Shuttle® MV43/MV43N

Pentium 4/Celeron , 478-pin processor based DDR Mainboard
Manual Version 1.0

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Quick Reference

About This Manual

1 INTRODUCTION

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 3.1 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 Shuttle MV43/MV43N mainboard.

Experienced DIY User

Congratulate on your purchase of the Shuttle MV43/MV43N mainboard. You will find that installing your new Shuttle MV43/MV43N mainboard is just easy. Bundled with an array of onboard functions, the highly-integrated MV43/MV43N 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 Drivers/Software Utilities 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 MV43/MV43N to construct your system. Shuttle MV43/MV43N incorporates all the state-of-the-art technology of the P4 M266 chipset from VIA. It integrates the most advanced functions you can find to date in a compact Micro ATX board.

This manual adopted in MV43 and MV43N mainboards at the same time.

The difference between MV43 and MV43N is that MV43N equips with onboard VIA VT6103 LAN PHY. In the manual, if there are some standards, characters, equipment or software only appeared or adopted by MV43N; it will be mentioned(MV43N only).

1.2 Item Checklist:

Check all items with you MV43/MV43N mainboard to make sure nothing is missing. The complete package should include:

✸ One piece of Shuttle MV43/MV43N Mainboard
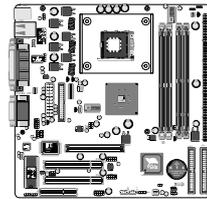
✸ One piece of ATA 100/66/33 Ribbon Cable

✸ IO Shielding

✸ One piece of Floppy Ribbon Cable

✸ One piece of twin ports USB Cable (optional)
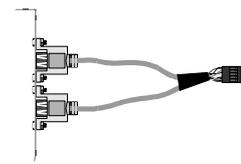
✸ MV43/MV43N User's Manual
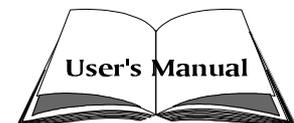
✸ One piece of Bundled CD-ROM with containing:
  ➢ MV43/MV43N user's manual saved in PDF format
  ➢ VIA Chipset System Driver
  ➢ VIA VGA Driver
  ➢ Onboard Audio controller driver
  ➢ AMI Flashing Utility
  ➢ LAN Driver (MV43N Only)
  ➢ USB2.0 Driver
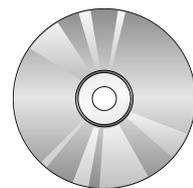
2 FEATURES

MV43/MV43N 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

Intel Pentium 4, 478-pin processors with 400 MHz FSB.

✺ Chipset

Features VIA VT8751(P4M266) N.B. and VIA VT8235 S.B..

✺ Integrated Graphics Controller

P4M266 integrates S3® Savag4 ™ graphics accelerator into a single chip. P4M266 brings mainstream graphics performance to the Value PC with leading-edge 2D, 3D and DVD video acceleration into a cost effective package. Based on its capabilities, P4M266 is an ideal solution for the consumer, corporate mobile users and entry-level professionals.

Maximum-shared memory size is 32MB.

✺ Built-in Ethernet LAN (MV43N only)

Built-in 10BaseT/100BaseTX Ethernet LAN.

VT8235 integrates Fast Ethernet MAC and VT6103 LAN PHY in compliance with IEEE802.3u 100BASE-TX, 10BASE-T and ANSI X3.263 TP-PMD standards.

In compliance with ACPI 1.0 and the Network Device Class Power Management 1.0.

✺ AC'97 Link for Audio and Telephony CODEC

AC'97 2.1 compliant.

Spread independent PCI functions for Audio and Modem.

✺ Versatile Memory Support

Two 184-pin DIMM slots to support up to 1GB of PC1600 or PC2100 compliant DDR SDRAM module.

or two 168-pin DIMM slots to support up to 1GB of PC100 or PC133 compliant SDR SDRAM module.

✺ PCI Expansion Slots

Provides two 32-bit PCI slots.

✸ AGP Expansion Slots

Provides one 32-bit AGP slot which supports 4X AGP devices.

✸ CNR Expansion Slot

Provides one CNR (Communication/ Network Riser) slot.

✸ 6 USB 2.0 Interface Onboard

- ➢ 2 USB connectors on back-panel and two sets of dual USB ports headers on mid-board.

✸ I/O Interface

Provides a variety of I/O interfaces:

- ➢ 1* Floppy interface for 3.5-inch FDD with 720KB, 1.44MB, or 2.88MB format or for 5.25-inch FDD with 360K or 1.2MB format.
- ➢ 1*PS/2 mouse connector.
- ➢ 1*PS/2 Keyboard connector.
- ➢ 1*RJ45 LAN connector.(MV43N only)
- ➢ 1*DB9 Serial connectors 16550 UART compatible.
- ➢ 1*VGA port.
- ➢ 1*DB25 Parallel port supports Standard Parallel Port and Bi-directional (SPP), Enhanced Parallel Port (EPP), and Extended Capabilities Port (ECP) data transmission schemes.
- ➢ 1*Line-Out port.
- ➢ 1*Line-In port.
- ➢ 1*Mic-In port.
- ➢ 1*MIDI/GAME port.

✸ PCI Bus Master IDE Controller Onboard

Two Ultra DMA 133/100 Bus Master Dual-channel IDE ports provide support to a maximum of four IDE devices (one Master and one Slave per chan

The IDE Bus implements data transfer speeds of up to 133/100 MB/sec and also supports Enhanced PIO Modes.

80-pin Cable Backward Compatible Legacy ATAPI Devices, ATAPI IDE CD-ROM, CD-R, CD-RW, and LS-120 Supports.nel).

✸ ATX Power Supply Connector

ATX power supply unit can connected to the onboard 20-pin Pentium 4 standard ATX power connectors, supporting Suspend and Soft-On/Off by dual-function power button.

✹ Advanced Configuration and Power Interface

Features four power saving modes: S1 (Snoop), S4 (Suspend to DISK), and S5 (Soft-Off). ACPI provides more efficient Energy Saving Features controlled by your operating system that supports OS Direct Power Management (OSPM) functionality.

✹ System BIOS

Provides licensed AMI BIOS 2Mb Flash core and supports Green PC, Desktop Management Interface (DMI).

✹ Micro ATX Form Factor

System board conforms to Micro ATX specification.
Board dimension: 244mm*244mm.

✹ Advanced Features

➢ Low EMI - Built in spread spectrum and automatic clock shut-off of unused PCI/SDRAMS slots to reduce EMI.

➢ Dual Function Power Button -The system can be in one of two states, one is Suspend mode and the other is Soft-Off mode. Pushing the power button for less than 4 seconds places the system into Suspend mode. When the power button is pressed for longer than 4 seconds, the system enters Soft-Off mode.

➢ Modem Ring Power-On -The system can be powered on automatically by the activation of modem ringing.

➢ CPU Clock Setting- This item allows users to adjust CPU Host Clock in BIOS.

➢ CPU Multiplier Setting- This item allows users to adjust CPU Multiplier in BIOS.

✹ Intelligent Features

➢ Voltage Monitoring -Monitors various voltages of key elements, such as the CPU, and other critical system voltage levels to ensure stable current passing through mainboard components.

➢ Fan Status Monitoring- To prevent CPU from overheating, the CPU fan is monitored for RPM and failure. (CPU Cooling FAN with RPM sensor is required.)

➢ Temperature Monitoring -This item allows users to make sure whether the CPU or system runs in a suitable temperature.

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 mainboard. Refer to the following mainboard layout to help you to identify various jumpers, connectors, slots, and ports. Then follow these steps designed to guide you through a quick and correct installation of your system.

3.1 Step-by-Step Installation

Accessories Of MV43/MV43N

Keyboard Power On- JP2   CPU FAN   CPU Clock - JP1A1/ JP1B1   Socket 478   VIA 8751 Chipset

PS/2 Keyboard and PS/2 Mouse Connectors
USB & LAN(MV43N only) Connectors
Serial Port Connector (COM1)
LAN LED Indicator- J16
VIA6103 Phy(MV43N only)
Parallel Connector
Floppy Connector
VGA Connector
ATX Power Connector
Line-Out/Line-In/Mic-In/ Game/MIDI Connectors
Panel1 Connector
Onboard Audio Connectors- CD1/CD2
One AGP 4x Slot
Extended four USB Connectors header-USB1/ USB2
Serial infrared port-SIR1
Panel2 Connector
One CNR Slot

Two 168pin SDR DIMM Slots
Two 184pin DDR DIMM Slots
DDR/SDR DRAM Type Selector -J2A/B/C/D J3A/B/C/D/
DRAM Voltage-JP1
Two E-IDE Connectors- VIA 8235 Chipset

Wake on Modem-WOM1
Wake on LAN-WOL1
Speaker Connector-SPK1
Two PCI Slots
System FAN
Clear CMOS - JBAT1
Sleep Switch-J12

Step 1

CPU Installation:

This mainboard supports Intel Pentium 4, Socket 478 series CPU. Please follow the step as below to finish CPU installation.

Be careful of CPU orientation when you plug it into CPU socket.

1. Pull up the CPU socket lever and up to 90-degree angle.

CPU socket lever up to 90 degree
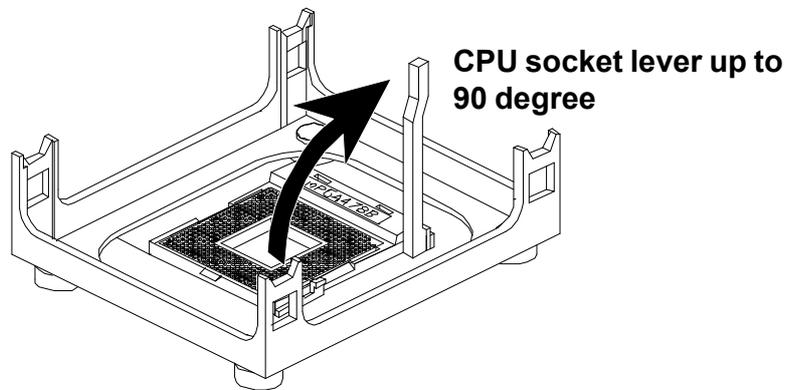
2. Locate Pin 1 in the socket and look for a black dot or cut edge on the CPU upper interface. Match Pin 1 and cut edge, then insert the CPU into the Socket.

CPU pin 1 and cut edge
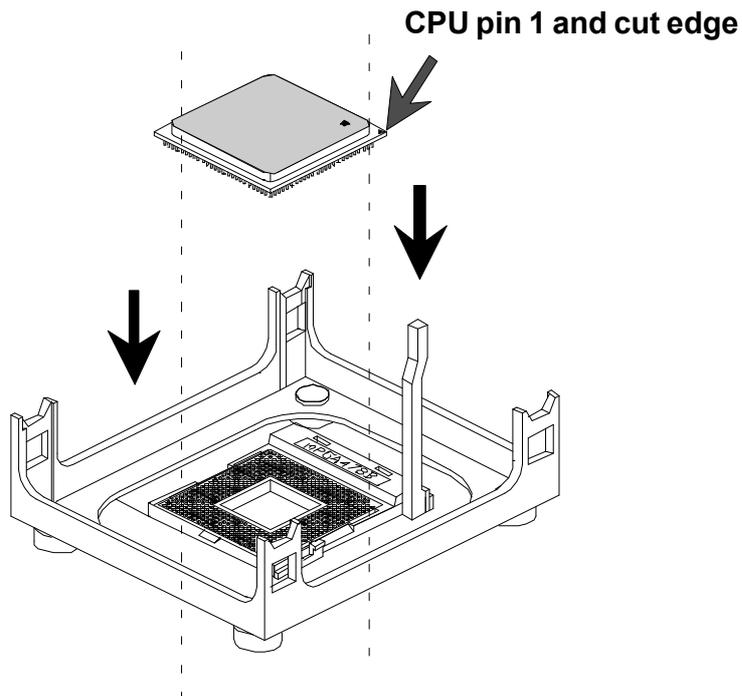
3. Press down the CPU socket lever and finish CPU installation.
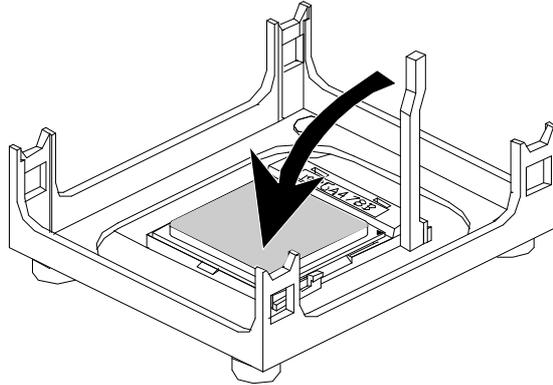
Note: If you do not match the CPU socket Pin 1 and CPU cut edge well, it may damage the CPU.

4. The Intel Pentium 4 /Celeron processor requires a set of heatsink/fan to en sure proper cooling of the processor. If heatsink/fan have not been already bundled with your CPU, you must purchase the heatsink/fan separately and have it installed. Plug the cable through the heatsink/fan in the CPU fan power connector located nearby. Note that there are several types of CPU fan connectors. Normally, if your mainboard supports the hard ware moni toring 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.

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 any of the following cases:

1. Clear CMOS
2. CPU Clock Setting
3. DRAM Type and Voltage Setting
4. Keyboard power on Setting

For first-time DIY system builders, we recommend that you do not change the default jumper settings if you are not totally familiar with the 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 DDR or SDR SDRAM System Memory

To insert memory module(s) in any one or two DIMM slot(s). Please note that modules are directional and will not go in the DIMM slots unless properly oriented. After the module is fully inserted into the DIMM slots, lift the clips of both sides of the DIMM slot to lock the module in place.

SDR SDRAM   **DDR SDRAM**
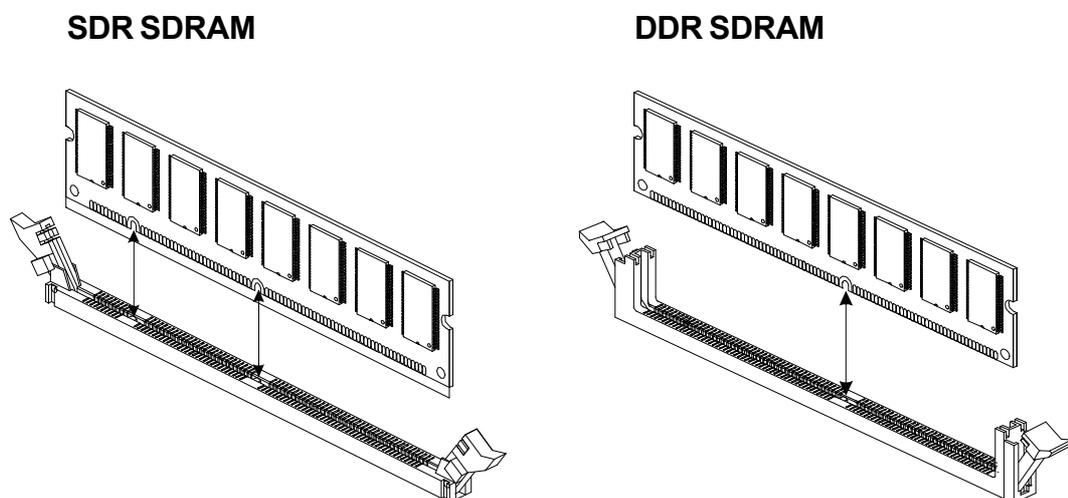
Step 4

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 each device according to the instructions provided by the manufacturer. (IDE devices, HDD, and CD-ROM, have to set jumpers to Master or Slave mode depending on whether you in stall more than one device of 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 from 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 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 correct mounting holes, the key point is to keep the back-panel of the mainboard in a close fit with your system case, as shown below.
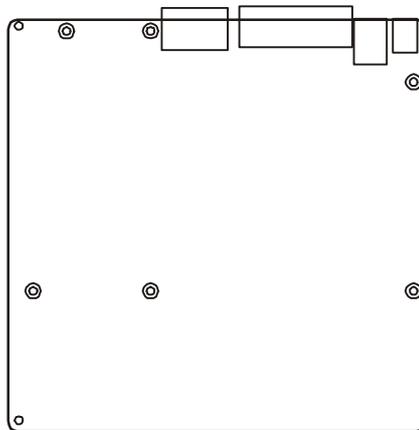
2. After deciding on the proper mounting holes, position the studs be tween the frame of the chassis and the mainboard. The studs are used to fix the mainboard and to keep a certain distance between the system chassis and the mainboard, in order to avoid any electrical shorts between the board and the metal frame of the 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 then fix the mainboard. If there arent 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/USB

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, Audio Line-out, Microphone-in, or USB devices etc.) These cables serve to connect the front-panel switches, LEDs, and USB connectors to the mainboard's front-panel connectors group , as shown below.
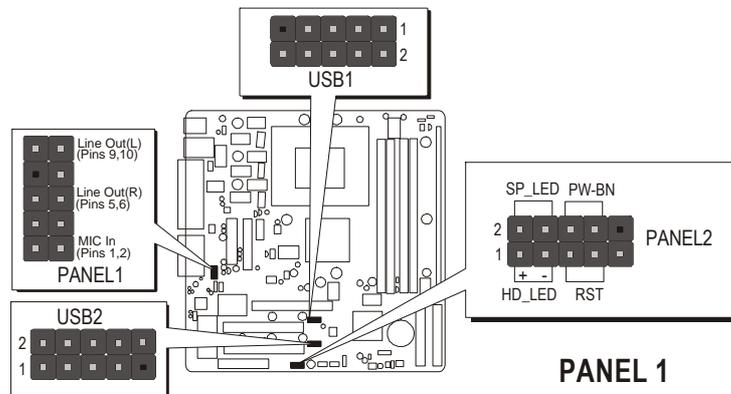
PANEL 1

1. MIC IN

2. GND

3. VCC MIC

4. +5V Audio

5. Line Out(R)

6. Line Out(R)

7. NC

8. Empty

9. Line Out(L)

10. Line Out(L)

PANEL 2

11.HDD_LED(HD_LED)

12. Green LED (SP_LED)

13.Reset Switch(RST)

14.Power Switch (PW_BN)

15.Extend USB headers(USB1/USB2)
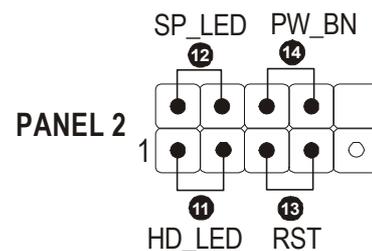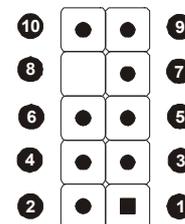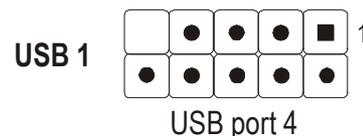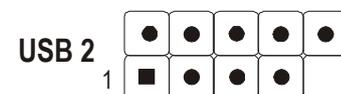
Step 7

Connect IDE and Floppy Disk Drives

1. IDE cable connector
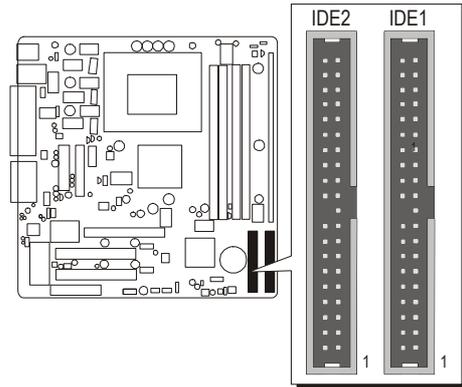
2. Floppy cable connector
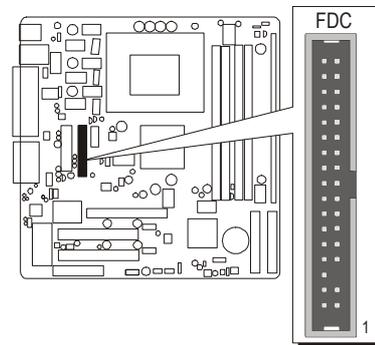
Step 8

Connect Other Internal Peripherals

1. CD-IN connectors
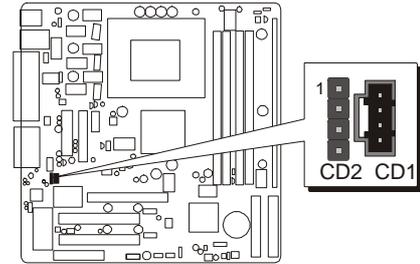
Step 9

Connect the Power Supply

1. System power connector
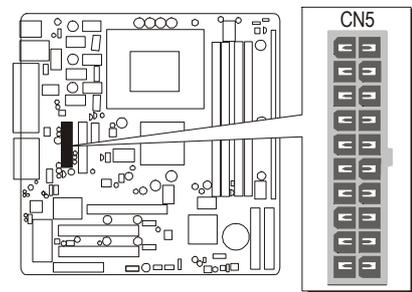
Step 10

Install Add-on Cards in Expansion Slots

1. Accelerated Graphics Port (AGP) Card
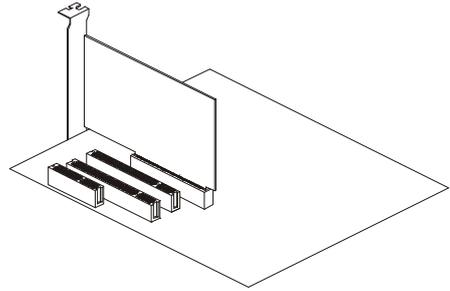
2. PCI Card
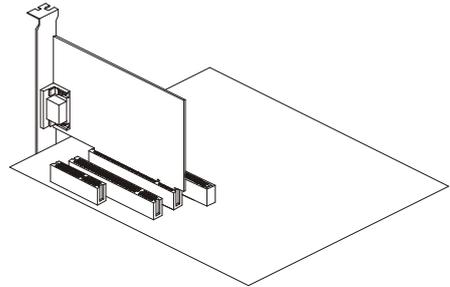
3. CNR Card
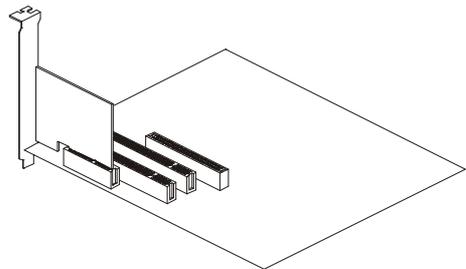
Step 11

Connect External Peripherals to Back-Panel

You are now ready to put the computer case back together and get on to the external peripherals connections to your system's back-panel.
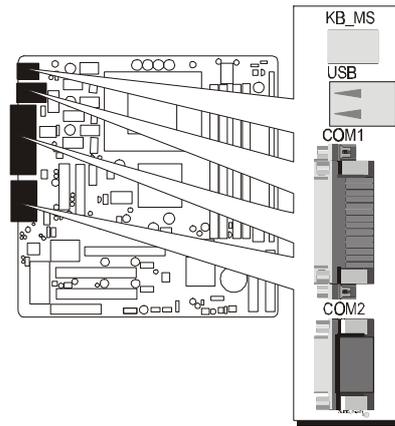
1. PS/2 Mouse and PS/2 Keyboard
2. LAN Port
3. USB1/2 Ports
4. Parallel Port
5. COM Port
6. VGA Port
7. Audio Line-Out /Line-In / Mic-In Ports
8. MIDI/GAME Port
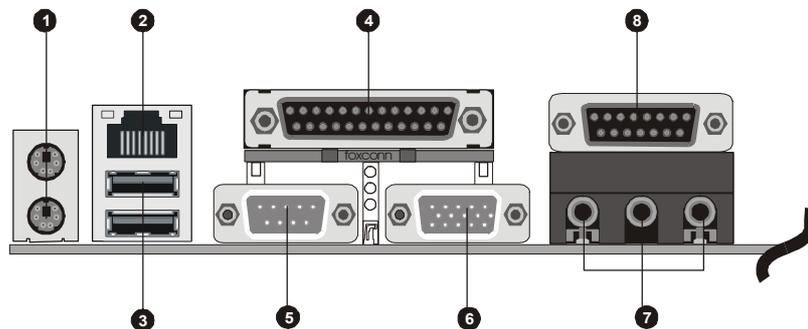
Step 12

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 partitions to occupy all the space available to 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 install 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 Drivers & Software Components

Please note that all the system utilities and drivers are designed for Win 9x/ 2000/ME/NT operating systems only. Make sure your operating system is already installed before running the drivers installation CD-ROM programs.

1. Insert the MV43/MV43N bundled CD-ROM into your CD-ROM drive. The autorun program will display the drivers main installation window on screen.
2. Choose "Install Mainboard MV43 Driver" bar to run into sub-menu for MV43 setup.
3. Choose "Install Mainboard MV43N Driver" bar to run into sub-menu for MV43N setup.
4. Choose "Install VIA Chipset Driver" and complete it.
5. Choose "Install VGA Device Driver" and complete it.
6. Choose "Install Audio Driver" and complete it.
7. Choose "Install USB2.0 Driver" and complete it.
8. Choose "Install LAN Driver" and complete it.(MV43N Only)
9. Return to the main installation window and exit from the auto-run drivers installation program.

3.2 Jumper Settings

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

3-pin and multi (> 3) pin jumpers shown as following:
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 mini jumpers 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 top of its original packaging film, 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.

Jumpers & Connectors Guide

Use the mainboard layout on page 11 to locate CPU socket, memory banks, expansion slots, jumpers and connectors on the mainboard during the installation. The following list will help you to identify jumpers, slots, and connectors along with their assigned functions:
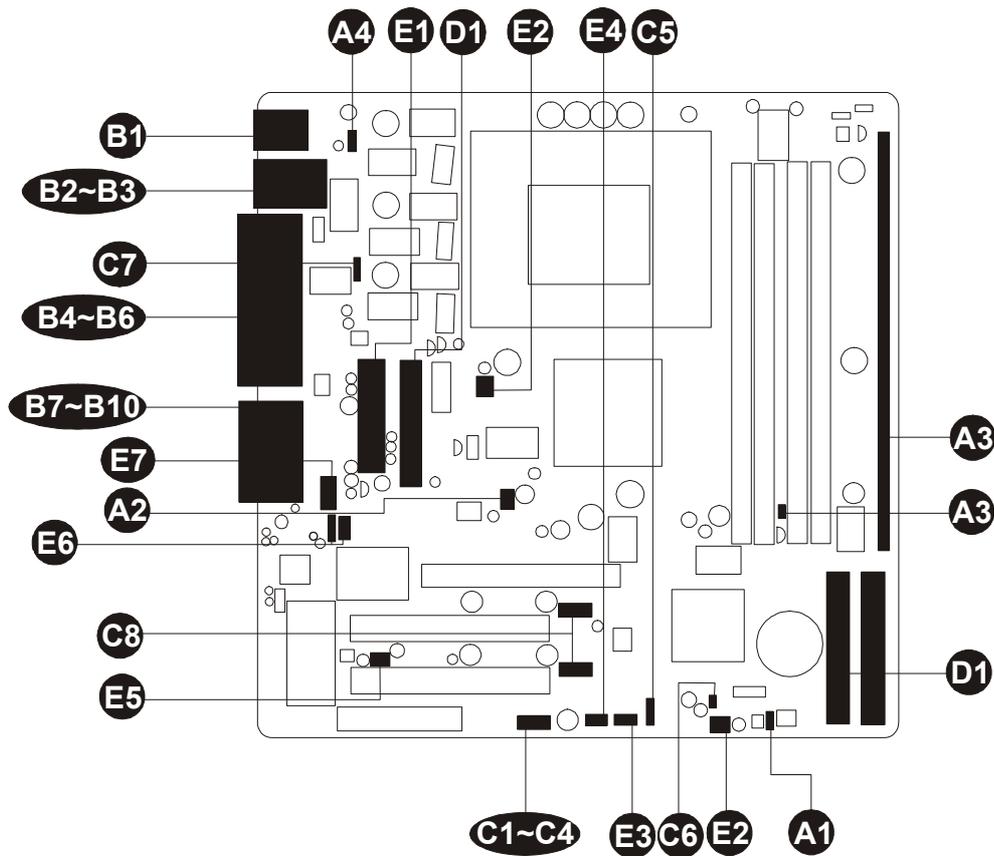
CPU/Memory/Expansion Slots

Socket478 : CPU Socket for Pentium 4 processors

DIMM1/2 : Two DIMM Slots for 16, 32, 64, 128, 256, 512 MB, and 1GB of 3.3V SDR SDRAM

DDR1/2 : Two DIMM Slots for 64, 128, 256, 512 MB, and 1GB of 2.5V DDR SDRAM

(The total installed memory does not exceed 2GB)

AGP : One AGP (Accelerated Graphics Port) Slot

PCI : Two 32-bit PCI Expansion Slots

CNR : Communication Network Riser slot

Jumpers

A1   JBAT1   : Clear CMOS setting

A2   JP1A1/JP1B1   : CPU Clock setting

A3   JP1   : DRAM Voltage setting

A3   J2A/B/C/D   : DDR/SDR DRAM Type Selector
           J3A/B/C/D

A4   JP2   : Keyboard Power On setting

Back Panel Connectors

B1   KB   : PS/2 keyboard port

B1   MS   : PS/2 mouse port

B2   LAN   : RJ45 LAN Port (MV43N only)

B3   USB   : 2 USB (Universal Serial Bus) ports

B4   PRINTER   : Parallel port (DB25 female)

B5   COM1   : Serial port 1

B6   VGA   : VGA Port

B7   LINE-OUT   : Line-Out Port

B8   LINE-IN   : Line-In Port

B9   MIC-IN   : Mic-In Port

B10   MIDI/GAME   : MIDI/GAME Port

Front Panel Connectors

C1   HD_LED   : IDE drive active LED

C2   SP_LED   : Green LED

C3   RST   : Hardware reset switch

C4   PW_BN   : ATX power on/off momentary type switch

C5   SPK1   : Speaker Connector

C6   J12   : Sleep Switch

C7   J16   : LAN LED Indicator

C8   USB1/USB2   : Extcnded USB Headers(USB Port3/4 & 5/6)

Internal Peripherals Connectors

(D1) FDC : Floppy disk drive interface

(D1) IDE1 : IDE primary interface (Dual-channel)

(D1) IDE2 : IDE secondary interface (Dual-channel)

Other Connectors

(E1) CN5 : ATX power connector

(E2) CPU FAN : CPU fan connector

(E2) SYSTEM FAN : System fan connector

(E3) WOL1 : Wake-On-LAN connector

(E4) WOM1 : Wake-On-Modem connector

(E5) SIR1 : IR header

(E6) CD1/CD2 : Onboard Audio Connectors

(E7) PANEL1 : Front-Panel Audio Line_Out/ Mic_In connector

☞ *Jumpers*

Ⓐ① **Clear CMOS Setting (JBAT1)**

JBAT1 is used to clear CMOS data. Clearing CMOS will result in the permanently erasing previous system configuration settings and the restoring original (factory-set) system settings.

Pin 1-2 (Default)

Pin 2-3 (Clear CMOS)
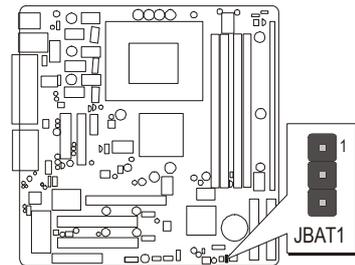
JBAT1

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

Step 2. Remove ATX Power cable from ATX Power connector.

Step 3. Remove jumper cap from JBAT1 pins 1-2.

Step 4. Place the jumper cap on JBAT1 pin 2-3 for a few seconds.

Step 5. Return the jumper cap to pin 1-2.

Step 6. Plug ATX Power cable into ATX Power connector.

Step 7. Turn on the system power (PC-> On).

Ⓐ② **CPU Clock Setting (JP1A1/JP1B1)**

This jumper enables user to select CPU frequency.

JP1A1/JP1B1

JP1A1 (Pin1-2)/

JP1B1 (Pin2-3)(100MBz)

JP1A1 (Pin2-3)/

JP1B1 (Pin1-2)(133MBz)

JP1A1 JP1B1
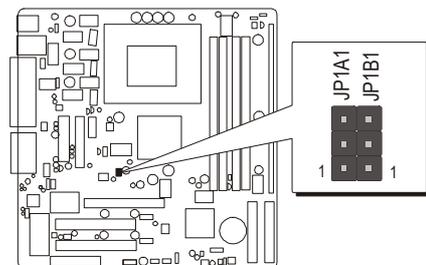
Ⓐ3 DRAM Voltage Setting (VCC) (JP1) & DDR/SDR DRAM Type Selector (J2A/B/C/D, J3A/B/C/D)

JP1 is set to select voltage of DRAM.

J2A/B/C/D and J3A/B/C/D are set to select the type of DDR or SDR DRAM.

JP1

Open Pins 1-2 (2.5V DDR)

JP1

Short Pins 1-2 (3V SDR)

J2A/B/C/D
J3A/B/C/D
1

JP1
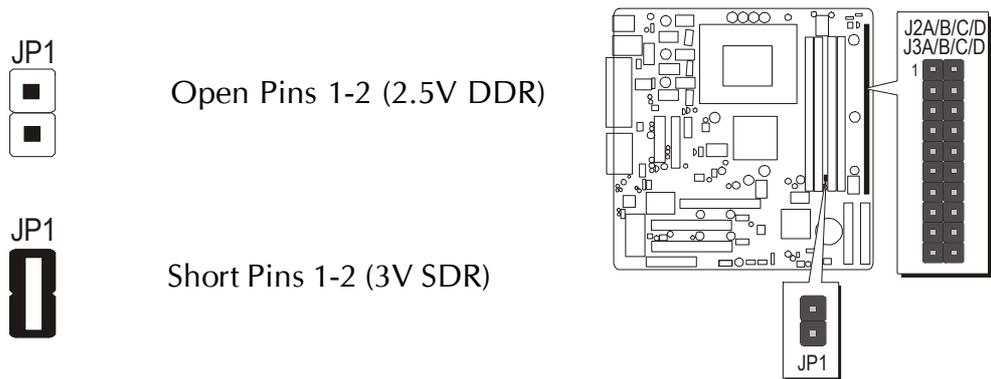
> Note: You may use SDRAM or DDR SDRAM, but you can't use them simultaneously.

When DDR SDRAM is installed, please short all J2A/B/C/D and J3A/B/C/D pins as below

When SDRAM is installed, please open all J2A/B/C/D and J3A/B/C/D pins as below

J2A/B/C/D
J3A/B/C/D

J2A/B/C/D
J3A/B/C/D
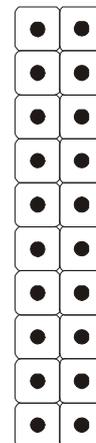
Short

Open

A4 Keyboard Power On(JP2)

This jumper enables any keyboard activity to power up a system which is previously in a standby or sleep state.

1 Disabled
Short Pins 1-2 (5V)

1 Enabled
Short Pins 2-3 (5VSB)
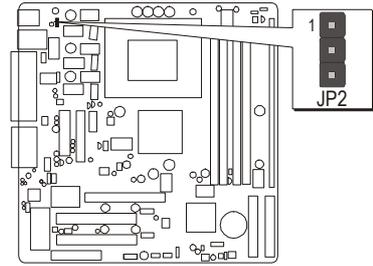
)   *Back-Panel Connectors*

Ⓑ❶ **PS/2 Keyboard & PS/2 Mouse Connectors**

Two 6-pin female PS/2 keyboard & Mouse con-
nectors are located at the rear panel of the
mainboard. Depending on the computer hous-
ing you use (desktop or tower), 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 tower
where the PS/2 Mouse connector is located at
the right of the PS/2 Keyboard's. Plug the PS/2
keyboard and mouse jacks into their corre-
sponding connectors.

PS/2 Mouse

PS/2 keyboard
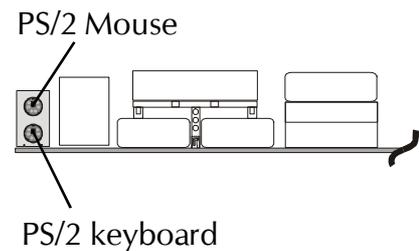
Ⓑ❷ **LAN Port Connectors(MV43N only)**

This mainboard can accommodate one de-
vice on LAN.
Attach a 10/100 baseT cable to the RJ45 at
the back-panel of your computer.

LAN Port
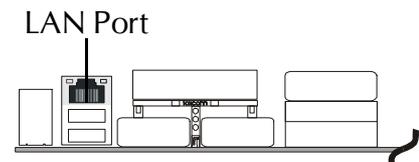
Ⓑ❸ **USB1/USB2 Port Connectors**

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

USB Port 2

USB Port 1
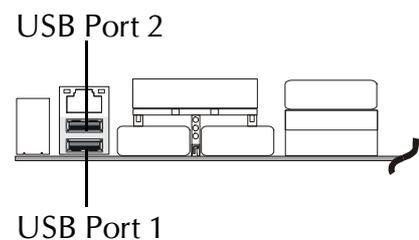
Ⓑ❹ **Parallel Port Connector**

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 connec-
tor.

Parallel Port
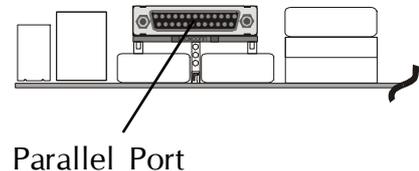
Ⓑ❺ **COM Port Connector**

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

COM1 Port
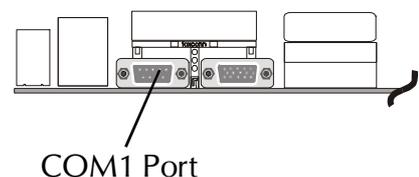
B6 VGA Connector

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

VGA Port
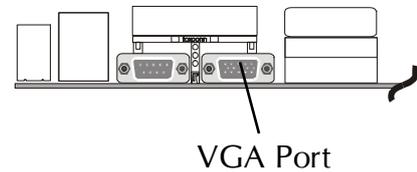
B7 Line-Out Port Connector

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.
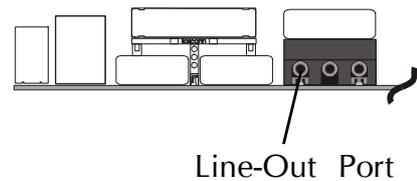
Line-Out Port

B8 Line-In Port Connector

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.

Line-In Port
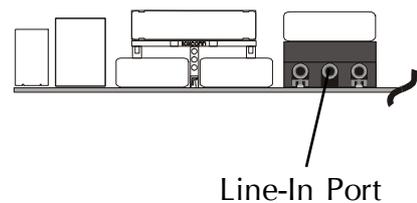
B9 Mic-In Port Connector

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.

Mic-In Port
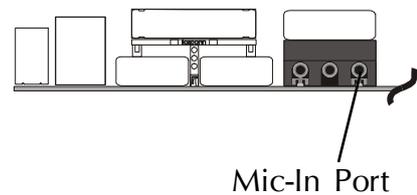
B10 MIDI/GAME Port Connector

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/GAME Port
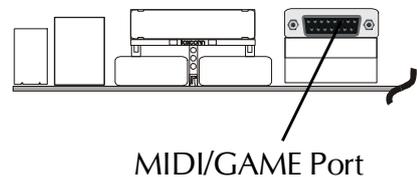
MIDI Instrument Connection

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.

☞ *Front-Panel Connectors*

Ⓒ1 **HDD LED Connector (HD_LED)**

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

```
              SP_LED  PW-BN
          2   ▢ ▢    ▢ ▢ ▢
          1   ■ ■    ▢ ▢ ▢
              HD_LED  RST
                   PANEL2
```
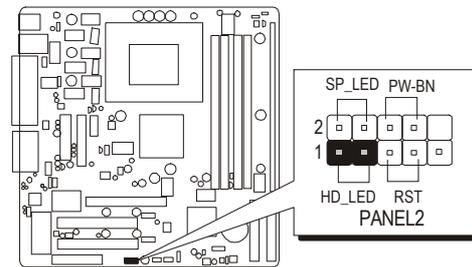
Note: Please notice all the LED connectors are directional. If your chassis s LED does not light up during running, please simply change to the opposite direction.

Ⓒ2 **Green LED Connector (SP_LED)**

The Green-LED(SP_LED) 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 Green LED header.

```
              SP_LED  PW-BN
          2   ■ ■    ▢ ▢ ▢
          1   ▢ ▢    ▢ ▢ ▢
              HD_LED  RST
                   PANEL2
```
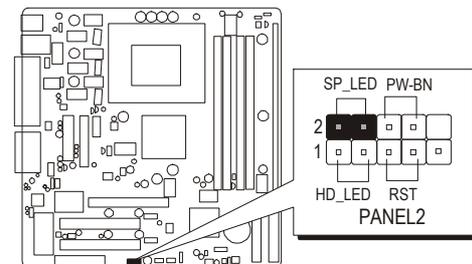
Hardware Reset Connector (RST)

Attach the 2-pin hardware reset switch cable to the (RST) header. Pressing the reset switch causes the system to restart.
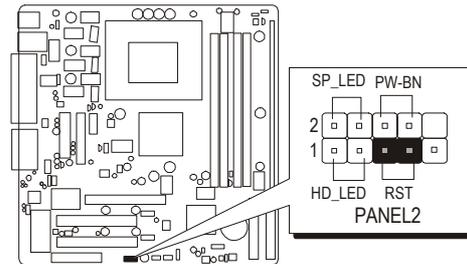
ATX Power On/Off Switch Connector (PW_BN)

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 (PW_BN) header on the mainboard.
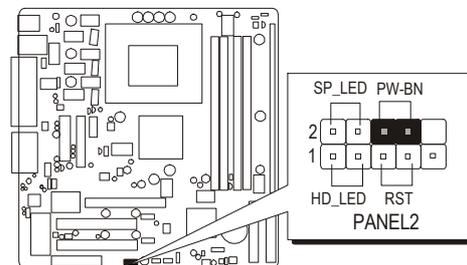
Speaker Connector (SPK1)

Attach the PC speaker cable from the case to the 4-pin speaker connector (SPK1).

Pins Assignment:

1 = SPKR

2 = NC

3 = GND

4 = + 5V
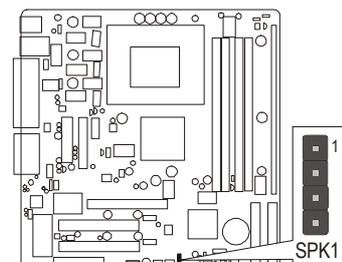
C6 Sleep Switch (J12)

This header is connected to the sleep button for suspending the computer's activity if pushing the button. Or,the computer is automatically suspended after passing a period of time.

J12
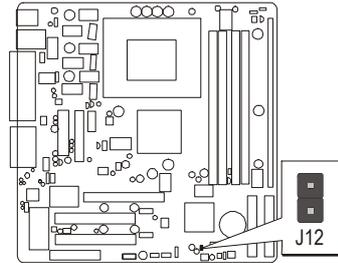
C7 LAN LED Indicator (J16)

This connected is attached to LAN device that needs a LED indicator.

Pins Assignment:

1, +2 = Link LED

+3,4 = ACT LED

J16

Note: The plus sign(+) indicates a pin which must be connected to a positive voltage.
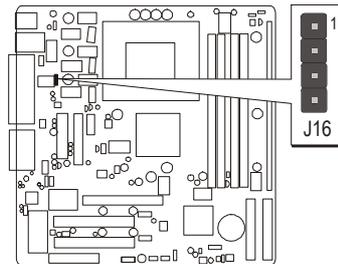
C8 Extended USB Header (USB1,USB2)

The mainboard has USB ports installed on the rear edge I/O port array. Some computer cases have a special module that mounts USB ports at the front of the case. If you have this kind of case, use auxiliary USB connectors USB1 and USB2 to connect the front-mounted ports to the mainboard.

USB1

USB3/4

USB2

USB5/6
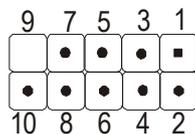
Pins Assignment:

1 = VERG_FP_USBPWR0   2 = VERG_FP_USBPWR0

3 = USB_FP_P0-   4 = USB_FP_P1-

5 = USB_FP_P0+   6 = USB_FP_P1+

7 = GND   8 = GND

9 = KEY   10 = USB_FP_OC0
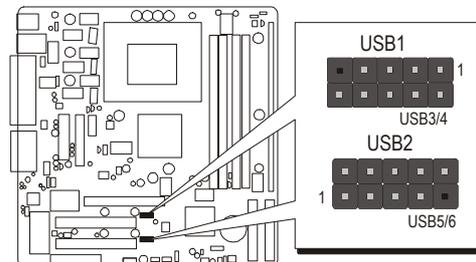
☞ *Internal Peripherals Connectors*

🄓 Enhanced IDE and Floppy Connectors

The 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 (H.D.D.).

This mainboard also includes one 34-pin floppy disk controller (FDC) to accommodate the Floppy Disk Drive (FDD). Moreover, this mainboard comes with one 80-pin ATA 133/100 ribbon cable to connect to IDE H.D.D. and one 34-pin ribbon cable for F.D.D. connection.
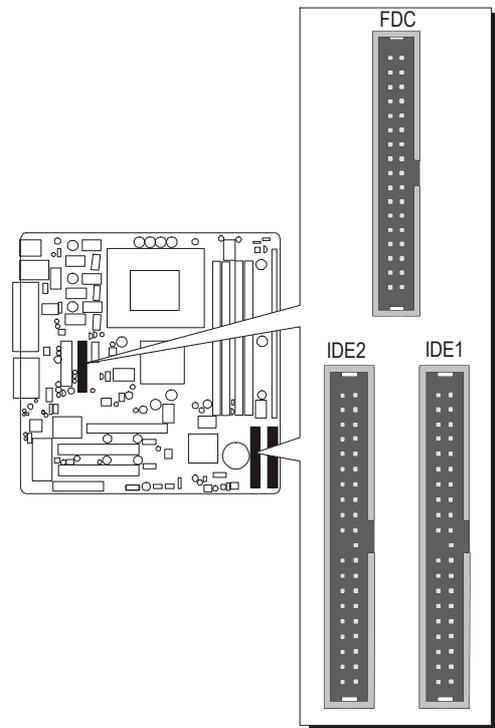
Important: Ribbon cables are directional, therefore, make sure to always connect with the red cable stripe on the same side as pin #1 of the IDE1/IDE2 or FDC connector on the mainboard.

☞ **Other Connectors**

🔟 **ATX Power Supply Connector (CN5)**

This motherboard uses 20-pin Pentium 4 standard ATX power header, CN5 and comes with another headers.

CN5
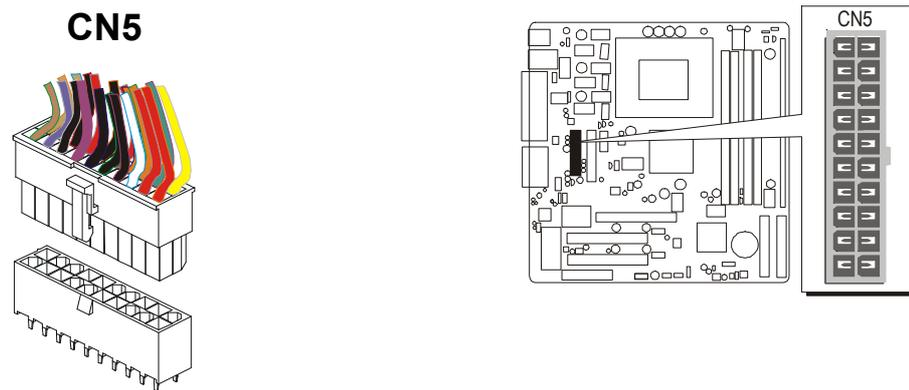
A traditional ATX system should remain at power off stage when AC power resumes from power failure. In such case, if there is no an UPS to keep power-on, the kind of design is inconvenient for a network server or workstation.

However, this motherboard implements an AC Power Auto Recovery function to solve this problem. You may enable the function PWRON After PWR-Fail that is under sub-menu of Power Mangement Setup through BIOS setup program.

> 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.

☳ CPU and System Fan connectors (CPU-FAN, SYSTEM-FAN)

The mainboard provides two onboard 12V cooling fan power connectors to support CPU and System cooling fans.

GND   +12V   SENSE
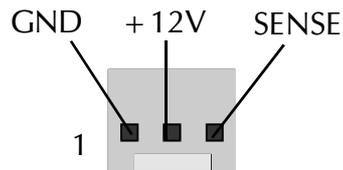
CPU FAN with rotate sense.
System FAN with rotate sense.

CPU_FAN

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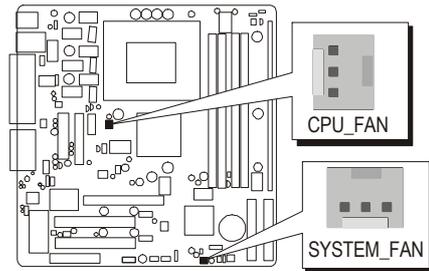
Note: Both cable wiring and type of plug may vary , which depends on the fan maker. Keep in mind that the red wire should always be connected to the +12V header and the black wire to the ground (GND) header.

☴ Wake-On-LAN Connector (WOL1)

Attach a 3-pin connector through the LAN card which supports the Wake-On-LAN (WOL1) function. This function lets users wake up the connected system through the LAN card.

3 2 1

Pins Assignment:
   1 = 5VSB
   2 = Ground
   3 = SENSE

WOL1
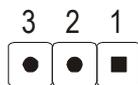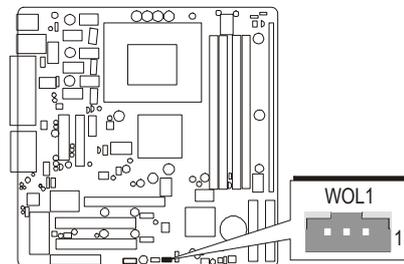
㉔ Wake-On-Modem Connector (WOM1)

If you have installed a modem, use the cable provided with the modem to plug into the mainboard WOM1 connector. This enables the Wake On Modem(WOM) feature. When you system is in a power-saving mode, any modem signal automatically resumes the system. You must enable this item using the Power Management page of the Setup Utility.

```
3  2  1
● ● ■
```
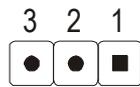
Pins Assignment:
1 = 5VSB
2 = Ground
3 = SENSE
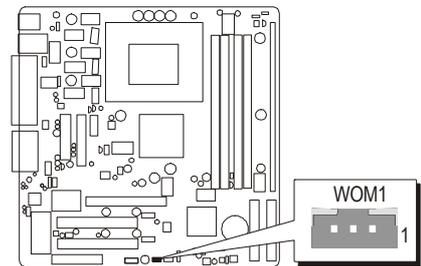
㉕ IR Header (SIR1)

The mainboard supports a Serial Infrared (SIR) data port. Infrared ports allow the wireless exchange of information between your computer and similarly equipped devices such as printers, laptops, Personal Digital Assistants (PDAs), and other computers.

```
2  4  6
   ●  ●
■  ●  ●
1  3  5
```
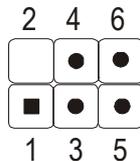
Pins Assignment:

1 = NC	2 = KEY
3 = + 5V	4 = GROUND
5 = IRTX	6 = IRRX
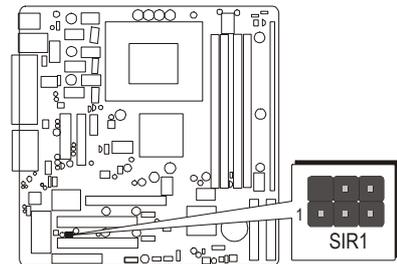
E6 Audio CD_IN Headers (CD1/CD2)

Use the audio cable provided with the CD-ROM/DVD drive to connect to the mainboard CD-in connector CD1 or CD2.

Pins Assignment:(CD1)

    1 = GND

    2 = CD IN L

    3 = GND

    4 = CD IN R

Pins Assignment:(CD2)

    1 = CD IN L

    2 = GND

    3 = GND

    4 = CD IN R
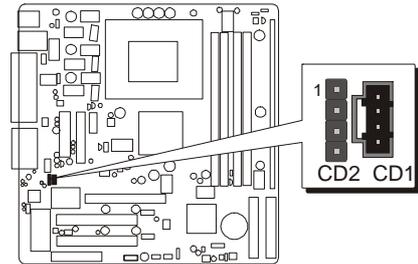
E7 Front-Panel Microphone and Line_out Header (PANEL1)

This header allows users to install auxiliary front-oriented microphone and line-out ports for easier access. Either the Mic and Line_out connector on back-panel or Panel1 header are available at the same time. If you would like to use this Panel1 header on front-panel, please remove all jumpers from PANEL1 and install your special Extra Mic / Line_out cable instead.
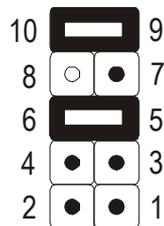
Two mini jumpers must be setted on pin5-6 and pin7-9 when the header is not used.

Pins Assignment:

    1 = MIC In   2 = GND

    3 = VCCMIC   4 = + 5V Audio

    5 = Line Out(R) 6 = Line Out(R)

    7 = NC   8 = Empty

    9 = Line Out(L) 10 = Line Out(L)
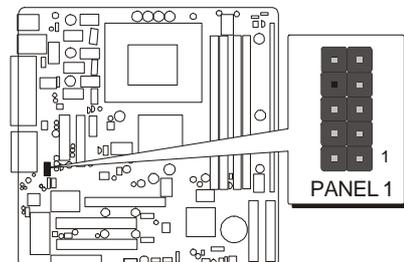
3.3 System Memory Configuration

The MV43/MV43N mainboard has two 184-pin and two 168-pin DIMM slots that allow you to install from 64MB up to 2GB of system memory.

Each 184-pin DIMM (Dual In-line Memory Module) slot can accommodate 64MB, 128MB, 256MB, 512MB, and 1GB of PC1600/PC2100 compliant 2.5V single or double side 64-bit wide data path DDR SDRAM modules.

Each 168-pin DIMM (Dual In-line Memory Module) Slot can accommodate 64MB, 128MB, 256MB, 512MB, and 1GB 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.

SDR SDRAM

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

DDR SDRAM

DIMM Slot	Memory Modules	Module Quantity
DDR 1	64MB, 128MB, 256MB, 512MB and 1GB 184-pin 2.5V DDR SDRAM DIMM	x 1
DDR 2	64MB, 128MB, 256MB, 512MB and 1GB 184-pin 2.5V DDR SDRAM DIMM	x 1

Important: You can choose 168-pin SDR SDRAM or 184-pin DDR SDRAM to boot, but the system doesn't start if you use both of them at the same time!

Note: You need to set jumpers to configure memory by jumper J2A/B/C/D & J3A/B/C/D & JP1. Please refer to the details page 29. 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 DRAM 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

4.1 Mainboard CD Overview

Note: The CD contents attached in MV43/MV43N mainboard are subject to change without notice.

To start your mainboard CD disc, 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 MV43 Driver- Installing VIA Chipset, VGA, Audio, USB2.0 drivers..

☞ Install Mainboard MV43N Driver - Installing VIA Chipset, VGA, Audio, USB2.0 , LAN drivers..

☞ Manual - MV43/MV43N Series mainboard user's manual in 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.
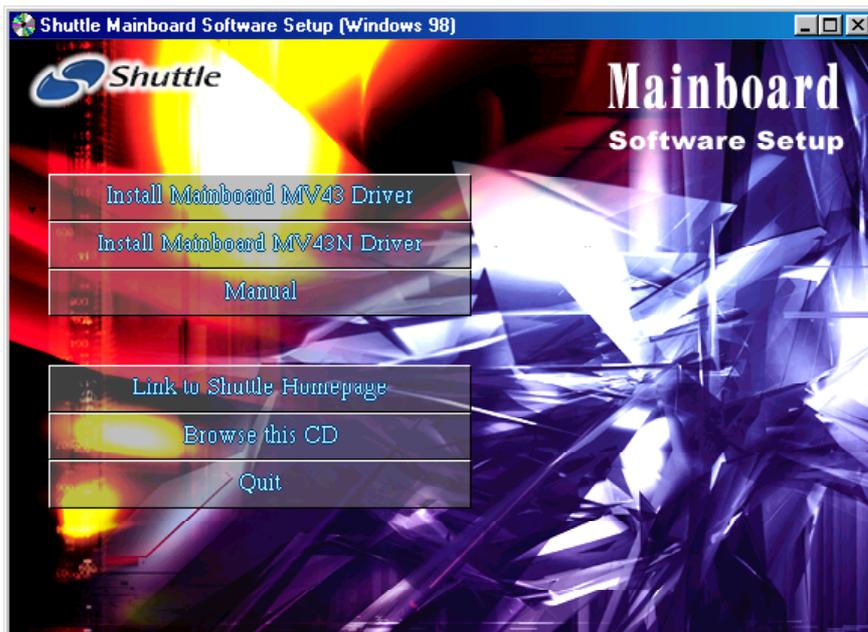
4.2 Install Mainboard Software

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.

Select using your pointing device (e.g. mouse) on the "Install Mainboard MV43 Driver" or "Install Mainboard MV43N Driver" bar to run into sub-menu.

The Mainboard MV43 Driver include:

    [4.2.A]   Install VIA Chipset Driver
    [4.2.B]   Install VGA Device Driver
    [4.2.C]   Install Audio Driver
    [4.2.D]   Install USB2.0 Driver

The Mainboard MV43N Driver include:

    [4.2.A]   Install VIA Chipset Driver
    [4.2.B]   Install VGA Device Driver
    [4.2.C]   Install Audio Driver
    [4.2.D]   Install USB2.0 Driver
    [4.2.E]   Install LAN Driver (MV43N only)

4.2.A Install VIA Chipset Driver

Select using your pointing device (e.g. mouse) on the "Install VIA Chipset Driver" bar to install VIA chipset driver.

MV43

MV43N

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

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

4.2.B Install VGA Driver

Select using your pointing device (e.g. mouse) on the "Install VGA Device Driver" bar to install VGA driver.

MV43

MV43N

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

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

4.2.C Install Audio Driver

Select using your pointing device (e.g. mouse) on the "Install Audio Driver" bar to install AC'97 Audio driver.

MV43

MV43N

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

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

4.2.D Install USB2.0 Driver

Select using your pointing device (e.g. mouse) on the "Install USB2.0 Driver" bar to install USB2.0 driver.

MV43

MV43N

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

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

4.2.E Install LAN Driver(MV43N Only)

Select using your pointing device (e.g. mouse) on the "Install LAN Driver" bar to install LAN driver.

MV43N

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

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

4.3 View the 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.

Select using your pointing device (e.g. mouse) on the "Manual" bar.
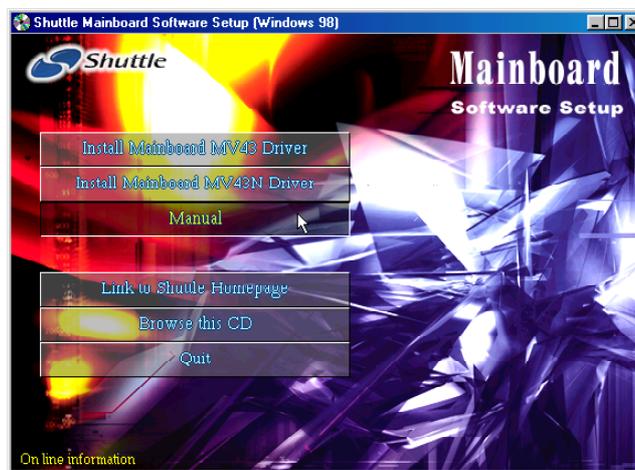
Then Online Information windows will appear on your screen. Click on the "Install Acrobat Reader" bar if you need to install acrobat reader.

Then click on "MV43/MV43N Manual" bar to view user's manual.

5 BIOS SETUP

MV43/MV43N 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.   As you see the message "Hit F2 if you want to run setup.", press <F2> key immediately.

Note 1. If you miss the train (the message disappears before you can respond) and you still wish to enter BIOS Setup, restart the sys tem 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.

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

5.2 The Main Menu

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

```
               AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.21.12
              (C)2000 American Megatrends, Inc. All Rights Reserved

   Standard CMOS Setup                    Features Setup

   Advanced Setup                         CPU PnP Setup

   Power Management Setup                 Hardware Monitor

   PCI / Plug and Play Setup              Change Password

   Load Optimal Settings                  Exit

   Load Best Performance Settings


   ESC: Quit      ↑↓←: Select Item    (Shift)F2: Change Color    F5: Old Values
   F6: Optimal values          F7: Best performance values        F10: Save&Exit

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

Note that a brief description of each highlighted selection appears at the bottom of the screen.

Standard CMOS Setup

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

Advanced Setup

This setup page includes all items of Advanced features.

Power Management Setup

This setup page includes all items of Power Management features.

PCI / Plug and Play setup

This page sets some of the parameters for devices installed on the PCI bus and devices that use the system plug and play capability.

Load Optimal Settings

Optimal settings load the values required by the System for the maximum performance. However, you can change the parameter through each Setup Menu.

Load Best Performance Settings

Fail Safe settings load the values required by the system for the O.K. performance. However, you can change the parameter through each Setup Menu.

Features Setup

This setup page includes all items of peripheral features.

CPU PnP Setup

This setup page includes all items of CPU PnP features.

Hardware Monitor

This setup page includes all items of Hardware Monitor features.

Change Password

Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.

Exit

Save all the CMOS values changed to CMOS and exit setup.

✍ *Standard CMOS Setup*

The items in Standard CMOS Setup Menu are divided into 8 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.

```
                  AMIBIOS SETUP - STANDARD CMOS SETUP
              (C)2000 American Megatrends, Inc. All Rights Reserved

Date (mm/dd/yyyy): Thu Sep 05,2002
Time (hh/mm/ss)  : 00:09:17
                                                  LBA  Blk  PIO  32Bit
              Type         Size   Cyln  Head WPcom Sec Mode Mode Mode Mode
Pri Master :Not Installed
Pri Slave  :Not Installed
Sec Master :Not Installed
Sec Slave  :Not Installed

Floppy Drive A:  Not Installed
Floppy Drive B:  Not Installed


Month:  Jan - Dec                              ESC : Exit
  Day:    01 - 31                              ↑↓  : Select Item
  Year: 1980 - 2099                            PU/PD/+/- : Modify
                                               (Shift)F2 : Color
                                               F3 : Detect All HDD
```

Date
   <mm>   <dd>   <yyyy>

   Set the system date. Note that the 'Day' automatically changes when you set the date.

Time
   <hh : mm : ss>

   The time is converted based on the 24-hour military-time clock. For example, 5 p.m. is 17:00:00.

Pri Master
   Options are in its sub-menu.

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

Pri Slave
   Options are in its sub-menu.

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

<u>See Master</u>

Options are in its sub-menu.

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

<u>See Slave</u>

Options are in its sub menu.

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

<u>Floppy Drive A/ Floppy Drive B</u>

Select the 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.

✍ *ADVANCED SETUP*

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing, and security.

```
                 AMIBIOS SETUP - ADVANCED SETUP
            (C)2000 American Megatrends, Inc. All Rights Reserved

Quick Boot                 Disabled    AGP Aperture Size        256MB
1st Boot Device            Disabled    Auto Detect DIMM/PCI Clk Disabled
2nd Boot Device            Disabled    CLK GEN Spread Spectrum  Disabled
3rd Boot Device            Disabled
Try Other Boot Devices     Yes
S.M.A.R.T. for Hard Disks  Disabled
BootUp Num-Lock            Off
Floppy Drive Swap          Disabled
Floppy Drive Seek          Disabled
Password Check             Setup
Boot To OS/2               No
L2 Cache                   Disabled
System BIOS Cacheable      Disabled
SDRAM Timing by SPD        Disabled
  SDRAM Frequency          100MHz
  SDRAM CAS# Latency       3         ESC : Quit         ↑↓← : Select Item
  SDRAM Bank Interleave    Disabled  F1  : Help         PU/PD/+/- : Modify
AGP Mode                   4x        F5  : Old Values  (Shift)F2 : Color
AGP Comp. Driving          Manual    F6  : Load Optimal Values
Manual AGP Comp. Driving   00        F7  : Load Best Performance Values
```

Quick Boot

If you enable this item, the system starts up more quickly be elimination some of the power on test routines.Quick Power On Self Test (Enabled)
➢ The choice: Enabled or Disabled .

1st/2nd/3rd Boot Device

Use these items to determine the device order the computer uses to look for an operating system to load at start-up time.
➢ The choice: CDROM, SCSI, NETWORK, BBS-0, BBS-1, BBS-2, BBS-3, USB FDD, USB CDROM, USB HDD, USB LS120, ZIP MO, Disabled, IDE-0, IDE-1, IDE-2, IDE-3, Floppy, ZIP A:/LS120, ATAPI ZIP C: .

Try Other Boot Devices

If you enable this item, the system will also search for other boot   devices if it fails to find an operating system from the first two   locations.Boot Up
➢ The choice: Yes or No.

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

Enable this item if any IDE hard disks support the S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) feature.
➢ The choice: Enabled or Disabled .

BootUp Num-Lock

This item determines if the Num Lock key is active or inactive at system start-up time.

➢ The choice: Off or On .

Floppy Drive Swap

If you have two diskette drives installed and you enable this item, drive A becomes drive B and drive B becomes drive A.

➢ The choice: Enabled or Disabled .

Floppy Drive Seek

If you enable this item, your system will check all floppy disk drives at start up. Disable this item unless you are using an old 360KB drive.

➢ The choice: Enabled or Disabled .

Password Check

If you have entered a password for the system, use this item to determine, if the password is required to enter the Setup Utility (Setup) or required both at start-up and to enter the Setup Utility (Always).

➢ The choice: Setup or Always.

Boot to OS/2

Enable this item if you are booting the OS/2 operating system and you have more than 64MB of system memory installed.

➢ The choice: YES or No.

L2 Cache

Leave these items enabled since all the processors that can be installed on this board have internal L1/L2 cache memory.

➢ The choice: Enabled or Disabled .

System BIOS Cacheable

If you enable this item, a segment of the system BIOS will be copied to main memory for faster execution.

➢ The choice: Enabled or Disabled .

SDRAM Timing By SPD

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

➢ The choice: Enabled or Disabled .

SDRAM Frequency

This item determines frequency of SDRAM memory.

➢ The choice: Auto, 100MHz, 133 MHz.

SDRAM CAS# Latency

This item determines the operation of SDRAM memory CAS (column address strobe). It is recommended that you leave this item at the default value. The 2T setting requires faster memory that specifically supports this mode.

➢ The choice: 3.

SDRAM Bank Interleave

Enable this item to increase SDRAM memory speed. When enabled, separate memory banks are set for odd and even addresses and the next byte of memory can be accessed while the current byte is being refreshed.

➢ The choice: Enabled or Disabled .

AGP Mode

This item provides the OnBoard VGA mode with three options of 1,2, 4 multiplied frequency.

➢ The choice: 4X, 2X, 1X .

AGP Comp. Driving

Use this item to signal driving current on AGP cards to auto or manual. Some AGP cards need stronger than normal driving current in order to operate. We recommend that you set this item to the default.

➢ The choice: Auto or Manual .

Manual AGP Comp. Driving

When AGP Driving is set to Manual, use this item to set the AGP current driving value.

➢ The choice: CB.

AGP Aperture Size

This item defines an AGP for the graphics. Leave this item at the default value 64MB.

➢ The choice: 4MB,8MB,16MB,32MB,64MB,128MB,256MB.

Auto Detect DIMM/PCI CIK

When this item is enabled, BIOS will disable the clock signal of free DIMM/PCI slots.

➢ The choice: Enabled or Disabled.

CLK GEN Spread Spectrum

Use this item to set the system bus spread spectrum for the installed processor.

➢ The choice: Enabled or Disabled.

☞ *Power Management Setup*

```
                    AMIBIOS SETUP - POWER MANAGEMENT SETUP
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ACPI Aware O/S            No
Power Management         Disabled
Suspend Time Out         Disabled
Hard Disk Time Out       Disabled
Restore On AC/Power Loss Power Off
Resume On RTC Alarm      Disabled
RTC Alarm Date           Every Day
RTC Alarm Hour           00
RTC Alarm Minute         00
RTC Alarm Second         00
LAN/Ring Power On        Disabled

                                      ESC : Quit        ↑↓← : Select Item
                                      F1  : Help        PU/PD/+/- : Modify
                                      F5  : Old Values  (Shift)F2 : Color
                                      F6  : Load Optimal Values
                                      F7  : Load Best Performance Values
```

ACPI Aware O/S

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

> ➢ The choice: Yes or No.

Power Management

> Use this item to enable or disable a power management scheme. If you enable power management, you can use the items below to set the power management operation. Both APM and ACPI are supported.

> ➢ The choice: Enabled or Disabled .

Suspend Time Out

> This sets the timeout for Suspend mode in minutes. If the time selected passes without any system activity, the computer will enter power-saving Suspend mode.

> ➢ The choice: Enabled or Disabled .

Hard Disk Time Out

> This item sets up the timeout to power down the hard disk driver, if there is no hard disk activity after passing the preset period of time

> ➢ The choice: Enabled or Disabled .

Restore on AC/Power Loss

This allow you to set whether you want your system to reboot after power has been interrupted

➢ The choice: Power off, Power on or Last state.

Resume On RTC Alarm / Date / Hour / Minute / Second

The system can be turned off with a software command. If you enable this item, the system can automatically resume at a fixed time based on the system's RTC (realtime clock). Use the items below this one to set the date and time of the wake-up alarm. You must use an ATX power supply in order to use this feature.

➢ The choice: Enabled or Disabled .

LAN/Ring Power On

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the Modem. You must use an ATX power supply in order to use this feature.

➢ The choice: Enabled or Disabled .

✎ *PCI /Plug and Play Setup*

```
              AMIBIOS SETUP - PCI / PLUG AND PLAY SETUP
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  Plug and Play Aware O/S    No
  Share Memory Size          None
  Primary Graphics Adapter   PCI
  Allocate IRQ to PCI VGA    Yes
  PCI IDE BusMaster          Disabled




                                        ESC : Quit          ↑↓← : Select Item
                                        F1  : Help          PU/PD/+/- : Modify
                                        F5  : Old Values  (Shift)F2 : Color
                                        F6  : Load Optimal Values
                                        F7  : Load Best Performance Values
```

Plug and Play Aware O/S

> Enable this item if you are using an O/S that supports Plug and Play such
> as Windows 95 or 98.
>
> ➢ The choice: Yes or No.

Share Memory Size

> This item lets you allocate a portion of the main memory for the onboard
> VGA display application with three options of 8/16/32MB.
>
> ➢ The choice: 8MB,16MB,32MB or None.

Primary Graphics Adapter

> This item indicates if the primary graphics adapter uses the PCI or the
> AGP bus. The default AGP setting still lets the onboard display work and
> allows the use of a second display card installed in an AGP slot.
>
> ➢ The choice: Onboard or PCI.

Allocate IRQ for PCI VGA

> If this item is enabled, an IRQ will be assigned to the PCI VGA graphics
> system. You set this value to No to free up an IRQ.
>
> ➢ The choice: Yes or No.

PCI IDE BusMaster

> This item enables or disables the DMA under DOS mode. We recommend
> you to leave this item at the default value.
>
> ➢ The choice: Enable or Disable.

✎ *Load Optimal Settings*

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

Load Optimal settings (Y/N) ? N

Pressing 'Y' the Setup Utility loads a set of fail-safe default values. These default values are not very demanding and they should allow your system to function with most kinds of hardware and memory chips.

✎ *Load Best Performance Settings*

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

Load best performance settings (Y/N) ? N

Pressing 'Y' the Setup Utility loads a set of best-performance default values. These default values are quite demanding and your system might not function properly if you are using slower memory chips or other low-performance components.

☞ *Features Setup*

```
                  AMIBIOS SETUP - FEATURES SETUP
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OnBoard FDC                 Auto
OnBoard Serial PortA        Auto
OnBoard IR Port             Disabled
OnBoard Parallel Port       Auto
  Parallel Port Mode        SPP
  Parallel Port IRQ         Auto
  Parallel Port DMA         N/A
OnBoard Game Port           Reserved
OnBoard MIDI Port           Reserved
  MIDI Port IRQ             N/A
OnBoard IDE                 Reserved
Audio Device                Enabled
Modem Device                Auto
Ethernet Device             Disabled
USB Controller              Disabled      ESC : Quit         ↑↓← : Select Item
USB Device Legacy Support Disabled        F1  : Help         PU/PD/+/- : Modify
ThumbDrive Support for DOSDisabled        F5  : Old Values   (Shift)F2 : Color
                                          F6  : Load Optimal Values
                                          F7  : Load Best Performance Values
```

OnBoard FDC

> Use this item to enable or disable the onboard floppy disk drive interface.
> ➢ The choice: Enabled,Auto,Disabled .

OnBoard Serial PortA

> Use this item to enable or disable the onboard COM1 serial port, and to assign a port address.
> ➢ The choice: Disabled,3F8h/COM1,2F8h/COM2,3E8h/COM3,2E8h/COM4,Auto.

OnBoard IR Port

> Use this item to enable or disable the onboard infrared port, and to assign a port address.
> ➢ The choice: Disabled, ASKIR,IrDA.

OnBoard Parallel Port

> Use this item to enable or disable the onboard LPT1 parallel port, and to assign a port address. The Auto setting will detect and available address.
> ➢ The choice: Auto, Disabled, 378h, 278h, or 3BCh.

Parallel Port Mode

> Use this item to set the parallel port mode. You can select SPP (Standard Parallel Port), ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port), or ECP + EPP.
> ➢ The choice: SPP,EPP,ECP,EPP+ECP.

Parallel Port IRQ

Use this item to assign IRQ to the parallel port.a port address.
➢ The choice: 7,5.

Parallel Port DMA

Use this item to assign a DMA channel to the parallel port.
➢ The choice: N/A.

OnBoard GAME Port

This item enables or disables the I/O address for the GAME Port.
➢ The choice: 201h,209h,Disabled.

OnBoard MIDI Port

Use this item to enable or disable the onboard MIDI port, and to assign a port address.

MIDI Port IRQ

Use this item to assign IRQ 7 to the parallel port.
➢ The choice: 10,11,5.

OnBoard IDE

Use this item to enable or disable the onboard IDE channel.
➢ The choice: Both,Disabled,Primary or Secondary.

Audio Device

This item enables or disables the AC'97 audio chip.
➢ The choice: Enable or Disable.

Modem Device

This item enables or disables the MC'97 modem chip.
➢ The choice: Enable or Disable.

Ethernet Device

This item enables or disables the onboard Ethernet LAN.
➢ The choice: Enable or Disable.

USB Controller

Use this item to select the USB ports or disabled.
➢ The choice: Disabled, All USB Port, USB1, USB2, USB1&2, USB3, USB1&3, USB2&3.

<u>USB Device Legacy Support</u>

This item allows you to enable the USB device, if you have installed a USB device on the system board.

➢ The choice: Disabled, No Mice, All Device.

<u>ThumbDrive Support for DOS</u>

This item allows user to use ThumbDvive under DOS Environment.

➢ The choice: Disabled, Enabled.

✎ *CPU PnP Setup*

This page helps you manually configure the mainboard for the CPU. The system will automatically detect the type of installed CPU and make the appropriate adjustments to the items on this page.

```
              AMIBIOS SETUP - CPU PnP SETUP
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CPU BRAND           INTEL
CPU Type            Pentium 4
CPU Ratio           8.0x
CPU Frequency       100MHz






                              ESC : Quit         ↑↓← : Select Item
                              F1  : Help         PU/PD/+/- : Modify
                              F5  : Old Values   (Shift)F2 : Color
                              F6  : Load Optimal Values
                              F7  : Load Best Performance Values
```

CPU BRAND
    This item show the Brand of CPU installed in your system.

CPU Type
    This item show the Type of CPU installed in your system.

CPU Ratio

    This item show the Ratio Selection of CPU installed in your system.

CPU Frequency
    This item show the Frequency of CPU installed in your system.

✎ *Hardware Monitor*

On mainboards that support hardware monitoring, this item lets you monitor the parameters for critical voltages, critical temperatures, and fan speeds:

```
            AMIBIOS SETUP - HARDWARE MONITOR
         (C)2000 American Megatrends, Inc. All Rights Reserved

   -=≡ System Hardware  ≡=-
   Vcore              1.552 V
   Vcc2.5V            2.480 V
   Vcc3.3V            3.312 V
   Vcc5V              4.919 V
   +12V              12.032 V
   -12V             -12.049 V
   SB5V               3.978 V
   VBAT               3.152 V
   SYSTEM Fan Speed   0 RPM
   CPU FAN Speed      4440 RPM
   POWER Temperature  45°C/113°F
   SYSTEM Temperature 38°C/100°F
   CPU Temperature    46°C/111°F

                                    ESC : Quit        ↑↓← : Select Item
                                    F1  : Help        PU/PD/+/- : Modify
                                    F5  : Old Values   (Shift)F2 : Color
                                    F6  : Load Optimal Values
                                    F7  : Load Best Performance Values
```

System Hardware

These fields provide you with information about the systems current operating status. You cannot make changes to these fields.

The fields include

Vcore

Vcc2.5V

Vcc3.3V

Vcc5V

+12V

-12V

SB5V

VBAT

System Fan Speed

CPU Fan speed

Power Temperature

System Temperature

CPU Temperature

✍ *Change Password*

If you highlight this item and press Enter, a dialog box appears which lets you enter a Supervisor password. You can enter no more than six letters or numbers. Press Enter after you have typed in the password. A second dialog box asks you to retype the password for confirmation. Press Enter after you have retyped it correctly. The password is then required to access the Setup Utility or for that and at start-up, depending on the setting of the Password Check item in Advanced Setup.

```
                AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.21.12
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    Standard CMOS Setup                 Features Setup

    Advanced Setup                      CPU PnP Setup

    Power Management Setup              Hardware Monitor

    PCI / Plug and Pla┌──────────────────────────────┐ord
                       │                              │
    Load Optimal Setti │  Enter current password:     │
                       │                              │
    Load Best Performa └──────────────────────────────┘

    ESC: Quit     ↑↓←: Select Item    (Shift)F2: Change Color   F5: Old Values
    F6: Optimal values        F7: Best performance values       F10: Save&Exit

                              Change password
```

Enter Password

Type the password up to eight characters, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable password, just press <Enter> when you are prompted to enter password. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

Password Disable

If you select System at Security Option of BIOS Features Setup Menu, you will be prompted in entering the password whenever the system is rebooted or you try to enter Setup. If you select Setup at Security Option of BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

Warning : Retain a record of your password in a safe place. If you forget the password, the only way to access the system is to clear CMOS, please refer to "Clear CMOS" on page 28.

✎ *Exit*

```
              AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.21.12
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    Standard CMOS Setup                Features Setup

    Advanced Setup                     CPU PnP Setup

    Power Management Setup             Hardware Monitor

    PCI / Plug and Play Setup          Change Password

    Load Optimal Settings              Exit

    Load Best Performance Settings


  ESC: Quit       ↑↓←: Select Item    (Shift)F2: Change Color    F5: Old Values
  F6: Optimal values          F7: Best performance values         F10: Save&Exit

                    Exit Or, Save CMOS setting and exit
```

Highlight this item and press ＜Enter＞ to save the changes that you have made in the Setup Utility configuration and exit the program.

Save current settings 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. The 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 is restarted again.

Pressing "N" 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.