

**MV21**

**Socket370 based**

**MAIN BOARD**

*User's Manual*

# Shuttle MV21

## Socket370 based Mainboard

### Manual Version 1.1

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## About This Manual

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For System Integrator .....	Page 5

# 1 INTRODUCTION

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## 1.1 To Different Users

### First-Time DIY System Builder

Welcome to the DIY world! Building your own computer system is not as difficult as you may think. To make your first computer DIY experience successful, right from the start, we have designed the **3 Hardware Installation** section in a step-by-step fashion for all the first-time DIY system builders. Prior to installation, we also suggest you to read the whole manual carefully to gain a complete understanding of your new MV21 mainboard.

### Experienced DIY User

Congratulate on your purchase of the Shuttle MV21 mainboard. You will find that installing your new Shuttle MV21 mainboard is just easy. Bundled with an array of onboard functions, the highly-integrated MV21 mainboard provides you with a total solution to build the most stable and reliable system. Refer to sections **3.2 Jumper Settings** and **Chapter 4 Software Utility** to find out how to get the best out of your new mainboard. **Chapter 5 BIOS Setup** also contains the relevant information on how to tune up your system to achieve higher performance.

### System Integrator

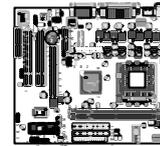
You have wisely chosen Shuttle MV21 to construct your system. Shuttle MV21 incorporates all the state-of-the-art technology of the VIA VT133 chipset from VIA. It integrates the most advanced functions you can find to date in a compact Micro ATX board. Refer to sections **3.2 Jumper Settings** and **Chapter 4 Software Utility** for an in-depth view of system construction.

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## 1.2 Item Checklist

Check all items with your MV21 mainboard to make sure nothing is missing. The complete package should include:

- \* One Shuttle MV21 Mainboard



- \* One ATA 100/66 Ribbon Cable



- \* One Floppy Ribbon Cable



- \* MV21 User' s Manual



- \* One CD-ROM containing:
  - MV21 user' s manual on PDF format
  - VIA 4 in 1 drivers
  - Audio device software
  - Award flashing utility



# 2 FEATURES

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MV21 mainboard is carefully designed for the demanding PC user who wants high performance and maximum intelligent features in a compact package.

## 2.1 Specifications

### \* CPU Support

Supports Intel PPGA/FCPGA Celeron and FCPGA Pentium III processors.

### \* Memory Support

Two DIMM slots for 168-pin SDRAM memory modules  
Support for 100/133 MHz memory bus  
Maximum installed memory is 2X512MB = 1GB

### \* Expansion Slots

One AMR slot for a special audio/modem riser card  
Three 32-bit PCI slots for PCI 2.2-compliant bus interface  
One 8/16-bit ISA slot

### \* Onboard IDE channels

Primary and Secondary PCI IDE channels  
Support for PIO modes, Bus Mastering and Ultra DMA 33/66/100 modes

### \* Power Supply and Power Management

ATX power supply connector  
ACPI and previous PMU support, suspend switch  
Supports Wake on Lan and Wake on Alarm

### \* Built-in Graphics System

Onboard 64-bit 2D/3D graphic engine and Video accelerator with advanced DVD video  
2 to 8 MB frame buffer use system memory

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### \* **AC97 Codec**

Compliant PC97 2.1 specification

Support 18-bit ADC(Analog Digital Converter) and DAC(Digital Analog Converter) as well as 18-bit stereo full-duplex codec

### \* **Onboard I/O Ports**

Provides PC99 Color Connectors for easy peripheral device connections

Floppy disk drive connector with 1MB/s transfer rate

One serial port with 16550-compatible fast UART

One parallel port with ECP and EPP support

Two USB ports, and optional two USB ports module

Two PS/2 ports for keyboard and mouse

One infrared port connector

### \* **Hardware Monitoring**

Built-in hardware monitoring for CPU and System

### \* **Onboard Flash ROM**

Automatic board configuration support Plug and Play of peripheral devices and expansion cards

### \* **Dimension**

Micro-ATX form factor (244mm X 190mm)

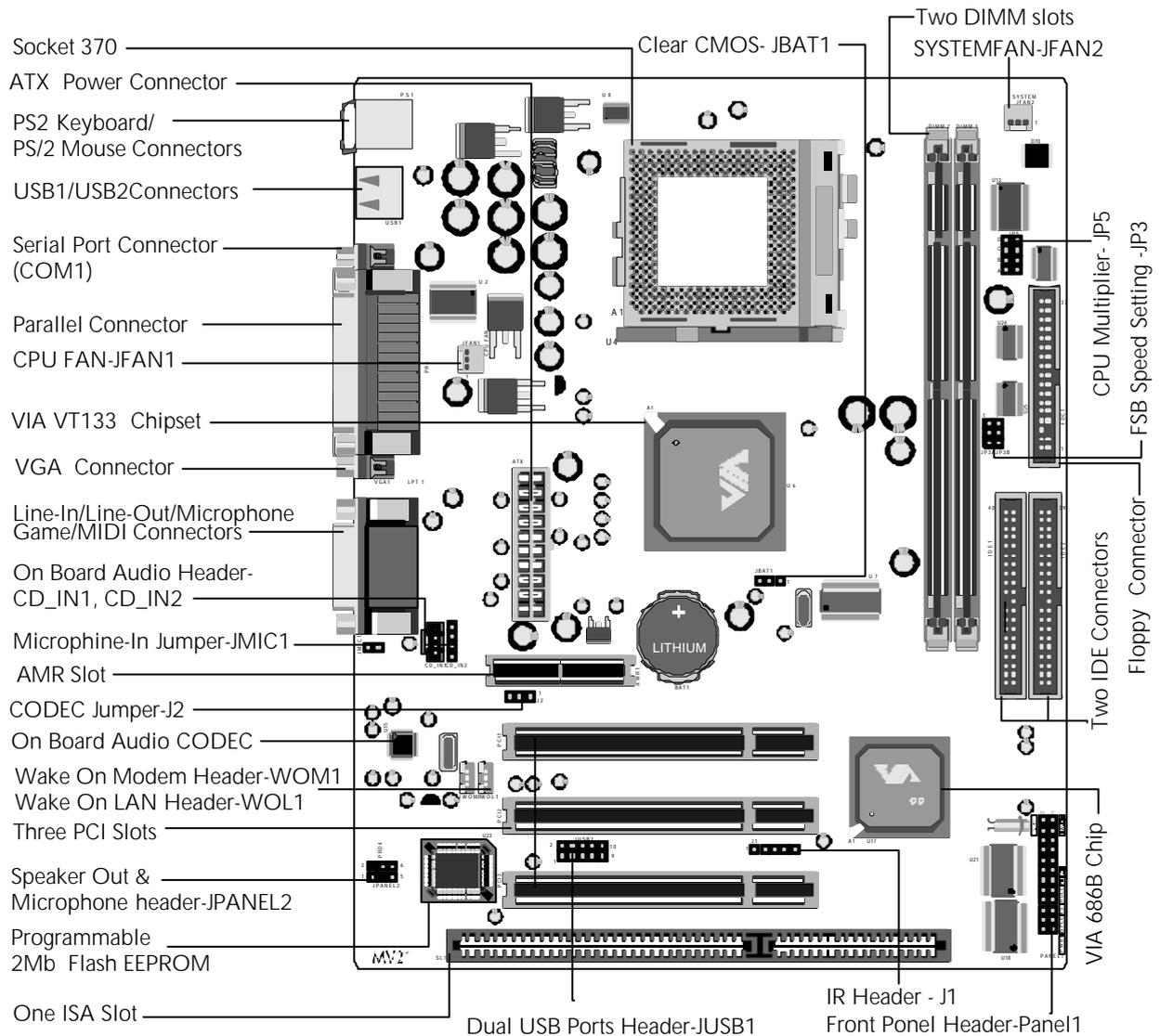
# 3 HARDWARE INSTALLATION

Before removing or installing any of these devices including CPU, DIMMs, Add-On Cards, Cables, please make sure to unplug the onboard power connector.

This section outlines how to install and configure your MV21 mainboard. Refer to the following mainboard layout to help you identify various jumpers, connectors, slots, and ports. Then follow these steps to guide you through a quick and correct installation of your system.

## 3.1 Step-by-Step Installation

### Accessories Of MV21

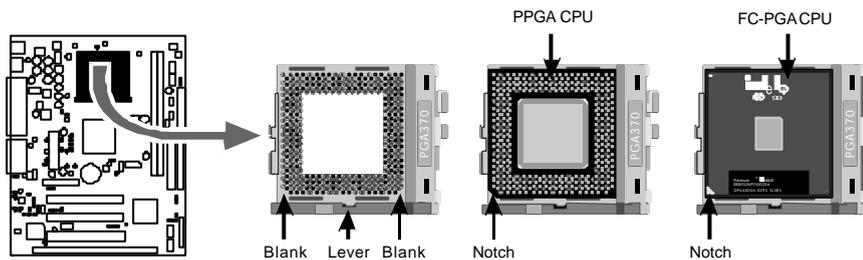


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## Step 1

### Install the CPU:

1. Locate the CPU ZIF (Zero Insertion Force) socket on the upper-right sector of your mainboard (between the back-panel connectors and the DIMM memory slots).
2. Pull the CPU ZIF socket lever slightly sideways away from the socket to unlock the lever, and then bring it to an upwardly vertical position.
3. Place your PPGA/FC-PGA processor in the socket 370. Note that the CPU edges have been purposely designed non-symmetrically to prevent from inserting the processor in the wrong direction. The following diagram demonstrates the correct placement of the CPU in the ZIF socket. You can see that the two blunt-edged corners should face towards the socket-lever.



4. Slightly push the PPGA/FC-PGA 370 processor into the socket without applying excessive force while making sure there is no gap between CPU and socket. Then lower the socket-lever all the way down to its horizontal position and lock it to secure the CPU in place.
5. The PPGA/FC-PGA 370 processor requires a set of heatsink/fan to ensure proper cooling of the processor. If heatsink/fan have not been already mounted on your CPU, you must purchase the heatsink/fan separately and have it installed. Plug the cable from heatsink/fan to CPU fan power connector located nearby. Note that there are several types of CPU fan connectors. Normally, if your mainboard supports the hardware monitoring function, a 3-pin fan power connector should allow your system to detect the CPU fan's speed. The CPU fan can also run with a 2-pin fan power connector, however, detection of CPU fan's speed is not supported. Another type of CPU fan may feature a large 4-pin fan power connector, which does not support CPU fan's speed detection and must be directly connected to the system's power supply unit.

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## Step 2.

### Set Jumpers

The default jumper settings have been set for the common usage standard of this mainboard. Therefore, you do not need to reset the jumpers unless you require special adjustments as in any of the following cases:

1. Over-clock your CPU
2. Clear CMOS
3. Change CODEC
4. Choose Microphone-Out Port

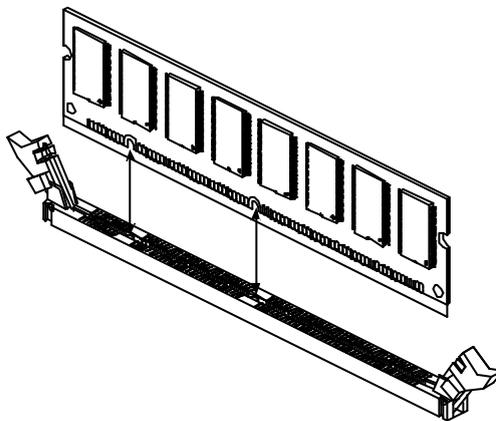
For first-time DIY system builders, we recommend that you do not change the default jumper settings if you are not totally familiar with mainboard configuration procedures. The factory-set default settings are tuned for optimum system performance. For the advanced users who wish to customize their system, section **3.2 Jumper Settings** will provide detailed information on how to configure your mainboard manually.

## Step 3.

### Install SDRAM System Memory

To install memory, insert SDRAM memory module(s) in DIMM slot(s). Note that SDRAM modules are directional and will not go in the DIMM slots unless they are properly oriented. After the module is fully inserted into the DIMM slot, lift the clips of both sides of the DIMM slot to lock the module in place.

#### SDRAM



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## **Step 4**

### **Install Internal Peripherals in System Case**

Before you install and connect the mainboard into your system case, we recommend that you first assemble all the internal peripheral devices into the computer housing, including but not limited to the hard disk drive (IDE /HDD), floppy disk drive (FDD), CD-ROM drive, and ATX power supply unit. This will greatly facilitate in making the connections to the mainboard described below.

To install IDE & FDD drives, follow this procedure:

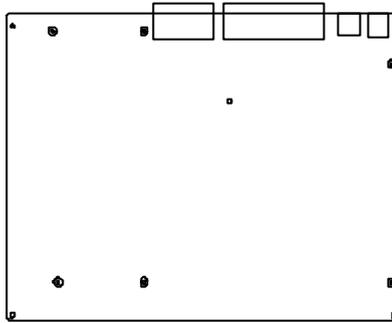
1. Set the required jumpers on board each device according to the instructions provided by the manufacturer. (IDE devices, HDD, and CD-ROM have to set jumpers on Master or Slave mode depending on your willing to install more than one device for each kind.)
2. Connect IDE cable and FDD cable on the back-panel of the internal peripheral devices to the corresponding headers on board. Note that the cable should be oriented with its colored stripe (usually in red or magenta) connected to pin#1 both on the mainboard IDE or FDD connector and on the device as well.
3. Connect an available power cable through your system power supply unit to the back-panel of each peripheral device. Note that the power cable is directional and cannot fit in if it is not properly positioned.

---

## Step 5

### Mount the Mainboard on the Computer Chassis

1. You may find that there are a lot of different mounting hole positions both on your computer chassis and on the mainboard. To choose a correct mounting hole, the key point is to keep the back-panel of the mainboard in a close fit with your system case, as shown below.



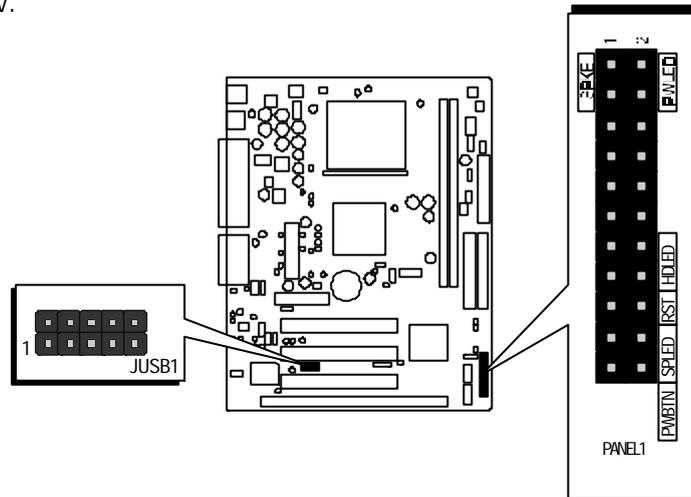
2. After deciding on the proper mounting holes, position the studs between the frame of chassis and the mainboard. The studs are used to fix the mainboard and to keep a certain distance between the system chassis and the mainboard, in order to avoid any electrical shortage between the board and the metal frame of chassis. (If your computer case is already equipped with mounting studs, you will need to tighten screws to attach the mainboard.)

**Note:** In most computer housings, you will be able to find 4 or more attachment points to install mounting studs and fix the mainboard. If there aren't enough matching holes, then make sure to install at least 4 mounting studs to ensure proper attachment of the mainboard.

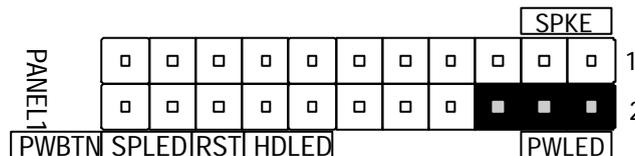
## Step 6

### Connect Front-Panel Switches/LEDs/Speaker/USB connectors

You can find there are several different cables already existing in the system case and originating from the computer's front-panel devices (HDD LED, Power LED, Reset Switch, PC Speaker, or USB devices etc.) These cables serve to connect the front-panel switches, LEDs, USB connectors to the mainboard's front-panel connectors group (PANEL1, JUSB1), as shown below.



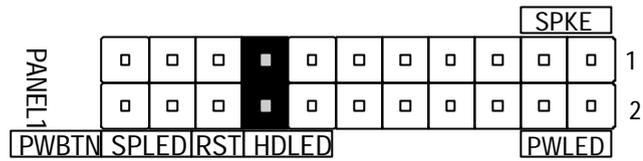
#### 1. Power LED(PWLED)



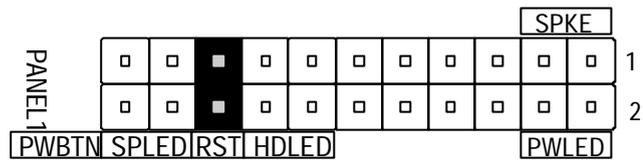
#### 2. Speaker Connector (SPKE)



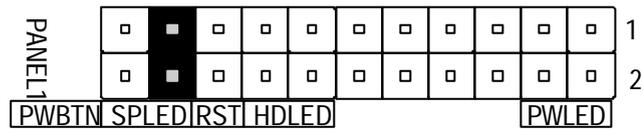
3. HDD LED Connector (HDLED)



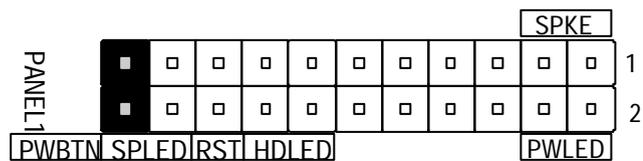
4. Hardware Reset Switch(RST)



5. Green LED Connector (SPLED)



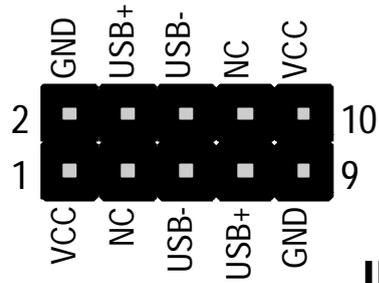
6. ATX Soft Power On/Off (PWBTN)



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7. Dual USB Ports Headers (JUSB1) USB3/USB4

**USB4**



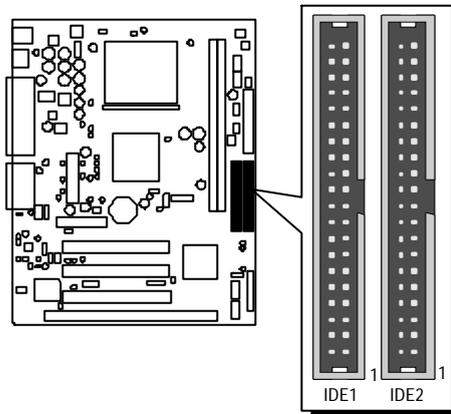
**JUSB1**

**USB3**

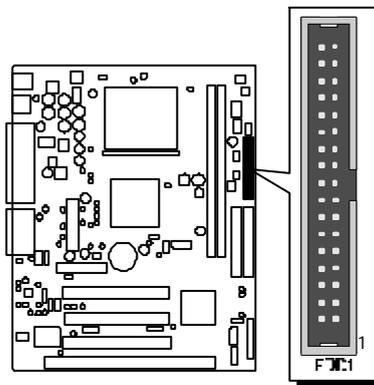
**Step 7**

**Connect IDE & Floppy Disk Drives**

1. IDE cable connector



2. FDD cable connector

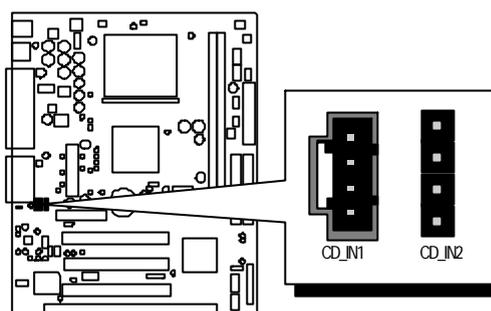


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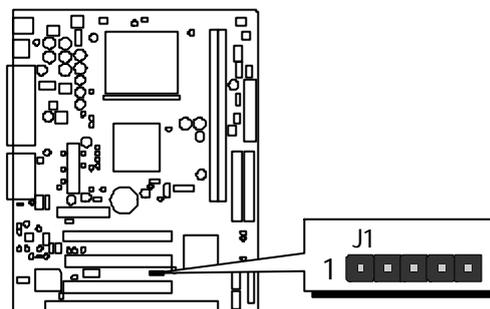
## Step 8

### Connect Other Internal Peripherals

1. Primary and Secondary CD\_IN connectors



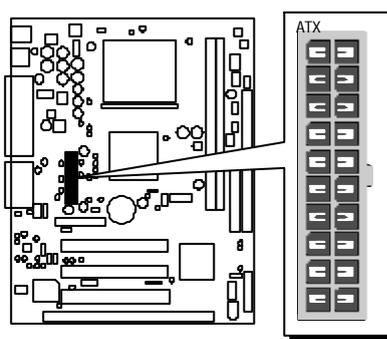
2. IR connector



## Step 9

### Connect Power Supply

1. System power connector

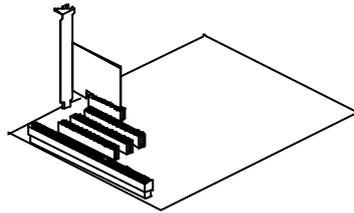


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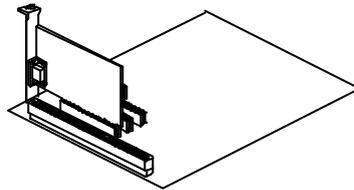
## **Step 10**

### **Install Add-on Cards in Expansion Slots**

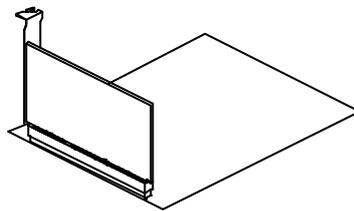
1. Audio Modem Riser (AMR) Card



2. PCI Card



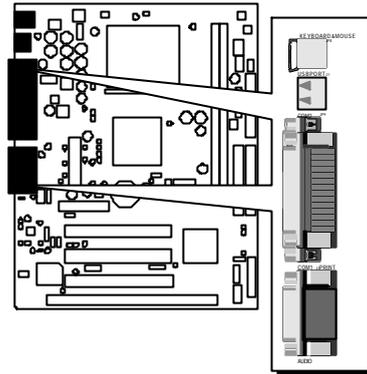
3. ISA Card



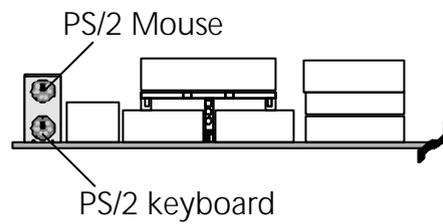
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## Step 11

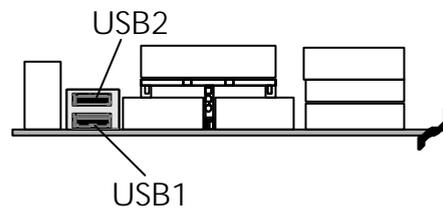
### Connect External Peripherals to Back-Panel



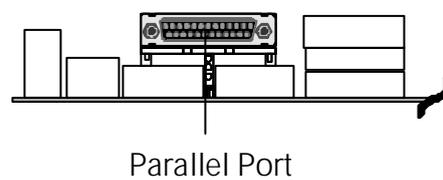
#### 1. PS/2 Mouse and Keyboard Ports



#### 2. USB Port s

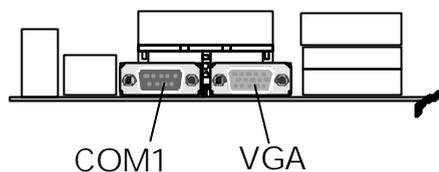


#### 3. Parallel Port

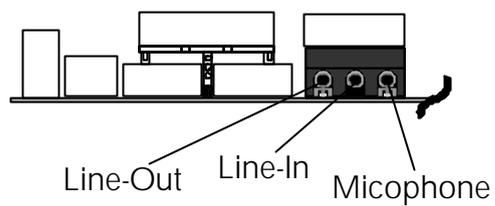


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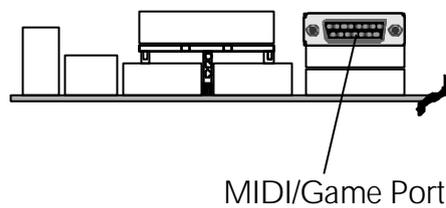
4. COM1 Port/ VGA Port



5. Audio Line\_out / Line\_in / Microphone Ports



6. MIDI/Game Port



---

## Step 12

### First Time System Boot Up

To assure the completeness and correctness of your system installation, you may check the above installation steps once again before you boot up your system for the first time.

1. Insert a bootable system floppy disk (DOS 6.2x, Windows 95/98/NT, or others) which contains FDISK and FORMAT utilities into the FDD.
2. Turn on the system power.
3. First, you must use the FDISK utility to create a primary partition of the hard disk. You can also add an extended partition if your primary partition does not use all of the available hard disk space. If you choose to add an extended partition, you will have to create one or more logical partition(s) to occupy all the space available in the extended partition. The FDISK utility will assign a drive letter (i.e., C:, D:, E:,...) to each partition which will be shown in the FDISK program. After FDISK procedure, reboot your system by using the same system floppy disk.

**Note:** DOS 6.2x and Windows 95A can only support up to 2.1GB of HDD partition. If you use the FDISK utility with one of the operating systems mentioned above, you can only divide your HDD into partitions no larger than 2.1GB each.

4. Now, use the FORMAT utility to format all the partitions you've created. When formatting the primary partition (C:), make sure to use the `FORMAT C: /S` command.

**Note:** `FORMAT C: /S` can transfer all the necessary system files into the primary partition of your hard disk. Then, your HDD will become a bootable drive.

5. Install all the necessary drivers for CD-ROM, Mouse, etc.
6. Setup the complete operating system according to your OS installation guide.

---

## **Step 13**

### **Install Driver & Software Components**

Please note that all the system utilities and drivers are designed for Win 9x operating systems only. Make sure your Windows 9x operating system is already installed before running the drivers installation CD-ROM programs.

1. Insert the MV21 bundled CD-ROM into your CD-ROM drive. The auto-run program will display the drivers main installation window on screen.
2. Select the Mainboard related program.
3. Install VIA 4-in-1 drivers to complete the installation.
4. Return to the main installation window and select the Audio Device related program to complete the installation.
5. Install VIA Audio driver.
6. Return to the main installation window and exit from the auto-run drivers setup program..

---

## 3.2 Jumper Settings

Several hardware settings are made through the use of jumper caps to connect jumper pins to the mainboard. Pin #1 could be located at any corner of each jumper; you just find a location marked with a white right angle, which stands for pin 1#. There are several types of pin 1# shown as below:

3-pin and multi-pin (> 3) jumpers show as follows:

Pin #1 to the left:



Pin #1 on the top:



Pin #1 to the right:



Pin #1 on the bottom:



Jumpers with two pins are shown as  for Close [On] or  for Open [Off]. To Short jumper pins, simply place a plastic jumper cap over the desired pair of pins.

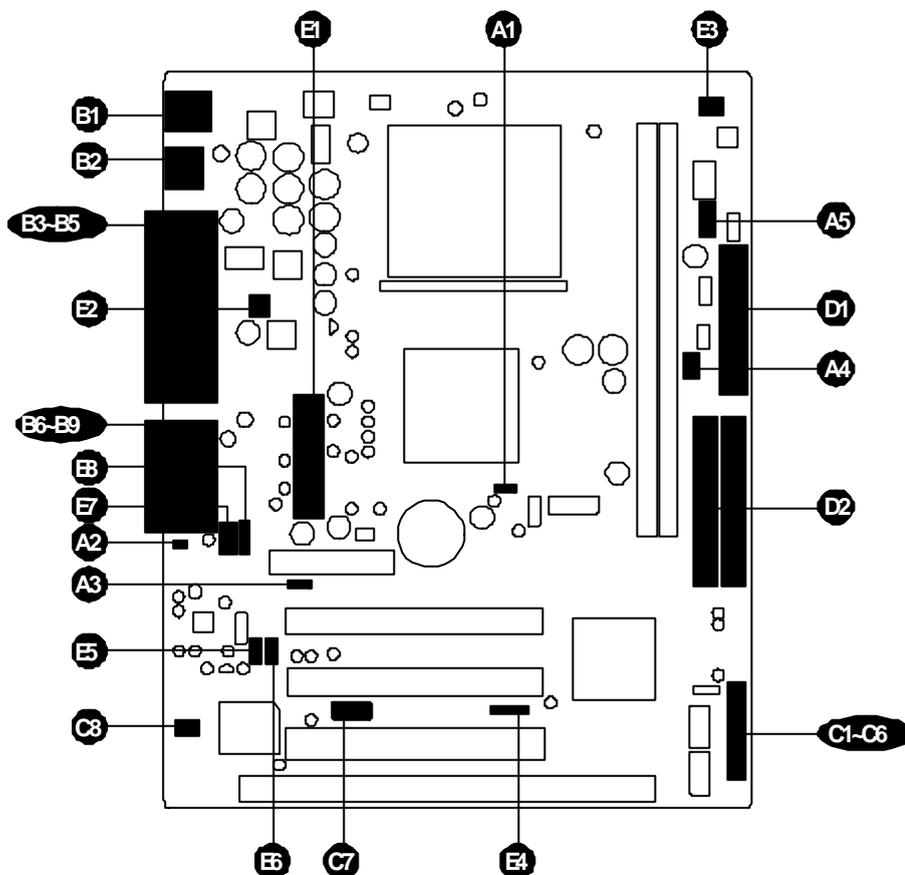
### **Caution!**

1. Do not remove the mainboard from its antistatic protective packaging until you are ready to install it.
2. Carefully hold the mainboard by its edges and avoid touching its components. When putting the mainboard down, place it on the top of its original packaging film and on an even surface, and components side up.
3. Wear an antistatic wrist strap or take other suitable measures to prevent electrostatic discharge (ESD) whenever handling this equipment.

---

## Jumper & Connector Guide

Use the mainboard layout on page 9 to locate CPU socket, memory slots, expansion slots, jumpers and connectors on the mainboard during installation. The following list will help you identify jumpers, slots, and connectors along with their assigned functions:



### **CPU/Memory/Expansion Slots**

- Socket 370 : CPU Socket for PPGA/FC-PGA 370 processors.
- DIMM1/2 : Two DIMM Slots for 16, 32, 64, 128, 256, and 512 MB of 3.3V SDRAM
- AMR : One AMR expansion slot for audio/modem riser card
- PCI : Three 32-bit PCI Expansion Slots
- ISA : One 16-bit ISA Expansion Slot

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### ***Jumpers***

- **A1** JBAT1 : Clear CMOS Setting
- **A2** JMIC1 : Microphone-Out Setting
- **A3** J2 : Codec Setting
- **A4** JP3A,JP3B : FSB Speed Setting
- **A5** JP5 : CPU Multiplier Setting

### ***Back-Panel Connectors***

- **B1** PS1 : PS/2 Keyboard Port
- **B1** PS1 : PS/2 Mouse Port
- **B2** USB1 : 2 x USB (Universal Serial Bus) Ports
- **B3** COM1 : Serial Port 1 (DB9 male)
- **B4** VGA 1 : VGA Port (DB15 female)
- **B5** LPT1 : Parallel Port (DB25 female)
- **B6** LINE-OUT : Line-Out Port
- **B7** LINE-IN : Line-In Port
- **B8** Microphone : Microphone Port
- **B9** MIDI/GAME : MIDI/ Game Port

### ***Front-Panel Connectors***

- **C1** PWLED : Power LED Connector
- **C2** SPKE : Speaker Connector
- **C3** HDLED : HDD LED Connector
- **C4** RST : Hardware Reset Connector
- **C5** SPLED : Green LED Connector
- **C6** PWBTN : ATX Power On/Off Switch Connector
- **C7** JUSB1 : Dual two USB Ports Header USB3/USB4
- **C8** JPANEL2 : Front-oriented Speaker-out & Microphone-In header(JPANEL2)

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### ***Internal Peripherals Connectors***

- Ⓓ1 FDD 1 : Floppy Disk Drive Interface
- Ⓓ2 IDE1/2 : IDE Primary/Secondary Interface (Dual-channel)

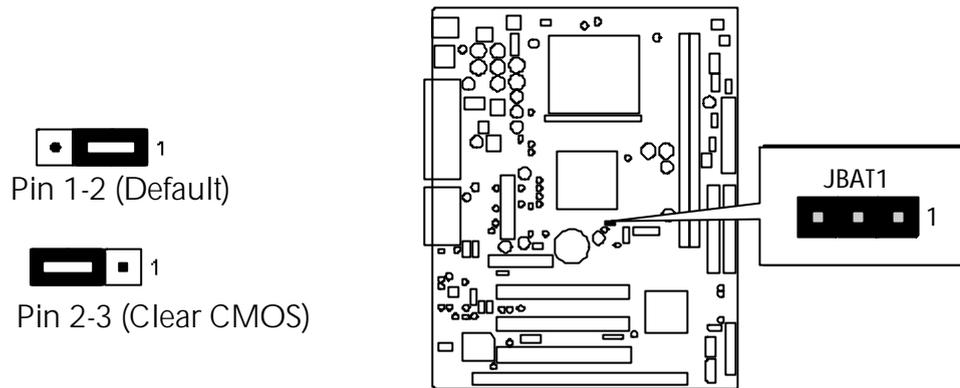
### ***Other Connectors:***

- Ⓔ1 ATX : ATX Power (20-pin header) Connector
- Ⓔ2 JFAN1 : CPU Fan Power Connector
- Ⓔ3 JFAN2 : System Fan Power Connector
- Ⓔ4 J1 : IR Connector
- Ⓔ5 JWOM1 : Wake-On-Modem Connector
- Ⓔ6 JWOL1 : Wake-On-LAN Connector
- Ⓔ7 CD\_IN1 : Audio Primary CD-In Connector
- Ⓔ8 CD\_IN2 : Audio Secondary CD-In Connector

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## A1 Clear CMOS (JBAT1)

JBAT1 is used to clear CMOS data. Clearing CMOS will result in the permanent erasing of previous system configuration settings and the restoration of original (factory-default) system settings.



**Step 1.** Turn off the system power (PC-> Off).

**Step 2.** Remove jumper cap from JBAT1 pins 1-2.

**Step 3.** Place the jumper cap on JBAT1 pin 2-3 for a few seconds.

**Step 4.** Return the jumper cap to pin 1-2.

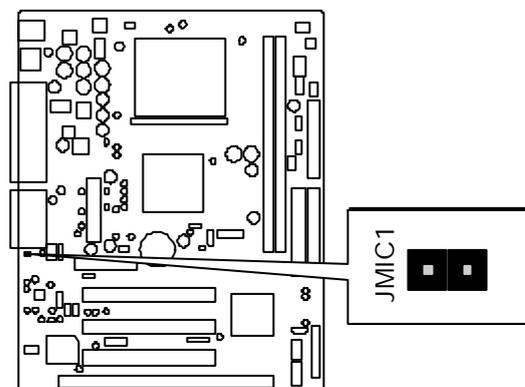
**Step 5.** Turn on the system power (PC-> On).

## A2 Microphone-In Setting (JM1C1)

You have two options to use Microphone-In jack by JM1C1 jumper. One is through the jack on the back panel, and another is to connect it to the front panel jack.

Back-oriented 

Front-oriented 



### A3 CODEC Selector Setting (J2)

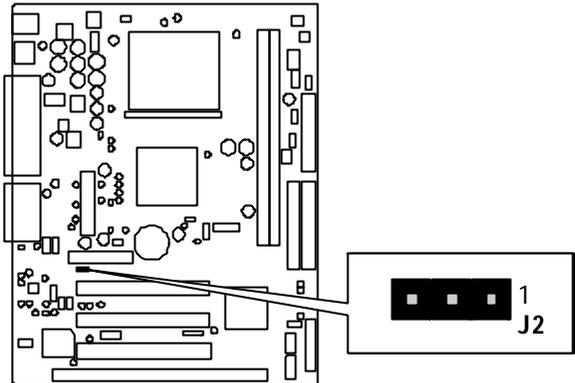
You may use J2 to set onboard audio CODEC or the CODEC on AMR card as primary.



Primary CODEC is on board



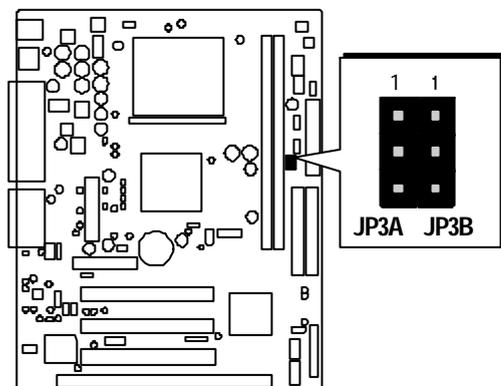
Primary CODEC is on AMR card



### A4 FSB Speed Setting (JP3A,JP3B)

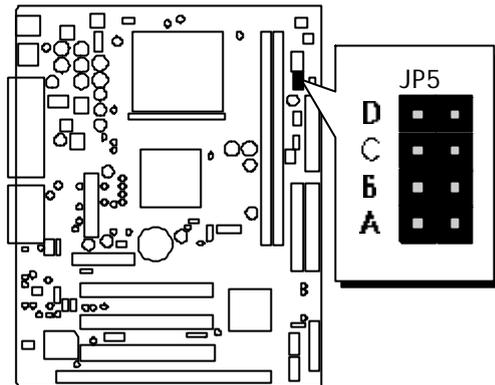
This Mainboard provides jumper JP3 to set FSB(front side bus) at 66MHz, 100MHz, 105MHz and 133MHz. Inserting mini-jumper caps on JP3 as below enables system to identify FSB speed automatically.

Speed / Jumper Setting	Speed / Jumper Setting
66 MHz FSB 	105MHz FSB 
100MHz FSB 	133MHz FSB 



## A5 CPU Multiplier Setting (JP5)

This Mainboard also provides a jumper group JP5 to set CPU multiplier. By inserting jumpers properly on JP5, the user can configure the CPU clock ratio manually.

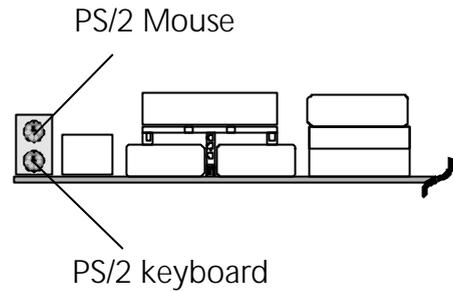


CPU Multiplier Selector: JP5							
Multiplier	2.0	2.5	3.0	3.5	4.0	4.5	5.0
JP5-D	short						
JP5-C	short	open	short	open	short	open	short
JP5-B	short	short	open	open	short	short	open
JP5-A	short	short	short	short	open	open	open
CPU Multiplier Selector: JP5							
Multiplier	5.5	6.0	6.5	7.0	7.5	8.0	8.5+
JP5-D	short	open	open	open	open	open	open
JP5-C	open	short	open	short	open	short	open
JP5-B	open	short	short	open	open	short	open
JP5-A	open	short	short	short	short	open	open

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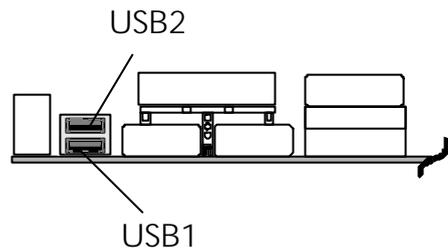
### **B1 PS/2 Keyboard & PS/2 Mouse Connectors**

Two 6-pin female PS/2 keyboard & Mouse connectors are located at the rear panel of mainboard. Depending on the computer housing you use (desktop or minitower), the PS/2 Mouse connector is situated at the top of the PS/2 Keyboard connector when the mainboard is laid into a desktop, as opposed to a minitower where the PS/2 Mouse connector is located at the right of the PS/2 Keyboard. Plug the PS/2 keyboard and mouse jacks into their corresponding connectors.



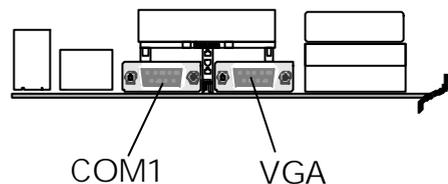
### **B2 USB1/USB2 Port Connectors**

This mainboard offers 2 USB ports on back-panel. Plug each USB device jack into an available USB1/USB2 connector.



### **B3 COM1 Connector**

This mainboard can accommodate two serial device on COM1. Attach a serial device cable to the DB9 serial port COM1 at the back panel of your computer.

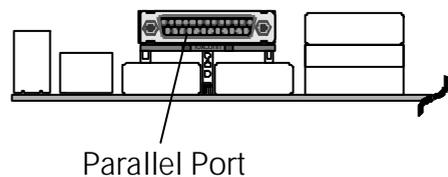


### **B4 VGA Connector**

One 15-pin VGA connector is located at the rear panel of mainboard.

### **B5 Parallel Port Connector**

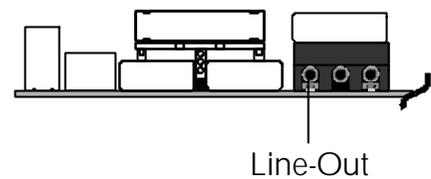
One DB25 female parallel connector is located at the rear panel of the mainboard. Plug the connection cable from your parallel device (printer, scanner, etc.) into this connector.



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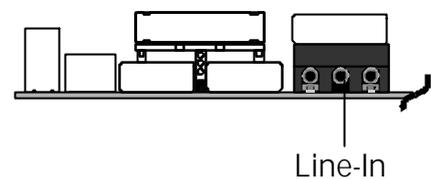
### **B6 Line-Out Port**

Line-Out is a stereo output port through which the combined signal of all internal and external audio sources on the board is output. It can be connected to 1/8-inch TRS stereo headphones or to amplified speakers



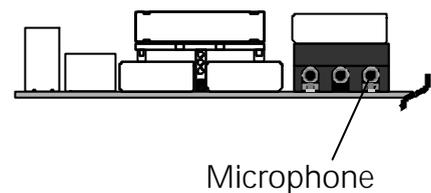
### **B7 Line-In Port**

Line-In is a stereo line-level input port that accepts a 1/8-inch TRS stereo plug. It can be used as a source for digital sound recording, a source to be mixed with the output, or both.



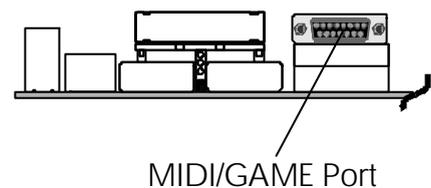
### **B8 Microphone Port**

Mic-In is a 1/8-inch jack that provides a mono input. It can use a dynamic mono or stereo microphone with a resistance of not more than 600 Ohms.



### **B9 MIDI/GAME Port**

The MIDI/GAME port is a 15-pin female connector. This port can be connected to any IBM PC compatible game with a 15-pin D-sub connector.



#### **MIDI Instrument Connection**

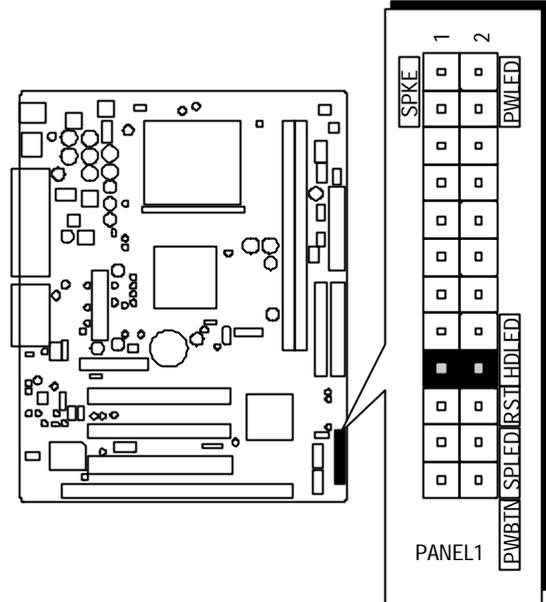
You will need a MIDI adapter to connect a MIDI compatible instrument to the sound card. The MIDI adapter can in turn be connected to the Joystick/MIDI port. You will also need the MIDI sequencing software to run MIDI instruments with your computer etc.) into this connector.



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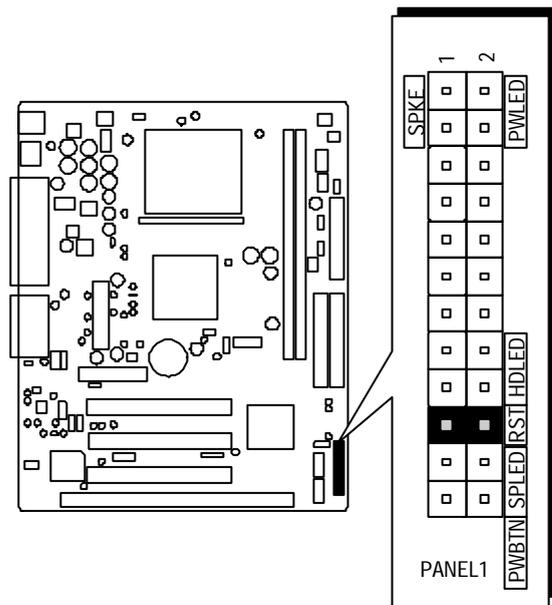
### ③ HDD LED Connector (HDLED)

Attach the connector cable from the IDE device LED to the 2-pin HDLED header. The HDD LED lights up whenever an IDE device is active.



### ④ Hardware Reset Connector (RST)

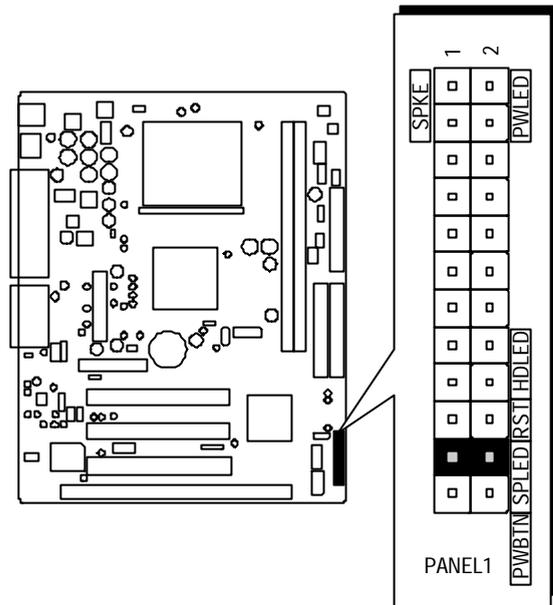
Attach the 2-pin hardware reset switch cable to the RST header. Pressing the reset switch causes the system to restart.



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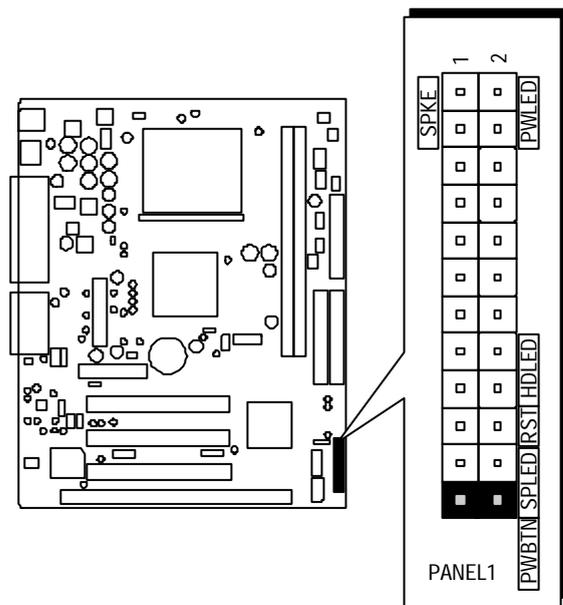
## ⑤ Green LED Connector (SPLED)

The Green LED (SPLED) indicates that the system is currently in one of the power saving mode (Doze/Standby/Suspend). When the system resumes to normal operation mode, the Green LED will go off. Attach a 2-pin Green LED cable to SPLED header.



## ⑥ ATX Power On/Off Switch Connector (PWBTN)

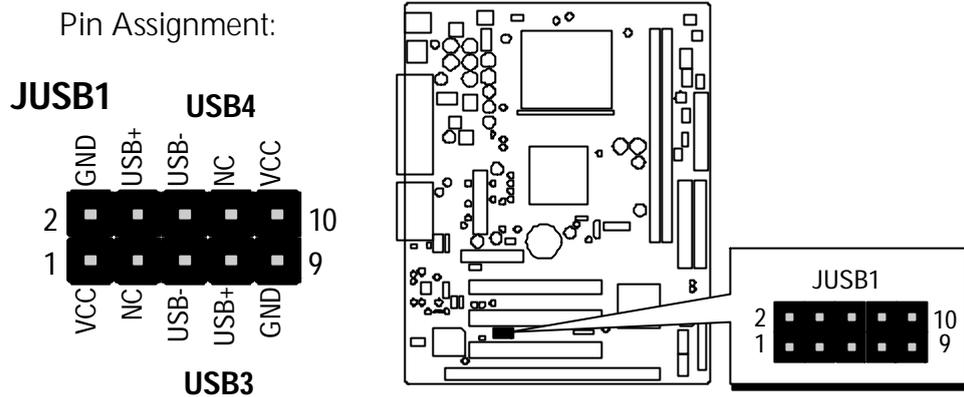
The Power On/Off Switch is a momentary type switch used for turning on or off the system ATX power supply. Attach the connector cable from the Power Switch to the 2-pin PWBTN header on the mainboard.



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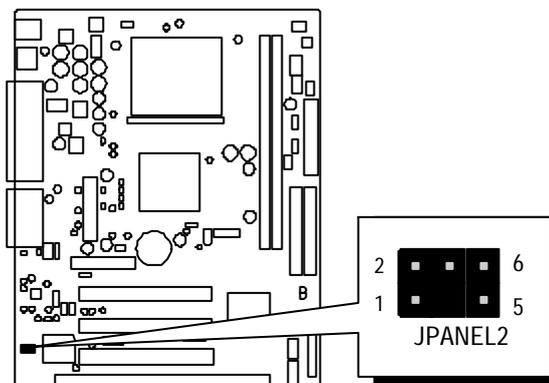
## Ⓒ7 Dual USB Ports Header USB3/USB4 (JUSB1)

This header is used to connect the cable attached to USB connectors mounted on front panel.



## Ⓒ8 Front-Oriented Speaker\_out and Microphone\_in Header (JPANEL2)

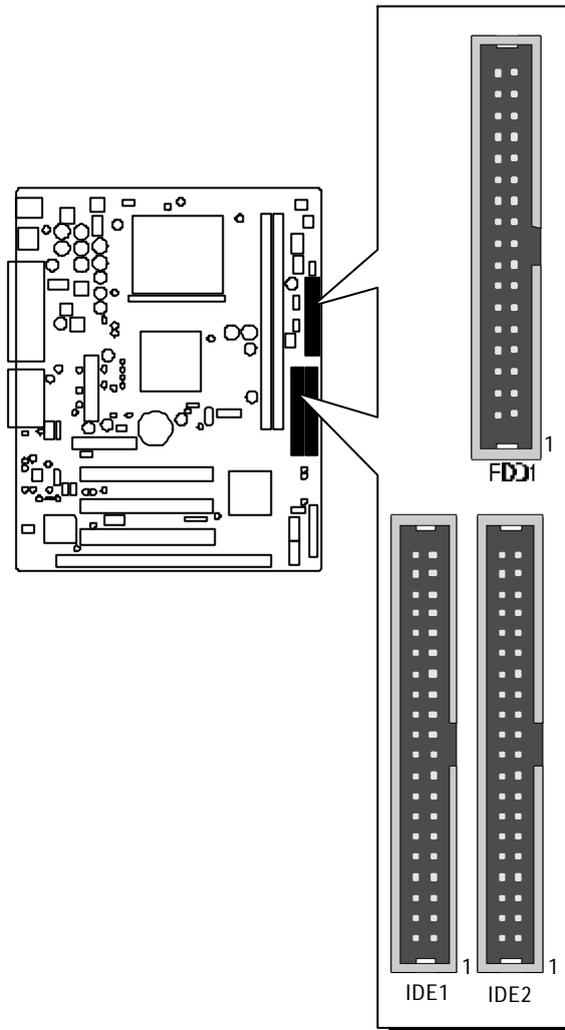
This header allows users to install auxiliary front-oriented microphone and line-out ports for easier access. Either front-oriented or back-oriented speaker\_out and Microphone\_in ports are available at the same time. If you would like to use this front-oriented speaker\_out and Microphone\_in ports, please set jumper JMC1 states on page 27 properly and then install the JPANEL2 header.



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## **D1~D2** Enhanced IDE Connector and Floppy Connector

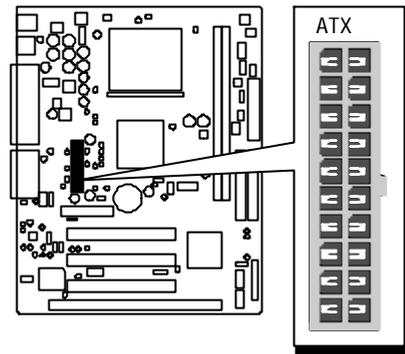
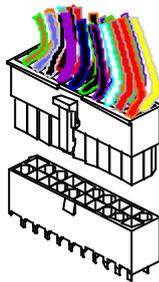
The MV21 mainboard features two 40-pin dual-channel IDE device connectors (IDE1/IDE2) providing support for up to four IDE devices, such as CD-ROM and Hard Disk Drives (HDD). This mainboard also includes one 34-pin floppy disk controller (FDD1) to accommodate the Floppy Disk Drive (FDD1). Moreover, this mainboard comes with one 80pin ATA100/66/33 ribbon cable to connect to IDE H.D.D. and one 34-pin ribbon cable for F.D.D. connection.



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## E1 ATX Power Supply Connector (ATX)

Locate the 20-pin male header ATX power connector (ATX) on your mainboard. Plug the power cable from the ATX power supply unit directly into the ATX power supply connector.



**Note 1:** The ATX power connector is directional and will not go in unless the guides match perfectly making sure that pin#1 is properly positioned.

**Note 2:** Make sure the latch of the ATX power connector clicks into place to ensure a solid attachment.

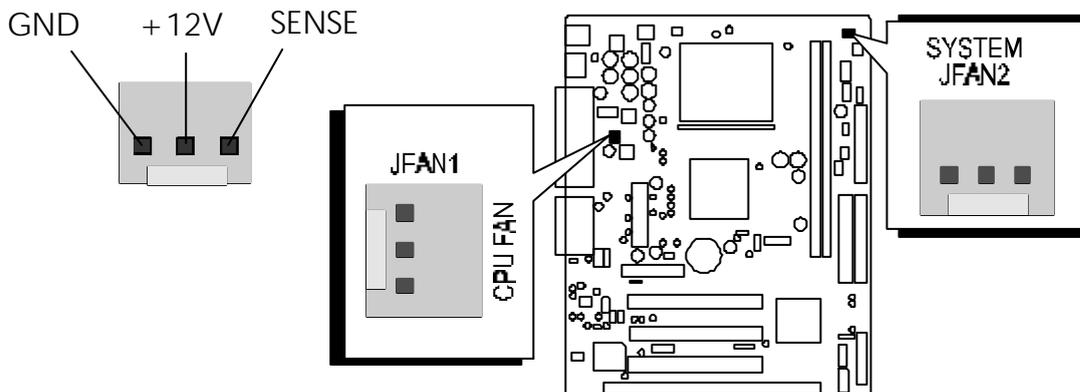
**Note 3:** Your ATX power supply must be supplied to ACPI +5V standby power and at least 720mA compatible.

**Note 4:** Make sure your power supply have enough power for higher speed processor installed.

## E2-E3 Cooling Fan Connectors for CPU (JFAN1), System (JFAN2)

The mainboard provides two onboard 12V cooling fan power connectors to support CPU FAN (JFAN1), System FAN (JFAN2).

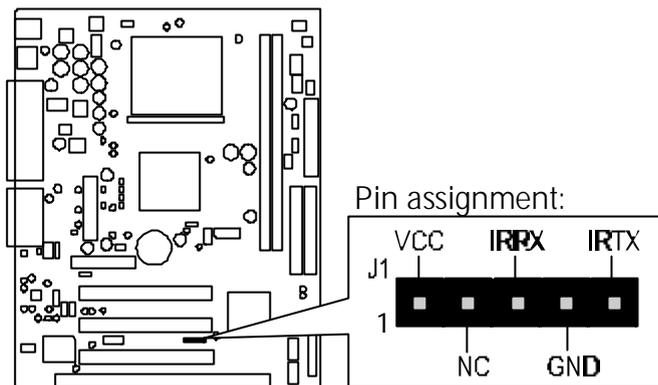
**Note:** Both cable wiring and type of plug may vary depending on the fan maker. Keep in mind that the red wire should always be connected to the +12V header, and the black wire, to the ground (GND) header.



---

## ⓔ4 IR Connector (J1)

If you have an Infrared device, this mainboard can implement IR transfer function. To enable the IR transfer function, follow these steps:



**Note:** Before connect your IR device, please be sure each IR on board pin allocation is matchable with the pin of the IR device. Otherwise, incorrect IR connection may do damage to your IR device.

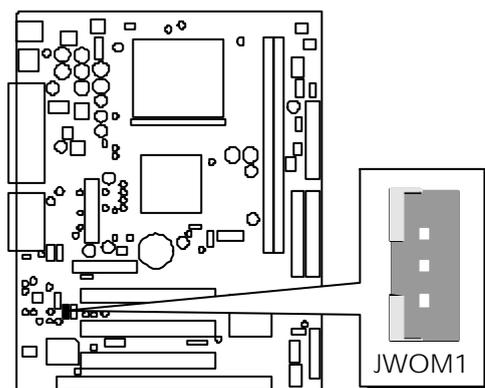
**Step 1.** Attach the 5-pin infrared device cable to J1 connector.  
(Refer to the above diagram for IR pin assignment.)

**Step 2.** Configure the Infrared transfer mode in field "UART 2 Mode" of "Integrated Peripherals" sub-menu in BIOS setup program.

This mainboard supports HPSIR, ASKIR, and Standard transfer modes.

## ⓔ5 Wake-On-Modem Connector (JWOM1)

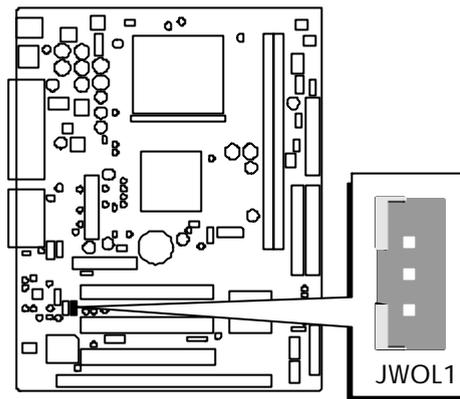
If you have a PCI modem card installed that supports wake-on-modem function, please connect the cable into the JWOM1 header on the mainboard. When your system is in power-saving mode, any modem signal resumes system automatically. And you also need to enable the item through "Power Management/ Wake Up Events" of BIOS setup program.



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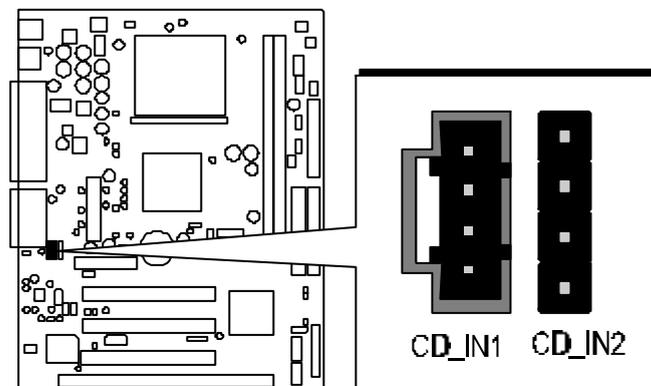
## **E6 Wake-On-LAN Connector (JWOL1)**

Attach a 3-pin connector through the LAN card which supports the Wake-On-LAN (JWOL1) function. This function lets users wake up the connected system through the LAN card.



## **E7~E8 Audio Primary / Secondary CD-In headers (CD\_IN1 and CD\_IN2)**

Use the audio cable provided with CD-ROM/DVD drive to join audio connector on rear edge of CD-ROM/DVD drive with one of the two audio-in connectors CD\_IN1 and CD\_IN2 on the mainboard.



---

### 3.3 System Memory Configuration

The MV21 mainboard has two 168-pin DIMM slots that allow you to install from 16MB up to 1GB of system memory.

Each 168-pin DIMM (Dual In-line Memory Module) Slot can accommodate 16MB, 32MB, 64MB, 128MB, 256MB, and 512MB of PC100/PC133 compliant 3.3V single or double side 64-bit wide data path SDRAM modules.

#### Install Memory:

Install memory in any or all of the slots and in any combination shown as follows.

##### *SDRAM*

DIMM Slot	Memory Modules	Module Quantity
DIMM 1	16MB, 32MB, 64MB, 128MB, 256MB, and 512MB 168-pin 3.3V SDR SDRAM DIMM	x 1
DIMM 2	16MB, 32MB, 64MB, 128MB, 256MB, and 512MB 168-pin 3.3V SDR SDRAM DIMM	x 1

**Note:** You do not need to set any jumper to configure memory since the BIOS utility can detect the system memory automatically. You can check the total system memory value in the BIOS Standard CMOS Setup menu.

#### Upgrade Memory:

You can easily upgrade the system memory by inserting additional SDRAM modules in available DIMM slots. The total system memory is calculated by simply adding up the memory in all DIMM slots. After upgrade, the new system memory value will automatically be computed and displayed in the field " Standard CMOS Setup" of BIOS setup program.

# 4 SOFTWARE UTILITY

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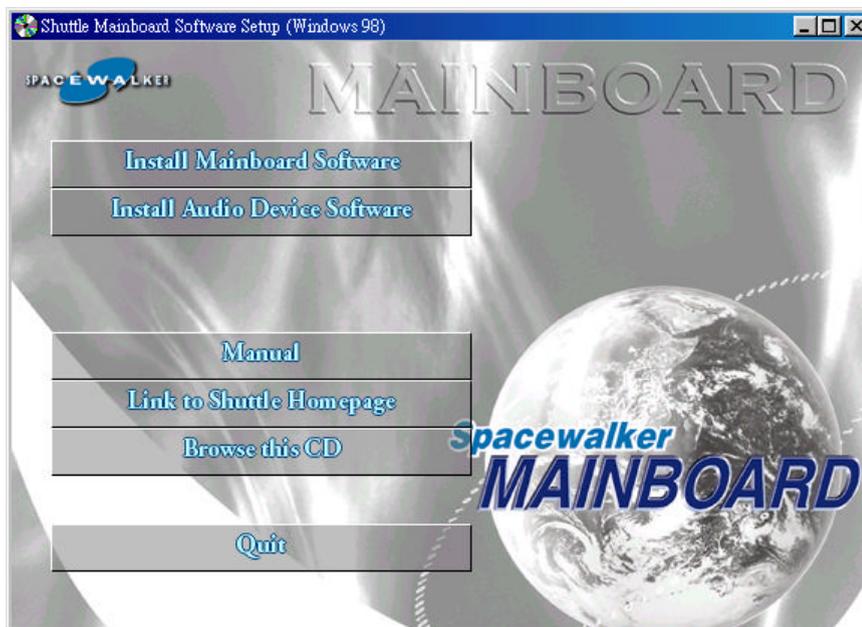
## 4.1 MV21 Mainboard CD Overview

**Note:** The cd contents attached in the MV21 mainboard are subject to change without notice.

To start your mainboard CD, just insert it into your CD-ROM drive, and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click or run D:\Autorun.exe (assuming that your CD-ROM drive is drive D:)

### Navigation Bar Description:

- ☞ **Install Mainboard Software** - Install mainboard drivers for windows.
- ☞ **Install Audio Device Software** - Install audio driver.
- ☞ **Manual** - MV21 mainboard user' s manual by PDF format.
- ☞ **Link to Shuttle Homepage** - Link to shuttle website homepage.
- ☞ **Browse this CD** - Allows you to see contents of this CD.
- ☞ **Quit** - Close this CD.



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## 4.2 Install Mainboard Software

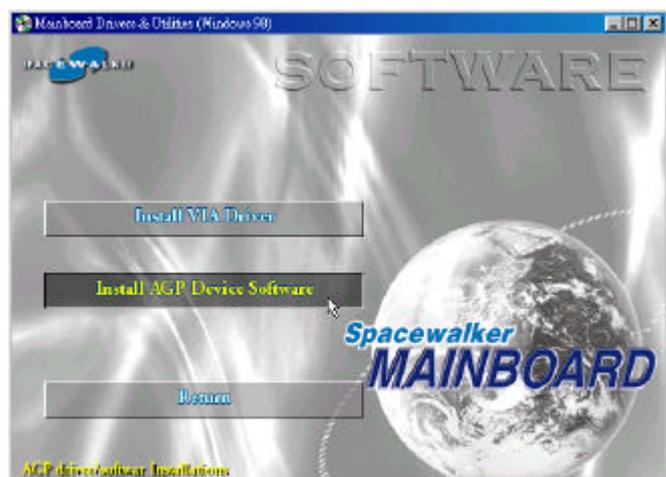
Insert the attached CD into your CD-ROM drive, and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in **My Computer** to bring up **Shuttle Mainboard Software Setup** screen. Use your pointing device (e.g. mouse) to select the "Install Mainboard Software" bar.

Once you made the selection, a Setup window runs the installation automatically. When the copying files is done, make sure you **reboot** the system to take the installation effect.



## 4.3 Install AGP Device Software

Using your pointing device (e.g. mouse) on the "Install AGP Device Software" bar to install AGP driver. Once you made the selection, a Setup window runs the installation automatically. When the copying files is done, make sure you **reboot** the system to take the installation effect.

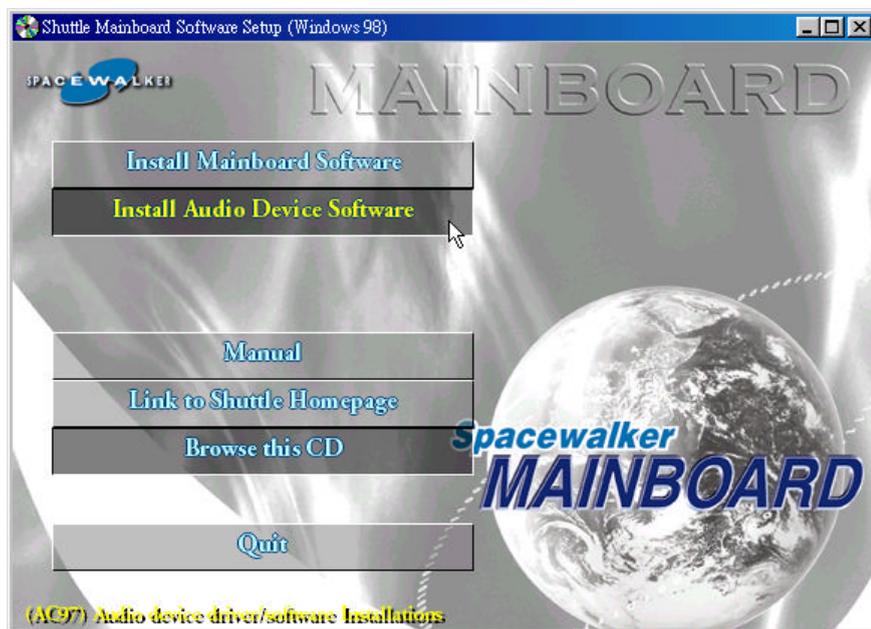


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## 4.4 Install Audio Device Driver

Insert the attached CD into your CD-ROM drive, and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in **My Computer** to bring up **Shuttle Mainboard Software Setup** screen.

Use your pointing device (e.g. mouse) to select the “**Install Audio Device Software**” bar.



Once you made the selection, a Setup window runs the installation automatically.

When the copying files is done, make sure you **reboot** the system to take the installation effect.

---

## 4.5 View User's Manual

Insert the attached CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in **My Computer** to bring up **Shuttle Mainboard Software Setup** screen.

Use your pointing device (e.g. mouse) to select the "Manual" bar.



Then **On line information** windows will appear on screen. Click on the "Install Acrobat Reader" bar if you need to install acrobe reader.



Then click on "MV21 Manual" bar to view MV21 user's manual.

# 5 BIOS SETUP

---

MV21 BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This information is stored in battery-backed RAM so that it retains the Setup information even if the system power is turned off.

The system BIOS is managing and executing a variety of hardware related functions in the system, including:

System date and time

Hardware execution sequence

Power management functions

Allocation of system resources

## 5.1 Enter the BIOS

To enter the BIOS (Basic Input / Output System) utility, follow these steps:

- Step 1.** Power on the computer, and the system will perform its POST (Power-On Self Test) routine checks.
- Step 2.** Press < Del > key immediately, or at the following message:  
"Press DEL to enter SETUP" ,or simultaneously press < Ctrl > , < Alt > , < Esc > keys

**Note 1.** If you miss trains of words mentioned in step 2 (the message disappears before you can respond) and you still wish to enter BIOS Setup, restart the system and try again by turning the computer OFF and ON again or by pressing the < RESET > switch located at the computer' s front panel. You may also reboot by simultaneously pressing the < Ctrl > , < Alt > , < Del > keys.

**Note 2.** If you do not press the keys in time and system does not boot, the screen will prompt an error message, and you will be given the following options:

**"Press F1 to Continue, DEL to Enter Setup"**

- Step 3.** As you enter the BIOS program, the CMOS Setup Utility will prompt you the Main Menu, as shown in the next section.



---

### ***Hardware Monitor***

This entry shows the current system temperature, voltage and Fan speed.

### ***Load Fail-Safe Defaults***

Setup defaults load the optimized settings for optimum system performance. However, you can change the parameter through each Setup Menu.

### ***Load Optimized Defaults***

To load the Turbo defaults is required by the power users who want to push the limitation of system performance by overclocking. **Before you use this function, make sure you fully understand the items in Chipset Setup menu and the components (CPU, DRAM, HDD, etc.) of your system are good enough for optimized setting.**

### ***Set Password***

The item can be used to install a password.

### ***Save & Exit Setup***

Save CMOS value changed to CMOS and exit from setup.

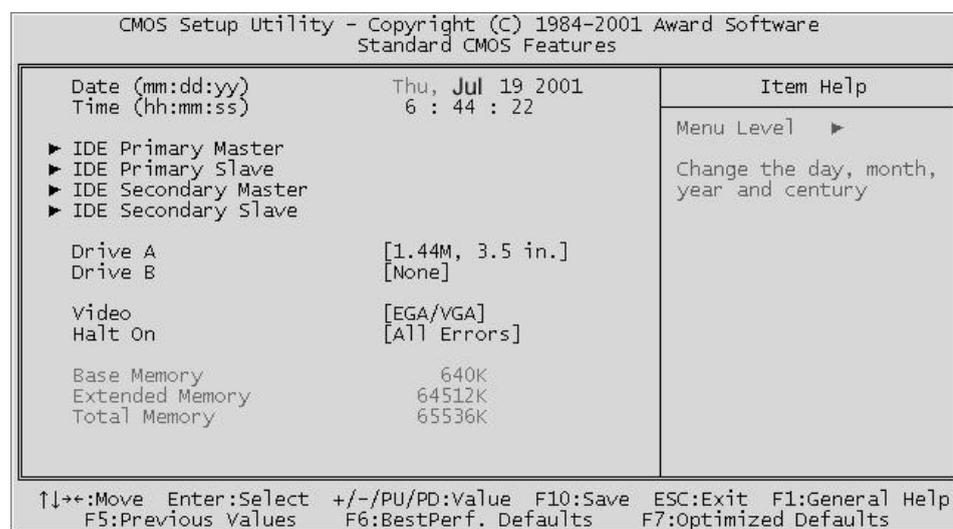
### ***Exit Without Saving***

Abandon all CMOS value changed and exit from setup.

---

## **Standard CMOS Features**

The items in Standard CMOS Setup Menu are divided into around 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.



### **Date**

The date format is < mm > < dd > < yy > .

Set system date. Please be noted that once you set "Date", it just takes effect automatically.

### **Time**

The time format is < hh > < mm > < ss > . The time is converted based on the 24-hour military-time clock. For example. 5 p.m. is 17:00:00.

### **IDE Primary Master/Slave**

Options are in its sub-menu.

Press < Enter > to enter sub-menu for detailed options.

### **IDE Secondary Master/Slave**

Option are in its sub-menu.

Press < Enter > to enter sub-menu for detailed options.

---

### **Drive A/Drive B**

Select type of floppy disk drive installed in your system.

- The choice: None, 360K, 5.25 in, 1.2M, 5.25 in, 720K, 3.5 in, 1.44M, 3.5 in, or 2.88M, 3.5 in.

### **Video**

Select the default video device.

- The choice: Mono, EGA/VGA, CGA 40, or CGA 80.

### **Halt On**

Select the situation in which you want the BIOS to stop the POST process and notify you.

- The choice: All Errors, No Errors, All, But Keyboard, All, But Diskette, or All, But Disk/Key.

### **Memory**

This item is only for display. It is automatically detected by POST (Power On Self Test) of the BIOS.

#### **Base Memory**

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 640K for systems with 640K memory installed on the mainboard.

#### **Extended Memory**

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1MB in the CPU's memory address map.

---

## **Advanced BIOS Features**

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software Advanced BIOS Features		Item Help
Virus Warning	[Disabled]	Menu Level ▶  Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area , BIOS will show a warning message on screen and alarm beep
Quick Power On Self Test	[Enabled]	
First Boot Device	[Floppy]	
Second Boot Device	[HDD-0]	
Third Boot Device	[CDROM]	
Boot Other Device	[Enabled]	
Swap Floppy Drive	[Disabled]	
Boot Up Floppy Seek	[Disabled]	
Boot Up NumLock Status	[Off]	
Gate A20 Option	[Fast]	
Typematic Rate Setting	[Disabled]	
x Typematic Rate (Chars/Sec)	6	
x Typematic Delay (Msec)	250	
Security Option	[Setup]	
OS Select For DRAM > 64MB	[Non-OS2]	
Video BIOS Shadow	[Enabled]	
C8000-CBFFF Shadow	[Disabled]	
CC000-CFFFF Shadow	[Disabled]	
D0000-D3FFF Shadow	[Disabled]	
D4000-D7FFF Shadow	[Disabled]	
D8000-DBFFF Shadow	[Disabled]	
DC000-DFFFF Shadow	[Disabled]	

↑↓←→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help  
F5:Previous Values F6:BestPerf. Defaults F7:Optimized Defaults

### **Virus Warning**

When enabled, this item provides protection against viruses that try to write to the boot sector and partition table of your hard disk drive. We recommend that you enable anti-virus protection as soon as you have installed an operating system.

- The choice: Enabled, Disabled.

### **Quick Power On Self Test**

Enable this item to shorten the power on testing (POST) and have your system start up faster. You might like to enable this item after you are confident that your system hardware is operating smoothly.

- The choice: Enabled, Disabled.

### **First / Second / Third Boot Device**

Use these three items to select the priority and order of the devices that your system searches for an operating system at start-up time.

- The choice: Floppy, LS120, SCSI, CDROM, HDD-0, HDD-1, HDD-2, HDD-3, ZIP-100, LAN, or Disabled.

---

### ***Boot Other Device***

System at start up time will search all other possible locations for an operating system if it fails to find one in the devices specified under the first, second, and third boot devices.

- The choice: Enabled, Disabled.

### ***Swap Floppy Drive***

If you have two floppy diskette drives in your system, this item allows you to swap the assigned drive letters so that drive A becomes drive B, and drive B becomes drive A.

- The choice: Enabled, Disabled.

### ***Boot Up Floppy Seek***

If this item is enabled, it checks the geometry of the floppy disk drives at start-up time. You don't need to enable this item unless you have an old diskette drive with 360K capacity.

- The choice: Enabled, Disabled.

### ***Boot Up NumLock Status***

This item defines if the keyboard Num Lock key is active when your system is started.

- The choice: On, Off.

### ***Gate A20 Option***

This item defines how the system handles legacy software that was written for an earlier generation of processors. Leave this item at the default value.

- The choice: Fast, Normal.

### ***Typematic Rate Setting***

If this item is enabled, you can use the following two items to set the typematic rate and the typematic delay settings for your keyboard.

- The choice: Enabled, Disabled.

### ***Typematic Rate (Chars/Sec)***

If the item Typematic Rate Setting is enabled, you can use this item to define how many characters per second are generated by a held-down key.

- The choice: 6, 8, 10, 12, 15, 20, 24, 30.

---

### ***Typematic Delay (Msec)***

If the item Typematic Rate Setting is enabled, you can use this item to define how many milliseconds must elapse before a held-down key begins generating repeat characters.

- The choice: 250, 500, 750, 1000.

### ***Security Option***

If you have installed password protection, this item defines if the password is required at system start up, or if it is only required when a user tries to enter the Setup Utility.

**System**      The system will not boot and access to Setup will be denied if the correct password is not entered promptly.

**Setup**        The system will boot, but access to Setup will be denied if the correct password is not entered promptly.

- The choice: Setup, System.

### ***OS Select For DRAM > 64MB***

This item is only required if you have installed more than 64 MB of memory and you are running the OS/2 operating system. Otherwise, leave this item at the default Non-OS2.

- The choice: Non-OS2, OS2.

### ***Video BIOS Shadow***

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

- The choice: Enabled, Disabled.

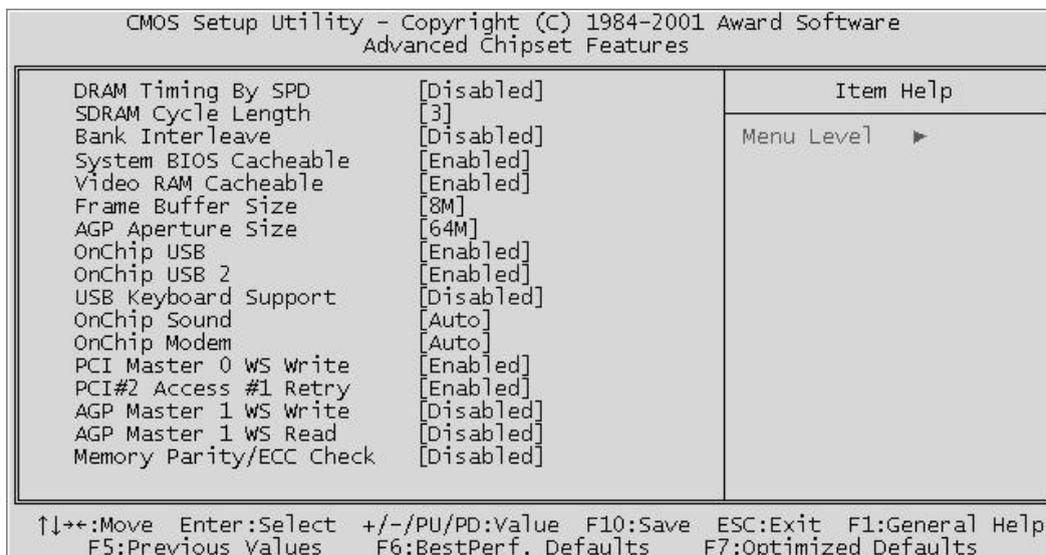
### ***XX000-XXFFF Shadow***

These categories determine whether option ROMs will be Chipset Features Setup Auto Configuration copied to RAM. An example of such option ROM would be support of on-board SCSI.

- The choice: Enabled, Disabled.

---

## **Advanced Chipset Features**



### **DRAM Timing By SPD**

This item allows you to enable or disable the DRAM timing defined by the Serial Presence Detect electrical.

- The choice: Enabled, Disabled.

### **SDRAM Cycle Length**

This field enables you to set the CAS latency time in HCLKs of 2/2 or 3/3. The system board designer should have set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU.

- The choice: 2, 3.

### **Bank Interleave**

This item allows you to enable or disable the Bank Interleave function with 2 banks or 4 banks.

- The choice: Disabled, 2 Bank, or 4 Bank.

### **System BIOS Cacheable**

When this is enabled, system BIOS will be cached for faster execution.

- The choice: Enabled, Disabled.

---

### ***Video RAM Cacheable***

When this is enabled, graphics card's local memory will be cached for faster execution. However, if any program writes to this memory area, a system error may occur.

- The choice: Enabled, Disabled.

### ***Frame Buffer Size***

This option determines the frame buffer size shared from the main memory for use by the onboard VGA display.

- The choice: 2M, 4M, or 8M.

### ***AGP Aperture Size***

This option determines the effective size of AGP Graphic *Aperture*, where memory-mapped graphic data structures are located.

- The choice: 4M, 8M, 16M, 32M, 64M, or 128M.

### ***OnChip USB***

This should be enabled if your system has a USB installed on mainboard and you wish to use it.

- The choice: Enabled, Disabled, or On Chip USB2.

### ***OnChip USB2***

This should be enabled if your system has front panel USB ports installed on the mainboard and you wish to use them.

- The choice: Enabled, Disabled.

### ***USB Keyboard Support***

Enable the function when the USB keyboard is being used. Disable it when an AT keyboard is used.

- The choice: Enabled, Disabled.

### ***OnChip Sound***

Disabling this function turns off onboard audio chip.

- The choice: Auto, Disabled.

### ***OnChip Modem***

This should be enabled if your system has a modem installed on the system board and you wish to use it.

- The choice: Auto, Disabled.

---

### ***PCI Master 0 WS Write***

When enable this, writes to PCI bus are executed with zero wait state.

- The choice: Enabled, Disabled.

### ***PCI#2 Access #1 Retry***

When enable it, AGP Bus (PCI#1) access to PCI Bus (PCI#2) is executed with error retry feature.

- The choice: Enabled, Disabled.

### ***AGP Master 1 WS Write***

This implements a single delay when writing to AGP Bus. Usually, two-wait states are used by system, which is default setting for greater stability.

- The choice: Enabled, Disabled.

### ***AGP Master 1 WS Read***

This implements a single delay when reading to AGP Bus. By default, two-wait states are used by the system, allowing for greater stability.

- The choice: Enabled, Disabled.

### ***Memory Parity/ECC Check***

This item allows users to enable memory error correcting code (ECC) function. Meanwhile, SDRAM modules with ECC installed is necessary.

- The choice: Auto, Disabled.

---

## **Integrated Peripherals**

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software		
Integrated Peripherals		
OnChip IDE Channel0	[Enabled]	Item Help
OnChip IDE Channel1	[Enabled]	
IDE Prefetch Mode	[Enabled]	Menu Level ▶
Primary Master PIO	[Auto]	
Primary Slave PIO	[Auto]	
Secondary Master PIO	[Auto]	
Secondary Slave PIO	[Auto]	
Primary Master UDMA	[Auto]	
Primary Slave UDMA	[Auto]	
Secondary Master UDMA	[Auto]	
Secondary Slave UDMA	[Auto]	
Init Display First	[PCI Slot]	
Onboard FDD Controller	[Enabled]	
Onboard Serial Port 1	[3F8/IRQ4]	
OnBoard IR Port	[Disabled]	
x UART 2 Mode	Standard	
x IR Function Duplex	Half	
x TX,RX inverting enable	No, Yes	
Onboard Parallel Port	[378/IRQ7]	
Onboard Parallel Mode	[Normal]	
ECP Mode Use DMA	[3]	
Parallel Port EPP Type	[EPP1.9]	
Onboard Legacy Audio	[Enabled]	
Sound Blaster	[Disabled]	
SB I/O Base Address	[220H]	
SB IRQ Select	[IRQ 5]	
SB DMA Select	[DMA 1]	
MPU-401	[Enabled]	
MPU-401 I/O Address	[300-303H]	
Game Port (200-207H)	[Enabled]	

↑↓←→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help  
F5:Previous Values F6:BestPerf. Defaults F7:Optimized Defaults

### **On-Chip IDE Channel0/1**

Use these items to enable or disable PCI IDE channels that are integrated on the mainboard.

- The choice: Enabled, Disabled.

### **IDE Prefetch Mode**

Enable prefetch mode for IDE drive interfaces that support its faster drive accesses. If you are getting disk drive errors, change the setting to omit drive interface where the errors occur. Depending on the configuration of your IDE subsystem, this field may not appear, and it does not appear when the Internal PCI/IDE field above is Disabled.

- The choice: Enabled, Disabled.

---

### ***Primary/Secondary Master/Slave PIO***

Each channel supports a master device and a slave device. These four items let you assign which kind of PIO (Programmed Input/Output) is used by IDE devices. You can choose Auto, to let the system auto detect which PIO mode is best, or you can install a PIO mode from 0-4.

- The choice: Auto, Mode 0,1 ~ 4.

### ***Primary/Secondary Master/Slave UDMA***

Each channel supports a master device and a slave device. This motherboard supports UltraDMA. UltraDMA technology provides faster access to IDE devices.

If you install a device that supports UltraDMA, change the appropriate item on this list to Auto. You may have to install the UltraDMA driver supplied with this motherboard in order to use an UltraDMA device.

- The choice: Auto, Disabled.

### ***Init Display First***

If install both PCI and AGP display card , use this item to define one as primary display adapter.

- The choice: PCI Slot, Onboard.

### ***Onboard FDD Controller***

This option enables onboard floppy disk drive controller.

- The choice: Enabled, Disabled.

### ***Onboard Serial Port 1***

This option is used to assign I/O address for onboard serial port.

- The choice: 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Auto, or Disabled.

### ***Onboard IR Port***

This option is used to assign I/O address for onboard IR port.

- The choice: Enabled, Disabled.

---

### ***UART 2 Mode***

This field is available if onboard serial port 2 field is set to any option but Disabled. UART 2 Mode enables you to select the infrared communication protocol—Standard, HPSIR, or ASKIR. HPSIR is Hewlett Packard's infrared communication protocol with a maximum baud rate up to 115.2 Kbps. ASKIR is Sharp's infrared communication protocol with a maximum baud rate up to 57.6 Kbps.

- The choice: Standard, HPSIR, or ASKIR.

### ***IR Function Duplex***

This field is available when UART 2 Mode is set to either ASKIR or HPSIR. This item enables you to determine the infrared (IR) function of onboard infrared chip. Full-duplex means that you can transmit and send information simultaneously. Half-duplex is the transmission of data in both directions, but only one direction at a time.

- The choice: Half, Full.

### ***TX, RX inverting enable***

Defines voltage level for Infrared module RxD (receive) mode and TxD (transmit) mode. This setting has to match the requirements of infrared module used in system.

- The choice: No, No / No, Yes / Yes, No / Yes, Yes.

### ***Onboard Parallel Port***

This option is used to assign I/O address for onboard parallel port.

- The choice: Disable, 3BC/IRQ7, 378/IRQ7, or 278/IRQ5.

### ***Onboard Parallel Mode***

This feature enables you to set data transfer protocol for parallel port. Normal allows data output only. Extended Capabilities Port (ECP) and Enhanced Parallel Port (EPP) are bi-directional modes, and they allow both data input and output. ECP and EPP modes are only supported with EPP and ECP aware peripherals.

- The choice: Normal, EPP, ECP, ECP/EPP.

### ***ECP Mode Use DMA***

When onboard parallel port is set to ECP mode, the parallel port has the option to use DMA 3 or DMA 1.

- The choice: 1, 3

---

### **Parallel Port EPP Type**

This option offers users to specify Enhanced Parallel Port (EPP) specification.

- The choice: EPP 1.7, EPP 1.9.

### **Onboard Legacy Audio**

This option enables the onboard legacy audio function. When enabled the following items become available.

- The choice: Enabled, Disabled.

### **Sound Blaster**

This feature is used to enable or disable a Sound Blaster card if installed.

- The choice: Enabled, Disabled.

### **SB I/O Base Address**

This item lets you set the I/O base address for the Sound Blaster card.

- The choice: 220H, 240H, 260H, 280H.

### **SB IRQ Select**

This item lets you set the Interrupt Request (IRQ) for the Sound Blaster card.

- The choice: IRQ5, IRQ7, IRQ9, IRQ10.

### **SB DMA Select**

This item lets you select the Direct Memory Access (DMA) for the Sound Blaster card.

- The choice: DMA0, DMA1, DMA2, DMA3.

### **MPU-401**

Use this item to enable MPU-401 function for the game port.

- The choice: Enabled, Disabled.

### **MPU-401 I/O Address**

Use this item to set I/O address for the game port.

- The choice: 300-303H, 310-313H, 320-323H, 330-333H.

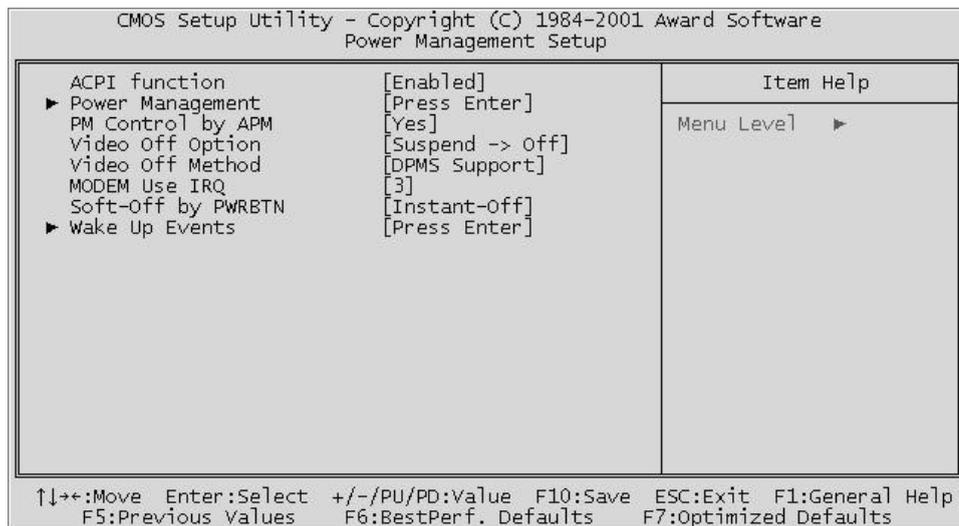
### **Game Port (200-207H)**

This item shows the I/O address for the game port.

- The choice: Enabled, Disabled.

---

## **Power Management Setup**



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

### **ACPI function**

This mainboard supports ACPI (Advanced Configuration and Power management Interface). Use this item to enable or disable the ACPI feature.

- The choice: Enabled, Disabled.

**Select "Power Management" to press "enter" key, and then you may run into the sub-menu. The sub-menu contains three items listed as follows:**

### **Power Management**

This function allows you to set the default parameters of power-saving modes. You may set "User Define" to choose your own parameters.

- The choice: User Define, Min Saving, Max Saving.

### **HDD Power Down**

IDE hard drive will spin down if it is not accessed within a specified length of time.

- The choice: Disable, 1Min, ....., 15Min.

---

### ***Doze Mode***

system speed will change from turbo to slow if no Power Management events occur for a specified length of time. Full power function will return when a Power Management event is detected.

- The choice: 1Min, 2Min, 4Min, 6Min, 8Min, 10Min, 20Min, 30Min, 40Min, 1Hour.

### ***Suspend Mode***

CPU clock will be stopped and the video signal will be suspended if no Power Management events occur for a specified length of time. Full power function will return when a Power Management event is detected. Options are from 1 Min to 1 Hour and Disable.

- The choice: 1Min, 2Min, 4Min, 6Min, 8Min, 10Min, 20Min, 30Min, 40Min, 1Hour, Disable.

***Press "Esc" key to go back to the previous sub-menu.***

### ***PM Control by APM***

This field allows you to control the PC Monitor's power management features via Intel-Microsoft Advanced Power Management software. Once you have enabled the APM interface, some settings made in the BIOS Setup program may be overridden by APM.

- The choice: Yes, No.

### ***Video Off Option***

This option defines if the video is powered down when the system is put into suspend mode.

- The choice: Always On, Suspend -> Off, All Modes -> Off.

### ***Video Off Method***

This determines the manner in which the monitor is blank.

#### **V/H SYNC + Blank**

This selection will cause system to turn off vertical and horizontal synchronization ports and write blanks to video buffer.

#### **Blank Screen**

This option only writes blanks to video buffer

#### **DPMS Support**

Initial power management signal of display.

- 
- The choice: V/H SYNC + Blank, Blank Screen, DPMS Support.

### ***MODEM Use IRQ***

If you want an incoming call on a modem to automatically resume the system from a power-saving mode, use this item to specify the interrupt request line (IRQ) that is used by the modem. You might have to connect the fax/modem to the mainboard Wake On Modem connector for this feature to work.

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

### ***Soft-Off by PWRBTN***

Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake Up Alarms. This item lets you install a software power down that is controlled by the normal power button on your system. If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to "Delay 4 Sec." then you have to hold the power button down for four seconds to cause a software power down.

- The choice: Instant-Off, Delay 4 Sec.

### ***\*\*\* Wake Up Events \*\*\****

Wake Up Events can prevent system from entering a power saving mode or can awaken system from such a mode. In effect, system remains alert for anything which occurs to a device that is configured as On or Enabled, even when system is in a power down mode.

### ***Wake Up Events***

This item allows user to determine wake up events.

- The choice: Press "Enter" key to run into the sub-menu.

---

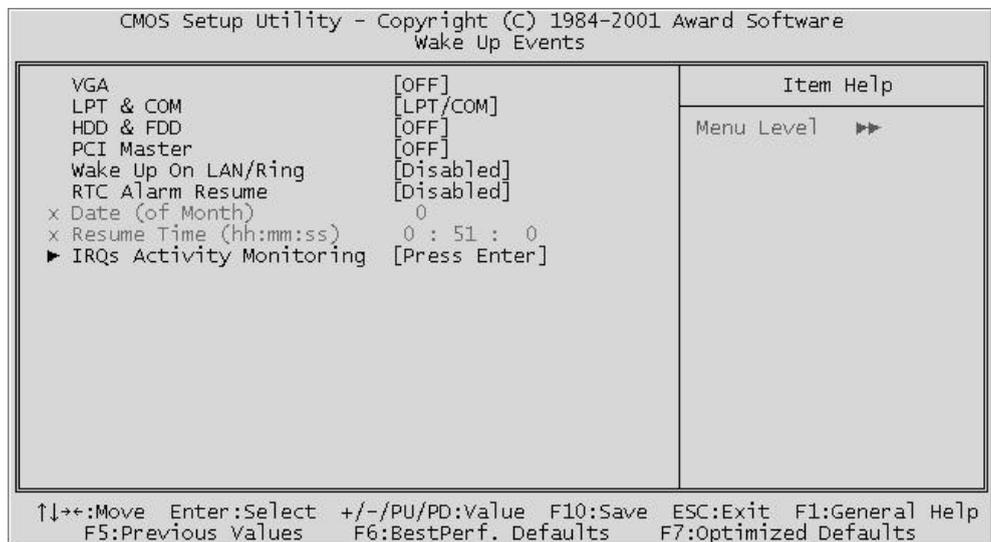
### \*\*\* **Wake Up Events** \*\*\*

Wake Up Events can prevent system from entering a power saving mode or can awaken system from such a mode. In effect, system remains alert for anything which occurs to a device that is configured as On or Enabled, even when system is in a power down mode.

#### **Wake Up Events**

This item allows user to determine wake up events.

- The choice: Press "Enter" key to run into the sub-menu.



#### **VGA**

Set the item ON, while you wake up system by LAN, and VGA is waken, too.

- The choice: ON, OFF.

#### **LPT & COM**

Set the item enabled then users can awaken system by any device connected to LPT/COM ports.

- The choice: NONE, LPT/COM, LPT, or COM.

#### **HDD & FDD**

Set the item ON then users can awaken system by Hard Disk/Floppy disk.

- The choice: ON, OFF.

---

### ***PCI Master***

Set the item ON then users can awaken system by any PCI Card (Master mode).

- The choice: ON, OFF.

### ***Wake Up On LAN/Ring***

When set the enabled, system power will be turned on if there is any LAN card or modem activity.

- The choice: Enabled, Disabled.

### ***RTC Alarm Resume***

Set the item Enabled, and then users may select alarm time in the next few items.

- The choice: Enabled, Disabled.

#### ***Date (of Month)***

This is for specifying the alarm Date on which system will awaken system from suspend mode.

- The choice: Key in a DEC number: Min=0, Max=31.

#### ***Resume Time (hh:mm:ss)***

This is to specify the alarm Hour/Minute/Second on which the system will awaken system from suspend mode.

- The choice: Key in a DEC number: Min=0, Max=23/59.

### ***IRQs Activity Monitoring***

This item allows user to enable any device with listed IRQ to awaken system.

- The choice: Press "Enter" key to run into sub-menu.

#### ***Primary INTR***

Press Enter to on/off the wake up ability of a specified IRQ.

- The choice: ON, OFF.

In 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 service.

---

When On mode exist, activity will neither prevent the system from going into a power management mode nor awaken it.

**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)**

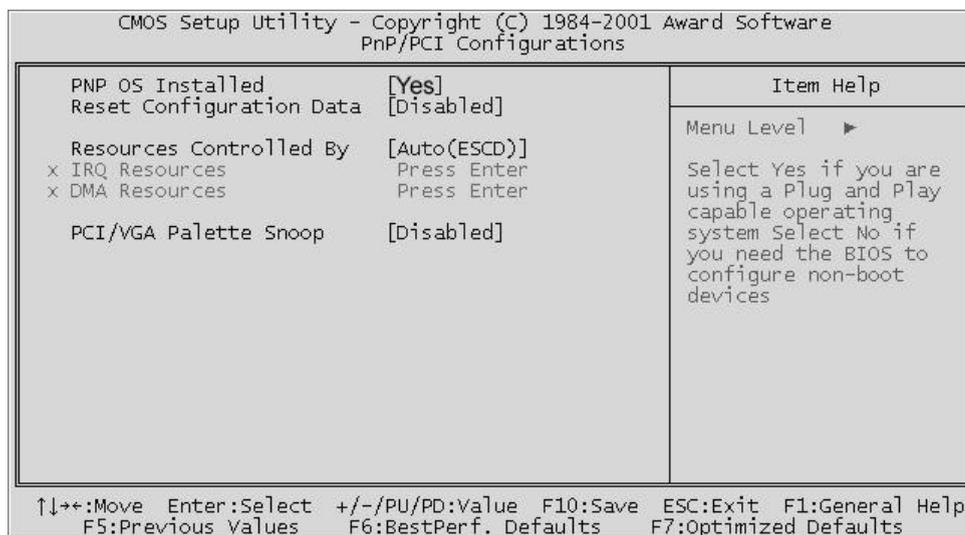
**IRQ14 (Hard Disk)**

**IRQ15 (Reserved)**

➤ The choice: Enabled, Disabled.

---

## **PnP/PCI Configurations**



The PnP/PCI Configurations allows you to configure ISA and PCI devices installed.

### ***PNP OS Installed***

Setting this option to Yes allows PnP OS (instead of BIOS) to assign system resources such as IRQ and I/O address to the ISA PnP device.

➤ The choice: Yes, No.

### ***Reset Configuration Data***

If you enable this item and restart system, any PnP configuration data stored in the BIOS setup is cleared from memory. New updated data is created.

➤ The choice: Enabled, Disabled.

### ***Resources Controlled By***

You should leave this item at default Auto (ESCD). Under this setting, system dynamically allocates resources to plug and play devices as they are required. If you cannot get a legacy ISA (Industry Standard Architecture) add-in card to work properly, you might be able to solve the problem by changing this item to Manual, and then opening up *IRQ Resources* and *DMA Resources* sub-menus.

➤ The choice: Auto, Manual.

In *IRQ Resources* sub-menu, if you change any of IRQ assignments to Legacy ISA, then that Interrupt Request Line is reserved for a legacy ISA add-in card. Press **Esc** to close the IRQ Resources sub-menu.

---

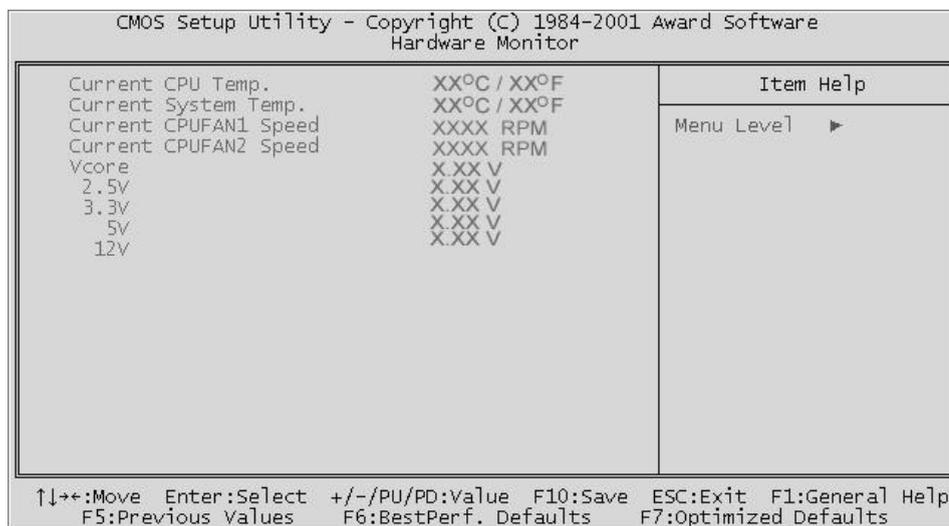
### ***PCI/VGA Palette Snoop***

This item is designed to overcome some problems that can be caused by some non-standard VGA cards. This board includes a built-in VGA system that does not require palette snooping so you must leave this item disabled.

➤ The choice: Disabled, Enabled.

---

## **Hardware Monitor**



### **Current CPU Temp.**

The mainboard supports CPU temperature monitoring and overheat alert. This item indicates the current Processor temperature.

### **Current System Temp.**

The mainboard supports System Temperature monitoring and overheat alert. This item indicate the current main board temperature.

### **Current CPUFAN1/2 Speed**

The mainboard can detect fan's rotation speed for CPU cooler.

### **Vcore**

This mainboard supports CPU and mainboard voltages monitoring. The onboard hardware monitor is able to detect the CPU voltage (Vcore) and the voltage output from power supply.

### **2.5V, 3.3V, 5V, 12V**

The mainboard supports CPU and mainboard voltages monitoring. The onboard hardware monitor is able to detect the voltages output of the voltage regulators and power supply.

---

 **Load Fail-Safe Defaults**

While you press < Enter > on this item, you will get a confirmation dialog box with a message similar to:

Load Fail-Safe Defaults (Y/N) ? N

Pressing ' Y ' loads the BIOS default values for the most stable, minimal-performance system operations.

 **Load Optimized Defaults**

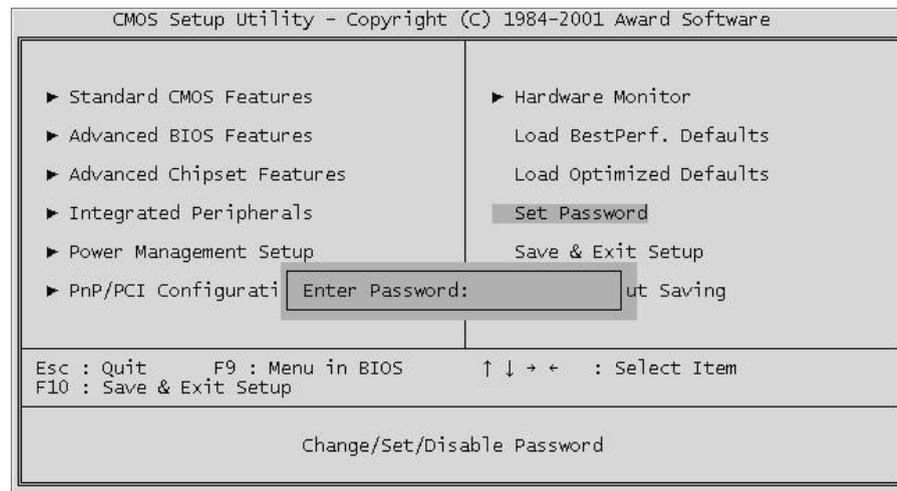
While you press < Enter > on this item, you will get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N) ? N

Pressing ' Y ' loads the default values that are factory settings for optimal performance system operations.

---

## Set Password



This item is to set supervisor password. Please follow below steps.

### **New Password Setting :**

1. While pressing < Enter > key to start setting password function, a dialog box appears to ask you "Enter Password : " .
2. Key in a new password now. However, the password can not be over eight characters or numbers.
3. Then system will request you to confirm new password by asking you to key in new password again.
4. Once the confirmation is completed, new code takes effect.

### **No Password Setting :**

5. If you want to delete password, just press < Enter > key instead of new password while password input is requested. And the other procedures are the same as above password setting.

### **If You Forget Password :**

6. While being asked of password, you just forget it and you must access the system. The only way is to turn off system and clear CMOS memory. Please take reference in page 29 for clear CMOS setting.

---

### **Save & Exit Setup**

Press < Enter > on this item, and a similar dialog box shows up to ask you the following confirmation :

Save to CMOS and EXIT (Y/N)? Y

Pressing "Y" stores the selections made in the menus of CMOS - a special section of memory that stays on after you turn your system off. When next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values, the system restarts again.

### **Exit Without Saving**

Press < Enter > on this item and a similar dialog box shows up to ask you the following confirmation :

Quit without saving (Y/N)? Y

This allows you to exit from Setup without storing in CMOS any change. The previous selections remain in effect. This exits from the Setup utility and restarts your computer.