

Chapter 1

INTRODUCTION

The MICRO ATX mainboard is a high-performance personal computer mainboard based on the Intel® Pentium® II/III processor. This mainboard features the leading edge Creative® ES1373 PCI technology in audio. The Intel® Pentium® II/III processor supports MMX™ (Multimedia Extension) technology.

The mainboard uses the highly integrated VIA VT82C693/VT82C693A chipset to support the Host/AGP bridge. The VIA VT82C596B chipset integrates all system control functions such as ACPI (Advanced Configuration and Power Interface). The ACPI provides more Energy Saving Features for the OSPM(OS Direct Power Management) function. The VIA VT82C596B chipset also improves the IDE transfer rate by supporting Ultra DMA/33/66 IDE that transfers data at the rate of 33/66MB/s.

The mainboard also supports the System Hardware Monitor Controller. Its functions include: CPU /power supply/chassis fan revolution detect, CPU/system voltage monitor, system temperature monitor, and chassis intrusion detect(optional).

1.1 Mainboard Features

CPU

- Slot 1 for Intel® Pentium® II/Pentium® III/Celeron™ processor.
- Supports 233MHz, 266MHz, 300MHz, 333MHz, 350MHz, 400MHz, 450MHz, 500MHz, 550MHz, 600MHz and faster.

Chipset

- VIA VT82C693/VT82C693A/VT82C596B

Clock Generator

- 66, 100 and 133 MHz (VT82C693A only) clocks are supported

Main Memory

- Supports four memory banks using two 168-pin DIMM.
- Supports a maximum memory size 512MB
- Supports ECC(1-bit Error Code Correct) function.
- Supports 3.3v SDRAM DIMM.

Slots

- One AGP slot.
- Three 32-bit Master PCI Bus slots and one 16-bit ISA bus slots wherein one shared slot can be used as ISA or PCI.
- Supports 3.3v/5v PCI bus Interface.

On-Board IDE

- An IDE controller on the VIA VT82C596B Chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA/33/66 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 USB ports
 - 2 serial port (COM 1) and (COM 2)
 - 1 parallel port supports SPP/EPP/ECP mode
 - 1 IrDA connector for SIR.

Sound

- Creative® ES1373
 - Running on PCI BUS.
 - 64 Voice and AC3 Capable (ES1373 only)
 - Support Direct Sound and Direct Sound 3D
 - AC97' Compliant

I/O Chip

- Winbond® multi super I/O W83977TF
 - 2M bps fast tape drive, IRQ sharing
 - Device Power Management
 - Real time clock (256 bytes RAM)
 - 8042-based keyboard controller (support PS/2 mouse)

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.
- ACPI(Advanced Configuration and Power Interface) feature.

Dimension

- MICRO ATX Form Factor : 24.4cm(L) x 19.2cm(W) x 4 layers PCB

Mounting

- 6 mounting holes.

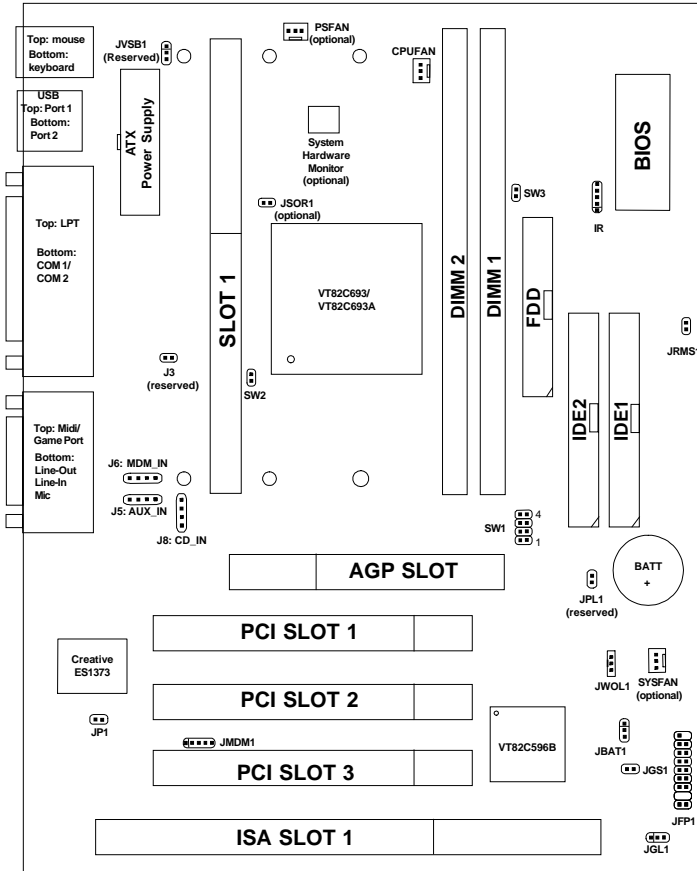
System Hardware Monitor (Optional)

- CPU/Power Supply/Chassis Fan Revolution Detect
- CPU Fan Control (the fan will automatically stop when the system enters suspend mode)
- System Voltage Detect
- CPU Overheat Warning.
- Display Actual Current Voltage

Other Features

- Keyboard Password Wake-Up (reserved)
- LAN Wake-Up
- Internal/External Modem Wake-Up

1.2 Mainboard Layout



MS-6156 MICRO ATX Mainboard

Chapter 2

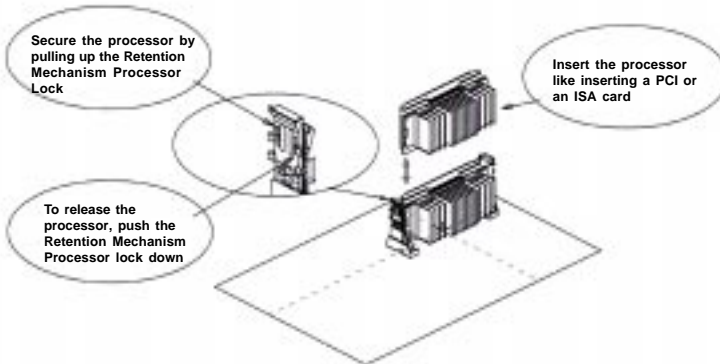
HARDWARE INSTALLATION

2.1 Central Processing Unit: CPU

2.1-1 CPU Installation Procedures

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 lock S.E.C.C. 2 and S.E.P.P. processor.

2.1-2 CPU Core Speed Derivation Procedure

- The DIP Switch SW1 (1, 2, 3, and 4) is used to set the Core/Bus (Fraction) ratio of the CPU. The actual core speed of the CPU is the Host Clock Frequency multiplied by the Core/Bus ratio. For example:

$$\begin{aligned}
 \text{If } & \text{CPU Clock} & = & 66\text{MHz}/100\text{MHz} \\
 & \text{Core/Bus ratio} & = & 4 \\
 \text{then } & \text{CPU core speed} & = & \text{Host Clock} \times \text{Core/Bus ratio} \\
 & & = & 66\text{MHz} \times 4/100\text{MHz} \times 4 \\
 & & = & 266\text{MHz}/400\text{MHz}
 \end{aligned}$$

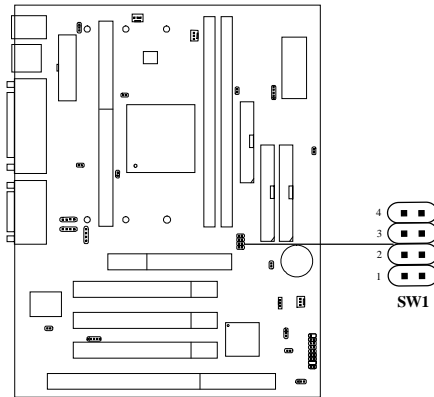
SW1				CPU
1	2	3	4	Core/Bus Ratio
ON	OFF	ON	ON	2.5
ON	ON	OFF	ON	3
ON	OFF	OFF	ON	3.5
ON	ON	ON	OFF	4
ON	OFF	ON	OFF	4.5
ON	ON	OFF	OFF	5
ON	OFF	OFF	OFF	5.5
OFF	ON	ON	ON	6
OFF	OFF	ON	ON	6.5
OFF	ON	OFF	ON	7
OFF	OFF	OFF	ON	7.5
OFF	ON	ON	OFF	8

ON - Short OFF - Open

Note: The CPU Bus Frequency is set at 66MHz, 100MHz or 133MHz (VT82C693A only) by CPU default.

2.1-3 CPU Speed Setting: SW1

To adjust the speed of the CPU, you must know the specification of your CPU (*always ask the vendor for CPU specification*). The mainboard can auto-detect between 66, 100 or 133MHz (VT82C693A only) CPU Bus Frequency.



a. 66MHz CPU Bus Frequency

































CPU Type	SW1
233MHz	4  3  2  1 
266MHz	4  3  2  1 
300MHz	4  3  2  1 
333MHz	4  3  2  1 
366MHz	4  3  2  1 
400MHz	4  3  2  1 
433MHz	4  3  2  1 
466MHz	4  3  2  1 

Table 2.1 233 ~ 466MHz Intel® Pentium® II/Celeron™ processor

b. 100MHz CPU Bus Frequency







CPU Type	SW1
350MHz	
400MHz	
450MHz	
500MHz	
550MHz	
600MHz	

Table 2.2 350 ~ 600MHz Intel® Pentium® II/III processor

c. 133Mhz CPU Bus Frequency (VT82C693A only)




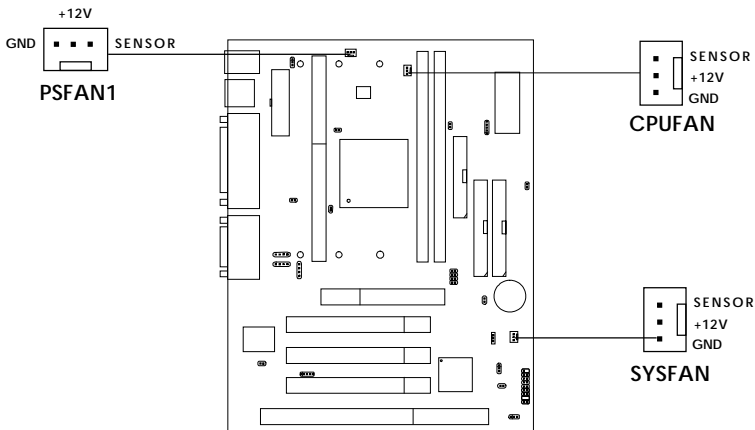
CPU Type	SW1
400MHz	
533MHz	
600MHz	

Table 2.3 400 ~ 600MHz Intel® Pentium® III/Coppermine processor

2.1-4 Fan Power Connectors: CPUFAN/PSEFAN/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 (optional)

CPUFAN : Processor Fan

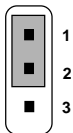
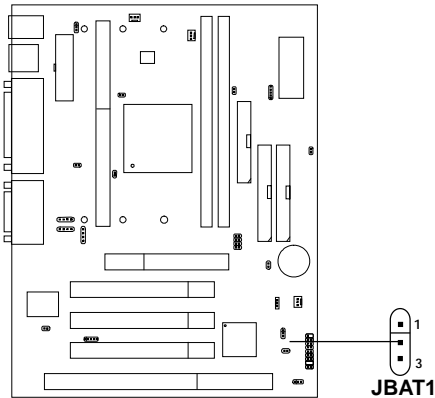
SYSFAN : System(Chassis) Fan (optional)

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.

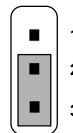
Note: 1. Always consult vendor for proper CPU cooling fan.

2.2 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



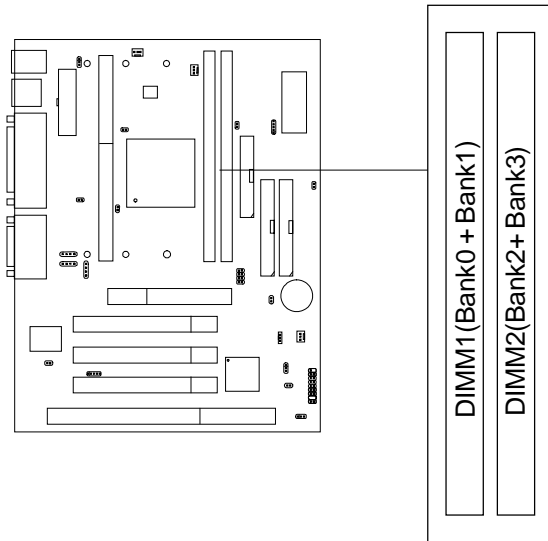
Clear Data

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 512MB DIMM for SDRAM: It provides two 168-pin DIMMs (Double In-Line Memory Module) sockets. It supports 8 MB to 256 Mbytes DIMM memory module.

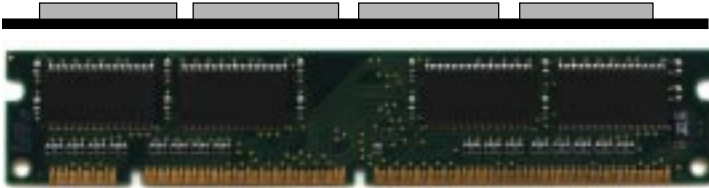


WARNING!

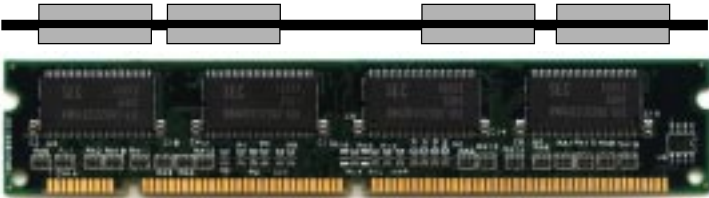
There are three kinds of DIMM specification supported by this mainboard: PC133, PC100 and PC66. If you use 66MHz CPU Bus Frequency, these three DIMM Specs. is supported. If you use 100 MHz CPU Bus Frequency, PC133 & PC100 DIMM Specs. is supported. If you use 133 MHz CPU Bus Frequency, only PC133 DIMM Specs. is supported.

2.3-2 Memory Installation Procedures

A. How to install a DIMM Module

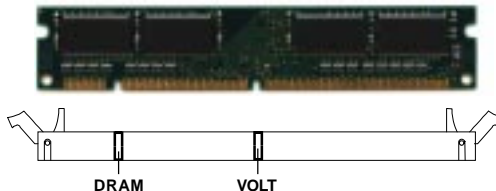


Single Sided DIMM



Double Sided DIMM

1. The DIMM slot has a two Notch Key “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

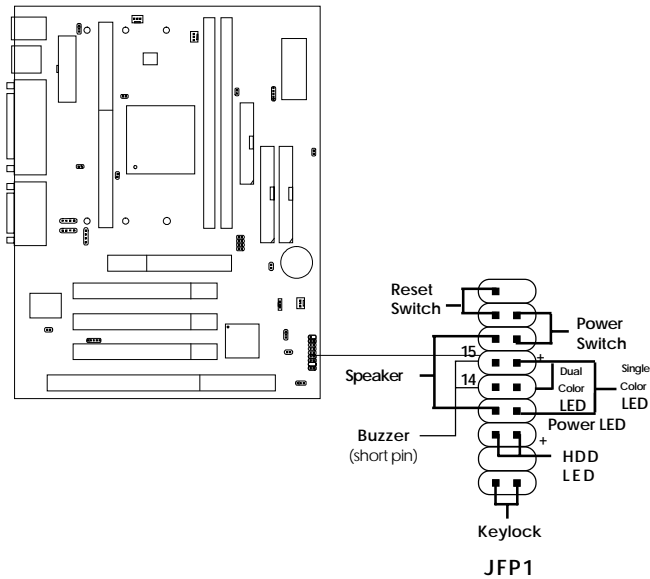
1. Supports only SDRAM DIMM.
2. To operate properly, at least one 168-pin DIMM module must be installed.
3. This mainboard supports Table Free memory, so memory can be installed on DIMM1 or DIMM 2 in any order.
4. Supports 3.3 volt DIMM.
5. The DRAM addressing and the size supported by the mainboard 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)	Double Side(D)
16M	1Mx16	ASYM	11	8	8MB	16MB
	2Mx8	ASYM	11	9	16MB	32MB
	4Mx4	ASYM	11	10	32MB	64MB
64M	2Mx32	ASYM	11	8	16MB	32MB
	4Mx16	ASYM	12	8	32MB	64MB
	4Mx16	ASYM	13	8	32MB	64MB
	8Mx8	ASYM	12	9	64MB	128MB
	16Mx4	ASYM	13	10	128MB	256MB
64M	8Mx8	ASYM	13	9	64MB	128MB
	16Mx4	ASYM	12	10	128MB	256MB

2.4 Case Connector: JFP1

The Power Switch, Reset Switch, Power LED, Speaker, Keylock 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

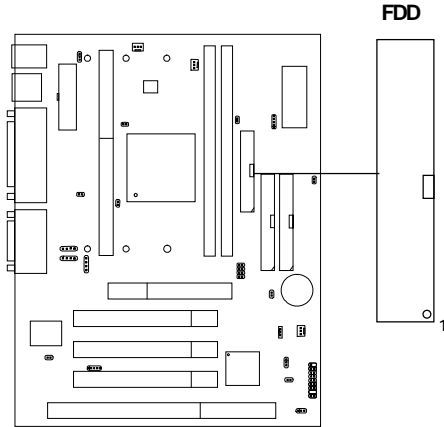
HDD LED shows the activity of a hard disk drive. Avoid turning the power off while the HDD led is lit. You can connect the HDD LED from the system case to this pin.

2.4-6 Keylock

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

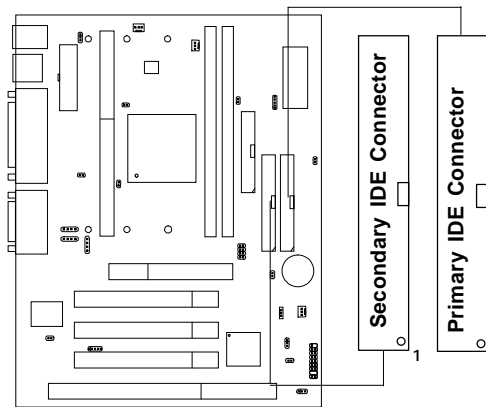
2.5 Floppy Disk Connector: FDD

The mainboard also provides a standard floppy disk connector FDC 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 Controller that provides PIO mode 0~4, Bus Master, and Ultra DMA/33/66 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.

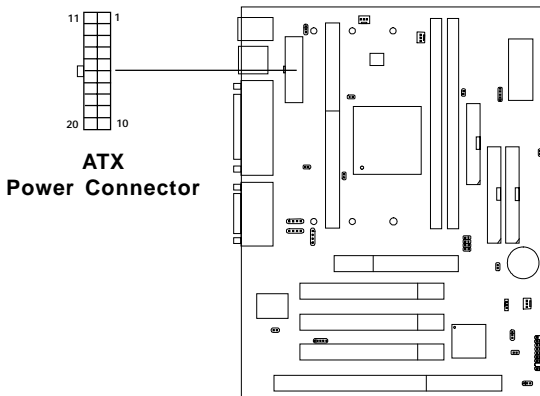
IDE2(Secondary IDE Connector)

IDE2 can also connect a Master and a Slave drive.

2.7 Power Supply

2.7-1 ATX 20-pin Power Connector: JWR1

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.



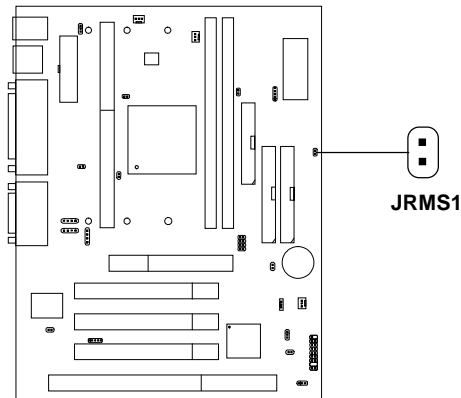
PIN DEFINITION

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.

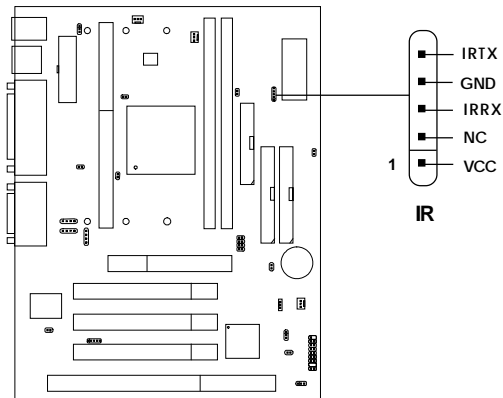
2.7-2 Remote Power On/Off Switch: JRMS1

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. This is only used for ATX type power supply.



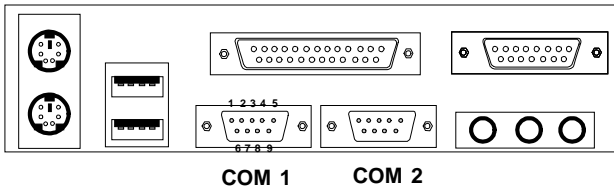
2.8 IrDA Infrared Module Connector: IR

The mainboard provides one 5-pin 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.



2.9 Serial Port Connectors: COM 1 and COM 2

The mainboard has two 9-pin male DIN connectors for serial port COM 1 and COM 2. These ports 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.



Serial Port (9-pin Male)

PIN DEFINITION

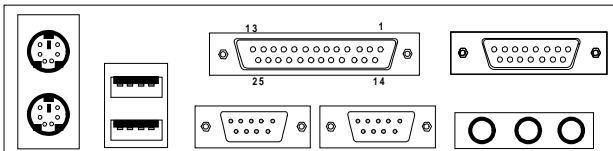
PIN	SIGNAL
1	DCD (Data Carry Detect)
2	SIN (Serial In or Receive Data)
3	SOUT (Serial Out or Transmit Data)
4	DTR (Data Terminal Ready)
5	GND
6	DSR (Data Set Ready)
7	RTS (Request To Send)
8	CTS (Clear To Send)
9	RI (Ring Indicate)

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

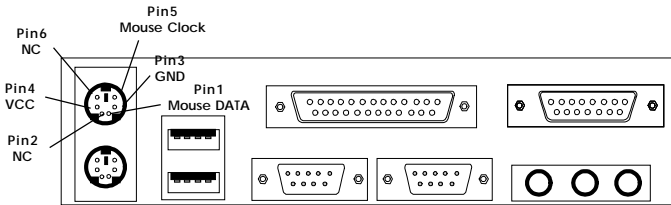


PIN DEFINITION

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: JKBS1

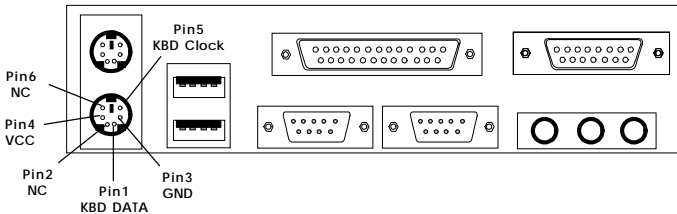
The mainboard provides a standard PS/2[®] mouse mini DIN connector for attaching a PS/2[®] mouse. You can plug a PS/2[®] mouse directly into this connector. The connector location and pin definition are shown below:



PS/2 Mouse (6-pin Female)

2.12 Keyboard Connector: JKBS1

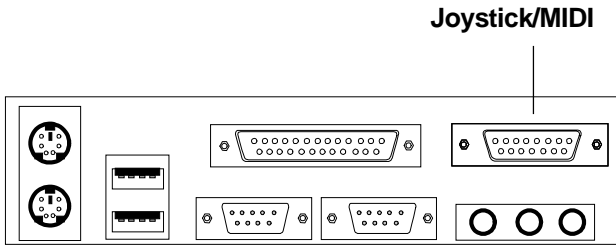
The mainboard provides a standard PS/2[®] keyboard mini DIN connector for attaching a keyboard. You can plug a keyboard cable directly to this connector.



PS/2 Keyboard (6-pin Female)

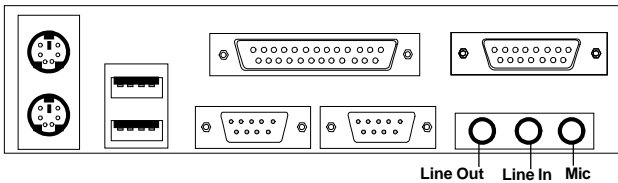
2.13 Joystick/Midi Connectors

You can connect joystick or game pads to this connector.



2.14 Audio Port Connectors

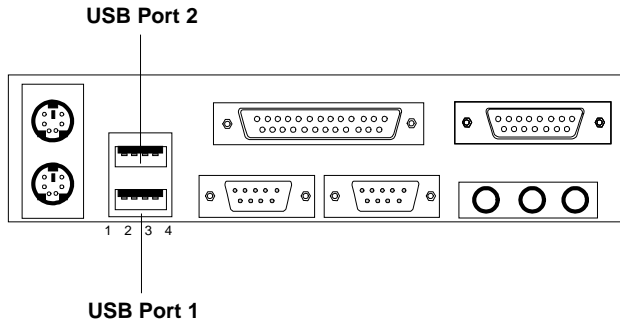
Line Out is a connector for Speakers or Headphones. **Line In** is used for external CD player, Tape layer, or other audio devices. **Mic** is a connector for the microphones.



1/8" Stereo Audio Connectors

2.15 USB Connectors

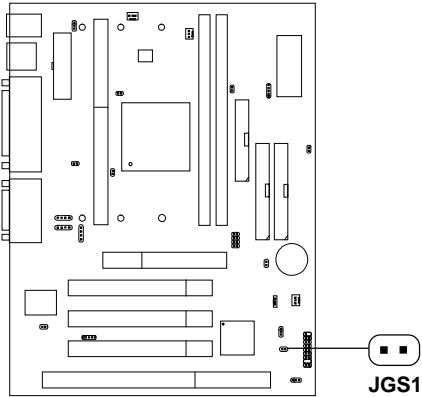
The mainboard provides a **UHCI(Universal Host Controller Interface) Universal Serial Bus root** for attaching USB devices like: keyboard, mouse and other USB devices. You can plug the USB device directly to this connector.



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

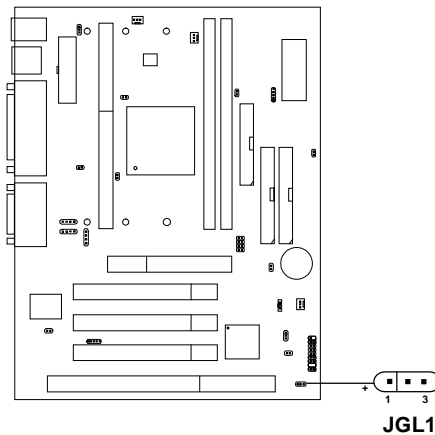
2.16 Power Saving Switch Connector: JGS1

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.



2.17 Power Saving LED Connector: JGL1

JGL1 can be connected with an 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
1-2 Single Color 1-3 Blink	1-2 Dual Color

2.18 Power On Mode Jumper: JP1

The mainboard supports three kinds of system boot up: the Boot-Up by switch, Stay Off, and Last State. With the **Boot-Up by Switch**, the system will boot up only when the power on switch is pressed. For **Stay Off**, the system will remain power off when the power connector is connected into the system; this function must be set in the BIOS Power Management. For **Last State**, this will record the last status the system was in: either System on or Shut down. The next time you boot up, the system will remember the last status. This function must be set at the BIOS Power Management Setup.

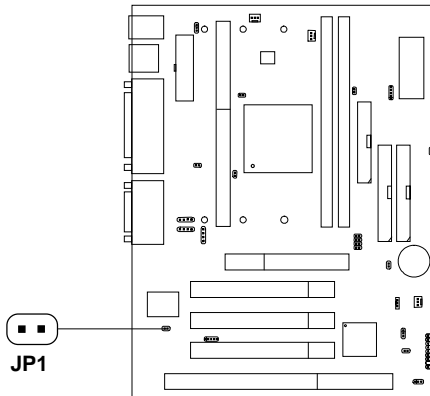




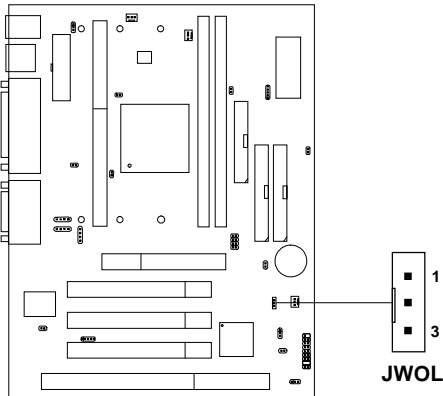
Table 2.20: Power On Mode Feature

JP1	Feature
	Select Boot-Up by Switch
	Select Stay Off/Select Last State

Note: Short **JP1**, when using Boot-Up by Switch feature. Open **JP1**, to enable Stay Off or Last State.

2.19 Wake-Up on LAN Connector: JWOL

The JWOL 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.



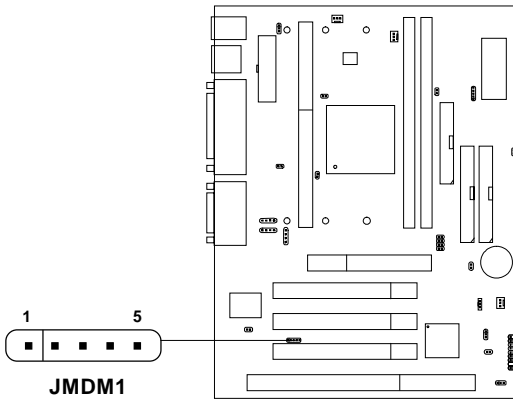
PIN	SIGNAL
1	5VSB
2	GND
3	MP_WAKEUP

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 use with Modem add-on card that supports the Modem Wake Up function. To use this function, you need to set the “Modem Ring Resume” to enable at the BIOS Power Management Setup.



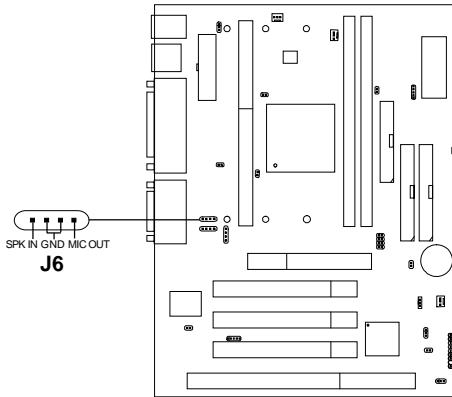
PIN	SIGNAL
1	NC
2	GND
3	MDM_WAKEUP
4	NC
5	5VSB

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: J6

The connector is for Modem with internal voice connector.

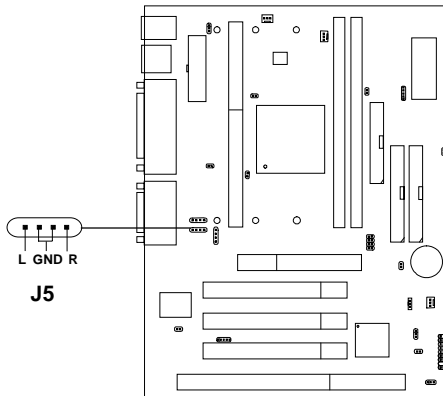


SPK_IN is connected to the Modem Speaker Out connector.

MIC_OUT is connected to the Modem Microphone In connector.

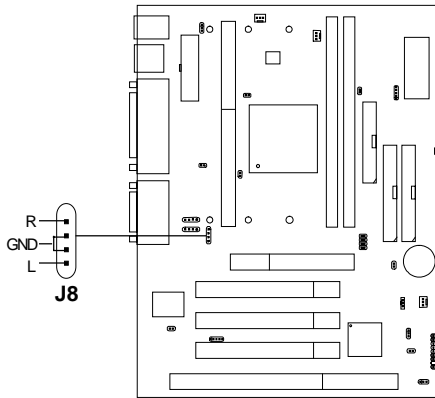
2.22 AUX Line In Connector: J5

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



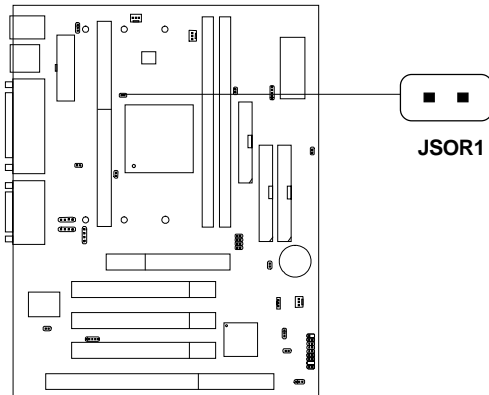
2.23 CD-In Modem Connector: J8

This connector is for CD-ROM voice connector.



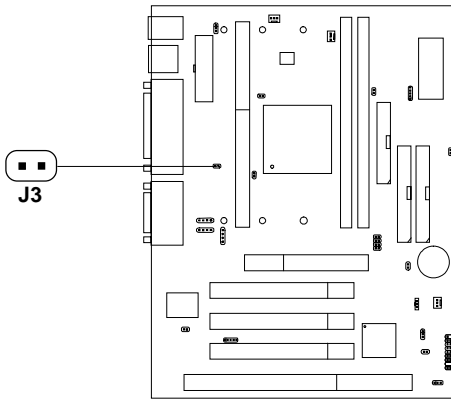
2.24 CPU Temperature Sensor: JSOR1 (optional)

This is used to check the CPU temperature. The JSOR1 is a sensor that is placed near the processor heatsink. This will monitor the CPU temperature.



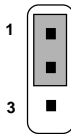
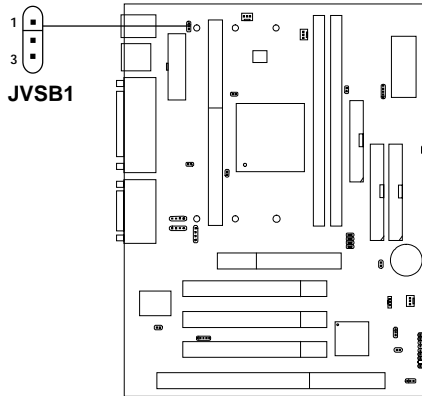
2.25 Chassis Intrusion Switch Connector: J3 (reserved)

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.

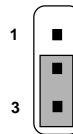


2.26 Keyboard Power: JVSBI (reserved)

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



5V Standby
Enable keyboard
power on function

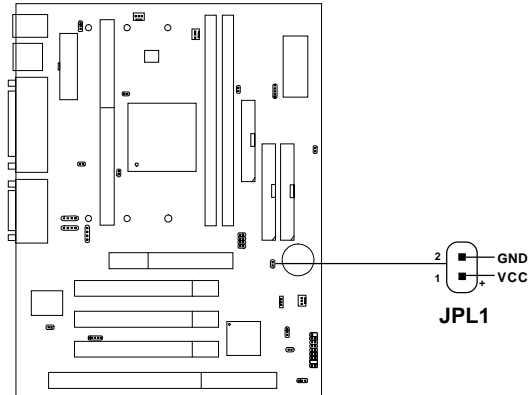


5V (default)
Disable keyboard
power on function

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)

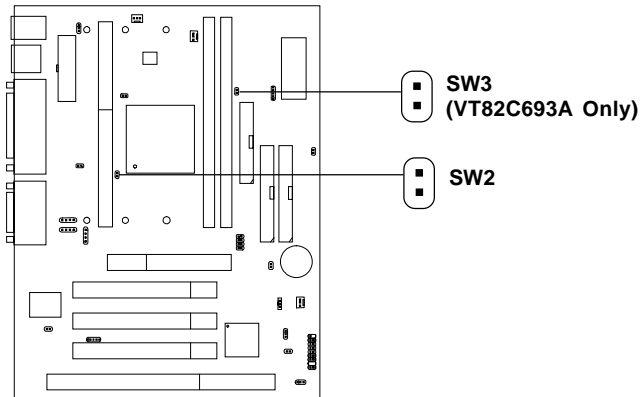
2.27 Power LED Connector: JPL1 (reserved)

The connector JPL1 can be connected to the Power LED. When the system is ON, the LED will be ON. When the system is OFF, the LED will be OFF.



2.28 Overclock Jumpers: SW2 & SW3

Jumpers SW2 and SW3 is used for overclocking from 66MHz to 100MHz, 100MHz to 133MHz or 66MHz to 133MHz. But this action is not highly suggested as it may cause system instability.



Overclock	SW2	SW3
66 to 100MHz	Open	Short
100 to 133MHz	Short	Open
66 to 133MHz	Open	Open
Auto Detect (default)	Short	Short

Chapter 3

AWARD® BIOS SETUP

Award® BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed RAM (CMOS RAM), so that it retains the Setup information when the power is turned off.

3.1 Entering Setup

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

TO ENTER SETUP BEFORE BOOT PRESS <CTRL-ALT-ESC>
OR KEY

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the “RESET” button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to,

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

3.2 Getting Help

Main Menu

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

Status Page Setup Menu/Option Page Setup Menu

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

3.3 The Main Menu

Once you enter Award® BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The Main Menu allows you to select from eleven setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

ROM PCI/ISA BIOS (2A59IM4C)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

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

Standard CMOS Setup

This setup page includes all the items in a standard compatible BIOS.

BIOS Features Setup

This setup page includes all the items of Award® special enhanced features.

Chipset Features Setup

This setup page includes all the items of chipset special features.

Power Management Setup

This category determines the power consumption for system after setting the specified items. Default value is Disable.

PNP/PCI Configuration Setup

This category specifies the IRQ level for PCI and ISA devices.

Load Setup Defaults

Chipset defaults indicates the values required by the system for the maximum performance.

Special Features Setup

This function is reserved for Special Hardware Monitor.

Integrated Peripherals

Change, set or disable onboard I/O, IRQ, and DMA assignment.

Supervisor Password/User Password

Change, set or disable password. This function allows the user access to the system and setup or just setup.

IDE HDD Auto Detection

Automatically configure hard disk parameters.

Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

3.4 Standard CMOS Setup

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

**ROM PCI/ISA BIOS (2A59IM4A)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.**

Date(mm:dd:yy): Fri, Feb 28,1997							
Time(hh:mm:ss): 00:00:00							
HARD DISKS	TYPE	SIZE	CYLS	HEADS	PRECOMP	LANDZONE	SECTOR MODE
Primary Master:	Auto	0	0	0	0	0	AUTO
Primary Slave :	Auto	0	0	0	0	0	AUTO
Secondary Master :	Auto	0	0	0	0	0	AUTO
Secondary Slave :	Auto	0	0	0	0	0	AUTO
Drive A :	1.44M,3.5in.			Base Memory:	640K		
Drive B :	None			Extended Base Memory:	15360K		
Video :	EGA/VGA			Other Memory:	384K		
Halt On :	All, but Keyboard			Total Memory:	16384K		
ESC :	Quit	↑↓→← : Select Item		PU/PD/+/- : Modify			
F1 :	Help	(Shift)F2 : Change Color					

Date

The date 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

The time format is <hour> <minute> <second>.

**PrimaryMaster/PrimarySlave
SecondaryMaster/Secondary Slave**

These categories identify the types of 2 channels that have been installed in the computer. There are 45 pre-defined types and 4 user definable types for Enhanced IDE BIOS. Type 1 to Type 45 are pre-defined. Type User is user-definable.

Press PgUp/<+> or PgDn/<-> to select a numbered hard disk type or type the number and press <Enter>. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Type User to define your own drive type manually.

If you select Type User, related information is asked to be entered to the following items. Enter the information directly from the keyboard and press <Enter>. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is ESDI, the selection shall be
“Type 1”.

If the controller of HDD interface is SCSI, the selection shall be
“None”.

If the controller of HDD interface is CD-ROM, the selection shall be
“None”.

CYLS.	number of cylinders
HEADS	number of heads
PRECOMP	write precom
LANDZONE	landing zone
SECTORS	number of sectors
MODE HDD	access mode

3.5 BIOS Features Setup

```
ROM PCI/ISA BIOS (2A59IM4A)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.
```

Anti-Virus Protection	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
CPU L2 Cache ECC Checking:	Enabled	D0000-D3FFF Shadow	: Disabled
Processor Number Feature	: Enabled	D4000-D7FFF Shadow	: Disabled
Quick Power on Self Test	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot From LAN First	: Disabled	DC000-DFFFF Shadow	: Disabled
Boot Sequence	: A, C, SCSI		
Swap Floppy Drive	: Disabled		
Boot Up Floppy Seek	: Enabled		
Boot up NumLock status	: On		
Gate A20 Option	: Fast		
Security Option	: Setup		
PCI/VGA palette snoop	: Disabled		
OS select for DRAM>64MB	: Non-OS2		
Report No FDD For WIN 95	: Yes		
		Esc : Quit ↑↓→← : Select item	
		F1 : Help PU/PD/+/- : modify	
		F5 : Old Value(Shift) F2 : Color	
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Anti-Virus Protection

During and after the system boots up, any attempt to write to the boot sector or partition of the hard disk drive will halt the system and the following error message will appear. For the meantime, you can run an anti-virus program to locate the problem. The settings are Enabled or Disabled.

Disabled

No warning message to appear when anything attempts to access the boot sector or hard disk partition table.

Enabled

Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector of hard disk partition table.

CPU Internal Cache

The default value is Enabled.

Enabled (default) Enable cache

Disabled Disable cache

Note: The internal cache is built in the processor.

External Cache

Choose Enabled or Disabled. This option enables the level 2 cache memory.

CPU L2 Cache ECC Checking

Choose Enabled or Disabled. This option enables the level 2 cache memory ECC(error check correction). Using 66MHz CPU BUS Deschutes processor, set to Enabled or Disabled. Using 100MHz CPU BUS Deschutes processor, always set to Enabled. For Celeron™ without cache processor, always set to Disabled.

Processor Number Feature

Choose Enabled or Disabled. This option enables the system to read the CPU's serial number.

Enabled (default) Allows to read the serial number of the CPU

Disabled The serial number of the CPU will be unreadable

Quick Power On Self Test

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

Enabled Enable quick POST

Disabled (default) Normal POST

Boot From LAN First

During Enabled, if there's a LAN card onboard, the priority booting will be from the LAN.

Boot Sequence

This category determines which drive the computer searches first for the disk operating system (i.e., DOS). The settings are A,C,SCSI/C,A,SCSI/C,CD-ROM,A/CD-ROM,C,A/D,A,SCSI/E,A,SCSI/F,A,SCSI/SCSI,A,C/SCSI,C,A/C,LS/ZIP,C only. Default value is A,C,SCSI.

Swap Floppy Drive

Switches the floppy disk drives between being designated as A and B. Default is Disabled.

Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 760K, 1.2M and 1.44M are all 80 tracks.

Boot Up NumLock Status

The default value is On.

On (default)	Keypad is numeric keys.
Off	Keypad is arrow keys.

Gate A20 Option

Normal	The A20 signal is controlled by keyboard controller or chipset hardware.
Fast (default)	The A20 signal is controlled by port 92 or chipset specific method.

Security Option

This category allows you to limit access to the system and Setup, or just to Setup.

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

PCI VGA Palette Snooping

Choose Disabled or Enabled. Some graphic controllers which are not VGA compatible, take the output from a VGA controller and map it to their display as a way to provide the boot information and the VGA compatibility.

However, the color information coming from the VGA controller is drawn from the palette table inside the VGA controller to generate the proper colors, and the graphic controller needs to know what is in the palette of the VGA controller. To do this, the non-VGA graphic controller watches for the Write access to the VGA palette and registers the snoop data. In PCI based systems, where the VGA controller is on the PCI bus and a non-VGA graphic controller is on an ISA bus, the Write Access to the palette will not show up on the ISA bus if the PCI VGA controller responds to the Writes.

In this case, the PCI VGA controller should not respond to the Write. It should only snoop the data and permit the access to be forwarded to the ISA bus. The non-VGA ISA graphic controller can then snoop the data on the ISA bus. Unless you have the above situation, you should disable this option.

Disabled (default)	Disables the function
Enabled	Enables the function

OS Selection for DRAM > 64MB

Allows OS2® to be used with > 64 MB of DRAM. Settings are Non-OS/2 (default) and OS2. Set to OS/2 if using more than 64MB and running OS/2®.

Report No FDD For WIN 95

This function is only used when you are testing SCT for Windows® 95 Logo.

Video BIOS Shadow

Determines whether video BIOS will be copied to RAM for faster execution. Video shadow will increase the video performance.

Enabled (default)	Video shadow is enabled
Disabled	Video shadow is disabled

C8000 - CFFFF Shadow/E8000 - EFFFF Shadow

Determines whether the optional ROM will be copied to RAM for faster execution.

Enabled	Optional shadow is enabled
Disabled (default)	Optional shadow is disabled

Note: For C8000-DFFFF optional-ROM on PCI BIOS, BIOS will automatically enable the shadow RAM. User does not have to select the item.

3.6 Chipset Features Setup

The Chipset Features Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.

Choose the “CHIPSET FEATURES SETUP” from the Main Menu and the following screen will appear.

ROM PCI/ISA BIOS(2A59IM4A)
CMOS SETUP UTILITY
CHIPSET FEATURES SETUP

SDRAM CAS Cycle Length :3	Auto Detect DIMM/PCI Clk :Enabled
DRAM Data Integrity Mode :Non-ECC	Spread Spectrum :Disabled
DRAM Clock :Host CLK	
Memory Hole :Disabled	
Video RAM Cacheable :Disabled	
AGP Aperture Size (MB) :64M	
AGP -2X Mode :Enabled	
Onchip USB :Enabled	
USB Keyboard Support :Disabled	
Esc : Quit ↑↓→← : Select item F1 : Help PU/PD/+/- : modify F5 : Old Value(Shift) F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	

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

SDRAM Cycle Length

You can select SDRAM Cycle Length in HCLKs of 2 or 3 (default). You should set the values in this field, depending on the SDRAM installed.

DRAM Data Integrity Mode

Select Non-ECC or ECC(error-correcting code), according to the type of installed DRAM. The settings are Non-ECC (default) or ECC.

DRAM CLK

The chipset support synchronous and asynchronous mode between the host clock and DIMM clock.

Host CLK (default)	DIMM clock equal to host clock
66MHz	DIMM clock equal to 66MHz

Memory Hole At 15M-16M

In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16 MB.

15M-16M	Memory hole supported.
Disabled(default)	Memory hole not supported.

Video RAM Cacheable

Select Enabled allows caching of the video RAM, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

AGP Aperture Size (MB)

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

AGP -2X Mode

This item allows you to enabled or disabled the AGP -2X mode.

Enabled (default)	Enables the AGP -2X mode.
Disabled	Disables the AGP -2X mode.

Onchip USB

This item should be enabled if your system has USB installed on the system board and wish use it.

Enabled	Enables the USB function.
Disabled	Disables the USB function.

USB Keyboard Support

Choosing Enabled will allow the system to utilize the USB keyboard without a device driver.

Auto Detect DIMM/PCI Clk

This item allows you to select the DIMM/PCI clock. The other sockets will not generate when DIMM/PCI cards are not installed. The setting should be set to enabled which works better for EMI.

Spread Spectrum

This item allows you to select the clock generator Spread Spectrum function and system bus frequency (CPU Clock). The default is CPU default frequency. If you over-clock the processor, the system will hang-up. (Press F10 to resume to the original value)

3.7 Power Management Setup

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

**ROM PCI/ISA BIOS (2A6LGM4E)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.**

Power Management	:User Define	IRQ3 (COM 2)	:Primary
PM Control by APM	:Yes	IRQ4 (COM 1)	:Primary
Video Off After	:Suspend → Off	IRQ5 (LPT 2)	:Primary
Video Off Method	:V/H SYNC+Blank	IRQ6 (Floppy Disk)	:Primary
MODEM Use IRQ	:3	IRQ7 (LPT 1)	:Primary
Reserve IRQ 9	:Yes	IRQ8 (RTC Alarm)	:Disabled
Soft-Off by PWRBTN	:Install - Off	IRQ9 (IRQ2 Redir)	:Secondary
** PM Timers **		IRQ10 (Reserved)	:Secondary
HDD Power Down	:Disable	IRQ11 (Reserved)	:Secondary
Doze Mode	:Disable	IRQ12 (PS/2 Mouse)	:Primary
Suspend Mode	:Disable	IRQ13 (Coprocessor)	:Primary
** PM Events **		IRQ14 (Hard Disk)	:Primary
VGA	:Off	IRQ15 (Reserved)	:Disabled
LPT & COM	:LPT/COM		
HDD & FDD	:ON		
Wake Up On LAN	:Disabled		
Modem Ring Resume	:Disabled		
RTC Alarm Resume	:Disabled		
Date (of Month)	:0		
Timer (hh:mm:ss)	:0: 0: 0		
		Esc : Quit	↑↓→← : Select item
		F1 : Help PU/PD/+/-	: modify
		F5 : Old Value(Shift)	F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. HDD Power Down
2. Doze Mode
3. Suspend Mode

There are four selections for Power Management, three of which have fixed mode settings.

Disabled (default)	No power management. Disables all three modes
Min. Power Saving	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management. Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

PM Control by APM

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

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

Video Off Option

The settings are Suspend→off/All modes→off/Always on. This option is for choosing the setting in which the monitor will turn off.

Always On Always turn on.

All Modes→Off During Doze mode, Standby mode or Suspend mode, the monitor will be turned off.

Suspend→Off During Suspend mode, the monitor will be turned off.

The default setting is Standby.

Video Off Method

This determines the manner in which the monitor blanked.

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

MODEM Use IRQ

This determines the IRQ in which the MODEM can use.

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

Soft-Off by PWR-BTTN

The settings are Delay 4 sec or Instant-off. During Delay 4 sec, if you push the switch once, the system goes into suspend mode. If you push it more than 4 seconds, the system will be turned off. During instant-off, the system will turn off once you push the switch.

PM Timers

The following four modes are Green PC power saving functions which are only user configurable when *User Defined Power Management* has been selected.

HDD Power Down

When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

Doze Mode

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

Suspend Mode

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

PM Events

PM events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything which occurs to a device which is configured as *On*, even when the system is in a power down mode.

VGA

When Enabled, you can set the VGA to awaken the system.

LPT & COM

When you choose either LPT or COM, any activity from one of the listed system peripheral devices or IRQs wakes up the system.

HDD & FDD

When you choose either HDD or FDD, any activity from one of the listed system peripheral devices wakes up the system.

Wake Up On LAN

To use this function, you need a LAN add-on card which support power on functions. It should also support the wake-up on LAN jumper (JWOL1).

- | | |
|-----------------|----------------------------------|
| Enabled | Wake up on LAN is supported. |
| Disabled | Wake up on LAN is not supported. |

Modem Ring Resume

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

RTC Alarm Resume

When *Enabled*, you can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.

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

- **IRQ3 (COM 2)**
- **IRQ4 (COM 1)**
- **IRQ5 (LPT 2)**
- **IRQ6 (Floppy Disk)**
- **IRQ7 (LPT 1)**
- **IRQ8 (RTC Alarm)**
- **IRQ9 (IRQ2 Redir)**
- **IRQ10 (Reserved)**
- **IRQ11 (Reserved)**
- **IRQ12 (PS / 2 Mouse)**
- **IRQ13 (Coprocessor)**
- **IRQ14 (Hard Disk)**
- **IRQ15 (Reserved)**

3.8 PNP/PCI Configuration Setup

You can manually configure the PCI Device's IRQ. The following pages tell you the options of each item & describe the meanings of each options.

ROM PCI/ISA BIOS (2A69HM4D)
PNP/PCI CONFIGURATION SETUP
AWARD SOFTWARE, INC.

PnP OS Installed	:No	PCI IRQ Activated By	: Level
Resources Controlled By	:Manual	Assign IRQ for VGA	: Enabled
Reset Configuration Data	:Disabled		
IRQ-3 assigned to	: Legacy ISA		
IRQ-4 assigned to	: Legacy ISA		
IRQ-5 assigned to	: PCI/ISA PnP		
IRQ-7 assigned to	: PCI/ISA PnP		
IRQ-9 assigned to	: PCI/ISA PnP		
IRQ-10 assigned to	: PCI/ISA PnP		
IRQ-11 assigned to	: PCI/ISA PnP		
IRQ-12 assigned to	: PCI/ISA PnP		
IRQ-14 assigned to	: PCI/ISA PnP		
IRQ-15 assigned to	: PCI/ISA PnP		
DMA-0 assigned to	: PCI/ISA PnP		
DMA-1 assigned to	: PCI/ISA PnP		
DMA-3 assigned to	: PCI/ISA PnP		
DMA-5 assigned to	: PCI/ISA PnP		
DMA-6 assigned to	: PCI/ISA PnP		
DMA-7 assigned to	: PCI/ISA PnP		
		Esc : Quit	↑↓→← : Select item
		F1 : Help	FU/PD/+/- : modify
		F5 : Old Value(Shift)	F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

PnP OS Installed

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® 95 or 98. When set to NO, BIOS will initialize all the PnP cards. So, for non-PnP operating system (DOS, Netware®), this option must set to NO.

Resources Controlled By

By Choosing “Auto”, the system BIOS will detect the system resource and automatically assign the relative IRQ and DMA Channel for each peripheral.

By Choosing “Manual”(default), the user will need to assign IRQ & DMA for add-on cards. Be sure that there is no conflict for IRQ/DMA and I/O ports.

Note: When choosing “Auto”, you must be sure that all of the system add-on cards are PnP type.

Reset Configuration Data

The system BIOS supports the PnP feature so the system needs to record which resource is assigned and protect resources from conflict. Every peripheral device has a node which is called ESCD. This node records which resources are assigned to it. The system needs to record and update ESCD to the memory locations. These locations (4K) are reserved at the system BIOS.

If Disabled (default) is chosen, the system’s ESCD will update only when the new configuration varies from the last one.

If Enabled is chosen, the system will be forced to update the system’s ESCD. Then, this option will be auto-set to Disable.

IRQ-3 assigned to : Legacy ISA
IRQ-4 assigned to : Legacy ISA
IRQ-5 assigned to : PCI/ISA PnP
IRQ-7 assigned to : Legacy ISA
IRQ-9 assigned to : PCI/ISA PnP
IRQ-10 assigned to : PCI/ISA PnP
IRQ-11 assigned to : PCI/ISA PnP
IRQ-12 assigned to : PCI/ISA PnP
IRQ-14 assigned to : PCI/ISA PnP

IRQ-15 assigned to : PCI/ISA PnP
DMA-0 assigned to : PCI/ISA PnP
DMA-1 assigned to : PCI/ISA PnP
DMA-3 assigned to : PCI/ISA PnP
DMA-5 assigned to : PCI/ISA PnP
DMA-6 assigned to : PCI/ISA PnP
DMA-7 assigned to : PCI/ISA PnP

The above settings will be shown on the screen only if “Manual” is chosen for the *Resources Controlled By* function.

Legacy is the term which signifies that a resource is assigned to the ISA Bus and provides for non PnP ISA add-on card. PCI/ISA PnP signifies that a resource is assigned to the PCI Bus or provides for ISA PnP add-on cards and peripherals.

Assign IRQ for VGA

Lets the user choose which IRQ to assign for VGA card.

Assign IRQ for USB

Set to Enabled when USB port will be used. Set to Disable if the USB port will not be used.

Used MEM base addr

Lets the user choose the Legacy ISA addr. The settings are NA#, C800, CC00, D000, D400, D800 or DC00.

Used MEM base addr

Lets the user choose the Legacy ISA addr. memory length. The settings are 8K, 16K, 32K, or 64K.

PCI IRQ Activated By

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

3.9 Load BIOS/Setup Defaults

This Main Menu item loads the default system values. If the CMOS is corrupted, the defaults are loaded automatically. Choose this item and the following message appears:

“ Load Setup Defaults (Y / N) ? N “

To use the Setup defaults, change the prompt to “Y” and press < Enter >

Note: The Setup defaults can be customized to increase performance. However the BIOS defaults can always be used as a back up if there is some problem with the mainboard operation.

3.10 Special Features Setup (optional)

This Special Features Setup is used by System Hardware Monitor chipset. You can manually change the value of each option.

ROM PCI/ISA BIOS (2A69HM4C)
 INTEGRATED PERIPHERALS
 AWARD SOFTWARE, INC.

***** POST SHOWING *****		***** SYSTEM MONITOR *****	
Chassis Fan Detected	:Disabled	Chassis FAN RPM	:0
Power Fan Detected	:Disabled	Power FAN RPM	:0
CPU Fan Detected	:Enabled	CPU Fan RPM	:6367
Chassis Intrusion Detect	:Disabled	System Temperature	:26°C/78°F
Voltage Detected	:Enabled	CPU Temperature	:28°C/82°F
Vcore Voltage Detected	:Enabled	CPU Critical Temp	:Disabled
+2.5V Voltage Detected	:Enabled	Shutdown Temp	:Disabled
+3.3V Voltage Detected	:Enabled		
+5.0V Voltage Detected	:Enabled		
+12V Voltage Detected	:Enabled		
-12V Voltage Detected	:Enabled		
-5.0V Voltage Detected	:Enabled		
		Esc : Quit ↑↓→← : Select item	
		F1 : Help PU/PD/+/- : modify	
		F5 : Old Value(Shift) F2 : Color	
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Chassis Fan Detected/Power Fan Detected/CPU Fan Detected/Voltage Detected/Vcore Voltage Detected/+2.5V Voltage Detected/+3.3V Voltage Detected/+5.0 Voltage Detected/+12V Voltage Detected/-12V Voltage Detected/-5.0 Voltage Detected

During Enabled, this will show the CPU/FAN voltage chart during system boot up. During Disabled, this will not show.

Chassis Intrusion Detect

Set this option to Enabled, Reset, or Disabled the chassis intrusion detector. During Enabled, any intrusion on the system chassis will be recorded. The next time you turn on the system, it will show a warning message. To be able to clear those warning, choose Reset. After clearing the message, it will go back to Enabled.

Chassis/Power/CPU Fan RPM

During Enabled, this will monitor the RPM of your CPU/Chassis/Power fan.

System Temperature/CPU Temperature

This will show the System and CPU temperature.

CPU Critical Temp

This option is for setting the critical temperature level for the processor. When the processor reach the temperature you set, this will reduce the load on the processor.

Shutdown Temp

This option is for setting the Shutdown temperature level for the processor. When the processor reach the temperature you set, this will shutdown the system. This function only works with Windows® 95 operating system.

3.11 Integrated Peripherals

ROM PCI/ISA BIOS (2A69HM4D)
 INTEGRATED PERIPHERALS
 AWARD SOFTWARE, INC.

CDROM Set PIO Mode	:Enabled	Onboard FDC controller	:Enabled
Primary Master PIO	:Auto	Onboard Serial Port 1	:3F8IRQ4
Primary Slave PIO	:Auto	Onboard Serial Port 2	:2F8IRQ3
Secondary Master PIO	:Auto	UART Mode Select	:Normal
Secondary Slave PIO	:Auto	Onboard Parallel Mode	:378/IRQ7
Primary Master UDMA	:Auto	Parallel Port Mode	:SPP
Primary Slave UDMA	:Auto		
Secondary Master UDMA	:Auto	Power Status Led	:Single
Secondary Slave UDMA	:Auto	Restore AC/Power Loss	:Last State
Init Dislay First	:PCI slot		
Onboard Sound	:Enable		
KBC Input Clock	:8MHz		
		Esc : Quit ↑↓→← : Select item F1 : Help PU/PD/+/- : modify F5 : Old Value(Shift) F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	

CDROM Set PIO Mode

Select whether the CDROM is fixed to PIO mode or not.

Enabled CDROM is fixed to PIO mode

Disabled The mode of CDROM is depending on the CD-ROM

Primary Master PIO**Auto/Mode0/Mode1-4****Primary Slave PIO****Auto/Mode0/Mode1-4****Secondary Master PIO****Auto/Mode0/Mode1-4****Secondary Slave PIO****Auto/Mode0/Mode1-4**

For these 4 IDE options, choose “Auto” to have the system BIOS auto detect the IDE HDD operation mode for PIO access.

Note: Some IDE HDD cannot operate at the responding HDD’s mode. When the user has selected “Auto” and the system BIOS has accepted the HDD response mode, the user may degrade the HDD’s operation mode. Ex: IF the HDD reported it can operate in mode 4 but it is not operating properly, the user will have to manually change the operation mode to mode 3.

Choosing Mode 1-4 will have the system ignore the HDD’s reported operation mode and use the selected mode instead.

Note: According to ATA specs. Mode 4 transfer rate is > Mode 3 > Mode 2 > Mode 1 > Mode 0. If the user’s HDD can operate at Mode 3 the user can also select a slower Mode (i.e. Mode 0-2) but not a faster Mode (ie Mode 4).

**IDE Primary Master UDMA/IDE Primary Slave UDMA/IDE
Secondary Master UDMA/IDE Secondary Slave UDMA**

- Auto** BIOS will Auto detect whether IDE is PIO Mode
or UDMA Mode
- Disabled** Disabled the UDMA Mode

Init Display First

- PCISlot** If both PCI VGA card and AGP card are
installed, the system will display the PCI
VGA card first.
- AGP** If both PCI VGA card and AGP card are
installed, the system will show the AGP
card first.

Onboard Sound

- Enabled/Disabled** Enabled or Disabled the onboard sound
chip.

Onboard FDC Controller**Enabled/Disabled**

The system has an on-board Super I/O chip with a FDD controller that supports 2 FDDs for 360K/720K/1.2M/1.44M/2.8M. Choose “Enabled” to use the on-board FDD controller for accessing the FDD. Otherwise choose “Disabled” to use the off-board FDD controller.

Onboard Serial Port 1**Disabled/(3F8/IRQ4)/(2F8/IRQ3)/(3E8/IRQ4)/(2E8/IRQ3)****Onboard Serial Port 2****Disabled/(3F8/IRQ4)/(2F8/IRQ3)/(3E8/IRQ4)/(2E8/IRQ3)**

The system has an On-board Super I/O chipset with 2 serial ports. The On-board serial ports can be selected as:

Disabled

3F8/IRQ4	COM 1 uses IRQ4
2F8/IRQ3	COM 2 uses IRQ3
3E8/IRQ4	COM 3 uses IRQ4
2E8/IRQ3	COM 4 uses IRQ3

Note: Because the ISA Bus Interrupt accepts low to high edge trigger, the interrupt request line cannot be shared by multiple sources. If an off-board ISA add-on card with a serial port is installed the user may have to disable the on-board serial port because it will conflict with IRQ request line for the off-board serial port

UART Mode Select

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

Onboard Parallel Mode**Disabled****(3BCH/IRQ7)/****(278H/IRQ5)/****(378H/IRQ5)**

There is a built-in parallel port on the on-board Super I/O chipset that provides Standard, ECP, and EPP features. It has the following options:

Disable

3BCH/IRQ7 Line Printer port 0

278H/IRQ5 Line Printer port 2

378H/IRQ5 Line Printer port 1

Parallel Port Mode

SPP : Standard Parallel Port

EPP : Enhanced Parallel Port

ECP : Extended Capability Port

SPP/(EPP/SPP)/**ECP(ECP/EPP)**

To operate the onboard parallel port as Standard Parallel Port only, choose "SPP." To operate the onboard parallel port in the ECP and SPP modes simultaneously, choose "ECP/SPP." By choosing "ECP", the onboard parallel port will operate in ECP mode only. Choosing "ECP/EPP" will allow the onboard parallel port to support both the ECP and EPP modes simultaneously. The ECP mode has to use the DMA channel, so choose the onboard parallel port with the ECP feature. After selecting it, the following message will appear: "ECP Mode Use DMA" At this time, the user can choose between DMA channels 3 or 1. The onboard parallel

port is EPP Spec. compliant, so after the user chooses the onboard parallel port with the EPP function, the following message will be displayed on the screen: “EPP Mode Select.” At this time either EPP 1.7 spec. or EPP 1.9 spec. can be chosen.

Power Status LED

This item determines which state the Power LED will use. The settings are Blink, Dual color and Single color. During Blink, the Power LED will blink when the system enters the suspend mode. When the mode is in Dual color, the Power LED will change its color in suspend mode. Choose the Single color and the Power LED will always remain lit.

Restore AC/Power Loss

The settings are Last Status (default) and Stay Off. During Stay Off, after every AC power loss, the system will be power off. During Last Status, after every AC power loss, whatever the system status, it will be the same when the AC power returns.

Note: If you set this option to last status, Jumper JP1 must be open or this function will not work.

3.12 Supervisor/User Password Setting

This Main Menu item lets you configure the system so that a password is required each time the system boots or an attempt is made to enter the Setup program. Supervisor Password allows you to change all CMOS settings but the User Password setting doesn't have this function. The way to set up the passwords for both Supervisor and User are as follow:

1. Choose "Change Password" in the Main Menu and press <Enter>.

The following message appears:

"Enter Password:"

2. The first time you run this option, enter your password up to only 8 characters and press <Enter>. The screen does not display the entered characters. For no password just press <Enter>.
3. After you enter the password, the following message appears prompting you to confirm the password:

"Confirm Password:"

4. Enter exactly the same password you just typed in to confirm the password and press <Enter>.
 5. Move the cursor to Save & Exit Setup to save the password.
 6. If you need to delete the password you entered before, choose the Supervisor Password and press <Enter>. It will delete the password that you had before.
 7. Move the cursor to Save & Exit Setup to save the option you did. Otherwise, the old password will still be there when you turn on your machine
-

next time.

3.13 IDE HDD Auto Detection

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

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

**ROM ISA BIOS
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.**

HARD DISKS	TYPE	SIZE	CYLS	HEADS	PRECOMP	LANDZONE	SECTOR	MODE
Primary Master:	Auto	0	0	0	0	0	0	AUTO
Primary Slave :	Auto	0	0	0	0	0	0	AUTO
Secondary Master :	Auto	0	0	0	0	0	0	AUTO
Secondary Slave :	Auto	0	0	0	0	0	0	AUTO

Select Primary Master		Option (N=Skip) : N					
OPTIONS	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
2	2112	1023	64	0	4094	63	LBA
1	2113	4095	16	65535	4094	63	NORMAL
3	2113	2047	32	65535	4094	63	LARGE

[ESC: Skip]

Chapter 4

DRIVER INSTALLATION

1. VIA Chipset Driver

Install “VIA Chipset Driver” first, before installing other drivers.

1.1 VIA Chipset 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 “VIA Chipset Drivers” icon.
- Step 4:** The screen will show “VIA Service Pack 4.07”, please click “Next” icon to continue.
- Step 5:** The screen will show four drivers for you to select from. These are “Bus Master PCI IDE Driver”, “AGP VxD Driver”, “Registry”, and “IRQ Routing Miniport Driver”. Please select all of the four drivers and click on “Next”.
- Step 6:** The screen will show Choose “Install”, “Uninstall” or “Enable/Disable (Ultra) DMA for IDE Driver”. Please select “Install” and then click “Next” icon to proceed.
- Step 7:** The screen will now show “Setup program will install/uninstall AGP Driver for you”, please select “Install VIA AGP VxD in turbo mode” and then click on “Next”.
- Step 8:** The screen will show “VIA Chipset Functions Registry Setup”, please click “Next” icon to continue.
- Step 9:** The screen will show “Install/Uninstall IRQ Routing Miniport Driver”. Please select “Install VIA IRQ Routing Miniport Driver” and then click on “Next”.
- Step 10:** The screen will show “Setup Complete”, please select “Yes, I want to restart my computer now” and click “Finish” and the system will now restart.

2. Creative Audio Driver

The Creative® 1373 digital controller provides the next generation of audio performance to the PC market

2.1 Features

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

2.2 System Requirements

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

Computer	Intel® Pentium® II/Celeron™ 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® 1373

2.3 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.

2.3-1 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.

2.3-1-1 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.

2.3-2 Windows® NT 4.0

2.3-2-1 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.

2.4 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