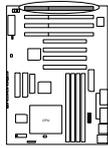


586ATX4

USER'S MANUAL

- * Auto detect CPU Voltage.
- * Support MMX CPU.
- * Switching mode Voltage regulator on Board.
- * Support Cyrix / IBM 6x86MX & AMD-K6 CPU.
- * FOR 5V CMOS ISA CARD, Please insert in Slot7.



- * JP5 : ON System After AC BACK : Full_ON.
- * JP5 : OFF System After AC BACK : Soft_OFF.

Pentium[®] Processor PCI - ISA BUS MAINBOARD

REV. 1.0 First Edition

Release Date 98.1.05

R-10-01-080105

I. Quick Installation Guide:

CPU	SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	SW 7	SW 8	J8
1.Pentium [®] Processor 90 MHz	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	OPEN
2.Pentium [®] Processor 100 MHz	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	OPEN
3.Pentium [®] Processor 120 MHz	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	OPEN
4.Pentium [®] Processor 133 MHz	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OPEN
5.Pentium [®] Processor 150 MHz	ON	ON	ON	OFF	OFF	OFF	ON	OFF	OPEN
6.Pentium [®] Processor 166 MHz	OFF	ON	ON	OFF	OFF	OFF	ON	OFF	OPEN
7.Pentium [®] Processor 180 MHz	ON	OFF	ON	OFF	OFF	OFF	ON	OFF	OPEN
8.Pentium [®] Processor 200 MHz	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF	OPEN
9. Intel MMX-150MHz	ON	ON	ON	OFF	OFF	OFF	ON	OFF	OPEN
10.Intel MMX-166MHz	OFF	ON	ON	OFF	OFF	OFF	ON	OFF	OPEN
11.Intel MMX-200MHz	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF	OPEN
12.Intel MMX-233MHz	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	OPEN
13.P54CT-150 MHz	ON	ON	ON	OFF	OFF	OFF	ON	OFF	OPEN
14.P54CT-166 MHz	OFF	ON	ON	OFF	OFF	OFF	ON	OFF	OPEN
15.P54CTB-150 MHz	ON	ON	ON	OFF	OFF	OFF	ON	OFF	OPEN
16.P54CTB-166 MHz	OFF	ON	ON	OFF	OFF	OFF	ON	OFF	OPEN

Quick Installation Guide

CPU	SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	SW 7	SW 8	J8
17.P54CTB-180 MHz	ON	OFF	ON	OFF	OFF	OFF	ON	OFF	OPEN
18.P54CTB-200 MHz	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF	OPEN
19.AMDK5-PR133	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OPEN
20.AMDK5-PR166	OFF	ON	ON	OFF	OFF	OFF	ON	OFF	OPEN
21.AMD-K6/166 (2.9V)	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OPEN
22.AMD-K6/180 (2.9V)	ON	OFF	ON	OFF	OFF	ON	ON	OFF	OPEN
23.AMD-K6/200 (2.9V)	OFF	OFF	ON	OFF	OFF	ON	ON	OFF	OPEN
24.AMD-K6/233 (3.2V)	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF	OPEN
25.Cyrix / IBM 6x86-PR150+	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	OPEN
26.Cyrix / IBM 6x86-PR166+	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OPEN
27.Cyrix / IBM 6x86-PR200+*	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	CLOSE
28.Cyrix / IBM 6x86L- PR150+*	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	OPEN
29.Cyrix / IBM 6x86L-PR166+	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	OPEN
30.Cyrix / IBM 6X86L-PR200+	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	CLOSE
31.Cyrix / IBM 6x86MX- PR166(60*2.5) 2.9V*	ON	ON	ON	OFF	OFF	ON	ON	OFF	OPEN
32.Cyrix / IBM 6x86MX- PR166(66*2) 2.9V*	OFF	ON	OFF	OFF	OFF	ON	ON	OFF	OPEN

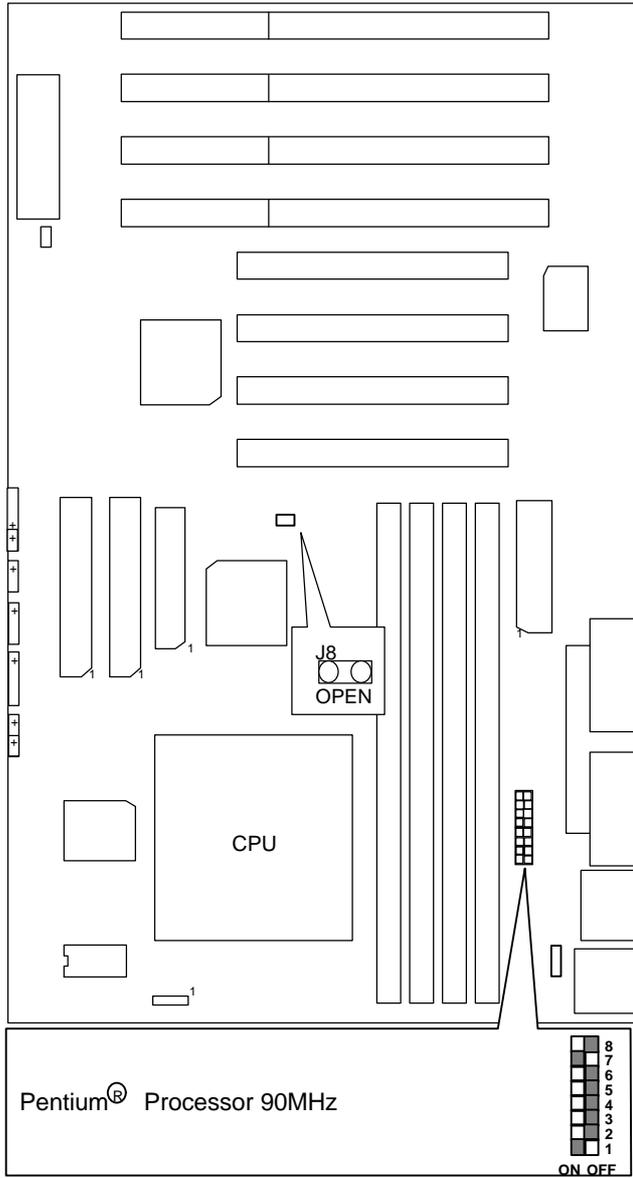
586ATX4

33. Cyrix/IBM 6x86MX- PR200GP(66*2.5) 2.9V*	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OPEN
34. Cyrix/IBM 6x86MX- PR200GP(75*2) 2.9V*	OFF	ON	OFF	OFF	OFF	ON	ON	OFF	CLOSE
35. Cyrix/IBM 6x86MX- PR233GP(66*3) 2.9V*	OFF	OFF	ON	OFF	OFF	ON	ON	OFF	OPEN
36. Cyrix/IBM 6x86MX- PR233GP(75*2.5) 2.9V*	OFF	ON	ON	OFF	OFF	ON	ON	OFF	CLOSE

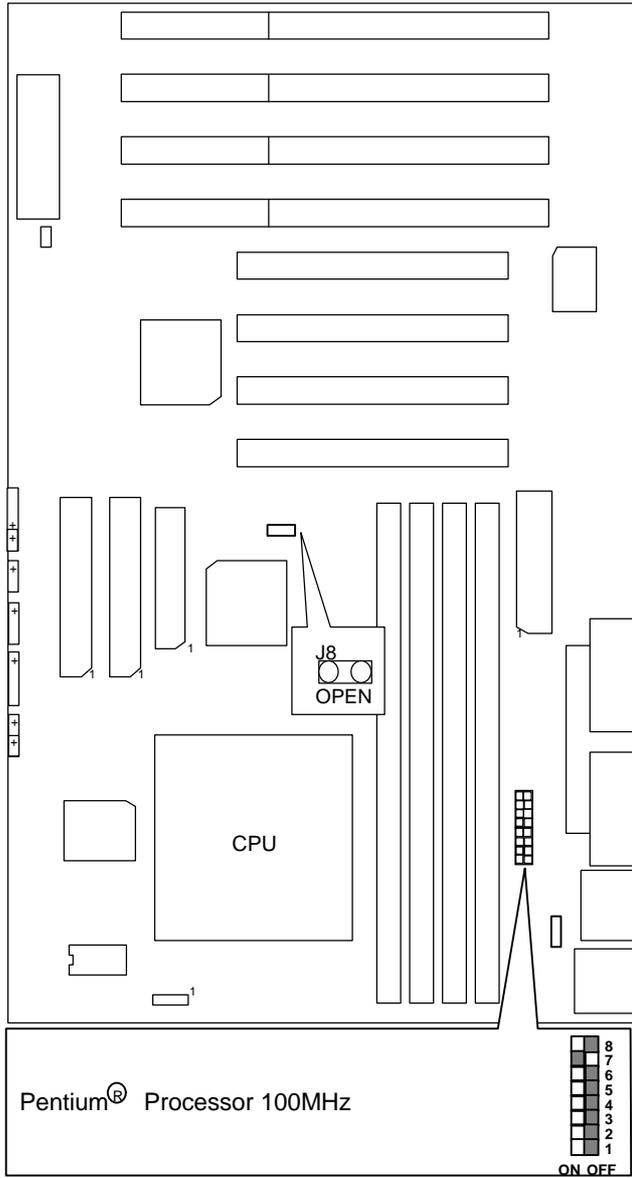
★ Note : If Cyrix 6x86 is being used, please check the CPU Date Code after 605.

★ Note : Cyrix/IBM 6x86-150MHz-PR200+ (75*2); Cyrix/IBM 6x86L-PR150+ (60*2),
Cyrix/IBM 6x86L-PR166+(66*2), Cyrix/IBM 6x86L-PR200+ (75*2), Cyrix6x86MX-
PR166GP (60*2.5, 66*2) , Cyrix/IBM 6x86MX-PR200GP (66*2.5, 75*2; 2.9V) ,
Cyrix/IBM 6x86MX-PR233GP (66*3, 75*2.5; 2.9V) .

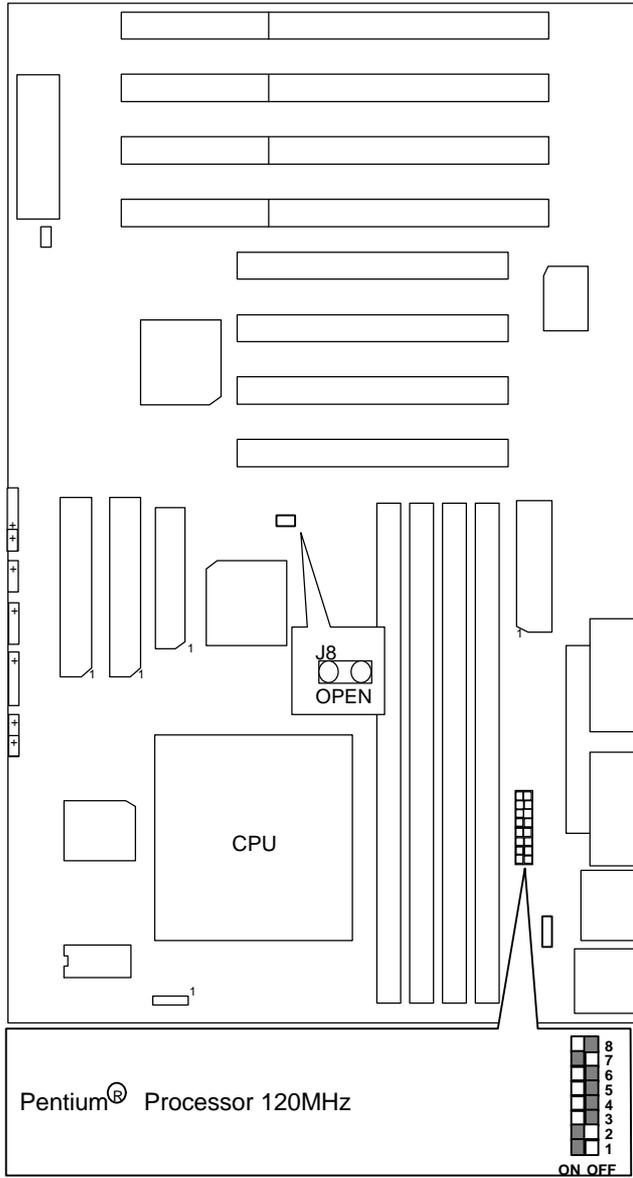
1. Pentium[®] Processor 90 MHz



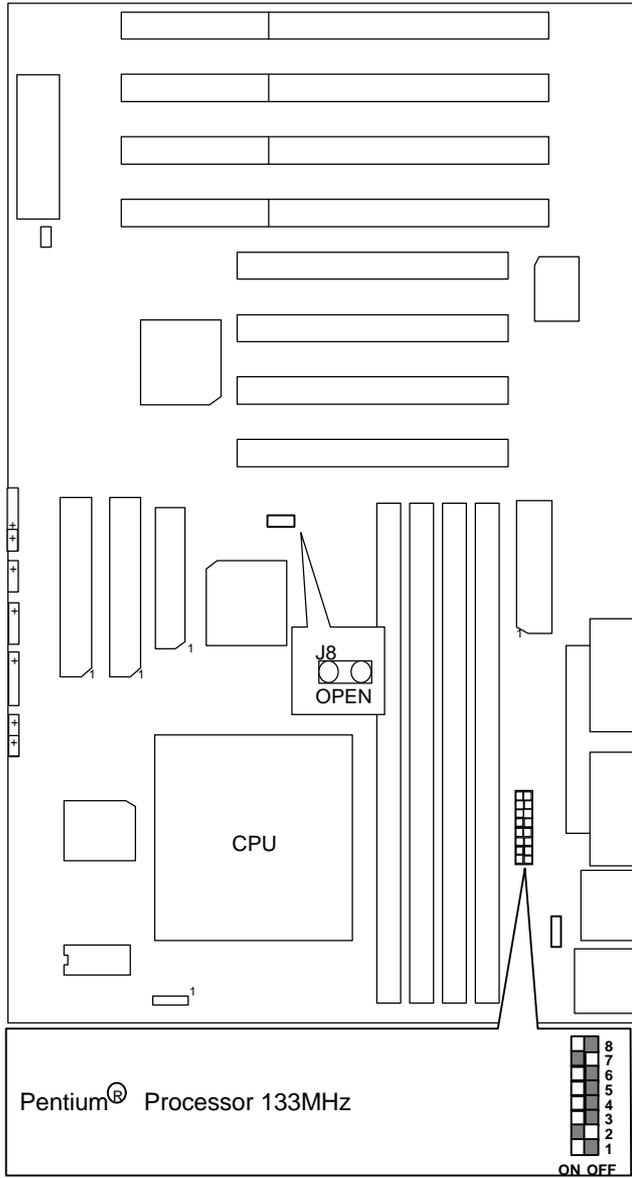
2. Pentium[®] Processor 100 MHz



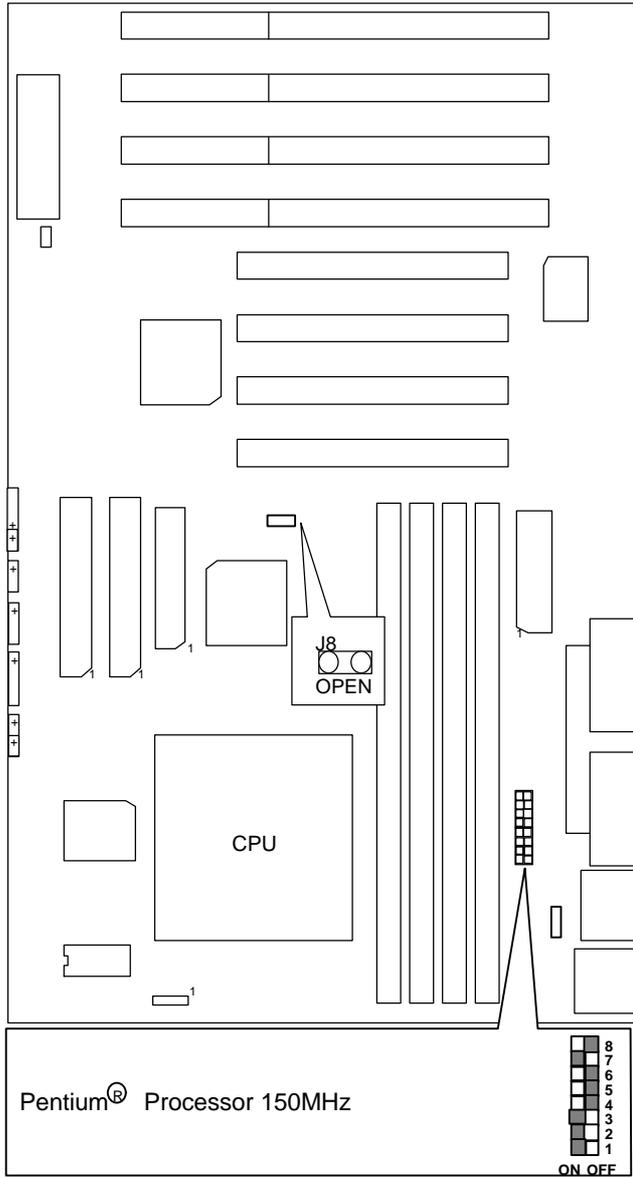
3. Pentium[®] Processor 120 MHz



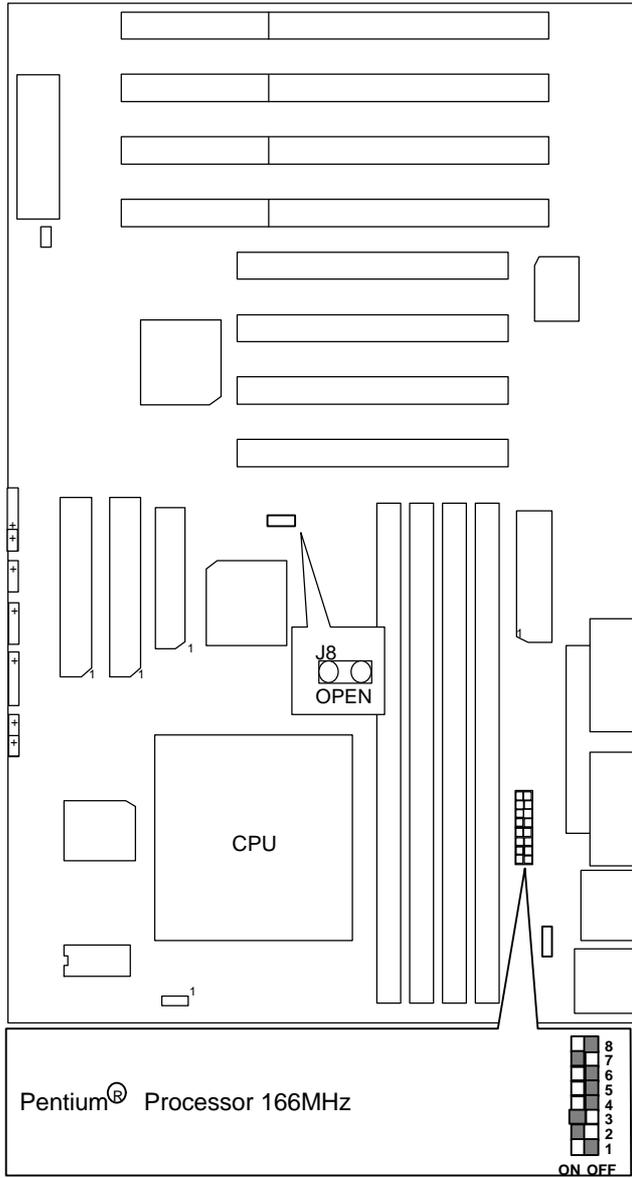
4. Pentium[®] Processor 133 MHz



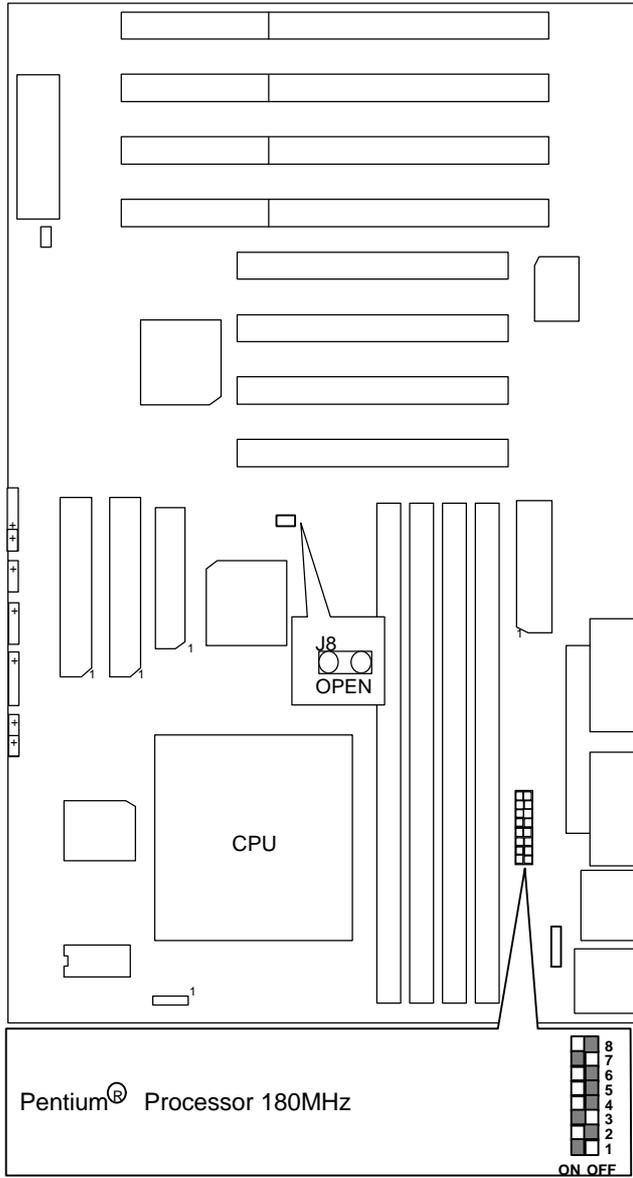
5. Pentium[®] Processor 150 MHz



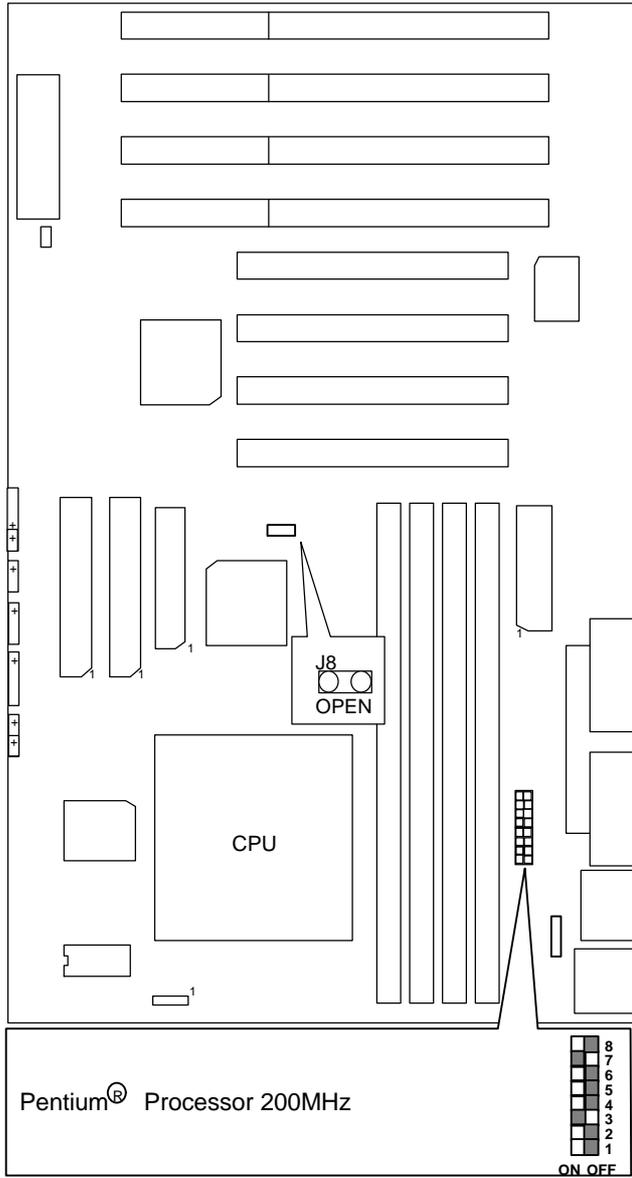
6. Pentium[®] Processor 166 MHz



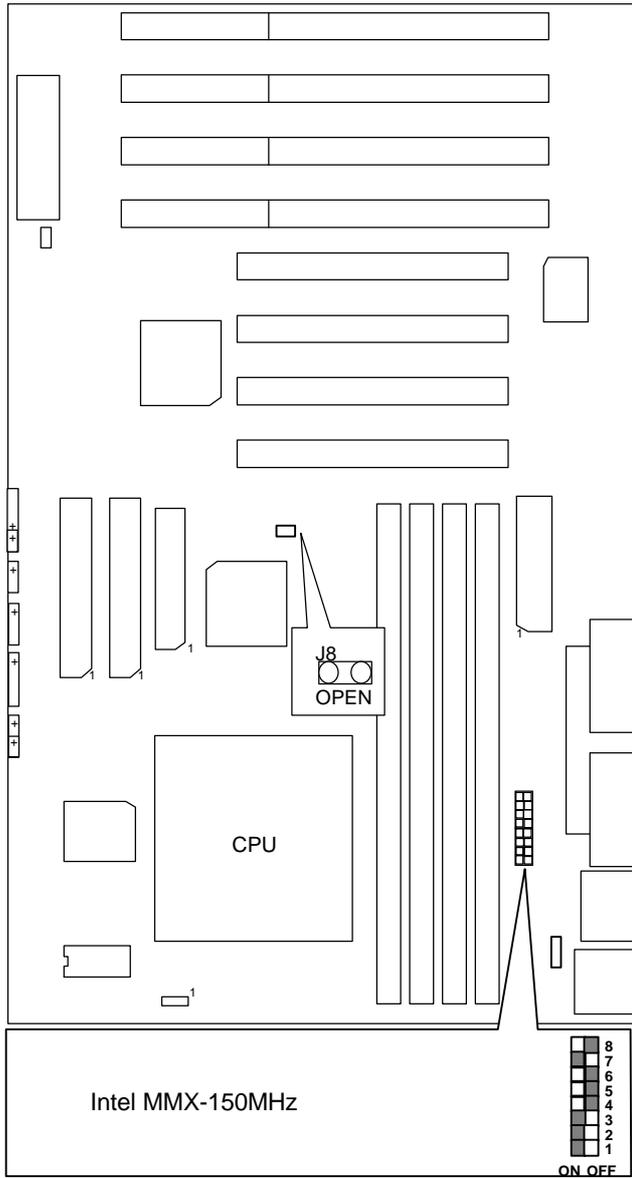
7. Pentium[®] Processor 180 MHz



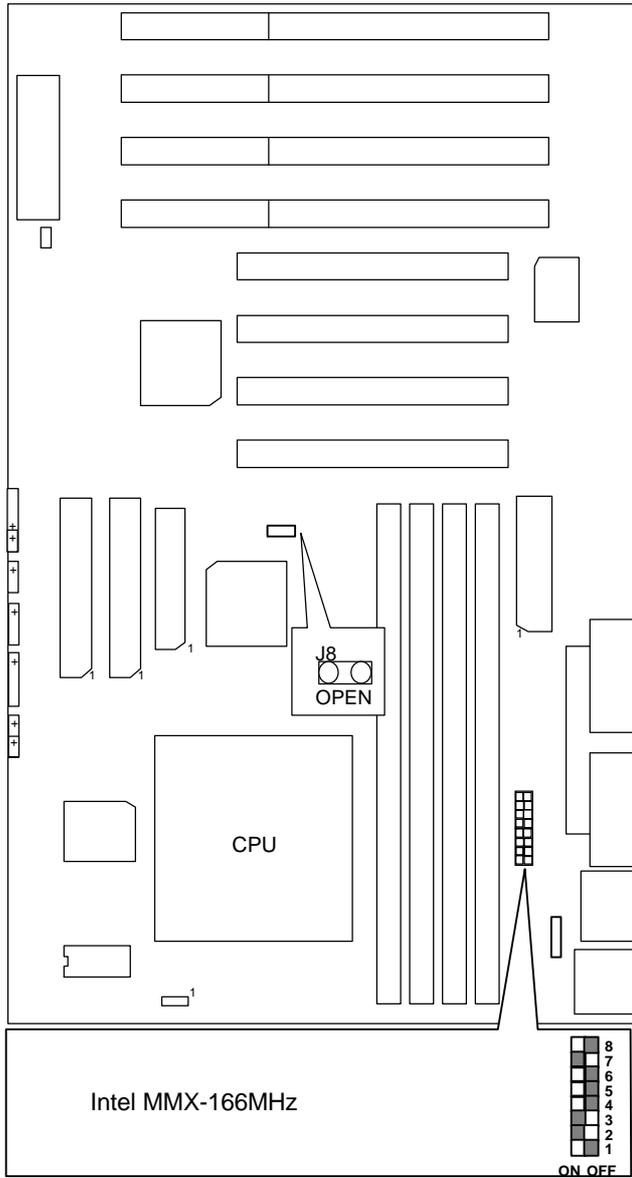
8. Pentium[®] Processor 200 MHz



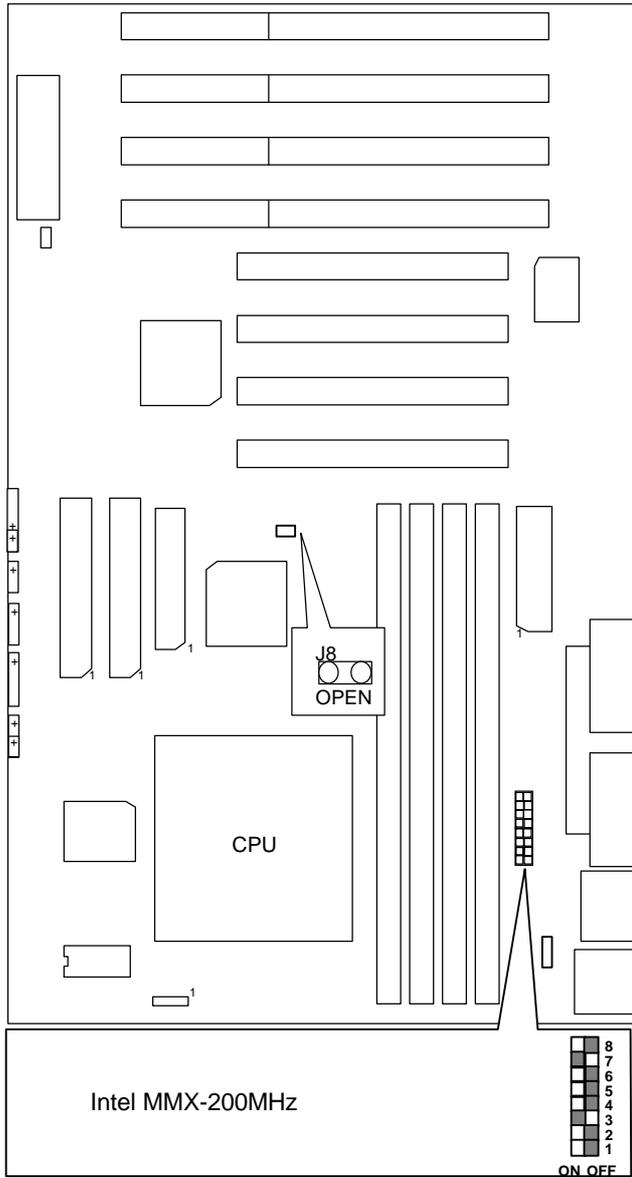
9. Intel MMX-150 MHz



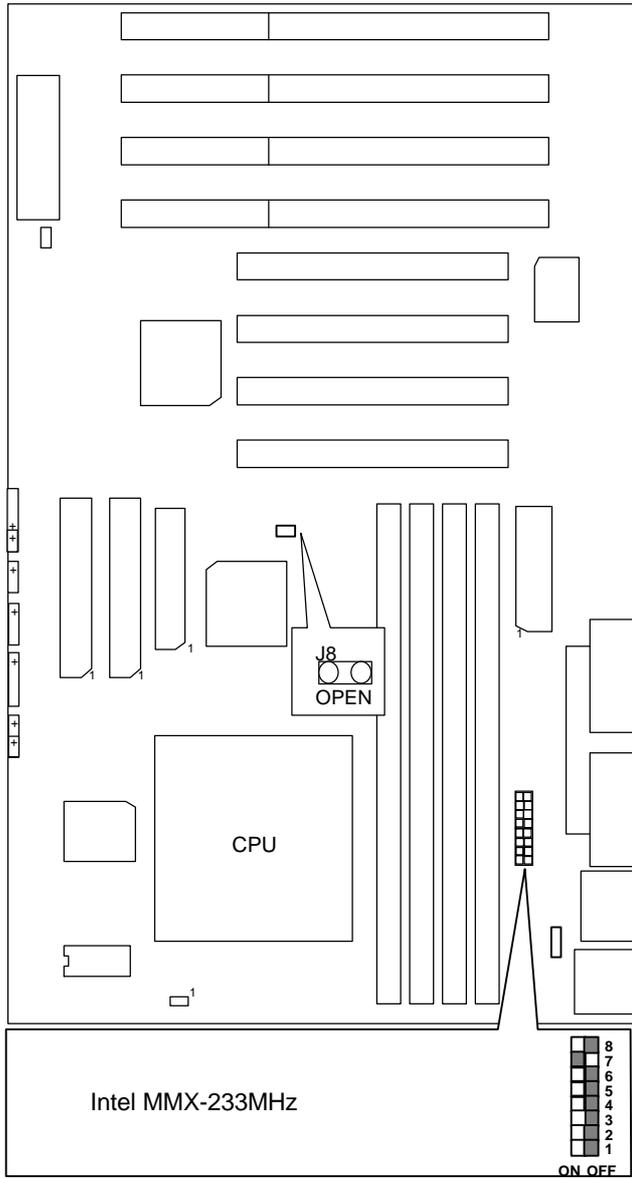
10. Intel MMX-166 MHz



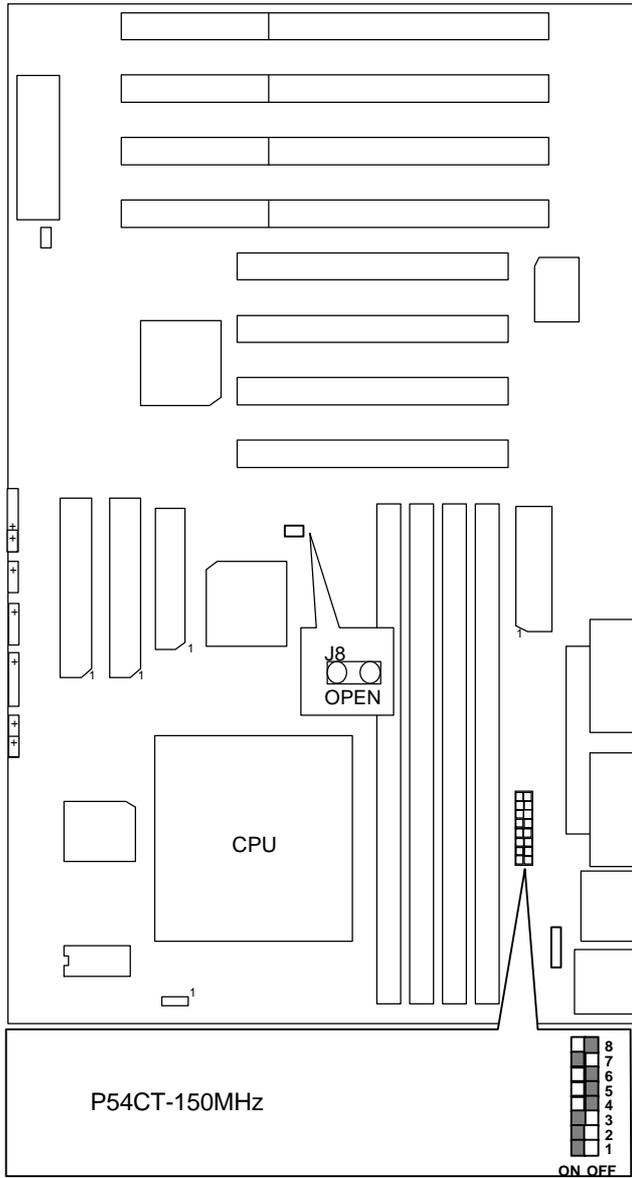
11. Intel MMX-200 MHz



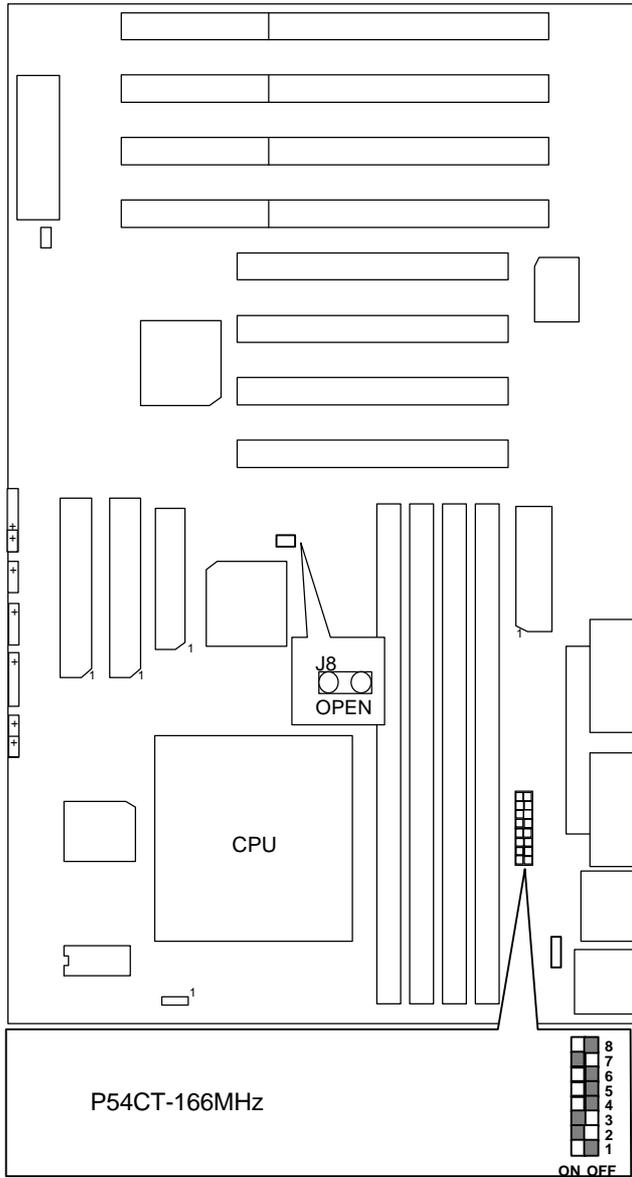
12. Intel MMX-233 MHz



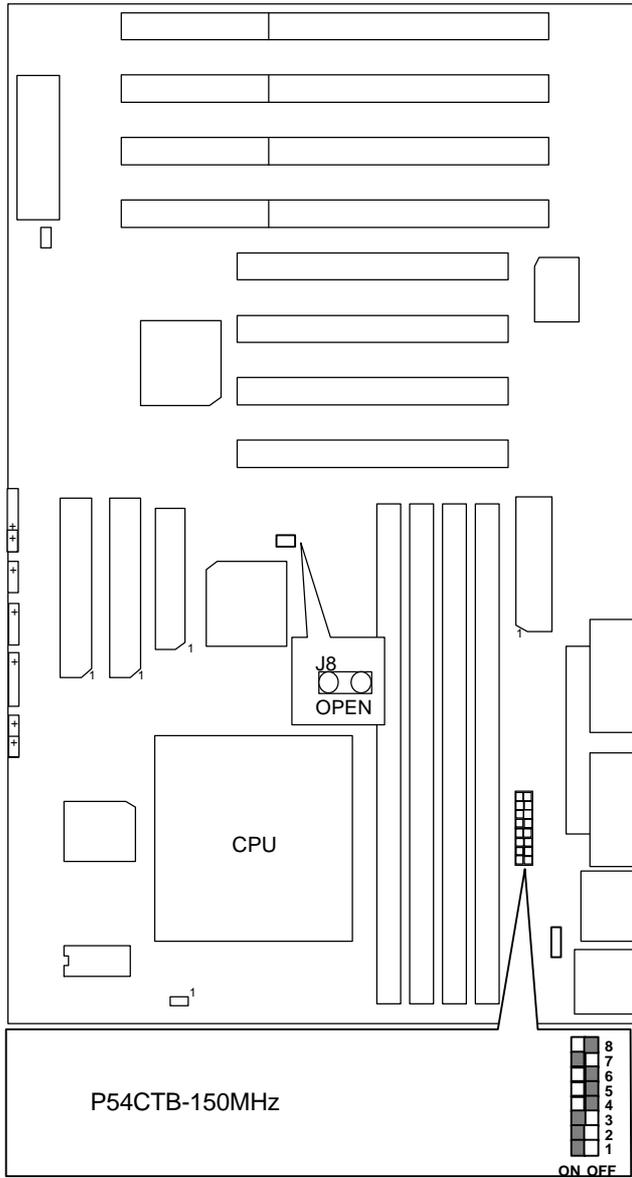
13. P54CT-150 MHz



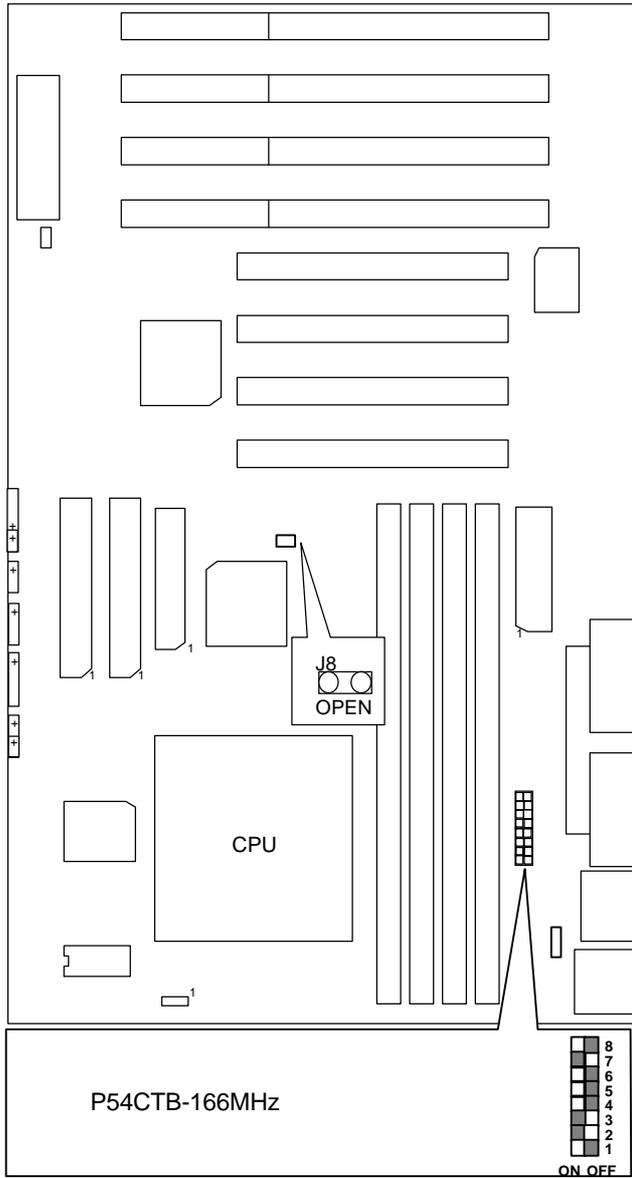
14. P54CT-166 MHz



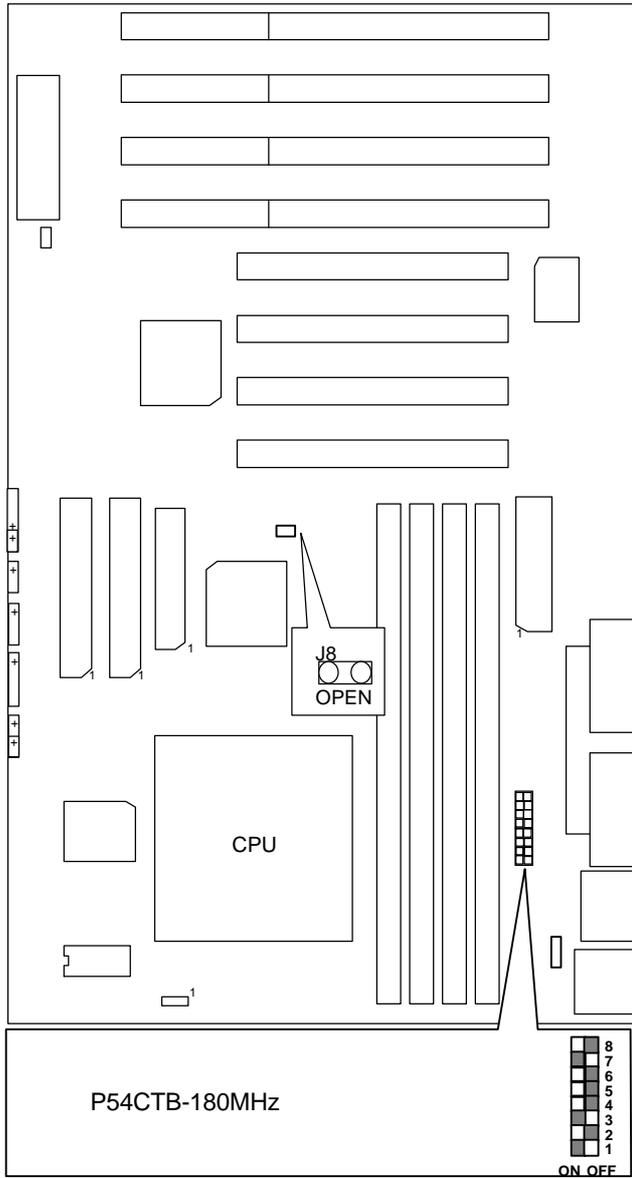
15. P54CTB-150 MHz



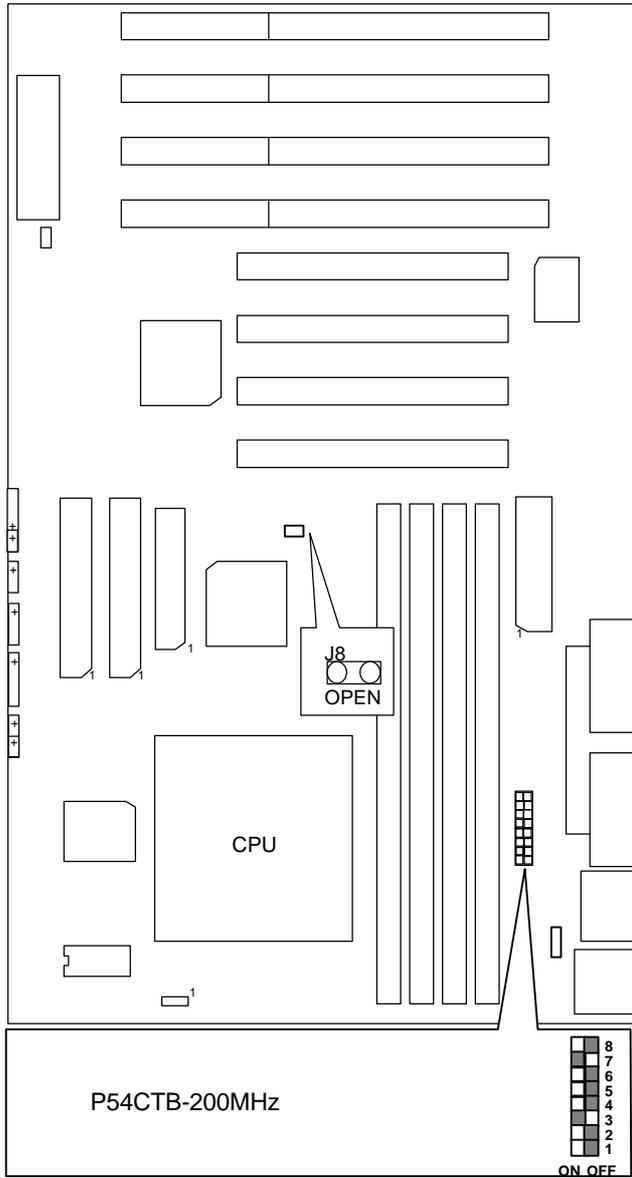
16. P54CTB-166 MHz



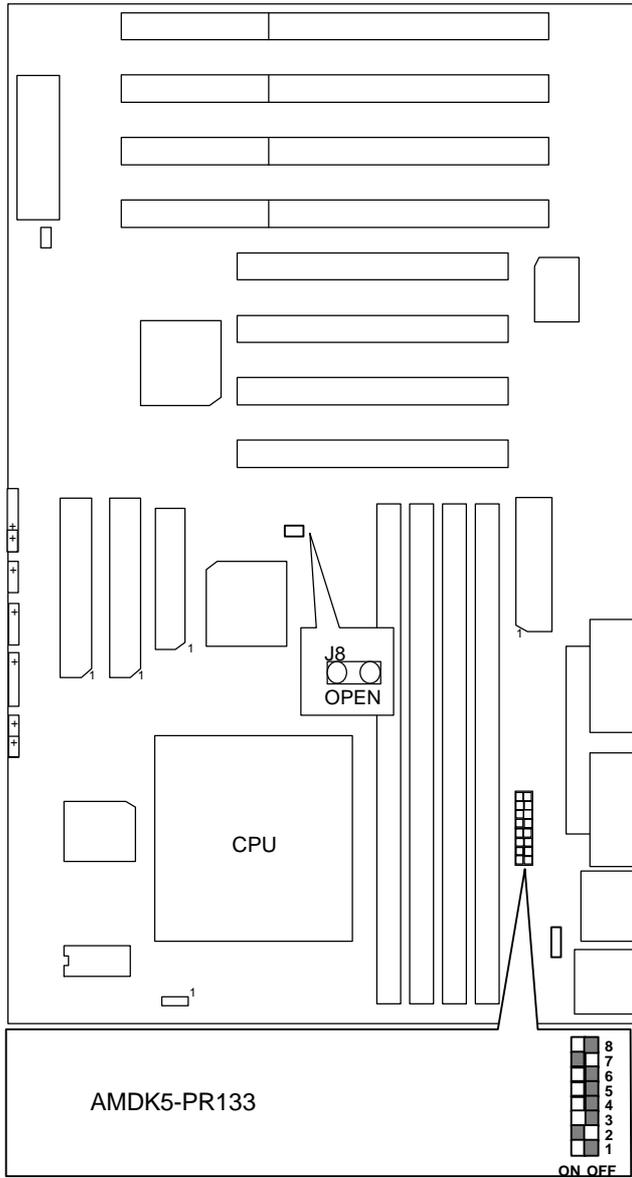
17. P54CTB-180 MHz



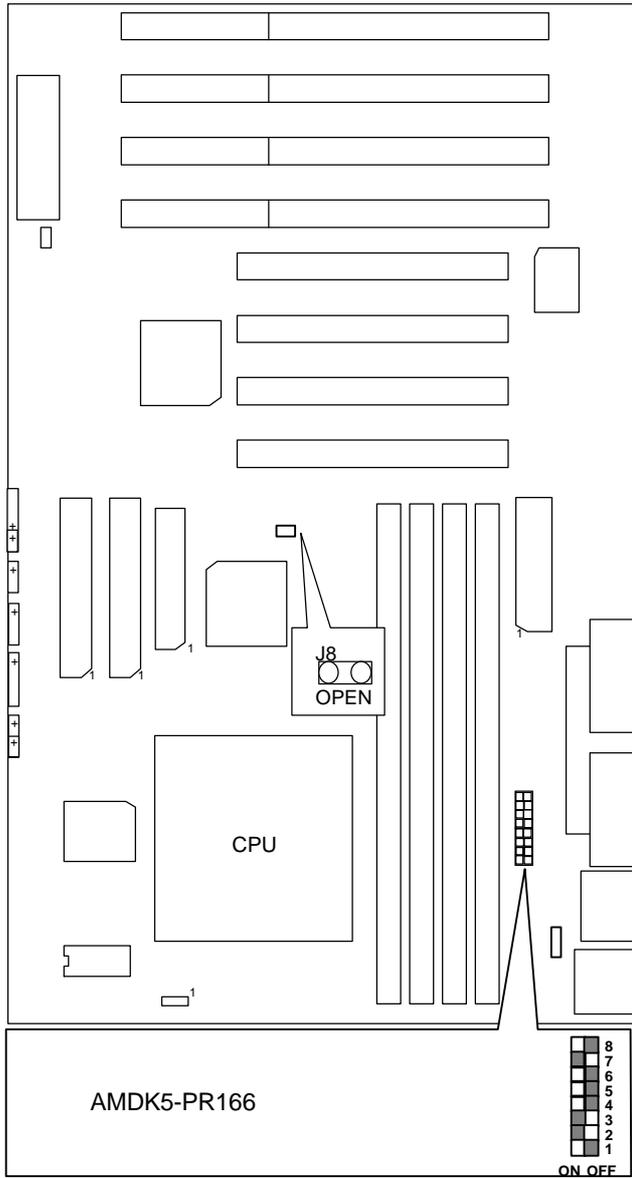
18. P54CTB-200 MHz



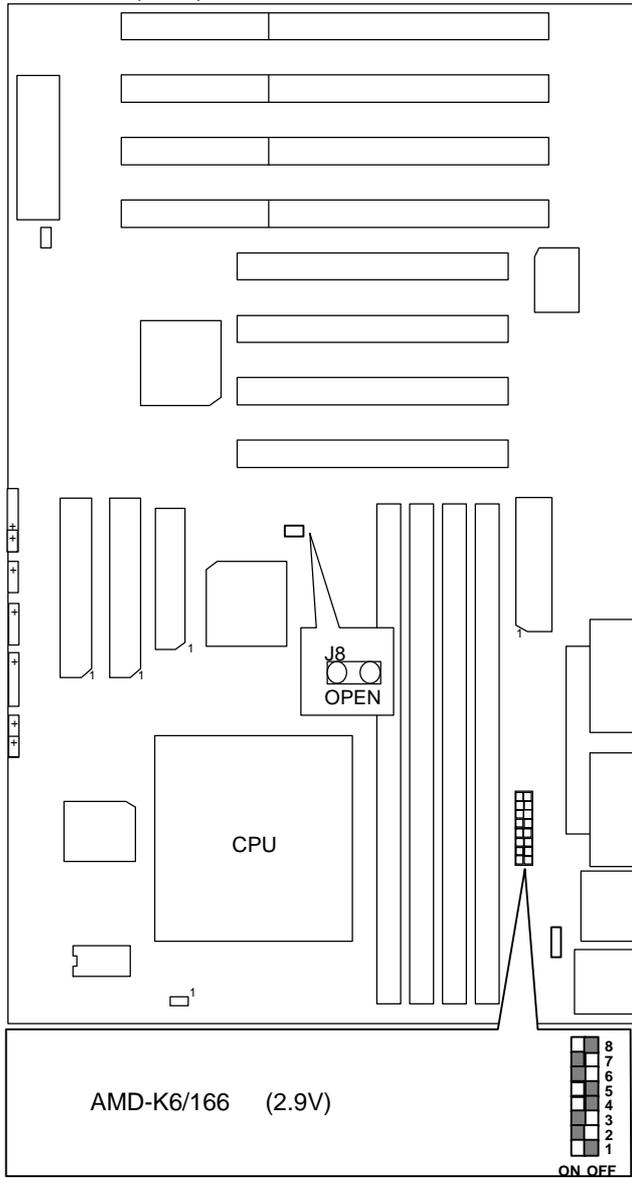
19. AMDK5-PR133



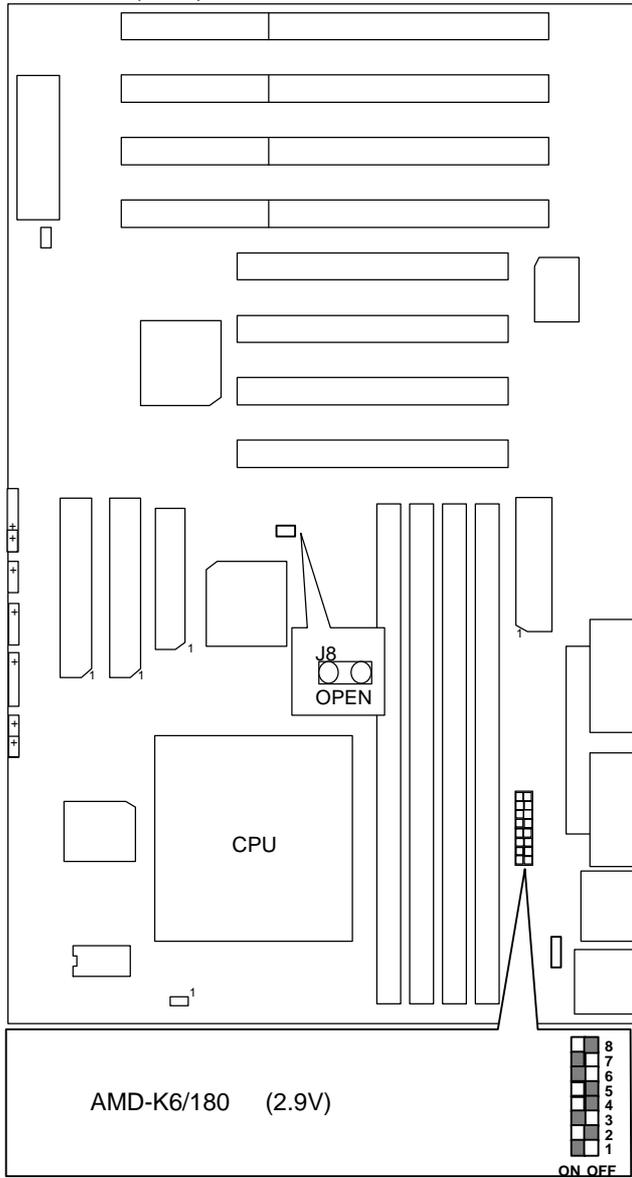
20. AMDK5-PR166



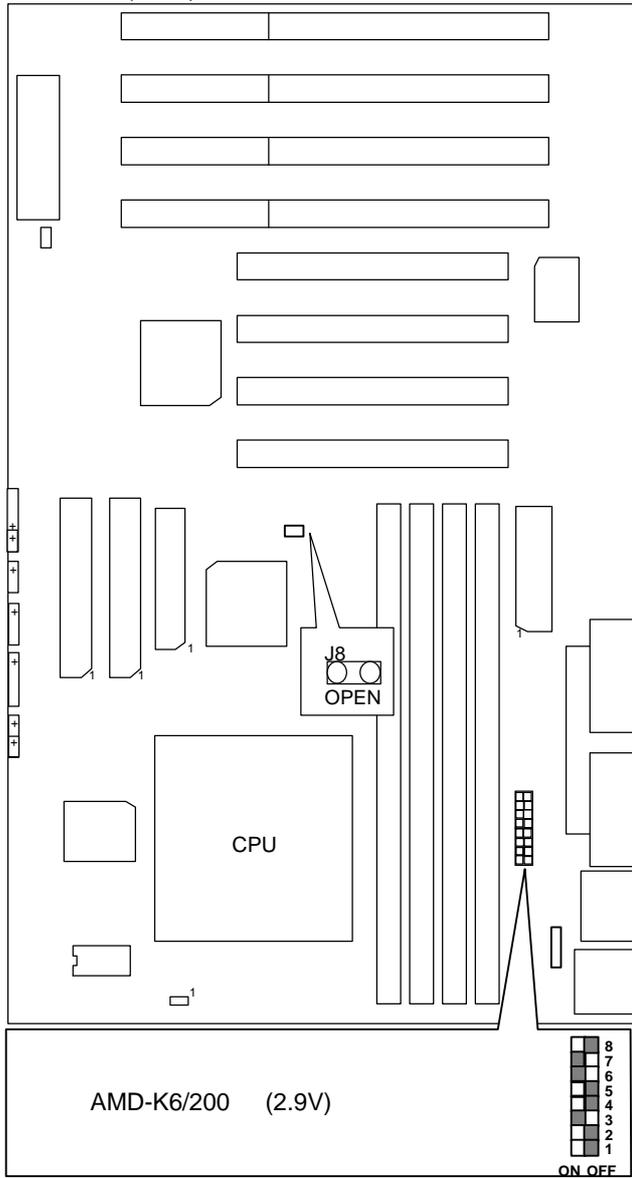
21. AMD-K6/166 (2.9V)



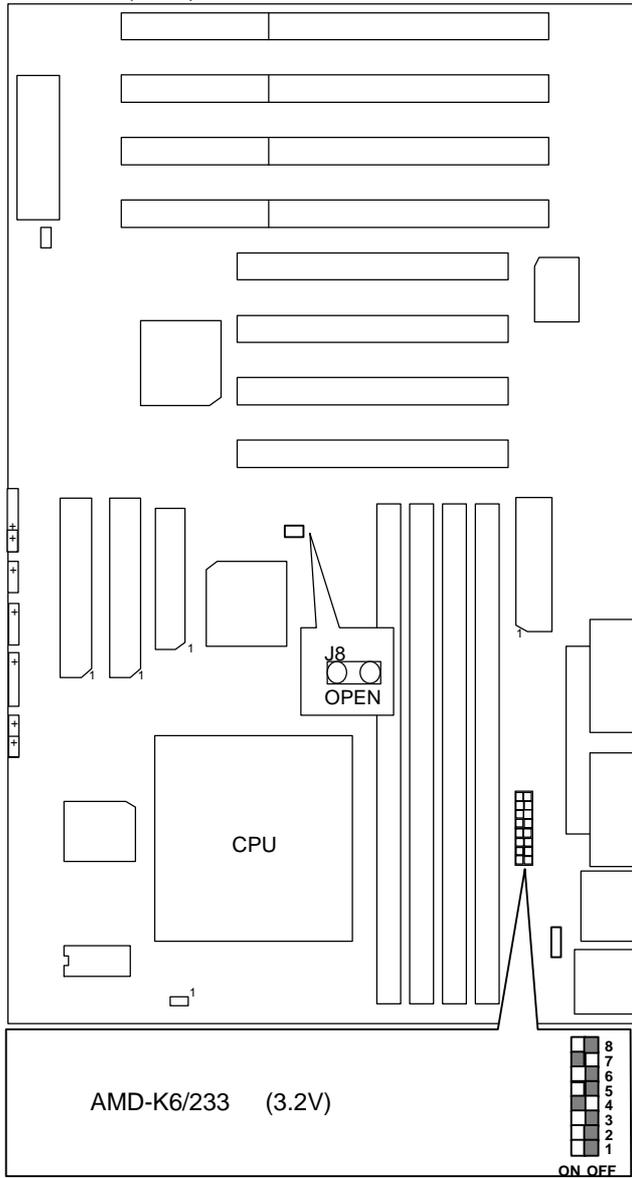
22. AMD-K6/180 (2.9V)



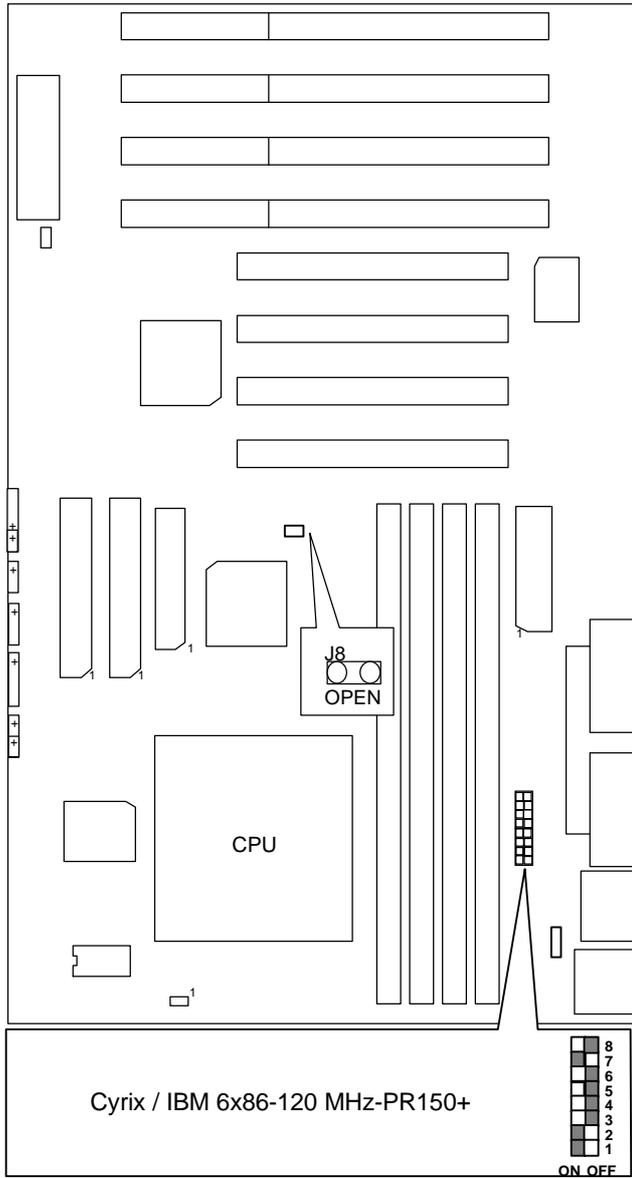
23. AMD-K6/200 (2.9V)



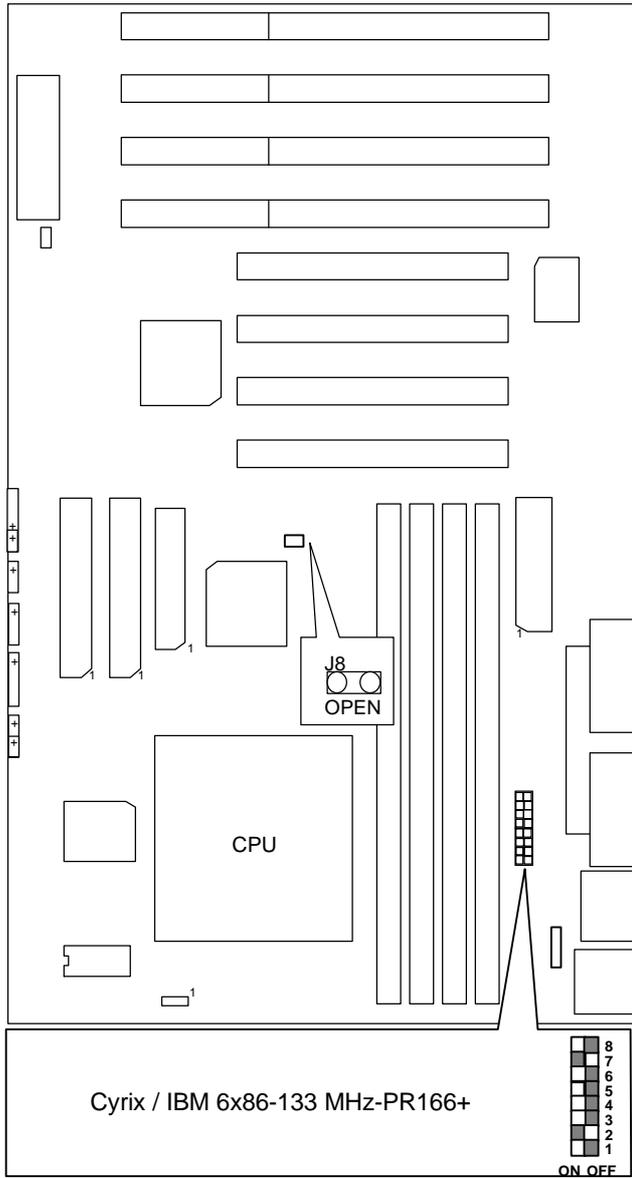
24. AMD-K6/233 (3.2V)



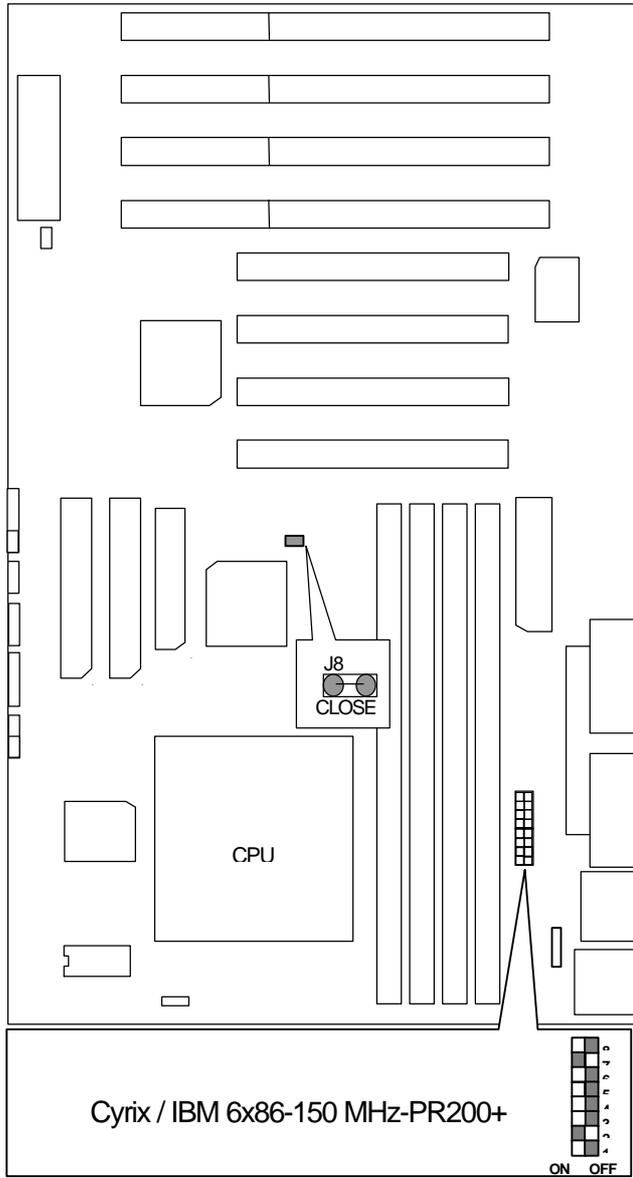
25. Cyrix / IBM 6x86-120 MHz-PR150+



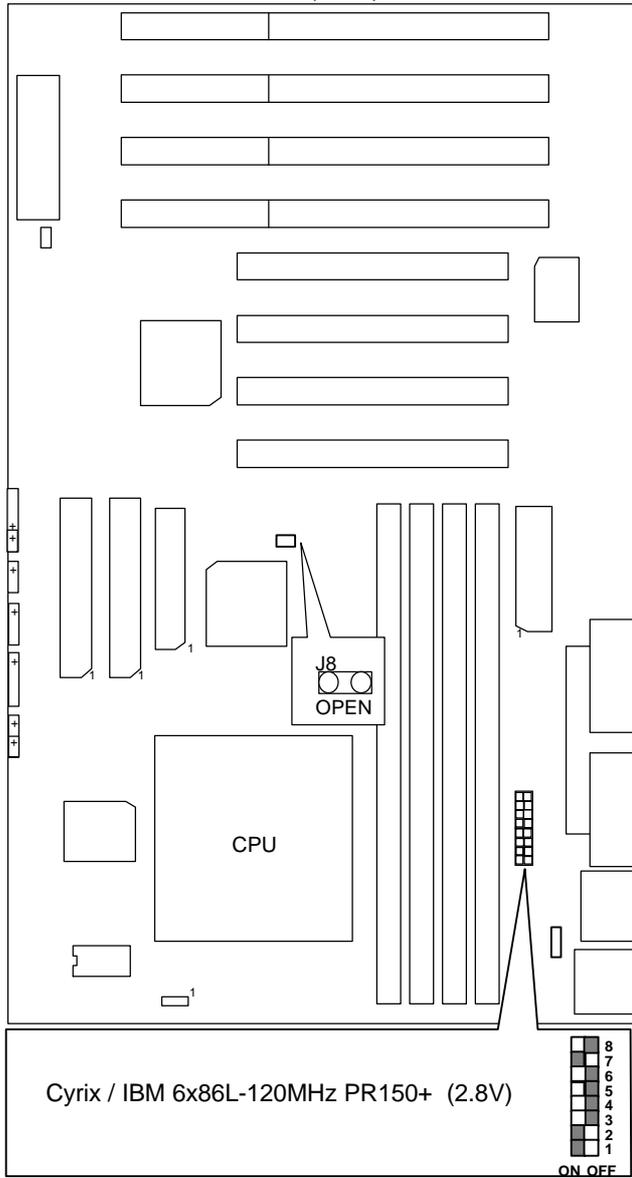
26. Cyrix / IBM 6x86-133 MHz-PR166+



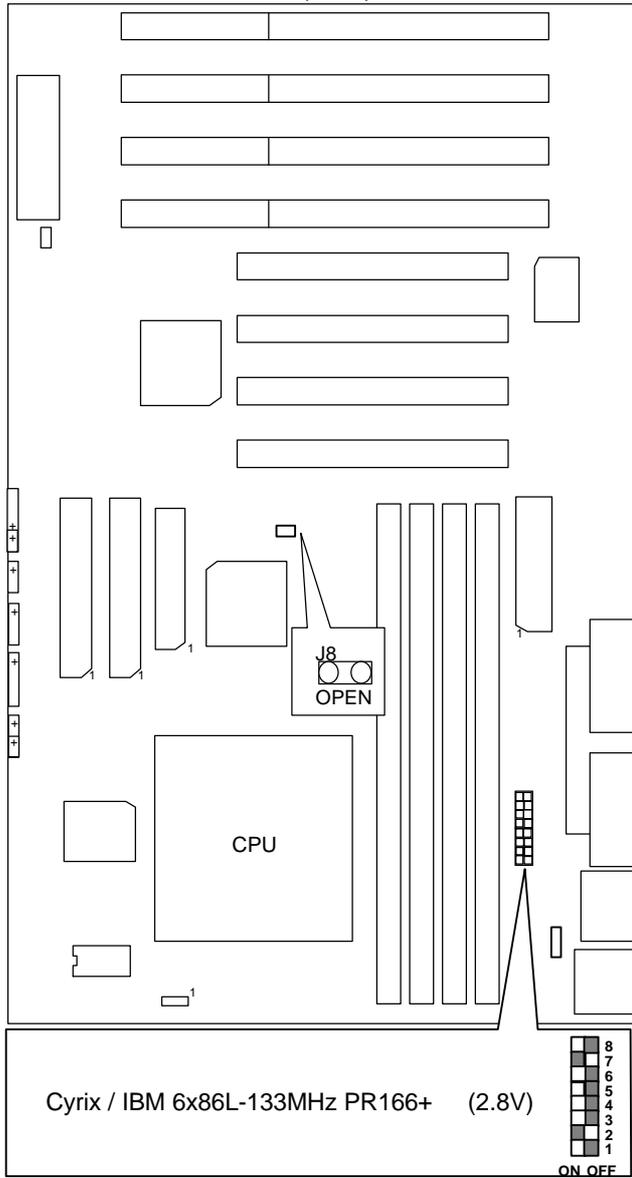
27. Cyrix / IBM 6x86-150 MHz-PR200+



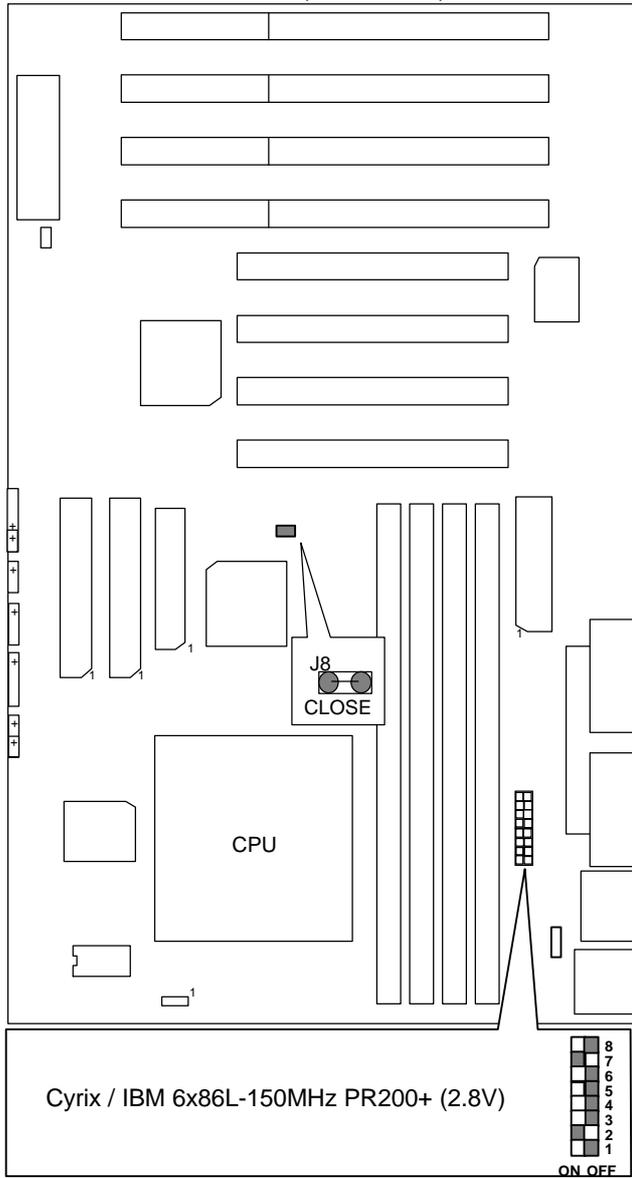
28. Cyrix / IBM 6x86L-PR150+ (2.8V)



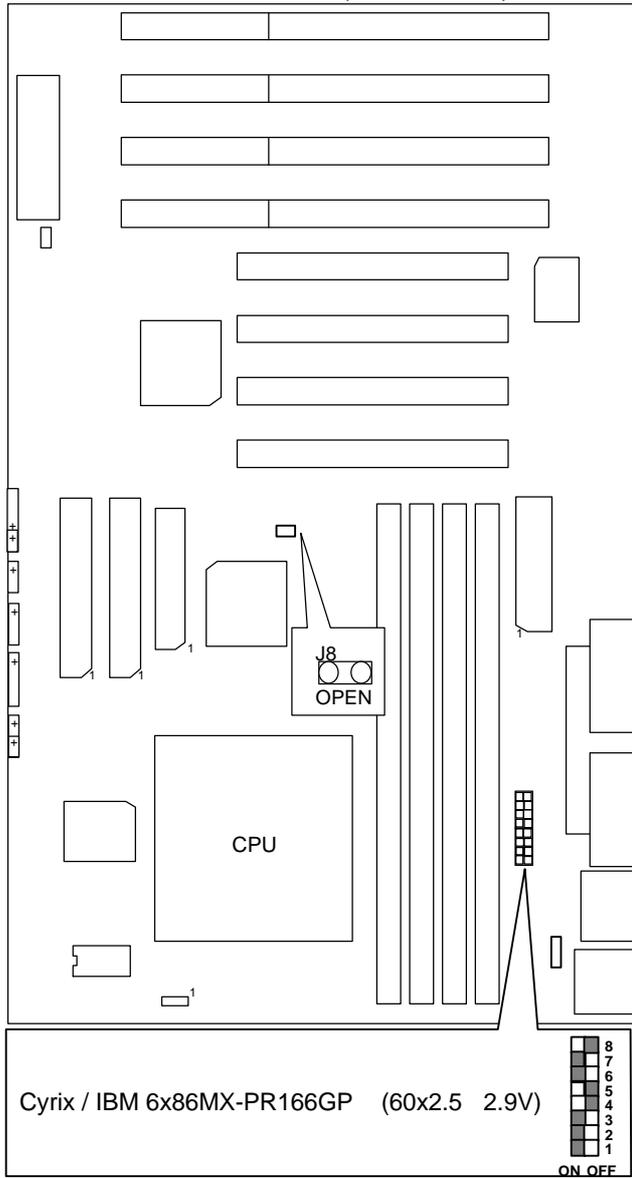
29. Cyrix / IBM 6x86L-PR166+ (2.8V)



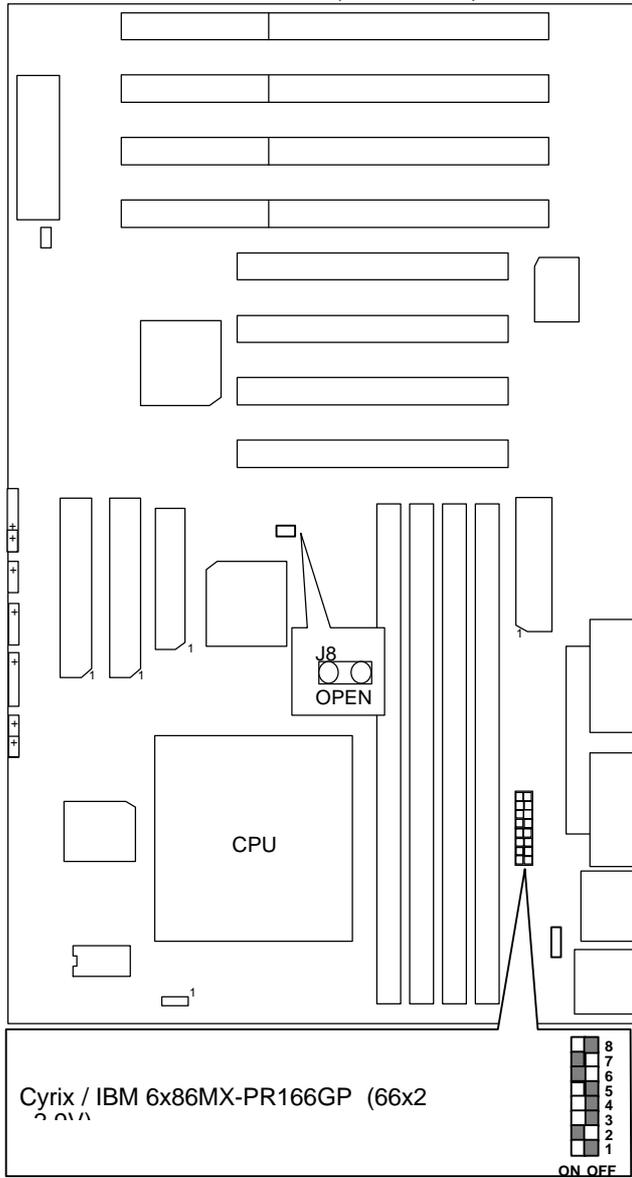
30. Cyrix / IBM 6x86L-PR200+ (75x2 2.8V)



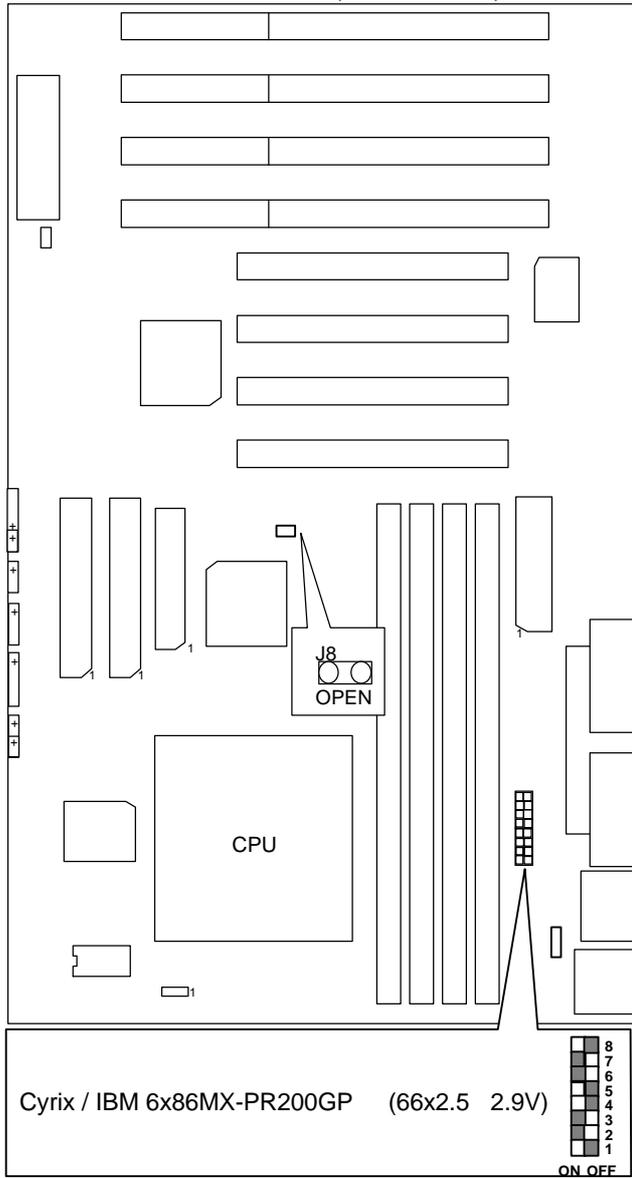
31. Cyrix / IBM 6x86MX-PR166GP (60x2.5 2.9V)



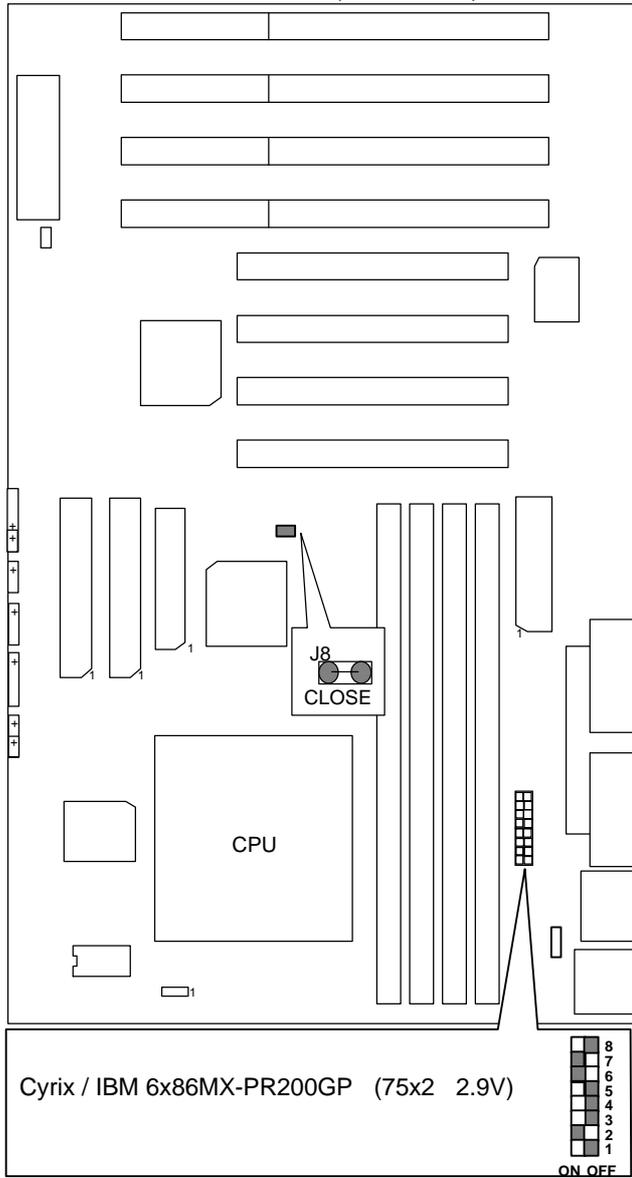
32. Cyrix / IBM 6x86MX-PR166GP (66x2 2.9V)



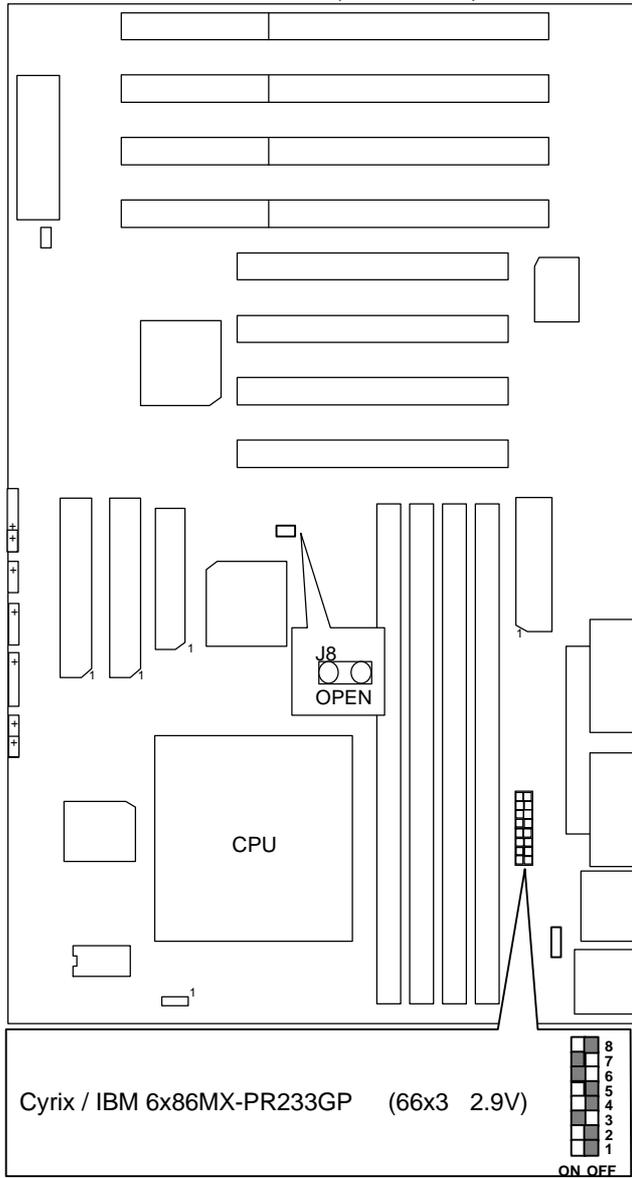
33. Cyrix / IBM 6x86MX-PR200GP (66x2.5 2.9V)



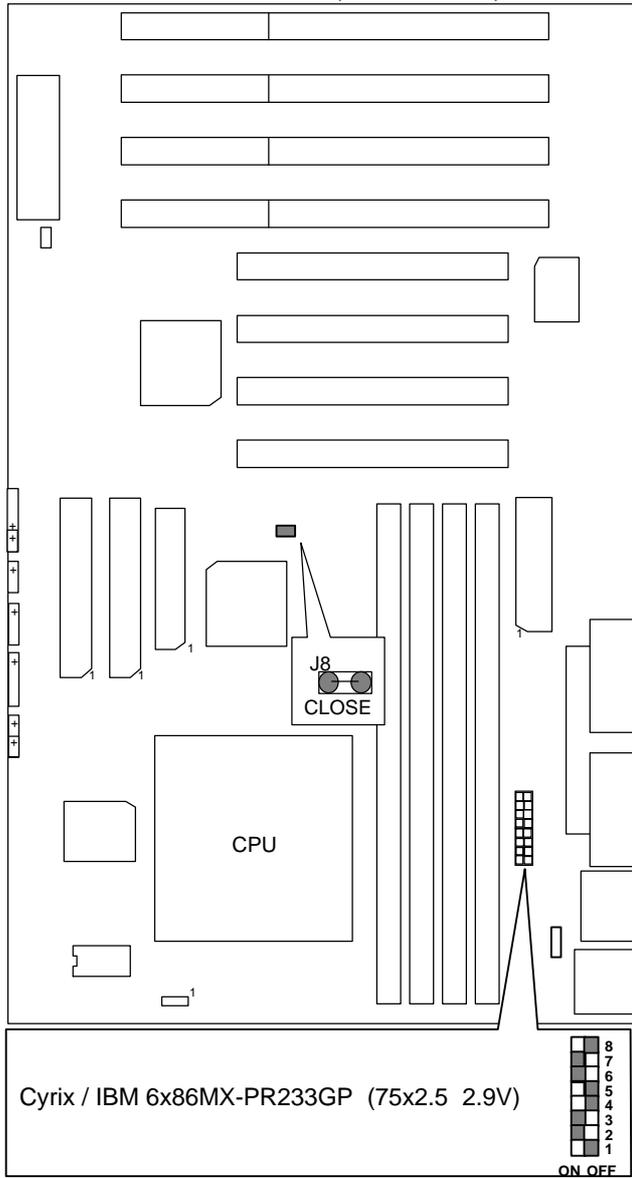
34. Cyrix / IBM 6x86MX-PR200GP (75x2 2.9V)



35. Cyrix / IBM 6x86MX-PR233GP (66x3 2.9V)

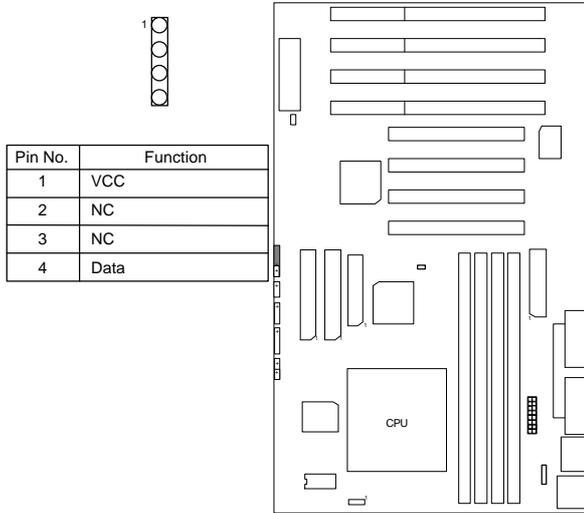


36. Cyrix / IBM 6x86MX-PR233GP (75x2.5 2.9V)

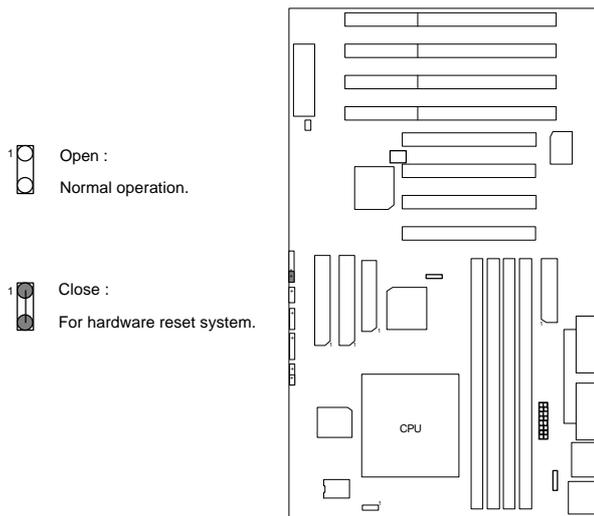


II. Quick Installation Guide of Jumper setting:

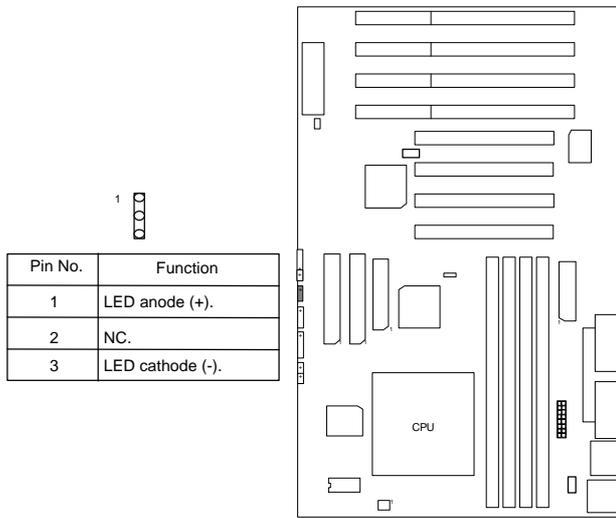
SPK : Speaker Connector



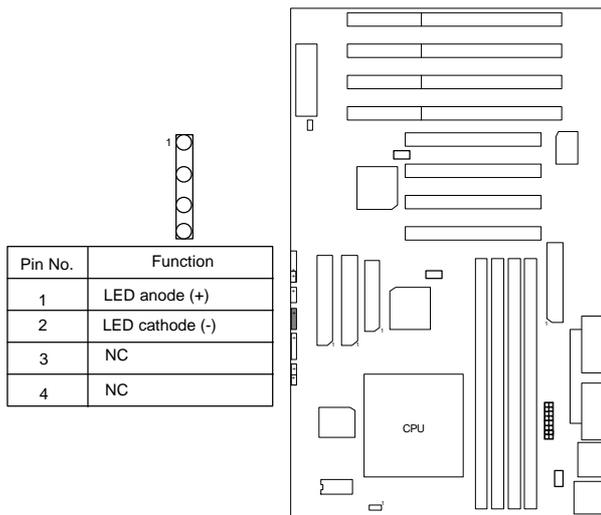
RST : Reset Switch



PW : Power LED



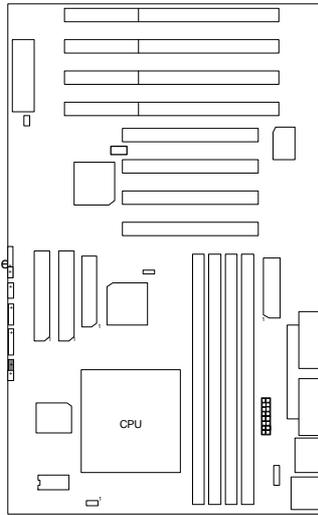
HD : IDE Hard Disk Active LED



GN : Green Function Switch

1  Open :
 Normal operation.

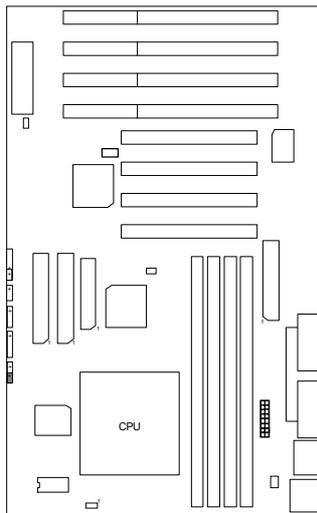
1  Close One Time :
 For system entering Green mode.



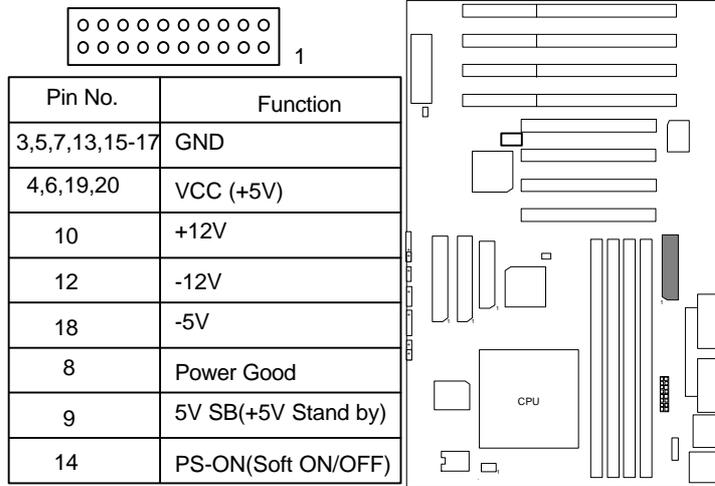
JP2 : Soft Power Connector



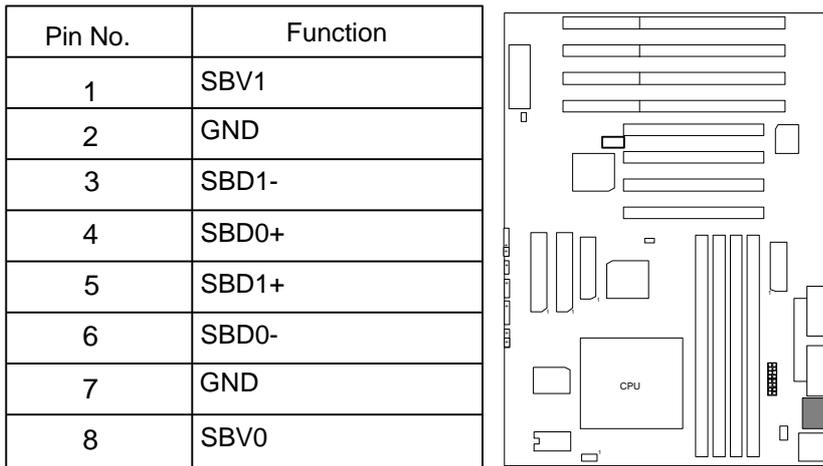
Pin No.	Function
1	GND
2	CTRL-Signal



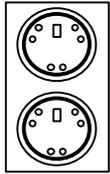
POWER1 : ATX Power Connector



JP1: USB Port



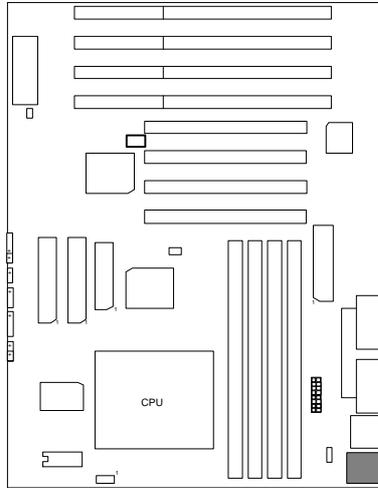
J3 : PS/2 Mouse / Keyboard Connector



PS/2 Mouse

PS/2 Keyboard

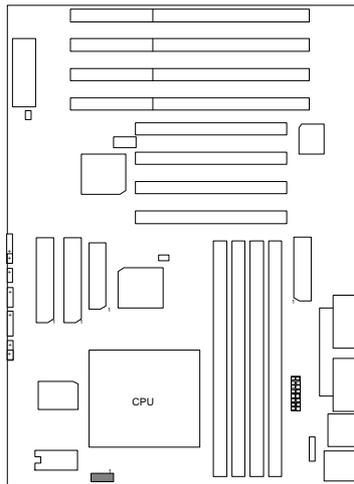
PS/2 Mouse / Keyboard	
Pin No.	Function
1	Key Data
2	NC
3	GND
4	VCC (+5V)
5	Key Clock.
6	NC



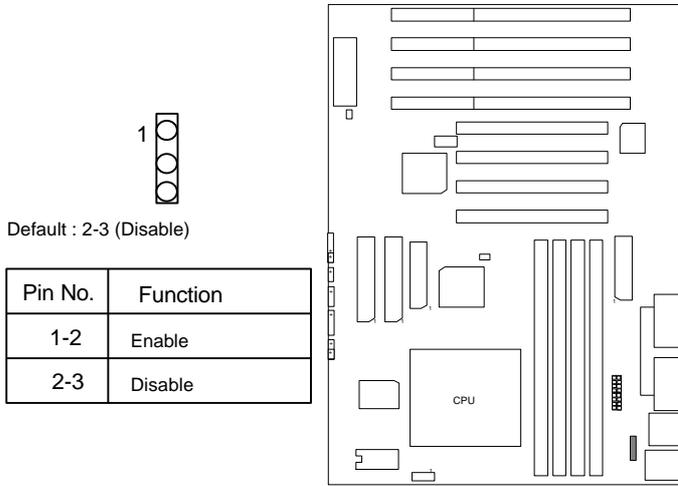
J1: CPU Cooling Fan Power Connector



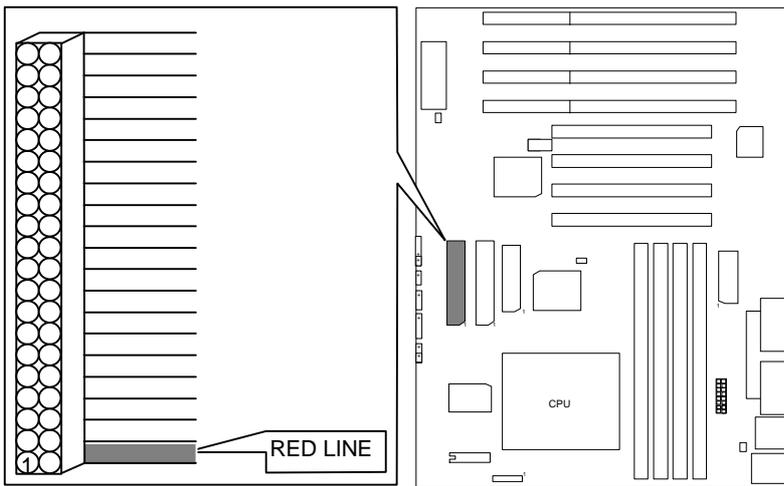
Pin No.	Function
1	+12V
2	NC



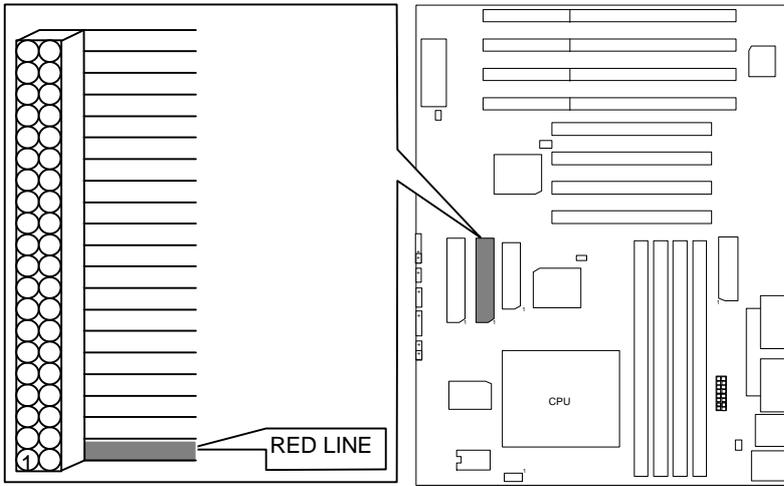
J17: Keyboard Power On selection



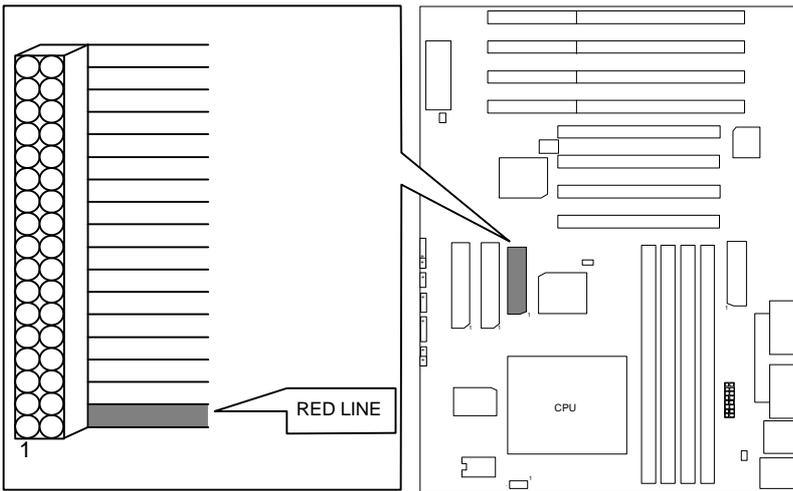
J5 : For Primary IDE port



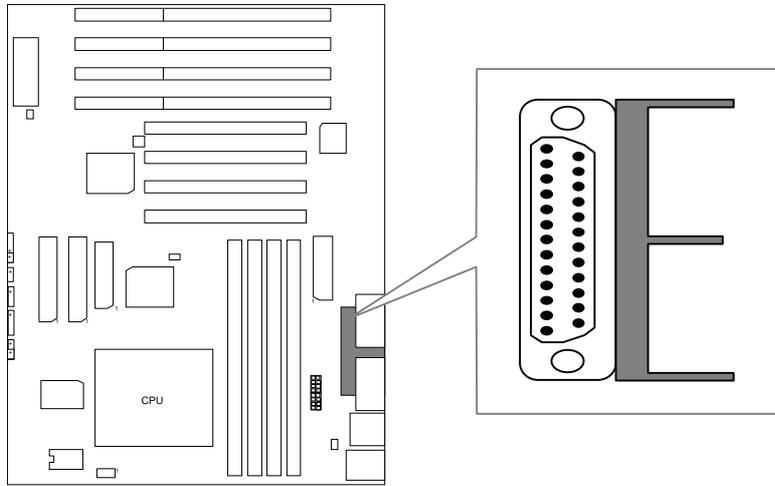
J4 : For Secondary IDE port



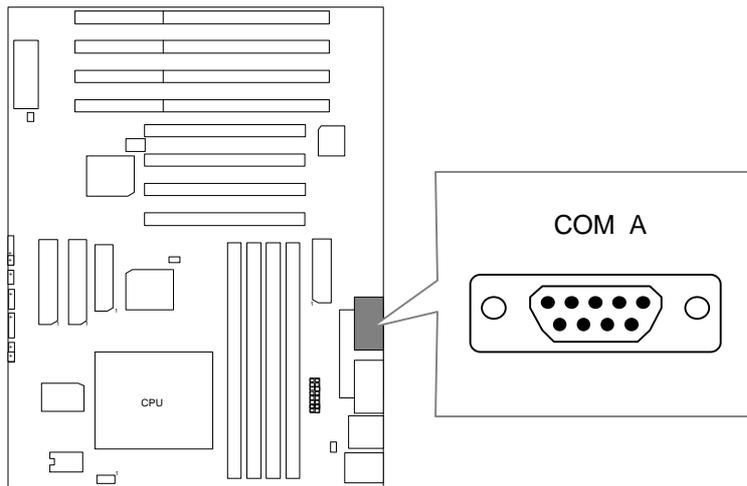
JP3 : FLOPPY PORT



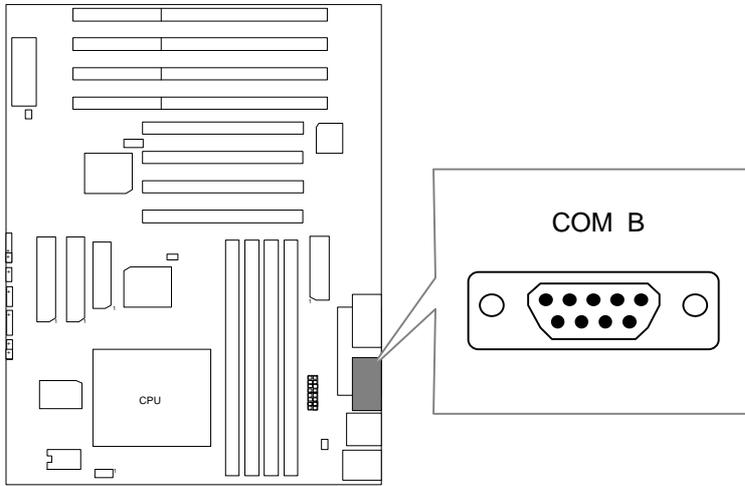
CN3 : LPT PORT



CN2 : COM A



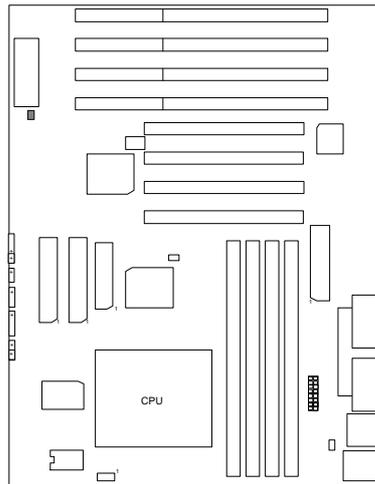
CN1 : COM B



JP5 : ATX POWER Control



Pin No.	Function
ON	System After AC BACK: Full_ON.
OFF	System After AC BACK: Soft_OFF.



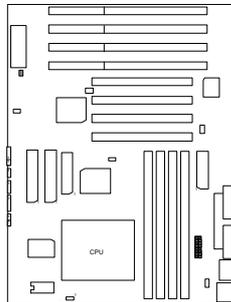
SW : For CPU Internal / External Frequency.

Hz Speed	60 MHz J8 <input type="checkbox"/> OPEN	66 MHz J8 <input type="checkbox"/> OPEN	75 MHz J8 <input checked="" type="checkbox"/> CLOSE	SW	4	5	6	7
x 1.5				AUTO	X	X	X	O
x 2				2.0 V	X	X	X	X
x 2.5				2.1 V	X	X	O	X
x 3				2.2 V	X	O	X	X
x 3.5				2.3 V	X	O	O	X
x 4				2.4 V	O	X	X	X
x 4.5				2.5 V	O	X	O	X
x 5				2.6 V	O	O	X	X
x 5.5				2.7 V	O	O	O	X
				2.8 V	X	X	X	O
				2.9 V	X	X	O	O
				3.0 V	X	O	X	O
				3.1 V	X	O	O	O
				3.2 V	O	X	X	O
				3.3 V	O	X	O	O
				3.4 V	O	O	X	O
				3.5 V	O	O	O	O

X : OFF
O : ON

* AUTO VOLTAGE: INTEL, CYRIX, AMDK5

2.9V:AMD-K6/200, Cyrix / IBM 6x86MX / 166 / 200 / 233
3.2V:AMD-K6/233



III. Top Performance Test Setting:

Users have to modify the value for each item in chipset features as follow:

Note:60ns DRAM timing is necessary for top performance setting.

Chipset features setup

ROM PCI / ISA BIOS
 CHIPSET FEATURES SETUP
 AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	Chipset NA# Asserted	: Enabled
DRAM Timing	: 60ns	DRAM Refresh Rate	: 15.6 us
DRAM Leadoff Timing	: 10/6/3	SDRAM (CAS Lat/RAS-to-CAS)	: 2/2
DRAM Read Burst (EDO/FP)	: x222 /x333	SDRAM Speculative Read	: Disabled
DRAM Write Burst Timing	: x222		
Fast EDO Lead off	: Disabled		
Refresh RAS# Assertion	: 4 Clks		
Fast RAS TO CAS Delay	: 2		
Fast MA to RAS# Delay	: 1 Clk		
System BIOS Cacheable	: Enabled		
Video BIOS Cacheable	: Enabled		
8 Bit I/O Recovery Time	: 1		
16 Bit I/O Recovery Time	: 1		
Memory Hole At 15M-16M	: Disabled		
PCI 2.1 Compliance	: Disabled		
		ESC : Quit ↑ ↓ → ← : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	

* Note: It depends on what kind of CPU your are using.

The author assumes no responsibility for any errors or omissions which may appear in this document nor does it make a commitment to update the information contained herein.

* THIRD-PARTY BRANDS AND NAMES ARE THE PROPERTY OF THEIR RESPECTIVE OWNERS.

January 5, 1998 Taipei, Taiwan

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1. INTRODUCTION

1.1. PREFACE

Welcome to use the **586ATX4** motherboard. The motherboard is a Pipeline 512 KB CACHE Pentium® Processor based PC/AT compatible system with ISA bus and PCI Local Bus, and has been designed to be the fastest PC / AT system. There are some new features allowing you to operate the system with just the performance you want. This manual also explains how to install the motherboard for operation, and how to set up your CMOS CONFIGURATION with BIOS SETUP program.

1.2. KEY FEATURES

- ❑ Pentium® Processor based PC / AT compatible mainboard with PCI - ISA Bus.
- ❑ 3 PCI Bus slots, 3 ISA Bus slots, 1 PCI-ISA Slot shared.
- ❑ Supports Pentium® Processor running at 90-233 MHz, P54CT (150 / 166), MMX (150 / 166 / 200 / 233), P54CTB (150 / 166 / 180 / 200), AMDK5 (PR133 / PR166), AMD-K6(166/180/200 (2.9V) /233 (3.2V)), Cyrix / IBM 6x86-120/ 133(PR150+ / PR166+ / PR200+), Cyrix / IBM 6x86L (PR150+ / PR166+ PR200+ (2.8V)), Cyrix / IBM 6x86MX (PR166GP(60x2.5 66x2 2.9V) / PR200GP (66x2.5 75x2 2.9V) / PR233GP(66x3 75x2.5 2.9V)).
- ❑ Supports true 64 bits CACHE and DRAM access mode.
- ❑ Supports 321 Pins (Socket 7) ZIF white socket on board.
- ❑ Supports 512 KB Pipeline Burst Sync. 2nd Cache.
- ❑ CPU L1 / L2 Write-Back cache operation.
- ❑ Supports 8 - 256 MB DRAM memory on board.
- ❑ Supports 4*168 pin 64/72 Bit DIMM module.
- ❑ Supports 2-channel Ultra DMA/33 Enhanced PCI IDE ports for 4 IDE Devices.
- ❑ Supports 2*COM (16550), 1*LPT (EPP / ECP), 1*1.44MB Floppy port.
- ❑ Supports PS/2 Keyboard & PS/2 Mouse port.
- ❑ Supports Green function, Plug & Play function.
- ❑ Licensed AWARD BIOS, FLASH EEPROM for BIOS update.
- ❑ 19.3cm*30.4cm, ATX Form Factory.
- ❑ Supports USB port.
- ❑ Supports Advanced Configuration and Power Interface (ACPI).

1.3. PERFORMANCE LIST

The following performance data list is the testing results of some popular benchmark testing programs.

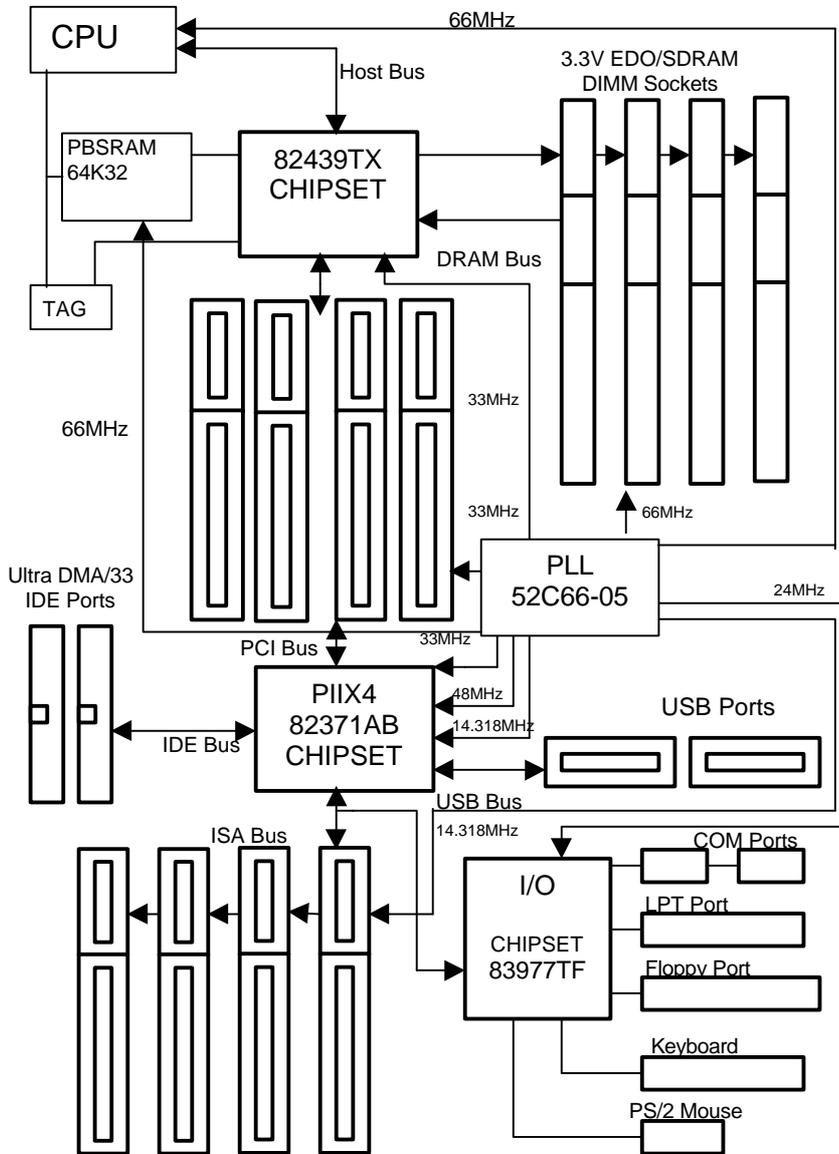
These data are just referred by users, and there is no responsibility for different testing data values gotten by users. (The different Hardware & Software configuration will result in different benchmark testing results.)

- CPU Pentium® Processor MMX-200 / 200 MHz
- DRAM 32 MB SDRAM (NEC D4516821G5 -A12)
- CACHE SIZE 512KB 2nd Cache on board.
- DISPLAY Matrox Mystique 2MB
- STORAGE Onboard IDE port + Quantum Fireball 1280AT IDE Drive
- O.S. Windows95 with Display Driver at 1024 x 768 x 256 colors & Bus Master IDE Driver.

◁Windows 95▷-With Matrox Millennium Display Driver 1024*768*256
-With Triones Bus Master IDE Driver

Program	Item	MMX200 MHz	200 MHz
Winstone97	Database	4.53	4.21
	Publishing	4.95	4.69
	WP/SS	4.61	4.32
	Winston97	45.9	42.5

1.4. BLOCK DIAGRAM



1.5. INTRODUCE THE PCI - BUS

Connecting devices to a CPU local bus can dramatically increase the speed of I/O-bound peripherals with only a slight increase in cost over traditional systems.

This price / Performance point has created a vast market potential for local bus products.

The main barrier to this market has been the lack of an accepted standard for local bus peripherals.

Many mainboard and chipset manufactures developed their own local bus implementations, but they are incompatible with each other.

The VL (Video Electronics Standards Association) local bus and PCI (Peripheral Component Interconnect) bus specification was created to end this confusion.

The PCI - bus standard, under development since Jun. 1992, which is designed to bring workstation-level performance to standard PC platform. The PCI - bus removes many of the bottlenecks that have hampered PC for several years.

On the PCI - bus, peripherals operate at the native speed of the computer system, thus enabling data transfer between peripherals and the system at maximum speed.

This performance is critical for bandwidth-constrained devices such as video, multimedia, mass storage, and networking adapters.

PCI - bus standard provides end-users with a low-cost, extendible and portable local bus design, which will allow system and peripherals from different manufactures to work together.

1.6. FEATURES

- 32 bits bus transfer mode.
- Bus Master or Slave access.
- Memory burst transfer to 132 MB/sec.
- 33 MHz operation speed.
- 10 devices loading ability.
- CPU independent.

2. SPECIFICATION

2.1. HARDWARE

- CPU
 - Pentium® Processor 90 - 233 MHz, MMX, P54CT, P54CTB, AMD-K5 (PR133 / PR166), AMD-K6 (166 / 180 / 200 (2.9V) / 233 (3.2V)), Cyrix / IBM 6x86 (PR150+ / PR166+ / PR200+), Cyrix / IBM 6x86L (PR150+ / PR166+ / PR200+ (2.8V)), Cyrix / IBM 6x86MX (PR166GP (60x2.5 66x2 2.9V) / PR200GP+(66x2.5 75x2 2.9V) / PR233GP (66x3 75x2.5 (2.9V)).
 - 321 pins (socket 7) ZIF white socket on board.
 - 3.52V / 2.0V-3.5V Dual Power Ready.
- COPROCESSOR
 - Included in Pentium® processor.
- SPEED
 - 60 / 66 / 75 MHz system speed.
 - 30 / 33 / 37.5 PCI-Bus speed.
 - 7.5 / 8 / 9.3 MHz AT bus speed.
- DRAM MEMORY
 - 4 banks 168 pins DIMM module socket on board.
 - Use 8 / 16 / 32 / 64 MB 60~70 ns SIMM module DRAM.
 - 8 ~ 256 MB DRAM size.
- CACHE MEMORY
 - 16 / 24 / 32 / 64KB L1cache included in CPU.
 - 512 KB L2 cache on board.
 - Supports Write Back cache function for both CPU & on board cache.
- I/O BUS SLOTS
 - 4 Master / Slave PCI-BUS Slots.
 - 4 16 bits ISA BUS Slots.
- IDE PORTS
 - 2-channel Ultra DMA/33 Enhanced IDE port on board.(Using IRQ14,15)
 - Supports Mode 3,4 IDE & ATAPI CD - ROM.

- I/O PORTS
 - Supports 2 16550 COM ports. (Using IRQ4, 3)
 - Supports 1 EPP/ECP LPT port. (Using IRQ7 or 5 and DMA3 or 1)
 - Supports 1 1.44/2.88 MB Floppy port. (Using DMA2 & IRQ6)
 - Supports PS/2 Mouse. (Using IRQ12)
- GREEN FUNCTION
 - Standby & Suspend mode support.
 - Green switch support.
 - IDE & Display power down support.
 - Monitor all IRQ / DMA / Display / I/O events.
- BIOS
 - 128KB FLASH EEPROM.
 - Supports Plug & Play Function.
- DIMENSION
 - ATX Form Factor, 4 layers PCB.

2.2. SOFTWARE

- BIOS
 - Licensed AWARD BIOS.
 - AT CMOS Setup, BIOS / Chipset Setup, Green Setup, Hard Disk Utility included.
- O.S.
 - Operation with MS-DOS®, Windows®95, WINDOWS™ NT, OS/2, NOVELL and SCO UNIX.

2.3. ENVIRONMENT

- Ambient Temp.
 - 0°C to +50°C (Operating).
- Relative Hum.
 - 0 to +85% (Operating).
- Altitude
 - 0 to 10,000 feet (Operating).
- Vibration
 - 0 to 1,000 Hz.
- Electricity
 - 4.9 V to 5.2 V.
 - Max. 20A current at 5V.

3. HARDWARE INSTALLATION

3.1. UNPACKING

The mainboard package should contain the following:

- The **586ATX4** mainboard.
- USER'S MANUAL for mainboard.
- Cable set for IDE & Floppy.
- Diskette for BUS MASTER ATAPI device 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.

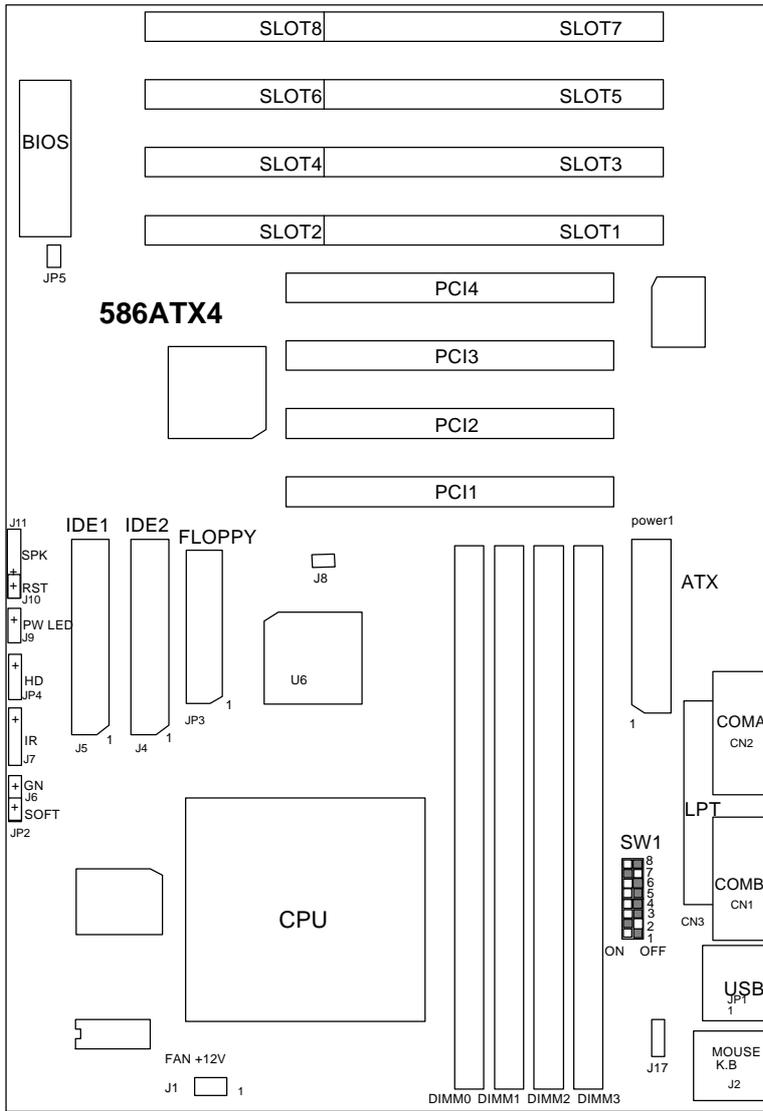
⚠ DO NOT APPLY POWER TO THE BOARD IF IT HAS BEEN DAMAGED.

You are now ready to install your mainboard. The mounting hole pattern on the mainboard matches the IBM-AT system board.

It is assumed that the chassis is designed for a standard IBM XT/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.

3.2. MAINBOARD LAYOUT



<Figure 3.1>

3.3. QUICK REFERENCE FOR JUMPERS & CONNECTORS

◆ CN1-3,JP3,J4,5 I/O Ports Connector	
CN1	For Serial port2 (COM B).
CN2	For Serial port1(COM A).
CN3	For LPT port.
JP3	For Floppy port.
J5	For Primary IDE port.
J4	For Secondary IDE port.

◆ GN-SW	
Pin No.	Function
Close	For system to entering Green Mode (Suspend mode).
Open	Normal Operation.

◆ Hard Disk active LED	
Pin No.	Function
1	LED anode(+).
2	LED cathode(-).

◆ JP1: USB Port	
Pin No.	Function
1	SBV1.
2	GND.
3	SBD1-.
4	SBD0+.
5	SBD1+.
6	SBD0-.
7	GND.
8	SBV0.

◆ JP5 : ATX POWER USE	
Pin No.	Function
Close	System After AC BACK: FULL_ON.
Open	System After AC BACK: Soft_OFF.

◆ J1: CPU Cooling FAN Power Connector	
Pin No.	Function
1	+12V.
2	GND.

◆ J2 : PS/2 Mouse / PS/2 Keyboard Connector	
Pin No.	Function
1	Key Data.
2	NC.
3	GND.
4	VCC (+5V).
5	Key Clock.
6	NC.

◆ Power LED	
Pin No.	Function
1	LED anode (+).
2	NC.
3	LED cathode (-).

◆ Power1: ATX POWER Connector	
Pin No.	Function
3,5,7,13,15-17	GND.
4,6,19,20	VCC (+5V).
10	+12V.
12	-12V.
18	-5V.
8	Power Good.
9	5V SB (Stand by +5V).
14	PS-ON (Soft ON/OFF).

◆ Reset Switch (RST)	
Pin No.	Function
Open	For normal operation.
Close	For hardware reset system.

◆ Speaker Connector	
Pin No.	Function
1	VCC.
2	NC.
3	NC.
4	Data.

◆ Soft Power Connector	
Pin No.	Function
1	GND.
2	CTRL-Signal.

◆ J17 : Keyboard Power on Selection	
Pin No.	Function
1-2	Enable
2-3	Disable

◆ SW1: CPU INT./ EXT. FREQ. RATIO								
X		OFF		SW	4	5	6	7
O		ON		AUTO	X	X	X	O
				2.0 V	X	X	X	X
				2.1 V	X	X	O	X
				2.2 V	X	O	X	X
				2.3 V	X	O	O	X
				2.4 V	O	X	X	X
				2.5 V	O	X	O	X
				2.6 V	O	O	X	X
				2.7 V	O	O	O	X
				2.8 V	X	X	X	O
				2.9 V	X	X	O	O
				3.0 V	X	O	X	O
				3.1 V	X	O	O	O
				3.2 V	O	X	X	O
				3.3 V	O	X	O	O
				3.4 V	O	O	X	O
				3.5 V	O	O	O	O

SW 1	J8	MHz
ON	OFF	60
OFF	OFF	66
OFF	ON	75

SW	2	3	8
x 1.5	X	X	X
x 2	O	X	X
x 2.5	O	O	X
x 3	X	O	X
x 3.5	X	X	X
x 4	O	X	O
x 4.5	O	O	O
x 5	X	O	O
x 5.5	X	X	O

3.4. DRAM INSTALLATION

The mainboard can be installed with 4 / 8 / 16 / 32 / 64MB 168 pins DIMM module DRAM, and the DRAM speed must be 50 or 60 ns for EDO and 67~100MHZ for SDRAM. The DRAM memory system on mainboard consists of bank 0, 1, 2 & bank 3. Each bank consists of 1 piece of 168pins DIMM module DRAM. Because the 168 pins DIMM module is 64 bits width, using 1 piece which can match a 64 bits system. The total memory size is 8 - 256 MB.

For the DRAM installation position, note that the Pin 1 of DIMM module must match with the Pin 1 of DIMM socket. Insert the DRAM DIMM module into the DIMM socket at vertical direction until the left and right metal holders can keep the SIMM module standing up firmly.

If there is a wrong direction of Pin 1, the DRAM DIMM module couldn't be inserted into socket completely. After completely insert SIMM module into socket, then press the SIMM module in vertical

● **Note: 128 MB SDRAM can only be installed on DIMM 0**

3.5. SRAM INSTALLATION

Sync. SRAM (Pipeline Burst SRAM)

If Sync SRAM Module is installed, it consists of 1 piece of 512K Pipeline Burst SRAM.

There is no jumper for cache size setting.

3.6. CPU INSTALLATION AND JUMPERS SETUP

The system speed depends on the frequency of CLOCK GENERATOR. The user can change SW selection to set up the system speed to 60 MHz or 66 MHz for 3.3V/2.5V Pentium® Processor (90-233 MHz) / AMDK5(PR133 / PR166) / AMD-K6(166/180/200(2.9V)/233(3.2V)), Cyrix / IBM 6x86 (PR150+ / PR166+ / PR200+), Cyrix / IBM 6x86L (PR150+/PR166+/PR200+ (2.8V)), Cyrix / IBM 6x86MX (PR166GP(60x2.5 66x2 2.9V) / PR200GP(66x2.5 75x2 2.9V) / PR233GP(66x3 75x2.5 2.9V)).

The mainboard can use Pentium® Processor, P54CT, MMX or P54CTB, AMDK5, AMD-K6, Cyrix / IBM 6x86, CPU, and the CPU speed must match with the frequency of CLOCK GEN. It will cause system hanging up if the CLOCK GEN.'S frequency is faster than CPU's.

- **The CPU is a sensitive electric component and it can be easily damaged by static electricity, so users must keep it away from metal surface when the CPU is installed onto mainboard.**
- **When the user installs the CPU on socket, please notice that the PIN 1 of CPU is in the same corner as the PIN 1 of socket!**
- **Before the CPU is installed, the mainboard must be placed on a flat plane in order to avoid being broken by the pressure of CPU installation.**

3.7. CMOS RTC & ISA CFG CMOS SRAM

The mainboard contains Built-in Real Time Clock (RTC) With 256B CMOS SRAM in PIIX4. They have a power supply from external battery to keep the DATA inviolate & effective. The CMOS SRAM is used for keeping the information of system configuration, so the system can automatically boot OS every time. Since the lifetime of internal battery is 5 years, the user can change a new Battery to replace old one when it has consumed.

- **Danger of explosion if battery is incorrectly replaced.**
- **Replace only with the same or equivalent type recommended by the manufacturer.**
- **Dispose of used batteries according to the manufacturer's instructions.**

3.8. SPEAKER CONNECTOR INSTALLATION

There is always a speaker in AT system for sound purpose. The 4-Pins connector **SPK** is used to connect speaker. The speaker can work well in both direction of connector when it is installed to the connector **SPK** on mainboard.

3.9. POWER LED CONNECTOR INSTALLATION

There is a system power LED light on the panel of case. The power LED will light on when system is powered-on. The connector should be installed to **PWR** of mainboard in correct direction.

3.10. HARDWARE RESET SWITCH CONNECTOR INSTALLATION

The RESET switch on panel provides users with HARDWARE RESET function which is almost the same as power-on/off. The system will do a cold start after the RESET switch is pushed and released by user. The RESET switch is a 2 PIN connector and should be installed to **RST** on mainboard.

3.11. GREEN FUNCTION INSTALLATION

For the purpose of power saving, there is a connector switch **GN**. The **GN** is a switch to force the system to get into green mode immediately.

3.12. PERIPHERAL DEVICE INSTALLATION

After installation of the device and setup of the jumpers, the mainboard can be mounted into the case and fixed by screw. To complete the mainboard installation, the peripheral devices could be installed now. The basic system needs a display interface card and a storage device.

If a PCI - Bus device is to be installed in the system, any one of four PCI - Bus slots can be used for Slave or Master PCI - Bus device.

After installing the peripheral device, the user should check everything again and prepare to power-on the system.

3.13. KEYBOARD SETTING FUNCTION

After booting the O.S., there are some special functions used by keyboard as follows:

"CTRL_ALT_DEL"	- Pressing these keys simultaneously will cause system to Warm Start (Software Reset).
----------------	--

4. BIOS CONFIGURATION

Award's BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration.

This type of information is stored in battery-backed CMOS SRAM so that it retains the Setup information when the power is turned off.

4.1. ENTERING SETUP

Power ON the computer and press immediately will allow you to enter Setup.

The other way to enter Setup is to power on the computer, when the below message appears briefly at the bottom of the screen during the POST (Power On Self Test), press Key or simultaneously press <Ctrl>, <Alt>, and <Esc> keys.

- **TO ENTER SETUP BEFORE BOOT PRESS CTRL-ALT-ESC OR DEL KEY**

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case.

You may also restart by simultaneously press <Ctrl>, <Alt>, and keys.

If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to,

- **PRESS F1 TO CONTINUE, CTRL-ALT-ESC OR DEL TO ENTER SETUP**

4.2. CONTROL KEYS

Up arrow	Move to previous item.
Down arrow	Move to next item.
Left arrow	Move to the item in the left hand.
Right arrow	Move to the item in the right hand.
Esc key	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu.
PgUp key	Increase the numeric value or make changes.
PgDn key	Decrease the numeric value or make changes.
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu.
F2 key	Change color from total 16 colors.
F3 key	Calendar, only for Status Page Setup Menu.
F4 key	Reserved.
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu.
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu.
F7 key	Load the default.
F8 key	Reserved.
F9 key	Reserved.
F10 key	Save all the CMOS changes, only for Main Menu.

4.3. GETTING HELP

4.3.1. Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

4.3.2. Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

4.4. THE MAIN MENU

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (Figure 4.1) will appear on the screen.

The Main Menu allows you to select from seven setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

ROM PCI / ISA BIOS
 CMOS SETUP UTILITY
 AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	
ESC : Quit F10 : Save & Exit Setup	
↑ ↓ → ← : Select Item (Shift)F2 : Change Color	
Time, Date, Hard Disk Type, ...	

Figure 4.1: Main Menu

- Standard CMOS setup
This setup page includes all the items in a standard compatible BIOS.
- BIOS features setup
This setup page includes all the items of Award special enhanced features.
- Chipset features setup
This setup page includes all the items of chipset special features.
- Power management setup
This setup page includes all the items of Green function features.
- PNP/PCI configuration
This setup page includes all the items of PNP/PCI configuration features.
- Load BIOS defaults
BIOS defaults indicates the most appropriate value of the system parameter which the system would be in safe configuration.
- Load setup defaults
BIOS defaults indicates the most appropriate value of the system parameter which the system would be in safe configuration.
- Integrated Peripherals
This setup page includes all the items of peripherals features.
- Supervisor Password
Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.
- User Password
Change, set, or disable password. It allows you to limit access to the system.
- IDE HDD auto detection
Automatically configure hard disk parameter.
- Save & exit setup
Save CMOS value changes to CMOS and exit setup.
- Exit without save
Abandon all CMOS value changes and exit setup.

4.5. STANDARD CMOS SETUP MENU

The items in Standard CMOS Setup Menu (Figure 4.2) are divided into 9 categories. Each category includes no, one or more than one setup items. Use the arrows to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

ROM PCI / ISA BIOS
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm:dd:yy) Mon, Dec 22 1997
Time (hh:mm:ss) 11 : 08 : 12

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	: Auto	0	0	0	0	0	0	Auto
Primary Slave	: None	0	0	0	0	0	0	-----
Secondary Master	: None	0	0	0	0	0	0	-----
Secondary Slave	: None	0	0	0	0	0	0	-----

Driver A : 1.44 , 3.5 in
Driver B : None
Floppy 3 Mode Support : Disabled

Video : EGA/VGA Halt On : No Errors	Base Memory: 640 K Extended Memory: 31744 K Other Memory: 384 K <hr style="width: 50%; margin: 5px auto;"/> Total Memory: 32768 K
--	--

ESC : Quit ↑ ↓ → ← : Select Item PU/PD/+/- : Modify
F1 : Help (Shift)F2 : Change Color

Figure 4.2: Standard CMOS Setup Menu

- Date

The date format is <day>, <date> <month> <year>. Press <F3> to show the calendar.

day	The day, from Sun to Sat, determined by the BIOS and is display-only
date	The date, from 1 to 31 (or the maximum allowed in the month)
month	The month, Jan. through Dec.
year	The year, from 1944 through 2079

- Time

The time format is <hour> <minute> <second>.
The time is calculated base on the 24-hour military-time clock.
For example, 1 p.m. is 13:00:00.

- Primary HDDs / Secondary HDDs

The category identifies the types of hard disk from drive C to F total 4 devices that has been installed in the computer.

There are three options for definable type; User, Auto and None.

Type User is user-definable; and type Auto means automatically detecting HDD's type and None type means No IDE HDD installed.

If you select Type User, related information is required to be entered to the following items.

Enter the information directly from the keyboard and press <Enter>.

Sush information should be provided in the documentation form your hard disk vendor or the system manufacturer.

CYLS.	number of cylinders
HEADS	number of heads
PRECOMP	write precomp
LANDZONE	landing zone
SECTORS	number of sectors

If a hard disk has not been installed select NONE and press <Enter>.

- Drive A type / Drive B type

The category identifies the types of floppy disk drive A or drive B that has been installed in the computer.

None	No floppy drive installed
360K, 5.25 in.	5-1/4 inch PC-type standard drive; 360 kilobyte capacity.
1.2M, 5.25 in.	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity (3-1/2 inch when 3 Mode is Enabled).
720K, 3.5 in.	3-1/2 inch double-sided drive; 720 kilobyte capacity
1.44M, 3.5 in.	3-1/2 inch double-sided drive; 1.44 megabyte capacity.
2.88M, 3.5 in.	3-1/2 inch double-sided drive; 2.88 megabyte capacity.

- Floppy 3 Mode Support (for Japan Area)

Disable	Normal Floppy Drive.
Drive A	Drive A is 3 mode Floppy Drive.
Drive B	Drive B is 3 mode Floppy Drive.
Both	Drive A & B are 3 mode Floppy Drive.

- Video

The category detects the type of adapter used for the primary system monitor that must match your video display card and monitor.

Although secondary monitors are supported, you do not have to select the type in setup.

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SVGA, or PGA monitor adapters
CGA 40	Color Graphics Adapter, power up in 40 column mode
CGA 80	Color Graphics Adapter, power up in 80 column mode
MONO	Monochrome adapter, includes high resolution monochrome adapters

- Halt on

The category determines whether the computer will stop if an error is detected during power up.

NO errors	The system boot will not be stopped for any error that may be detected
All errors	Whenever the BIOS detects a non-fatal error the system will be stopped and you will be prompted
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors
All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors

- Memory

The category is display-only which is determined by POST (Power On Self Test) of the BIOS.

Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

The value of the base memory is typically 512 K for systems with 512K memory installed on the motherboard, or 640 K for systems with 640K or more memory installed on the motherboard.

Extended Memory

The BIOS determines how much extended memory is present during the POST.

This is the amount of memory located above 1 MB in the CPU's memory address map.

Expanded Memory

Expanded Memory in memory defined by the Lotus / Intel / Microsoft (LIM) standard as EMS.

Many standard DOS applications can not utilize memory above 640, the Expanded Memory Specification (EMS) swaps memory which not utilized by DOS with a section, or frame, so these applications can access all of the system memory.

Memory can be swapped by EMS is usually 64 within 1 MB or memory above 1 MB, depends on the chipset design.

Expanded memory device driver is required to use memory as Expanded Memory.

Other Memory

This refers to the memory located in the 640 to 1024 address space. This is memory that can be used for different applications.

DOS uses this area to load device drivers to keep as much base memory free for application programs. Most use for this area is Shadow RAM.

4.6. BIOS FEATURES SETUP

ROM PCI / ISA BIOS 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 - D3FFF Shadow	: Disabled
Boot Sequence	: A, C, SCSI	D4000 - D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000 - DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	DC000 - DFFFF Shadow	: Disabled
Boot Up NumLock Status	: On		
Security Option	: Setup		
PCI/VGA Palette Snoop	: Disabled		
OS Select For DRAM >64MB	: Non-OS2		
		ESC : Quit	↑ ↓ → ← : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift)F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Figure 4.3: BIOS Features Setup

- Virus Warning

This category flashes on the screen. During and after the system boots up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system and the following error message will appear, in the mean time, you can run anti-virus program to locate the problem.

The default value is Disabled.

Enabled	Activate automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Disabled	No warning message to appear when anything attempts to access the boot sector or hard disk partition table.

- CPU Internal Cache / External Cache

These two categories speed up memory access. However, it depends on CPU / chipset design. The default value is Enabled.

Enabled	Enable cache function.
Disabled	Disable cache function.

- Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power on the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST. The default value is Enabled.

Enabled	Enable quick POST.
Disabled	Normal POST.

- Boot Sequence

This category determines which drive computer searches first for the disk operating system (i.e., DOS). The default value is A,C,SCSI.

A,C,SCSI	System will first search for floppy disk drive then hard disk (C) drive and SCSI drive.
C,A,SCSI	System will first search for hard disk (C) drive then floppy disk drive and SCSI drive.
C,CDROM,A	System will first search for hard disk (C) drive then CDROM drive and floppy disk drive.
CDROM,C,A	System will first search for CDROM drive then hard disk (C) drive and floppy disk drive.
D,A,SCSI	System will first search for hard disk (D) drive then floppy disk drive and SCSI drive.
E,A,SCSI	System will first search for hard disk (E) drive then floppy disk drive and SCSI drive.
F,A,SCSI	System will first search for hard disk (F) drive then floppy disk drive and SCSI drive.
SCSI,A,C	System will first search for SCSI drive then floppy disk drive and hard disk (C) drive .
SCSI,C,A	System will first search for SCSI drive and hard disk (C) drive then floppy disk drive .
C only	System will only search for hard disk (C) drive.
LS/ZIP,C	System will first search for floppy disk drive (LS) or ZIP drive then hard disk (C) drive.

- Swap Floppy Drive

The default value is Disabled.

Enabled	Floppy A & B will be swapped under DOS.
Disabled	Floppy A & B will be normal definition.

- Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360 type is 40 tracks while 720 , 1.2 and 1.44 are all 80 tracks.

The default value is Enabled.

Enabled	BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS can not tell from 720, 1.2 or 1.44 drive type as they are all 80 tracks.
Disabled	BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360 .

- Boot Up NumLock Status

The default value is On.

On	Keypad is number keys.
Off	Keypad is arrow keys.

- Security Option

The default value is Setup.

Setup	The system will boot and access to Setup will be denied if the correct password is not entered at the prompt.
System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.

- **To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. If the user does not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup**

freely.

- PCI/VGA Palette Snoop

The default value are Disabled.

Enabled	For having Video Card on ISA Bus and VGA Card on PCI Bus.
Disabled	For VGA Card only.

- OS Select For DRAM>64MB

The default value is Non-OS2.

Non-OS2	Using non-OS2 operating system.
OS2	Using OS2 operating system and DRAM>64MB.

- Video BIOS Shadow

It determines whether video BIOS will copied to RAM, however, it is optional from chipset design. Video Shadow will increase the video speed.

The default value is Enabled.

Enabled	Video shadow is enabled.
Disabled	Video shadow is disabled.

- C8000 - CFFFF Shadow / D0000 - DFFFF Shadow

These categories determine whether optional ROM will be copied to RAM by 16 byte. The default value are Disabled.

Enabled	Optional shadow is enabled.
Disabled	Optional shadow is disabled.

4.7. CHIPSET FEATURES SETUP

ROM PCI / ISA BIOS
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	Chipset NA# Asserted	: Enabled
DRAM Timing	: 70ns	DRAM Refresh Rate	: 15.6 us
DRAM Leadoff Timing	: 10/6/4	SDRAM (CAS Lat/RAS-to-CAS)	: 3/3
DRAM Read Burst (EDO/FP)	: x333 /x444	SDRAM Speculative Read	: Disabled
DRAM Write Burst Timing	: x333		
Fast EDO Lead Off	: Disabled		
Refresh RAS# Assertion	: 4 Clks		
Fast RAS To CAS Delay	: 3		
Fast MA To RAS# Delay	: 2 Clks		
System BIOS Cacheable	: Enabled		
Video BIOS Cacheable	: Enabled		
8 Bit I/O Recovery Time	: 1		
16 Bit I/O Recovery Time	: 1		
Memory Hole At 15M-16M	: Disabled		
PCI 2.1 Compliance	: Disabled		
		ESC : Quit	↑ ↓ → ← : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift)F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Figure 4.4: Chipset Features Setup

- Auto Configuration

The default value is Enabled.

Enable	Enabled Auto Configuration.
Disable	Disabled Auto Configuration.

- DRAM Timing

The default value is 70ns.

60ns	Using 60ns DRAM speed.
70ns	Using 70ns DRAM speed.

- DRAM Leadoff Timing

The default value is 10/6/4.

11/7/3	Set DRAM Leadoff Timing to 11/7/3
10/6/3	Set DRAM Leadoff Timing to 10/6/3
11/7/4	Set DRAM Leadoff Timing to 11/7/4
10/6/4	Set DRAM Leadoff Timing to 10/6/4

- DRAM Read Burst (EDO/FP)

The default value is x333 / x444.

X444 / x444	Set DRAM Read Burst (EDO/FP) to x444 / x444.
X333 / x444	Set DRAM Read Burst (EDO/FP) to x333 / x444.
X222 / x333	Set DRAM Read Burst (EDO/FP) to x222 / x333.

- DRAM Write Burst Timing

The default value is x333.

x222	Set DRAM Write Burst Timing to x222.
X333	Set DRAM Write Burst Timing to x333.
X444	Set DRAM Write Burst Timing to x444.

- Fast EDO Lead Off

The default value is Disabled.

Disabled	Disabled Fast EDO Lead Off.
Enabled	Enabled Fast EDO Lead Off.

- Refresh RAS# Assertion

The default value is 4 Clks .

4 Clks	Set Refresh RAS# Assertion to 4 Clks.
5 Clks	Set Refresh RAS# Assertion to 5 Clks.

- Fast RAS To CAS Delay

The default value is 3.

2	Set Fast RAS to CAS delay to 2.
3	Set Fast RAS to CAS delay to 3.

- Fast MA to RAS# Delay.

The default value is 2 Clks.

2 Clks	Set Fast MA to RAS# Delay is 2 Clks.
1 Clks	Set Fast MA to RAS# Delay is 1 Clks.

- System BIOS Cacheable

The default value is Enabled.

Enable	Enabled System BIOS Cacheable.
Disable	Disabled System BIOS Cacheable.

- Video BIOS Cacheable

The default value is Enabled.

Enable	Enable Video BIOS Cacheable.
Disable	Disabled Video BIOS Cacheable.

- 8 Bit I/O Recovery Time

The default value is 1.

1-8	Set 8 Bit I/O recovery time from 1 to 8.
NA	None.

- 16 Bit I/O Recovery Time

The default value is 1.

1-4	Set 16 Bit I/O recovery time from 1 to 4.
NA	None.

- Memory Hole At 15M-16M

The default value is Disabled.

Enable	Enable Memory Hole At 15M-16M .
Disable	Disable Memory Hole At 15M-16M .

- PCI 2.1 Compliance

The default value is Disabled.

Enable	Enabled PCI 2.1 Compliance.
Disable	Disabled PCI 2.1 Compliance.

- Chipset NA# Asserted

The default value is Enabled.

Enabled	Enabled Chipset NA# Asserted.
Disable	Disabled Chipset NA# Asserted.

- DRAM Refresh Rate

The default value is 15.6 us.

15.6 us	Set DRAM Refresh Rate to 15.6 us.
31.2 us	Set DRAM Refresh Rate to 31.2 us.
64.4 us	Set DRAM Refresh Rate to 64.4 us.
125 us	Set DRAM Refresh Rate to 125 us.
256 us	Set DRAM Refresh Rate to 256 us.
Disable	Disable DRAM Refresh Rate .

- SDRAM (CAS Lat / RAS-TO-CAS)

The default value is 3/3.

3/3	SDRAM (CAS Lat / RAS-TO-CAS) is 3/3.
2/2	SDRAM (CAS Lat / RAS-TO-CAS) is 2/2.

- SDRAM Speculative Read

The default value is Disabled.

Enabled	Enabled SDRAM Speculative Read.
Disabled	Disabled SDRAM Speculative Read.

4.8. POWER MANAGEMENT SETUP

ROM PCI / ISA BIOS
 POWER MANAGEMENT SETUP
 AWARD SOFTWARE, INC.

Power Management	: Enabled	** Reload Global Timer Events **	
PM Control by APM	: Yes	IRQ [3-7,9-15] , NMI	: Enabled
Video Off Method	: DPMS	Primary IDE 0	: Enabled
Video Off After	: Suspend	Primary IDE 1	: Enabled
Standby Mode	: Disabled	Secondary IDE 0	: Enabled
Suspend Mode	: Disabled	Secondary IDE 1	: Enabled
HDD Power Down	: Disabled	Floppy Disk	: Enabled
Suspend Mode Option	: PowerOn Suspend	Serial Port	: Enabled
Throttle Duty Cycle	: 50.0%	Parallel Port	: Enabled
VGA Active Monitor	: Enabled		
Soft-off by PWR-BTTN	: Instant-off		
Resume by Alarm	: Disabled		
* Date (of Month) Alarm	: 0	ESC : Quit	↑ ↓ → ← : Select Item
* Time (hh:mm:ss) Alarm	: 7:00	F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values (Shift)F2	: Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Figure 4.5: Power Management Setup

* These items can be selected only when Resume by Alarm is Enabled.

- Power Management

The default value is Enabled.

Enabled	Enable Power Management .
Disabled	Disable Power Management.

Please disable Green Function for Non-S CPU in OS/2, Unix, Window NT & Novell system.

- PM Control by APM

The default value is Yes.

Yes	Enable software APM function.
No	Disable software APM function.

- Video Off Method

The default value is DPMS.

V/H SYNC + Blank	BIOS will turn off V/H-SYNC when gets into Green mode for Green monitor power saving.
Blank Screen	BIOS will only black monitor when gets into Green mode.
DPMS	BIOS will use DPMS Standard to control VGA card. (The Green type VGA card will turn of V/H-SYNC automatically.)

- Video Off After

The default value is Suspend.

Suspend	Set Video off After to Suspend.
Standby	Set Video off After to Standby.

- Standby Mode (for Network Card using)

The default value is Disable.

Disable	Disable Standby Mode.
1 min - 1 Hour	Setup the timer to enter Standby Mode.

- Suspend mode (for CPU stop clock Mode)

The default value is Disable.

Disable	Disable Suspend Mode.
1 min - 1 Hour	Setup the timer to enter Suspend Mode.

- HDD Power Down

The default value is Disable.

Disable	Disable HDD Power Down mode function.
1-15 mins	Enable HDD enter Power Down mode between 1 to 15 mins.

- Suspend Mode Option

The default value is PowerOn Suspend.

PowerOn Suspend	Suspend Mode Option is PowerOn Suspend.
Suspend to Disk	Suspend Mode Option is Suspend to Disk.

- Throttle Duty Cycle

The default value is 50.0%.

50.0%	Set Throttle Duty Cycle is 50.0%.
62.5%	Set Throttle Duty Cycle is 62.5%.
75.0%	Set Throttle Duty Cycle is 75.0%.
12.5%	Set Throttle Duty Cycle is 12.5%.
25.0%	Set Throttle Duty Cycle is 25.0%.
37.5%	Set Throttle Duty Cycle is 37.5%.

- VGA Active Monitor

The default value is Enabled.

Enabled	Enabled VGA Active Monitor.
Disabled	Disabled VGA Active Monitor.

- Soft-Off by PWR-BTTN

The default value is Instant-off.

Instant-off	Soft-off by PWR-BTTN is Instant-off .
Delay 4 Sec.	Soft-off by PWR-BTTN is Delay 4 Secs .

- Resume by Alarm

The default value is Disabled.

Enabled	Resume by Alarm Enabled .
Disabled	Resume by Alarm Disabled.

- IRQX (3-7,9-15),NMI

The default value is Enabled.

Enabled	The system will return to normal mode from Green Mode when the IRQX is active.
Disabled	The system will not return to normal mode from Green Mode when the IRQX is active.

- Primary/Secondary IDE (0,1)

The default value is Enabled.

Enabled	Primary / Secondary IDE Enabled.
Disabled	Primary / Secondary IDE Disabled.

- Floppy Disk

The default value is Enabled.

Enable	Floppy Disk Enabled.
Disable	Floppy Disk Disabled.

- Serial Port

The default value is Enabled.

Enable	Serial Port Enabled.
Disable	Serial Port Disabled.

- Parallel Port

The default value is Enabled.

Enable	Parallel Port Enabled.
Disable	Parallel Port Disabled.

4.9. PNP/PCI CONFIGURATION

ROM PCI / ISA BIOS
 PNP/PCI CONFIGURATION
 AWARD SOFTWARE, INC.

PNP OS Installed	: No	PCI IDE IRQ Map To	: PCI-AUTO
Resources Controlled by	: Manual	Primary IDE INT#	: A
Reset Configuration Data	: Disabled	Secondary IDE INT#	: B
IRQ-3 assigned to	: Legacy ISA		
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	: Legacy ISA		
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	

Figure 4.6: PCI Slot Configuration

- PNP OS Installed

The default value is NO.

NO	Enable PNP OS Installed.
YES	Disable PNP OS Installed.

- Resources Controlled by

The default value is Manual.

Manual	User can set the PnP resource (I/O Address, IRQ & DMA channels) used by legacy ISA DEVICE.
Auto	BIOS automatically use these PnP rescuers.

- Reset Configuration Data

The default value is Disabled.

Enabled	Enabled Reset Configuration Data.
Disabled	Disabled Reset Configuration Data.

- IRQ (3,4,5,7,9,10,11,12,14,15),DMA(0,1,3,5,6,7) assigned to

The default value is "Legacy ISA" or "PCI/ISA PnP".

Legacy ISA	The resource is used by Legacy ISA device.
PCI/ISA PnP	The resource is used by PCI/ISA PnP device (PCI or ISA).

- PCI IDE IRQ Map To

PCI-Auto	Map PCI IDE IRQ to PCI slot automatically.
ISA	Map PCI IDE IRQ to ISA slot.
PCI-Slot1~PCI-Slot4	Map PCI IDE-IRQ to PCI-Slot1~PCI-Slot4.

- Primary/Secondary IDE INT#

A	Set INTA for primary/secondary PCI IDE.
B	Set INTB for primary/secondary PCI IDE.
C	Set INTC for primary/secondary PCI IDE.
D	Set INTD for primary/secondary PCI IDE.

4.11. LOAD SETUP DEFAULTS

ROM PCI / ISA BIOS
 COMS SETUP UTILITY
 AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD BIOS DEFA	SAVING
LOAD SETUP DEFAULTS	
Load SETUP Defaults (Y/N)? N	
ESC : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Load SETUP Defaults except Standard CMOS SETUP	

Figure 4.8: Load Setup Defaults

- Load SETUP Defaults

To load SETUP defaults value to CMOS SRAM, enter "Y". If not, enter "N".

- **If there is any problem occurred, loading SETUP DEFAULTS step is recommended.**

4.12. INTEGRATED PERIPHERALS

ROM PCI / ISA BIOS
 INTEGRATED PERIPHERALS
 AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	PS/2 Mouse Power On	: Disabled
IDE Primary Master PIO	: Auto	Keyboard Power On	: Disabled
IDE Primary Slave PIO	: Auto	# KB Power On Multikey	: Enter
IDE Secondary Master PIO	: Auto		
IDE Secondary Slave PIO	: Auto		
IDE Primary Master UDMA	: Auto		
IDE Primary Slave UDMA	: Auto		
IDE Secondary Master UDMA	: Auto		
IDE Secondary Slave UDMA	: Auto		
On-Chip Primary PCI IDE	: Enabled		
On-Chip Secondary PCI IDE	: Enabled		
USB Keyboard Support	: Disabled		
Onboard FDD Controller	: Enabled		
Onboard Serial Port1	: 3F8/IRQ4	ESC : Quit	↑ ↓ → ← : Select Item
Onboard Serial Port2	: 2F8/IRQ3	F1 : Help	PU/PD/+/- : Modify
Onboard Parallel Port	: 378/IRQ7	F5 : Old Values (Shift)F2	: Color
Parallel Port Mode	: SPP	F6 : Load BIOS Defaults	
* ECP Mode Use DMA	: 3	F7 : Load Setup Defaults	
** Parallel Port EDD Type	: EPP1.9		

Figure 4.9: Integrated Peripherals

- * This item will show up only if On board Parallel Mode is set to ECP or ECP/EPP.
- ** This item will show up if On board Parallel Mode is set to EPP or ECP/EPP.
- # This item will show up if Keyboard Power On is set to Multikey.
- IDE HDD Block Mode

The default value is Enabled.

Enabled	Enable IDE HDD Block Mode
Disabled	Disable IDE HDD Block Mode

- IDE Primary Master PIO (for onboard IDE 1st channel).

The default value is Auto.

Auto	BIOS will automatically defect the IDE HDD Accessing mode.
Mode0~4	Manually set the IDE Accessing mode.

- IDE Primary Slave PIO (for onboard IDE 1st channel).

The default value is Auto.

Auto	BIOS will automatically defect the IDE HDD Accessing mode.
Mode0~4	Manually set the IDE Accessing mode.

- IDE Secondary Master PIO (for onboard IDE 2nd channel).

The default value is Auto.

Auto	BIOS will automatically defect the IDE HDD Accessing mode.
Mode0~4	Manually set the IDE Accessing mode.

- IDE Secondary Slave PIO (for onboard IDE 2nd channel).

The default value is Auto.

Auto	BIOS will automatically defect the IDE HDD Accessing mode.
Mode0~4	Manually set the IDE Accessing mode.

- IDE Primary Master UDMA (for onboard IDE 1st channel).

The default value is Auto.

Auto	BIOS will automatically set the IDE HDD to Ultra DMA/33 Mode.
Disabled	Disable Ultra DMA HDD Function.

- IDE Primary Slave UDMA (for onboard IDE 1st channel).

The default value is Auto.

Auto	BIOS will automatically set the IDE HDD to Ultra DMA/33 Mode.
Disabled	Disable Ultra DMA HDD Function.

- IDE Secondary Master UDMA (for onboard IDE 2nd channel).

The default value is Auto.

Auto	BIOS will automatically set the IDE HDD to Ultra DMA/33 Mode.
Disabled	Disable Ultra DMA HDD Function.

- IDE Secondary Slave UDMA (for onboard IDE 2nd channel).

The default value is Auto.

Auto	BIOS will automatically set the IDE HDD to Ultra DMA/33 Mode.
Disabled	Disable Ultra DMA HDD Function.

- On-Chip Primary PCI IDE

The default value is Enabled.

Enabled	Enable onboard 1st channel IDE port.
Disabled	Disable onboard 1st channel IDE port.

- On-Chip Secondary PCI IDE

The default value is Enabled.

Enabled	Enable onboard 2nd channel IDE port.
Disabled	Disable onboard 2nd channel IDE port.

- USB Keyboard Support

The default value is Disabled.

Enabled	Enable USB Keyboard Support.
Disabled	Disable USB Keyboard Support.

- Onboard FDC Controller

The default value is Enabled.

Enabled	Enable onboard FDD port.
Disabled	Disable onboard FDD port.

- Onboard Serial Port 1

The default value is COM1/3F8.

3F8/IRQ4	Enable onboard Serial port A and address is 3F8.
2F8/IRQ3	Enable onboard Serial port A and address is 2F8.
3E8/IRQ4	Enable onboard Serial port A and address is 3E8.
2E8/IRQ3	Enable onboard Serial port A and address is 2E8.
Disabled	Disable onboard Serial port A.
Auto	onboard Serial port A automatically set.

- Onboard Serial Port 2

The default value is COM2/2F8.

3F8/IRQ4	Enable onboard Serial port B and address is 3F8.
2F8/IRQ3	Enable onboard Serial port B and address is 2F8.
3E8/IRQ4	Enable onboard Serial port B and address is 3E8.
2E8/IRQ3	Enable onboard Serial port B and address is 2E8.
Disabled	Disable onboard Serial port B.
Auto	onboard Serial port B automatically set.

- Onboard Parallel port

The default value is 378/IRQ7.

378/IRQ7	Enable onboard LPT port and address is 378/IRQ7.
278/IRQ5	Enable onboard LPT port and address is 278/IRQ5.
3BC/IRQ7	Enable onboard LPT port and address is 3BC/IRQ7.
Disabled	Disable onboard LPT port.

- Onboard Parallel Mode

The default value is SPP.

SPP	Using Parallel port as Normal Printer Port.
EPP	Using Parallel port as Enhanced Parallel Port.
ECP	Using Parallel port as Extended Capabilities Port. *
ECP/EPP	Using Parallel port as Extended Capabilities Port mode/Enhanced Parallel Port. *

* As ECP, ECP/EPP Mode is selected, two options can be defined:

1. ECP Mode use DMA: 3
2. ECP Mode use DMA: 1

* * As EPP, ECP/EPP Mode is selected, two options can be defined:

1. Parallel Port EPP Type : EPP 1.9
2. Parallel Port EPP Type : EPP 1.7

- PS/2 Mouse Power On

The default value is Disabled.

Left Double	Enable double click PS/2 Mouse Left Key Power On function.
Right Double	Enable double click PS/2 Mouse Right Key Power On function
Disabled	Disable PS/2 Mouse Power On function.

- Keyboard Power On

The default value is Disabled.

Multikey	Key In password to set Keyboard Power On function.
Disabled	Disable Keyboard Power On function.

*KB Power On Multikey : Enter

Press Enter to start to key in Password for Keyboard Power On Function.

4.13. SUPERVISOR / USER PASSWORD

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD

ROM PCI / ISA BIOS
 CMOS SETUP UTILITY
 AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	SAVING
LOAD SETUP DEFAULTS	

Enter Password:

ESC : Quit F10 : Save & Exit Setup	↑ ↓ → ← : Select Item (Shift)F2 : Change Color
---------------------------------------	---

Change / Set / Disable Password

Figure 4.10: Password Setting

Type the password, up to eight characters, and press <Enter>. The password typed now will clear and previously entered password from CMOS memory.

You will be asked to confirm the password. Type the password again and press <Enter>.

To disable password, just press <Enter> when you are prompted to enter password. A message will confirm the password being disabled.

Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED

If you select System at Security Option of BIOS Features Setup Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup.

If you select Setup at Security Option of BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

4.14. IDE HDD AUTO DETECTION

ROM PCI / ISA BIOS
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

HARD DISKS	TYPE	SIZE	CYLS.	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master:								
Select Primary Master Option (N=Skip): N								
OPTION	SIZE	CYLS.	HEAD	PRECOMP	LANDZ	SECTOR	MODE	
1	521	1060	16	65535	1059	63	NORMAL	
2 (Y)	521	530	32	0	1059	63	LBA	
3	521	530	32	65535	1059	63	LARGE	

Note: some OSes (like SCO-UNIX) must use "NORMAL" for installation
ESC : Skip

Figure 4.11: IDE HDD Auto Detection

Type "Y" will accept the H.D.D. parameter reported by BIOS.

Type "N" will keep the old H.D.D. parameter setup. If the hard disk cylinder NO. is over 1024, then the user can select LBA mode or LARGER mode for

DOS partition LARGE than 528 MB.

4.15. SAVE & EXIT SETUP

ROM PCI / ISA BIOS
 CMOS SETUP UTILITY
 AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	SAVING
LOAD SETUP DEFAULTS	

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

ESC : Quit F10 : Save & Exit Setup	↑ ↓ → ← : Select Item (Shift)F2 : Change Color
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Save Data to CMOS & Exit SETUP

Figure 4.12: Save & Exit Setup

Type "Y" will quit the Setup Utility and save the user setup value to RTC CMOS SRAM.

Type "N" will return to Setup Utility.

<p align="center">DECLARATION OF CONFORMITY <small>Per FCC Part 2 Section 2.1077(a)</small></p> <p align="center">FC</p> <p>Responsible Party Name: G.E.T. INC. Address: 18385 Valley Blvd., Suite#A LA Puente, CA 91744 Phone/Fax No: (818) 854-9338 / (818) 854-9339</p> <p>I hereby declare that the product Product Name: Mother Board Model Number: GA-586ATX4</p> <p>Conforms to the following specifications: FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109(a), Class B Digital Device</p> <p>Supplementary Information: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.</p> <p>Representative Person's Name: <u>ETC LIT</u> Signature: <u>ETC LIT</u> Date: <u>Dec. 26, 1997</u></p>

FCC Compliance Statement:

This equipment has been tested and found to comply with limits for a Class B digital device , pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this

equipment does cause interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Move the equipment away from the receiver
- Plug the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/television technician for additional suggestions

You are cautioned that any change or modifications to the equipment not expressly approve by the party responsible for compliance could void Your authority to operate such equipment.

This device complies with Part 15 of the FCC Rules. Operation is subjected to the following two conditions:1) This device may not cause harmful interference and 2) this device must accept any interference received, including interference that may cause undesired operation.

Declaration of Conformity

We, Manufacturer/Importer
(full address)

G.B.T. Technology Trädng GmbH
Ausschlag Weg 41, 1F, 20537 Hamburg, Germany

declare that the product
(description of the apparatus, system, installation to which it refers)

Mother Board
GA-586ATX4

is in conformity with
(reference to the specification under which conformity is declared)
in accordance with 89/336 EEC-EMC Directive

- | | | | |
|---|--|--|--|
| <input type="checkbox"/> EN 55011 | Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM high frequency equipment | <input type="checkbox"/> EN 61000-3-2*
<input checked="" type="checkbox"/> EN60555-2 | Disturbances in supply systems caused by household appliances and similar electrical equipment "Harmonics" |
| <input type="checkbox"/> EN55013 | Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment | <input type="checkbox"/> EN61000-3-3*
<input checked="" type="checkbox"/> EN60555-3 | Disturbances in supply systems caused by household appliances and similar electrical equipment "Voltage fluctuations" |
| <input type="checkbox"/> EN 55014 | Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical apparatus | <input checked="" type="checkbox"/> EN 50081-1
<input checked="" type="checkbox"/> EN 50082-1 | Generic emission standard Part 1: Residual, commercial and light industry
Generic immunity standard Part 1: Residual, commercial and light industry |
| <input type="checkbox"/> EN 55015 | Limits and methods of measurement of radio disturbance characteristics of fluorescent lamps and luminaries | <input type="checkbox"/> EN 55081-2 | Generic emission standard Part 2: Industrial environment |
| <input type="checkbox"/> EN 55020 | Immunity from radio interference of broadcast receivers and associated equipment | <input type="checkbox"/> EN 55082-2 | Generic immunity standard Part 2: Industrial environment |
| <input checked="" type="checkbox"/> EN 55022 | Limits and methods of measurement of radio disturbance characteristics of information technology equipment | <input type="checkbox"/> ENV 55104 | Immunity requirements for household appliances tools and similar apparatus |
| <input type="checkbox"/> DIN VDE 0855
<input type="checkbox"/> part 10
<input type="checkbox"/> part 12 | Cabled distribution systems; Equipment for receiving and/or distribution from sound and television signals | <input type="checkbox"/> EN 50091- 2 | EMC requirements for uninterruptible power systems (UPS) |

CE marking



The manufacturer also declares the conformity of above mentioned product with the actual required safety standards in accordance with LVD 73/23 EEC

- | | | | |
|-----------------------------------|---|-------------------------------------|---|
| <input type="checkbox"/> EN 60065 | Safety requirements for mains operated electronic and related apparatus for household and similar general use | <input type="checkbox"/> EN 60950 | Safety for information technology equipment including electrical business equipment |
| <input type="checkbox"/> EN 60335 | Safety of household and similar electrical appliances | <input type="checkbox"/> EN 50091-1 | General and Safety requirements for uninterruptible power systems (UPS) |

Manufacturer/Importer

Signature : Rex Lin

(Stamp)

Date : Jan. 19, 1998

Name : Rex Lin