

Chapter 1

INTRODUCTION

The MS-6301 ATX CA8 mainboard is a high-performance computer mainboard based on Intel® 820 chipset. The MS-6301 is designed for the Intel® Pentium™ II/III processor for high-end business/personal desktop markets.

The Intel® 820 chipset is the first generation chipset for the Intel® Pentium® II/III processor. An integrated centralized memory arbiter allocates memory bandwidth to multiple system agents to optimize system memory utilization. A new chipset component interconnect, the hub interface, is designed into the Intel 820 chipset to provide an efficient communication channel between the memory controller hub and I/O controller hub.

The Intel 820 chipset contains four core components: the Memory Controller Hub (MCH), Memory Translator Hub (MTH), the I/O Controller Hub (ICH) and the Firmware Hub (FWH). The MCH integrates a 100MHz/133MHz CPU FSB, and a fix 100MHz SDRAM controller and high-speed hub interface for communication with the ICH. The ICH integrates an Ultra ATA/66(ICH) controller, USB host controller, LPC interface controller, FWH interface controller, PCI interface controller, AC'97 digital controller and a hub interface for communication with the MCH.

The Intel® 82802 Firmware Hub (FWH) component is part of the Intel® 820 chipset. The FWH is key to enabling future security and manageability infrastructure for the PC platform.

1.1 Mainboard Features

CPU

- Support Intel® Pentium® II/III & Coppermine 100/133MHz FSB processor.
- Support 350/400/450/500/533/600MHz or higher processor

Chipset

- Intel® 820 Camino chipset. (324 BGA)
 - Optimized for Pentium III processor
 - AGP 4x/2x universal slot
 - Support 100/133MHz FSB
- Intel® ICH chipset. (241 BGA)
 - AC'97 Controller Integrated
 - 2 full IDE channels, up to ATA66
 - Low pin count interface for SIO
- Intel® MTH chipset. (241 BGA)

Front Side Bus (FSB)

- 100/133MHz clocks are supported.

Main Memory

- Supports three 168-pin DIMM sockets.
- Supports a maximum SDRAM memory size of 512MB or 1GB (32Mx4) registered DIMM only.
- Support only SDRAM without ECC Function.

Slots

- One AMR (Audio Modem Riser)
- One AGP (Accelerated Graphics Port) slot.
 - AGP specification compliant
 - AGP 66/133/266MHz device support
- Five 32-bit Master PCI Bus slots and one 16-bit ISA slot(optional).
- Supports 3.3v/5v PCI bus Interface.

Note: If there's onboard Hardware Audio or LAN. The PCI slot 1 and PCI slot 5 will be shared.

On-Board IDE

- An IDE controller on the ICH chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA/66 operation modes.
- Can connect up to four IDE devices.

On-Board Peripherals

- On-Board Peripherals include:
 - 1 floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes.
 - 2 serial port (COMA + 1 COMB)
 - 1 parallel port supports SPP/EPP/ECP mode
 - 2 USB ports
 - 1 IrDA connector for SIR.
 - 1 LAN port

Audio

- ICH chip integrated
- Creative CT5880. (Optional)
 - 64 Voice WaveTable Synthesizer
 - Sound Library of over 4000 different sounds
 - Support SPDIF (AC3)
 - Support Microsoft Direct Sound, Direct Sound 3D, Direct Music, and A3DAPL.

Network (Reserved)

- Intel 82559 10/100M Ethernet (optional)
 - WFW baseline & NET PC specs compliant
 - Advanced Power Management (ACPI support)
 - ARP & Flexible frame filtering
 - Software drivers are backwards compatible
 - IP checksumming in hardware
 - Alert on LAN II(optional)

BIOS

- The mainboard BIOS provides “Plug & Play” BIOS which detects the peripheral devices and expansion cards of the board automatically.
- The mainboard provides a Desktop Management Interface(DMI) function which records your mainboard specifications.
- CPU Voltage setting through BIOS
- FWH Flash BIOS Protect

Dimension

- ATX Form Factor: 30.5cm x 21cm

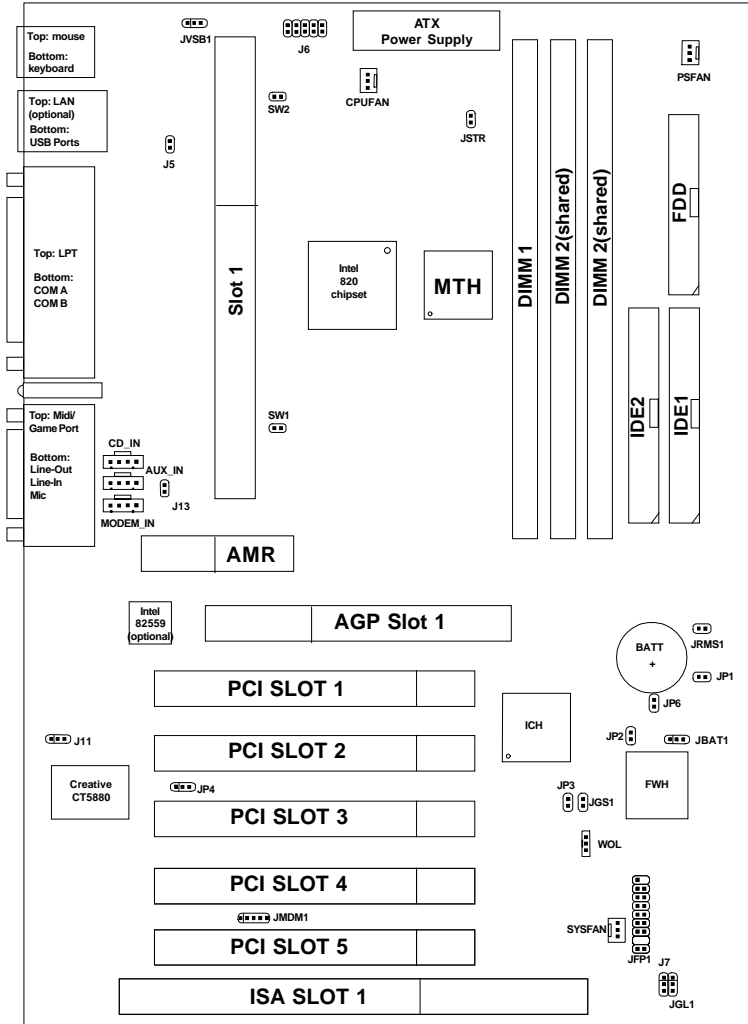
Mounting

- 6 mounting holes.

Other features

- CPU core/bus ratio & FSB frequencies setting through BIOS.
- Diagnostic LED system status display
- Reset button protect
- Keyboard/Mouse Power on function
- Support suspend to RAM (STR)

1.2 Mainboard Layout



MS-6301 ATX CA8 Mainboard

Chapter 2

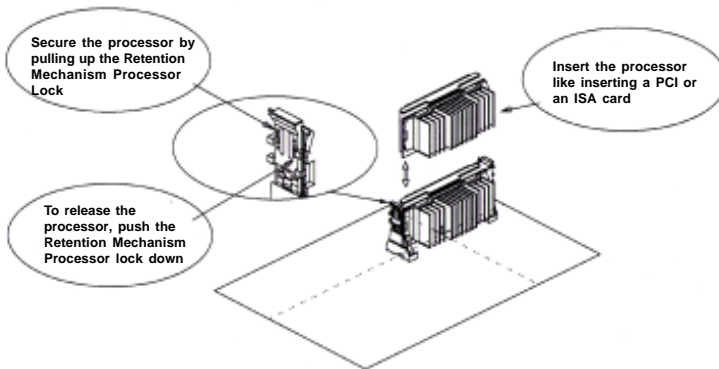
HARDWARE INSTALLATION

2.1 Central Processing Unit: CPU

2.1-1 Processor Installation Procedure

Step 1: Install the Retention Mechanism.

Attach the Retention Mechanism to the Mainboard. Push the Plastic lock to secure the Retention Mechanism into the mainboard.



Step 2: Install the Processor.

Insert the Processor like inserting a PCI or an ISA card.

Step 3: Lock the Processor.

Lock the processor by pulling up the Retention Mechanism processor lock shown above.

Note: The Retention Mechanism processor lock can only be used with S.E.C.C. 2 and S.E.P.P. processor.

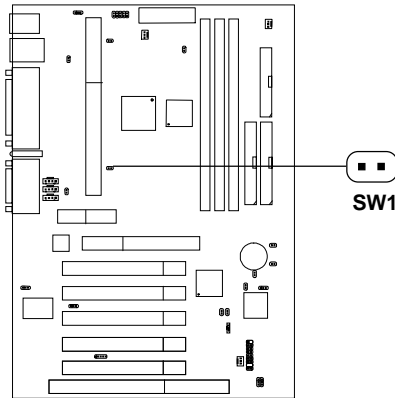
2.1-2 CPU Core Speed Derivation Procedure



The mainboard CPU Core/Bus ratio and CPU Bus Frequency can both be set through BIOS setup

if	<u>CPU Clock</u>	=	100MHz
	<u>Core/Bus ratio</u>	=	4
then	<u>CPU core speed</u>	=	<u>Host Clock</u> x <u>Core/Bus ratio</u>
		=	100MHz x 4
		=	400MHz

2.1-3 Overclocking Jumper: SW1

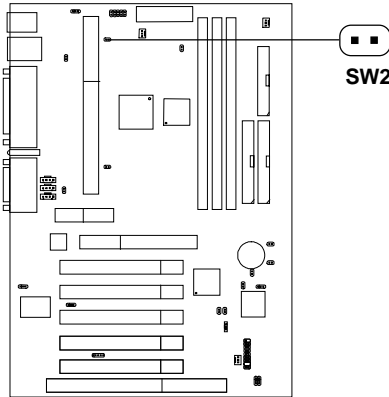
Overclocking is operating a CPU/Processor beyond its specified frequency. SW1 jumper is used for overclocking.





SW1	Function
 Short	Automatically detect CPU Bus Frequency
 Open	Allows CPU overclocking. Set 100MHz to 133Mhz

2.1-4 Clocking Jumper for 66MHz (FSB) processor: SW2

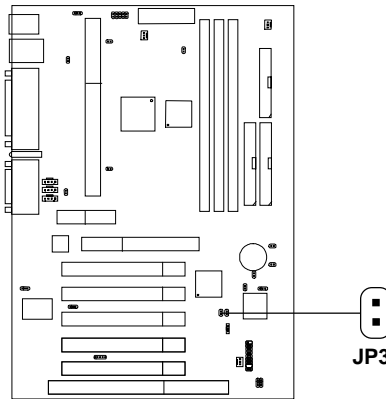
This jumper is used to enabled 66MHz (FSB) processor. To be able to used 66MHz(FSB) processor, you need to set this jumper.





SW2	Function
 Short	Default (if 66MHz FSB processor is installed, the system will be unabled to boot)
 Open	Allows 66MHz (FSB) processor to run at 100MHz

2.1-5 CPU Core/Bus Ratio strap to Safe Mode: JP3

This jumper is used to adjust the CPU core/ratio to safe mode.

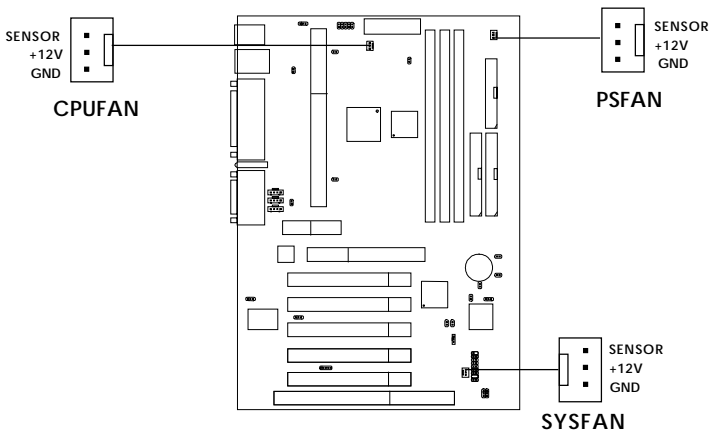


JP3	Function
 Short	Safe Mode (Core/Bus Ratio by 2)
 Open	Core/Bus Ratio in ICH Register (Default)

Warning: If CPU Core/Bus ratio is set too high that the system hang. Short pin JP3, then restart the system until boot up, the CPU core/bus ratio will be set to the default setting by 2. Properly shutdown the system, and remove the short on JP3.

2.1-6 Fan Power Connector: CPUFAN/PSFAN/SYSFAN

These connectors support system cooling fan with + 12V. It supports 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, the black wire is Ground and should be connected to GND. If your mainboard has System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of this function.



PSFAN: Power Supply Fan

CPUFAN: Processor Fan

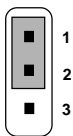
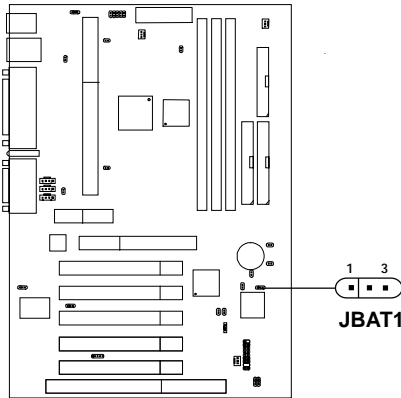
SYSFAN: System(Chassis) Fan

For fans with fan speed sensor, every rotation of the fan will send out 2 pulses. System Hardware Monitor will count and report the fan rotation speed.

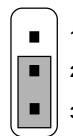
- Note:**
1. Always consult vendor for proper CPU cooling fan.
 2. CPU FAN supports the FAN control. You can install PC Alert utility. This will automatically control the CPU FAN Speed according to the actual CPU temperature.
 3. During Suspend mode, FAN status can be set through BIOS.

2.2 Clear CMOS Jumper: JBAT1

A battery must be used to retain the mainboard configuration in CMOS RAM. Short 1-2 pins of JBAT1 to store the CMOS data.



Keep Data



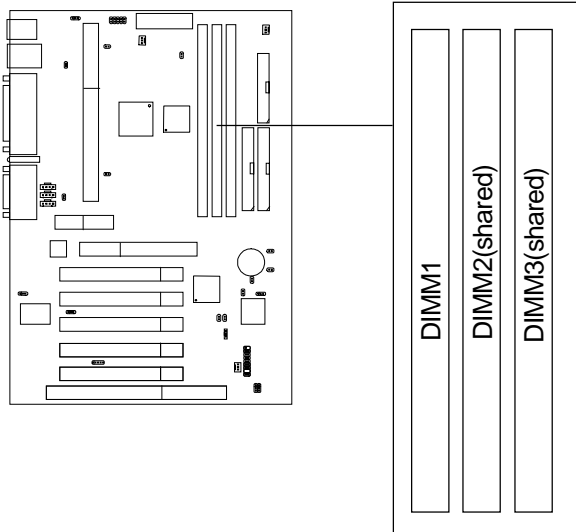
Clear Data

Note: You can clear CMOS by shorting 2-3 pin, while the system is off. Then, return to 1-2 pin position. Avoid clearing the CMOS while the system is on, it will damage the mainboard. Always unplug the power cord from the wall socket.

2.3 Memory Installation

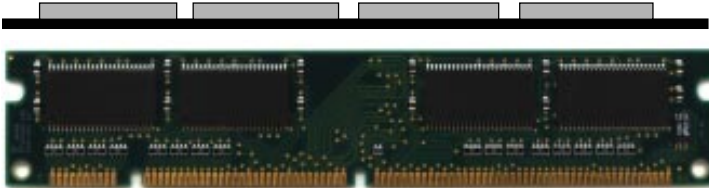
2.3-1 Memory Bank Configuration

The mainboard supports a maximum memory size of 512MB or Registered DIMM 1GB(32 device) : It provides three 168-pin DIMMs sockets. DIMM 2 and DIMM 3 sockets are shared.

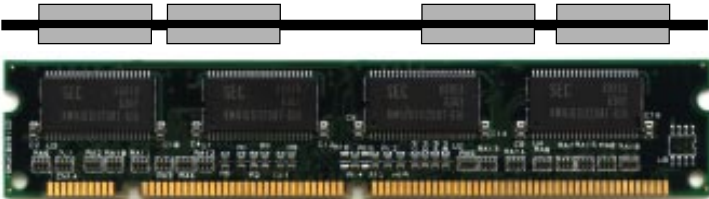


2.3-2 Memory Installation Procedures

A. How to install a DIMM Module

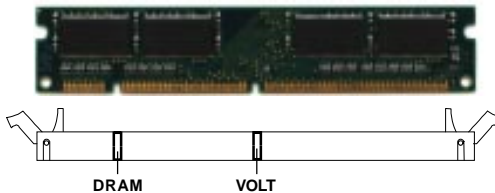


Single Sided DIMM



Double Sided DIMM

1. The DIMM slot has 2 Notch Keys “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. The plastic clip at the side of the DIMM slot will automatically close.

2.3-3 Memory Population Rules

1. Support only SDRAM DIMM w/o ECC function.
2. To operate properly, at least one DIMM module must be installed.
3. DIMM Slot configuration:

DIMM1	DIMM2	DIMM3
D/S	D/S	-
D/S	-	D/S
D/S	S	S

D: Double Sided Memory
 S: Single Sided Memory

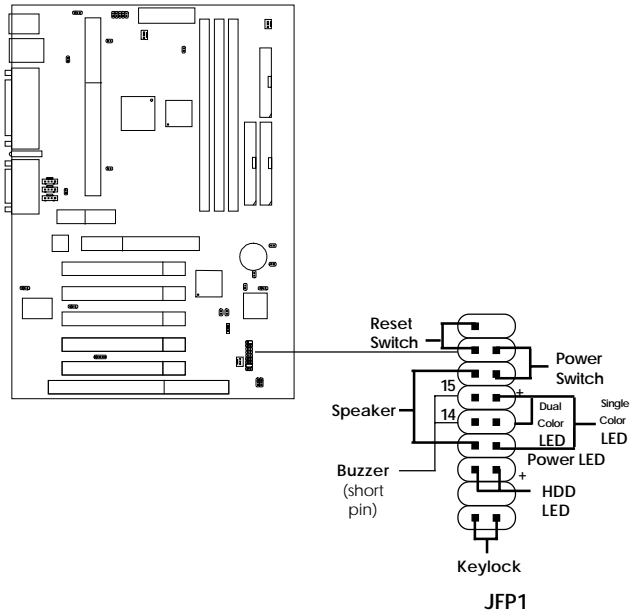
4. The DRAM addressing and the size supported by the mainboard is shown below:

Table 2.3-1 SDRAM Memory Addressing

DRAM Tech.	DRAM Density & Width	DRAM Addressing	Address Size		MB/DIMM	
			Row	Column	Single Side(S) no. pcs.	Double Side(D) no. pcs.
64MB	8Mx8	ASYM	12	9	64MBx8	128MBx16
64MB	4Mx16	ASYM	12	8	32MBx4	64MBx8
128MB	16Mx8	ASYM	12	10	128MBx8	256MBx16
128MB	32Mx4	ASYM	12	11	256MBx16	512MBx32

2.4 Case Connector: JFP1

The Keylock, Power Switch, Reset Switch, Power LED, Speaker, and HDD LED are all connected to the JFP1 connector block.



2.4-1 Power Switch

Connect to a 2-pin push button switch. This switch has the same feature with JRMS1.

2.4-2 Reset Switch

Reset switch is used to reboot the system rather than turning the power ON/OFF. Avoid rebooting while the HDD LED is lit. You can connect the Reset switch from the system case to this pin.

2.4-3 Power LED

The Power LED is lit while the system power is on. Connect the Power LED from the system case to this pin. There are two types of LED that you can use: 3-pin single color LED or 2-pin dual color LED(ACPI request).

- a. 3 pin single color LED connect to pin 4, 5, & 6. This LED will lit when the system is on.
- b. 2 pin dual color LED connect to pin 5 & 6.
GREENColor: Indicate the system is in full on mode.
ORANGEColor: Indicate the system is in suspend mode.

2.4-4 Speaker

Speaker from the system case is connected to this pin.

If on-board Buzzer is available:

Short pin 14-15: On-board Buzzer Enabled.

Open pin 14-15: On-board Buzzer Disabled.

2.4-5 HDD LED

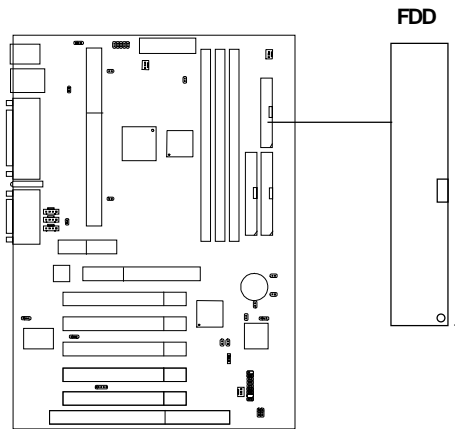
HDD LED shows the activity of a hard disk drive. Avoid turning the power off while the HDD led is lit. You can connect the HDD LED from the system case to this pin.

2.4-6 Keylock

Keylock allows you to disable the keyboard for security purposes. You can connect the keylock to this pin.

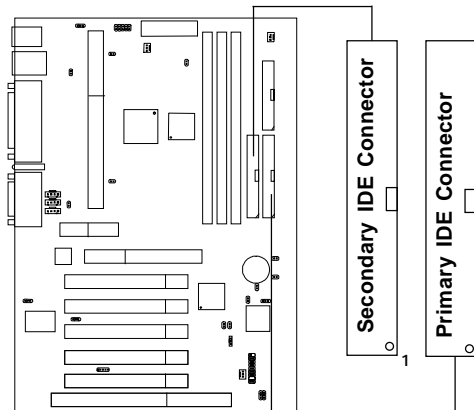
2.5 Floppy Disk Connector: FDD

The mainboard also provides a standard floppy disk connector FDD that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types. This connector supports the provided floppy drive ribbon cables.



2.6 Hard Disk Connectors: IDE1 & IDE2

The mainboard has a 32-bit Enhanced PCI IDE and Ultra DMA/66 (ICH)/ Ultra DMA/33(ICH0) Controller that provides PIO mode 0~4, Bus Master, and Ultra DMA/33 function. It has two HDD connectors IDE1 (primary) and IDE2 (secondary). You can connect up to four hard disk drives, CD-ROM, 120MB Floppy (reserved for future BIOS) and other devices to IDE1 and IDE2. These connectors support the provided IDE hard disk cable.



IDE1(Primary IDE Connector)

The first hard drive should always be connected to IDE1. IDE1 can connect a Master and a Slave drive. You must configure second hard drive to Slave mode by setting the jumper accordingly.

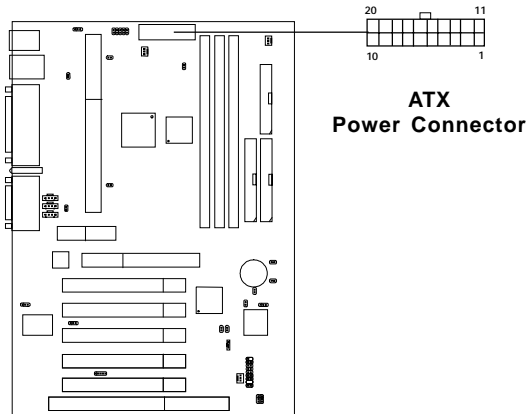
IDE2(Secondary IDE Connector)

IDE2 can also connect a Master and a Slave drive.

2.7 Power Supply

2.7-1 ATX 20-pin Power Connector: JPWR1

This connector supports the power button on-board. Using the ATX power supply, functions such as Modem Ring Wake-Up and Soft Power Off are supported by this mainboard. This power connector supports instant power on function which means that system will boot up instantly when the power connector is inserted on the board.



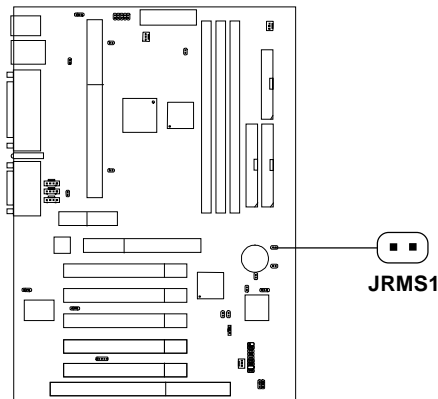
PIN DEFINITION

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

Warning: Since the mainboard has the instant power on function, make sure that all components are installed properly before inserting the power connector to ensure that no damage will be done.

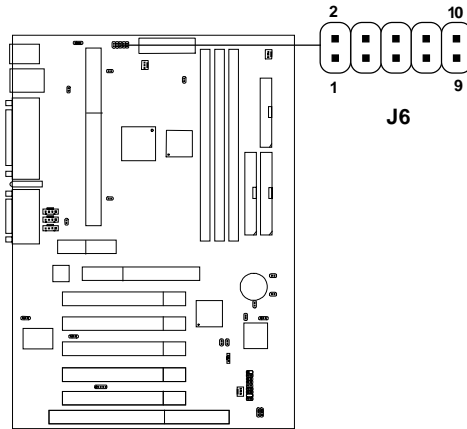
2.7-2 Remote Power On/Off Switch: JRMS1

Connect to a 2-pin push button switch. During OFF state, press once and the system turns on. **During ON stage, push once and the system goes to sleep mode: pushing it more than 4 seconds will change its status from ON to OFF.** If you want to change the setup, you could go to the BIOS Power Management Setup.



2.8 IrDA Infrared Module Connector: J6

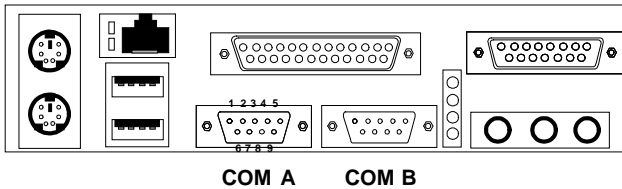
The mainboard provides one 5-pin infrared (J6) connector for IR modules. This connector is for optional wireless transmitting and receiving infrared module. You must configure the setting through the BIOS setup to use the IR function. FIR and Consumer IR are reserved functions.



PIN	SIGNAL
1	VCC
2	NC
3	NC
4	CIIRX
5	IRRX
6	5VSB
7	GND
8	NC
9	IRTX
10	NC

2.9 Serial Port Connectors: COM A and COM B

The mainboard provides two 9-pin male DIN connector for serial port COM A & COM B. These port are a 16550A high speed communication port that send/receive 16 bytes FIFOs. You can attach a mouse or a modem cable directly into this connector.



Serial Port (9-pin Male)

PIN DEFINITION

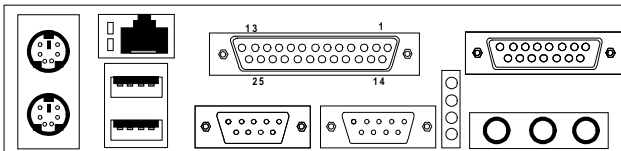
PIN	SIGNAL
1	DCD (Data Carry Detect)
2	SIN (Serial In or Receive Data)
3	SOUT (Serial Out or Transmit Data)
4	DTR (Data Terminal Ready)
5	GND
6	DSR (Data Set Ready)
7	RTS (Request To Send)
8	CTS (Clear To Send)
9	RI (Ring Indicate)

2.10 Parallel Port Connector: LPT1

The mainboard 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:

Parallel Port (25-pin Female)

LPT 1

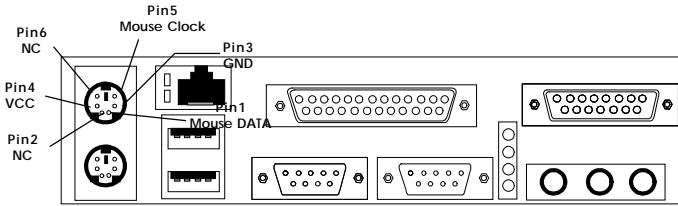


PIN DEFINITION

PIN	SIGNAL	PIN	SIGNAL
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		

2.11 Mouse Connector: JKBMS1

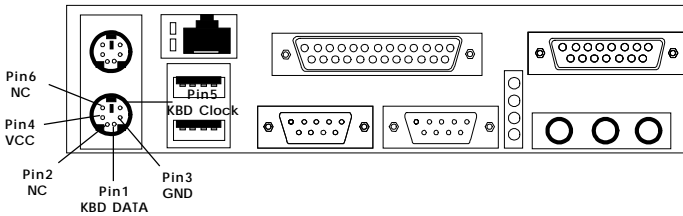
The mainboard provides a standard PS/2[®] mouse mini DIN connector for attaching a PS/2[®] mouse. You can plug a PS/2[®] mouse directly into this connector. The connector location and pin definition are shown below:



PS/2 Mouse (6-pin Female)

2.12 Keyboard Connector: JKBMS1

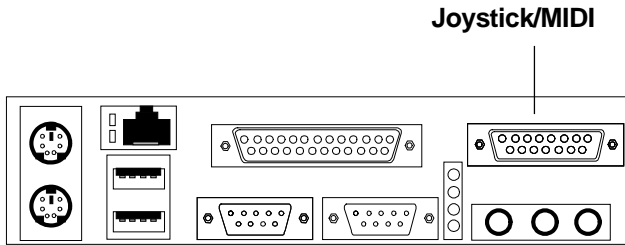
The mainboard provides a standard PS/2[®] keyboard mini DIN connector for attaching a keyboard. You can plug a keyboard cable directly to this connector.



PS/2 Keyboard (6-pin Female)

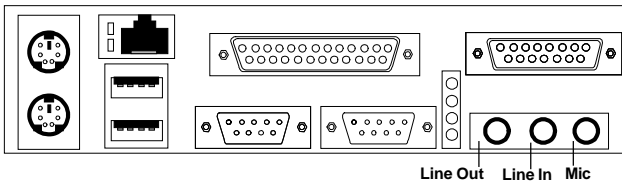
2.13 Joystick/Midi Connectors

You can connect joystick or game pad to this connector.



2.14 Audio Port Connectors

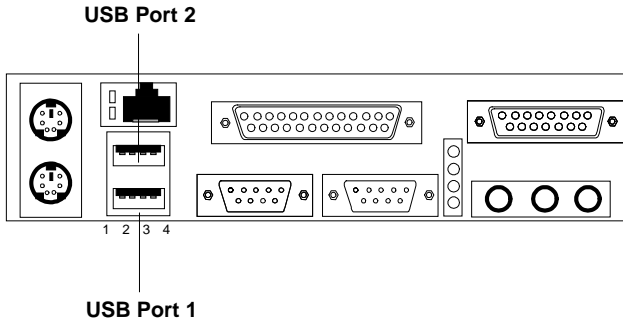
Line Out is a connector for Speakers or Headphones. **Line In** is used for external CD player, Tape layer, or other audio devices. **Mic** is a connector for the microphones.



1/8" Stereo Audio Connectors

2.15 USB Connectors

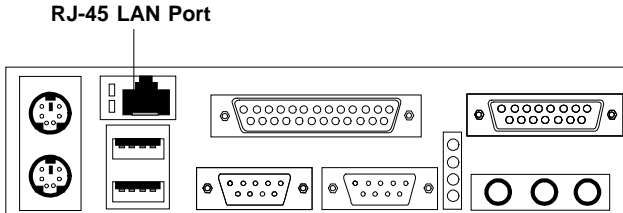
The mainboard provides a **UHCI(Universal Host Controller Interface) Universal Serial Bus root** for attaching USB devices like: keyboard, mouse and other USB devices. You can plug the USB device directly to this connector.



PIN	SIGNAL
1	VCC
2	-Data0
3	GND
4	+Data0

2.16 LAN Connector (reserved)

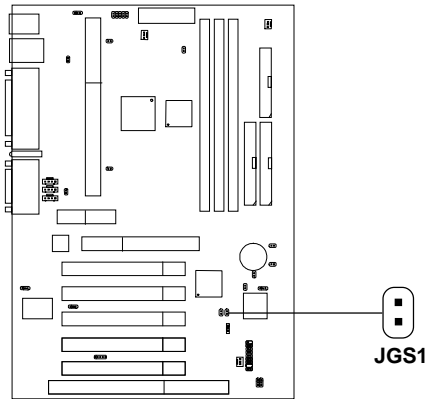
The mainboard provides a **RJ-45** LAN connector for your Network need.



PIN	SIGNAL	DESCRIPTION
9	RDN	Receive Differential Pair
10	RDP	Receive Differential Pair
11	GND	Ground
12	GND	Ground
13	GND	Ground
14	GND	Ground
15	TDN	Transmit Differential Pair
16	TDP	Transmit Differential Pair

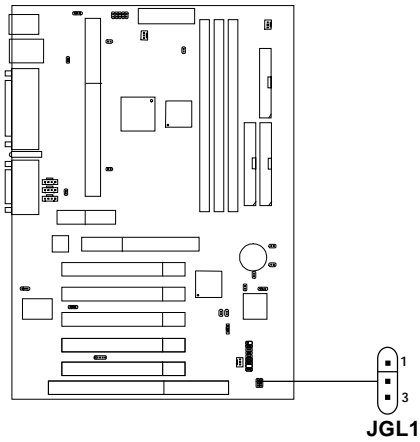
2.17 Power Saving Switch Connector: JGS1

Attach a power saving switch to **JGS1**. When the switch is pressed, the system immediately goes into suspend mode. Press any key and the system wakes up.



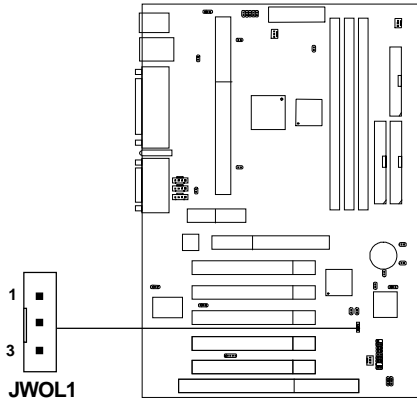
2.18 Power Saving LED Connector: JGL1

JGL1 can be connected with a LED. When the 2-pin LED is connected to JGL1, the light will turn green, when system is On. During sleep mode, the 2-pin LED will change color from Green to Orange.



2.19 Wake-Up on LAN Connector: JWOL1

The JWOL1 connector is for use with LAN add-on cards that supports Wake Up on LAN function. To use this function, you need to set the “Wake-Up on LAN” to enable at the BIOS Power Management Setup.



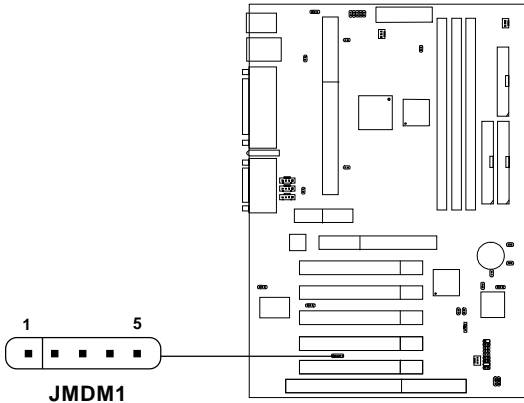
PIN	SIGNAL
1	5VSB
2	GND
3	MP_WAKEUP

Note: LAN wake-up signal is active “high”.

Note: To be able to use this function, you need a power supply that provide enough power for this feature. (Power supply with 750mA 5V Stand-by)

2.20 Modem Wake Up Connector: JMDM1

The JMDM1 connector is for used with Modem add-on card that supports the Modem Wake Up function.



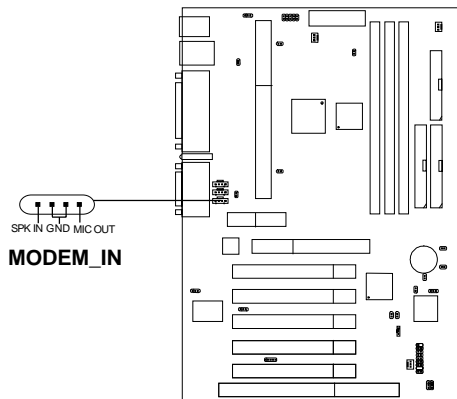
PIN	SIGNAL
1	NC
2	GND
3	MDM_WAKEUP
4	NC
5	5VSB

Note: Modem wake-up signal is active “low”.

Note: To be able to use this function, you need a power supply that provide enough power for this feature. (Power supply with 750mA 5V Stand-by)

2.21 Modem-In: MODEM_IN

The connector is for Modem with internal voice connector.

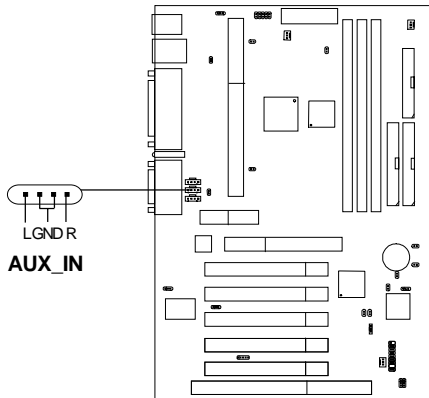


SPK_IN is connected to the Modem Speaker Out connector.

MIC_OUT is connected to the Modem Microphone In connector.

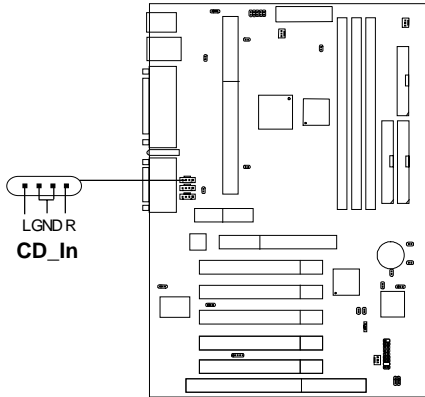
2.22 AUX Line In Connector: AUX_IN

This connector is used for DVD Add on Card with Line In connector.



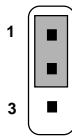
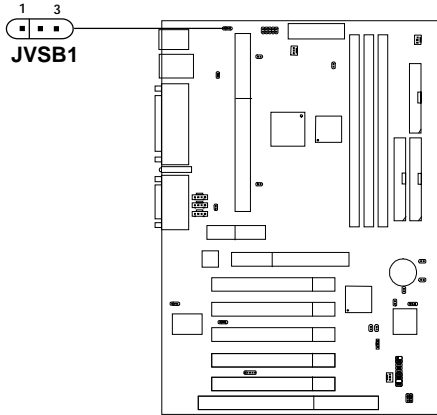
2.23 CD-In Connector: CD_IN

This connector is for CD-ROM audio connector.

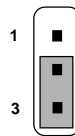


2.24 Keyboard Power: JVS B1

The JVS B1 jumper is for setting keyboard power. This function should be set in the BIOS for the keyboard Wake-up function.



5V Standby
Enable keyboard
power on function

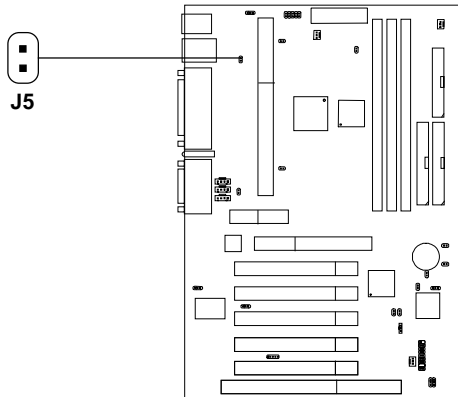


5V (default)
Disable keyboard
power on function

Note: To be able to use this function, you need a power supply that provide enough power for this feature. (Power supply with 750mA 5V Stand-by)

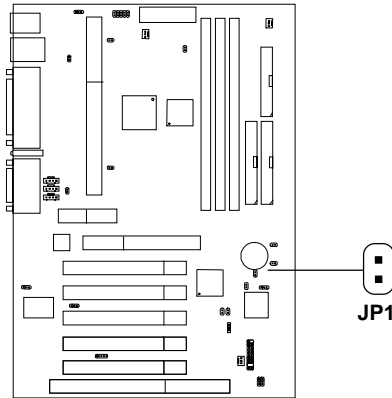
2.25 Chassis Intrusion Switch Case: J5

This connector is connected to a 2-pin connector chassis switch. If the Chassis is open, the switch will be open. The system will record this status. To clear the warning, you must enter the BIOS setting and clear the status.



2.26 FWH Boot Block Protect: JP1 (reserved)

This jumper is used to lock/unlock FWH BIOS Flash. This Jumper should be unlock when flashing/programming the BIOS.



**BIOS Flash
Unlocked**

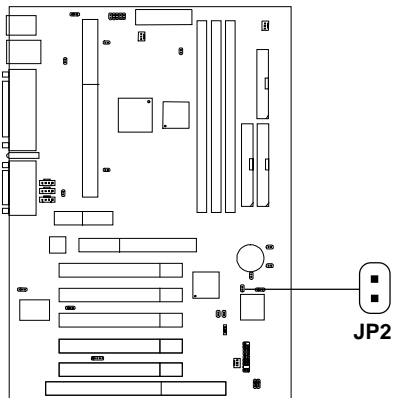


**BIOS Flash
Locked**

Note: If this jumper does not exist, this motherboard will have self building BIOS function.

2.27 System Error Reset Jumper: JP2

This jumper is used to Enabled/Disabled the reboot.



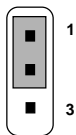
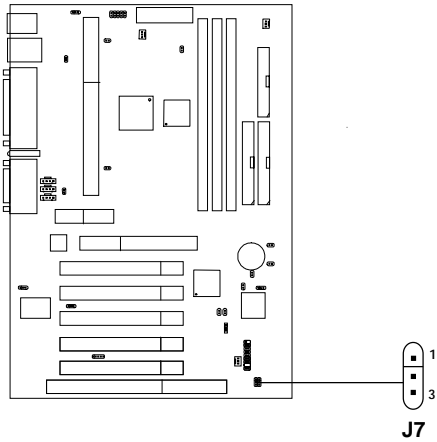
**No Reboot
(default)**



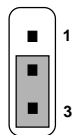
**Reboot
(7 sec
automatic
restart)**

2.28 Speaker Output Select Jumper: J7

This jumper will enable the case speaker/buzzer to be transferred to the Audio speaker.



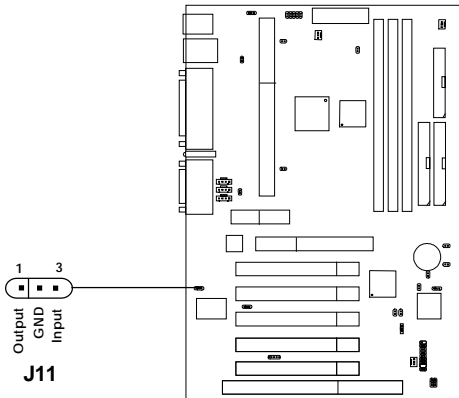
**Output to
Audio Chip**



**Output to
Onboard Buzzer
(default)**

2.29 SPDIF Connector: J11

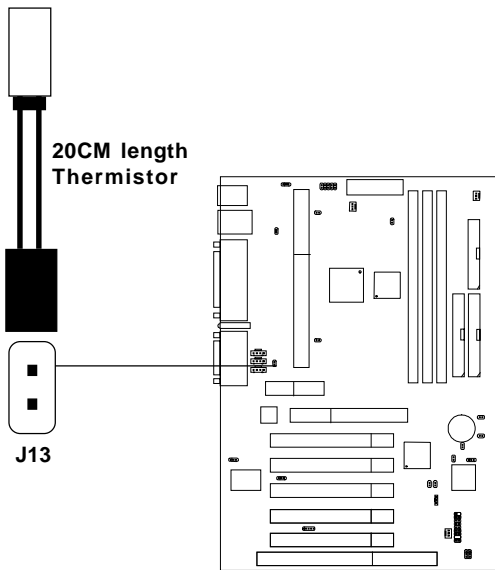
This item is for Sony & Philips Digital Interface for AC3 decoder.



Note: This jumper only exist with Hardware Audio onboard.

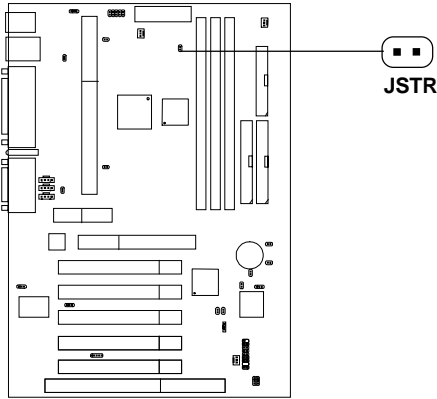
2.30 TOP TECH III: J13



This is used to check the AGP card or chipset temperature. The J13 is a 2-pin connector which can be inserted with a 20cm length thermistor. It is located near the chipset heatsink that monitors the chipset temperature. The BIOS setup for “TOP TECH. III” should be set to enabled.



2.31 Suspend To RAM: JSTR

This jumper is used to enabled support for STR(suspend to RAM). The power supply should be more than 750mA or up to be able to enabled the STR support.

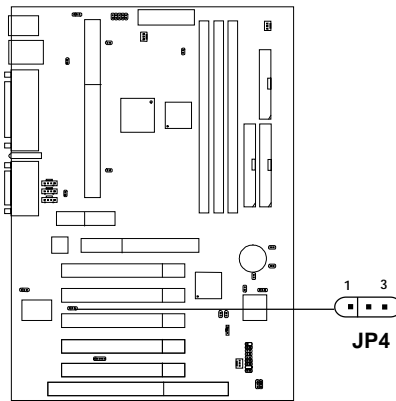




JSTR	Function
 Short	Enabled STR
 Open	Disabled STR

Note: Add-on VGA card must support ACPI mode, for this function to work.

2.32 Onboard Software Audio Jumper: JP4 (reserved)

This jumper is used to enabled/disabled Onboard Software audio. For enabling AMC97 on AMR slot. Note: This jumper will only exist if there's no Hardware audio onboard.

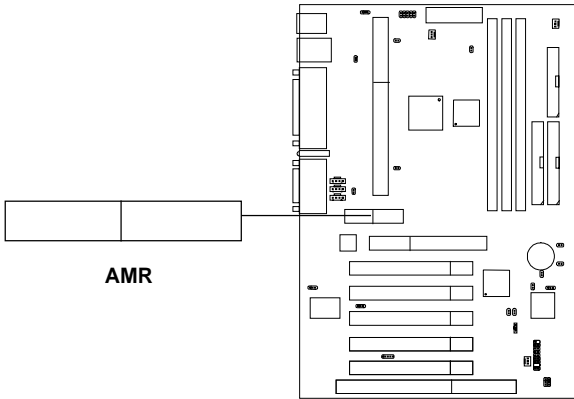


JP4	Function
	Enabled Onboard Audio
	Enabled AMC97 on AMR(Audio Modem Riser) Card

Note: Short pin 2-3 on JP4, to be able to use AMR card.

2.32 AMR

The Audio/Modem Riser specification is an open industry-standard specification that defines a hardware scalable Original Equipment Manufacturer (OEM) mainboard riser board and interface, which supports both audio and modem.



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 pages will describe how to enter BIOS setup, and all about options.

3.1 Enter BIOS Setup

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

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

```
AMIBIOS (C) 1999 American Megatrends Inc.  
AGIOMS VXXX XXXXXX
```

```
Hit <DEL> if you want to run setup
```

```
(C) American Megatrends Inc.  
61-XXXX-001169-00111111-071592-i82440FX-H
```

2. When the "Hit " message appears, press key to enter the BIOS setup screen.
3. After pressing key, the BIOS setup screen will appear.

Note: *If you don't want to modify CMOS original setting, then don't press any key during the system boot.*

```
AMIBIOS HIFLEX SETUP UTILITIES - VERSION 1.22
(C) 1999 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
Hardware Monitor Setup
Auto-Detect Hard Disks
Change User Password
Change Supervisor Password
Auto Configuration with Optimal Settings
Auto Configuration with Fail Safe Settings
Save Settings and Exit
Exit without Saving

Standard CMOS setup for changing time, hard disk type, etc.
```

4. Use the <Up> and <Down> key to move the highlight scroll up or down.
5. Use the <ENTER> key to select the option.
6. To exit, press <ESC>. To save and exit, press <F10>.
7. Section 3.2 to 3.7 will explain the option in more details.

3.2 Standard CMOS Setup

1. Press <ENTER> on “Standard CMOS Setup” of the main menu screen .

```

AMIBIOS SETUP - STANDARD CMOS SETUP
(C)1999 American Megatrends, Inc. All Rights Reserved
-----
Date (mm/dd/yyyy):      Fri March 20, 1999
Time (hh/mm/ss):        17:09:25

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

                Type  Size  Cyln  Head  WPcom  Sec   LBA   Blk   PIO   32Bit
Pri Master :Auto                ON   ON   AUTO  ON
Pri Slave  :Auto                ON   ON   AUTO  ON
Sec Master :Auto                ON   ON   AUTO  ON
Sec Slave  :Auto                ON   ON   AUTO  ON

Boot Sector Virus Protection Disabled

-----
Month   : Jan-Dec                ESC:Exit      :Sel
Day     : 01-31                  PgUp/PgDn:Modify
Year    : 1901-9999              F2/F3:Color

```

2. Use <Up> and <Down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.
3. After you have finished with the Standard CMOS Setup, press <ESC> to go back to the main menu.

3.3 Advanced CMOS Setup

1. Press <ENTER> on “Advanced CMOS Setup” of the main menu

AMIBIOS SETUP - ADVANCED CMOS SETUP		
(C) 1999 American Megatrends, Inc. All Rights Reserved		
Quick Boot	Enabled	Available Options:
1st Boot Device	Floppy	Disabled
2nd Boot Device	IDE 0	Enabled
3rd Boot Device	CD-ROM	
4th Boot Device	Disabled	
Try Other Boot Devices	Yes	
Floppy Access Control	Read-Write	
S.M.A.R.T. For Hard Disk	Disabled	
BootUp Num-Lock	On	
BIOS Flash Protection	Enabled	
Floppy Drive Swap	Disabled	
Floppy Drive Seek	Disabled	
PS/2 Mouse Support	Enabled	
Primary Display	VGA/EGA	
Password Check	Setup	
Boot to OS/2 > 64M	No	
CPU Serial Number	Enabled	
L1 Cache	Write Back	
L2 Cache	Write Back	
Cache Bus ECC	Enabled	
System BIOS Cacheable	Disabled	
C000, 32k Shadow	Disabled	
C800, 16k Shadow	Disabled	
CC00, 16k Shadow	Disabled	
D000, 16k Shadow	Disabled	
D400, 16k Shadow	Disabled	
D800, 16k Shadow	Disabled	
DC00, 16k Shadow	Disabled	
		ESC:Exit :Sel
		PgUp/PgDn:Modify
		F2/F3:Color

2. Use <Up> and <Down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.
3. After you have finished with the Advanced CMOS Setup, press <ESC> to go back to the main menu.

Description of the item on screen follows:**Quick Boot**

Set this option to Enabled to permit AMI® BIOS to boot within 5 seconds. This option replaces the old ABOVE 1 MB Memory Test option. The Optimal default setting is Enabled. The Fail-Safe default setting is Disabled.

1st Boot Device/2nd Boot Device/3rd Boot Device/4th Boot Device

This option sets the sequence of boot drives.

The settings are:

IDE0	The system will boot from the first HDD.
IDE1	The system will boot from the Second HDD.
IDE2	The system will boot from the Third HDD.
IDE3	The system will boot from the Fourth HDD.
Floppy	The system will boot from Floppy.
ZIP A:/LS120	The system will boot from ZIP, LS120.
ATAPI ZIP C	The system will boot from ZIP (ATAPI2).
SCSI	The system will boot from the SCSI.
Network	The system will boot from the Network drive.
CD-ROM	The system will boot from the CD-ROM.
Disable	Disable this sequence.

Try other Boot Devices

This option sets the other device boot, if all the Four Boot Devices failed.

Floppy Access Control

This option sets the Floppy to Read-only or Read-Write.

S.M.A.R.T. for Hard Disks

This option sets the SMART Function for the hard disk. The hard disk need to have SMART function for this feature to work.

Boot up Num Lock

When this option is set to Off, AMI® BIOS turns off the Num Lock key when the system is powered on. The end user can then use the arrow keys on both the numeric keypad and the keyboard. The settings are On or Off. The optimal default and Fail-Safe default settings are On.

BIOS Flash Protection

This item is used to protect BIOS from flashing. During Enabled, BIOS can be flash. During Disabled, you will unabled to flash the BIOS.

Note: If jumper JP1 is onboard. The BIOS will not display this item.

Floppy Drive Swap

Set this option to Enabled to specify that floppy drives A: and B: are swapped. The setting are Enabled and Disabled. The Optimal and Fail-Safe default settings are Disabled.

Floppy Drive Seek

When this option is set to Enabled, AMI® BIOS performs a Seek command on floppy drive A: before booting the system. The settings are Enabled and Disabled. The Optimal and Fail-Safe default settings are Disabled.

PS/2® Mouse Support

When this option is set to Enabled, AMI® BIOS supports a PS/2® mouse. The settings are Enabled and Disabled. The Optimal and Fail-Safe default settings are Enabled.

Primary Display

This option configures the primary display subsystem in the computer. The settings are Mono(monochrome), 40CGA, 80CGA or VGA/EGA. The optimal and Fail-Safe default settings are VGA/EGA.

Password Check

This option specifies the type of AMI® BIOS password protection that is implemented. The Optimal and Fail-Safe default settings are Setup.

Boot To OS/2® > 64MB

Set this option to Enabled to permit the BIOS to run properly, if OS/2® is to be used with > 64MB of DRAM. The settings are Enabled or Disabled. The Optimal and Fail-safe default settings are Disabled.

CPU Serial Number

This option is for Pentium III processor. During Enabled, this will check the CPU Serial number. Disabled this option if you don't want the system to know the Serial number.

L1 Cache

The default value is Write Back.

Write Back(default) Write Back cache.

Disabled Disabled cache.

L2 Cache

Choose Write Back or Write through or Disabled. This item default setting is Write Back the level 2 cache memory.

Cache Bus ECC

This option is for Pentium® II/III processor. During Enabled, this will affect the system performance. Disabled this option if you don't want to affect the system performance.

System BIOS Cacheable

AMI® BIOS always copies the system BIOS from ROM to RAM for faster execution. Set this option to Enabled to permit the contents of the F0000h RAM memory segment to be written to and read from cache memory. The settings are Enabled or Disabled. The Optimal default setting is Enabled. The Fail-Safe default setting is Disabled.

C000, 32K Shadow

These options specify how the contents of the video ROM are handled. The settings are:

Disabled - the Video ROM is not copied to RAM.

Cached - the contents of the video ROM from C0000h - C7FFFh are not only copied from ROM to RAM; it can also be written to or read from cache memory.

Shadow - the Contents of the video ROM from C0000h - C7FFFh are copied(shadowed) from ROM to RAM for faster execution.

The Optimal and Fail-Safe default setting is Cached.

**C8000, 16k Shadow/CC00, 16k Shadow/D000, 16k Shadow/
D400, 16k Shadow/D800, 16k Shadow/DC00, 16k Shadow**

These options specify how the contents of the adaptor ROM named in the option title are handled. The ROM area that is not used by ISA adapter cards will be allocated to PCI adapter cards. The settings are:

Disabled- The specified ROM is not copied to RAM.

Cache- The contents of the ROM area are not only copied from ROM to RAM for faster execution, it can also be written to or read from cache memory.

Shadow- The contents of the ROM area are copied from ROM to RAM for faster execution.

The Optional and Fail-Safe default settings are Disabled.

3.4 Advanced Chipset Setup

1. Press <ENTER> on “Advanced Chipset Setup” of the main menu screen.

AMIBIOS SETUP - ADVANCED CHIPSET SETUP		
(C) 1999 American Megatrends, Inc. All Rights Reserved		
SDRAM CAS Latency	3 sc1ks	Available Options: Disabled Enabled
Memory Hole	Disabled	
ICH Delayed Transaction	Disabled	
ICH DCB Enable	Disabled	
Graphics Aperture Size	64MB	
ClkGen Spread Spectrum	Enabled	
ClkGen for PCI Slot	Enabled	
USB Function	Enabled	
USB KB/Mouse Legacy Support	Disabled	

2. Use <Up> and <Down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.
3. After you have finished with the Advanced Chipset Setup, press <ESC> to go back to the main menu.

Description of the item on screen follows:**SDRAM CAS Latency**

This option determines the CAS latency time parameter of SDRAM. The settings are 2 clks or 3 clks or Auto. The setting Auto is determines from SPD. It is recommended that this be set to 3.

Memory Hole

This option allows the end user to specify the location of a memory hole(15MB-16MB). The cycle matching the selected memory hole will be passed to the ISA bus.

ICH Delayed Transaction

Select Enabled to compliance with PCI specification version 2.1. If some PCI can't work currently. The setting is Disabled.

ICH DCB Enabled

Select Enabled the LPC DMA device and PC/PCI DMA device collection buffer Enabled. The system performance is better. This item Disabled

Graphics Aperture Size

This option determines the effective size of the graphics aperture used in the particular MCM configuration. The AGP aperture is memory - mapped, while graphics data structure can reside in a graphics aperture. The aperture range should be programmed as not cacheable in the processor cache, accesses with the aperture range are forwarded to the main memory, then MCM will translate the original issued address via a translation table that is maintained on the main memory. The option allows the selection of an aperture size of 4MB,8MB,16MB,32MB,64MB,128MB and 256MB.

ClkGen Spread Spectrum

This item allows you to select the clock generator Spread Spectrum function for EMI. The default is enabled. This item should always be set to Disabled, if you over clock the processor.

ClkGen for PCI Slot

Select Enabled to allows close PCI clock, when PCI slot is not install any card. If you don't want to turn off clock, this item is setting Disabled.

USB Function

Set this option to Enabled or Disabled the on-chip USB controller. The Optional and Fail-Safe default setting are Disabled.

USB Keybd/Mouse Legacy Support

Set this option to Enabled or Disabled USB keyboard/mouse legacy support. The Optional and Fail-Safe default settings are Disabled.

3.5 Power Management Setup

1. Press <ENTER> on “Power Management Setup” of the main menu screen.

AMIBIOS SETUP - POWER MANAGEMENT SETUP		
(C) 1999 American Megatrends, Inc. All Rights Reserved		
Compliance With O/S	Yes	Available Options:
ACPI Sleep Type	S1/POS	Disabled
Power Management/APM	Enabled	Enabled
Green PC Monitor Power State	Stand By	
Video Power Down Mode	Suspend	
Hard Disk power Down Mode	Stand By	
Suspend Time Out (Minute)	Disabled	
Power Button Function	On/Off	
Reset Button Control	Enabled	
Green PC LED Status	Dual Color	
FAN Duty When Suspend	Stop	
Restore on AC/Power Loss	Last State	
Resume By Ring	Disabled	
Resume By LAN	Disabled	
Resume By PME# Function	Disabled	
Resume On RTC Alarm	Disabled	
RTC Alarm Date	15	
RTC Alarm Hour	12	
RTC Alarm Minute	30	
RTC Alarm Second	30	
CPU Critical Temperature	Disabled	
Throttle Slow Clock Ratio	50.0%	
--- System Power Event ---		
Keyboard & PS/2 Mouse Access	Monitor	
FDC/LPT/COM Ports Access	Monitor	
SB & MSS Audio Ports Access	Ignore	
MIDI Ports Access	Ignore	
ADLIB Ports Access	Ignore	
Primary Master IDE Access	Monitor	
Primary Slave IDE Access	Ignore	
Secondary Master IDE Access	Monitor	
Secondary Slave IDE Access	Ignore	
PIRQ[A] IRQ Active	Ignore	
PIRQ[B] IRQ Active	Ignore	
PIRQ[C] IRQ Active	Ignore	
PIRQ[D] IRQ Active	Ignore	
		ESC:Exit :Sel
		PgUp/PgDn:Modify
		F2/F3:Color

2. Use <Up> and <Down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.
3. After you have finished with the Power Management Setup, press <ESC> to go back to the main menu.

Description of the item on screen follows:**Compliance With O/S**

Set this option to Yes the operating system is support ACPI. The setting is No, the operating system is support APM.

ACPI Sleep Type

The settings are S1/POS or S3/STR.This item default is S1/POS.

S1/POS(Power On Suspend)

The S1/POS state is low power saving state. In this state, the system context will maintains all CPU, chipset and memory power.

S3/STR(Suspen to RAM)

The S3/STR state is system off and only maintains memory power off.

Power Management/APM

Set this option to Enabled to enable the chipset's power management features and APM(Advanced Power Management). The settings are Enabled. The Optimal and Fail-Safe default settings are Disabled.

Green PC Monitor Power State

This option specifies the power state that the green PC-compliant video monitor enters when AMI® BIOS places it in a power savings state after the specified period of display inactivity has expired. The settings are Off, Standby, Suspend. The Optional and Fail-Safe default settings are Standby.

Video Power Down Mode

This option specifies the power conserving state that the VESA VGA video subsystem enters after the specified period of display inactivity has expired. The settings are Disabled, Standby or Suspend. The Optimal and Fail-Safe default settings are Standby.

Hard Disk Power Down Mode

This option specifies the power conserving state that the hard disk drive enters after the specified period of hard drive inactivity has expired. The settings are Disabled, Standby or Suspend. The Optional and Fail-Safe default settings are Disabled.

Suspend TimeOut (Minute)

This option specifies the length of a period of system inactivity. When this length of time expires, the computer enters power conserving state (see the previous page). The settings are Disabled, 1 min, 2 min, 3 min, 4 min, 5 min, 6 min, 7 min, 8 min, 9 min, 10 min, 11 min, 12 min, 13 min, 14 min or 15 min. The Optimal and Fail-Safe default settings are Disabled.

Power Button Function

During Suspend, if you push the switch once, the system goes into suspend mode and if you push it more than 4 seconds, the system will be turned off. During On/Off, the system will turn off once you push the switch.

Reset Button Control

During Enabled, if system goes into suspend mode, push the Reset Button will not resume system. During Disabled, you can resume system at any time. This purpose is prevent Push Reset Button.

Note: If jumper JP1 is onboard. The BIOS will not display this item.

Green PC LED Status

This item determines which state the Green PC LED will use. The settings are Blinking or No Changed or Dual color. During Dual Color, the Green PC LED will change its color in suspend mode. During Blinking, the Green PC LED will blink LED in suspend mode. During No Changed, the Green PC LED will always remain lit.

FAN Duty When Suspend

When system support Hardware monitor Function, you can choose stop , 25%, 50%, 75%, or Full on control all of FAN at system goes into suspend mode.

When system contains no Hardware monitor Function, you only can choose stop or Full on.

Restore on AC/Power Loss

The settings are power on or power off or last status. During power on, after every AC power loss, the system will be turned on. During power off, after every AC power loss, the system will be turned off. During last status, after every AC power loss, whatever the system status, it will be the same when the AC power returns.

Resume by Ring

During Disabled, the system will ignore any incoming call from the modem. During Enabled, the system will boot up if there's an incoming call from the modem.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system. Then, power off the system. This function will work the next time you power on.

Resume by LAN

During Disabled, the system will ignore any incoming signal from the LAN network card. During Enabled, the system will boot up if there's an incoming signal from the LAN network card.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system. Then, power off the system. This function will work the next time you power on.

Resume by PME# Function

The setting is Enabled to compliance with PCI specification version 2.2 and PCI card have to be support. It can power on or resume from the PME# signal.

Resume On RTC Alarm

This function is for setting the Date, Hour, Minute, and Second for your computer to boot up. During Disabled, you cannot use this function. During Enabled, Choose the Date, Hour, Minute, and Second:

RTC Alarm Date	Choose which day the system will boot up.
RTC Alarm Hour	Choose which hour the system will boot up.
RTC Alarm Minute	Choose which minute the system will boot up.
RTC Alarm Second	Choose which second the system will boot up.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system. Then, power off the system. This function will work the next time you power on.

CPU Critical Temperature

This option is for setting the CPU temperature that would be critical enough, so that it would use the Thermal Slow Clock Ratio to cool down the CPU.

Throttle Slow Clock Ratio

This option specifies the speed at which the system clock runs in power saving states. The settings are expressed as a ratio between the normal CPU clock speed and the CPU clock speed when the computer is in the power-conserving state.

Keyboard&PS/2 Mouse Access/ FDC/LPT/COM Ports Access/ SB & MSS Audio Ports Access/ MIDI Ports Access/ ADLIB Ports Access/ Primary Master/Slave IDE Access / Secondary Master/Slave IDE Access/ PIRQ[A/B/C/D] IRQ Active

When set to Monitor, these options enabled event monitoring on the specified hardware interrupt request line. If set to Monitor and the computer is in a power saving state, AMI® BIOS watches for activity on the specified IRQ line. The computer enters the full on power state if any activity occurs.

AMI® BIOS reloads the Standby and Suspend timeout timers if activity occurs on the specified IRQ line.

3.6 PCI/Plug and Play Setup

1. Press <ENTER> on "PCI/Plug and Play Setup" of the main menu screen.

AMIBIOS SETUP - PCI/PLUG AND PLAY SETUP		
(C) 1999 American Megatrends, Inc. All Rights Reserved		
Plug and Play Aware O/S	No	Available Options:
Clear NVRAM	No	Enabled
PCI Latency Timer (PCI Clocks)	64	Disabled
Primary Graphics Adapter	AGP	
PCI VGA Palette Snoop	Disabled	
offBoard PCI IDE Card	Auto	
DMA Channel 0	PnP	
DMA Channel 1	PnP	
DMA Channel 3	PnP	
DMA Channel 5	PnP	
DMA Channel 6	PnP	
DMA Channel 7	PnP	
IRQ3	PCI/PnP	
IRQ4	PCI/PnP	
IRQ5	PCI/PnP	
IRQ7	PCI/PnP	
IRQ9	PCI/PnP	
IRQ10	PCI/PnP	
IRQ11	PCI/PnP	
IRQ14	PCI/PnP	
IRQ15	PCI/PnP	
Reserved Memory Size	Disabled	
Reserved Memory Address	C8000	
		ESC:Exit :Sel
		PgUp/PgDn:Modify
		F2/F3:Color

2. Use <Up> and <Down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.
3. After you have finished with the PCI/Plug and Play Setup, press <ESC> to go back to the main menu.

Description of the item on screen follows:

Plug and Play Aware O/S

Set this option to Yes if the operating system in this computer is aware of and follows the Plug and Play specification. Currently, the Windows is PnP-aware. The settings are Yes or No. The Optimal and Fail-Safe default settings No.

Clear NVRAM on Every Boot

During Yes, this will clear NVRAM data on every boot.

PCI Latency Timer (PCI Clocks)

This option specifies the latency timings (in PCI clocks) for all PCI devices on the PCI bus. The settings are 32, 64, 96, 128, 160, 192, 224 or 248. The Optimal and Fail-Safe default settings are 64.

Primary Graphics Adapter

This option is for selecting which VGA card is to be your primary display graphics adapter.

PCI VGA Palette Snoop

When this option is set to Enabled, multiple VGA devices operating on different buses can handle data from the CPU on each set of palette registers on every video device. Bit 5 of the command register in the PCI device configuration space is the VGA Palette Snoop bit (0 is disabled). For example, if there are two VGA devices in the computer (one PCI and ISA) and the Bit settings are:

Disabled - Data read and written by the CPU is only directed to the PCI VGA device's palette registers.

Enabled - Data read and written by the CPU is directed to both the PCI VGA device's palette registers and the ISA VGA device palette registers, permitting the palette registers of both devices to be identical.

This option must be set to Enabled if an ISA adapter card requires VGA palette snooping. The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are Disabled.

OffBoard PCI IDE Card

This option specifies if an off board PCI IDE controller adapter card is installed in the computer. You must specify the PCI expansion slot on the mainboard where the offboard PCI IDE controller is installed. If an offboard PCI IDE controller is used, the onboard IDE controller is automatically disabled. The settings are Auto(AMI® BIOS automatically determines where the offboard PCI IDE controller adapter card is installed), Slot1, Slot2, Slot3 or Slot4. The Optimal and Fail-Safe settings are Auto.

If an off board PCI IDE controller adapter card is installed in the computer, you must also set the Offboard PCI IDE Primary IRQ and Offboard PCI IDE Secondary IRQ options.

DMA Channel 0/1/3/5/6/7

These options specify the bus that the specified DMA channel is used. These options allow you to reserve DMAs for legacy ISA adapter cards.

These options determine if AMI® BIOS should remove a DMA from the available DMAs passed to devices that are configurable by the system BIOS. The available DMA pool is determined by reading the ESCD NVRAM. If more DMAs must be removed from the pool, the end user can use these options to reserve the DMA by assigning an ISA/EISA setting to it.

IRQ3/IRQ4/IRQ5/RQ7/IRQ9/IRQ10/IRQ11/IRQ14/IRQ15

These options specify the bus that the specified IRQ line is used on. These options allow you to reserve IRQs for legacy ISA adapter cards.

These options determine if AMI® BIOS should remove an IRQ from the pool of available IRQs passed to devices that are configurable by the system BIOS. The available IRQ pool is determined by reading the ESCD NVRAM. If more IRQs must be removed from the pool, the end user can use these options to reserve the IRQ by assigning an ISA/EISA setting to it. Onboard I/O is configured by AMI® BIOS. All IRQs used by onboard I/O

are configured as PCI/PnP. If all IRQs are set to ISA/EISA and IRQ14 and 15 are allocated to the onboard PCI IDE, IRQ9 will still be available for PCI and PnP devices, because at least one IRQ must be available for PCI and PnP devices. The settings are ISA/EISA or PCI/PnP. The Optimal and Fail-Safe default settings are IRQ3 through 7 are ISA/EISA. The Optimal and Fail-Safe default settings PCI/PnP.

Reserved Memory Size

This option specifies the size of the memory area reserved for legacy ISA adapter cards. The settings are Disabled, 16K, 32K or 64K. The Optimal and Fail-Safe default settings are Disabled.

Reserved Memory Address

This option specifies the beginning address(in hex) of the reserved memory area. The specified ROM memory area is reserved for use by legacy ISA adapter cards.

3.7 Peripheral Setup

1. Press <ENTER> on “Peripheral Setup” of the main menu screen.

AMIBIOS SETUP - PERIPHERAL SETUP		
(C) 1999 American Megatrends, Inc. All Rights Reserved		
Onboard FDC	Auto	Available Options: Auto Disabled Enabled
Onboard Serial Port A	Auto	
Onboard Serial Port B	Auto	
Serial Port B Mode	Normal	
IR Duplex Mode	N/A	
IR Pin Select	N/A	
Onboard CIR Port	Disabled	
CIR IRQ Select	10	
Onboard Parallel Port	Auto	
Parallel Port Mode	ECP	
EPP Version	N/A	
Parallel Port IRQ	Auto	
Parallel Port DMA Channel	Auto	
Onboard Midi Port	290	
Midi IRQ Select	9	
Onboard Game Port	200	
Keyboard PowerOn Function	Disabled	
Specific Key for Power On	N/A	
Mouse PowerOn Function	Disabled	
OnBoard IDE	Both	
OnBoard Audio	Enabled	
OnBoard AC'97 Modem	Disabled	ESC:Exit :Sel
OnBoard LAN Controller	Enabled	PgUp/PgDn:Modify F2/F3:Color

2. Use <up> and <down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.
3. After you have finished with the Peripheral Setup, press <ESC> to go back to the main menu.

Description of the item on screen follows:

Onboard FDC

Choose Auto, for the BIOS to automatically detect the device

If the ISA add-on card has	Onboard FDC to be set at
FDC exist	Disabled
none FDC exist	Enabled

Choose Enabled, Enabling onboard FDC.

Choose Disabled, Disabling onboard FDC.

The Optimal and Fail-Safe default settings are Auto.

Onboard Serial Port A/Onboard Serial Port B

Choose 3F8, for the BIOS to automatically detect the device.

If the ISA add-on card has				Onboard Serial port to be set at			
COM1 (I/O:3F8H)	COM2 (I/O:3F8H)	COM3 (I/O:3E8H)	COM4 (I/O:2E8H)	PORT1	IRQ ASSIGNED	PORT2	IRQ ASSIGNED
✓	✓	✓	✓	DISABLED	X	DISABLED	X
✓	✓	X	X	COM3	4	COM4	3
X	X	✓	✓	COM1	4	COM2	3
✓	X	X	✓	COM2	3	COM3	4
X	✓	✓	X	COM1	4	COM4	3
✓	✓	✓	X	COM4	3	DISABLED	X
✓	✓	X	✓	COM3	4	DISABLED	X
✓	X	✓	✓	COM2	3	DISABLED	X
X	✓	✓	✓	COM1	4	DISABLED	X
X	X	X	X	COM1	4	COM2	3
✓	X	X	X	COM2	3	COM3	4
X	✓	X	X	COM1	4	COM3	4
X	X	✓	X	COM1	4	COM2	3
X	X	X	✓	COM1	4	COM2	3

Note: *If the onboard serial port interrupt and ISA add-on card interrupt are in conflict, the serial port will not work properly. Please disable one of the devices.*

Serial PortB Mode

Choosing Normal will set the Serial Port B for normal use, not for IR device. Choosing IrDA or Ask IR will set it for use with IR device using these protocols.

IR Duplex Mode

Can be set as either Half or Full duplex.

IR Pin Select

Set this option to IRRX/IRTX when using an internal IR device which is connected to IR1 connector.

Onboard CIR Port

Setting Enabled, the system support consuem IR and yor device have to be connect to J6 conntor.

CIR IRQ Select

Select IRQ 3, 4, 9, 10 or 11 to support CIR Interrupt.

Onboard Parallel Port

Choose Auto, the BIOS automatically assigned onboard parallel port to the available parallel port or disabled.

If the ISA add-on card has			Onboard parallel port to be set as	
LPT1 I/O:378H	LPT2 I/O:278H	LPT3 I/O:3BCH	PORT ASSIGNED	IRQ ASSIGNED
✓	✓	✓	Disabled	X
✓	✓	X	LPT3	5
✓	X	✓	LPT2	5
X	✓	✓	LPT1	7
✓	X	X	LPT2	5
X	✓	X	LPT1	7
X	X	✓	LPT1	7
X	X	X	LPT1	7

Note: *If the onboard parallel port interrupt and ISA add-on card interrupt are in onflict, the parallel port will not work properly. Please disable one of the devices.*

Parallel Port Mode

This option allows user to choose the operating mode of the onboard parallel port. The settings are Normal, Bi-Direct/EPP or ECP mode.

EPP Version

This option is for setting which EPP version will be used. The settings are 1.7 and 1.9.

Parallel Port IRQ

If the onboard parallel mode is not on auto mode, the user can select the interrupt line for onboard parallel port. We suggest that the user select the interrupt for the onboard parallel port as shown below:

Onboard parallel port set at	Parallel Port IRQ
LPT1(378H)	7
LPT2(278H)	5
LPT3(3BCH)	5

Parallel Port DMA Channel

This option allows user to choose DMA channel 1 to 3 for the onboard parallel port on ECP mode.

Onboard Midi Port

Choose 290H, 292H, 300H, 330H, support MIDI device.

MIDI IRQ Select

Choose 5, 7, 9, 10, support MIDI device interrupt.

Onboard GAME Port

Choose 200H, 208H, support Joystick device

Note: If onboard is Hardware Audio, no display this item in the peripheral setup.

Keyboard Power on Function

This function allows you to Enabled or Disabled the Keyboard Power On. The default setting is Disabled.

Specific Key for Power On

If keyboard power on function choose specific key.

Note: The specific Key can input specific password, it maximum can't over 5 words.

Mouse Power on Function

This function allows you to Disabled ,Left-button or Right-button Mouse Power on. The default setting is Disabled.

Onboard IDE

Set this option to enable or disable on board IDE controller.

Onboard Audio/Onboard AC'97 Modem

This item allows you to decide to enable/disable the Intel 810 chipset family to support AC97 Audio/Modem. The settings are Enabled, Disabled.

Onboard LAN Controller

This item allows you to Enabled or Disabled. Choose "Enabled" to use the onboard LAN Controller for accessing the RJ-45. Otherwise choose "Disabled" to use the add-on LAN Card.

3.8 Hardware Monitor Setup (optional)

The Hardware Monitor Setup is used to set the CPU speed and monitor the current CPU Temperature, CPU Fan speed, Chassis Fan Speed, Power fan speed, Vcore, etc.

1. Press <ENTER> on “Hardware Monitor Setup” of the main menu screen.

AMIBIOS SETUP - HARDWARE MONITOR SETUP		
(C) 1999 American Megatrends, Inc. All Rights Reserved		
CPU Ratio Selection	3.0X	Available Options:
CPU Host Clock(Mhz)	100	Manual
CPU Voltage(V)	Auto	Auto
--- System Hardware Monitor ---		
Chassis Intrusion	Disabled	
Current CPU Temperature	39°C/102°F	
Current System Temperature	35°C/95°F	
Current Ultra Temperature	Not Present	
Current CPU Fan Speed	0 RPM	
Current Chassis Fan Speed	0 RPM	
Current Power Fan Speed	4218 RPM	
CPU VID	1.80V	
Vcore	1.600V	
Vtt	1.456V	
Vio	3.232V	
+5,000V	5.113V	
+12,000V	11.619V	
-12,000V	-11.989V	ESC:Exit :Sel
-5,000V	-5.077V	PgUp/PgDn:Modify
Battery	3.152V	F2/F3:Color
+5V SB	4.775V	

2. Use <Up> and <Down> to choose the item and <PgUp> and <PgDn> keys to modify the highlighted item.
3. After you have finished with the PCI/Plug and Play Setup, press <ESC> to go back to the main menu.

Chapter 4

CREATIVE AUDIO DRIVER

1. Creative CT5880

The Creative® CT5880 digital controller provides the next generation of audio performance to the PC market

1.1 Features

- SoundScape WaveTable Synthesizer.
- Full DOS Game Compatibility.
- PCI Bus Master for fast DMA.
- Fully Compliant with PC97 Power Management Specification.

1.2 System Requirements

This section describes system requirements for the Audio Driver installation and Usage.

Computer	Intel® Pentium® II/III or Coppermine processor or higher
Operating system	DOS 5.0 or higher, Windows® 95, Windows® 98, Windows® NT 3.51 or 4.0, or OS/2®
CD-ROM	Double Speed or Higher
Chipset	Creative® CT5880

1.3 Audio Driver Setup

Insert the CD-title into your CD-ROM drive. This CD will auto-run. This will display installation for Microsoft DirectX6, Creative Audio PCI Sound Drivers and VIA chipset. Please make sure that you have finished the installation for VIA Chipset Drivers before proceeding to install the Audio Driver. To install the audio driver, click on the button for automatic installation.

1.3-1 Windows® 95/98

If you start Windows® 95/98, this will automatically detect this hardware onboard “PCI Multimedia Audio Device” and “Gameport Joystick”. You need to click “Next”, then “Finish”. Do not click on the “Cancel”. The driver need these ID.

Audio Driver Installation Procedure:

- Step 1:** Insert the provided CD_ROM disk into the CD-ROM drive.
- Step 2:** Look for the CD_ROM drive, double click on the CD_ROM icon. This will show the setup screen.
- Step 3:** Click on “CREATIVE Audio PCI” sound drivers icon.
- Step 4:** This will copy the audio drivers into the hard drive.
- Step 5:** A message will appear stating you must restart the Windows® 95/98 system, select **yes** to restart.

Note: You must install Audio Driver before installing USB support.

1.3-2 Windows® NT 4.0

Audio Driver Installation Procedure:

- Step 1:** Click **Start** menu and select **Control Panel** from **Settings** group.
- Step 2:** Select **Multimedia** icon.
- Step 3:** Click on the **Devices** tab.
- Step 4:** Click **Add**.
- Step 5:** Double click on **Unlisted or Updated Driver** in the list.
- Step 6:** Insert the **CD-ROM Disk** into the CD-ROM Drive.
- Step 7:** When the Install from Disk dialog box appears, look for your CD-ROM drive :**\Sound\Creative\AudioPCI\Audio\NT40\English\NT4drv**
- Step 8:** Click **OK**.
- Step 9:** Click **OK**.
- Step 10:** A message will appear stating that the drivers were successfully installed. Click **OK**. You must now restart Windows® NT 4.0.

1.4 Detailed User's Manual

The detailed user's manual can be found on following path of the CD-ROM provided:

PATH: Sound\Creative\AudioPCI\Docs\Manual.doc

Chapter 5

INTEL® 82559 FAST ETHERNET LAN DRIVER

1. Overview

The 82559 is a sophisticated 32-bit PCI component, with enhanced scatter-gather bus mastering capabilities. Its true 32-bit architecture enables it to perform high speed data transfers on the PCI bus using four DMA channels.

1.1 Features

- IEEE 802.3/802.3u 10BASE-T and 100BASE-TX compatible
- Glueless 32-bit PCI bus master interface
- Backward software compatible to the 82557
- Internal transmit and receive FIFOs (3 kbytes each)
- Back-to-back transmit at 100 Mbps within minimum IFS
- EEPROM support for configuration and customized feature selection
- Advanced configuration and Power Interface Specification, Revision 1.0, and PCI Power Management Specification, Revision 1.0 compliant
- Remote Wake Up (Magic Packet*) support in APM and ACPI modes
- ACPI “interesting” packet wake support in D0 to D3 low power states
- IEEE 802.3u Auto-Negotiation support for 10BASE-T and 100BASE-TX
- Full or half duplex capable at 10 or 100 Mbps
- IEEE 802.3x flow control support

2. LAN Driver Setup

2.1 Windows® 95

To install the driver, just insert the provided CD-ROM into the CD-ROM drive. The CD-ROM will autorun. Press the button for installing the LAN driver.

2.2 Other OS driver

To install the driver for other operating system, just insert the provided CD-ROM into the CD-ROM drive.

Type:

CD-ROM Path:\E100B\Setup/readme

This will show different procedure for the installation of LAN driver for different kind of operating system. Just follow the procedures given.