
Introduction

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The MS-6365 ATX mainboard is a high-performance computer mainboard based on Apollo Pro266 chipset. The MS-6365 is designed for the Intel® Celeron™ Pentium® II/III or Coppermine (FC-PGA) & VIA Cyrix III processor for inexpensive business/personal desktop markets.

The Apollo Pro266 chipset consists of the VT8633 V-Link/DDR Host system controller and the VT8233 highly integrated V-Link/Client PCI/LPC controller. The VT8633 provides superior performance between the CPU, DRAM, AGP bus and V-Link interface with pipelined, burst, and concurrent operation and supports eight banks of SDR/DDR SDRAMs up to 4 GB and full AGP v2.0 capability including 2x and 4x mode transfers, SBA (SideBand Addressing), Flush/Fence commands, and pipelined grants.

The VIA® VT8233 South Bridge enhances the functionality of the standard ISA peripherals and supports delayed transactions and remote power management so that slower ISA peripherals do not block the traffic of the PCI bus. In addition, the VT8233 includes eight levels (doublewords) of line buffers from the PCI bus to the ISA bus to further enhance overall system performance.

This chapter contains the following topics:

Mainboard Specifications	1-2
Mainboard Layout	1-4
Key Features	1-5
MSI Special Features	1-6

CHAPTER 1

Mainboard Specification

CPU

- Support Socket 370 for Intel® Celeron/ Pentium®II/III(FC-PGA) processor or VIA Cyrix III/Samuel processor
- Support 433MHz, 466MHz, 500MHz, 533MHz, 566MHz, 600MHz, 733MHz, 850MHz, 866MHz, 933MHz, 1GHz or higher

Chipset

- VIA® VT8633 chipset (552 BGA)
 - support 66/100/133 FSB
 - AGP 4x and Vlink plus Advanced Memory Controller
 - Support PC200/266 DDR technology
- VIA® VT8233 chipset (376 BGA)
 - High Bandwidth Vlink Client controller
 - Integrated Faster Ethernet LPC
 - Integrated Hardware Sound Blaster/Direct Sound AC97 audio
 - Ultra DMA 33/66/100 master mode PCI EIDE controller
 - ACPI

Clock Generator

- 66.6MHz, 100MHz and 133MHz clocks are supported.

Main Memory

- Support six memory banks using three 184-pin DDR DIMM.
- Support a maximum memory size of 3GB.

Slots

- One AGP (Accelerated Graphics Port) PRO slot.
 - AGP v2.0 specification compliant
- One CNR (Communication Network Riser) slot.
- Six 32-bit Master PCI Bus slots.
- Supports 3.3V/5V PCI bus Interface.

On-Board IDE

- An IDE controller on the VIA® VT8233 Chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA 33/66/100 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 ports (COMA + COMB)
 - 1 parallel port supports SPP/EPP/ECP mode
 - 6 USB ports (2 rear connector and 2 USB front pin header-4 USB ports)
 - 1 IrDA connector for SIR/CIR/ASKIR
 - 1 Audio/Game Port

Audio

- Chip integrated

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.

Dimension

- ATX Form Factor

Mounting

- 6 mounting holes.

Key Features

- PC99 Color Connector
- ATX Form Factor
- Support Accelerated Graphic Port (AGP) Pro Add-In Card
- Support Intel® Pentium III(FC-PGA) processors or VIA Cyrix III/Samuel processor at 100MHz and 133MHz System Bus Frequencies
- PC Alert™ III (System Hardware Monitor)
- TCAV (Build-in Trend Micro Anti-Virus Protection on BIOS)
- Support DMI (Desktop Management Interface) through BIOS
- LAN Wake Up Function
- Modem (Internal/External) Ring Wake Up Function
- Support Ultra DMA/ATA33/66/100
- CNR (Communication Network Riser)
- TI® 1394 support up to 400Mbps (option)
- USB PC to PC Function (option)

CHAPTER 1

MSI Special Features

The following MSI special features are designed by MSI R&D which are features only in MSI mainboards. The MS-6365 mainboard is equipped with PC Alert™ III, TOP Tech.™ III and D-LED™.

T.O.P TechIII™

The T.O.P Tech™ is an extended sensing device that can 100% accurately detect the CPU's temperature. You can see the temperature on BIOS setup menu. The PC Alert™ also can provide the information.



CPU temperature on Setup menu

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
PC Health Status

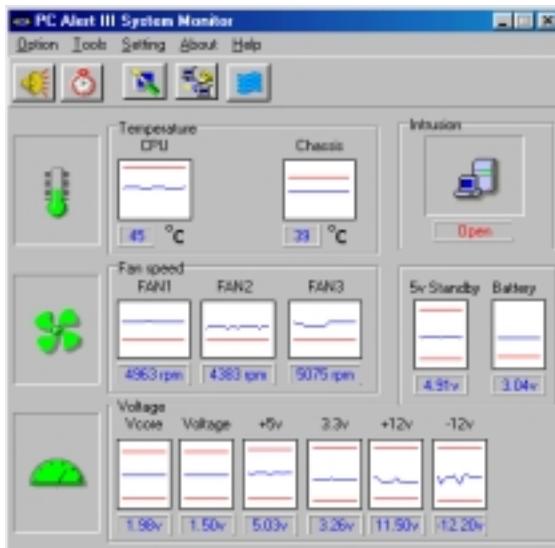
Current CPU Temp.	Item Help
Current System Temp.	
Current CPUFAN Speed	Menu Level >
Current SYSFAN Speed	
Vcore	
2.5V	
3.3V	
5V	
12V	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults	

PC Alert™ III

The PC Alert™ III is a utility you can find in the CD-ROM. The utility is just like your PC doctor that can detect the following PC hardware status during real time operation:

- * monitor CPU & system temperature
- * monitor fan speed
- * monitor system voltage
- * monitor chassis intrusion

If one of the items above is abnormal, the program main screen will be immediately shown on the screen, with the abnormal item highlighted in red. This will continue to be shown until user disables warning.



CHAPTER 1

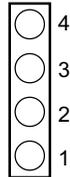


Features:

- Network Management
 - Monitoring & remote control
- Basic System Utilities
 - Scandisk & Defragment to maintain your HDD
- 3D Graphics Design
 - Enables a more friendly user interface
- Software Utilities
 - SoftCooler Optimized Cooling
 - Doctor Y2K diagnoses Y2K problems
 - BusRacing function adjusts F.S.B under Windows 95/98
 - MoSpeed speeds up your modem transmission

D-LED™

The D-LED™ uses graphic signal display to help users understand their system. Four LEDs embedded in the mainboard provide up to 16 combinations of signals to debug the system. The 4 LEDs can debug all problems that fail the system, such as VGA, RAM or other failures. This special feature is very useful for the overclocking users. These users can use the feature to detect if there are any problems or failures.



● Red ○ Green

Diagnostic LED

D-LED	Description
<p>1 2 3 4</p>	<p>System Power ON</p> <p>- The D-LED will hang here if the processor is damaged or not installed properly.</p>
	<p>Early Chipset Initialization</p>
	<p>Memory Detection Test</p> <p>- Testing onboard memory size. The D-LED will hang if the memory module is damaged or not installed properly.</p>
	<p>Decompressing BIOS image to RAM for fast booting.</p>
	<p>Initializing Keyboard Controller.</p>
	<p>Testing VGA BIOS</p> <p>- This will start writing VGA sign-on message to the screen.</p>

CHAPTER 1

	<p>Processor Initialization</p> <p>- This will show information regarding the processor (like brand name, system bus, etc...)</p>
	<p>Testing RTC (Real Time Clock)</p>
	<p>Initializing Video Interface</p> <p>- This will start detecting CPU clock, checking type of video onboard. Then, detect and initialize the video adapter.</p>
	<p>BIOS Sign On</p> <p>- This will start showing information about logo, processor brand name, etc....</p>
	<p>Testing Base and Extended Memory</p> <p>- Testing base memory from 240K to 640K and extended memory above 1MB using various patterns.</p>
	<p>Assign Resources to all ISA.</p>
	<p>Initializing Hard Drive Controller</p> <p>- This will initialize IDE drive and controller.</p>
	<p>Initializing Floppy Drive Controller</p> <p>- This will initializing Floppy Drive and controller.</p>
	<p>Boot Attempt</p> <p>- This will set low stack and boot via INT 19h.</p>
	<p>Operating System Booting</p>

2

Hardware Setup

This chapter provides you with the information about hardware setup procedures. During installation, be careful when handling the components and follow the installation procedures properly. For some components, installing it in a wrong orientation will cause it to become unstable.

Remember to use a grounded wrist strap before handling computer components. Static electricity may damage the components.

This chapter contains the following topics:

Central Processing Unit (CPU)	2-2
Memory Installation	2-4
Back Panel	2-7
Connectors	2-12
Power Supply	2-21
Jumpers	2-24
Slots	2-31

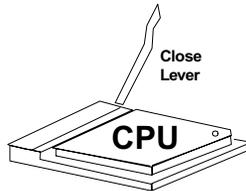
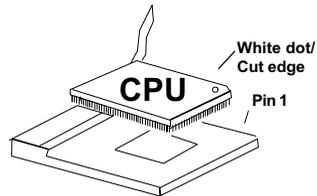
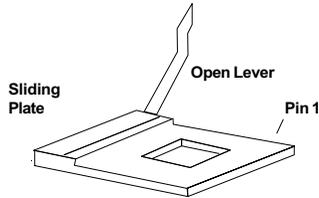
CHAPTER 2

Central Processing Unit: CPU

The mainboard operates with **Intel® Celeron™ Pentium® II/III (FC-PGA) processor**. The mainboard uses a CPU socket called Socket 370 for easy CPU installation. The CPU should always have a Heat Sink and a cooling fan attached to prevent overheating.

• CPU Installation Procedures

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.



- **CPU Core Speed Derivation Procedure**

The BIOS can be used to set the CPU Host Bus Frequency Clock.

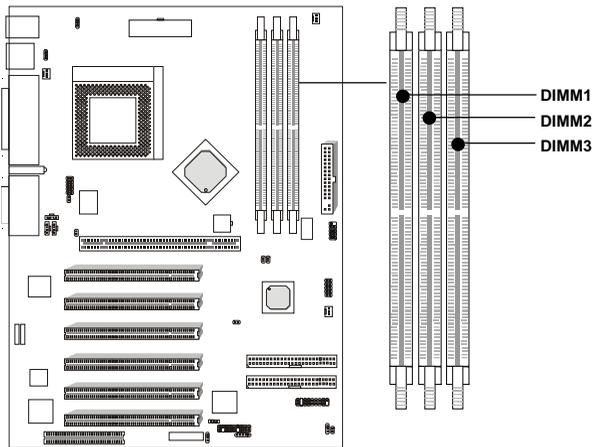
if CPU Clock = 100MHz
Core/Bus ratio = 7
then CPU core speed = Host Clock x Core/Bus ratio
= 100MHz x 7
= 700MHz

CHAPTER 2

Memory Installation

• Memory Bank Configuration

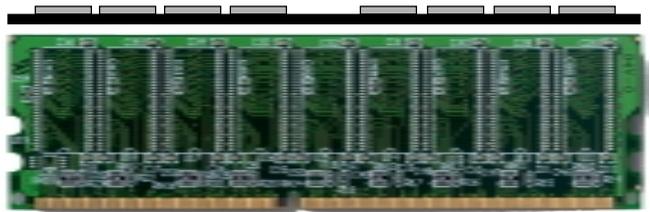
The mainboard supports a maximum memory size of 3GB. It provides three 184-pin **unbuffered** DIMMs (Double In-Line Memory Module) sockets. It supports 64 MB to 1 G Mbytes DIMM memory module.



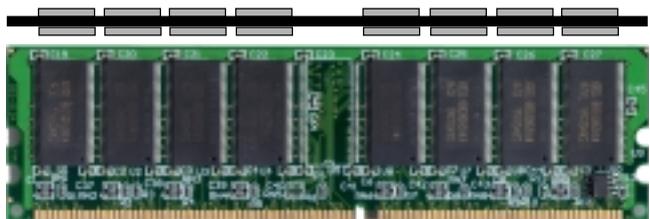
There are two kinds of DIMM specification supported by this mainboard: DDR266 & DDR200. If you use 66MHz CPU Bus Frequency, PC200 DIMM Specs. is supported. If you use 100 MHz CPU Bus Frequency, PC200 and PC266 DIMM Specs. are supported. If you use 133MHz CPU Bus Frequency, PC200 and PC266 DIMM Specs. will be supported

• **Memory Installation Procedures**

How to install a DIMM Module

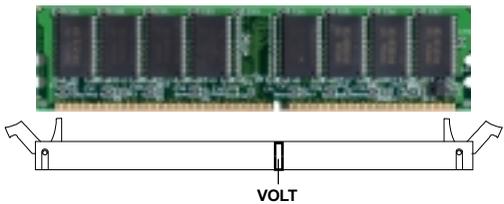


Single Sided DDR DIMM



Double Sided DDR 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.

CHAPTER 2

• Memory Population Rules

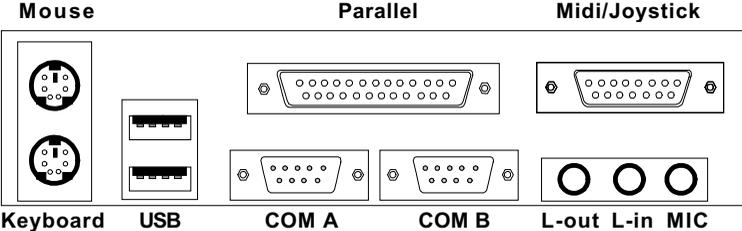
1. Supports only DDR DIMM.
2. To operate properly, at least one 184-pin DIMM module must be installed.
3. This mainboard supports Table Free memory, so memory can be installed on DIMM1, DIMM 2 or DIMM 3 in any order.
4. Supports 2.5 volt DIMM.

• DDR Memory Addressing

DRAM Tech.	DRAM Density & Width	DRAM Addressing	Address Size		MB/DIMM	
			Row	Column	Single no. Side(S) pcs.	Double no. Side(D) pcs.
16M	1Mx16	ASYM	11	8	8MBx4	16MBx8
	2Mx8	ASYM	11	9	16MBx8	32MBx16
	4Mx4	ASYM	11	10	32MB	64MB
64M	2Mx32	ASYM	11	9	32MBx2	64MBx4
	2Mx32	ASYM	12	8	16MBx2	32MBx4
	4Mx16	ASYM	11	10	32MB	64MB
	4Mx16	ASYM	13	8	32MB	64MB
	8Mx8	ASYM	13	9	64MB	128MB
64M	16Mx4	ASYM	13	10	128MB	256MB
	2Mx32	ASYM	12	8	16MB	32MB
	4Mx16	ASYM	13	8	32MB	64MB
	8Mx8	ASYM	13	9	64MB	128MB
	16Mx4	ASYM	13	10	128MB	256MB

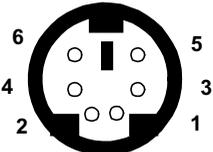
Back Panel

The mainboard provides the following back panel connectors:



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.



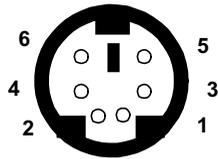
PS/2 Mouse (6-pin Female)

PIN	SIGNAL	DESCRIPTION
1	Mouse DATA	Mouse DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Mouse Clock	Mouse clock

CHAPTER 2

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.

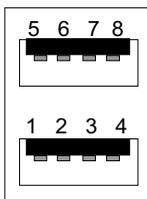


PS/2 Keyboard (6-pin Female)

PIN	SIGNAL	DESCRIPTION
1	Keyboard DATA	Keyboard DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Keyboard Clock	Keyboard clock
6	NC	No connection

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.

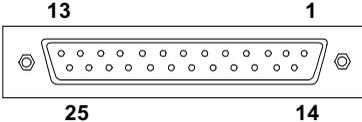


USB Ports

PIN	SIGNAL	DESCRIPTION
1	VCC	+5V
2	-Data 0	Negative Data Channel 0
3	+Data 0	Positive Data Channel 0
4	GND	Ground
5	VCC	+5V
6	-Data 1	Negative Data Channel 1
7	+Data 1	Positive Data Channel 1
8	GND	Ground

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:

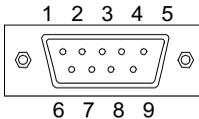


PIN	SIGNAL	DESCRIPTION
1	STROBE	Strobe
2	DATA0	Data0
3	DATA1	Data1
4	DATA2	Data2
5	DATA3	Data3
6	DATA4	Data4
7	DATA5	Data5
8	DATA6	Data6
9	DATA7	Data7
10	ACK#	Acknowledge
11	BUSY	Busy
12	FE	Paper End
13	SELECT	Select
14	AUTO FEED#	Automatic Feed
15	ERR#	Error
16	INIT#	Initialize Printer
17	SLIN#	Select In
18	GND	Ground
19	GND	Ground
20	GND	Ground
21	GND	Ground
22	GND	Ground
23	GND	Ground
24	GND	Ground
25	GND	Ground1

CHAPTER 2

Serial Port Connectors: COM A and COM B

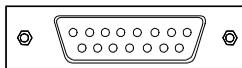
The mainboard provides two 9-pin male DIN connectors for serial port COM A & COM B. These port are 16550A high speed communication port that send/receive 16 bytes FIFOs. You can attach a mouse or a modem cable directly into this connector.



PIN	SIGNAL
1	DCD (Data Carry Detect)
2	SIN (Serial In or Receive Data)
3	SOUT (Serial Out or Transmi 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)

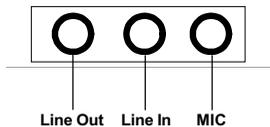
Joystick/Midi Connectors

You can connect a joystick or game pad to this connector.



Audio Port Connectors

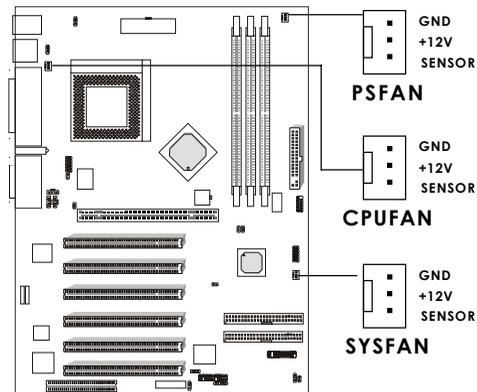
Line Out is a connector for Speakers or Headphones. **Line In** is used for external CD player, Tape player, or other audio devices. **Mic** is a connector for the microphones.



Connectors

Fan Power Connectors: PSFAN/CPUFAN/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 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.

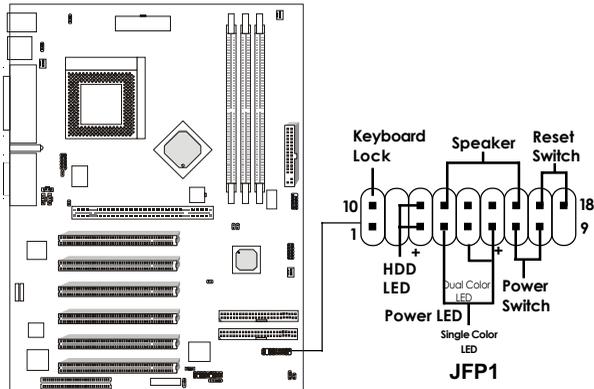
Note:

1. Always consult your reseller 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.

CHAPTER 2

Case Connector: JFP1

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



Power Switch

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

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.

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).

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

Speaker

Speaker from the system case is connected to this pin.

If on-board Buzzer is available:

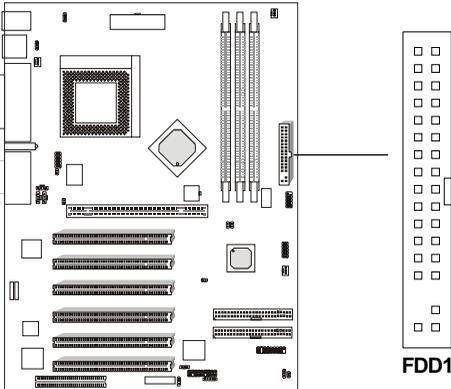
- Short pin 14-15: On-board Buzzer Enabled.
- Open pin 14-15: On-board Buzzer Disabled.

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.

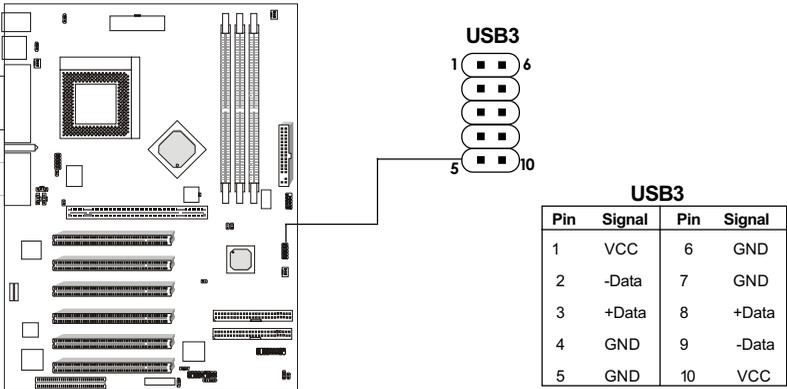
Floppy Disk Connector: FDD1

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.



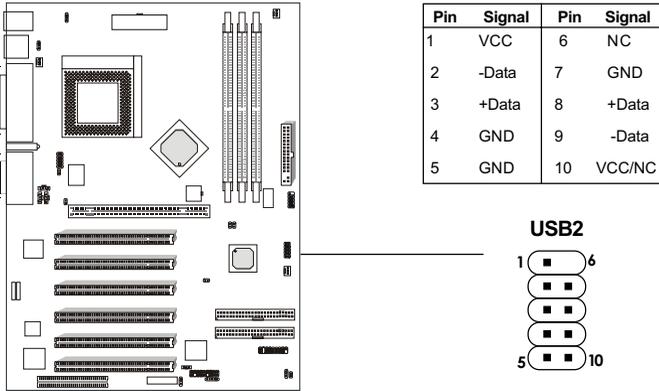
USB Front Connectors: USB2 & USB3

The mainboard provides two front Universal Serial Bus connectors USB 2 & USB3.



CHAPTER 2

The USB2 can be used for USB PC to PC communication network (option).
The pin 10 will be NC while USB2 is used for USB PC to PC function.



USB PC to PC Networking feature allows users to transfer and receive data from other computers or share system resources with other computers without using any network adapter. See below for instructions.

To Attach the USB PC to PC cable

1. Check whether the package includes the following items. If any is missing, contact your dealer.



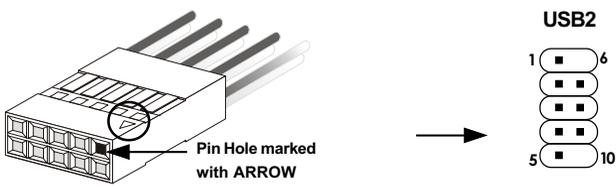
USB PC to PC Bracket



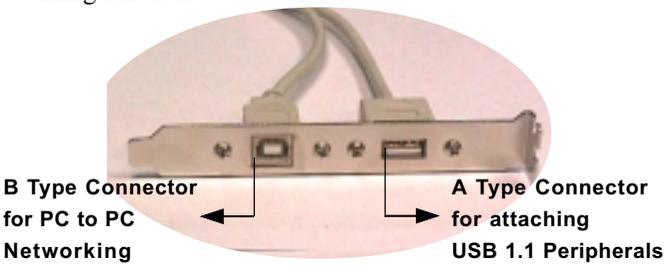
USB PC to PC Cable

HARDWARE SETUP

- 2. Connect the USB Bracket cable to the USB2 pin header on the mainboard. Locate the pin hole marked with the ARROW on the connector of USB Bracket and Pin# 6 of USB2. Then align the pin hole with Pin# 6 to attach the USB Bracket.

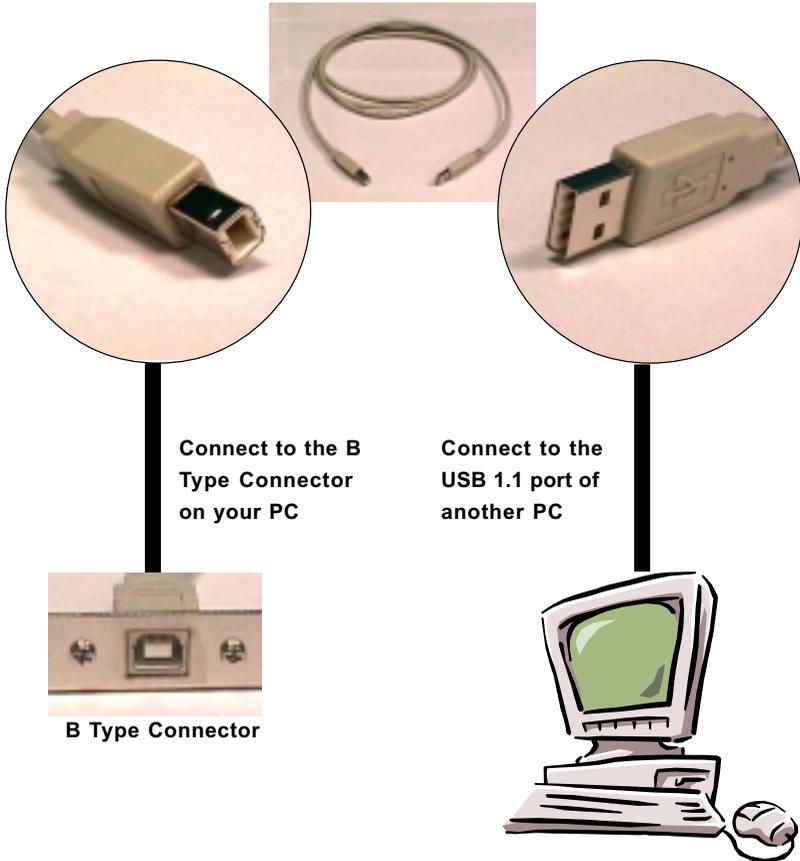


- 3. Identify the **B Type Connector** on the bracket used for PC to PC Networking function.



CHAPTER 2

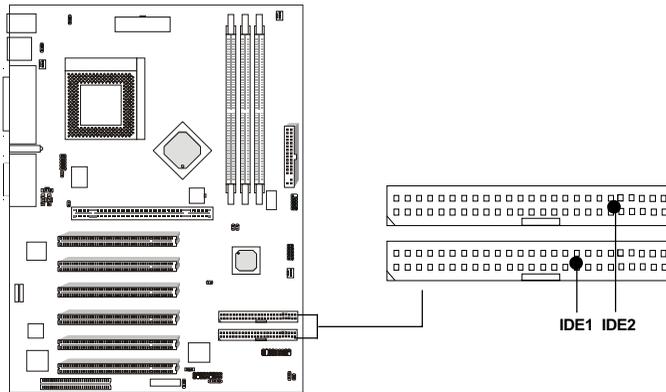
4. Connect your PC to another PC via USB PC to PC cable. The transfer rate will run at USB 1.1 speed (12Mbps/s)



For more information on USB PC to PC Networking function, please refer to Appendix: USB PC to PC Networking Function.

Hard Disk Connectors: IDE1 & IDE2

The mainboard has a 32-bit Enhanced PCI IDE and Ultra DMA/100 Controller that provides PIO mode 0~4, Bus Master, and Ultra DMA/33/66/100 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.

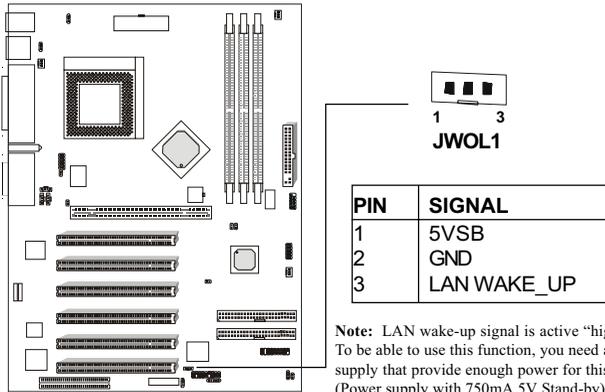
IDE2 (Secondary IDE Connector)

IDE2 can also connect a Master and a Slave drive.

CHAPTER 2

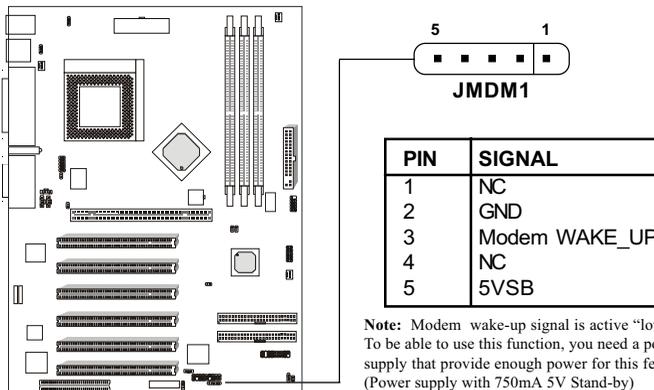
Wake-Up on LAN Connector: JWOL1

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.



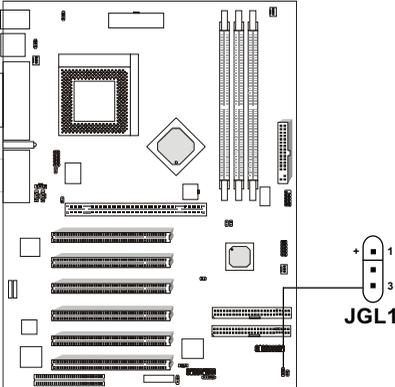
Modem Wake Up Connector: JMDM1

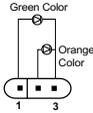
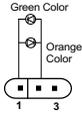
The JMDM1 connector is for use with Modem add-on card that supports the Modem Wake Up function.



Power Saving LED Connector: JGL1

JGL1 can be connected with dual color LED. There are two types of LED that you can use: 3-pin LED or 2-pin LED (ACPI request). 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. For 3-pin LED, when LED is connected to JGL1, this will light when the system is On and blinks when it is in suspend/sleep mode.

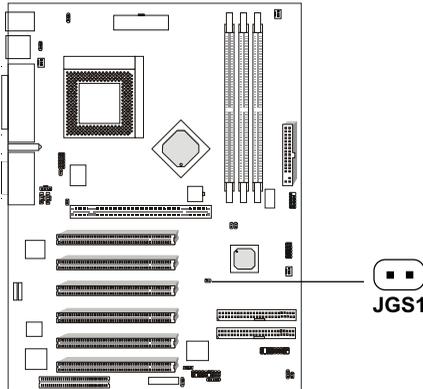


3-pin LED	2-pin LED
	
<p>1-2 Single Color 1-3 Blink</p>	<p>1-2 Dual Color</p>

CHAPTER 2

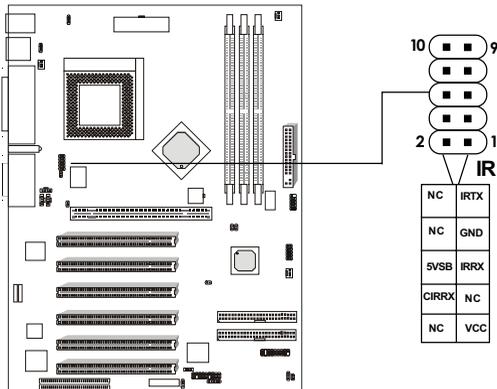
Power Saving Switch Connector: JGS1

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.



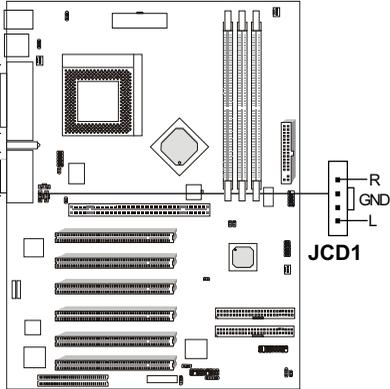
IrDA Infrared Module Connector: IR

The mainboard provides one infrared (IR) 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.



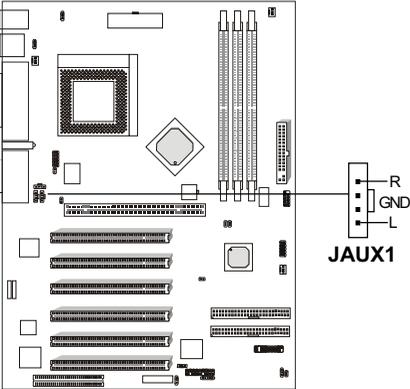
CD-In Connector: JCD1

This connector is for CD-ROM audio connector.



AUX Line In Connector: JAUX1

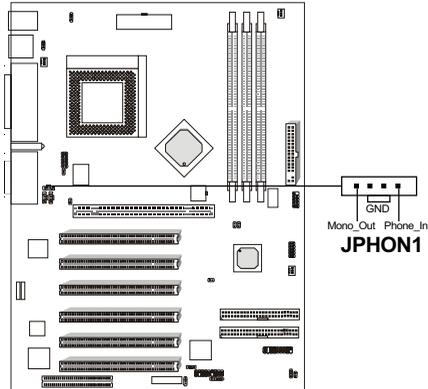
This connector is used for DVD Add on Card with Line In connector.



CHAPTER 2

Modem-In: JPHON1

The connector is for Modem with internal voice connector.

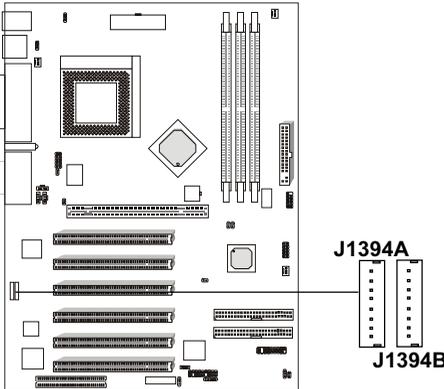


Mono_Out is connected to the Modem Speaker Out connector.

Phone_In is connected to the Modem Microphone In connector.

IEEE 1394 Connector

The IEEE 1394 high-speed serial bus complements USB by providing enhanced PC connectivity for a wide range of devices, including consumer electronics audio/video (A/V) appliances, storage peripherals, other PCs, and portable devices.



***Software Support**

IEEE 1394 Driver is provided by Windows® 98 SE and Windows® 2000. Just plug in the IEEE 1394 connector into J1394A & J1394B. These Operating System will install the driver for IEEE 1394.

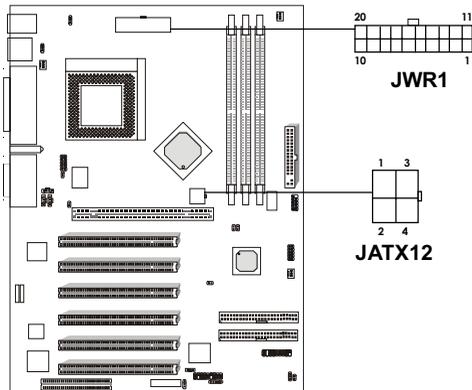
CHAPTER 2

Power Supply

ATX 20-pin Power Connector: JWR1

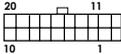
ATX 12V Power Connector: JATX12

These connectors support 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. These power connectors support instant power on function which means that system will boot up instantly when the power connector is inserted on the board. Refer to chapter 2-14 for pin definition.



PIN DEFINITION TABLE

Pin definition for JWR1



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

Pin definition for JATX12

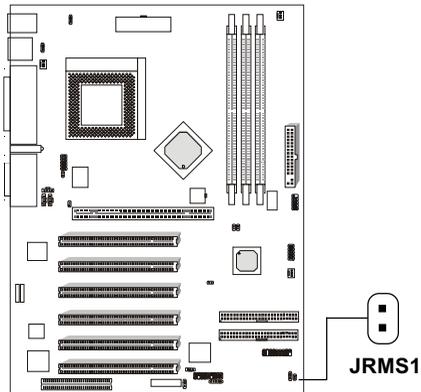


PIN	SIGNAL
1	GND
2	GND
3	12V
4	12V

CHAPTER 2

Remote Power On/Off: JRMS1

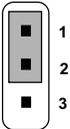
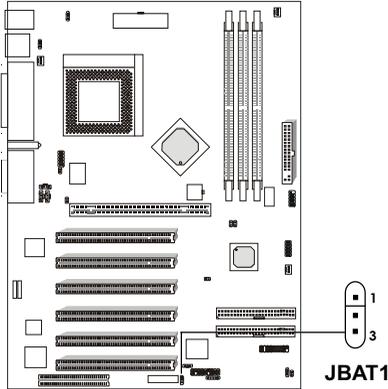
Connect to a 2-pin push button switch. During OFF state, press once and the system turns on. **During ON stage, push once and the system goes to sleep mode: pushing it more than 4 seconds will change its status from ON to OFF.** If you want to change the setup, you could go to the BIOS Power Management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



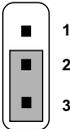
Jumpers

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



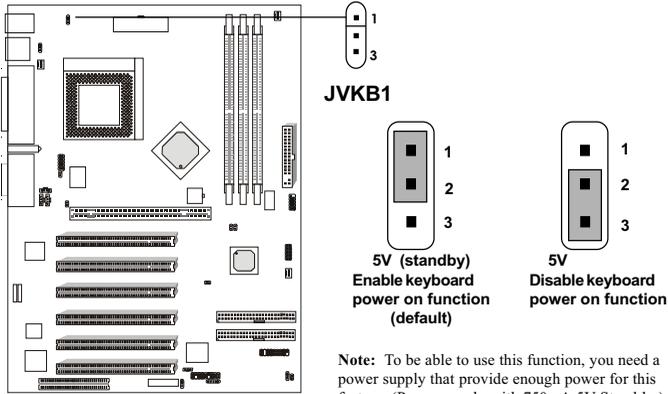
Clear Data

 **WARNING!** *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.*

CHAPTER 2

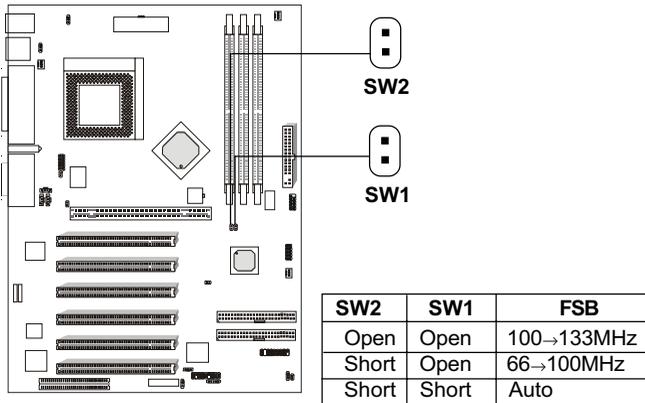
Keyboard Power: JVKB1

The JVKB1 jumper is for setting keyboard power. This function should be set in the BIOS for the keyboard and PS/2 mouse Wake-up function.



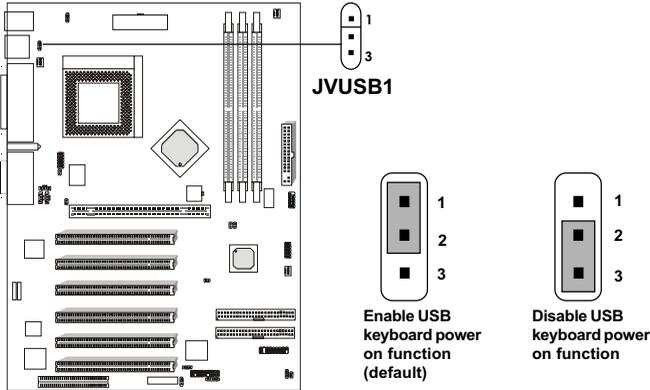
Overclocking Jumper: SW1 & SW2

Overclocking is operating a CPU/Processor beyond it's specified frequency. SW1 & SW2 jumpers are used for overclocking.



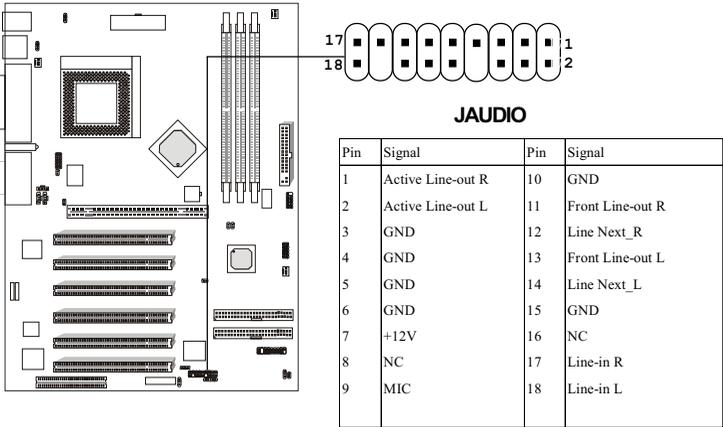
USB Keyboard Power-On: JVUSB1

This jumper is for setting the USB keyboard power-on.



Front Panel Audio Header: JAUDIO (option)

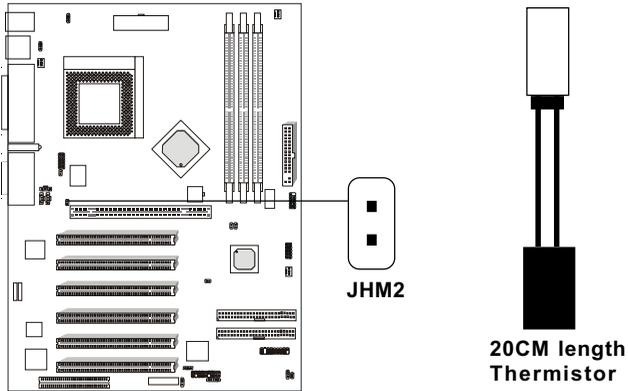
You can connect an optional audio connector to the Front Panel Audio Header.



CHAPTER 2

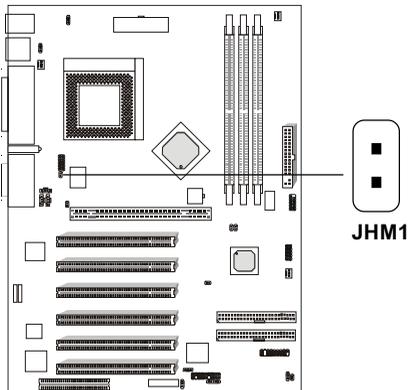
TOP TECH. III: JHM2

The JHM2 is a 2-pin connector which can be inserted with a 20cm length thermistor. It is located near AGP slot that monitors the AGP card temperature.



Chassis Intrusion Switch Case: JHM1

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



Slots

AGP Pro Slot (Accelerated Graphics Port)

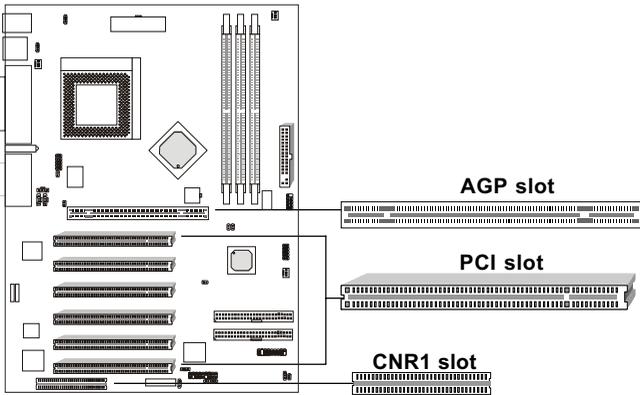
The mainboard provides an AGP Pro slot which you can install the AGP card.

PCI (Peripheral Component Interconnect) Slots

The mainboard provides 6 PCI slots which you can insert the expansion cards according to your needs.

CNR1 (Communication Network Riser)

The Communication Network Riser specification is an open industry-standard specification that defines a hardware scalable Original Equipment Manufacturer (OEM) mainboard riser board and interface, which supports modem only.



AMI® BIOS Setup 3

The mainboard uses AMI® BIOS ROM that provides a Setup utility for users to modify the basic system configuration. The information is stored in a battery-backed CMOS RAM so it retains the Setup information when the power is turned off.

This chapter provides you with the overview of the BIOS Setup program. It contains the following topics:

Entering Setup	3-2
Control Keys	3-2
Getting Help	3-3
The Main Menu	3-4
Standard CMOS Features	3-6
Advanced BIOS Features	3-8
Advanced Chipset Features	3-12
Power Management Setup	3-16
PNP/PCI Configurations	3-20
Integrated Peripherals	3-23
Hardware Monitor Setup	3-27

CHAPTER 3

Entering Setup

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press key to enter Setup.

Hit DEL if you want to run SETUP

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

Control Keys

<↑>	Move to the previous item
<↓>	Move to the next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Enter>	Select the item
<Esc>	Jumps to the Exit menu or returns to the main menu from a submenu
<+/PU>	Increase the numeric value or make changes
<-/PD>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load the default CMOS value from Fail-Safe default table, only for Option Page Setup Menu
<F7>	Load Optimized defaults
<F10>	Save all the CMOS changes and exit

Getting Help

After entering the Setup utility, the first screen you see is the Main Menu.

Main Menu

The main menu displays the setup categories the BIOS supplies. You can use the arrow keys (↑↓) to select the item. The on-line description for the selected setup category is displayed on the bottom of the screen.

General Help <F1>

The BIOS setup program provides a General Help screen. You can call up this screen from any menu by simply pressing <F1>. The Help screen lists the appropriate keys to use and the possible selections for the highlighted item. Press <Esc> to exit the Help screen.

Default Settings

The BIOS setup program contains two kinds of default settings: the Setup and BIOS defaults. Setup defaults provide optimum performance settings for all devices and the system. BIOS defaults provide the safest set of parameters instead of the optimal system performance for the system.

Power Management Setup

Use this menu to specify your settings for power management.

PNP/PCI Configurations

This entry appears if your system supports PnP/PCI.

Integrated Peripherals

Use this menu to load factory default settings into the BIOS for optimal system performance operations.

Hardware Monitor Setup

This entry shows your PC's current status.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations.

Supervisor Password

Use this menu to set Supervisor Password.

User Password

Use this menu to set User Password.

Save & Exit Setup

Save changes to CMOS and exit setup.

Exit Without Saving

Abandon all changes and exit setup.

CHAPTER 3

Standard CMOS Features

The items inside STANDARD CMOS SETUP menu are divided into 9 categories. Each category includes one or more setup items. Use the arrow keys to highlight the item you want to modify and use the <PgUp> or <PgDn> keys to switch to the value you prefer.

AMIBIOS SETUP - STANDARD CMOS SETUP								
(C) 2001 American Megatrends, Inc. All Rights Reserved								
Date (mm/dd/yyyy):		Wed Feb 21, 2001						
Time (hh/mm/ss):		17:09:25						
	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Pri Master	:Auto							
Pri Slave	:Auto							
Sec Master	:Auto							
Sec Slave	:Auto							
Floppy Drive A:1.44MB 3½						Base Memory:640Kb		
Floppy Drive B:Not Installed						Other Memory: 384Kb		
Boot Sector Virus Protection:Disabled						Extended Memory: Mb		
						Total Memory: Mb		
Month	: Jan-Dec					ESC:Exit		
Day	: 01-31					↑ ↓ → ←:Select Item		
Year	: 1901-2099					PU/PD/+/-:Modify		
						(Shift)F2: Color		

Date

This allows you to set the system to the date that you want (usually the current date). The format is <day><month> <date> <year>.

- day** Day of the week, from Sun to Sat, determined by BIOS. Read-only.
- month** The month from Jan. through Dec.
- date** The date from 1 to 31 can be keyed by numeric function keys.
- year** The year depends on the year of the BIOS.

Time

This allows you to set the system time that you want (usually the current time). The time format is <hour> <minute> <second>.

Pri Master/Pri Slave/Sec Master/Sec Slave

Press PgUp/<+> or PgDn/<-> to select the hard disk drive type. The specification of hard disk drive will show up on the right hand according to your selection.

<u>TYPE</u>	Type of the device.
<u>SIZE</u>	Capacity of the device.
<u>CYLS</u>	Number of cylinders.
<u>HEAD</u>	Number of heads.
<u>PRECOMP</u>	Write precompensation.
<u>LANDZ</u>	Cylinder location of Landing zone.
<u>SECTOR</u>	Number of sectors.
<u>MODE</u>	Access mode.

Floppy Drive A/B

This item allows you to set the type of floppy drives installed. Available options are *Not Installed*, *360 KB 5¼*, *1.2 MB 5¼*, *720 KB 3½*, *1.44 MB 3½*, or *2.88 MB 3½*. The default value for Floppy Drive A is *1.44 MB 3½*, and for Floppy Drive B is *Not Installed*.

Boot Sector Virus Protection

The item is to set the Virus Warning feature for IDE Hard Disk boot sector protection. If the function is enabled and any attempt to write data into this area is made, BIOS will display a warning message on screen and beep. Setting options are *Disabled* and *Enabled*. The Setup and BIOS default values are *Disabled*.

CHAPTER 3

Advanced BIOS Features

AMIBIOS SETUP - ADVANCED CMOS SETUP	
(C) 2001 American Megatrends, Inc. All Rights Reserved	
Quick Boot	Enabled
1st Boot Device	Floppy
2nd Boot Device	IDE-0
3rd Boot Device	CDROM
S.M.A.R.T. for Hard Disks	Disabled
BootUp Num-Lock	On
Floppy Drive Swap	Disabled
Floppy Drive Seek	Enabled
Password Check	Setup
Boot To OS/2	No
CPU Serial Number	Enabled
Internal Cache	Enabled
External Cache	Enabled
System BIOS Cacheable	Enabled
C000, 32k Shadow	Cached

ESC:Exit ↑↓→←:Select Item
F1:Help PU/PD/+/-:Modify
F5:Load Previous Values
F6:Fail-Safe Defaults
F7:Optimized Defaults

Quick Boot

Setting the item to *Enabled* allows the system to boot within 5 seconds since it will skip some check items. Available options are *Enabled* and *Disabled*. The Setup default value is *Enabled* and the BIOS default is *Disabled*.

1st/2nd/3rd Boot Device

The items allow you to set the sequence of boot devices where AMIBIOS attempts to load the operating system. 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 drive.
- ATAPI ZIP* The system will boot from ATAPI ZIP drive.
- LS-120/ZIP* The system will boot from LS-120/ZIP drive.
- 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.
- Disabled* Disable this sequence. Settings are:

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

This allows you to activate the S.M.A.R.T. (Self-Monitoring Analysis & Reporting Technology) capability for the hard disks. S.M.A.R.T is a utility that monitors your disk status to predict hard disk failure. This gives you an opportunity to move data from a hard disk that is going to fail to a safe place before it becomes offline. Setting options are *Enabled* and *Disabled*. The Setup and BIOS default values are *Disabled*.

BootUpNum-Lock

This item is to set the Num Lock status when the system is powered on. Setting to *On* will turn on the Num Lock key when the system is powered on. Setting to *Off* will allow end users to use the arrow keys on the numeric keypad. Setting options are *On* and *Off*. The Setup and BIOS default values are *On*.

Floppy Drive Swap

Setting to *Enabled* will swap floppy drives A: and B:.. The Setup and BIOS default values are *Disabled*.

Floppy Drive Seek

Setting to *Enabled* will make BIOS seek floppy drive A: before booting the system. Setting options are *Disabled* and *Enabled*. The Setup and BIOS default values are *Enabled*.

Password Check

This specifies the type of AMIBIOS password protection that is implemented. Setting options are described below.

Option	Description
Setup (default)	The password prompt appears only when end users try to run Setup.
Always	A password prompt appears every time when the computer is powered on or when end users try to run Setup.

CHAPTER 3

Boot to OS/2

This allows you to run the OS/2[®] operating system with DRAM larger than 64MB. When you choose the default value *No*, you cannot run the OS/2[®] operating system with DRAM larger than 64MB. But it is possible if you choose *Yes*. The Setup and BIOS default values are *No*.

CPU Serial Number

This feature is for Pentium[®] !!! only. When set to *Enabled*, the system will check CPU Serial Number. Set to *Disabled* if you don't want the system to know the CPU Serial Number. The Setup and BIOS default values are *Disabled*.

Internal Cache

This sets the type of caching algorithm used by AMIBIOS and the CPU for L1 cache memory. Setting options are:

- WriteBack* (default) A write-back algorithm is used.
- Disabled* AMIBIOS does not specify the type of caching algorithm. The algorithm is set by the CPU.

 **Note:** The L1 cache is built inside the processor.

External Cache

The items enable or disable the L2 (external) cache memory for CPU. Setting to *Enabled* will speed up the system performance.

System BIOS Cacheable

Selecting *Enabled* allows caching of the system BIOS ROM resulting in better video performance. Setting options are *Enabled* and *Disabled*. The Setup and BIOS default values are *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.

AMI® BIOS SETUP

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.

CHAPTER 3

Advanced Chipset Features

AMIBIOS SETUP - ADVANCED CHIPSET SETUP		
(C) 2001 American Megatrends, Inc. All Rights Reserved		
Configure DRAM Timing by	SPD	
DRAM Frequency	HCLK	
DRAM CAS Latency	2.5Cycles	
DRAM Bank Interleave	Disabled	
DRAM 1T Command	Disabled	
Memory Hole	Disabled	
AGP Mode	4x	
AGP Read Synchronization	Enabled	
AGP Fast Write	Disabled	
AGP Comp. Driving	Auto	
Manual AGP Comp. Driving	CB	
AGP Aperture Size	64MB	
AGP Master 1 W/S Write	Disabled	
AGP Master 1 W/S Read	Disabled	
Search for MDA Resources	Yes	
PCI Delay Transaction	Disabled	
		ESC:Exit ↑↓→←:Select Item
		F1:Help PU/PD/+/-:Modify
		F5:Load Previous Values
		F6:Fail-Safe Defaults
		F7:Optimized Defaults

 **Note:** Change these settings only if you are familiar with the chipset.

Configure DRAM Timing by

Selects whether DRAM timing is controlled by the SPD (Serial Presence Detect) device on the DRAM module. Setting to *SPD* enables DRAM Frequency, DRAM CAS# Latency and DRAM Bank Interleave automatically to be determined by BIOS based on the configurations on the SPD. Selecting *User* allows user to configure the three fields manually. The default value is *SPD*.

DRAMFrequency

Use this item to configure the clock frequency of the installed DRAM. Settings are:

- HCLK* The DRAM clock will be equal to the Host Clock.
- HCLK+33* The DRAM clock will be equal to the Host Clock plus 33MHz. For example, if the Host Clock is 100MHz, the DRAM clock will be 133MHz.

<i>HCLK-33</i>	The DRAM clock will be equal to the Host Clock minus 33MHz. For example, if the Host Clock is 133MHz, the DRAM clock will be 100MH
<i>SPD</i>	<i>SPD</i> will set the clock frequency by reading the contents of the SPD device.

When the installed CPU is 100MHz, this field has three setting options: *HCLK*, *HCLK+33* and *SPD*. When the installed one is 133MHz, the three setting options will be *HCLK*, *HCLK-33* and *SPD*.

DRAMCAS# Latency

This controls the time delay (in clock cycles) before DRAM starts a read command after receiving it. Settings are *2* and *2.5*. *2* increases the system performance while *2.5* provides more stable performance. The default value is *2.5*.

DRAMBank Interleave

This field selects 2-bank or 4-bank interleave for the installed DRAM. Disable the function if 16MB DRAM is installed. Settings are *Disabled*, *2-Way* and *4-Way*. The default value is *Disabled*.

DRAMITCommand

This item controls the DRAM command rate. Selecting *Enabled* allows DRAM signal controller to run at 1T (T=clock cycles) rate. Selecting *Disabled* makes DRAM signal controller run at 2T rate. *1T* is faster than *2T*. The default value is *Disabled*.

MemoryHole

This allows end user to specify a location of a memory hole. The cycle matching the selected memory hole will be passed to ISA bus. Settings are *Disabled* and *15-16M* (from 15MB to 16MB). The Setup and BIOS default values are *Disabled*.

AGPMode

The item sets an appropriate mode for the installed AGP card. Settings are *1x*, *2x* and *4x* (default). Select *4x* if your AGP card can support it.

CHAPTER 3

AGP Read Synchronization

The field allows you to enable or disable the AGP Read Synchronization feature. Settings are *Enabled* and *Disabled*.

AGP Fast Write

The field enables or disables the AGP Fast Write feature. The Fast Write technology allows CPU to write directly to the graphics card without passing anything through the system memory and improves the AGP 4X speed. Select *Enabled* only when the installed AGP card supports the function. The default value is *Disabled*.

AGP Comp. Driving

This field is used to adjust the AGP driving force. Selecting *Manual* allows you to select an AGP driving force in **Manual AGP Comp. Driving**. It is strongly suggested to select *Auto* to avoid causing any system error.

Manual AGP Comp. Driving

This item specifies an AGP driving force.

AGP Aperture Size

The field selects the size of the Accelerated Graphics Port (AGP) aperture. Aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. Settings are *4MB*, *8MB*, *16MB*, *32MB*, *64MB*, *128MB* and *256MB*.

AGP Master 1 W/S Write

The field allows users to insert one wait state into the AGP master write cycle. Settings are *Enabled* and *Disabled* (default).

AGP Master 1 W/S Read

The field allows users to insert one wait state into the AGP master read cycle. Settings are *Enabled* and *Disabled* (default).

Search for MDA Resources

MDA stands for Mono Display Adapter. Select *Yes* only when you install and use mono display adapter card.

PCIDelay Transaction

The chipset has an embedded 32-bit posted write buffer to support delayed transactions cycles. Select *Enabled* to support compliance with PCI specification version 2.1. Settings are *Enabled* and *Disabled* (default).

CHAPTER 3

Power Management Setup

AMIBIOS SETUP - POWER MANAGEMENT SETUP			
(C) 2001 American Megatrends, Inc. All Rights Reserved			
IPCA Function	Yes	Wake Up On Ring/LAN	Enabled
ACPI Standby State	S1/POS	Wake Up On PME#	Enabled
USB1 Wakeup From S3-S5	Disabled	Resume By Alarm	Disabled
Power Management/APM	Enabled	Alarm Date	15
Sleep State LED	Dual Color	Alarm Hour	12
Suspend Time Out(Minute)	Disabled	Alarm Minute	30
Display Activity	Ignore	Alarm Second	30
IRQ3	Monitor		
IRQ4	Monitor		
IRQ5	Ignore		
IRQ7	Monitor		
IRQ9	Ignore		
IRQ10	Ignore		
IRQ11	Ignore		
IRQ13	Ignore		
IRQ14	Monitor		
IRQ15	Ignore		
CPU Critical Temperature	Disabled		
Power Button Function	Suspend		
Restore on AC/Power Loss	Last State		
		ESC:Exit ↑↓←→:Select Item F1:Help PU/PD/+/-:Modify F5:Load Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults	

IPCA Function

This item is to activate the ACPI (Advanced Configuration and Power Management Interface) Function. If your operating system is ACPI-aware, such as Windows 98SE/2000/ME, select *Yes*. Available options are *Yes* and *No*. The default value is *Yes*.

ACPI Standby State

This item specifies the power saving modes for ACPI function. Options are:

- S1/POS* The S1 sleep mode is a low power state. In this state, no system context is lost (CPU or chipset) and hardware maintains all system context.
- S3/STR* The S3 sleep mode is a lower power state where the information of system configuration and open applications/files is saved to main memory that remains

powered while most other hardware components turn off to save energy. The information stored in memory will be used to restore the system when an “wake up” event occurs.

The default value is *SI/POS*.

USB Wakeup From S3-S5

This item allows the activity of the USB device to wake up the system from S3, S4 or S5 sleep states. S3, S4 and S5 are three system states for ACPI, which saves different amount of system power. S3 is STR (Suspend to RAM) mode, S4 is Suspend to Disk mode and S5 is Soft-Off state. Settings are *Enabled* and *Disabled*. The default value is *Disabled*.

Power Management/APM

Setting to *Enabled* will activate the Advanced Power Management (APM) features to enhance power saving modes. Settings are *Enabled* and *Disabled*. The default value is *Enabled*.

Sleep State LED

This item sets how the system uses sleep state LED on the case to indicate the sleep state. Available options are:

- Blinking* The sleep state LED blinks to indicate the sleep state.
- Single Color* The sleep state LED remains the same color.
- Dual Color* The sleep state LED changes its color to indicate the sleep state.

The default value is *Dual Color*.

Suspend Time Out (Minute)

The item specifies the length of the period of system inactivity before the system enters the suspend mode from the standby mode. Nearly all power use is reduced in the suspend mode. Settings are *Disabled* (default), *1, 2, 4, 8, 10, 20, 30, 40, 50* and *60* (Minutes).

CHAPTER 3

Display Activity/IRQ3/IRQ4/IRQ5/IRQ7/IRQ9/IRQ10/IRQ11/IRQ13/IRQ14/IRQ15

These items specify if the BIOS will monitor the activity of the specified hardware peripheral or component. If set to *Monitor*, any activity detected on the specified hardware peripheral or component will wake up the system or prevent the system from entering the power saving modes. Settings are *Monitor* and *Ignore*. The default values for different items are listed below:

Display Activity	<i>Ignore</i>
IRQ3	<i>Monitor</i>
IRQ4	<i>Monitor</i>
IRQ5	<i>Ignore</i>
IRQ7	<i>Monitor</i>
IRQ9	<i>Ignore</i>
IRQ10	<i>Ignore</i>
IRQ11	<i>Ignore</i>
IRQ13	<i>Ignore</i>
IRQ14	<i>Monitor</i>
IRQ15	<i>Ignore</i>

Note: IRQ (Interrupt Request) lines are system resources allocated to I/O devices. When an I/O device needs to gain attention of the operating system, it signals this by causing an IRQ to occur. After receiving the signal, when the operating system is ready, the system will interrupt itself and perform the service required by the I/O device.

CPU Critical Temperature

This item is used to specify a thermal limit for CPU. If CPU temperature reaches the specified limit, the system will issue a warning to prevent the CPU overheat problem. Settings are *Disabled*, *70°C/158°*, *75°C/167°F*, *80°C/176°F*, *85°C/185°F*, *90°C/194°F* and *95°C/203°F*.

Power Button Function

This specifies the function of the power button on the case. Available options are:

<i>On/Off</i>	Each time you press the power button, it turns on/off the computer.
---------------	---

Suspend When you press the power button, the computer enters suspend mode (sleep state), but if you press the power button for more than four seconds, the computer is turned off.

The Setup and BIOS default values are *On/Off*.

Restore on AC/Power Loss

This item specifies whether your system will reboot after a power failure or interrupt occurs. Available options are:

- Power Off* Leaves the computer in the power off state.
- Power On* Reboots the computer.
- Last State* Restores the system to the former status before the power failure or interrupt occurred.

CHAPTER 3

PNP/PCI Configurations

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

AMIBIOS SETUP - PCI/PLUG AND PLAY SETUP		
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PnP Aware O/S	No	
Clear NVRAM	No	
PCI Latency Timer	64	
Primary Graphics Adapter	PCI	
PCI VGA Palette Snoop	Disabled	
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	
		ESC:Exit ↑↓→←:Select Item F1:Help PU/PD/+/-:Modify F5:Load Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

PnP Aware O/S

When set to *YES*, BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like Windows® 98, 2000 or ME. When set to *NO*, BIOS will initialize all the PnP cards. Select *Yes* if the operating system is Plug & Play aware.

Clear NVRAM

The ESCD (Extended System Configuration Data) NVRAM (Non-volatile Random Access Memory) is where the BIOS stores resource information for both PNP and non-PNP devices in a bit string format. When the item is set

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 item specifies which VGA card is your primary graphics adapter. Settings are *AGP* and *PCI*. The default value is *PCI*.

PCI VGA Palette Snoop

When 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 one ISA) and the:

VGA Palette Snoop Bit Setting	Action
<i>Disabled</i>	Data read or written by the CPU is only directed to the PCI VGA device's palette registers.
<i>Enabled</i>	Data read or written by the CPU is directed to both the PCI VGA device's palette registers and the ISA VGA device's palette registers, permitting the palette registers of both VGA devices to be identical.

The setting must be set to *Enabled* if any ISA adapter card installed in the system requires VGA palette snooping. The Setup and BIOS default values are *Disabled*.

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

These items specify the bus that the system DMA (Direct Memory Access) channel is used. These options allow you to reserve DMAs for Legacy ISA adapter cards.

CHAPTER 3

The settings determine if AMIBIOS 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 reserve the DMA by assigning an *ISA/EISA* setting to it. The Setup and BIOS default values are *PnP*.

IRQ 3/4/5/7/9/10/11/14/15

These items specify the bus where the IRQ line is used. These options allow you to reserve IRQs for Legacy ISA adapter cards.

The settings determine if AMIBIOS 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 IRQ pool, the end user can use these settings to reserve the IRQ by assigning an *ISA/EISA* setting to it. Onboard I/O is configured by AMIBIOS. All IRQs used by onboard I/O are configured as *PCI/PnP*. If all IRQs are set to *ISA/EISA*, and IRQ 14 and 15 are allocated to the onboard PCI IDE, IRQ 9 will still be available for PCI and PnP devices. Available settings are *ISA/EISA* and *PCI/PnP*. The Setup and BIOS default values are *PCI/PnP*.

Integrated Peripherals

AMIBIOS SETUP - PERIPHERAL SETUP			
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FDC Function	Auto	OnChip MC97 Modem	Auto
Serial Port1	Auto	USB Controller	All USB Port
Serial Port2	Auto	USB KB/Mouse Legacy	Disabled
Serial Port2 Mode	Normal		
IR Duplex Mode	Half Duplex		
IR Pin Select	IRRX/IRTX		
Parallel Port	Auto		
Parallel Port Mode	ECP		
EPP Version	N/A		
Parallel Port IRQ	Auto		
Parallel Port DMA	Auto		
Onboard Midi Port	Disabled		
Midi IRQ Select	5		
Onboard Game Port	200		
Keyboard PowerOn Function	Disabled		
Specific Key for PowerOn	N/A	ESC:Exit	↑↓←→:Select Item
Mouse PowerOn Function	Disabled	F1:Help	PU/PD/+/-:Modify
IDE Function	Both	F5:Load Previous Values	
OnChip AC97 Audio	Auto	F6:Fail-Safe Defaults	
AC97 Audio Channel	2	F7:Optimized Defaults	

FDCFunction

This is used to enable or disable the onboard Floppy controller.

Option	Description
Auto (default)	BIOS will automatically determine whether to enable the onboard Floppy controller or not.
Enabled	Enables the onboard Floppy controller.
Disabled	Disables the onboard Floppy controller.

Serial Port1/2

These items specify the base I/O port addresses of the onboard Serial Port 1 (COM A)/Serial Port 2 (COM B). Selecting *Auto* allows AMIBIOS to automatically determine the correct base I/O port address. Settings are *Auto*, *3F8h/COM1*, *2F8h/COM2*, *3E8h/COM3*, *2E8h/COM4* and *Disabled*. The default value is *Auto*.

CHAPTER 3

Serial Port2 Mode

This item sets the operation mode for Serial Port 2. Settings are *Normal*, *1.6uS*, *3/16 Baud* and *ASKIR* (the last three operation modes are setting options for IR function). The default value is *Normal*.

IR Duplex Mode

This field specifies a duplex value for the IR device connected to COM B. Full-Duplex mode permits simultaneous two-direction transmission. Half-Duplex mode permits transmission in one direction only at a time. Settings are *Half Duplex* and *Full Duplex*. The default is *Half Duplex*.

IR Pin Select

Set to *IRRX/IRTX* when using an internal IR module connected to the IR (J6) connector. Set to *SINB/SOUTB*. when connecting an IR adapter to COM B.

Parallel Port

This field specifies the base I/O port address of the onboard parallel port. Selecting *Auto* allows AMIBIOS to automatically determine the correct base I/O port address. Settings are *Auto*, *378*, *278*, *3BC* and *Disabled*. The default value is *Auto*.

Parallel Port Mode

This item selects the operation mode for the onboard parallel port: *ECP*, *Normal*, *Bi-Dir* or *EPP*. The default is *ECP*.

EPP Version

The item selects the EPP version used by the parallel port if the port is set to *EPP* mode. Settings are *1.7* and *1.9*.

Parallel Port IRQ

When **Parallel Port** is set to *Auto*, the item shows *Auto* indicating that BIOS determines the IRQ for the parallel port automatically.

Parallel Port DMA

This feature needs to be configured only when **Parallel Port Mode** is set to the *ECP* mode. When **Parallel Port** is set to *Auto*, the field will show *Auto* indicating that BIOS automatically determines the DMA channel for the parallel port.

OnBoard Midi Port

The field specifies the base I/O port address of the onboard Midi Port. Settings are *Disabled*, *330*, *300*, *310* and *320*.

Midi IRQ Select

The item is used to select the IRQ line for onboard Midi port.

OnBoard Game Port

This item is used to specify the address for the onboard Game Port.

Keyboard PowerOn Function

This controls how and whether the PS/2 keyboard is able to power on the system. Settings are *Disabled*, *PowerKey*, *Any Key* and *Specific Key*.

Specific Key for PowerOn

This item allows you to specify a password for powering on the system when the **Keyboard PowerOn Function** is set to *Specific Key*.

Mouse PowerOn Function

This controls how and whether the PS/2 mouse is able to power on the system. Settings are *Disabled*, *Left-button* and *Right-button*.

IDE Function

This allows you to enable or disable on-chip IDE controller. Settings are *Disabled*, *Primary*, *Secondary* and *Both*. The default value is *Both*.

CHAPTER 3

OnChip AC'97 Audio

This item is used to enable or disable the onboard AC'97 (Audio Codec'97) feature. Disable the function if you want to use other controller cards to connect an audio device. Settings are *Disabled* and *Enabled*. The default value is *Enabled*.

AC97 Audio Channel

This allows you to set the AC97 Audio Channel. The default value is 2.

Hardware Monitor Setup

This section is to set CPU ratio, monitor the current hardware status including CPU temperature, CPU/Chassis/Power Fan speed, Vcore etc. This is available only if there is hardware monitoring onboard.

AMIBIOS SETUP - HARDWARE MONITOR SETUP	
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CPU Vcore Adjust(V)	Auto
Spread Spectrum	±0.25%
CPU FSB Clock(Mhz)	Auto
Chassis Intrusion	Disabled
CPU Temperature	
System Temperature	
Ultra Temperature	
CPU Full Speed	
CPU Fan Speed	
Power Fan Speed	
Vcore	
Vtt	
Vio	
+5.0V	
+12.0V	
-12.0V	
-5.0V	
Battery	
+5V SB	
ESC:Exit ↑↓←→:Select Item F1:Help PU/PD/+/-:Modify F5:Load Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults	

CPU Vcore Adjust (V)

The items are used to adjust the CPU voltage (Vcore). The items make overclocking possible.

Spread Spectrum

This item allows you to configure the clock generator's Spread Spectrum feature. When overclocking the processor, always set it to *Disabled*.

CPU FSB/PCI Clock

This item is used to set clock frequencies (in MHz) for CPU FSB (Front Side Bus). Selecting *By H/W* will enable the CPU FSB to follow the hardware configurations. If the installed CPU is **100MHz**, you are allowed to adjust the clock frequency from **100 to 120MHz**. If the installed one is **133MHz**, you are allowed to bring its frequency down to **100~120MHz** or adjust it up to **133~153MHz**. The item makes overclocking possible.

CHAPTER 3

Chassis Intrusion

The field enables or disables the feature of recording the chassis intrusion status and issuing a warning message if the chassis is opened. To clear the warning message, set the field to *Reset*. The setting of the field will automatically return to *Enabled* later on. Settings are *Enabled*, *Reset* and *Disabled*. The default value is *Disabled*.

CPU Temperature/System Temperature/Ultra Temperature/CPU Fan Speed/Chassis Fan Speed/Power Fan Speed/Vcore/Vtt/Vio/+5.0V/+12.0V/-12.0V/-5.0V/Battery/+5V SB

These items display the current status of all of the monitored hardware devices/components such as system voltages, temperatures and fan speeds.

Glossary

Buffer

A temporary storage area, usually in RAM. The purpose of most buffers is to act as a holding area, enabling CPU to manipulate data before transferring it to a device.

Bus

A collection of wires through which data is transmitted from one part of a computer to another. You can think of a bus as a highway on which data travels within a computer.

Chipset

A number of integrated circuits designed to perform one or more related functions. For example, one chipset may provide the basic functions of a modem while another provides the CPU functions for a computer.

CMOS

Abbreviation of *complementary metal oxide semiconductor*. Pronounced *see-moss*, CMOS is a widely used type of semiconductor. CMOS chips are particularly attractive for use in battery-powered devices, such as portable computers. Personal computers also contain a small amount of battery-powered CMOS memory to hold the date, time, and system setup parameters.

Com

In DOS system, the name of a serial communications port. DOS supports four serial ports: COM1, COM2, COM3, and COM4.

DIMM

Short for *dual in-line memory module*, a small circuit board that holds memory chips. A *single in-line memory module (SIMM)* has a 32-bit path to the memory

chips whereas a DIMM has 64-bit path.

IDE

Abbreviation of either *Intelligent Drive Electronics* or *Integrated Drive Electronics*, depending on who you ask. An IDE interface is an interface for mass storage devices, in which the controller is integrated into the disk or CD-ROM drive.

IrDA

Short for *Infrared Data Association*, a group of device manufacturing that developed a standard for transmitting data via infrared light waves. This enables you to transfer data from one device to another without any cables.

LED

Abbreviation of *light emitting diode*, an electronic device that lights up when electricity is passed through it. LEDs are usually red. They are good for displaying images because they can be relatively small, and they do not burn out.

LPT

A name frequently used by operating systems to identify a printer. Although LPT originally stood for *line printer terminal*, it is now used more generally to identify any type of printer.

PCI

Acronym for *Peripheral Component Interconnect*, a local bus standard developed by Intel Corporation. Most modern PCs include a PCI bus in addition to a more general ISA expansion bus.

PS/2 Port

A type of port developed by IBM for connecting a mouse or keyboard to a PC. The PS/2 port supports a mini DIN plug containing just 6 pins. Most PCs have a PS/2 port so that the special port can be used by another device, such as a modem.

