PCI

PENTIUM® TR9

MAINBOARD

USER'S MANUAL

MS-5143

PCI Pentium® TR9 ATX MB

(Intel® 430VX Chipset)

FLASH BIOS

AMI® / AWARD® PnP BIOS

PCI IDE

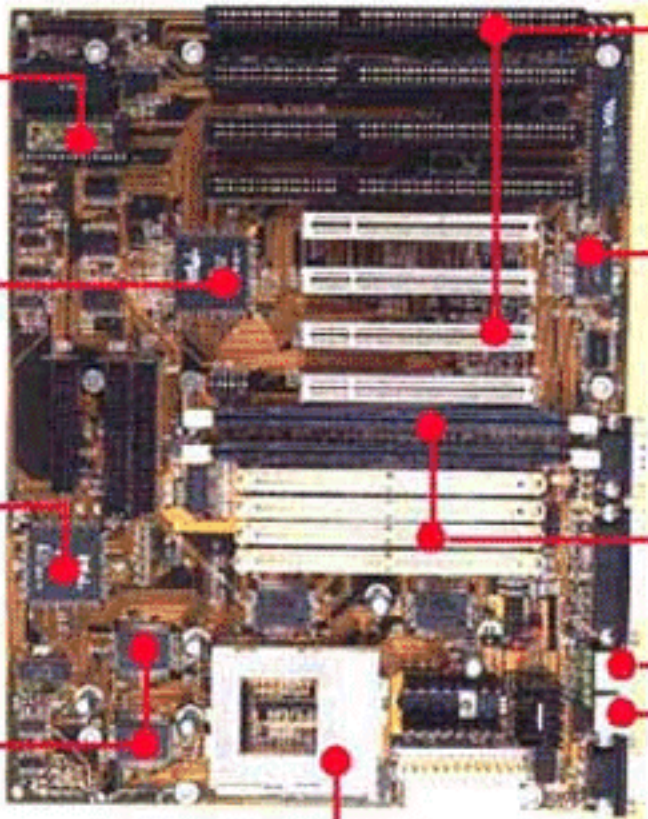
Dual channel, Supports 4 HDD/ CD-ROM (PIO Mode transfer up to 14MB/sec)

CHIPSET

Intel® 430VX

L2 CACHE

256/512K PB cache on board



SLOTS

4 16-bit ISA
4 32-bit PCI
(1 PCI/ISA shared)

SUPER I/O

16550 Fast UART, EPP/ ECP Printer Port & IrDA header

MEMORY

72-pin SIMM x 4, 168-pin DIMM x 2, Max. 128MB on board, Supports FP, EDO & SDRAM

CPU SOCKET

ZIF Socket 7, Supports Intel® Pentium® 75-200 MHz, 150-200 MHz P55C or Cyrix® & AMD® CPU

USB CONN.

Dual USB Ports for serial tranfers at 1.5MB/sec (reserved)

SIZE & FORM FACTOR

30.5 x 23.5 cm ATX

CONNECTOR

PS/2 K/B + PS/2 Mouse

CLICK HERE FOR MORE INFO

Manual Rev: 2.0
Release Date: February, 1997

CE

FCC-B Radio Frequency Interference Statement

This equipment has been tested and found to comply with the 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 when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Notice 1
The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2
Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.

Version 2.0

Edition

January 1997

Table of Contents

Chapter 1

Introduction

The PCI Pentium™ TR system board is a high-performance personal computer system board based on a 3.3V version of the Pentium microprocessor -- the P54 microprocessor. The system board supports the Peripheral Component Interconnect (PCI) Local Bus standard and provides four 32-bit PCI bus master slots.

The system board uses the highly integrated Intel 83430VX Chipset to support the PCI/ISA and Green standards, and to provide the Host/PCI bridge. The 82430VX chip set integrates all system control functions.

1.1 System Board Features

CPU
- Socket 7 supports Intel Pentium™ family -- P54C and P55C 75MHz/90MHz/100MHz/120Mhz/133MHz/150MHz/166MHz/200MHz
- The Cyrix 6x86 and AMD K5 are also supported.

Chip Set
- Intel 82430 VX chip set.

Cache Memory
- Supports 256K/512K cache memory.

Main Memory
- Supports four memory banks using four 72-pin SIMM sockets and two 168-pin DIMM sockets.
- Up to 128 Mbytes main memory.
- Supports EDO Hyper Page Mode DRAM or Standard Fast Page mode DRAM and SDRAM

Note: DIMM socket is optional

Slots
- Four 32-bit Master PCI Bus slots and four 16-bit ISA bus slots. One shared slot that can be used as ISA or PCI.

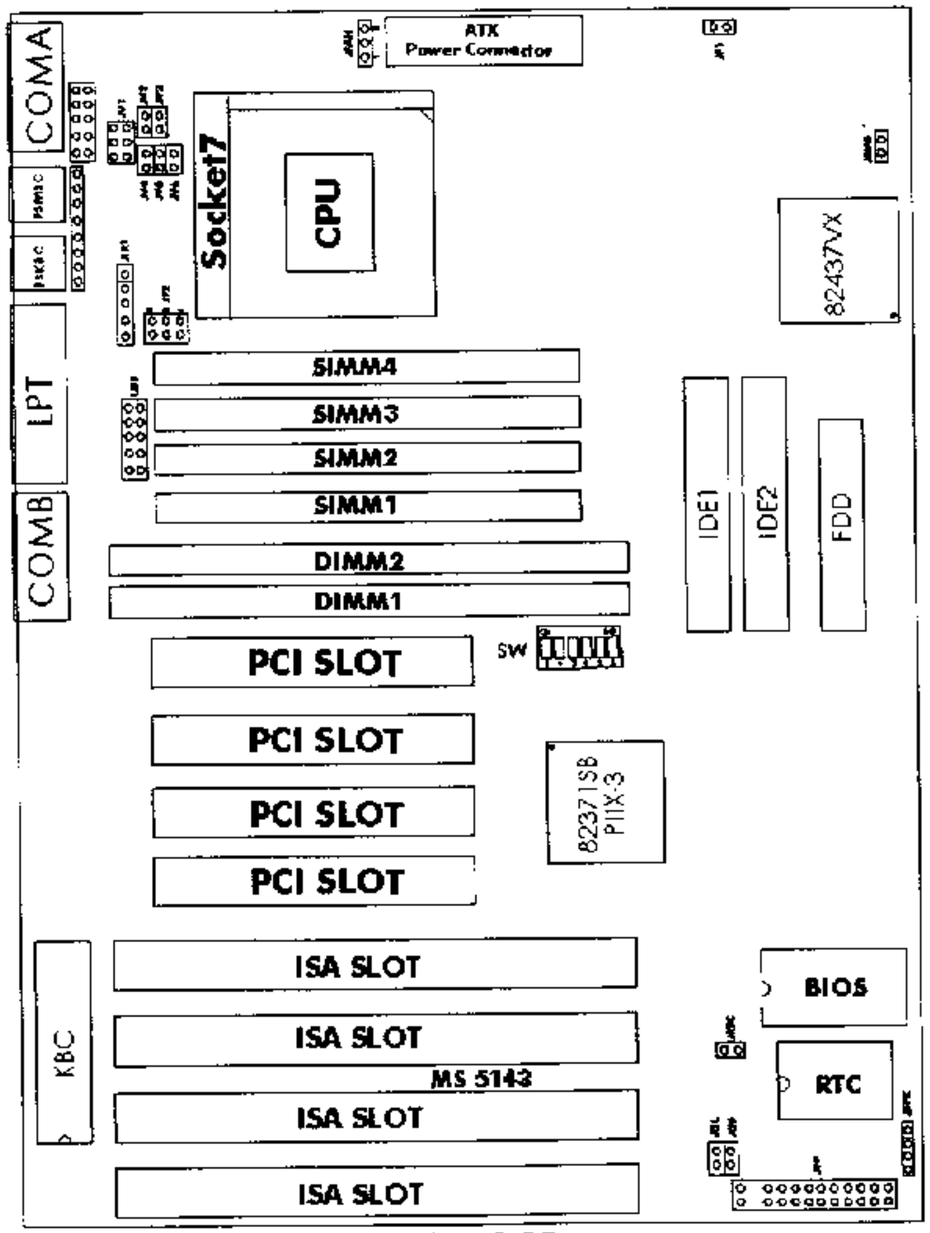
On-Board Peripherals
- On-Board Peripherals include:
  - 1 floppy port supports 2FDD
  - 2 serial ports (COMA + COMB)
  - 1 parallel port supports ECP or EPP mode
  - 2 PCI Bus Master IDE ports (up to four IDE HDD)
  - USB (reserved)

Remote Control
- Supports Remote Control Power ON/OFF operations

Dimensions
- ATX Form Factor
- 23.5cm(L) x 30.5cm(W) x 4 layer PCB

Mounting
- 9 mounting holes

1.2 System Board Layout



MS-5143

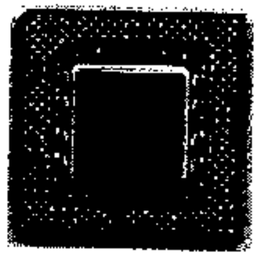
Chapter 2

Hardware Installation

2.1 Central Processing Unit: CPU

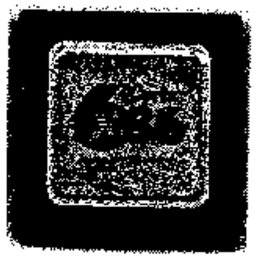
The **MS-5143** motherboard operates with **Intel® P54C/P55C, Cyrix® 6x86** and **AMD® 5K86** processors. It could operates with 2.5V to 3.52V processors. The motherboard provides a 321-pin ZIF Socket 7 for easy CPU installation, a DIP switch (SW1) to set the proper speed for the CPU and a Jumper block (JV1 - JV6) for setting the CPU voltage. The CPU should always have a cooling fan attached to prevent overheating.

INTEL®



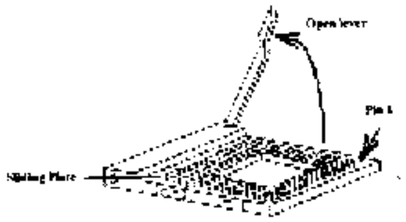
AMD®

CYRIX®

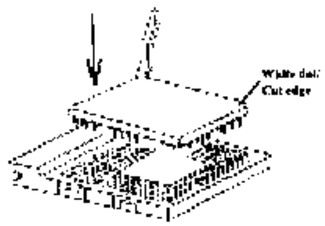


2.1-1A CPU Installation Procedure

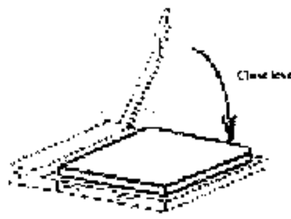
1. Pull the lever sideways away from the socket then raise the lever up to a 90-degree angle.



2. Locate Pin 1 in the socket and look for the white dot or cut edge in the CPU, match Pin 1 with the white dot/cut edge then insert the CPU. It should insert easily.



3. Press the lever down to complete the installation.



2.1-1B CPU Core Speed Derivation Procedure

1. The 4 CPU clock frequencies that the system supports are 50 MHz, 55MHz, 60MHz and 66.6MHz (To adjust SW1 pin 3, 4, 5 and 6). See the following chart to set the different Host Clock Frequencies.

SW1				CPU
3	4	5	6	CLOCK
ON	ON	OFF	OFF	50MHz
OFF	ON	OFF	OFF	55MHz
ON	OFF	OFF	OFF	60MHz
OFF	OFF	OFF	OFF	66.6MHz

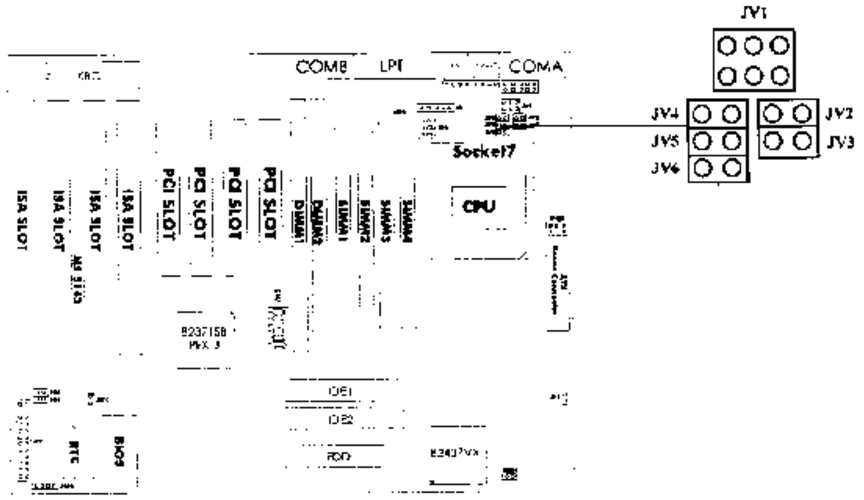
2. The DIP Switch SW1 (1,2) is used to set the Core/Bus (Fraction) ratio of the CPU. The actual core speed of the CPU is the Host Clock Frequency multiplied by the Core/Bus ratio. For example:

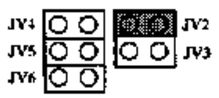
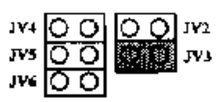
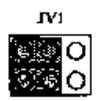
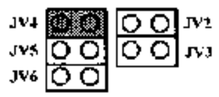
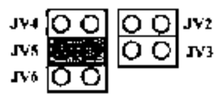
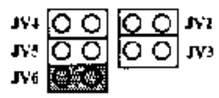
If CPU Clock = 66.6MHz
Core/Bus ratio = 3/2
then CPU core speed = Host Clock x Core/Bus ratio
= 66.6MHz x 3/2
= 100MHz

SW1		CPU
1	2	CORE/BUS RATIO
ON	ON	5/2
OFF	ON	3/1
ON	OFF	2/1
OFF	OFF	3/2

3. The PCI Bus Clock is the CPU Clock Frequency divided by 2.

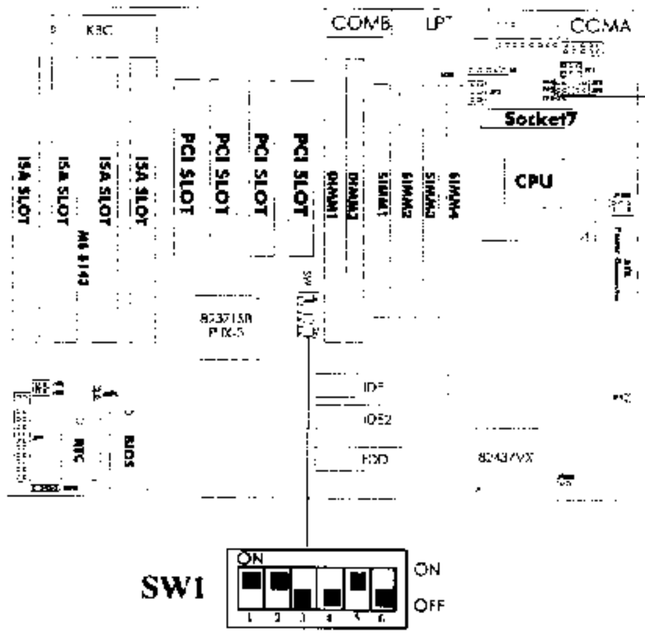
2.1-2 CPU Voltage Setting: JV1 - JV6



V I/O	Vcore	JV1	JV2~JV6
3.38	3.38		JV2 short 
3.52	3.52		JV3 short 
3.3	2.5		JV4 short 
3.3	2.8		JV5 short 
3.3	2.9		JV6 short 

2.1-3 CPU Speed and Voltage Setting: SW1 & JV1-JV6

To adjust the speed and voltage of the CPU, you must know the specification of your CPU (*always ask the vendor for CPU specification*) then look at **Table 2.1 (Intel® P54C/P55C)**, **Table 2.2 (Cyrix® 6x86)** and **Table 2.3 (AMD® 5K86)** for proper setting.



Voltage Setting

Speed Setting

Table 2.1 Intel® P54C CPU

P54C-75	3.38		
P54C-90	3.38		
	3.52		
P54C-100	3.38		
P54C-120	3.38		
P54C-133	3.52		
P54C-150	3.52		
P54C-166	3.52		
P55C-166	3.33	2.8	
P54C-200	3.52		
P55C-200	3.33	2.8	

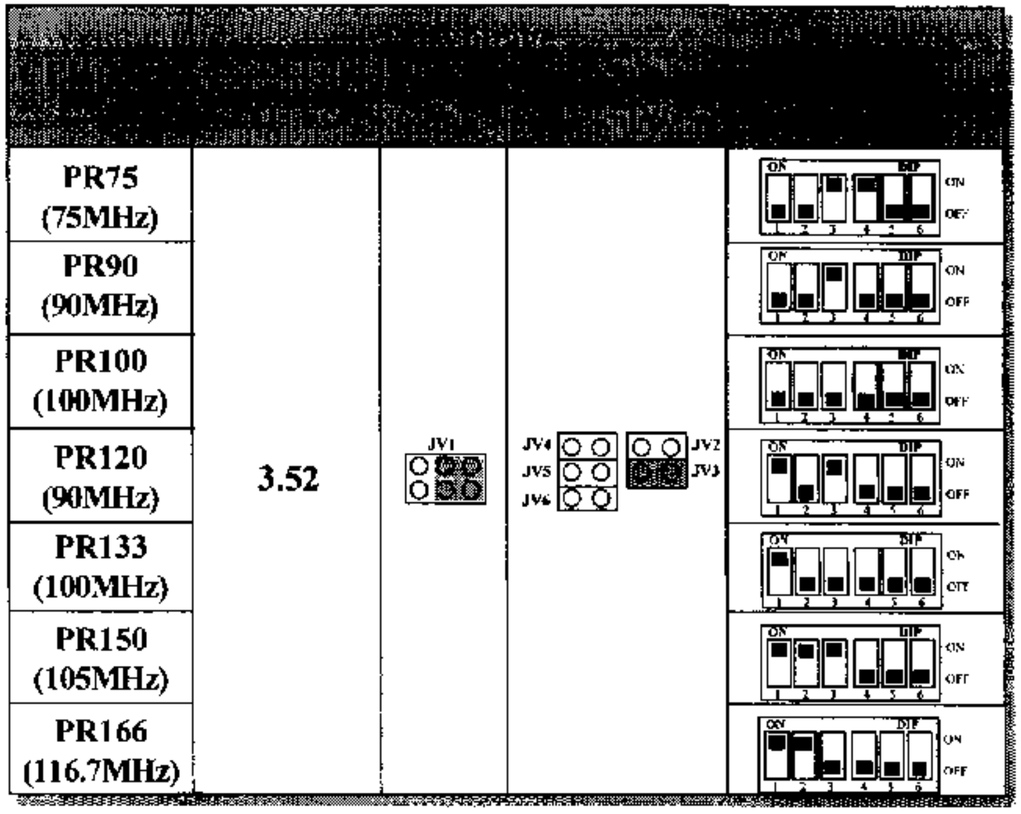
Table 2.2 Cyrix® 6x86 CPU

Cyrix® 6x86 CPU uses P to rate the speed of there processor base on Intel® CPU core speed , for example P120+ (100MHz) has 120MHz core speed of Intel but has 100MHz core speed in Cyrix®. Cyrix® 6x86b CPU should always uses a more powerful fan (ask vendor for proper cooling fan).

P120+ (100MHz)	3.52
P133+ (110MHz)	
P150+ (120MHz)	
P166+ (133MHz)	

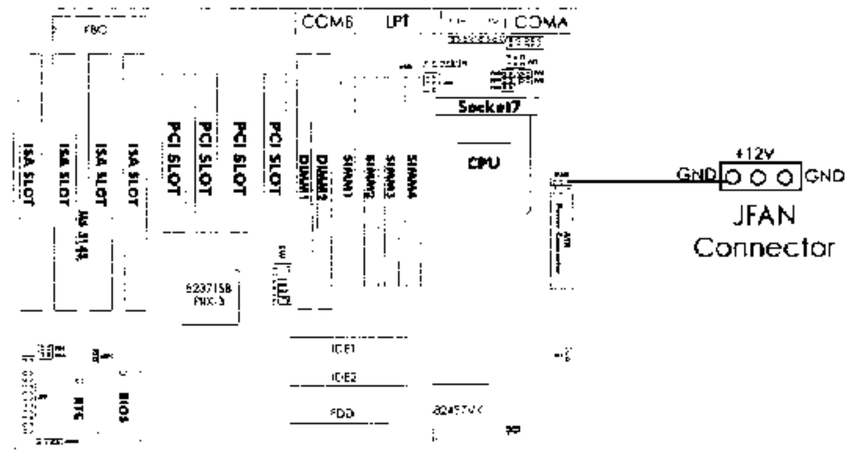
Table 2.3 AMD® 5K86 CPU

AMD® 5K86 CPU uses PR to rate the speed of there processor base on Intel® CPU core speed , for example P133+ (100MHz) has 133MHz core speed of Intel® but has 100MHz core speed in AMD® 5K86 CPU.



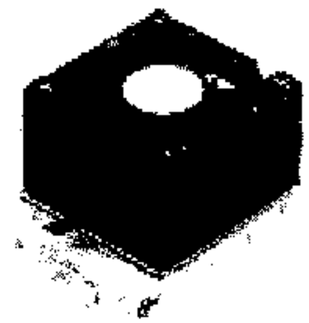
2.1-4 CPU Fan Power Connector: JFAN

This connector supports CPU cooling fan with +12V. It supports both two and three pin head connector. When connecting the wire to the connector, always take note that the red wire is the positive and should be connected to the +12V.



Recommended CPU cooling fan specification:

- Metallic Clip
- RPM 5000
- CFM 10
- +12V
- 52x52x10mm
- Ball Bearing

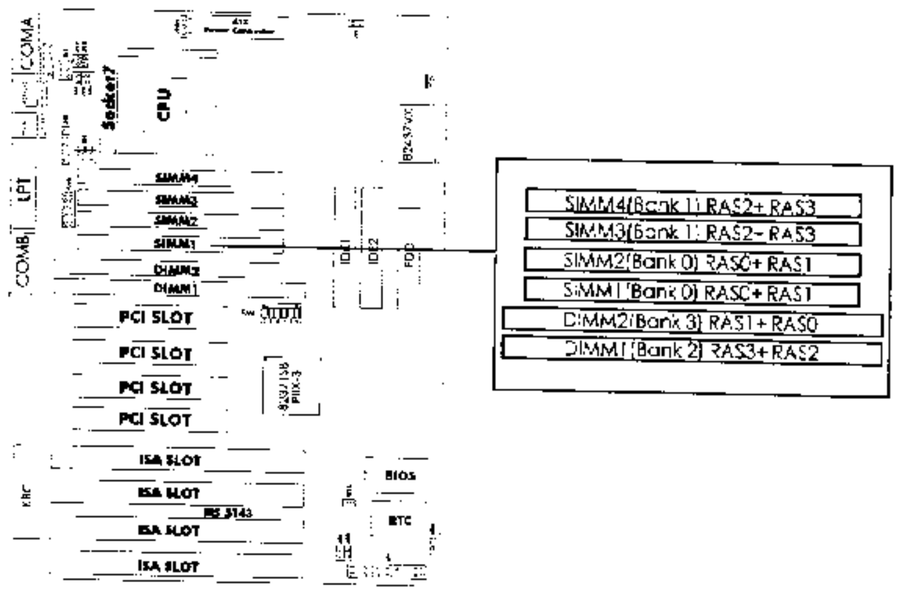


Note: *Always consult vendor for proper CPU cooling fan.*

2.2 Memory Installation

2.2-1 Memory Bank Configuration

The system board supports a maximum of 128M of memory, and provides four 72-pin SIMMs (Single In-Line Memory Module) and two 168-pin DIMM sockets. Each bank supports 4M, 8M, 16M and 32M. The 2MB is the minimum and the 16MB is the maximum for one 72-pin single sided memory module. This board supports 4 RAS. Each RAS supports memory ranging from 4MB to 32MB.

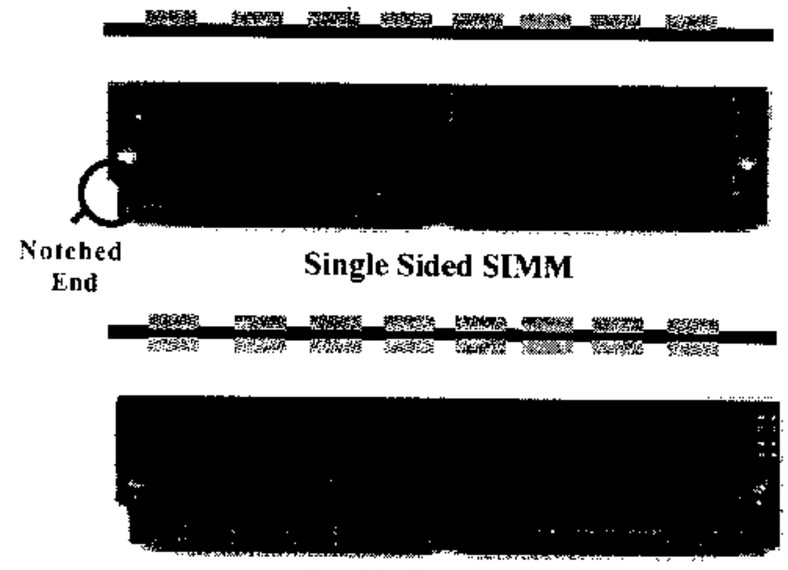


The configuration for the memory banks is in the table on the next page.

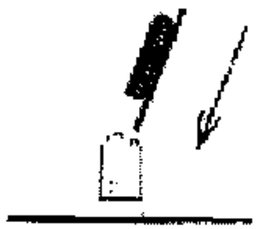
Warning! Memory bank 0 & 1's SIMM power level is 5 volts. Memory bank 2 & 3's DIMM power level is 3.3 volts or 5 volts depending on the JP2 setting. If you want to install both SIMM & DIMM slot, you must use a 3.3 volt DIMM with 5 volt I/O signal tolerance, otherwise it may cause damage to the DIMM.

2.2-2 Memory Installation Procedures:

A. How to install a SIMM Module



1. The SIMM slot has a "*Plastic Safety Tab*" and the SIMM memory module has a "Notched End", so the SIMM memory module can only fit in one direction.

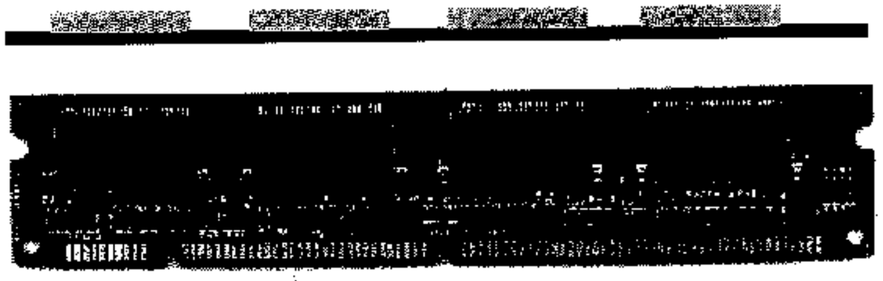


2. Insert the SIMM memory modules into the socket at **45-degree angle, then push into a vertical position so that it** will snap into place.

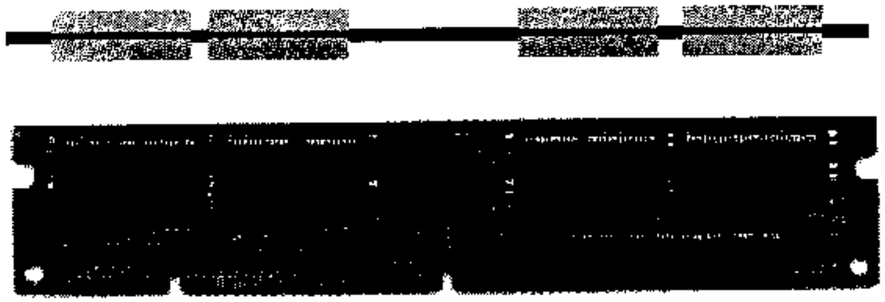
3. The Mounting Holes and Metal Clips should fit over the edge and hold the SIMM memory modules in place.

Note: Always use a 5 volts SIMM with 70 ns or above(Fast Page or EDO)

B. How to install a DIMM Module



Single Sided DIMM



Double Sided DIMM

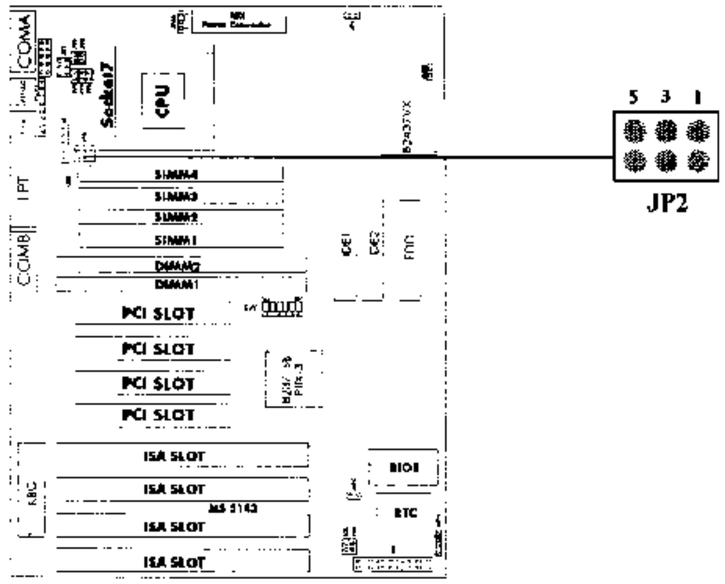
1. The DIMM slot has a two key mark "VOLT and DRAM", so the DIMM memory module can only fit in one direction.

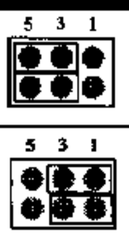
2. Insert the DIMM memory module vertically into the DIMM slot then push it in.

3. Close the plastic clip at the side of the DIMM slot.

Note: You can use a 3.3 volt DIMM with 5 volt I/O signal tolerance or a full 5 volt DIMM module (EDO, FP or SDRAM)

B.1 DIMM Power Voltage Selector : JP2



DIMM Voltage	JP2
5V	
3.3V	

SIMM Power Level : 5 Volts DIMM Power Level : 3.3V or 5V

2.2-3 Memory Population Rule

1. Make sure that the SIMM banks are using the same type and equal size density memory.

2. To operate properly at least two 72-pin SIMM module must be installed in the same bank or one 168-pin DIMM module must be installed. The system cannot operate with only one 72-pin SIMM module.

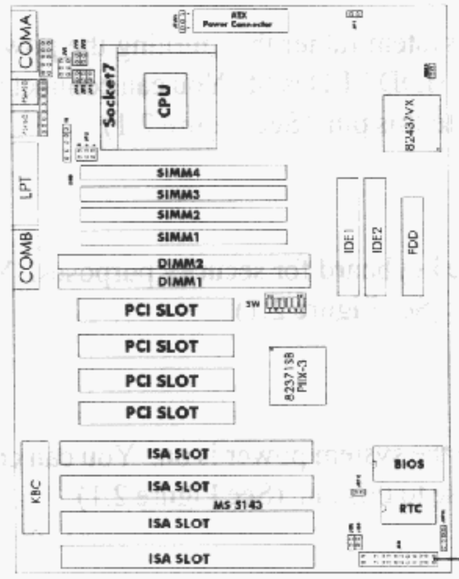
3. This mainboard supports Table Free so memory can be installed on Bank 0 (SIMM1 + SIMM2), Bank 1 (SIMM3 + SIMM4), Bank 2 (DIMM1) or Bank3 (DIMM 2).

S = Single D = Double Shaded = See Warning

SIMM1 + SIMM2 Bank 0	SIMM3+ SIMM4 Bank 1	DIMM1 Bank 2	DIMM2 Bank 3
S	-	-	-
S	S	-	-
S	D	-	-
D	-	-	-
D	S	-	-
D	D	-	-
-	S	-	-
-	-	S	-
-	D	-	-
-	-	D	-
-	-	-	S
-	-	S	S
-	-	S	D
-	-	D	S
-	-	-	D
-	-	D	D
S	-	-	S
S	-	S	-
S	-	S	S
S	-	D	-
S	-	D	S
-	S	-	S
-	S	S	-
-	S	S	S
-	S	-	D
-	S	S	D
S	S	-	S
S	S	S	-
S	S	S	S
D	-	S	-
D	-	D	-
D	S	S	-
-	D	-	S
-	D	-	D
S	D	-	S

2.3 Case Connector (JFP)

The Turbo LED, Turbo Switch, Hardware Reset, Key Lock, Power LED, Power Saving LED, Sleep Switch, Speaker and HDD LED all connected to the JFP connector block.



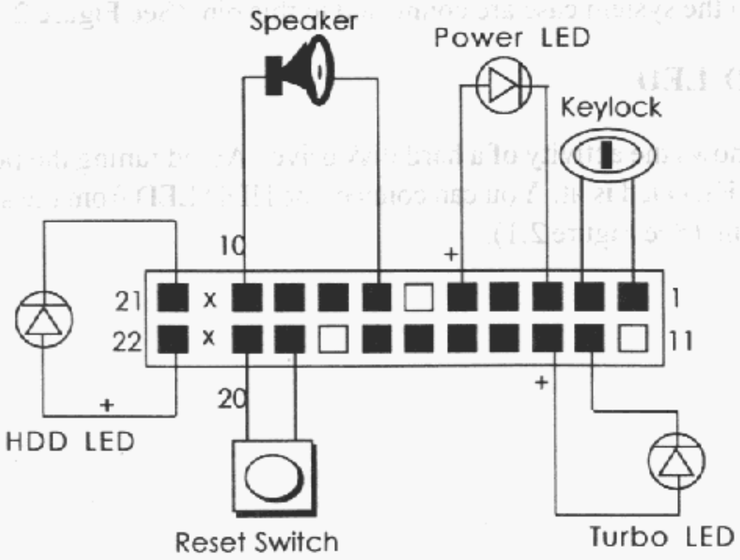


Figure 2.1

2.3-1 Turbo LED

The Turbo LED is always ON. You can connect the Turbo LED from the system case to this pin. (See Figure 2.1)

2.3-2 Hardware Reset

Reset switch are use to reboot the system rather than turning the power ON/ OFF, but avoid rebooting while the HDD LED is lit. You can connect the Reset switch form the system case to this pin. (See Figure 2.1)

2.3-3 Keylock

Keylock allows you to disabled the keyboard for security purposes. You can connect the keylock to this pin. (See Figure 2.1)

2.3-4 Power LED

The Power LED is always lit while the system power is on. You can connect the Power LED form the system case to this pin. (See Figure 2.1)

2.3-5 Speaker

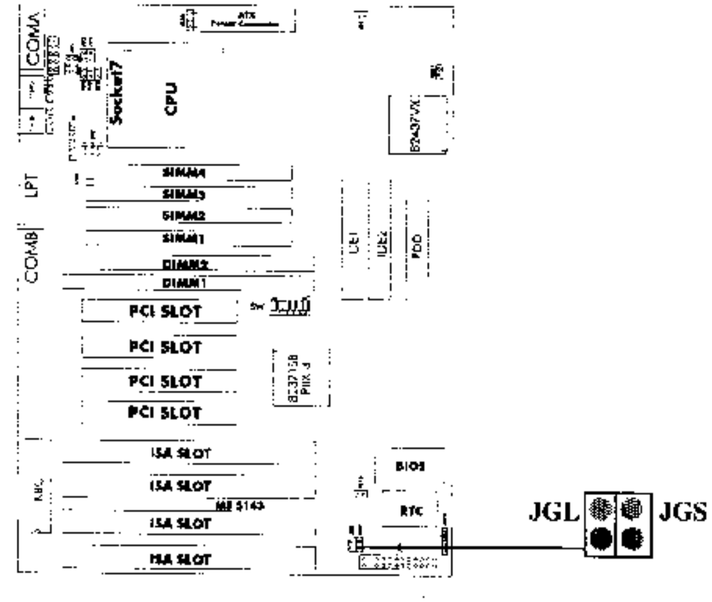
Speaker from the system case are connected to this pin. (See Figure 2.1)

2.3-6 HDD LED

HDD LED shows the activity of a hard disk drive. Avoid tuning the power off while the HDD led is lit. You can connect the HDD LED from the system case to this pin. (See Figure 2.1).

2.4 Power Saving Switch Connector: JGS/ Power Saving LED Connector: JGL

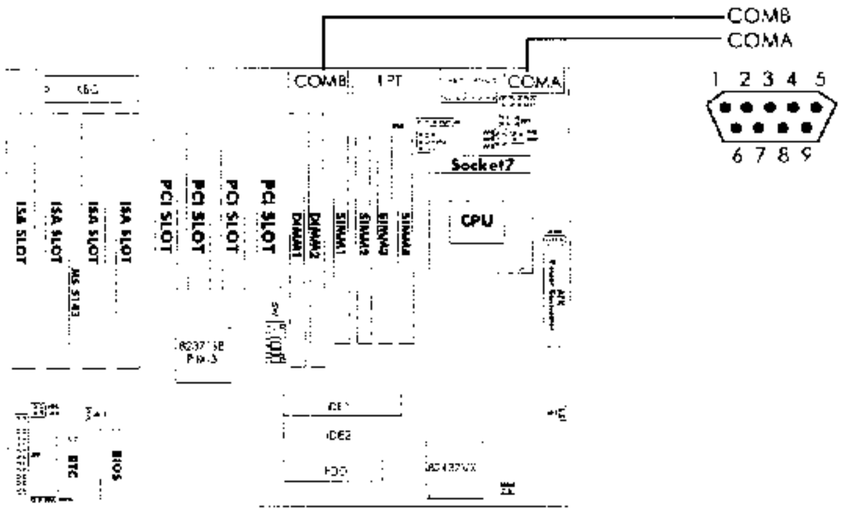
Attach a power saving switch to JGS. When the switch is pressed, the system immediately goes into suspend mode. Press any key and the system wakes up. JGL can be connected with LED to monitor the JGS.



Note: You should enable the Power Management Mode (at BIOS setup) to use this function.

2.5 Serial Port Connectors: COMA & COMB

The system board has two 9-pin male DIN connectors for serial ports COMA and COMB. These two ports are 16550A high speed communication ports that send/receive 16 bytes FIFOs. You can attach a mouse or a modem cable directly into these connectors.

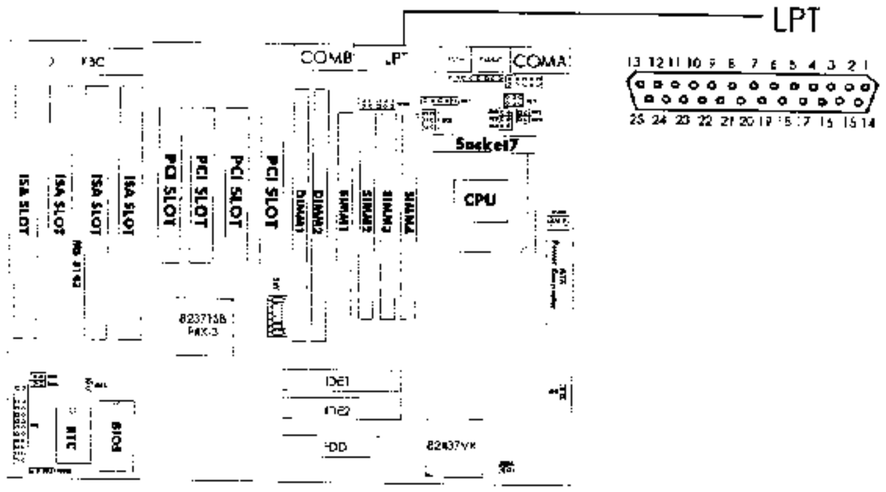


PIN DEFINITION

Pin #	Definition
1	DCD(Data Carry Detect)
2	SIN(Serial In or Receive Data)
3	SOUT(Serial Out or Transmit Data)
4	DTR(Data Terminal Ready)
5	GND
6	DSR(Data Set Ready)
7	RTS(Request To Send)
8	CTS(Clear To Send)
9	RI(Ring Indicate)

2.6 Parallel Port Connectors: LPT

The system board provides a 25 pin female centronic connector for LPT. A parallel port is a standard printer port that also supports Enhanced Parallel Port(EPP) and Extended capabilities Parallel Port(ECP). See connector and pin definition below:

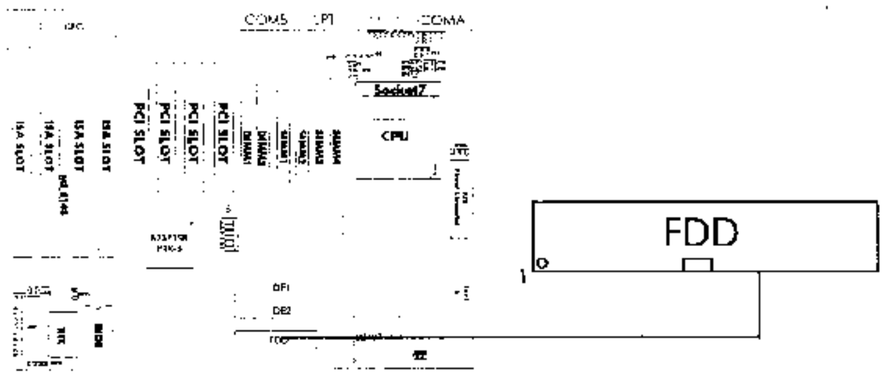


PIN DEFINITION

PIN #	DEFINITION	PIN #	DEFINITION
1	STROBE	14	AUTO FEED#
2	DATA0	15	ERR#
3	DATA1	16	INIT#
4	DATA2	17	SLIN#
5	DATA3	18	GND
6	DATA4	19	GND
7	DATA5	20	GND
8	DATA6	21	GND
9	DATA7	22	GND
10	ACK#	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SELECT		

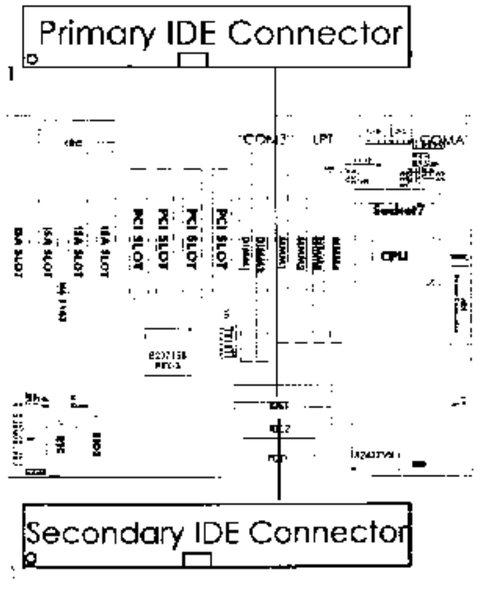
2.7 Floppy Disk Connector: FDD

The system board also provides a standard floppy disk connector FDD that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types. You can attach a floppy disk cable directly to this connector.



2.8 Hard Disk Connector: IDE1 & IDE2

The system board has a 32-bit Enhanced PCI IDE Controller that provides for two HDD connectors IDE1 (primary) and IDE2 (secondary). You can connect up to four hard disk drives, CD-ROM, Floppy (reserved for future BIOS) and other devices to IDE1 and IDE2.



IDE1(primary IDE connector)

The first hard disk should always be connected to IDE1. IDE1 can connect a Master and a Slave drive.

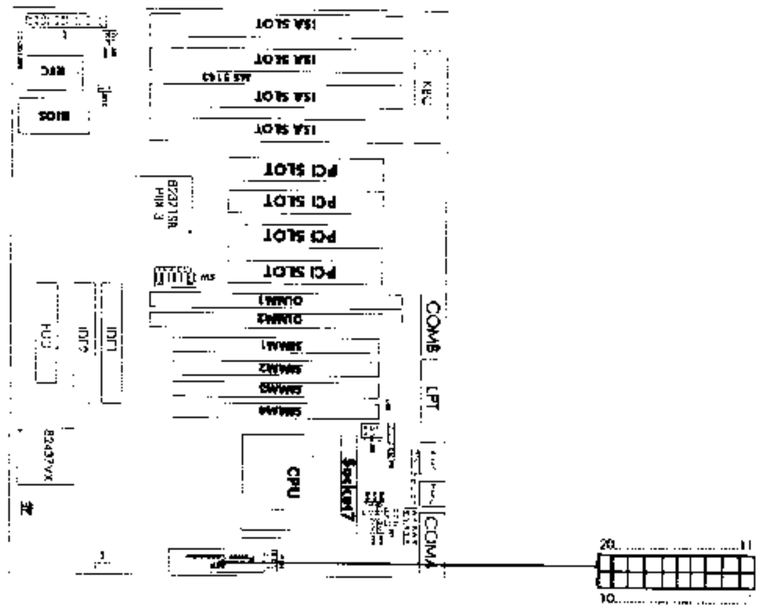
IDE2(secondary IDE connector)

IDE2 can connect a Master and a Slave drive.

2.9 Power Supply

2.9-1 ATX 20-pin Power Connector: PWR20

This type of connector already supports the remote ON/OFF function. If you use an ATX power supply you need to connect the **Remote Power On/OFF switch JRMS.**



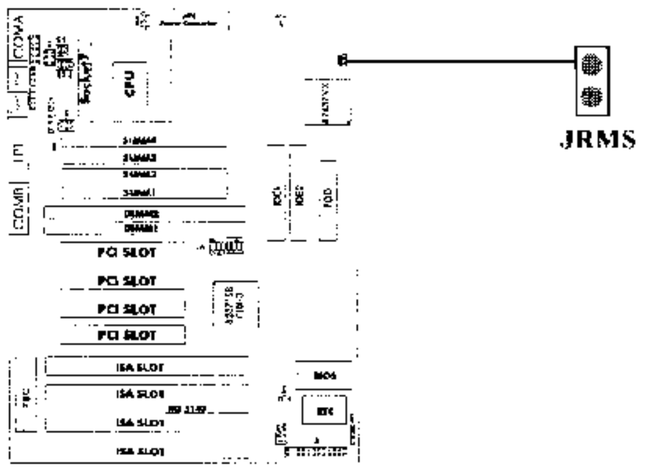
ATX Power Connector

ATX Power Connector Pin Description

20	19	18	17	16	15	14	13	12	11
5V	5V	-5V	GND	GND	GND	PS_ON	GND	-12V	3.3V
12V	5V_SB	PW_OK	GND	5V	GND	5V	GND	3.3V	3.3V
10	9	8	7	6	5	4	3	2	1

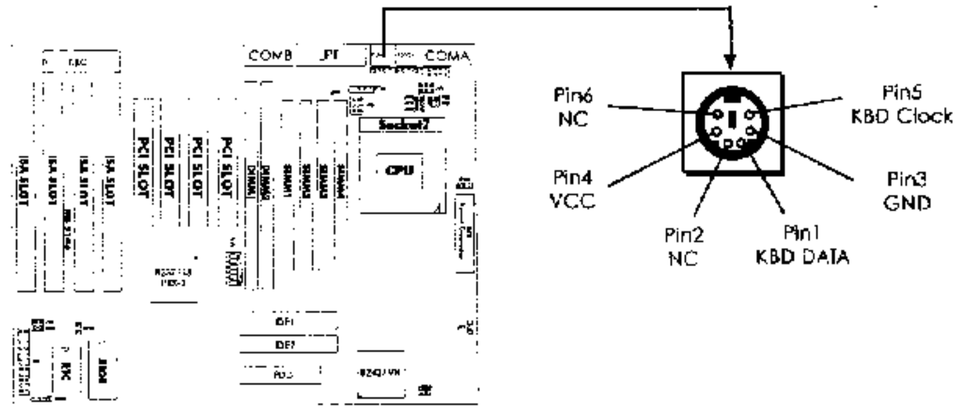
2.9-2 Remote Power On/Off Switch: JRMS

Connect to a 2-pin push button switch. Every time the switch is shorted by pushing it once, the power supply will change its status from OFF to ON and On to OFF. This is use for ATX type power supply.



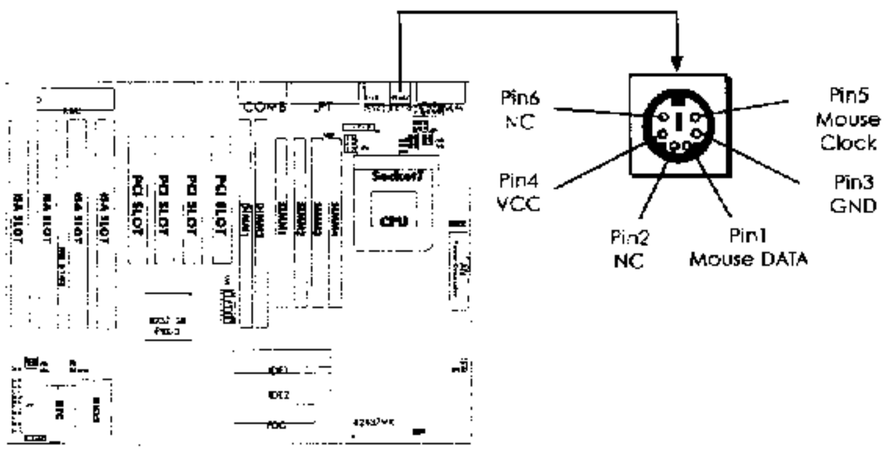
2.10 Keyboard Connector: PSKBC

The system board provides a standard PS/2 style keyboard mini DIN connector for attaching a keyboard. You can plug a keyboard cable directly to this connector.



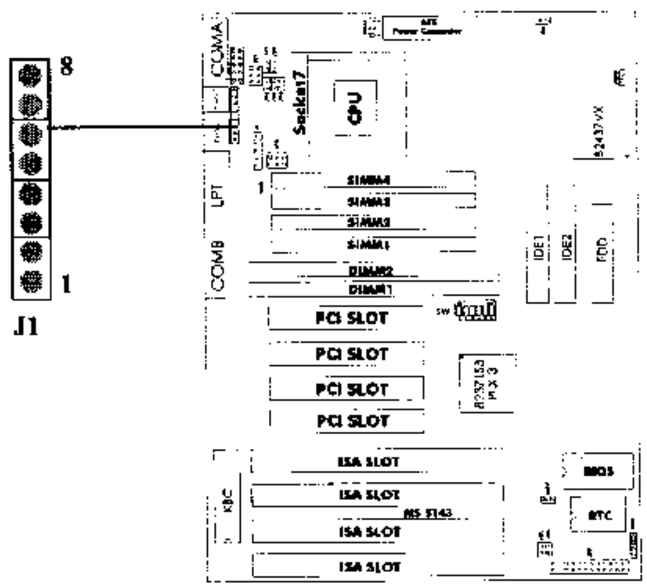
2.11 Mouse Connector: PSMSC

The system board provides a standard PS/2 style mouse mini DIN connector for attaching a PS/2 style mouse. You can plug a PS/2 style mouse directly into this connector. The connector location and pin definition as shown below:



2.12 PS/2 Keyboard and Mouse Connector (Reserved) : J1

J1 is reserved. The default setting is as follows:



PIN DEFINITION

PIN#	DESCRIPTION
1,2	KBCLK
3,4	KBDAT
5,6	MSDAT
7,8	MSCLK

Chapter 3

AMI BIOS User's Guide

The system configuration information and chipset register information is stored in the CMOS RAM. This information is retained by a battery when the power is off. Enter the Bios setup (if needed) to modify this information.

The following chapter explains how to enter BIOS and what the functions of each setting are.

3.1 Entering Setup

Enter the AMI setup Program's Main Menu as follows:

1. Turn on or reboot the system. The following screen appears with a serial of diagnostic check.

> AMIBIOS (C) 1995 American Megatrends Inc.,
>
> Hit <DEL> if you want to run setup
>
> (C) American Megatrends Inc.,
>
> 51-XXXX-001169-00101111-071595-82430VX-F

2. When the "Hit <DEL>" message appears, press <DEL> key to enter the BIOS setup screen.

Note : If you don't want to modify the original CMOS settings,

then just wait until the system boots up without pressing any keys.

3. After pressing the <DEL> key ,the BIOS Setup screen (as below) will be displayed.

```
AMIBIOS SETUP - BIOS SETUP UTILITIES
(C) 1995 American Megatrends, Inc. All Rights Reserved

                Standard CMOS Setup
                Advanced CMOS Setup
                Advanced Chipset Setup
            Power Management Setup
                PCI / Plug and Play Setup
                Peripheral Setup
                Auto-Detect Hard Disks
                Change User Password
            Change Supervisor Password
                Change Language Setting
        Auto Configuration with Optimal Settings
        Auto Configuration with Fail Safe Settings
                Save Settings and Exit
        Exit without Saving

Standard CMOS Setup for changing time,date, etc.
ESC : Exit  ↑↓: Sel  F2/F3 : Color  F10 : Save & Exit
```

4. Using the <↑> and <↓> key to move the hightlight scroll up or down.
5. Using the <ENTER> key to enter the option.

6.To exit press <ESC>. To save and exit press <F10>.

7. Section 3-2 to 3-7 will describe the option in details.

3.2 Standard CMOS Setup

1. Press <ENTER> on "Standard CMOS Setup" of MAIN MENU SCREEN and the following screen appears.

```
AMIBIOS SETUP - STANDARD CMOS SETUP
(C)1995 American Megatrends, Inc. All Rights Reserved

Date (mm/dd/yyyy) :     Wed, Mar 20, 1996
Time (hh/mm/ss) :       16:19:52

Floppy Drive A: 3 1/2 ,1.44M
Floppy Drive B: Not Installed

                                                    LBA   BLK  PI0  32Bit
            Type  Size Cyln Head WPcom Sec  Mode   Mode  Mode Mode
Pri Master  : AUTO                          ON     ON    ON   AUTO
Pri Slave   : AUTO                          ON     ON    ON   AUTO
Sec Master  : AUTO                          ON     ON    ON   AUTO
Sec Slave   : AUTO                          ON     ON    ON   AUTO

Month :Jan - Dec                    ESC:Exit ↑↓:Sel
Day:  01  - 31                      PgUp/PgDn:Modify
Year: 1901-2099                     F2/F3:Color
```

2. Using <↑> ,and <↓> to choose the item. Using <PgUp>, and <PgDn> keys to modify the highlight item.

3. After you have finished with Standard CMOS Setup, press <Esc> to return to the main menu screen.

3.3 Advanced CMOS Setup

1. Press <ENTER> on "Advanced CMOS Setup" of MAIN MENU SCREEN and the following screen will appear.

AMIBIOS SETUP - ADVANCED CMOS SETUP (C)1995 American Megatrends, Inc. All Rights Reserved		
BootUp Sequence	**A:,C:,CDROM**	Available Options:
Boot From SCSI	Disabled	
BootUp Num-lock	On	
Floppy Drive Seek	Disabled	
PS/2 Mouse Support	Enabled	
System Keyboard	Absent	
Primary Display	EGA/VGA	
Password Check	Setup	
Run OS/2 >= 64M	Disabled	
Internal Cache	Writeback	
External Cache	Enabled	
System BIOS Cacheable	Enabled	
C000,32k Shadow	Enabled	ESC: Exit ↑↓:: Sel
C800,16k Shadow	Disabled	PgUp/PgDn: Modify
CC00,16k Shadow	Disabled	F2/F3 : Color
D000,16k Shadow	Disabled	
D400,16k Shadow	Disabled	
D800,16k Shadow	Disabled	
DC00,16k Shadow	Disabled	

2. Using <↑> ,and <↓> to choose the item. Using <PgUp>,and <PgDn> keys to modify the highlight item.

3. After you have finished with Advanced CMOS Setup, press <Esc> to return to the main menu screen.

A short description of this screen's items follows:

BootUp Sequence The BIOS first attempts to boot from drive A: and then , if unsuccessful, from hard disk C: and then from the CD ROM. You can set the

sequence with this option.

Boot From SCSI This feature specifies which one to use for boot up, SCSI or IDE.

BootUp Num-Lock Decides if the numeric keypad will be **:ON or OFF** ,used as a number keys or arrow keys.If OFF: the numeric keypad will be used for numbers and the LED will be "OFF.". If ON: the numeric keypad will be used for ARROW functions and the LED will be "ON."

Flppy Drive Seek The settings are Normal (default) and Read Only.

PS/2 Mouse Support Choose Enabled or Disabled. Enabled has the Auto-detect function of this BIOS detect the existence of the PS/2 mouse. If the PS/2 mouse is installed then IRQ12 willl be assigned to it. If the PS/2 mouse isn't installed the IRQ12 will be released to another card. The Disabled setting has IRQ12 always assigned to another card.

System Keyboard Choose Absent or Present. When Absent is chosen the keyboard is not tested at boot-up. When Present is chosen and a keyboard is not attached to the system a keyboard error message appears on the screen.

Primary Display Choose display type: EGA/VGA or MONO.

Password Check Choose Setup, or Always. "Setup" requires a password to enter BIOS setup. "Always"

requires a password on Boot Up to load operating system, or enter BIOS Setup.

Run OS/2 >= 64M Only the system is OS/2 and system memory ≥ 64MB. Then this option must be enabled.

Internal Cache Writeback: enables the CPU's internal cache. Although some CPUs support write-through cache, it degrades performance. Therefore this item has no "Write-through" option.

External Cache Enable: enables L2 (external cache)
Disable: disables L2 cache.

System BIOS Choose Disabled or Enabled. Chooses whether the system BIOS should be cacheable (F000,64K).

C000,16K Shadow: Choose whether the ISA ROM and use (C000,16K) should be shadow to (C000,16K).

C800,16K Shadow: Choose whether the ISA ROM and use (C800,16K) should be shadow to (C800,16K).

CC00,16K Shadow: Choose whether the ISA ROM and use (CC00,16K) should be shadow to (CC00,16K).

D000,16K Shadow: Choose whether the ISA ROM and use (D000,16K) should be shadow to (D000,16K).

D400,16K Shadow: Choose whether the ISA ROM and use (D400,16K) should be shadow to (D400,16K).

D800,16K Shadow: Choose whether the ISA ROM and use (D800,16K) should be shadow to (D800,16K).

DC00,16K Shadow: Choose whether the ISA ROM and use (DC00,16K) should be shadow to (DC00,16K).

3.4 Advanced Chipset Setup

1. Press <ENTER> on "Advanced Chipset Setup" of MAIN MENU SCREEN and the screen as below will dispaly.

AMIBIOS SETUP - ADVANCED CHIPSET SETUP (C)1995 American Megatrends, Inc. All Rights Reserved		
Memory Hole	**Disabled**	Available option:
DRAM Timing Setting	Auto	Disabled
ISA Clock Divisor	Auto	512-640K
8Bit I/O Recovery Time (Sysclk)	Disabled	15-16M
16Bit I/O Recovery Time (Sysclk)	Disabled	
CD-ROM Options	0	
USB Function	Disabled	
USB Keyboard Support	Disabled	ESC:Exit ↑↓:Sel PgUp/PgDn:Modify F2/F3 : Color

2. Using <↑> ,and <↓> to choose the item. Using <PgUp>,and <PgDn> keys to modify the highlight item.

3. After you have finished with Advanced Chipset Setup, press <Esc> to return to the main menu screen.

A Short description of the screen's items follows:

Memory Hole 512-640K/15-16M are reserved for the card that has memory for this region. Disable: All on

board memory is used by the system. 512-640K: The on board memory in this range will not be used and the OS demands on this region will be passed to the ISA. 15-16M: The on board memory in this range will not be used and OS demands in this area will be passed to the ISA.

Note: If the memory hole is set for 15-16M and the on board memory is greater than 16M, some testing application will only test 14M and report only 14M memory on the system..

DRAM TIMING: Auto: the system default setting is 60ns for EDO and 70ns for Fast Page. If the memory specifications are different from the Auto: chage the option to manual,and set 60ns or 70ns according the memory installed.

Note : If 60ns and 70ns memory be used at the same time then the DRAM timing must be set as 70ns.

8 Bit I/O Recovery Time Choose the time (system clock) will be inserted when two continue 8 bit I/O cycle occur.

16 Bit I/O Recovery Time Choose the time (system clock) will be inserted when two continue 16 bit I/O cycle occur.

USB This function is reserved. The default setting is disabled.

3.5 Power Management Setup

1. Press <ENTER> on "Power Management Setup" of MAIN MENU SCREEN and the following screen will be displayed.

AMIBIOS SETUP - POWER MANAGEMENT SETUP (C)1995 American Megatrends, Inc. All Rights Reserved			
Power Management/APM		Disabled	Available Options:
Instant-On Timeout (Minute)		Disabled	Enabled
Green PC Monitor State		Off	Inst-ON
Video Power Down Mode		Disabled	Disabled
Hard Disk Power Down Mode		Disabled	
Hard Disk Time Out (Minute)		Disabled	
Standby Time Out (Minute)		Disabled	
Suspend Time Out (Minute)		Disabled	
IRQ3	Active (at suspend)	Wake Up	
IRQ4	Active (at suspend)	Ignore	
IRQ5	Active (at suspend)	Ignore	
IRQ7	Active (at suspend)	Wake Up	
IRQ9	Active (at suspend)	Ignore	
IRQ10	Active (at suspend)	Ignore	
IRQ11	Active (at suspend)	Ignore	ESC:Exit ↑↓:SEL
IRQ12	Active (at suspend)	Wake Up	PgUp/PgDn: Modify
IRQ13	Active (at suspend)	Ignore	F2/F3 : Color
IRQ14	Active (at suspend)	Wake Up	
IRQ15	Active (at suspend)	Wake Up	

2. Using <↑> ,and <↓> to choose the item. Using <PgUp>,and <PgDn> keys to modify the highlight item.
3. After you have finished with Power Management Setup, press <Esc> to return to the main menu screen.

A short description of this screen's items follows:

Advanced Power Choose Enabled or Disabled. This option

Management (APM) enables or disables the green PC features.

Instant-On Timeout (Minute) Choose the time setting for supporting Windows95 Instant-On. This default setting is disabled.

Green PC Monitor Power State This specifies in which mode the monitor will turn off. The available selections are Standby (default), Suspend, and Off.

Video Power Down Mode Choose Standby, Suspend, or OFF. The Standby mode truns off the H.Sync of the VGA. The Suspend mode turns off the V. SYNC of the VGA. The OFF mode turns off the VH.SYNC and V.SYNC of the VGA.

Note : this function depends on the VGA card.

Standby Timeout(Minute) The time system will wait before entering standby.

Suspend Time Out 1. When the standby mode is disabled and the suspend time has expired the system enters suspend mode from normal mode.
2.When the standby mode is set , and system has entered standby mode, then the suspend timers will begin to count. When the suspend time has expired the system will enter suspend mode from standby mode.

IRQ3/4/5/7/9/10/11/12/13/14 Active (at suspend) Choose WakeUP or Disabled
1. Reload the Standby Timer countdown the break events occur during the Normal mode.
2. Return back to the Normal mode from the suspend mode.Also reload the Standby and

the Suspend Time countdown.

3.6 PCI / Plug and Play Setup

1. Press <ENTER> on "PCI/PLUG and PLAY Setup" of MAIN MENU SCREEN and the following screen will be displayed.

AMIBIOS SETUP - PCI/PLUG AND PLAY SETUP (C)1995 American Megatrends, Inc. All Rights Reserved		
Reset NVRAM	No	Available Options
Plug and Play Aware O/S	Yes	
PCI IRQ Priority Auto Setting	Yes	
1st Available IRQ	IRQ11	
2nd Available IRQ	IRQ10	
3rd Available IRQ	IRQ9	
4th Available IRQ	IRQ5	
Assign IRQ to PCI VGA Card	Yes	
PCI VGA Palette Snoop	Disabled	
PCI IDE BusMaster	Disabled	ESC:Exit ^↓:Sel
OffBoard PCI IDE Card	Auto	PgUp/PgDn:Modify
OffBoard PCI IDE Primary IRQ	Disabled	F2/F3 : Color
OffBoard PCI IDE Secondary IRQ	Disabled	
Reserved Memory Size	Disabled	
Reserved Memory Address	C0000	

2. Using <↑> ,and <↓> to choose the item. Using <PgUp>,and <PgDn> keys to modify the highlight item.
3. After you have finished with PCI/Plug and Play Setup, press <Esc> to return to the main menu screen.

A short description of this screen's items follows:

Reset NVRAM Indicate Yes or No. Enabling this option will

clear the BIOS NVRAM during boot up.

Plug and Play Aware O/S The settings are No (default) and Yes. Set this feature to Yes if the operating system installed in the computer is Plug and Play aware. AMIBIOS only detects and enables PnP ISA adapter cards that are required for system boot. The Windows 95 operating system detects and enables all other PnP-aware adapter cards. Windows 95 is PnP-aware. Set this options to No if the operating system (such as DOS, OS/2, Windows 3.x) does not use PnP.

PCI IRQ Priority Auto Setting Set the PCI IRQ routing priority. **Yes**: PCI IRQ routing will be done by the BIOS. **No**: PCI IRQ routin will according "1st, 2nd, 3rd, and 4th Available IRQ" option.

1st Available IRQ Choose the IRQ which is to be the priority for PCI.

2nd Available IRQ Choose the IRQ which is the second priority for PCI.

3rd Available IRQ Choose the IRQ which is the third priority for PCI.

4th Available IRQ Choose the IRQ which is the fourth priority for PCI.

Assign IRQ to PCI VGA Card This specifies whether to assign an IRQ for the PCI VGA card or not. Cjoose whether Yes or No.

PCI VGA Palette Snoop Choose Disabled or Enabled. Some graphic controllers which are not VGA compatible take the output from a VGA controller and map it to their display as a way to provide the boot information and the VGA compatibility. However, the color information coming from the VGA controller is drawn from the palette table inside the VGA controller. In order for the graphic controller to generate the proper colors, the graphic controller needs to know what is in the palette of the VGA controller. To do this, the non-VGA graphic controller watches for Write access to the VGA palette, registers and snoops the data. In PCI-based systems where the VGA controller is on the PCI bus and a non-VGA graphic controller is on the ISA bus, the Write access to the palette will not show up on the ISA bus if the PCI VGA controller responds to the Writes. In this case the PCI VGA controller should not respond to the Write, it should only snoop the data and permit the access to be forwarded to the ISA bus. The non-VGA ISA graphic controller can then snoop the data on the ISA bus. If you don't have the one of the above situations disable this option.

DMA Channel 0-7 The choices are PnP and ISA/ZISA.

IRQ3-15 The settings are PCI/PnP and ISA/ZISA.

3.7 Peripheral Setup

1. Press <ENTER> on "PCI/PLUG and PLAY Setup" and the following screen will be displayed.

AMIBIOS SETUP - PERIPHERAL SETUP (C)1995 American Megatrends, Inc. All Rights Reserved		
OnBoard FDC	ENABLE	Available Options:
Drive A, B, Exchanged	No	Enabled
OnBoard Serial Port1	3F8/COM1	Disabled
OnBoard Serial Port2	2F8/COM2	Auto
Serial Port2 Mode	Normal	
IR Duplex Mode	Full	
OnBoard Parallel Port	378/LPT1	ESC:Exit ↑↓:Sel
Parallel Port Mode	SPP/EPP	PgUp/PgDn:Modify
Parallel Port DMA Channel	Disabled	F2/F3 : Color
Parallel Port IRQ	7	
OnBoard IDE	Both	

2. Using <↑> ,and <↓> to choose the item. Using <PgUp>,and <PgDn> keys to modify the highlight item.
3. After you have finished with PCI/Plug and Play Setup, press <Esc> to return to the main menu screen.

A short description of this screen's items follows:

OnBoard FDC Choose Enabled or Disabled. The default setting enables the on-board FDC. If want to use off board FDC(i.e.ISA card), then choose disabled.

Drive A, B Exchange Choose Enabled or Disabled. The system board supports the diskette drive A/B exchange feature. If this item is Enabled, then FDD A becomes FDD B and FDD B becomes FDD A.

OnBoard Serial Port1 Choose COM1 (3F8),COM2 (2F8), COM3 (3E8), or COM4 (2E8) to use serial port 1.

OnBoard Serial Port2 Choose COM1 (3F8), COM2(2F8), COM3 (3E8), or COM4 (2E8) to use serial port2.

Serial port2 Mode Choose onboard serial port2 operates with COMB or Ir function.

IR Duplex Mode If serial port2 mode is normal then this option is not available. If serial port2 mode is Ir function then full or half are available options.

OnBoard Parallel Port Choose LPT1 (378), LPT2 (278), LPT3 (3BC) or disabled to set the use of the on-board parallel port.

Parallel Port Mode Choose Extend or Normal. You can set the Parallel Extend Mode only when this item is set to Extended.

Parallel Port DMA Channel This option can be configured in either the ECP mode or the ECP & EPP mode. These two modes may need to use one DMA channel. Below is the procedure for using the DMA channel when it is needed.

1. Choose Extended for the Parallel Port mode.
2. Choose ECP or ECP & EPP for the Parallel Extended mode.
3. Choose DMA1 or DMA3 for the Parallel Port DMA.

Parallel Port IRQ Choose IRQ 5 or 7. The interrupt of the on-board parallel port is connected to the chip set

and is routed to the IRQ line by the BIOS's program.

OnBoard IDE Choose Both Primary, Secondary, or Disabled to enable ,or disable onboard IDE channel (primary & secondary)function. "**Both**" onboard IDE's primary and secondary channel is enabled. "**Primary**" only primary channel is enabled and secondary channel is disabled. "**Secondary**" only secondary channel is enabled and primary channel is disabled. "**Disabled**" both primary & secondary channels will be disabled.

Chapter 4

AWARD BIOS User's Guide

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 RAM (CMOS RAM) so that it retains the Setup information when the power is turned off.

4.1 Entering Setup

Turn on the computer and press **<Del>** 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 , press **<Del>** key.

TO ENTER SETUP BEFORE BOOT PRESS **<DEL>** KEY

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

4.2 The Main Menu

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The Main Menu allows you to select from ten 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 (2A4IBG33)

CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERAL
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO ETECTION
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...

4.3 Standard CMOS Setup

1. Choose "STANDARD CMOS SETUP" from the Main Menu and a screen (as below) with a list of items appears.

2. Use the arrow keys to highlight the item and then use the **<PgUp>** or **<PgDn>** keys to modify the value.

ROM PCI/ISA BIOS (2A5IA000)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Fri, Apr 7 1995
Time(hh:mm:ss) : 00:00:00

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDE	SECTOR
MODE							
Primary Master :	None	0	0	0	0	0	0
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

Drive A : 1.44M ,3. 5in.
Drive B : None
Video : EGA / VGA
Halt On : All Errors

Base Memory : 640K
Extended Memory : 3328K
Other Memory : 128K
Total Memory : 4096K

ESC : Quit
F1 : Help

↑↓→← : Select Item
(Shift) F2 : Change Color

PU / PD / + / - : Modify

3. If the HARD DISK TYPE is set to Auto, it is not necessary to use IDE HDD AUTO DETECTION. However, if you can not boot up your system when the HARD DISKS TYPE is Auto, then you need to use the IDE HDD AUTO DETECTION.

4. After you have fininshed with this Setup program, press the **<ESC>** key to return to the Main Menu.

4.4 BIOS Features Setup

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

2. Use the arrow keys to highlight the item and then use the **<PgUp>** or **<PgDn>** keys to modify the value.

ROM PCI/ISA BIOS (2A4IBG33)
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	: Disabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: Disabled	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: A ,C, SCSI	D8000-DBFFF Shadow	: Disabled

Boot Up Floppy Seek	: Enabled	DC000-DFFFF Shadow	: Disabled
Boot Up NumLock Status	: On		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
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	

3. After you have fininshed with this Setup program press the **<ESC>** key to return to the Main Menu.

A short description of the screen items follows:

Virus Warning Choose Enabled or Disabled.
Enabled: 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 a error message will appear
Disabled: Will disable this function.

CPU Internal Cache Choose Enabled or Disabled. This option enables or disables the CPU's internal cache.

External Cache Choose Enabled or Disabled. This option enable or disable the L2 cache memory.

Quick power On Self Test Choose Enabled or Disabled. Enabled provides a fast POST at boot up.

Boot Sequence This option determines which drive (A, C,

CDROM, D, E, F, SCSI) the computer searches first for the disk operating system.

Swap Floppy Drive Choose Enabled or Disabled. This option swaps drive A: and drive B:.

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 Choose Enabled or Disabled. Enable this option to adjust the keystroke repeat rate.

Typematic Rate (chr/sec) Choose the rate a character keeps repeating.

Typematic Delay (Msec) Choose the time after you press a key before a character begins repeating.

Security Option Choose "System" to prevent unauthorized system boot-up or choose "Setup" to prevent unauthorized use of BIOS Setup.

PCI VGA Palette Snooping Choose Disabled or Enabled. Some graphic controllers which are not VGA compatible take the output from a VGA controller and map it to their display as a way to provide the boot information and the VGA compatibility. However, the color information coming from the VGA controller is drawn from the palette table inside the VGA controller. In order for the graphic controller to generate the proper colors, the graphic controller

needs to know what is in the palette of the VGA controller. To do this, the non-VGA graphic controller watches for Write access to the VGA palette, registers and snoops the data. In PCI-based systems where the VGA controller is on the PCI bus and a non-VGA graphic controller is on the ISA bus, the Write access to the palette will not show up on the ISA bus if the PCI VGA controller responds to the Writes. In this case the PCI VGA controller should not respond to the Write, it should only snoop the data and permit the access to be forwarded to the ISA bus. The non-VGA ISA graphic controller can then snoop the data on the ISA bus. If you don't have the one of the above situations disable this option.

OS Select For DRAM > 64MB Allows OS2 to be used with >64MB of DRAM. Settings are Non-OS2 (default) and OS2.

Video BIOS Shadow Determine whether video BIOS will be copied to RAM. However, it is optimal depending on chipset design. Video shadow will increase the speed.

C8000-CBFFF Shadow/DC000 -DFFFF Shadow These categories determine whether option ROMs will be copied to RAM. An example of such option ROM would be support of on-board SCSI.

4.5 Chipset Features Setup

1. Choose "CHIPSET FEATURES SETUP" from the Main Menu and a screen (as below) with a list of items appears.

2. Use the arrow keys to highlight the item and then use the **<PgUp>** or **<PgDn>** keys to modify the value.

ROM PCI/ISA BIOS (2A4IBG33)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

DRAM Timing	: 70ns	CF-ROM Option	: 0
System BIOS Cacheable	: Disabled		
Video BIOS Cacheable	: Disabled		
Memory Hole At 15M-16M	: Disabled		

ESC : Quit ↑↓→←: Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift) F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

3. After you have fininshed this Setup program, press the <ESC> key to return to the Main Menu.

A short description of the screen items follows:

DRAM Timing Choose 70ns or 60ns depending on the DRAM used.

System BIOS Cacheable Choose Enabled or Disabled. Enabling this will cause the System BIOS to be shadowed in both the DRAM and the Cache memory, otherwise, it's only shadowed in the DRAM.

Video BIOS Same as System BIOS Cacheable.

Cacheable

Memory Hole at 15M-16M This reserves the 15MB to 16MB memory address space for use of ISA expansion cards.

4.6 Power Management Setup

1. Choose "POWER MANAGEMENT FEATURES SETUP" from the Main Menu and a screen (as below) with a list of items appears.

2. Use the arrow keys to highlight the item and then use the **<PgUp>** or **<PgDn>** keys to modify the value.

ROM PCI/ISA BIOS (2A4IBG33)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	: Disabled	** Power Down & Resume Events **	
PM Control by APM	: Yes	IRQ3 (COM 2)	: ON
Video Off Method	: V/H SYNC + Blank	IRQ4 (COM 1)	: ON
MODEM Use IRQ	: 3	IRQ5 (LPT 2)	: OFF
		IRQ6 (Floppy Disk)	: ON
Doze Mode	: Disabled	IRQ7 (LPT 1)	: ON
Standby Mode	: Disabled	IRQ8 (RTC Alarm)	: OFF
Suspend Mode	: Disabled	IRQ9 (IRQ2 Redir)	: ON
HDD Power Down	: Disable	IRQ10 (Reserved)	: OFF
		IRQ11 (Reserved)	: OFF
** Wakeup Events in Doze & Standby **		IRQ12 (PS/2 Mouse)	: ON
IRQ 3	:OFF	IRQ13 (Coprocessor)	: OFF
IRQ 4	:ON	IRQ14 (Hard Disk)	: ON
IRQ 8	:ON	IRQ15 (Reserved)	: ON
IRQ 12	:ON		
		ESC: Quit	↑↓→←: Select Item
		F1 : Help	PU / PD / + / - : Modify
		F5 : Old Values	(Shift)F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

3. After you have fininshed this Setup program, press the **<ESC>** key to return to the Main Menu.

A short description of the screen items follows:

Power Management Choose Disabled or Others. Disabled doesn't allow the system to utilize the Green Function; If Others is chosen the system uses the Green function and has the option of using the Green Timer.

PM Control by APM Choose Yes or NO. Choose Yes when the operating system has the APM function, otherwise choose No.

Video Off Method Choose Blank Screen, DPMS, or V/H Sync+Blank. Choose either DPMS or V/H Sync+Blank when the monitor has the Green function. Choose Blank when the monitor doesn't have the Green function .

MODEM Use IRQ This indicates the IRQ no. That would be used by the MODEM (if there is a MODEM).

Standby Mode Suspend Mode Choose the mode for the different timers. The Standby Mode turns off the VGA monitor. The Suspend Mode turns off the CPU and saves the system's energy.

Wakeup Events in Doze & Standby The system will wakeup from the Standby Mode when any of the options below occurs.

Power Down & Resume Events The system will enter the Power Down Mode when any of the options below occurs.

4.7 PnP/PCI Configuration

1. Choose "PNP/PCI CONFIGURATION " from the Main Menu and a screen (as below) with a list of items appears.

2. Use the arrow keys to highlight the item and then use the **<PgUp>** or **<PgDn>** keys to modify the value.

3. After you have fininshed this Setup program, press the **<ESC>** key to return to the Main Menu.

ROM PCI/ISA BIOS (2A41BG33)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

PnP OS Installed	: No	PCI IRQ Actived By	: Level
Resource Controlled by	: Manual	PCI IDE Map To	: PCI-AUTO
Reset Configuration Data	: Disabled	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	Assign IRQ For VGA	: Disable
IRQ-7 assigned to	:Legacy ISA		
IRQ-9 assigned to	: PCI/ISA PnP	Used MEM base addr	: N/A
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	:PCI/ISA PnP		
IRQ-15 assigned to	:PCI/ISA PnP		
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	

A short description of the screen items follows:

PnP OS Installed The settings are Yes or No. Some cards may only operate while using "Yes" setting under Win95.

Resources Controlled by Choose Manual or Auto. The BIOS will check the IRQ/DMA channel number on the ISA and PCI card automatically. Under Manual the IRQ/DMA channel number needs to be checked manually.

Reset Configuration Data This item allows you to determine reset the configuration data or not. Choices are Enabled or Disabled (default).

IRQ-3~DMA-7 assigned to Choose Legacy ISA or PCI/ISA PnP. If ISA card has no Plug & Play function then choose Legacy ISA..

PCI IRQ Actived 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 by your manufacturer. Choices are Level (default) and 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

Power Down & Resume Events The system will enter the Power Down Mode when any of the options below occurs.

4.7 PnP/PCI Configuration

1. Choose "PNP/PCI CONFIGURATION " from the Main Menu and a screen (as below) with a list of items appears.

2. Use the arrow keys to highlight the item and then use the **<PgUp>** or **<PgDn>** keys to modify the value.

3. After you have fininshed this Setup program, press the **<ESC>** key to return to the Main Menu.

ROM PCI/ISA BIOS (2A4IBG33)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

PnP OS Installed	: No	PCI IRQ Actived By	: Level
Resource Controlled by	: Manual	PCI IDE Map To	: PCI-AUTO
Reset Configuration Data	: Disabled	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	Assign IRQ For VGA	: Disable
IRQ-7 assigned to	:Legacy ISA		
IRQ-9 assigned to	: PCI/ISA PnP	Used MEM base addr	: N/A
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	:PCI/ISA PnP		
IRQ-15 assigned to	:PCI/ISA PnP		
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	

A short description of the screen items follows:

PnP OS Installed The settings are Yes or No. Some cards may only operate while using "Yes" setting under Win95.

Resources Controlled by Choose Manual or Auto. The BIOS will check the IRQ/DMA channel number on the ISA and PCI card automatically. Under Manual the IRQ/DMA channel number needs to be checked manually.

Reset Configuration Data This item allows you to determine reset the configuration data or not. Choices are Enabled or Disabled (default).

IRQ-3~DMA-7 assigned to Choose Legacy ISA or PCI/ISA PnP. If ISA card has no Plug & Play function then choose Legacy ISA..

PCI IRQ Actived 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 by your manufacturer. Choices are Level (default) and 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.

Assign IRQ For VGA Lets the user choose which IRQ to assign for VGA use.

4.8 Load Setup Defaults

This item loads the default system values. If the CMOS is corrupted the defaults are loaded automatically. 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>.**

4.9 Integrated Peripherals

1. Choose "INTEGRATED PERIPHERALS " from the Main Menu and a screen (as below) with a list of items appears.

2. Use the arrow keys to highlight the item and then use the **<PgUp>** or **<PgDn>** keys to modify the value.

ROM PCI/ISA BIOS (2A4IBG33)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	Onboard Parallel Mode	:SPP
IDE Primary Master PIO	: Auto		
IDE Primary Slave PIO	: Auto		
IDE Secondary Master PIO	: Auto		
IDE Secondary Slave PIO	: Auto		
On-Chip Primay PCI IDE	: Enabled		
On-Chip Secondary PCI IDE	: Enabled		
USB Controller	: Disabled		
USB Keyboard Controller	: Disabled		
Onboard FDD Controller	: Enabled		
Onboard Serial Port 1	: 3F8/IRQ4		
Onboard Serial Port 2	: 2F8/IRQ3	ESC: Quit	↑↓→←: Select Item
UART 2 Mode	: Standard	F1 : Help	PU / PD / + / - :
		Modify	
		F5 : Old Values	(Shift)F2 :
		Color	
		F6 : Load BIOS Defaults	
Onboard Parallel Port	: 378H/IRQ 7	F7 : Load Setup Defaults	

3. After you have fininshed this Setup program, press the **<ESC>** key to return to the Main Menu.

A short description of the screen items follows:

IDE HDD Block Mode Choose Disabled or Others. If hard disk size is larger than 540MB, choose Enabled; and if the hard disk size is smaller than 540MB, check with hard disk vendor to decide which one should be selected. If using the IDE HDD Auto Detection option, the BIOS will choose this option automatically

IDE Primary/ Secondary Master/Slave PIO

Choose Auto or Mode 0`4. The BIOS will detect the HDD Mode type automatically when you choose Auto. Set to a lower mode than Auto when hard disk becomes unstable.

Onchip Primary/Secondary IDE

If using ISA IDE choose Disabled Primary or Secondary PCI IDE.

Onboard FDD Controller

Choose Disabled or Enabled. Choose Disabled when using an ISA card with FDD function, or, choose Enabled to use the onboard FDD connector.

Onboard Serial port1

Choose 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, or Disabled. Choose Onboard COM1 connector to use I/O port address/IRQ for 3F8/IRQ4, or others.

Onboard Serial Port 2

The settings are: Disabled, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, and 2E8/IRQ3. Choosing 3F8/IRQ4 will allow COMM1 to use IRQ4, 2F8/IRQ3 for COMM2 to use IRQ3, 3E8/IRQ4 for COMM3 to use IRQ4, and 2E8/IRQ3 for COMM4 to use IRQ3.

UART 2 Mode

The options are Standard ASKIR, and HPSIR. The system's built-in IR (Infrared) is on the on-board Super I/O chipset and shares serial port2 with

UART2. Only one option can be selected for serial port 2, whether the IR or UART.

Onboard Parallel Port

The options are Disabled, 3BCH/IRQ7, 278H/IRQ5, 378H/IRQ7. Choosing 3BCH/IRQ7 will enabled the line printer port 0, 278H/IRQ5 line printer port2, and 378H/IRQ7 line printer port 1.

OnBoard Parallel Mode

To operate the onboard parallel port as Standard Parallel port, choose "SPP". To operate in ECP mode choose "ECP". To support the ECP and SPP modes at the same time, choose "ECP/SPP". The ECP mode has to use the DMA channel so choose the onboard parallel port with the ECP feature. After selecting it the following message will appear: "ECP Mode Use DMA". The user can choose between DMA channels 3 or 1. The onboard parallel port with the EPP Specification compliant so after the user chooses the onboard parallel port with the EPP function, this message will appear: "Parallel Port EPP Type." At this time either EPP 1.7 specification or EPP specification can be chosen.

4.10 User/Supervisor Password

This setting lets you configure the system so that a password is required each time the system boots or an attempt is made to enter the Setup program. Supervisor Password allows you to change all CMOS settings but the User Password setting doesn't have this function if you have set the Supervisor Password. The method for setting up the password is as follows:

1. Choose "Supervisor Password" or "User Password" in the Main Menu and press **<Enter>**. the following message appears:
   "ENTER PASSWORD:"

2. The first time you run this option, enter a password up to 8 characters and press **<Enter>.** The screen does not display the entered characters. For no password press **<Enter>.**

3. After entering the password, the following message appears prompting the user to confirm the password: "Confirm Password:"

4. Enter the same password you previously typed to confirm the password and press **<Enter>.**

5. Move the cursor to Save & Exit Setup to save the password.

6. If you need to delete the previously entered password, choose the Password and press **<Enter>.** It will delete the previous password.

7. Move the cursor to Save & Exit Setup to save the new settings. If you don't the old password will still be used the next time your machine is used.

4.11 IDE HDD Auto Detection

You can use this utility to automatically detect most hard drives.

When you enter this utility, the screen asks you to select a specific hard disk for Primary Master. If you accept a hard disk detected by the BIOS, you can enter **"Y"** to confirm and then press **<Enter>** to check the next hard disk. This function allows you to check four hard disks and you may press the **<Esc>** after the **<Enter>** to skip this function and go back to the Main Menu.

ROM/PCI/ISA BOPS (2XXXXXXX)
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	HEADS	PRECOMP	LANDZONE	SECTORS	MODE
1(Y)	516	1120	16	65535	1119	59	NORMAL
2	516	524	32	0	1119	63	LBA