Chapter 1

INTRODUCTION

The ATX mainboard is a high-performance personal computer mainboard based on the Intel® Socket 370 processor and Cyrix® processor. The Intel® Socket 370 processor supports MMX™ (Multimedia Extension) technology.

The mainboard uses the highly integrated VIA VT82C693A chipset to support to provide 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, chassis intrusion detect and TOP TECH III as an optional function.

1.1 Mainboard Features

CPU
- Socket 370 for Intel® Celeron™ , Pentium® III, and Cyrix® Joshua processors.
- Supports 300MHz, 333MHz, 366MHz, 400MHz, 433MHz, 466MHz, 500MHz and faster.

Chipset
- VIA VT82C693A/VT82C596B.

FSB (Front Side Bus)
- 66MHz ,100MHz and 133MHz are supported.

Main Memory
- Supports four memory banks using three 168-pin unbuffered DIMM.
- Supports a maximum memory size of 1GB (16M x 4) registered DIMM only.
- Supports 3.3v SDRAM DIMM.

Slots
- One AGP slot.
    - AGP specification compliant
    - AGP 66/133MHz 3.3v device support
- Five 32-bit Master PCI Bus slots and two 16-bit ISA Bus slots (wherein one PCI/ISA slot is shared).
  *See Chapter 2-30 for further details on PCI slots.
- Supports 3.3v/5v PCI bus Interface.

On-Board IDE for Ultra 66/33
- An IDE controller on the VT82C596B PCI Chipset provides IDE HDD/CD-ROM with PIO, Bus Master Ultra DMA/33, and Ultra DMA/66 operation modes.
- Can connect up to four IDE devices.

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

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.
- Anti-BIOS Virus function.

Dimension
- ATX Form Factor : 30cm(L) x 19.2cm(W) x 4 layers PCB

**Mounting**
- 6 mounting holes.

System Hardware Monitor
- CPU/Power Supply/Chassis Fan Revolution Detect
- CPU Fan Control detects the CPU temperature, then determine the FAN SPEED, which utilizes PC Alert program (the fan will automatically stop when the system enters suspend mode)
- System Voltage Detect
- 5VSB and Battery Voltage Detect
- CPU Overheat Warning.
- Display Actual Current Voltage
- Chassis Intrusion

Other Features
- Keyboard Password Wake-Up
- LAN Wake-Up
- Internal/External Modem Wake-Up

1.2 Mainboard Layout
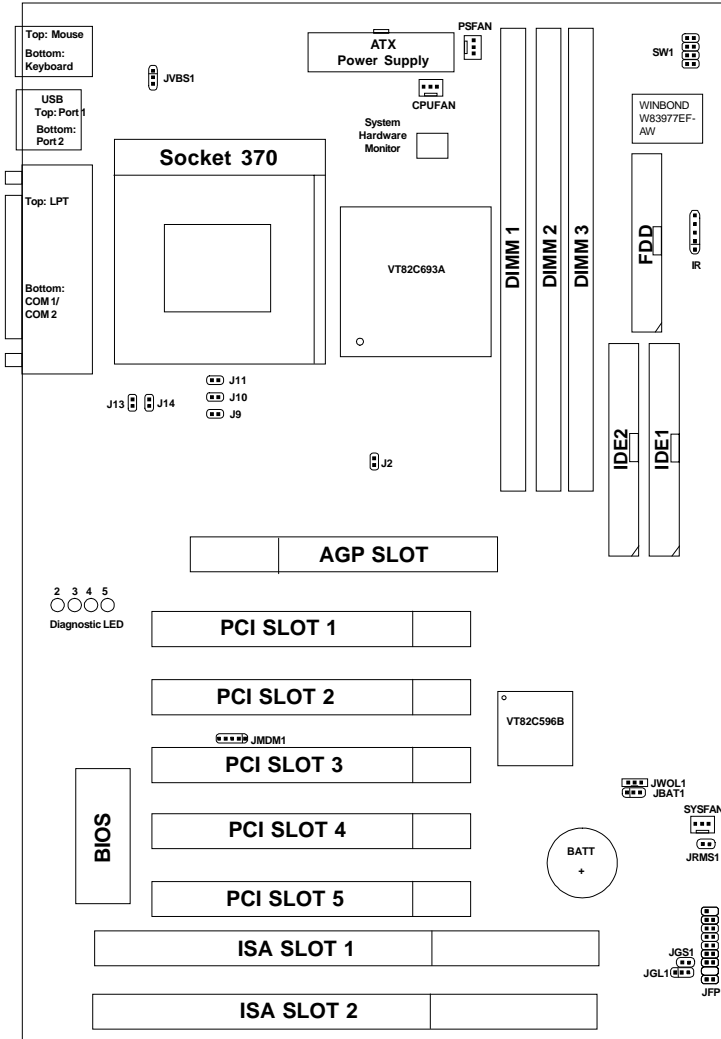

MS-6153VA ATX Mainboard

Chapter 2

HARDWARE INSTALLATION

2.1 Central Processing Unit: CPU

The mainboard operates with **Intel® CeleronTM or Pentium® III 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.

2.1-1 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.
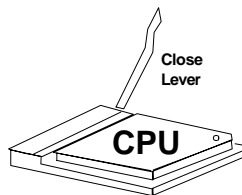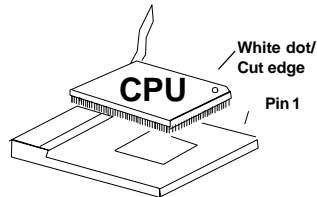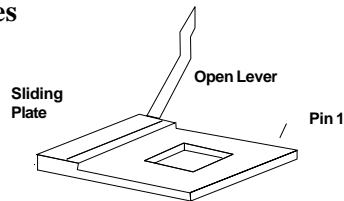
2.1-2 CPU Core Speed Derivation Procedure (SW1)

1. If the CPU Core/Bus ratio is already fixed, adjusting the SW1 will not change the CPU Core/Bus ratio. If the Core/Bus ratio is not fixed by the CPU, then you can adjust the SWI to change the Core/Bus ratio.

If	CPU Clock	=	66MHz
	Core/Bus ratio	=	3.5
then	CPU core speed	=	Host Clock x Core/Bus ratio
		=	66MHz x 3.5
		=	233MHz

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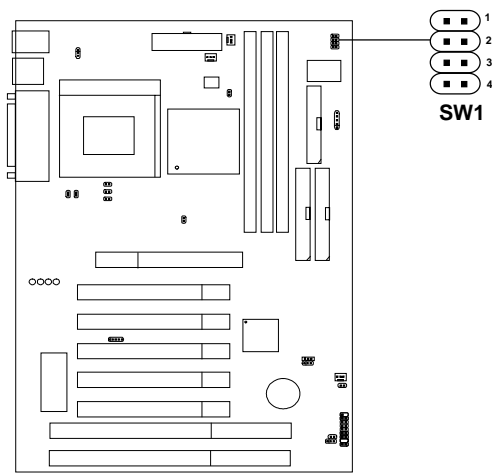
SW1				CPU
1	**2**	**3**	**4**	**Core/Bus Ratio**
ON	ON	OFF	ON	3
ON	OFF	OFF	ON	3.5
ON	ON	ON	OFF	4
ON	OFF	ON	OFF	4.5
ON	ON	OFF	OFF	5
ON	OFF	OFF	OFF	5.5
OFF	ON	ON	ON	6
OFF	OFF	ON	ON	6.5
OFF	ON	OFF	ON	7
OFF	OFF	OFF	ON	7.5
OFF	ON	ON	OFF	8

ON = Short   **OFF = Open**

2.1-3 CPU Bus Frequency Selector: J9

The J9 is used to set the CPU Bus Frequencies from 66MHz to 100MHz. When J9 is shorted, this will automatically detect the CPU Bus Frequency. When J9 is open, if you used 66MHz CPU, the Bus Frequency will be set virtually into 100MHz.
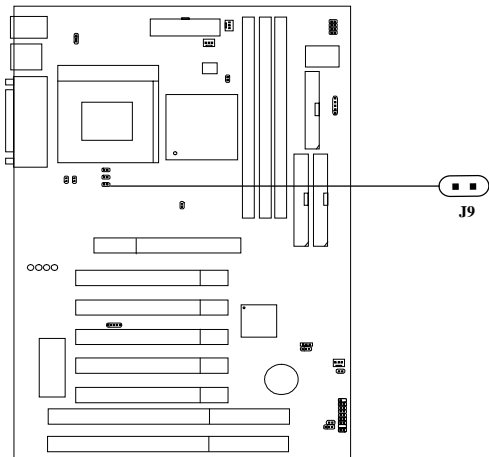
J9	Feature
	Automatically detect 66MHz and 100MHz CPU Bus Frequency
	Virtually set 66MHz CPU Bus Frequency into 100MHz

NOTE: 1. This feature works with 66MHz FSB only.
2. If your CPU FSB supports 66MHz and you want to run it on   100MHz FSB, the J9 should be open. The AGP Bus will be set to run at 100MHz x 2/3=66MHz to make it stable.

2.1-4 CPU Bus Frequency Selector 2: J10

The J10 is used to set the CPU Bus Frequency from 100MHz to 133MHz.
When J10 is shorted, this will automatically detect the CPU Bus Frequency.
When J10 is open, if you used 66/100MHz CPU, the Bus Frequency will be
set virtually into 133MHz.
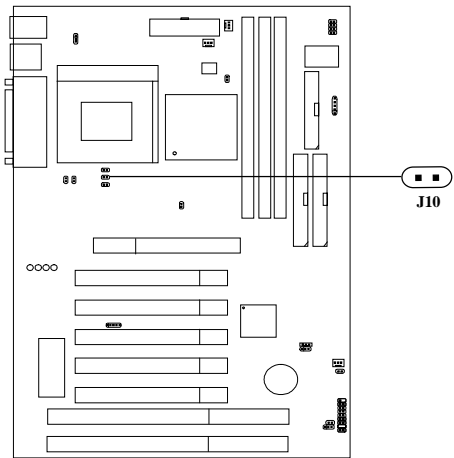
J10	Feature
	Automatically detect 133MHz or others CPU Bus Frequency
	Virtually set CPU Bus Frequency into 133MHz or for Cyrix® CPU *

*Please see next page for detail.

NOTE: 1. This feature works with 100MHz FSB only.
2. If your CPU FSB supports 100MHz and you want to run it
on 133MHz FSB, the J10 should be open. The AGP Bus will
be set to run at 133MHz x 1/2=66MHz to make it stable.

2.1-5 Intel® processor or Cyrix® processor: J11, J13 & J14

For **Intel**® processor, you need to open J11. For **Cyrix**® processor, you need to short J11 and open J10.
Please refer to the following table below.
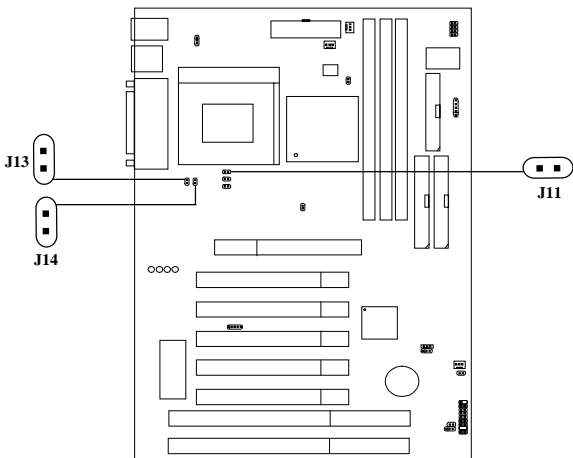
	Cyrix 66MHz	Cyrix 100MHz	Cyrix 133MHz	Intel Processor
J10	**Open**	**Open**	**Open**	**Short**
J11	**Short**	**Short**	**Short**	**Open**
J13	**Short**	**Open**	**Open**	**Open**
J14	**Short**	**Short**	**Open**	**Open**

2.1-4 Fan Power Connectors: CPUFAN/PSFAN/SYSFAN

These connectors support system cooling fan with +12V. It supports three
pin head connector.   When connecting the wire to the connector, always
take note that the red wire is the positive and should be connected to the
+12V, the black wire is Ground and should be connected to GND. If your
mainboard has System Hardware Monitor chipset on-board, you must use a
specially designed fan with speed sensor to take advantage of this function.
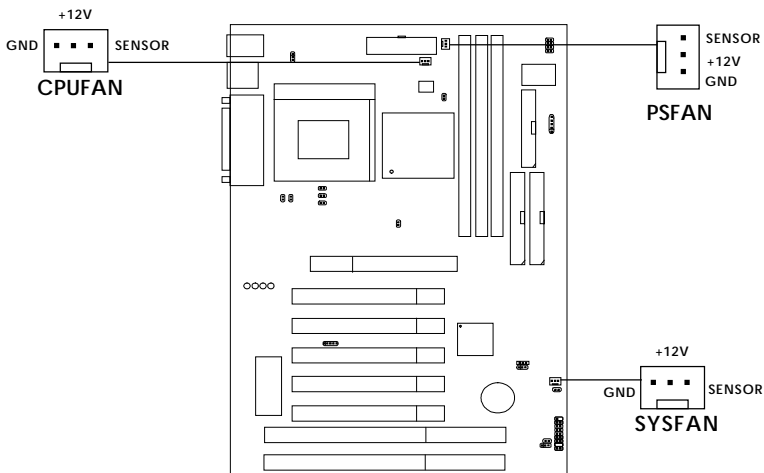
PSFAN   : Power Supply Fan
CPUFAN : Processor Fan
SYSFAN : System(Chassis) Fan

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

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

2. CPU FAN supports the FAN control, you can install PC Alert
   utility. This will automatically set the CPU FAN Speed depending
   on the actual CPU temperature.

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.

JBAT1
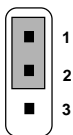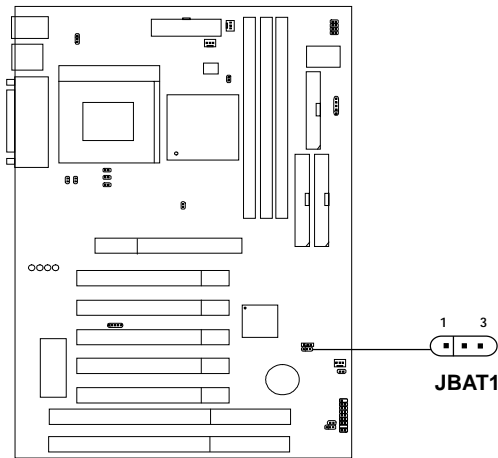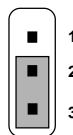
Keep Data   **Clear Data**

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

2.3 Memory Installation

2.3-1   Memory Bank Configuration

The mainboard supports a maximum memory size of 512MB (8M x 8) or 1G (16M x 4) registered DIMM for SDRAM: It provides three 168-pin **unbuffered** DIMMs (Double In-Line Memory Module) sockets. It supports 8 MB to 512 Mbytes DIMM memory module.
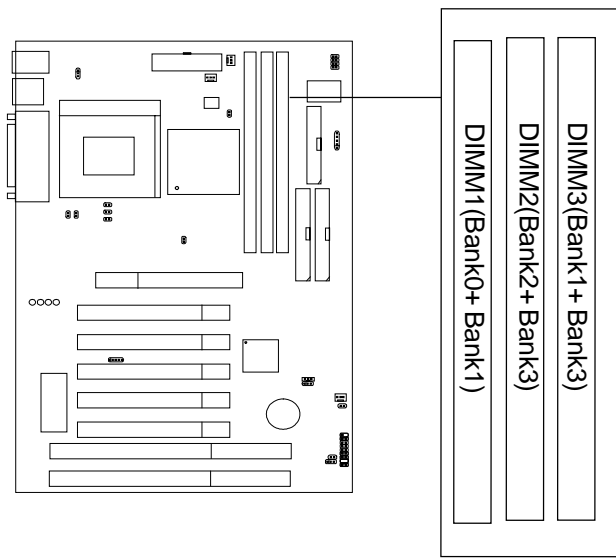
⚠️ WARNING!	There are three kinds of DIMM specification supported by this mainboard: PC133, PC100 and PC66. If you use 66MHz CPU Bus Frequency, these three DIMM Specs. is supported. If you use 100MHz CPU Bus Frequency, PC100 & PC133 DIMM Specs. is supported. If you use 133MHz CPU Bus, only PC133 DIMM Specs. is supported.

2.3-2   Memory Installation Procedures

A. How to install a DIMM Module

Single Sided Bank DIMM
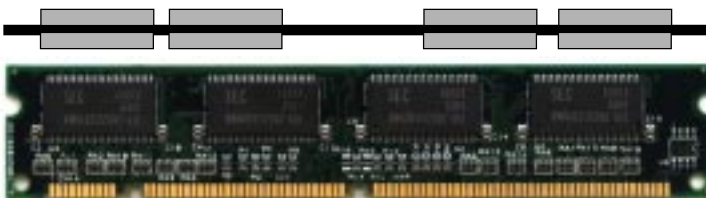
Double Sided Bank DIMM

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.

DRAM   VOLT
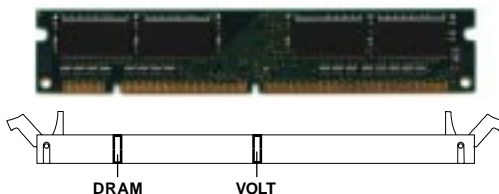
3. The plastic clip at the side of the DIMM slot will automatically close.

2.3-3 SDRAM 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
	16Mx4	ASYM	13	10	128MB	256MB
64M	2Mx32	ASYM	12	8	16MB	32MB
	4Mx16	ASYM	13	8	32MB	64MB
	8Mx8	ASYM	13	9	64MB	128MB
	16Mx4	ASYM	13	10	128MB	256MB

2.4 Case Connector: JFP

The Power Switch, Reset Switch, Power LED, Speaker, Keylock and HDD
LED are all connected to the JFP connector block.
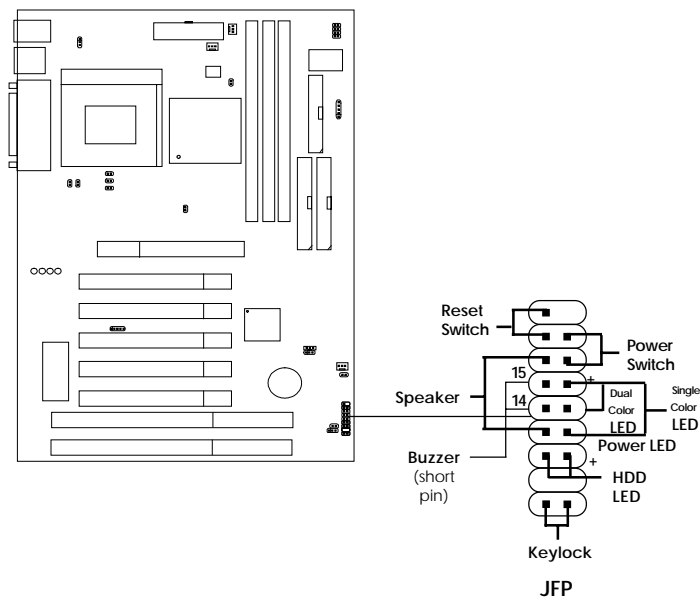
2.4-1 Power Switch
Connect to a 2-pin push button switch. This switch has the same feature with JRMS1.

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 light when the system is on.
>   **b.** 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.

2.4-4 Speaker
Speaker from the system case is connected to this pin.
If on-board Buzzer is available:
Short pin 14-15:   On-board Buzzer Enabled.
Open pin 14-15:   On-board Buzzer Disabled.

2.4-5 HDD LED
HDD LED shows the activity of a hard disk drive. Avoid turning the power off while the HDD led is lit. You can connect the HDD LED from the system case to this pin.

2.4-6 Keylock
Keylock allows you to disable the keyboard for security purposes. You can connect the keylock to this pin.

2.5 Floppy Disk Connector: FDD

The mainboard also provides a standard floppy disk connector (FDD) that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types. This connector supports the provided floppy drive ribbon cables.
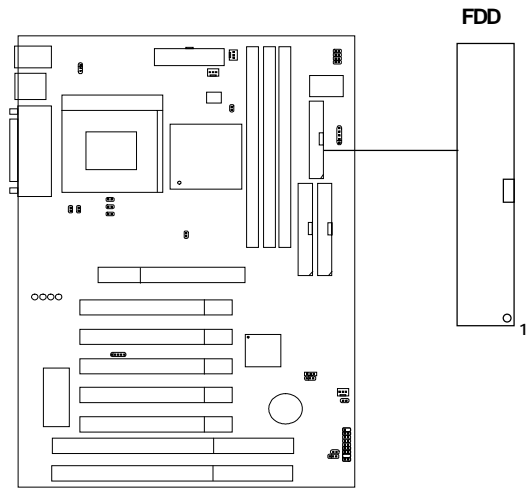
2.6 Hard Disk Connectors: IDE1 & IDE2

The mainboard has a 32-bit Enhanced PCI IDE 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.
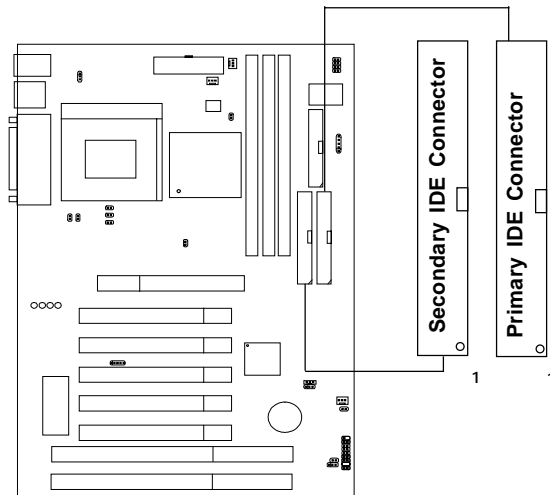
IDE1(Primary IDE Connector)

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.
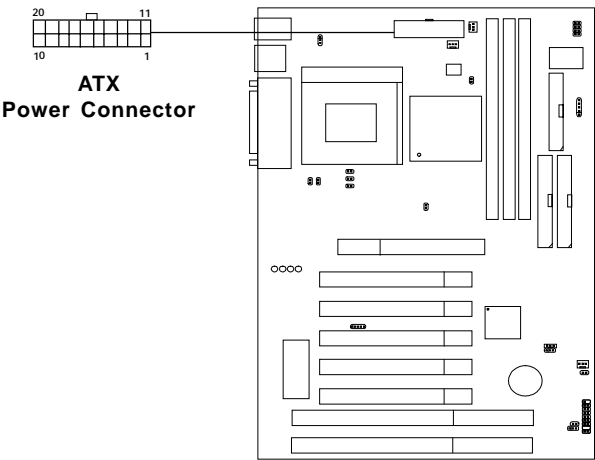
PIN DEFINITION

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.

JRMS1
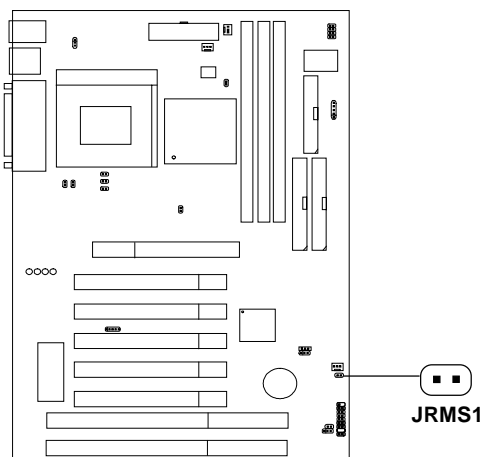
2.8 IrDA Infrared Module Connector: IR

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.
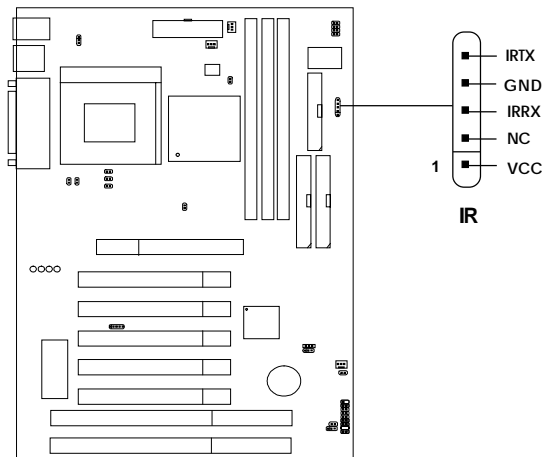
2.9 Serial Port Connectors: COM A and COM B

The mainboard has two 9-pin male DIN connectors for serial port COM A and COM B. 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.

COM A   COM B
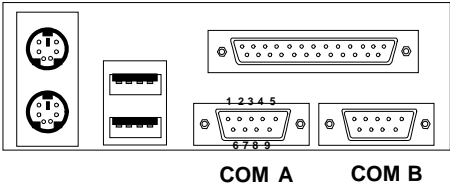
Serial Port (9-pin Male)

PIN DEFINITION

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

2.10 Parallel Port Connector: LPT1

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

Parallel Port (25-pin Female)

LPT 1
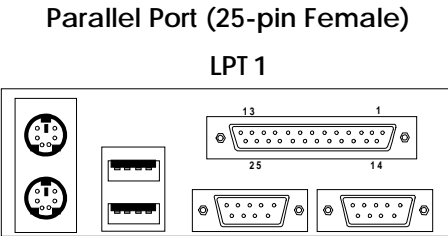
PIN DEFINITION

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

2.11 Mouse Connector: JKBMS1

The mainboard provides a standard PS/2® mouse mini DIN connector for attaching a PS/2® mouse. You can plug a PS/2® mouse directly into this connector. The connector location and pin definition are shown below:
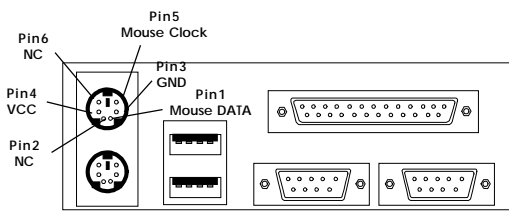
PS/2 Mouse (6-pin Female)

2.12 Keyboard Connector: JKBMS1

The mainboard provides a standard PS/2® keyboard mini DIN connector for attaching a keyboard. You can plug a keyboard cable directly to this connector.
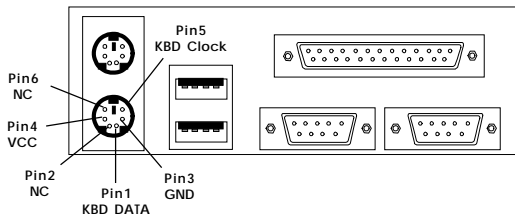
PS/2 Keyboard (6-pin Female)

2.13 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.
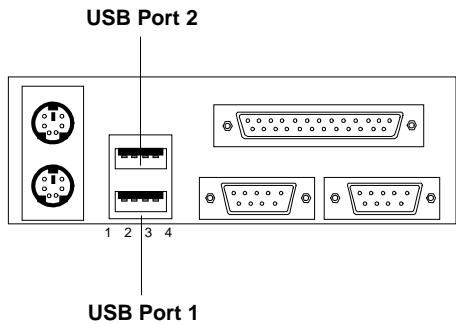
PIN	SIGNAL
1	VCC
2	-Data0
3	GND
4	+Data0

2.14   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.

JGS1
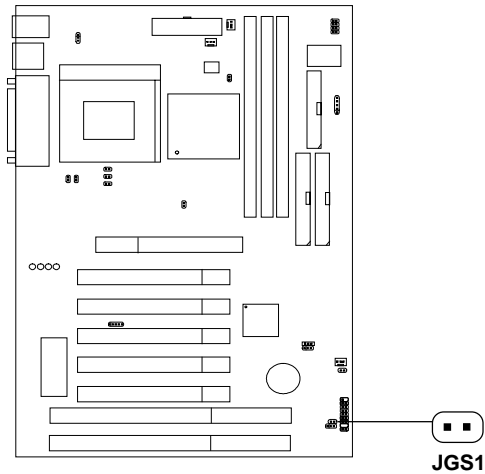
2.15 Wake-Up on LAN Connector: JWOL1

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.

JWOL1
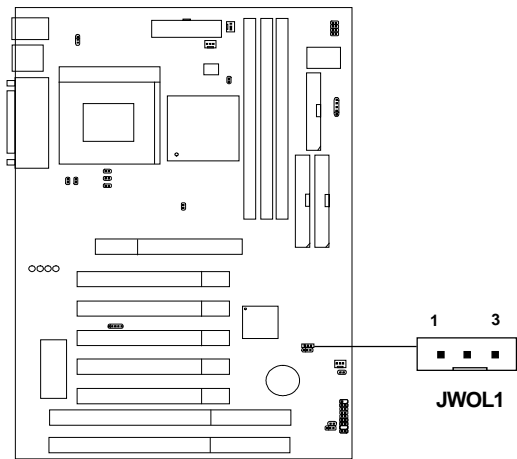
PIN	SIGNAL
1	5VSB
2	GND
3	MP_WAKEUP

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 750 ma 5V Stand-by)

2.16 Modem Wake Up Connector: JMDM1

The JMDM1 connector is use for the Modem add-on card which 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.
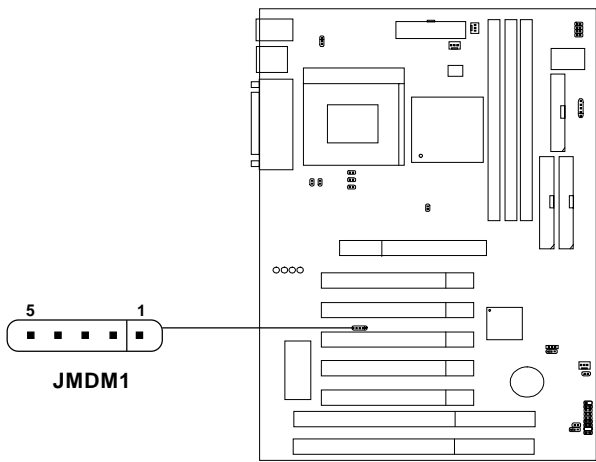
PIN	SIGNAL
1	NC
2	GND
3	MDM_WAKEUP
4	NC
5	5VSB

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 750 mA 5V Stand-by)

2.17 TOP TECH. III: J2 (Optional)

This is used to check the AGP card or 693A chipset temperature. The J2 is a 2-pin connector which can be inserted with a 20cm length thermistor. It is located near the chipset heatsink that monitors the chipset temperature. The BIOS setup for "TOP TECH. III" should be set to enabled. (See page 3-26)

20CM length Thermistor

J2
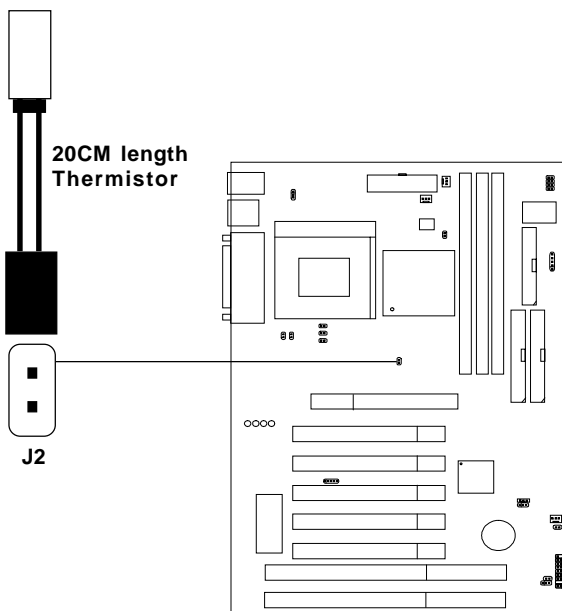
2.19 Keyboard Power: JVSB1

The JVSB1 jumper is for setting keyboard power. This function should be set in the BIOS for the keyboard and PS/2 mouse Wake-up function.
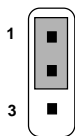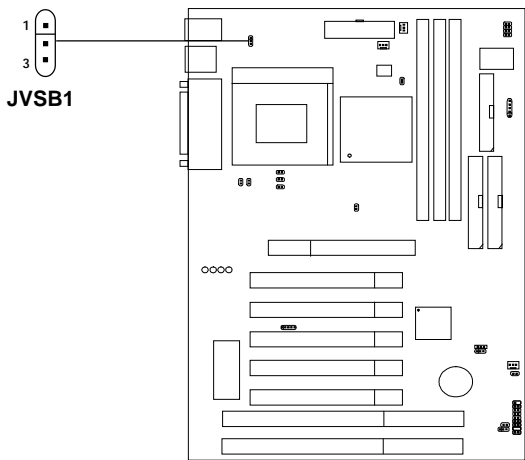
5V Standby
Enable keyboard
power on function
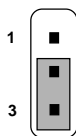
5V (default)
Disable keyboard
power on function

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

2.20 PCI and ISA Slots

There are 5 PCI slots and 2 ISA slots. All PCI slots can be used as master. The 1st and 5th PCI slots share the same bus master signal, only one of these slots can be used as a master at a time; which means that if a master card is installed in PCI slot 1, PCI Slot 5 can only accomodate a slave card, and vice versa.
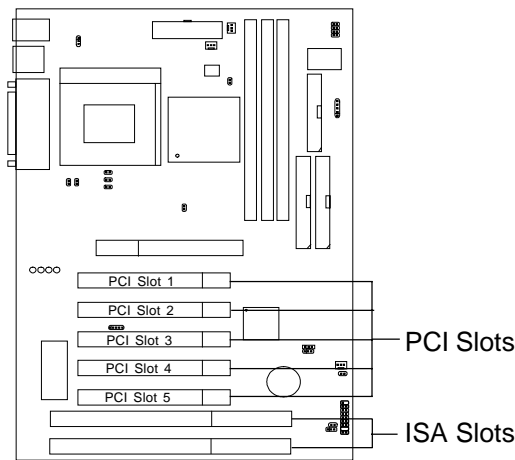
2.21 Diagnostic LED

The mainboard provides a Special Diagnostic LED for users to be aware of their mainboard conditions. The LED helps user determine the problem of the mainboard.
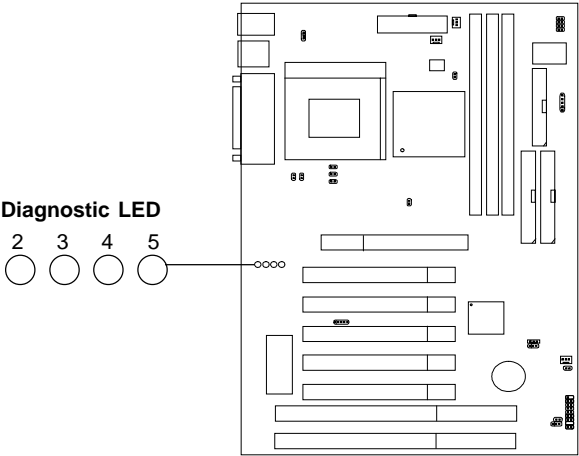
Diagnostic LED Function

Diagnostic LED 2 3 4 5				Description	Possible Problem/ Solution
0	0	0	0	System Power ON. This will start BIOS Initialization	The Processor might be damage or not installed properly Damage/Discharge Lithium Battery
0	0	0	1	Early Chipset Initialization	***
0	0	1	0	Memory Detection Test Testing Onboard memory size	The Memory module might be damage or not installed properly.
0	0	1	1	Decompressing BIOS image to RAM for fast booting.	***
0	**1**	**0**	**0**	Initializing Keyboard Controller	*If there is no keyboard connected, D-LED will blink 3 times.
0	1	0	1	Test shadow RAM (R/W Shadow RAM Area)	***
0	1	1	0	Processor Initialization This will show information regarding the processor (like brand name, system bus, etc...)	***
0	**1**	**1**	**1**	Testing RTC (Real Time Clock)	Low Lithium Battery *If RTC battery is low or failed, D-LED will blink 3 times.
1	**0**	**0**	**0**	Initializing Video Interface This will start detecting CPU clock, checking type of video onboard. Then, detect and initialize the video adapter	System D-LED will produce Beep sound The VGA card might be damage or not inserted properly. *If there is no VGA installed, D-LED will blink 3 times.
1	0	0	1	BIOS Sign On This will start showing information about Logo, processor brand name, etc.....	***
1	0	1	0	Testing Base and Extended Memory Testing base memory from 240K to 640K and extended memory above 1MB using various patterns.	***
1	0	1	1	Assign Resource to all ISA	***
1	**1**	**0**	**0**	Initializing Hard Drive Controller This will initialize IDE drive and controller	Check IDE cable for proper installation *If there is no HDD connected, D-LED will blink 3 times.
1	1	0	1	Initializing Floppy Drive Controller This will initialize Floppy Drive and controller	The Floppy Drive Cable might not be installed properly
1	1	1	0	Assign IRQs to PCI Devices	***
1	1	1	1	Operating System Booting.	***

1 = GREEN 0 = RED   *** Check local Vendor for possible internal mainboard problem.

2.22 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.

JGL1
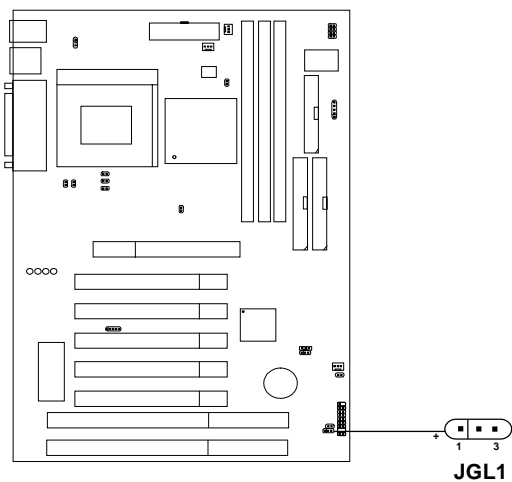
3-pin LED	2-pin LED
2-3 Single Color 1-3 Blink	1-2 Dual Color

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 <Del> 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 <Del> key or simultaneously press <Ctrl>, <Alt>, and <Esc> keys.

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

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously 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 <DEL> 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      <<<CPU PLUG & PLAY II>>> *         │
│                                                               │
│  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...                    │
│                                                               │
└─────────────────────────────────────────────────────────────┘
```

*CPU Plug & Play II is an optional item, this only appears/show up when the system supports hardware monitor

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.

CPU Plug & Play II
This function supports CPU Plug & Play II and 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 catego-
ries. 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,  Jan  29,1999                           │
 │ 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       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 │
 │                                                               │
 │                          ┌─────────────────────────────────┐ │
 │ Drive  A :  1.44M,3.5in. │ Base  Memory:            640K    │ │
 │ Drive  B :  None         │  Extended  Base  Memory:15360K   │ │
 │                          │  Other  Memory:          384K    │ │
 │ Video     : EGA/VGA      ├─────────────────────────────────┤ │
 │ 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 defin-able 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│
 │                                  │ D4000-D7FFF  Shadow      :Disabled│
 │ Quick Power on Self Test :Enabled│ D8000-D8FFF  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    │                                   │
 │ System BIOS Lock       :Disabled │                                   │
 │                                  ├───────────────────────────────────┤
 │                                  │ 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 table 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.

Disable(default)	No warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Enable	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 Pentium® II processor, set to Enabled or Disabled.   For Celeron™ processor w/o Cache, always set to Disabled.

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   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.

System BIOS Lock

This item allows the user to lock/unlock the system BIOS. During enabled, the user will not be able to overwrite or flash the system BIOS. The default setting is Disabled.

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-CBFFF/DC000-DFFFF Shadow

Determine whether the optimal ROM will be be compiled to RAM for faster execution.

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

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
```

```
┌────────────────────────────────────────────┬───────────────────────────────────┐
│ Bank 0/1 DRAM Timing     :SDRAM 10ns        │ Auto Detect DIMM/PCI Clk :Enabled │
│ Bank 2/3 DRAM Timing     :SDRAM 10ns        │                                   │
│ Bank 4/5 DRAM Timing     :SDRAM 10ns        │                                   │
│ SDRAM Cycle Lenght       :3                 │                                   │
│ DRAM Data Integrity Mode :Non-ECC           │                                   │
│ DRAM Clock               :Host Clk          │                                   │
│ Memory Hole              :Disabled          │                                   │
│ Concurrent PCI/Host      :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.

Bank 0/1 DRAM Timing/Bank 2/3 DRAM Timing/Bank 4/5 DRAM Timing

Set the DRAM latency time to SDRAM 10ns, SDRAM 8ns, Normal, Medium, Fast and Turbo.

SDRAM Cycle Lenght

The item allows you to select the value for SDRAM Cycle delay time. The settings are 2ns or 3ns. The default value is 3ns.

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 Clock

The default value for this item is Host Clk.

Host Clk   DRAM Clock equals to host (system clock)
HCLK-33M   DRAM Clock equals to host clock minus 33MHz.

Memory Hole

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

Enabled   Memory hole supported
Disabled   Memory hole not supported

Concurrent PCI Host

Select Enabled allows caching of the system BIOS ROM at F000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

Enabled   BIOS access cached
Disabled   BIOS access not cached

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 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.

Onchip USB

This item allows you to Enable or Disable the USB function. The default value of this item is Enabled

USB Keyboard Support

This item allows you to Enable or Disable the USB Keyboard Function. The default setting is Disabled.

Auto Detect DIMM/PCI Clk

This item allows you to select theDIMM/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.

3.7 Power Management Setup

The Power Management Setup will appear on your screen like this:

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

┌─────────────────────────────────────────────────────────────────────┐
│ Power Management      :User Define│ Fan Off In Suspend   :Enabled     │
│ PM Control by APM     :Yes        │ IRQ3 (COM2)          :Primary     │
│ Video Off Option      :Suspend→Off│ IRQ4 (COM1)          :Primary     │
│ Video Off Method      :DPMS Support│ IRQ5 (LPT2)          :Primary    │
│ Modem Use IRQ         :3          │ IRQ6 (Floppy Disk)   :Primary     │
│ Reserve IRQ9          :Yes        │ IRQ7 (LPT1)          :Primary     │
│ Soft-Off by PWRBTN    :Instant-off│ IRQ8 (RTC Alarm)     :Disable     │
│        ** PM Timers **            │ IRQ9 (IRQ2 Redir)    :Secondary   │
│ HDD Power Down        :Disable    │ IRQ10 (Reserved)     :Secondary   │
│ Doze Mode             :Disable    │ IRQ11 (Reserved)     :Secondary   │
│ Suspend Mode          :Disable    │ IRQ12 (PS/2 Mouse)   :Primary     │
│        ** PM Events **            │ IRQ13 (Coprocessor)  :Primary     │
│ VGA                   :Off        │ IRQ14 (Hard Disk)    :Primary     │
│ LPT & COM             :LPT/COM    │ IRQ15 (Reserved)     :Disabled    │
│ HDD & FDD             :ON         │                                   │
│ Wake Up on LAN        :Disabled   │                                   │
│ Modem Ring Resume     :Disabled   ├───────────────────────────────────│
│ RTC Alarm Resume      :Disabled   │ 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 determines the power consumption for system after selecting below items. Default value is user define. The following pages tell you the options of each item & describe the meanings of each options.

Power Management

Disable	Global Power Management will be disabled.
User Define	Users can configure their own power management.
Min Saving	Pre-defined timer values are used such that all timers are in their MAX value.
Max Saving	Pre-defined timer values are used such that all timers are in their MIN value.

PM Control by APM

No	System BIOS will ignore APM when power managing the system.
Yes	System BIOS will wait for APM's prompt before it enter any PM mode

Note : Enable this for O.S. with APM like Windows® 95/98, Windows® NT, etc.

Video Off Option

Blank Screen	The system BIOS will only blank off the screen when disabling video.
V/H SYN C+Blank	In addition to (1), BIOS will also turn off the V-SYNC & H-SYNC signals from VGA card to monitor.
DPMS	This function is enabled only for VGA card supporting DPMS.

Note: Green monitors detect the V/H SYNC signals to turn off its electron gun.

Video Off Method

The settings are N/A, Standby, Doze, or Suspend. This option is for choosing the setting in which the monitor will turn off.

N/A   Always turn on.
Doze   During Doze mode, the monitor will be turned off.
Standby   During Standby mode, the monitor will be turned off.
Suspend   During Suspend mode, the monitor will be turned off.
The default setting is Standby.

MODEM Use IRQ

Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system. The settings are NA, 3, 4, 5, 7, 9, 10, or 11.

Reserve IRQ 9

This item is reserved for Windows® 98 ACPI mode. Choose yes, if you use Windows® 98 ACPI mode. Otherwise, set to no.

Soft-Off by PWRBTN

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 turn off. During Instant-off, the system will turn off once you push the switch.

HDD Power Down

Disable   HDD's motor will not shut off.

1 Min/2 Min/   Defines the continuous HDD idle time before
3 Min/4 Min/   the HDD enters the power saving mode (motor
5 Min/6 Min/   off). BIOS will turn off the HDD's motor when
7 Min/8 Min/   time is out.
9 Min/10 Min/
11 Min/12 Min/
13 Min/14 Min/
15 Min

Doze Mode

Disable   System will never enter DOZE mode.

1 Min/2 Min/
4 Min/8 Min/
12 Min/20 Min/
30 Min/40 Min/
1 Hr

Suspend Mode

Disable   System will never enter SUSPEND mode.

1 Min/2 Min/   Defines the continuous idle time before the
4 Min/8 Min/   system enters SUSPEND mode.
12 Min/20 Min/   If any item defined in the options of "Power
30 Min/40 Min/   Down & Resume Events" is enabled & active,
1 Hr   SUSPEND timer will be reloaded. When the
                     system has entered SUSPEND mode, any of the
                     items enabled in the "Power Down & Resume
                     Events" will trigger the system to wake up.

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 supported.
Disabled	Wake up on LAN not supported.

Modem Ring Resume

To use this function, you need a Modem card which support power on functions. It should also support the wake-up on Inetrnal Modem Jumper (JMDM1)

Enable	Wake up on Internal Modem support
Disable	Wake up on Internal Modem not support

RTC Alarm Resume

This function is for setting date and time for your computer to boot up. During Disabled, you cannot use this function. During Enabled, choose the Date and Time Alarm:

Date(of month) Alarm	You can choose which date the system will boot up. Set to 0, to boot every day.
Time(hh:mm:ss) Alarm	You can choose what hour, minute and second the system will boot up.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work.

FAN Off in Suspend

During Enabled, if the system goes into suspend mode, the CPU fan will stop. During Disabled, if the system goes into suspend mode, the CPU fan will resume.

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 Delay Transaction    :Enabled
Resources Controlled By :Manual
Reset Configuration Data :Disabled PCI IRQ Actived By       :Level
                                   Assign IRQ for VGA       :Enabled
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-10assigned to       :PCI/ISA PnP
IRQ-11assigned to       :PCI/ISA PnP
IRQ-12assigned to       :PCI/ISA PnP
IRQ-14assigned to       :PCI/ISA PnP
IRQ-15assigned to       :PCI/ISA PnP
DMA-0assigned to        :PCI/ISA PnP
DMA-1assigned to        :PCI/ISA PnP  Esc : Quit    ↑↓→←: Select item
DMA-3assigned to        :PCI/ISA PnP  F1 : Help      PU/PD/+/- : modify
DMA-5assigned to        :PCI/ISA PnP  F5 : Old Value(Shift) F2 : Color
DMA-6assigned to        :PCI/ISA PnP  F6 : Load BIOS Defaults
DMA-7assigned to        :PCI/ISA PnP  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.

PCI Delay Transaction
This item allows you to Enable/Disable the PCI delay transaction.
Enabled   Delay Transaction Timing
Disabled   Transaction in Normal Mode

PCI IRQ Active 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. The settings are Level or Edge.
Level   Active by high or low level
Edge   Active by rising or fulling time

Assign IRQ for VGA
This item allows the user to Enable/Disable the Assign IRQ for VGA.
Enabled   Choose which IRQ to assign for VGA card
Disabled   Will not assign IRQ for VGA card

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 CPU Plug & Play II

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

┌───────────────────────────────────┬───────────────────────────────────┐
│ *******CPU PLUG & PLAY II********  │ ********* SYSTEM MONITOR ********  │
│ Adjust CPU Voltage        :2.00V   │ CPU Fan RPM               :6367   │
│ CPU Clock/Spread Spectrum :Default │ CPU Temperature           :28⁰C/82⁰F│
│   **Hardware Monitor Showing**     │                                   │
│ PS Fan Detected          :Disabled │ TOP TECH. III             :Disabled│
│ Sys Fan Derected         :Disabled │                                   │
│ CPU Fan Detected         :Enabled  │ CPU Critical Temp         :Disabled│
│                                    │ Shutdown Temp             :Disabled│
│ Voltage Detected         :Enabled  │                                   │
│ Vcore Voltage Detected   :Enabled  │                                   │
│ +2.5V Voltage Detected   :Enabled  │                                   │
│ +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   │
│ VBat Voltage Detected    :Enabled  │ F1 : Help PU/PD/+/- : modify      │
│ 5VSB Voltage Detected    :Enabled  │ F5 : Old Value(Shift) F2 : Color  │
│                                    │ F6 : Load BIOS Defaults           │
│                                    │ F7 : Load Setup Defaults          │
└───────────────────────────────────┴───────────────────────────────────┘
```

Adjust CPU Voltage

         This function is used to adjust the CPU voltage. During overclocking, the processor might get unstable. Try adjusting the CPU voltage to lessen the hear generated by the CPU voltage.

Note: We do not guarantee that the Motheboard or other components will work properly after overclocking.

CPU Clock/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) CPU Clock/Spread Spectrum

CPU Fan RPM

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

CPU Temperature

This will show the CPU temperature.

TOP TECH. III

This option is used to disabled or enabled the J2 connector 20 cm thermistor. The default setting is Disabled (See page 2-27). When choosing Enabled, "TOP TECH III Temp" item will appear onscreen.

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® 95/98 operating system.

3.11 Integrated Peripherals

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

```
┌─────────────────────────────────┬──────────────────────────────────┐
│ Onchip IDE Channel 0   :Enabled │ Onboard FDC Controller  :Enabled │
│ Onchip IDE Channel 1   :Enabled │ Onboard Serial Port 1   :3F8/IRQ4│
│ CDROM Set PIO Mode     :Enabled │ Onboard Serial Port 2   :2F8/IRQ3│
│ Primary Master PIO     :Auto    │ UART Mode Select        :Normal  │
│ Primary Slave PIO      :Auto    │                                  │
│ Secondary Master PIO   :Auto    │                                  │
│ 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    │ PWRON After PWR-Fail    :Off     │
│ Secondary Slave UDMA   :Auto    │ Power Status Led        :Single  │
│ Init Dislay First      :PCI slot│                                  │
│                                 │                                  │
│ Power On Function      :Password│                                  │
│ KB Power On Password   :Enter   ├──────────────────────────────────┤
│ 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         │
└─────────────────────────────────┴──────────────────────────────────┘
```

IDE HDD Block Mode
Enabled/Disabled   Enabled allows the Block mode access for the
IDE HDD.

IDE Primary Master PIO
Auto/Mode0/Mode1-4

IDE Primary Slave PIO
Auto/Mode0/Mode1-4

IDE Secondary Master PIO
Auto/Mode0/Mode1-4

IDE 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 that 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).

On-Chip Primary PCI IDE
Enabled/Disabled

On-Chip Secondary PCI IDE
Enabled/Disabled

The system provides for an On-Board On-Chipset PCI IDE controller that supports Dual Channel IDE (Primary and Secondary). A maximum of 4 IDE devices can be supported. If the user install the Off-Board PCI IDE controller (i.e. add-on cards), the user must choose which channels will be disabled. This will depend on which channel will be used for the Off-Board PCI IDE add-on card.

Init Display First

    PCI Slot   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.

Power ON Function

                                 This function allows you to select Button only, Keyboard Password, Mouse Left or Mouse Right, and Hot Key (Ctrl F1 to Ctrl F12) which features the same function to Power ON the system.

Note: If you choose Mouse Left or Mouse Right, you must let the system boot up until it goes to the BIOS table configuration, before this function will work. During Power OFF, double click the left or right mouse button to Power ON the system.

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 allows you to determine which InfraRed (IR) function of the onboard I/O chip, this function uses.

278H/IRQ5   Line Printer port 2
378H/IRQ5   Line Printer port 1

Onboard Parallel Port

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

Onboard Parallel 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.

PWRON after PWR-FAIL

This option will determine how the system will power on after a
power failure. The settings are: Off, On and Former State.

On	When the power is resume after a power failure, the system will automatically be power on regardless of the last power status.
Former State	When the power is resume after a power failure, the system will keep its original power status.

Power Status LED

This item determines which status 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 during suspend mode.
Choose the Single Color and the Power LED will always remain lit.

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 8 characters only and press <Enter>. The screen will 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]
```