

MK40V/MK40VN
AMD AthlonXP
462-pin Processor
with 200/266/333 MHz FSB
Based DDR MAINBOARD

User's Manual

Shuttle® MK40V/MK40VN

**AMD AthlonXP
462-pin Processor
with 200/266/333 MHz FSB
Based DDR Mainboard
Manual Version 1.1**

Copyright

Copyright© 2003 by Shuttle® Inc. All Rights Reserved.

This publication, including all photos, illustrations, and software, is protected under international copyright laws, with all rights reserved. Reproducing any of the material contained herein is prohibited without the consent of the publisher.

Disclaimer

Shuttle® Inc. shall not be liable for any incidental or consequential damages resulting from the performance or use of this product.

This company makes no representations or warranties regarding the contents of this manual. Information in this manual has been carefully checked for reliability; however, no guarantee is given as to the correctness of the contents. In the interest of continued product improvement, this company reserves the right to revise the manual or include changes in the specifications of the product described within it at any time without notice and without obligation to notify any person of such revision or changes. The information contained in this manual is provided for general use by the customers.

Trademarks

Shuttle is a registered trademark of Shuttle Inc.

AMD, Athlon, and Duron are registered trademarks of AMD Corporation.

PS/2 is a registered trademark of IBM Corporation.

AWARD is a registered trademark of Award Software Inc.

Microsoft and Windows are registered trademarks of Microsoft Corporation.

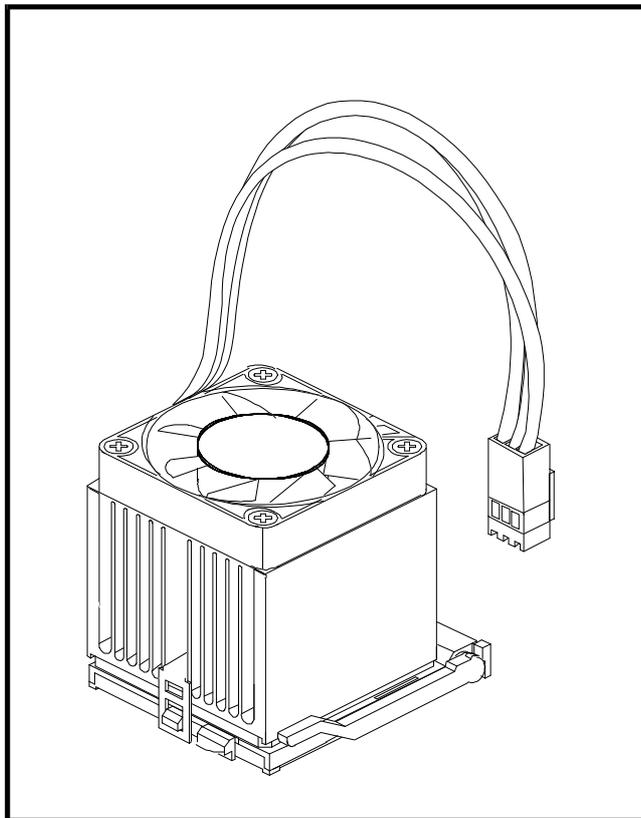
General Notice: Other product names used in this manual are ascribed to their respective owners and acknowledged.

WARNING

Thermal issue is highly essential for processors with a speed of 600MHz and above. Hence, we recommend you to use the CPU fan qualified by AMD or motherboard manufacturer. Meanwhile, please make sure CPU and fan are securely fastened well. Otherwise, improper fan installation not only gets system unstable but also could damage both CPU and motherboard because insufficient thermal dissipation.

If you would like to know more about thermal topic please see **AMD website** for detailed thermal requirement through the address:

<http://www.amd.com>



Statement of Shuttle Mainboard via the EMI Test

Shuttle mainboards have been via the EMI test in terms of series of regulations: EN55022/ CISPR22/AS/NZS3548 Class B, EN55024 (1998/AS/NZS), EN4252.1 (1994), EN61000, ANSI C63.4 (1992), CFR47 Part 15 Subpart B, and CNS13438 (1997). The items tested are illustrated as follows:

(A) Voltage: AC 110V/60HZ & AC 230V/50HZ

(B) Tested Product Information:

Product Name: PC Mainboard

Status: Sample

Model Name: MK40V/MK40VN

S/N: N/A

CPU:

External Frequency: 133 MHz

AMD Athlon XP 2400+/2600+

External Frequency: 166 MHz

AMD Athlon XP 2800+/3000+

Mouse Port: one port with 6 pins

Keyboard Port: one port with 6 pins

Parallel Port: one port with 25 pins

Serial Port: one port with 9 pins

VGA Port: one port with 15 pins

USB Port: two ports with 4 pins respectively

LAN Port: one port with 4 pins (10Mbps/100Mbps)

Line-In & Line-Out & Mic-In Ports: one port for each

DIMM Memory (optional): 256 MB*2

All CPUs have completely been tested, and values offered by the worst EMI combination of CPU external frequency are listed as follows:

Test Mode	External Frequency	CPU	Power Supply	Network Transfer Speed
1	166MHz	Athlon XP 3000+	ENP-2320	100 Mbps

(C) Remedy for the Tested Product & Its EMI Interference:

Remedy: N/A

EMI Interference:

Crystal: 32.768 KHz(X1)/14.318 MHz(X2)/ 25.000 KHz(X4)/ 24.576 MHz(Y1)

Clock: U5

(D) Supported Host Peripherals:

Host Peripheral	Product Name	Model Name	S/N	FCC ID
#1	Case	MK40V/VN	N/A	
#2	Power Supply (300W)	ENP-0730 (ATX12V)	100002885	
#3	Western Digital HDD (30GB)	WD300BB		3902B934
#4	MITSUMI FDD	D353M3D	62007003	
#5	Panasonic VCD Player	DVD-115		3892A807

(E) Notices for Assembling Computers:

1. Cases should be made of iron or other metal that has good electric conductivity.
2. Cylinders in a case should be made of metal, and as having a mainboard mounted in a case, make sure screws are all utilized and fastened on a mainboard.
3. An I/O shielding should be contacted with I/O metallic parts of a mainboard.
4. Cables should appropriately be arranged and fixed in a case. Follow instructions:
 - Leave IDE cables not crossed upon CPU and SDRAM;
 - Leave power cables minimum in length, and not crossed upon a mainboard;
 - Leave CPU fan cables minimum in length, and not near CPU;
 - Leave cables on panels and other spare cables tied in a computer case.
5. Make sure an EMI shielding attached to a case has properly been installed.
6. Make sure a 5.25" or 3.5" FDD and screws are fastened to an EMI shielding.
7. Make sure a case is closely in contact with EMI connected points.
8. Make sure there is no cleft in a case which is not deformed.
9. Make sure a PCI or AGP door is bound to a case.
10. Make sure cables of other devices (fans or some others) are fixed in a case.

TABLE OF CONTENTS

WHAT'S IN THE MANUAL	5
Quick Reference	5
About This Manual	5
1 INTRODUCTION	6
1.1 TO DIFFERENT USERS	6
FIRST-TIME DIY SYSTEM BUILDER	6
EXPERIENCED DIY USER	6
SYSTEM INTEGRATOR	6
1.2 ITEM CHECKLIST	7
2 FEATURES	8
2.1 SPECIFICATIONS	8
3 HARDWARE INSTALLATION	11
3.1 STEP BY STEP INSTALLATION	11
STEP 1 Install the CPU	12
STEP 2 Set Jumpers	13
STEP 3 Install DDR SDRAM System Memory	13
STEP 4 Install Internal Peripherals in System Case	14
STEP 5 Mount the Mainboard on the Computer Chassis	15
STEP 6 Connect Front Panel LEDs/Switches/USB	16
STEP 7 Connect IDE and Floppy Disk Drives	17
STEP 8 Connect Other Internal Peripherals	18
STEP 9 Connect the Power Supply	19
STEP 10 Install Add-on Cards in Expansion Slots	19
STEP 11 Connect External Peripherals to Back Panel	20
STEP 12 First Time System Boot Up	20
STEP 13 Install Drivers & Software Components	21

3.2 JUMPER SETTINGS	22
JUMPERS & CONNECTORS GUIDE	23
<i>Jumpers</i>	
Clear CMOS Setting (Clear CMOS1)	25
CPU Frequency Setting (JP3)	25
<i>Back Panel Connectors</i>	
PS/2 Mouse & PS/2 Keyboard Port Connectors	26
COM1 Port Connector	26
Parallel Port Connector	26
VGA Port Connector	26
USB1/2/3/4 Port Connectors	27
LAN Port Connector (MK40VN only)	27
Line-In Port Connector	27
Line-Out Port Connector	27
Mic-In Port Connector	27
<i>Front Panel Connectors</i>	
HDD LED Connector (HDLED)	28
Hardware Reset Connector (RST)	28
MSG LED Connector (MSGLED)	29
ATX Power On/Off Switch Connector (PWR)	29
Extended USB Header (USB2)	30
Front Panel Audio Header (AUDIO1)	30
<i>Internal Peripheral Connectors</i>	
Enhanced IDE and Floppy Connectors (IDE1/IDE2 & FDC1)	31
<i>Other Connectors</i>	
ATX Power Supply Connector (J3 & CN3)	32
CPU and System Fan Connectors (CPUFAN1/SYSTEMFAN1)	33
Audio CD_IN Connector (CD1)	33

IR Header (SIR1)	34
Internal Speaker Header (SPK1)	34
3.3 SYSTEM MEMORY CONFIGURATION	35
1. INSTALL MEMORY	35
2. UPGRADE MEMORY	35
4 SOFTWARE UTILITY	36
4.1 Mainboard CD Overview	36
4.2 Install Mainboard Software	37
4.2.A Install VIA 4in1 Driver	38
4.2.B Install VIA VGA Driver	39
4.2.C Install VIA USB2.0 Driver	40
4.2.D Install VIA Audio Driver	41
4.2.E Install VIA LAN Driver(MK40VN Only)	42
4.3 View the User's Manual	43
5 BIOS SETUP	44
5.1 ENTER BIOS	44
5.2 THE MAIN MENU	45
STANDARD CMOS SETUP	47
ADVANCED SETUP	49
POWER MANAGEMENT SETUP	52
PCI/PLUG AND PLAY SETUP	54
LOAD OPTIMAL DEFAULTS	54
LOAD BEST PERFOAMANCE DEFAULTS	55
FEATURE SETUP	55
CPU PnP SETUP	57
HARDWARE MONITOR	58

CHANGE PASSWORD	58
EXIT	59

WHAT'S IN THE MANUAL

Quick Reference

Hardware Installation >> Step-by-Step	Page 11
Jumper Settings >> A Closer Look	Page 22
Drivers/Software Utilities >> How to Install	Page 36
BIOS Setup >> How to Configure	Page 44

About This Manual

For First-Time DIY System Builder	Page 6
For Experienced DIY User	Page 6
For System Integrator	Page 6

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 MK40V/MK40VN mainboard.

Experienced DIY User

Congratulate on your purchase of the Shuttle MK40V/MK40VN mainboard. You will find that installing your new Shuttle MK40V/MK40VN mainboard is just easy. Bundled with an array of onboard functions, the highly-integrated MK40V/MK40VN 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

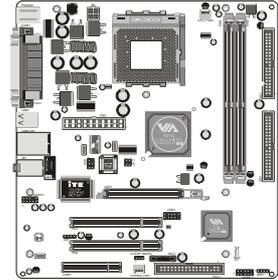
You have wisely chosen Shuttle MK40V/MK40VN to construct your system. Shuttle MK40V/MK40VN incorporates all the state-of-the-art technology of the KM400 chipset from VIA. It integrates the most advanced functions you can find to date in a compact micro ATX board.

This manual is all-purpose for two kinds of mainboards: MK40V and MK40VN. The main difference between them is that MK40VN is equipped with an onboard LAN. In the manual, if there are some standards, characteristics, equipment, or software adopted only by MK40VN, it will be highlighted in brackets.

1.2 Item Checklist:

Check all items with your MK40V/MK40VN mainboard to make sure nothing is missing. The complete package should include:

- * One piece of Shuttle MK40V/MK40VN Mainboard



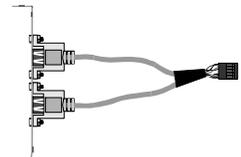
- * One piece of ATA 133/100/66/33 Ribbon Cable



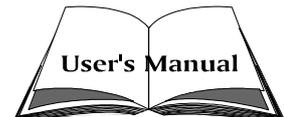
- * One piece of Floppy Ribbon Cable



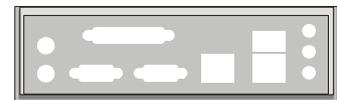
- * One piece of twin ports USB Cable (optional)



- * MK40V/MK40VN User's Manual



- * I/O Shielding



- * One piece of Bundled CD-ROM with containing:
 - MK40V/MK40VN user's manual saved in PDF format
 - VIA 4in1 Driver
 - VIA VGA Driver
 - VIA USB2.0 Driver
 - VIA LAN Driver (MK40VN only)
 - VIA Audio Driver
 - AMI BIOS CMOS Setup Utility



2 FEATURES

MK40V/MK40VN 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

Support Socket 462 package CPU.

AMD Athlon XP Processor with 200/266/333 MHz FSB.

* Chipset

Features VIA KM400 N.B. and VIA VT8235 S.B..

* Onboard Graphical Controller

The VIA KM400 integrates a full featured Unichrome I 128-bit 2D/3D AGP controller.

* Onboard 10/100Mb/s LAN (MK40VN only)

VIA VT6103, support 10Mb/s and 100 Mb/s operation.

* AC'97 Audio Codec.

AC'97 2.1 compliant.

Spread independent PCI functions for Audio and Modem.

* CPU FSB Configuration

Soft-configuration FSB (The FSB speed is software configurable from 100MHz to 166MHz.)

* Versatile Memory Support

Two 184-pin DIMM slots to support max 2GB of PC1600/PC2100/PC2700 compliant with DDR SDRAM module.

* PCI Expansion Slots

Provides two 32-bit PCI slots.

* AGP Expansion Slot

Provides one 32-bit AGP slot which support 4X,8X AGP device.

* **CNR Expansion Slot**

Provides one CNR (Communications and Networking Riser) slot to insert special riser cards with Audio and Modem functionality.

* **6 USB 2.0 Complaint Interface Onboard**

4 x USB connectors on back-panel and one set of dual USB port headers on mid-board.

* **I/O Interface**

Provides a variety of I/O interfaces:

- 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.
- 1x PS/2 Mouse Port.
- 1x PS/2 Keyboard Port.
- 1x DB25 parallel port.
- 1x DB9 serial port 16550 UART compatible.
- 1x VGA port.
- 4x USB 2.0 Ports.
- 1x LAN port. (MK40VN only)
- 1x Line-In port.
- 1x Line-Out port.
- 1x Mic-In port.

* **PCI Bus Master IDE Controller Onboard**

Two Ultra DMA 133/100/66/33 Bus Master Dual-channel IDE ports provide support to a maximum of four IDE devices (one Master and one Slave per channel). The IDE Bus implements data transfer speeds of up to 133/100/66/33 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.

* **ATX Power Supply Connector**

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

The Pentium 4 ATX power include other 4-pin + 12V ATX power connector.

★ **Advanced Configuration and Power Interface**

Features three 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 Award BIOS V6.0 PG on Intel Firmware Hub 2Mb Flash core and supports Green PC, Desktop Management Interface (DMI).

★ **Form Factor**

System board conforms to Micro ATX specification.

Board dimension: 230 mm * 200 mm.

★ **Advanced Features**

- Low EMI - Built in spread spectrum. Unused PCI/SDRAM slots are shut off by the automatic clock for reducing EMI.
- Dual Function Power Button - The system can be in any of the 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 will enter Soft-Off mode.
- CPU Host Clock Setting - These items allow users to adjust CPU Host Clock in BIOS.

★ **Intelligent Features**

- Voltage Monitoring - Monitors various voltages of key elements, such as the CPU, and other critical system voltage levels to ensure a stable current passing through mainboard components.
- Fan Status Monitoring - To prevent the CPU from overheating, the CPU fan is monitored by RPM, with which the cooling fan is required.
- Temperature Monitoring - This item allows users to make sure whether the CPU or system runs under a suitable temperature.

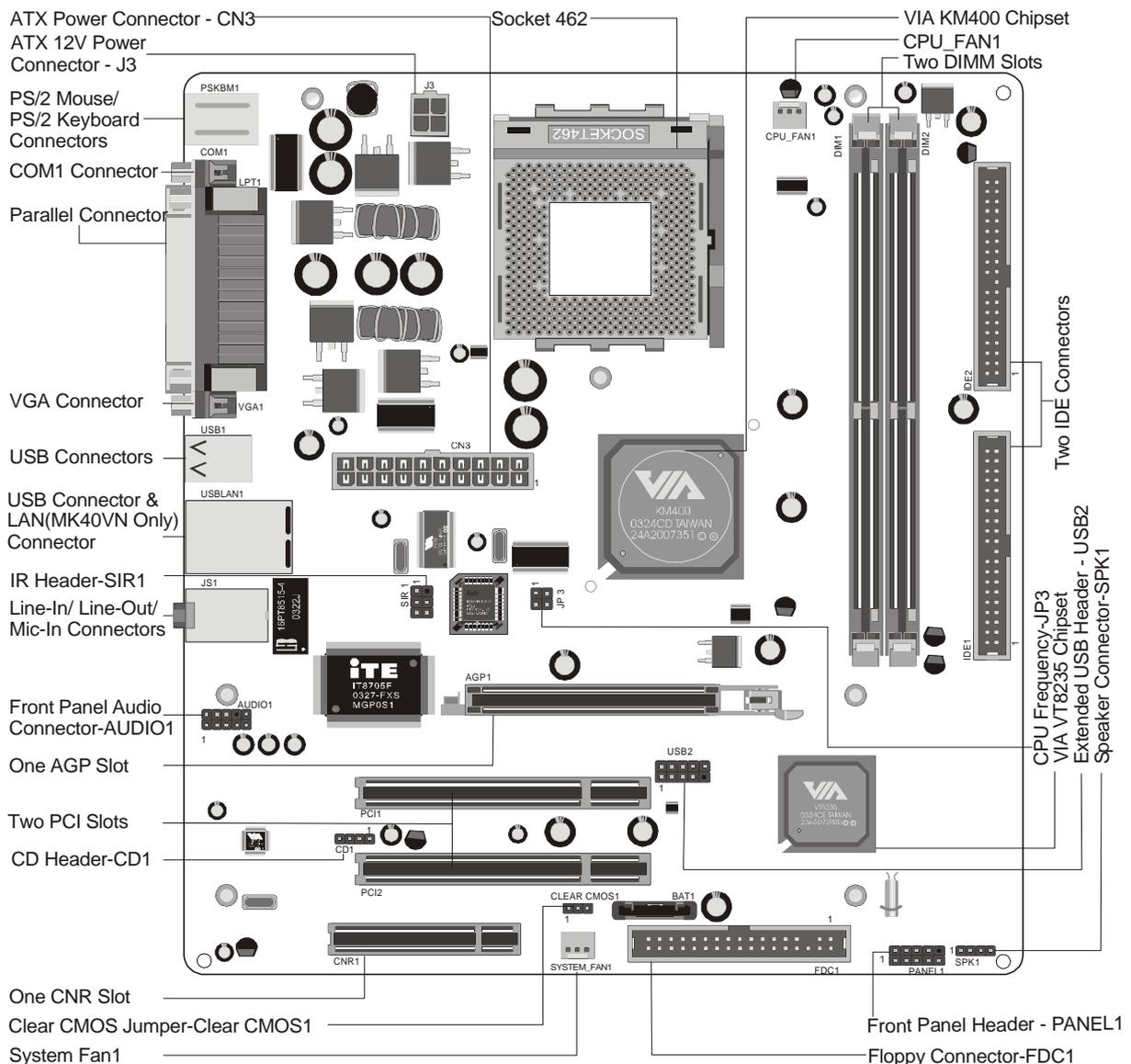
3 HARDWARE INSTALLATION

Before removing/installing any of these devices : CPU, DIMMs, Add-On Cards, and Cables, please unplug the onboard power connector.

This section outlines how to install and configure your mainboard. Referring to the following mainboard layout helps you identify various jumpers, connectors, slots, and ports. Steps described herein will lead you to a quick and correct installation of your system.

3.1 Step-by-Step Installation

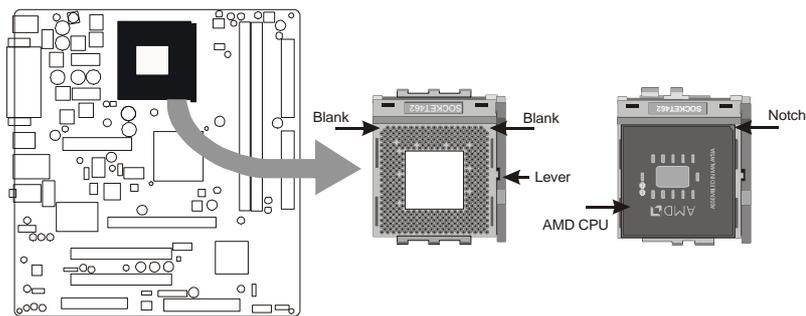
Accessories Of MK40V/MK40VN



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 AMD AthlonXP processor in the socket A. Note that the CPU's 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 AMD AthlonXP 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 AMD AthlonXP 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 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 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. Please refer to the following diagram.

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 Frequency

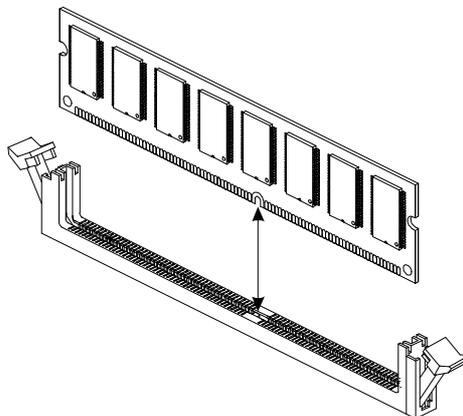
For first-time DIY system builders, we recommend that you do not change the default jumper settings if you are not totally familiar with the mainboard configuration procedures. The factory-set default settings are tuned for optimum system performance. For the advanced users who wish to customize their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

Step 3

Install DDR SDRAM System Memory

To install memory, insert DDR SDRAM memory module(s) in any one or two DIMM banks. Note that SDRAM modules are directional and will not go in the DIMM banks if they are not properly oriented. After the module is fully inserted into the DIMM bank, lift the clips of both sides of the DIMM bank to lock the module in place.

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.

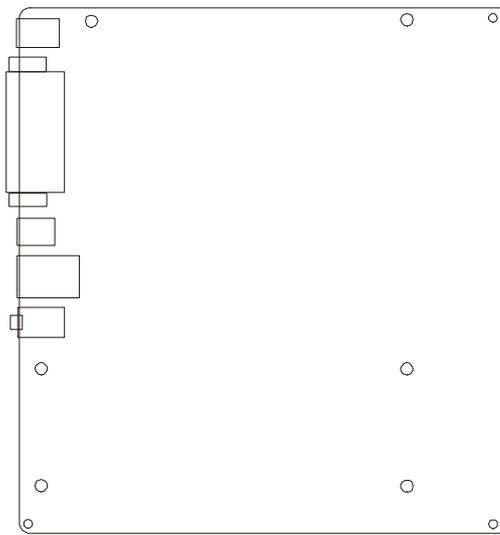
To install IDE & FDD drives, follow this procedure:

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 install 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 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 there are a lot of mounting holes on your computer chassis and mainboard. To match the holes on both properly, the key point is to make the back panel of the mainboard in a close fit with your system case, as shown below.



2. Position the studs between the chassis and the mainboard. The studs are used to fix the mainboard and to keep a certain distance between the them, for avoiding any electrical shorts in-between.

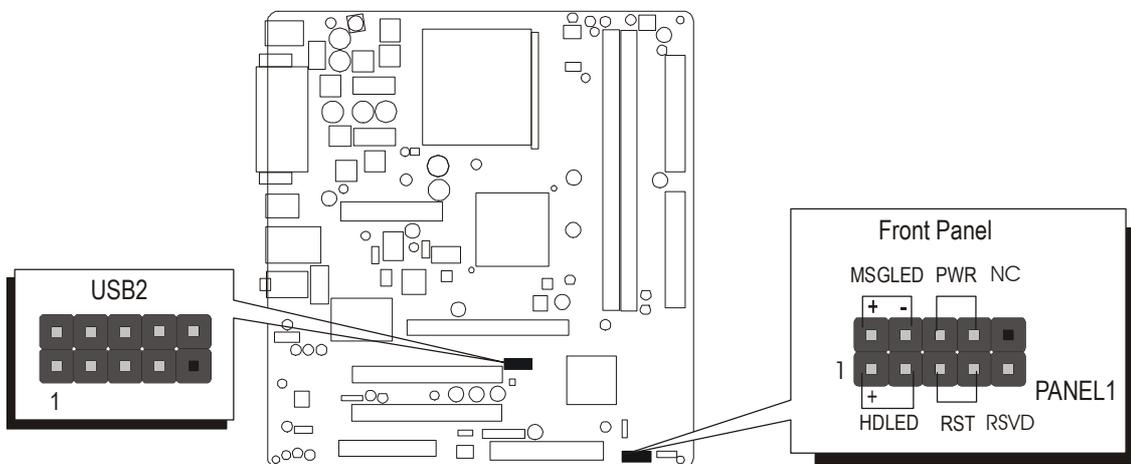
(If your computer case is already equipped with mounting studs, you need to tighten the screws to attach the mainboard.)

Note : In most computer housings, you can find 4 or more holes to place studs for fixing the mainboard. If there aren't enough matching holes, screw at least 4 studs to ensure the proper attachment of the mainboard.

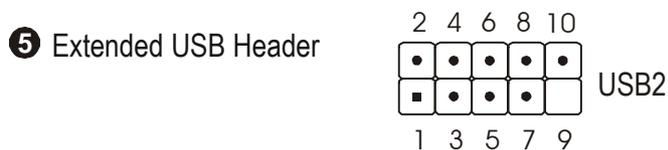
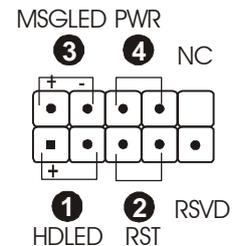
Step 6

Connect Front Panel LEDs/Switches/USB

You can find there are several different cables already existing in the system case and originating from the computer's front panel devices (HDLED, RST switch, MSGLED, PWR or USB device etc.). These cables serve to connect the front-panel LEDs, switch, and USB connectors to mainboard's front-panel connector groups (PANEL1 and USB2), as shown below.



1. HDD LED (HDLED)
2. Hardware Reset Switch Button (RST)
3. Green-LED (MSG LED)
4. ATX Soft Power On/Off (PWR)
5. Extended USB Header (USB2)

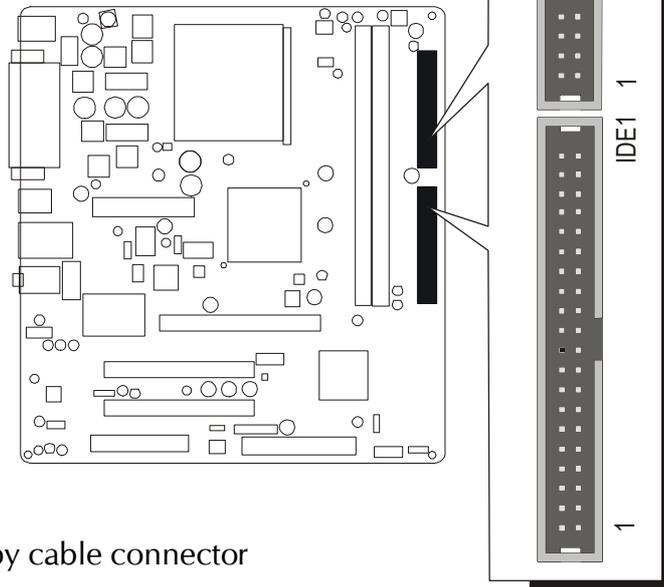


- | | |
|---------------------|---------------------|
| 1 = VREG_FP_USBPWR0 | 2 = VREG_FP_USBPWR0 |
| 3 = USB_FP_P0- | 4 = USB_FP_P1- |
| 5 = USB_FP_P0+ | 6 = USB_FP_P1+ |
| 7 = GND | 8 = GND |
| 9 = KEY | 10 = USB_FP_OC0 |

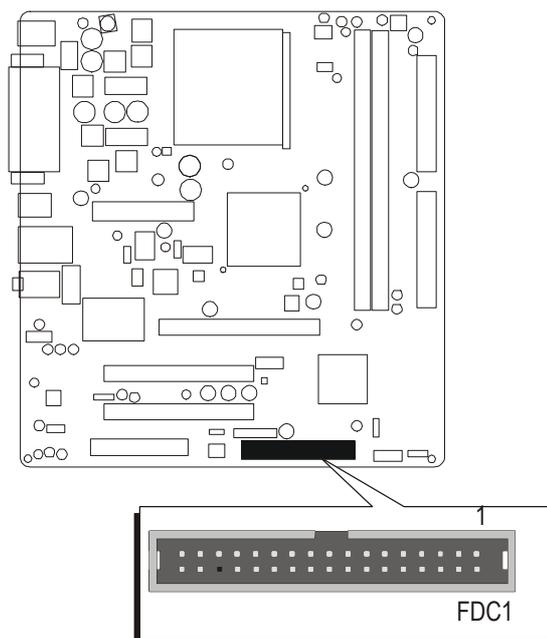
Step 7

Connect IDE and Floppy Disk Drives

1. IDE cable connectors



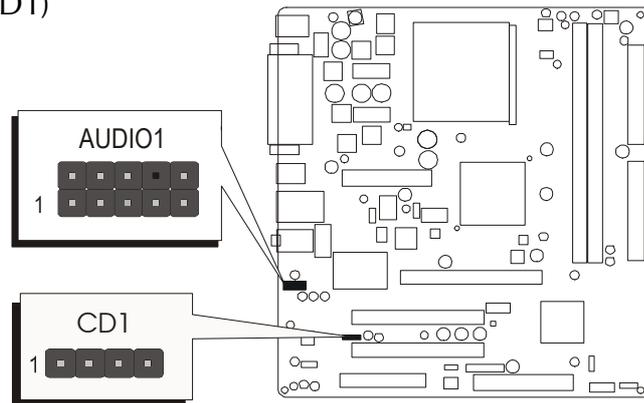
2. Floppy cable connector



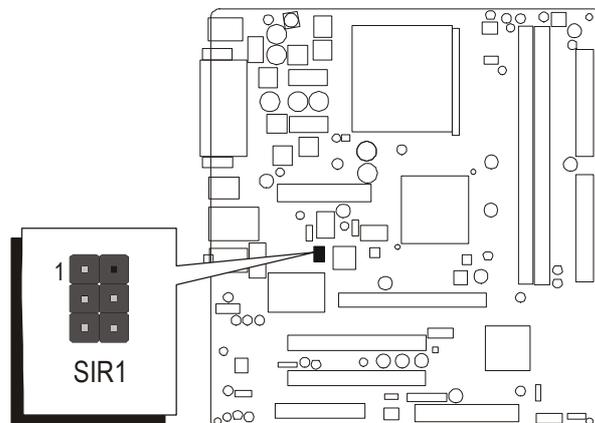
Step 8

Connect Other Internal Peripherals

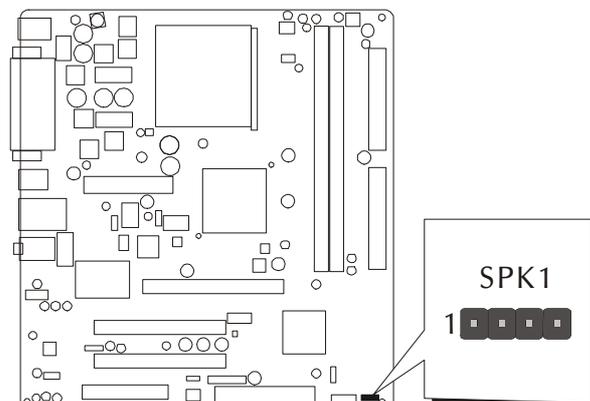
1. Front panel microphone and line-out header (AUDIO1);
CD_IN connector (CD1)



2. IR header (SIR1)



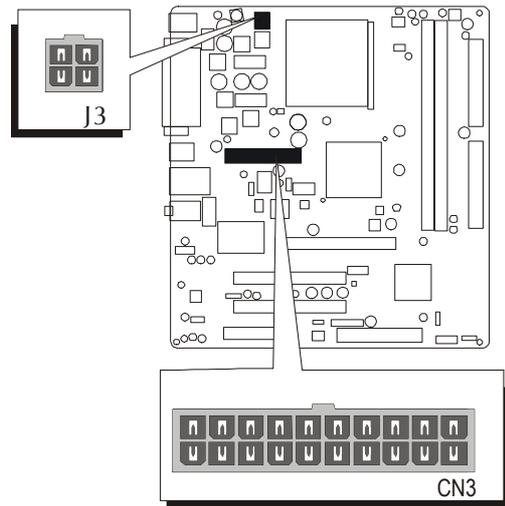
3. Internal speaker header (SPK1)



Step 9

Connect the Power Supply

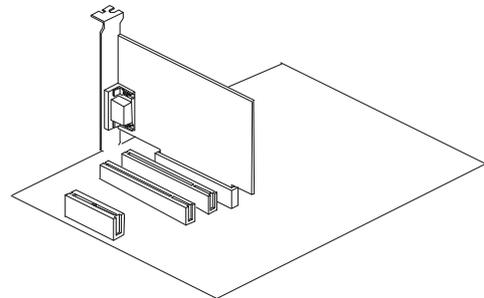
1. System power connectors



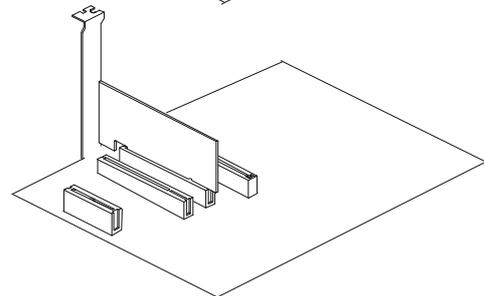
Step 10

Install Add-On Cards in Expansion Slots

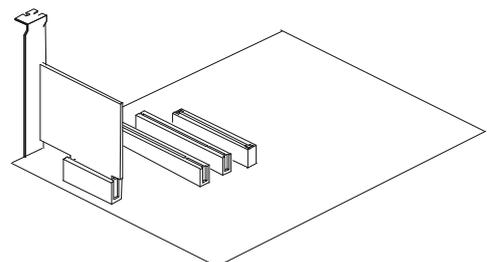
1. Accelerated Grapics Port (AGP) Card



2. PCI Card



3. Communications and Networking Riser (CNR) Card

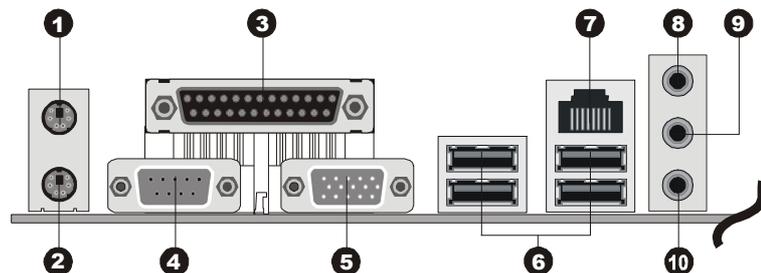
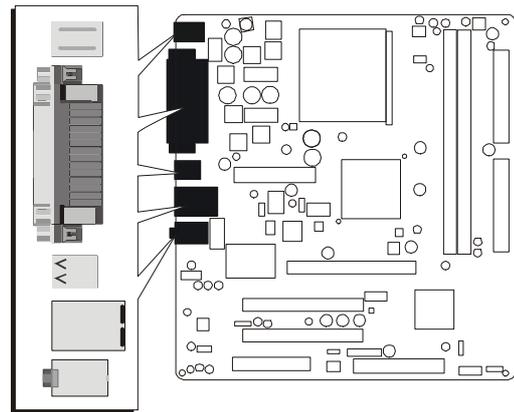


Step 11

Connect External Peripherals to Back Panel

You are now ready to connect the external peripherals to your system's back panel.

1. PS/2 Mouse Port
2. PS/2 Keyboard Port
3. Parallel Port (LPT1)
4. Serial Port (COM1)
5. VGA Port
6. USB Ports
7. LAN Port (MK40VN only)
8. Line-In Port
9. Line-Out Port
10. Mic-In 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/XP operating systems only. Make sure your operating system is already installed before running the drivers installation CD-ROM programs.

1. Insert the MK40V/MK40VN bundled CD-ROM into your CD-ROM drive. The auto-run program will display the driver's main installation window on screen.
2. Choose "Install Mainboard MK40V/MK40VN Software".
3. Choose "Install VIA 4in1 Driver" and complete it.
4. Choose "Install VIA VGA Driver" and complete it.
5. Choose "Install VIA USB2.0 Driver" and complete it.
6. Choose "Install VIA Audio Driver" and complete it.
7. Choose "Install VIA LAN Driver" and complete it. (MK40VN only)
8. Quit (from the auto-run installation program).

☛ Please refer to section Chapter 4 Software Utility to install driver.

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:



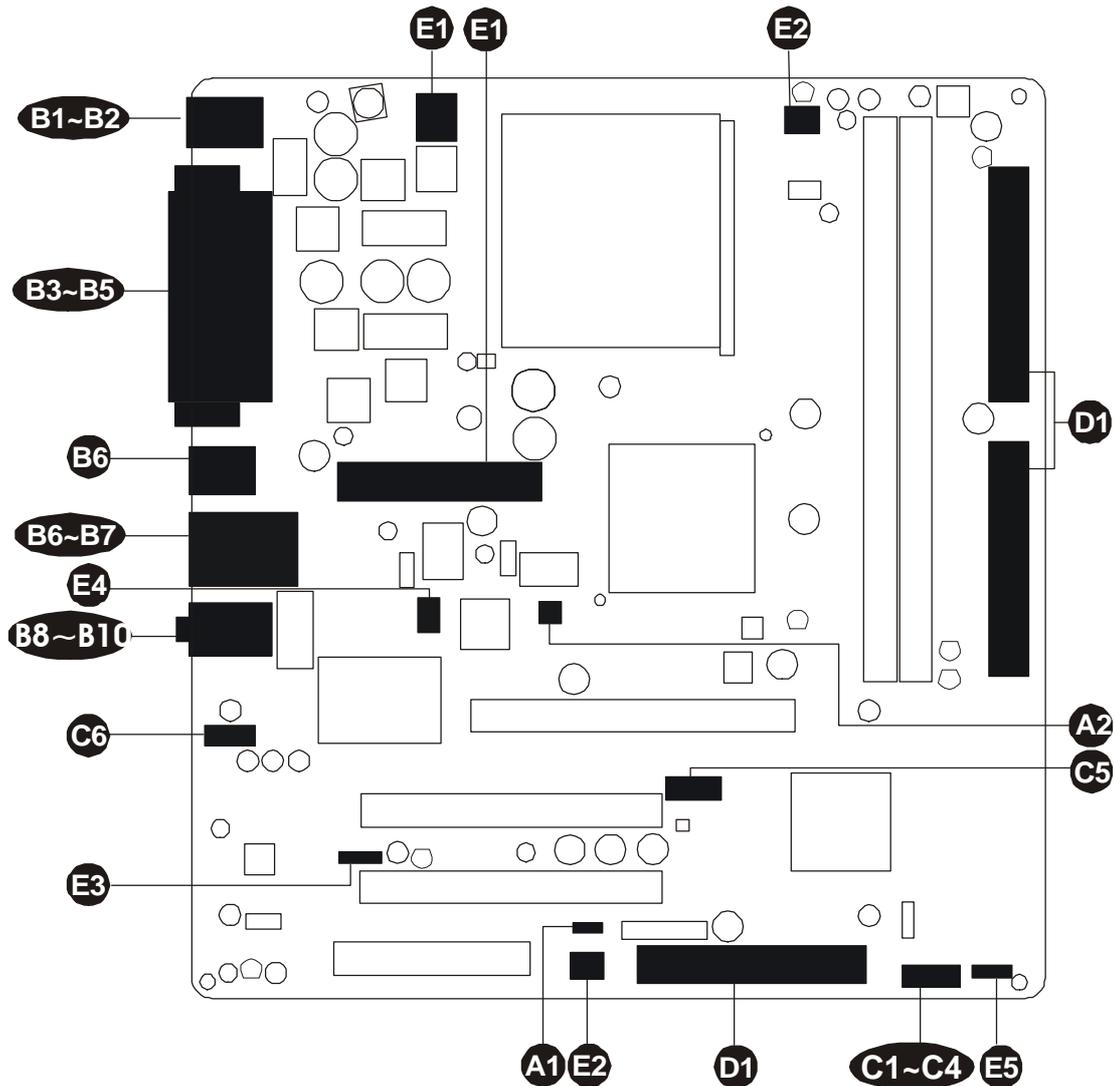
Jumpers with two pins are shown as  for Close [On] or  for Open [Off]. To short jumper pins, simply place a plastic mini jumpers over the desired pair of pins.

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

The following list will help you to identify jumpers, slots, and connectors along with their assigned functions:



CPU/Memory/Expansion Slots

Socket 462 : CPU Socket for AthlonXP, 462-pin processors

DIMM1/2 : Two DIMM Slots for 128, 256, 512 MB, and 1GB of 2.5V

DDR SDRAM(The total installed memory does not exceed 2GB.)

AGP : One 4X/8X AGP (Accelerated Graphics Port) Slot

PCI : Two 32-bit PCI Expansion Slots

CNR : One CNR (Communications and Networking Riser) Slot

Jumpers

- A1** Clear CMOS1 : Clear CMOS setting
- A2** JP3 : CPU Frequency setting

Back Panel Connectors

- B1** MS : PS/2 mouse port
- B2** KB : PS/2 keyboard port
- B3** COM1 : Serial port (DB9 male)
- B4** LPT1 : Parallel port (DB25 female)
- B5** VGA1 : VGA port (DB15 female)
- B6** USB : 4x USB (Universal Serial Bus) ports 1/2/3/4
- B7** LAN : 1x LAN port (MK40VN only)
- B8** LINE_IN : Line-In port
- B9** LINE_OUT : Line-Out port
- B10** MIC_IN : Mic-In port

Front Panel Connectors

- C1** HDLED : IDE drive active LED
- C2** RST : Hardware reset switch
- C3** MSG LED : Green LED
- C4** PWRSW : ATX power on/off momentary type switch
- C5** USB2 : Extended USB header
- C6** AUDIO1 : Front-panel audio header

Internal Peripheral Connectors

- D1** IDE1 : IDE primary interface (Dual-channel)
- D1** IDE2 : IDE secondary interface (Dual-channel)
- D1** FDC1 : Floppy disk drive interface

Other Connectors

- E1** J3/CN3 : ATX power connector
- E2** CPUFAN1 : CPU fan connector
- E2** SYSTEMFAN1 : System fan connector
- E3** CD1 : CD_IN connector
- E4** SIR1 : IR header
- E5** SPK1 : Internal speaker header

Jumpers

A1 Clear CMOS Setting (Clear CMOS1)

Clear CMOS1 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 (Normal)



Pin 2-3 (Clear CMOS)

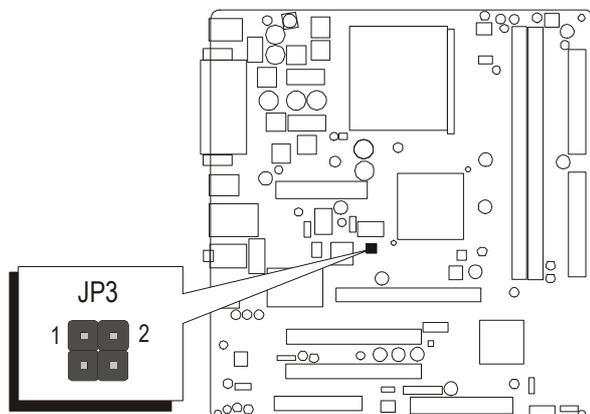


- Step 1. Turn off the system power (PC-> Off).
- Step 2. Remove ATX Power cable from ATX Power connector.
- Step 3. Remove jumper cap from pins 1-2.
- Step 4. Place the jumper cap on pins 2-3 for a few seconds.
- Step 5. Return the jumper cap to pins 1-2.
- Step 6. Plug ATX Power cable into ATX Power connector.
- Step 7. Turn on the system power (PC-> On).

A2 CPU Frequency Setting (JP3)

JP3 are used to set the CPU frequency (100MHz to 166 MHz) according to the CPU.

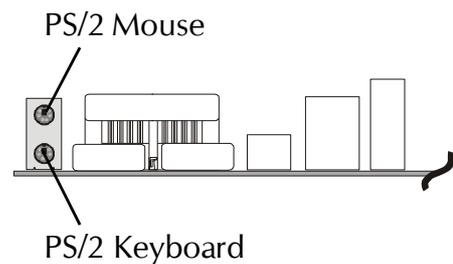
CPU Frequency	Pins 1-2	Pins 3-4
133 MHz	Off	Off
166 MHz	Off	On
100 MHz	On	Off
200MHz (Reserve)	On	On



☞ **Back Panel Connectors**

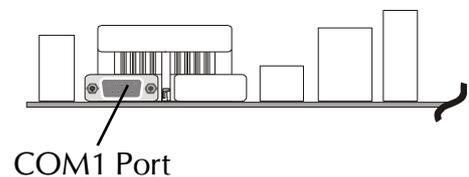
B1 PS/2 Mouse & PS/2 Keyboard Port **B2 Connectors**

Two 6-pin female PS/2 Mouse & Keyboard connectors are located at the rear panel of the mainboard. Depending on the computer housing 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 Mouse and Keyboard jacks into their corresponding connectors.



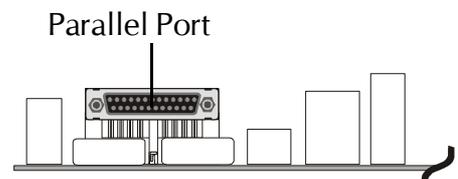
B3 COM1 Port Connector

Attach a serial device cable to the DB9 serial port COM1 at the back panel of your computer.



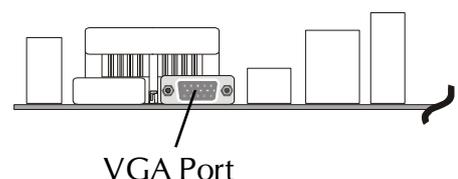
B4 Parallel Port Connector

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.



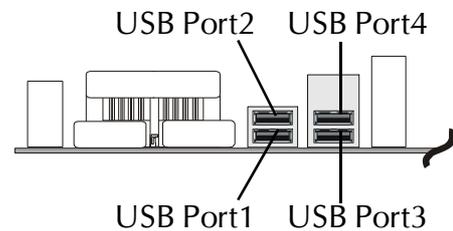
B5 VGA Port Connector

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



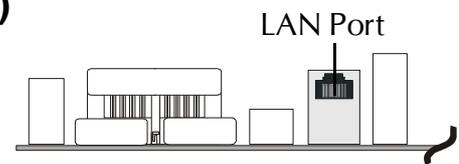
B6 USB1/2/3/4 Port Connectors

This mainboard offers 4 USB ports on back panel. Plug each USB device jack into an available USB1/2/3/4 connector.



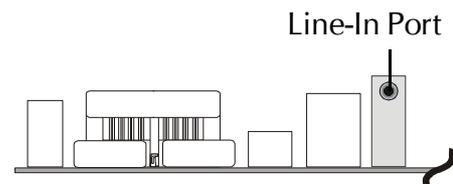
B7 LAN Port Connector (MK40VN only)

This mainboard can accommodate one device on LAN. Attach RJ-45 cable to this port connector to your PC to the LAN.



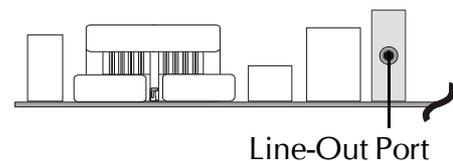
B8 Line-In Port Connector

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.



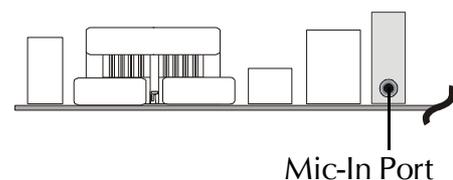
B9 Line-Out Port Connector

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.



B10 Mic-In Port Connector

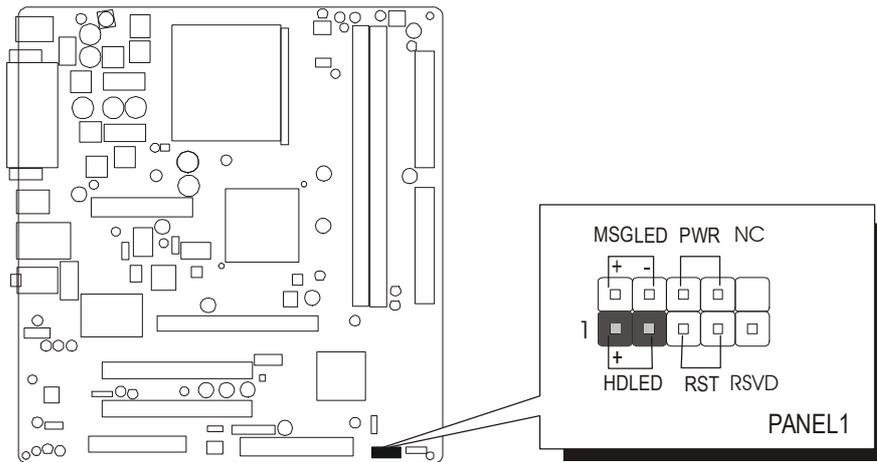
Mic-In is a 1/8-inch jack that provides a mono input. It can use a dynamic mono or stereo microphone with a resistance of not more than 600 Ohms.



☞ **Front Panel Connectors**

④ **HDD LED Connector (HDLED)**

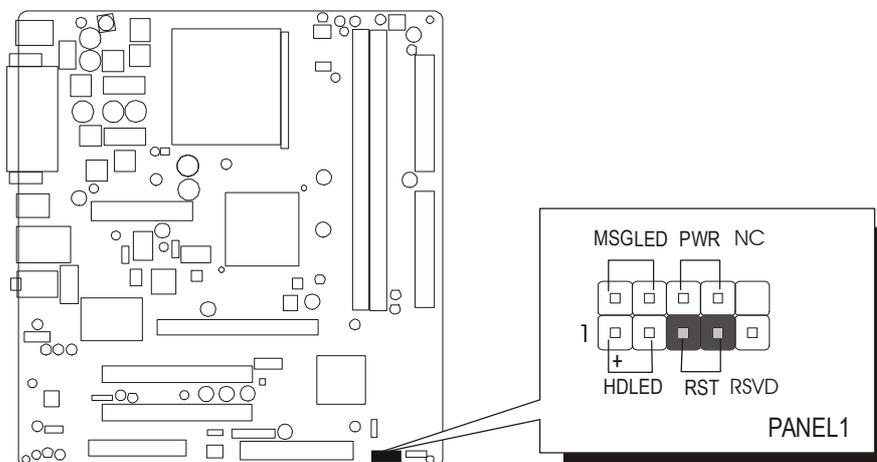
Attach a connector cable from the IDE device LED to the 2-pin (HDLED) header. The HDD LED lights up whenever an IDE device is active.



Note : Please notice all the LED connectors are directional. If your chassis's LED does not light up during running, please change it to the opposite direction.

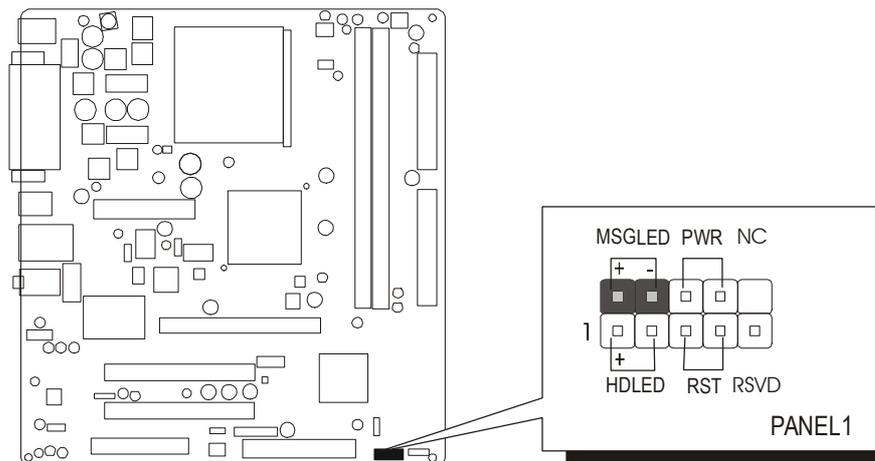
⑤ **Hardware Reset Connector (RST)**

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



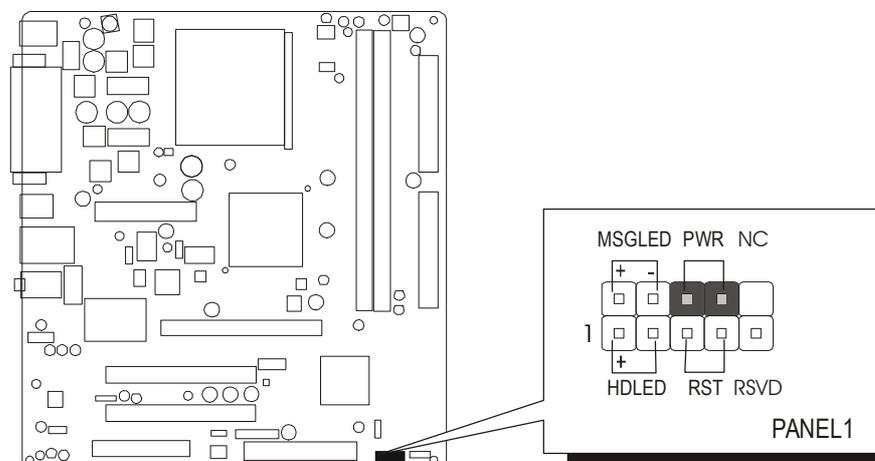
③ MSG LED Connector (MSGLED)

Connecting MSG LED a single- or dual-color, front panel mounted LED provides power on/off, sleep and message waiting indication.



④ ATX Power On/Off Switch Connector (PWR)

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

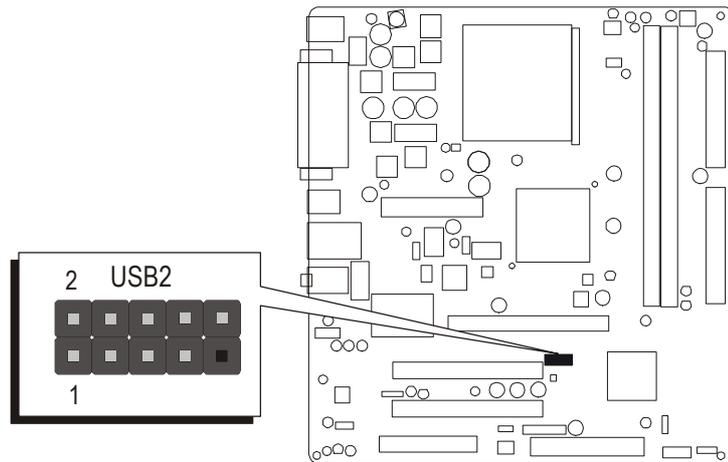


⑤ Extended USB Header (USB2)

The header is used to connect the cable attached to a USB connector which is mounted on front panel or back panel. But the USB cable is optional at the time of purchase.

Pins Assignment:

- 1 = VREG_FP_USBPWR0
- 2 = VREG_FP_USBPWR0
- 3 = USB_FP_P0-
- 4 = USB_FP_P1-
- 5 = USB_FP_P0+
- 6 = USB_FP_P1+
- 7 = GROUND
- 8 = GROUND
- 9 = KEY
- 10 = USB_FP_OC0

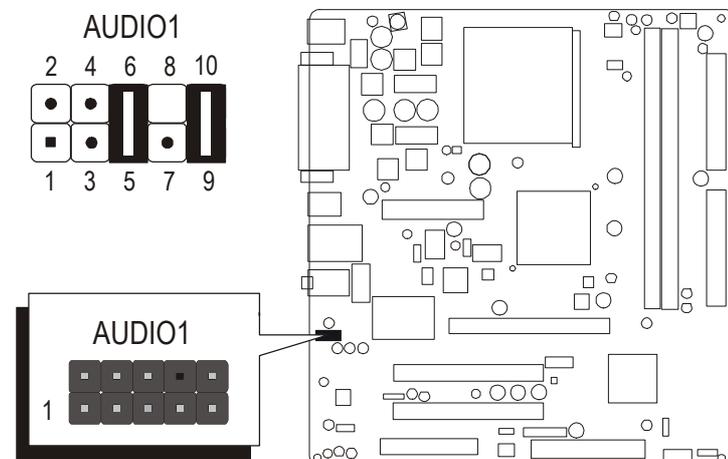


⑥ Front Panel Audio Header (AUDIO1)

This header allows users to install an auxiliary Front-Oriented Microphone and Line-Out port for easier access. Either the Line-Out port connector on back panel or AUDIO1 header is available at the same time. If you would like to use this header on front panel, please remove all jumpers from this header and install your special extra microphone and line-out cable instead. Two mini jumpers must be setted on pins 5-6 and pins 9-10, when this header is not used.

Pin Assignments:

- 1 = AUD_MIC
- 2 = AUD_GND
- 3 = AUD_MIC_BIAS
- 4 = AUD_VCC
- 5 = AUD_FPOUT_R
- 6 = AUD_RET_R
- 7 = HP_ON
- 8 = KEY
- 9 = AUD_FPOUT_L
- 10 = AUD_RET_L

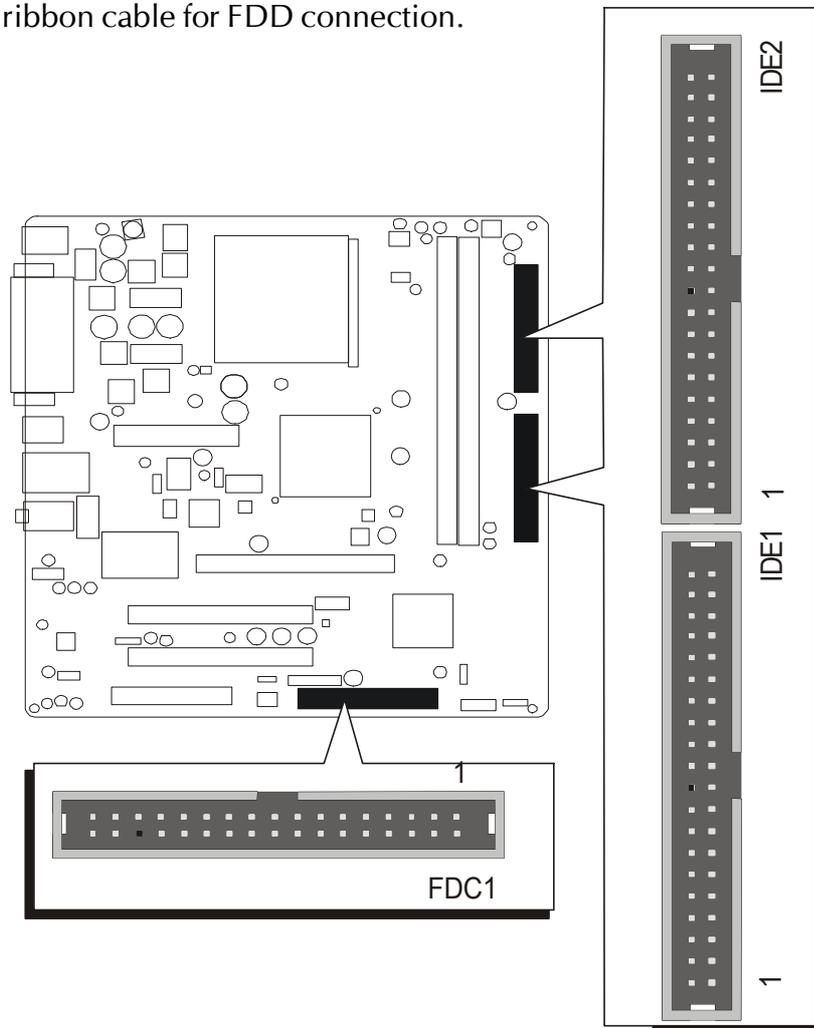


☞ *Internal Peripheral Connectors*

① **Enhanced IDE and Floppy Connectors (IDE1/IDE2 & FDC1)**

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 Drive (HDD).

This mainboard also includes one 34-pin Floppy Disk Controller (FDC1) to accommodate the Floppy Disk Drive (FDD). Moreover, this mainboard comes with one 80-pin ATA 133/100/66/33 ribbon cable to connect IDE HDD, and one 34-pin ribbon cable for FDD connection.



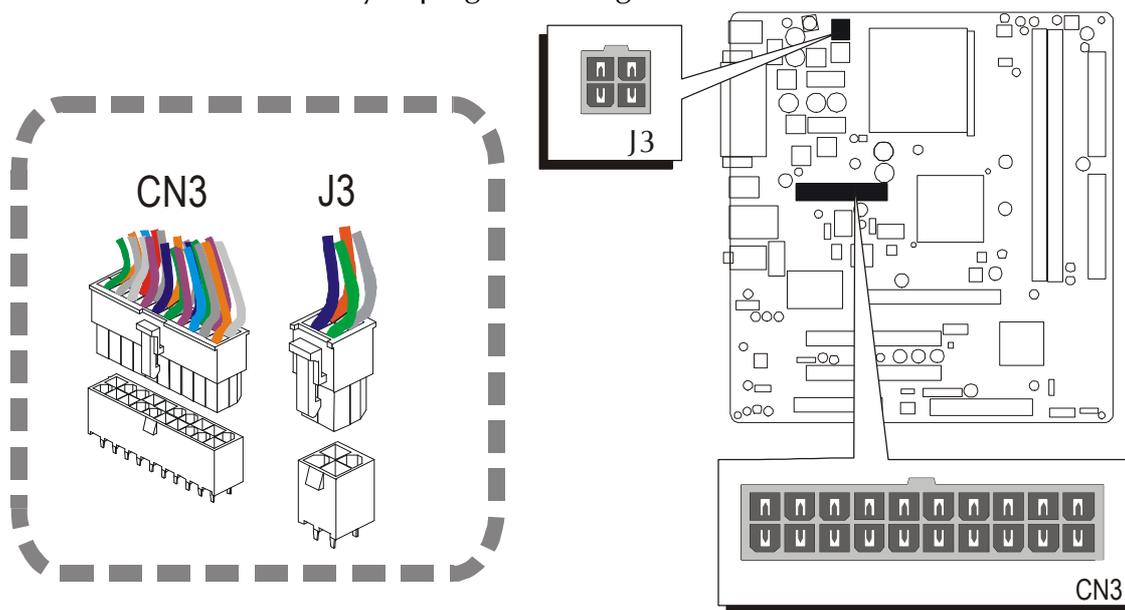
Important : Ribbon cables are directional; therefore, connect the red cable stripe to the same side.

☞ **Other Connectors**

Ⓜ ATX Power Supply Connector (J3 & CN3)

This motherboard uses 20-pin Pentium 4 standard ATX power header, and J3 with 1x4-pin +12V PC ATX power supply headers.

Please make sure you plug it in the right direction.



A traditional ATX system remains in the power-off stage when AC power resumes from power failure. However, it is inconvenient for a network server or workstation if there is not an UPS to execute power-on. Thus, this motherboard supports an AC Power Auto Recovery function to solve this problem. You may enable the function, "Restore on AC/power loss" in the sub-menu of "Power Management Setup" within the 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.

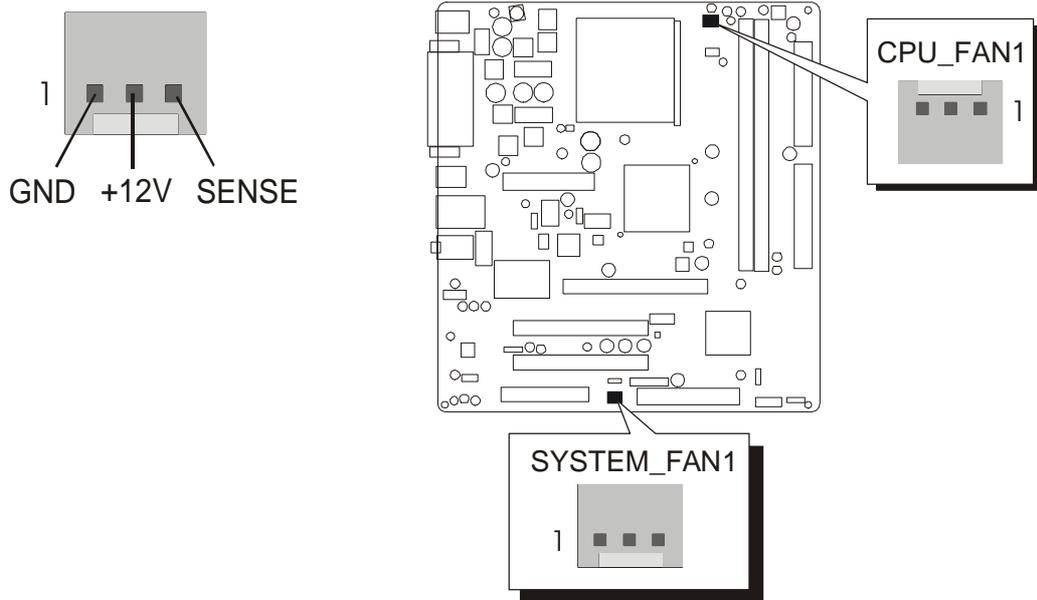
Note 2 : Make sure the latch of the ATX power connector clicks into place to ensure a solid attachment.

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.

E2 CPU and System Fan Connectors (CPUFAN1/SYSTEMFAN1)

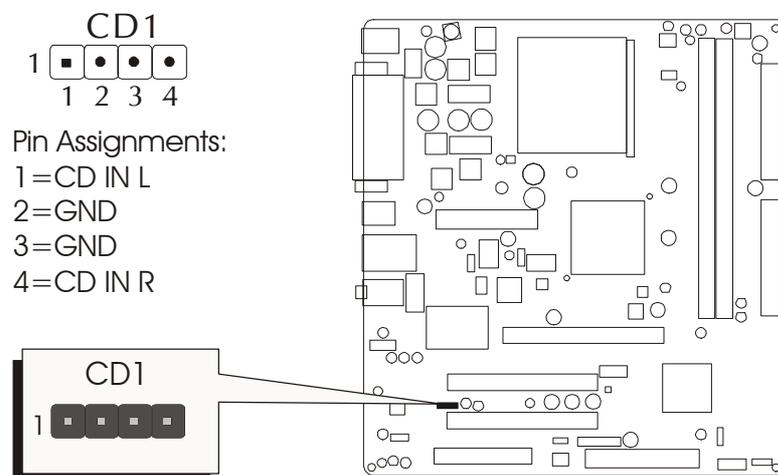
The mainboard provides two onboard 12V cooling fan power connectors to support CPU (CPUFAN1) and System (SYSTEMFAN1) cooling fans.



Note : Both cable wiring and type of plug may vary, which depend 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.

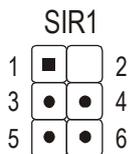
E3 Audio CD_IN Connector (CD1)

Port CD1 is used to attach the audio connector cable from the CD-ROM/DVD-ROM drive.



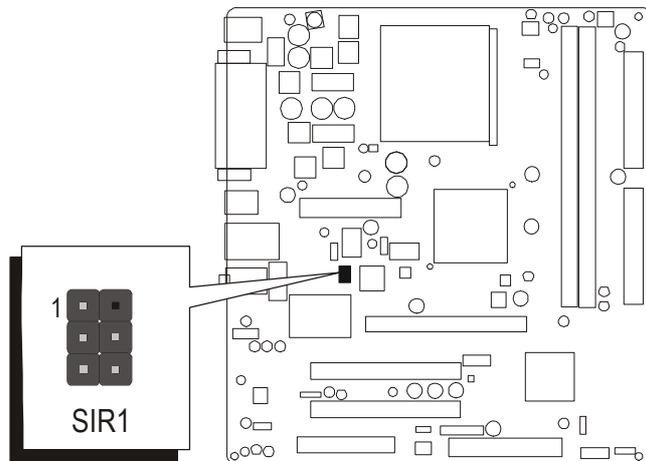
E4 IR Header (SIR1)

If you have an Infrared device, this mainboard can implement IR transfer function. This mainboard supports Normal or IrDA transfer mode. To enable this function, attach a 6-pin infrared device cable to the IR (SIR1) header, and refer to the diagram below for the IR pin assignments.



Pin Assignments:

- 1=NC
- 2=KEY
- 3=+5V
- 4=GND
- 5=IRTX
- 6=IRRX



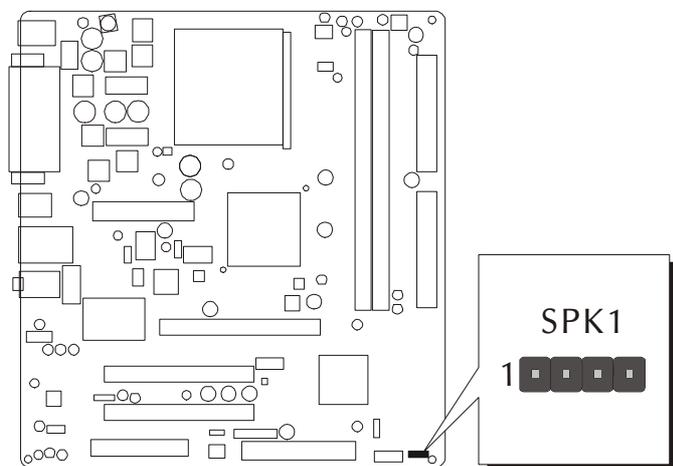
E5 Internal Speaker Header (SPK1)

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



Pin Assignments:

- 1=SPKR
- 2=NC
- 3=GND
- 4=+5V



3.3 System Memory Configuration

The MK40V/MK40VN mainboard has two 184-pin DIMM banks that allow you to install from 128MB up to 2GB of system memory. Each 184-pin DIMM (Dual In-line Memory Module) bank can accommodate 128MB, 256MB, 512MB, and 1GB of PC1600/PC2100/PC2700 compliant 2.5V single or double side DDR SDRAM modules. DIMM slots are arranged in two banks, each memory bank made of one bank and providing a 64-bit wide data path.

1. Install Memory:

Install memory in any or all of the banks. The combination shown as follows.

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

Note : The total installed memory does not exceed 2GB.

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.

2. Upgrade Memory:

You can easily upgrade the system memory by inserting additional DDR SDRAM modules in available DIMM banks. The total system memory is calculated by simply adding up the memory in all DIMM banks. 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

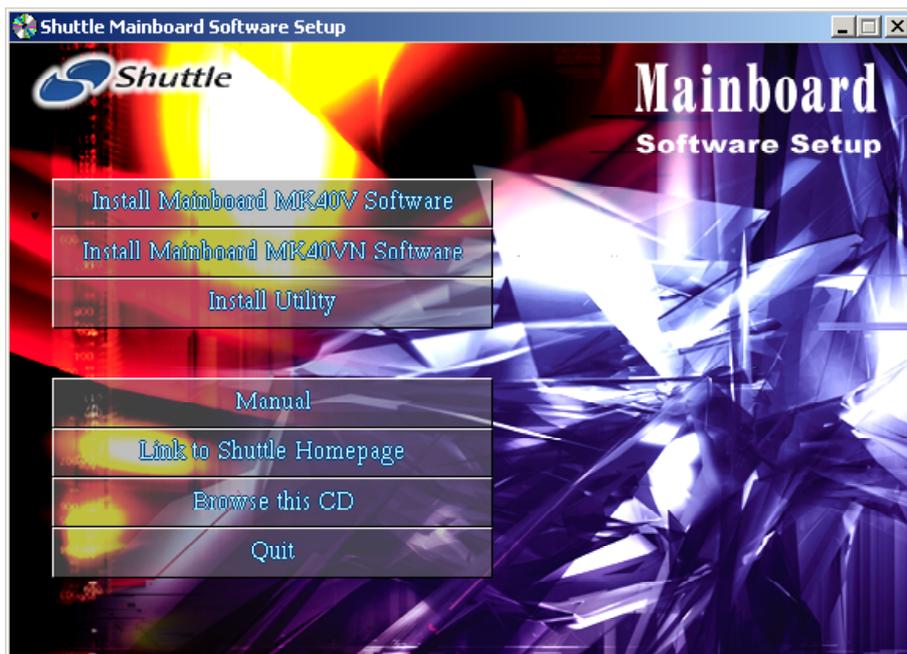
Note : The CD contents attached in MK40V/MK40VN mainboard are subject to change without notice.

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 MK40V Software -Installing VIA 4in1, VIA VGA , VIA USB2.0 and VIA Audio Drivers.
- ☞ Install Mainboard MK40VN Software - Installing VIA 4in1, VIA VGA, VIA USB2.0, VIA LAN and VIA Audio Drivers.
- ☞ Install Utility - Installing Acrobat Reader, WinFlash Utility
- ☞ Manual - MK40V/MK40VN 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. Use your pointing device (e.g. mouse) on the "Install Mainboard MK40V Software" bar to run into sub-menu. The software includes:

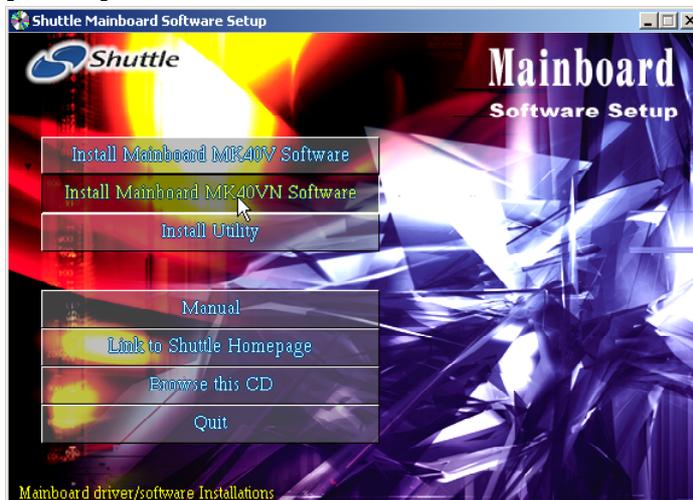
- [4.2.A] Install VIA 4in1 Driver
- [4.2.B] Install VIA VGA Driver
- [4.2.C] Install VIA USB2.0 Driver
- [4.2.D] Install VIA Audio Driver



MK40V

Or use your pointing device (e.g. mouse) on the "Install Mainboard MK40VN Software" bar to run into sub-menu. The software includes:

- [4.2.A] Install VIA 4in1 Driver
- [4.2.B] Install VIA VGA Driver
- [4.2.C] Install VIA USB2.0 Driver
- [4.2.D] Install VIA LAN Driver
- [4.2.E] Install VIA Audio Driver



MK40VN

4.2.A Install VIA 4in1 Driver

Select using your pointing device (e.g. mouse) on the "Install VIA 4in1 Driver" bar to install the chipset driver.



MK40V



MK40VN

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 VIA VGA Driver

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



MK40V



MK40VN

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 VIA USB2.0 Driver

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



MK40V



MK40VN

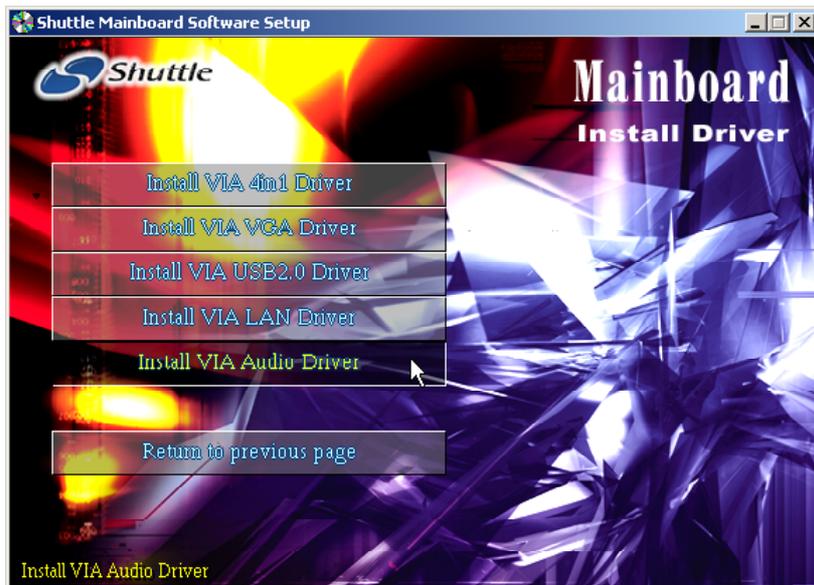
Once you made your selection, a Setup window run the installation automatically. When the copying files is done, make sure you reboot the system to take the installation effect.

4.2.D Install VIA Audio Driver

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



MK40V



MK40VN

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 VIA LAN Driver (MK40VN only)

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

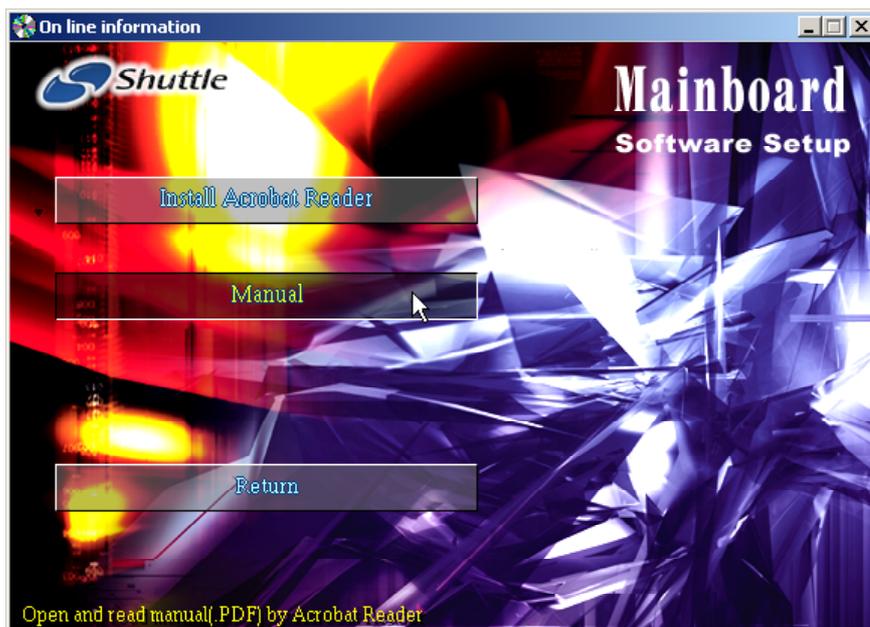
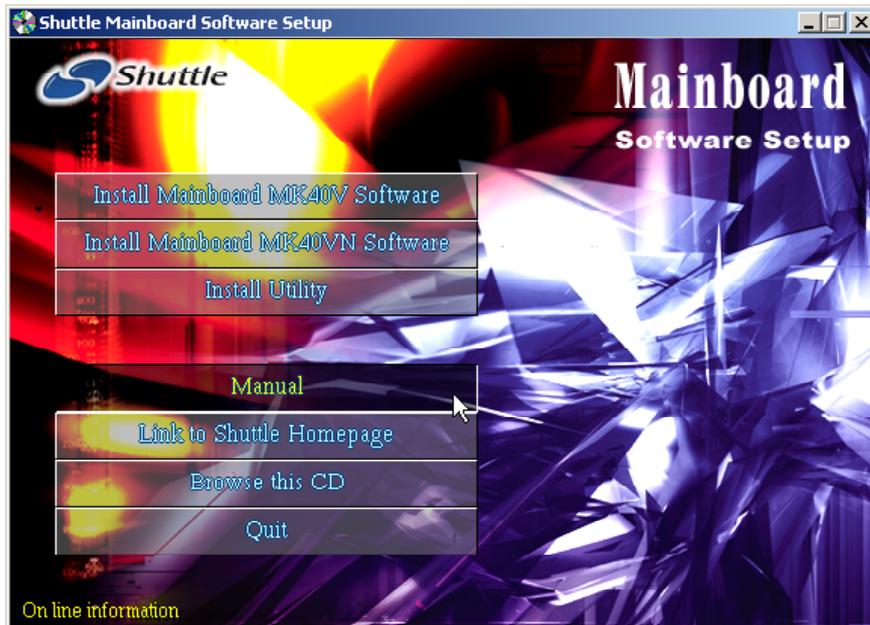
MK40VN



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

Select using your pointing device (e.g. mouse) on the "Manual" bar. Click on the "Install Acrobat Reader" bar if you need to install it, or click on "Manual" bar to view MK40V/MK40VN user's manual.



5 BIOS SETUP

MK40V/MK40VN 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 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>, keys simultaneously.

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:

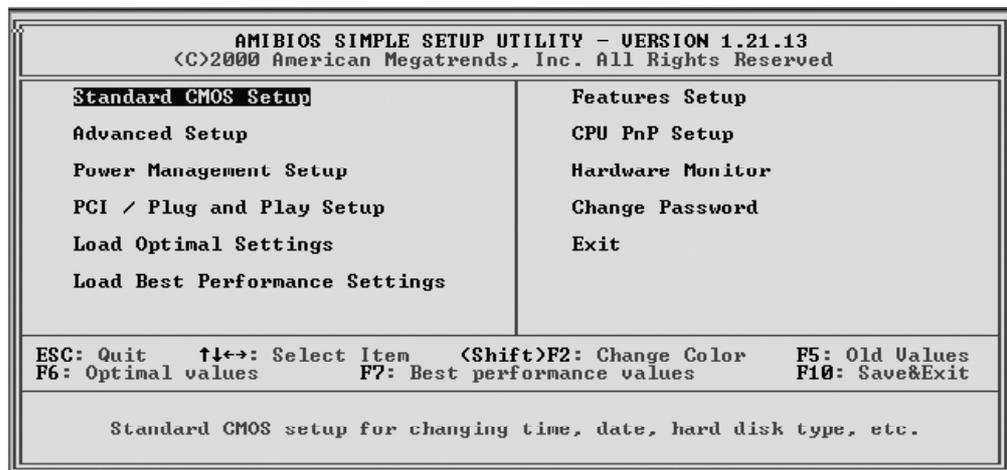
"Press F1 to Continue, DEL to Enter Setup"

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

Note: The content of this manual is subject to any change without notice in advance.

5.2 The Main Menu

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



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

Setup Items

The main menu includes the following main setup categories. Recall that some systems may not include all entries.

Standard CMOS Setup

Use this menu for basic system configuration.

Advanced Setup

Use this menu to set the Advanced information available on your system.

Power Management Setup

Use this menu to specify your settings for power management.

PCI / Plug and Play Setup

Use this menu to sets some of parameters for devices installed on the PCI bus and devices that use the system plug and play capability.

Load Optimal Settings

If you select this item and press Enter a dialog box apperars. If you press Y, and then Enter, 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

If you select this item and press Enter a dialog box apperars. If you press Y, and then Enter, 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 chips or other low-performance components.

Features Setup

Use this menu to sets some of the parameters for peripheral devices connected to the system.

CPU PnP Setup

Use this menu to lets you manually configure the mainboard for thw CPU.

Hardware Mointor

Use this menu to sets some of the parameters for the hardware monitoring function of this mainboard.

Change Password

Use this menu to change, set, or disable supervisor/user password. It allows you to limit access to the system and Setup, or only to Setup.

Exit

Save CMOS value changes in CMOS and exit from setup.

Standard CMOS Setup

The items in Standard CMOS Setup 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 Sen 04, 2003										
Time (hh/mm/ss) : 05:21:14										
	Type	Size	Cyln	Head	WPcom	Sec	LBA Mode	Blk Mode	PIO 32Bit 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									
Day:	01 - 31									
Year:	1980 - 2099									
							ESC	: Exit		
							↑↓	: Select Item		
							PU/PD/+/-	: Modify		
							(Shift)F2	: Color		
							F3	: Detect All HDD		

Date (mm : dd : yyyy)

Set the system date. Note that if you are running a Windows OS, this items are automatically updated whenever you make changes to the Windows Date.

Time (hh : mm : ss)

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

Pri/Sec Master/Slave

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

Floppy Drive A/DriveB

Select the type of floppy disk drive and installed in your system.

- The choice: Not Installed, 1.2MB, 5.25 in, 720KB, 3.5 in, 1.44MB, 3.5 in, or 2.88M, 3.5 in.

IDE Adapters

The IDE adapters control the hard disk drive. Use a separate sub-menu to configure each hard disk drive.

IDE HDD Auto-Detection

Press <Enter> to auto-detect HDD on this channel. If detection is successful, it fills the remaining fields on this menu.

IDE Primary Master

Selecting 'Manual' lets you set the remaining fields on this screen and select the type of fixed disk.

- The choice: None, Auto, or Manual.

Access Mode

Choose the access mode for this hard disk.

- The choice: CHS, LBA, Large, or Auto.

Capacity

Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk checking program.

The following options are selectable only if the 'IDE Primary Master' item is set to 'Manual', and the 'Access Mode' item is set to 'CHS'.

Cylinder

Set the number of cylinders for this hard disk.

- Min = 0, Max = 65535

Head

Set the number of read/write heads.

- Min = 0, Max = 255

Precomp

Warning: Setting a value of 65535 means no hard disk.

- Min = 0, Max = 65535

Landing Zone

Set the Landing Zone size.

- Min = 0, Max = 65535

Sector

Number of sector per track.

- Min = 0, Max = 255



Advanced Setup

This section allows you to configure your system for basic operation.

AMIBIOS SETUP - ADVANCED SETUP	
(C)2000 American Megatrends, Inc. All Rights Reserved	
Quick Boot	Disabled
1st Boot Device	Disabled
2nd Boot Device	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 > 64MB	No
L2 Cache	Disabled
System BIOS Cacheable	Disabled
Graphic Win Size	256MB
SDRAM Timing by SPD	Disabled
SDRAM CAS# Latency	3.0
SDRAM Bank Interleave	Disabled
Auto Detect DIMM/PCI Clk	Disabled
Spread Spectrum	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	

Quick Boot.

This item enables/disables the system starts up more quickly/slowly by elimination some of the power on test routines.

- The choice: Enabled or Disabled.

1st/ 2nd/ 3rd 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: IDE 0 ~ 3, Floppy, ARMD-FDD/,ARMD-HDD, CD/DVD-0 ~ 3, SCSI, Network, BBS-0 ~ 9, USB FDD,CDROM, HDD, RMD-FDD,RMD-HDD or Disabled.

Try Other Boot Device

If you enable this item, the system searches all other possible locations for and operating system if it fails to find one in the devices specified under the First, Second, and Third boot devices.

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

- The choice: Off or On.

Floppy Drive Swap

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 or Disabled.

Floppy Drive Seek

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

- 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 > 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.

- The choice: Yes or No.

L2 Cache

Leave these items enabled since all the processors that can be installed on this board have internal 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.

Graphic Win Size

This item defines the size of aperture if you use a graphic adapter.

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

SDRAM Timing by SPD

This item enables or disables the SDRAM timing defined by the Serial Presence Detect electrical.

- The choice: Enabled or Disabled.

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 choice: 1.5, 3.0, 2.5 or 2.

SDRAM Bank Interleave

Enable this item to increase SDRAM memory speed. When enabled, separate memory banks are set of odd and even addresses, and upcoming byte of memory is accessible while refreshing the current byte.

- The choice: 2-way/ 4-way or Disabled.

Auto detect DIMM/PCI Clk

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

- The choice: Enabled or Disabled.

Spread Spectrum

If you enable spread spectrum, it can significantly reduce the EMI (Electro Magnetic Interference) generated by the system.

- The choice: Enabled or Disabled.

Power Management Setup

The Power Management Setup allows you to configure your system to most effectively saving energy.

AMIBIOS SETUP - POWER MANAGEMENT SETUP	
<C>2000 American Megatrends, Inc. All Rights Reserved	
ACPI Aware O/S	No
Power Management	Disabled
Suspend Time Out	Disabled
Power Button < 4 Secs	Instant 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	PH/PD/+/- : Modify
F5 : Old Values	<Shift>F2 : Color
F6 : Load Optimal Values	
F7 : Load Best Performance Values	

ACPI Aware O/S

Enable this item if you are using an O/S that supports ACPI function such as Windows 98/ ME/ 2000.

- The choice: Yes or No.

Power Management

This item acts like a master switch for the power-saving modes and hard disk timeouts. If this item is set to Max Saving, power-saving modes occur after a short timeout. If it is set to Min Saving, power-saving modes occur after a longer timeout. If it is set to User Define, you can insert your own timeouts for the power-saving modes.

- The choice: Enabled or Disabled.

Suspend Time Out

When this item is not disabled and after the setup time of system inactivity, all devices except the CPU will be shut off.

- The choice: Disabled, 1 Min, 2 Min, 4 Min, 6 Min, 8 Min, 10 Min, 20 Min, 30 Min, 40 Min, or 60 Min.

PWR Button < 4 secs

Under ACPI 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 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 4 seconds to cause a software power down.

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

Resume On RTC Alarm Date/ Hour/ Minute/ Second

When Enabled, set the date and time of the RTC (Real-Time Clock) alarm will awaken the system from a suspend mode.

- The choice: Disabled or Enabled.

Date (of Month)

This item selects the alarm date.

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

Resume Time (hh:mm:ss)

This item selects the alarm time.

[hh] ➤ Key in a DEC number: Min = 0, Max = 23.

[mm] ➤ Key in a DEC number: Min = 0, Max = 59.

[ss] ➤ Key in a DEC number: Min = 0, Max = 59.

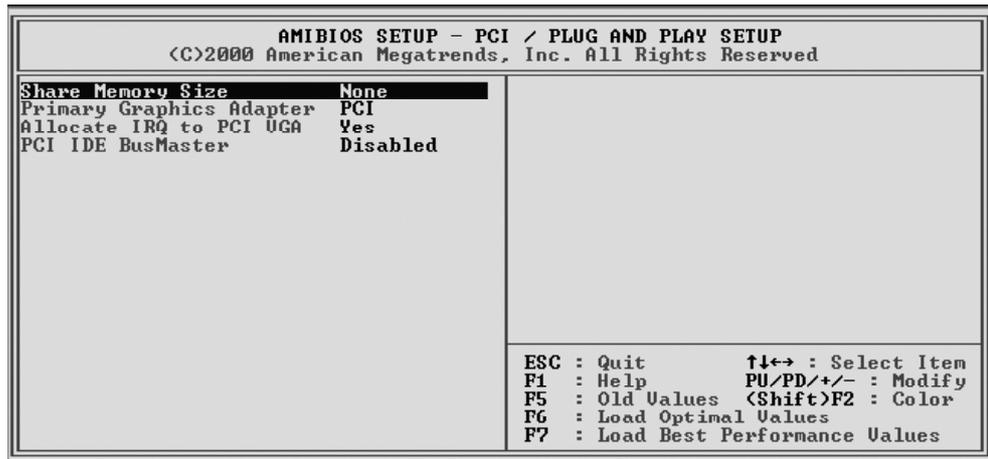
LAN/ Ring Power On

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

These items set some of the parameters for devices installed on the PCI bus and devices that use the system plug and play capability.



Share Memory size

This item lets you allocate a portion of the main memory for the onboard VGA display application.

- The Choice: 8MB, 16MB, 32MB, 64MB or None.

Primary Graphics Adapter

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

- The Choice: PCI or AGP.

Allocate IRQ to 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: Enabled or Disabled.

Load Optimal Settings

Pressing <Enter> on this item asks for confirmation: Load Optimal Settings (Y/N) ? Y

Pressing 'Y' 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

Pressing <Enter> on this item asks for confirmation: Load Best Performance Settings (Y/N) ? Y

Pressing 'Y' 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

These items set some of the parameters for peripheral devices connected to the system.

AMIBIOS SETUP - FEATURES SETUP	
<C>2000 American Megatrends, Inc. All Rights Reserved	
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 PCI IDE	Reserved
Audio Device	Enabled
Modem Device	Enabled
Ethernet Device	Disabled
OnBoard USB Function	Disabled
USB Function For DOS	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	

OnBoard FDC

Use this item to enable or disable the onboard floppy disk drive interface.

- The choice: Auto, Enabled or Disabled.

OnBoard Serial PortA

Use this item to enable or disable the onboard COM1 serial port, and to assign a port address.

- The choice: Auto, Disabled, 3FB/COM1 /2FB/COM2/ 3E8/COM3/ 2E8/COM4.

OnBoard IR Port

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

- The choice: IrDA, ASKIR or Disabled.

OnBoard Parallel Port

Use this item to enable or disable the onboard LPT1 port mode, and to assign a port address.

- The choice: 378, 278, 3BC, Auto or Disabled.

Parallel Port Mode

Use this item to set the onboard parallel port mode.

- The choice: SPP (Standard Parallel Port), ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port) or ECP + EPP.

Parallel Port IRQ

Use this item to assign IRQ to the parallel port.

- The choice: IRQ 5 or IRQ 7.

Parallel Port DMA

Use this item to assign a DMA channel to the parallel port.

- The choice: 0, 1 or 3.

OnBoard PCI IDE

This item enables or disables either or both of the onboard Primary and Secondary IDE channels.

Audio Device

Use this item to set the onboard AC'97 audio chip.

- The choice: Enabled or Disabled.

Modem Device

Use this item to set the onboard AC'97 modem chip.

- The choice: Auto, Enabled or Disabled.

Ethernet Device

Use this item to set the onboard AC'97 Ethernet LAN.

- The choice: Enabled or Disabled.

OnBoard USB Function

Enable this item if you plan to use the USB ports on this mainboard.

- The choice: Enabled or Disabled.

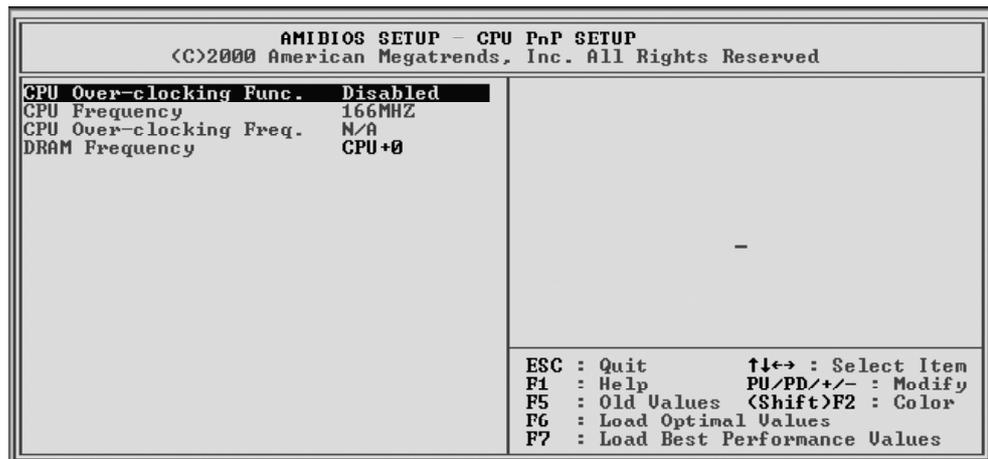
USB Function for DOS

Enable this item if you plan to use the USB ports on this mainboard in a DOS environment.

- The choice: Enabled or Disabled.

CPU PnP Setup

Use this menu to let you manually configure the mainboard for the CPU. The system will automatically detect the kind of CPU that you have installed and make the appropriate adjustments to the items.



CPU Over-Clocking Func.

This item allows you to set the CPU over-clocking function.

- The choice: Enabled or Disabled.

CPU/DRAM Frequency Ratio

This item allows you to set the CPU/ DRAM frequency.

- The choice: 167 ~ 198.

CPU Over-Clocking Frequency.

This item allows you to set the CPU over-clocking frequency.

- The choice: Auto, CPU + 0, CPU + 33 or CPU + 66.



Hardware Monitor

Use this menu to sets some of the parameters for the hardware monitoring function of this mainboard.

AMIBIOS SETUP - HARDWARE MONITOR	
<C>2000 American Megatrends, Inc. All Rights Reserved	
-== System Hardware ==-	
Vcore	4.080 U
Vdimm	4.080 U
Vivdd	4.080 U
Vcc5V	6.854 U
SB3V	4.080 U
SYSTEM FAN Speed	0 RPM
CPU FAN Speed	0 RPM
SYSTEM Temperature	-1°C/-33°F
CPU Temperature	-1°C/-33°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	

CPU/System Temperature

This item display CPU and sytem temperature measurement.

FANs & Voltage Measurements

These items indicate cooling fan speeds in RPM and the various system voltage measurements.



Change Password

Use this menu to change, set, or disable supervisor/user password. It allows you to limit access to the system and Setup, or only to Setup.

AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.21.13	
<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	password
Load Optimal Setting	Enter new password:
Load Best Performance	
ESC: Quit ↑↓↔: Select Item <Shift>F2: Change Color F5: Old Values F6: Optimal values F7: Best performance values F10: Save&Exit	
Change password	

Steps to set supervisor/user password are described as follows:

New Password Setting:

1. While pressing <Enter> to set a password, a dialog box appears to ask you enter a password.
2. Key in a new password that can not exceed eight characters.
3. System will request you to confirm the new password again.
4. When completed, new code takes effect.

No Password Setting:

If you want to disable the password, just press <Enter> as a password input is requested.

If You Forget Password:

If you forget the password, the only way to access the system is to clear the CMOS memory. Please refer to page 25 on clear CMOS setting.

 **Exit**

Pressing <Enter> on this item asks for confirmation: SAVE to CMOS and EXIT (Y/N) ? Y

Pressing 'Y' stores the selections made in the menus of CMOS. 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.