

P4V8X-MX

User Guide



Motherboard

E2227

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Notices

Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.

Safety Information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

About This Guide

How this guide is organized

This manual contains the following parts:

- **Chapter 1: Product Introduction**
This chapter describes the features of the motherboard and the new technology it supports. It also lists the hardware setup procedures that you have to perform when installing system components. It includes description of the jumpers and connectors on the motherboard.
- **Chapter 2: BIOS Information**
This chapter tells how to change system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.
- **Chapter 3: Software Support**
This chapter describes the contents of the support CD that comes with the motherboard package.

Conventions used in this guide

To make sure that you perform certain tasks properly, take note of the following symbols used throughout this guide.



WARNING: Information to prevent injury to yourself when trying to complete a task.



CAUTION: Information to prevent damage to the components when trying to complete a task.



IMPORTANT: Information that you **MUST** follow to complete a task.



NOTE: Tips and additional information to aid in completing a task.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. **ASUS websites**
The ASUS websites worldwide provide updated information on ASUS hardware and software products. Refer to the ASUS contact information.
2. **Optional documentation**
Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

P4V8X-MX Specifications Summary

CPU	Socket 478 for Intel Pentium 4/ Celeron processor Intel Hyper-Threading Technology ready Supports Intel Prescott CPU
Chipset	VIA P4M800 VIA 8237R PLUS
Front Side Bus (FSB)	800/533/400 MHz
Memory	2 x 184-pin DIMM Sockets for up to 2GB DDR 333/266, non-ECC DDR SDRAM memory
Expansion Slots	1 x AGP 8X (1.5V only) 3 x PCI
VGA	Integrated UniChrome Pro 3D/2D Graphics & Video Controller Supports 64MB Share Memory size Microsoft DirectX 9.0 and OpenGL (Please update VGA driver and Direct 9.0 driver in support CD to support Direct 9.0)
Storage	VIA 8237R PLUS South Bridge: *2 x Serial ATA, RAID 0, RAID 1, JBOD *2 x UltraDMA 133/100/66/33
Audio	C-Media CMI9761A 6-channel CODEC
LAN	Integrated 10/100Mbps LAN controller + VIA 6103 PHY
USB 2.0	Supports up to eight USB 2.0 ports
ASUS Special features	ASUS CrashFree BIOS 2 ASUS EZ Flash ASUS MyLogo2
Overclock Features	FSB frequency adjustable with 1MHz step (SFS) ASUS C.P.R. (CPU Parameter Recall)
Back panel I/O ports	1 x Parallel port 1 x Serial (COM1) port 1 x PS/2 Keyboard port (purple) 1 x PS/2 Mouse port (green) 1 x VGA 1 x 6-channel Audio I/O port 4 x USB 2.0/1.1 ports 1 x LAN (RJ-45) port
Internal I/O connectors	2 x USB connectors supports additional 4 USB ports CPU/Chassis FAN connectors 20-pin ATX power connector 4-pin ATX 12V Power connector Chassis Intrusion connector S/PDIF out connector CD/AUX audio in connectors 20-pin Panel connector Front panel audio connector

(continued next page)

P4V8X-MX Specifications Summary

BIOS features	4 Mb Flash ROM, AMI BIOS, PnP, DMI2.0, WfM2.0, SM BIOS 2.3, ACPI 2.0a, C.P.R. (CPU Parameter Recall), ASUS CrashFree BIOS2, ASUS EZ Flash, MyLogo2, PXE, RPL
Industry standard	PCI 2.2, USB 2.0/1.1
Manageability	WfM 2.0, DMI 2.0, WOL by PME, WOR by PME
Support CD	Drivers ASUS PC Probe Anti-Virus Software (OEM version) ASUS LiveUpdate Utility
Accessory	1 x UltraDMA 133/100/66 cable 1 x Serial ATA / Power cable 1 x FDD cable User's Manual I/O shield
Form factor	Micro ATX Form Factor, 9.6" x 8" (24.5cm x 19.6cm)

* Specifications are subject to change without notice.

This chapter describes the motherboard features and the new technologies it supports.

1 Product Introduction

1.1 Welcome!

Thank you for buying an ASUS® P4V8X-MX motherboard!

The motherboard delivers a host of new features and latest technologies, making it another standout in the long line of ASUS quality motherboards!

Before you start installing the motherboard, and hardware devices on it, check the items in your package with the list below.

1.2 Package contents

Check your motherboard package for the following items.

Motherboard	ASUS P4V8X-MX motherboard
Cables	1 x UltraDMA 133/100/66 cable 1 x Serial ATA / Power cable 1 x Floppy Disk Drive cable
Accessories	I/O shield
Application CDs	ASUS motherboard support CD
Documentation	User guide



If any of the above items is damaged or missing, contact your retailer.

1.3 Special features

1.3.1 Product highlights

Intel Hyper-Threading Technology support

Leveraging the VIA P4M800 chipset to support P4 CPU on 800Hz FSB, DDR400 memory, Intel Hyper-Threading Technology, and a full-range of advanced features. See Page 1-7.

Integrated Graphics

The VIA P4M800 delivers powerful integrated 2D and 3D graphics performance for functionality and value.

AGP8X

AGP8X (AGP 3.0) is the mainstream VGA interface specification that enables enhanced graphics performance with high bandwidth up to 2.12 GB/s. See page 1-14 for details.

Serial ATA technology



Serial ATA is the next generation ATA specification that provides scalable performance for today and tomorrow. With up to 150MB/s data transfer rate, Serial ATA is faster than current Parallel ATA, while providing software compatibility with the legacy Parallel ATA (See page 1-19 for details).

Integrated 10/100 LAN controller



A 10/100Mbps Fast Ethernet controller is embedded in this motherboard to give you a fast and reliable connection to a local area network (LAN) and the Internet.

USB 2.0 technology



USB 2.0 is the latest connectivity standard for next generation components and peripherals. Backwards compatible with current USB 1.1 peripherals, USB 2.0 delivers transfer speeds up to 40 times faster at 480 MB/s, for easy connectivity and ultra-fast data transfer rate (See pages 1-17 & 1-20 for details).

1.3.2 Innovative ASUS features

ASUS CrashFree BIOS 2



The CrashFree BIOS2 feature now includes the BIOS auto-recovery function in a support CD. Users can reboot their system through the support CD when a bootable disk is not available, and go through the simple BIOS auto-recovery process. ASUS motherboards now enable users to enjoy this protection feature without the need to pay for an optional ROM (See page 2-6).

ASUS EZ Flash BIOS



With ASUS EZ Flash, you can update BIOS before entering operating system. No more DOS-based flash utility and bootable diskette required (See page 2-5).

C.P.R. (CPU Parameter Recall)



When the system hangs due to overclocking failure, there is no need to open the case to clear CMOS data. Just simply restart the system, the BIOS would show the previous setting and then users can amend the CPU setting again.

ASUS MyLogo 2



You can convert your favorite photo into a 256-color boot logo for a more colorful and vivid image on your screen.

1.4 Before you proceed

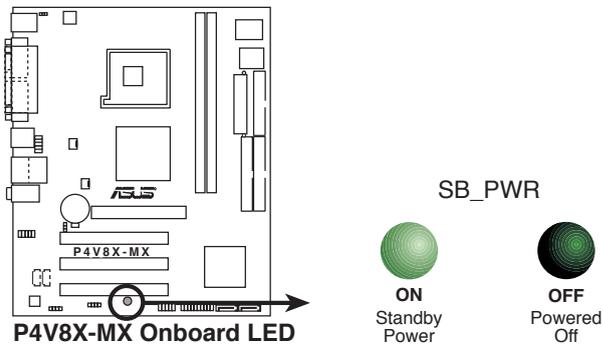
Take note of the following precautions before you install motherboard components or change any motherboard settings.



- Unplug the power cord from the wall socket before touching any component.
- Use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity
- Hold components by the edges to avoid touching the ICs on them.
- Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.
- Before you install or remove any component, ensure that the ATX power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

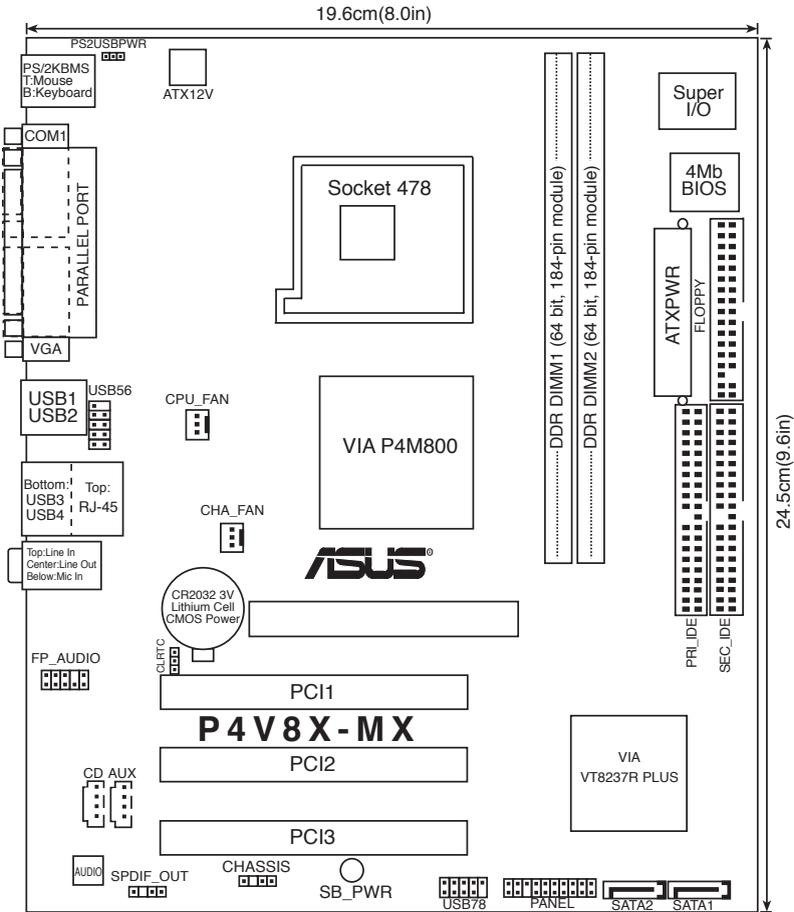
Onboard LED

The motherboard comes with a standby power LED that lights up to indicate that the system is ON, in sleep mode, or in soft-off mode. This is a reminder that you should shut down the system and unplug the power cable before removing or plugging in any motherboard component. The illustration below shows the location of the onboard LED.



1.5 Motherboard overview

1.5.1 Motherboard layout



1.5.2 Placement direction

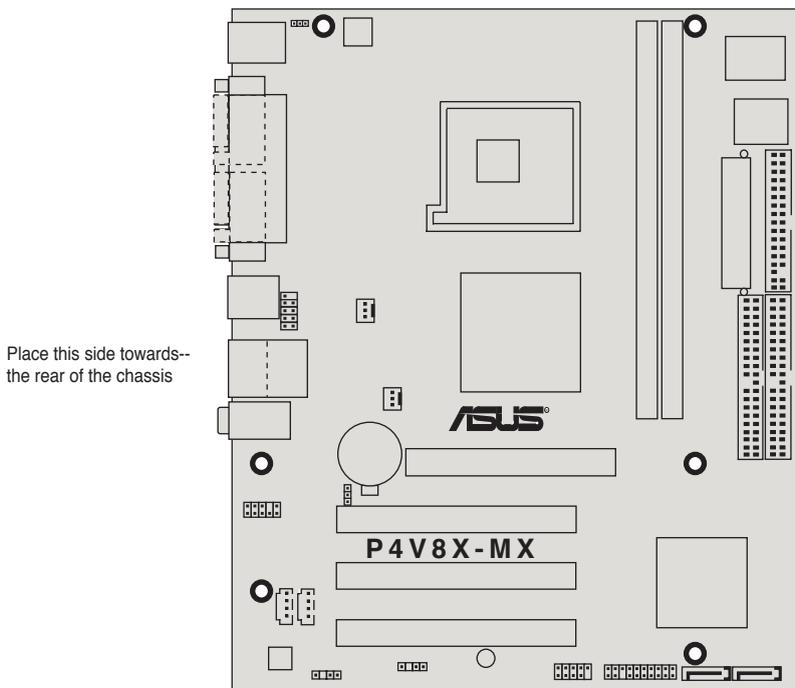
When installing the motherboard, make sure that you place it into the chassis in the correct orientation. The edge with external ports goes to the rear part of the chassis as indicated in the image below.

1.5.3 Screw holes

Place six screws into the holes indicated by circles to secure the motherboard to the chassis.



Do not overtighten the screws! Doing so can damage the motherboard.



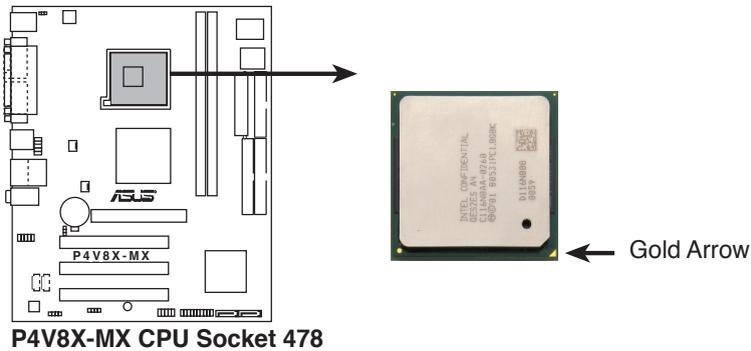
1.6 Central Processing Unit (CPU)

1.6.1 Overview

The motherboard has a Socket 478 for installation. The Intel Pentium 4/Celeron CPU has a “marked” corner. This corner is usually indicated with a notch, and/or a golden square or triangle. Refer to this indicator when orienting the CPU. A fan and heat sink should be installed on top of the CPU to prevent overheating.



Do not use processors with core speeds of less than 1GHz.



Notes on Intel Hyper-Threading Technology



1. This motherboard supports Intel® Pentium® 4 CPUs with Hyper-Threading Technology
2. Hyper-Threading Technology is supported under Windows® XP and Linux 2.4.x (kernel) and later versions only. Under Linux, use the Hyper-Threading compiler to compile the code. If you are using any other operating systems, disable the Hyper-Threading Technology item in BIOS to ensure system stability and performance.
3. It is recommended that you install Windows® XP Service Pack 1.
4. Make sure to enable the Hyper-Threading Technology item in BIOS before installing a supported operating system.
5. For more information on Hyper-Threading Technology, visit www.intel.com/info/hyperthreading.

To use the Hyper-Threading Technology on this motherboard:

1. Buy an Intel Pentium 4 CPU that supports Hyper-Threading Technology, Install the CPU
2. Power up the system and enter BIOS Setup (see Chapter 4). Under the AAdvanced Menu, make sure that the item **Hyper-Threading Technology** is set to Enabled, The item appears only if you installed a CPU that supports Hyper-Threading Technology.
3. Reboot the computer

1.6.2 Installing the CPU

Follow these steps to install a CPU:

1. Locate the CPU socket. Open the socket by pulling the lever gently sideways away from the socket, then lift the lever upwards to a 90 to 100-degree angle.
2. Insert the CPU with the correct orientation. The notched or golden corner of the CPU must be oriented toward the inner corner of the socket base nearest to the lever hinge.

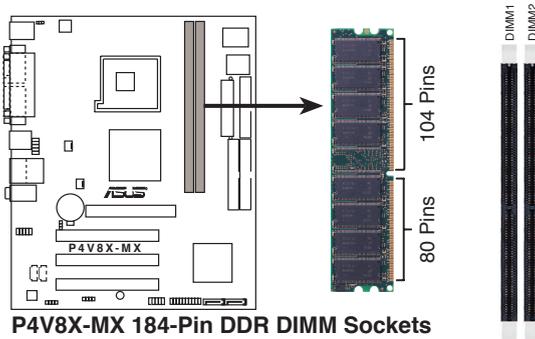


The CPU should drop easily into place. Do not force the CPU into the socket to avoid bending the pins. If the CPU does not fit, check its alignment and look for bent pins.

1.7 System memory

1.7.1 Overview

The motherboard has two Double Data Rate (DDR) DIMM sockets that support up to 2 GB unbuffered non-ECC DDR333/266 DDR SDRAM DIMMs. Each DIMM socket is double-sided.



1.7.2 Memory configurations

You may install single or double-sided 64 MB, 128 MB, 256 MB, 512 MB, and 1 GB DDR DIMMs to the sockets.



1. DIMMs with more than 8 devices on each side of the module are not supported.
2. Make sure the memory frequency and bus frequency setting in the BIOS are the same or set to [Auto] ensure system stability.
3. A DDR DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket to avoid damaging the DIMM.
4. For optimum compatibility, it is recommended that you obtain memory modules from qualified vendors. See the next page for a list of qualified DDR333 DIMM vendors.
5. Visit ASUS website (www.asus.com) for latest DDR333 Qualified Vendor List.

Qualified Vendors List (QVL)

Size	Vendor	Model	CL	Brand	SS/DS	Component
256MB	Kingston	KVR333X64C25/256	N/A	Kingston	SS	D3208DH1T-6
256MB	Kingston	KVR333X64C25/256	N/A	Hynix	DS	HY5DU56822BT-D43
512MB	Kingston	KVR333X64C25/512	N/A	Kingston	DS	D3208DH1T-6
512MB	Kingston	KVR400X64C3A/512	N/A	Hynix	DS	HY5DU56822BT-D43
512MB	Kingston	KVR400X64C3A/512	N/A	Kingston	DS	D3208DH1T-5
256MB	Kingston	KVR400X64C3A/256	N/A	Kingston	SS	D3208DL3T-5A
256MB	Kingston	KVR400X64C3A/256	N/A	PSC	SS	A2S56D30BTP
1G	Kingston	KVR400X64C3A/1G	N/A	Infineon	DS	HYB25D512800BE-5B
256MB	Infineon	HYS64D32300HU-5-C		Infineon	SS	HYB25D256800CE-5C
512MB	Infineon	HYS64D64320HU-5-C		Infineon	DS	HYB25D256800CE-5C
512MB	Infineon	HYS64D64300HU-5-B	N/A	Infineon	SS	HYB25D512800BE-5B
256MB	Infineon	HYS64D32300GU-5-C	N/A	Infineon	SS	HYB25D256800CE-5C
512MB	Infineon	HYS64D64320HU-6-C	N/A	Infineon	DS	HYB25D256800CE-6C
256MB	HY	HYMD232646D8J-D43		Hynix	SS	HY5DU56822DT-D43
512MB	HY	HYMD264646D8J-D43	N/A	Hynix	DS	HY5DU56822DT-D43
256MB	HY	HYMD232646B8J-J	N/A	Hynix	SS	HY5DU56822BT-J
512MB	HY	HYMD264646B8J-J	N/A	Hynix	DS	HY5DU56822BT-J
256MB	Corsair	VS256MB400	N/A	Value select	SS	VS32M8-5 2B0409
256MB	Corsair	XMS3202V3.1		Infineon	SS	HYB25D256807BT-5B
512MB	Corsair	VSS12MB400	N/A	Value select	DS	VS32M8-5 2B0402
256MB	Corsair	XMS2700v1.1		Winbond	SS	W942508BH-6
256MB	Corsair	VS256MB333	N/A	Samsung	SS	K4H5608380-TCB3
512MB	Corsair	XMS2702V3.1		Mosel	DS	V58C2256804SAT6
512MB	Corsair	XMS2702v1.2		Winbond	DS	W942508CH-6
512MB	Micron	MT16VDDT6464AG-335GB	N/A	Micron	DS	MT46V32M8TG-6TG
256MB	Micron	MT8VDDT3264AG-335GB		Micron	SS	MT46V32M8TG-6TG
512MB	Micron	MT16VDDT6464AG-40BCB		Micron	DS	MT46V32M8TG-6TCB
256MB	Samsung	M368L3223FTN-CCC		Samsung	SS	K4H560838F-TCCC
512MB	Samsung	M368L6423FTN-CCC		Samsung	DS	K4H560838F-TCCC
256MB	Samsung	M368L3223FTN-CB3		Samsung	SS	K4H560838F-TCB3
512MB	Samsung	M368L6423FTN-CB3		Samsung	DS	K4H560838F-TCB3
256MB	Winbond	U24256ADWBG6H20	N/A	Winbond	SS	W942508CH-5
256MB	Winbond	U24256AAWBG6H20	N/A	Winbond	SS	W942508CH-6
512MB	Winbond	DDR333-512	N/A	Winbond	DS	W942508BH-6
512MB	Winbond	U24512ADWBG6H20	N/A	Winbond	DS	W942508CH-5
256MB	Elpida	U24256ADEPG6H20	N/A	Elpida	SS	DD2508AKTA-5C
512MB	Elpida	U24512ADEPG6H20	N/A	Elpida	DS	DD2508AMTA
256MB	Transcend	DDR400-256	N/A	Samsung	SS	K4H560838F-TCCC
256MB	Transcend	103004-0720		PSC	SS	A2S56D30BTP
512MB	Transcend	102709-0001		PSC	DS	A2S56D30A1P
512MB	Transcend	DDR400-512	N/A	Mosel	DS	V58C2256804SAT5B
512MB	Transcend	DDR400-512	N/A	Samsung	DS	K4H560838F-TCCC
256MB	Transcend	111448-0214		PSC	SS	A2S56D30BTP
512MB	Transcend	DDR333-512	N/A	Hynix	DS	HY5DU56822CT-J
512MB	Kingmax	MPMC22D-38HT3R	N/A	Hynix	DS	HY5DU56822BT-J
256MB	Kingmax	MPXB62D-38KT3R	N/A	Kingmax	SS	KDL388P4LA-50
512MB	Kingmax	MPXC22D-38KT3R	N/A	Kingmax	DS	KDL388P4EA-50
512MB	Mosel	V826664K24SATG-D3		Mosel	DS	V58C2256804SAT5
256MB	Nanya	NT256D64S88B1G-5T		Nanya	SS	NT5DS32M8BT-5T
512MB	Nanya	NT512D64S88B1G-5T		Nanya	DS	NT5DS32M8BT-5T
512MB	Nanya	NT512D64S88C0GY-5T	N/A	Nanya	SS	NT5DS64M8CS-5T
1G	Nanya	NT1G64S88C0GY-5T	N/A	Nanya	DS	NT5DS64M8CS-5T
512MB	Apacer	77.90728.U1G		Apacer	DS	AM3A568AJT-6B
256MB	Apacer	77.10636.46G		Samsung	SS	K4H560838E-TCCC
256MB	Apacer	77.10636.56G		Mosel	SS	V58C2256804SAT5B
512MB	Apacer	77.10736.11G		Infineon	DS	HYB25D256800BT-5B
256MB	Smart	U24256ADSRG6H20	N/A	Smart	SS	D32M8XS50H3X4AMV
256MB	Smart	U24256ADSRG6H20	N/A	Smart	SS	D32M8XS60HBX4AMV
512MB	Smart	U24512ADSRG6H20	N/A	Smart	DS	D32M8XS50H3X4AMV
512MB	Smart	U24512ADSRG6H20	N/A	Smart	DS	D32M8XS60HBX4AMV
256MB	Twinmos	DDR333-256		Twinmos	SS	TMD7608F8E60B
256MB	Twinmos	M2G9108A-TT		Twinmos	SS	TMD7608F8E501

Note: When you use 400MHz memory module, the default data of this motherboard run the efficiency of 333MHz.

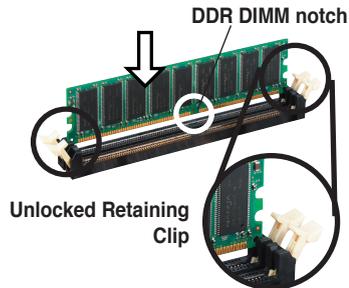
1.7.3 Installing a DIMM



Make sure to unplug the power supply before adding or removing DIMMs or other system components. Failure to do so may cause severe damage to both the motherboard and the components.

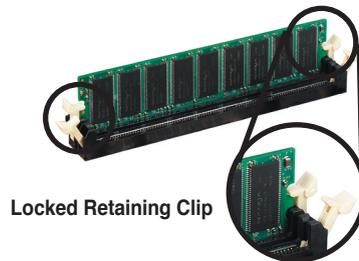
Follow these steps to install a DIMM.

1. Locate the DIMM sockets in the motherboard.
2. Unlock a DIMM socket by pressing the retaining clips outward.
3. Align a DIMM on the socket such that the notch on the DIMM matches the break on the socket.



A DDR DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket to avoid damaging the DIMM.

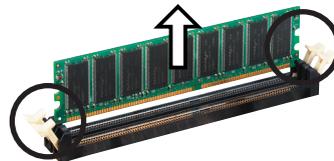
4. Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM is properly seated.



1.7.4 Removing a DIMM

Follow these steps to remove a DIMM.

1. Simultaneously press the retaining clips outward to unlock the DIMM.



Support the DIMM lightly with your fingers when pressing the retaining clips. The DIMM might get damaged when it flips out with extra force.

2. Remove the DIMM from the socket.

1.8 Expansion slots

In the future, you may need to install expansion cards. The following sub-sections describe the slots and the expansion cards that they support.



Make sure to unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage motherboard components.

1.8.1 Installing an expansion card

To install an expansion card:

1. Before installing the expansion card, read the documentation that came with it and make the necessary hardware settings for the card.
2. Remove the system unit cover (if your motherboard is already installed in a chassis).
3. Remove the bracket opposite the slot that you intend to use. Keep the screw for later use.
4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
5. Secure the card to the chassis with the screw you removed earlier.
6. Replace the system cover.

1.8.2 Configuring an expansion card

After installing the expansion card, configure it by adjusting the software settings.

1. Turn on the system and change the necessary BIOS settings, if any. See Chapter 2 for information on BIOS setup.
2. Assign an IRQ to the card. Refer to the tables on the next page.
3. Install the software drivers for the expansion card.

Standard interrupt assignments

IRQ	Priority	Standard Function
0	1	System Timer
1	2	Keyboard Controller
2	N/A	Re-direct to IRQ#9
3	11	IRQ holder for PCI steering
4	12	Communications Port (COM1)
5	13	IRQ holder for PCI steering
6	14	Floppy Disk Controller
7	15	Printer Port (LPT1)
8	3	System CMOS/Real Time Clock
9	4	IRQ holder for PCI steering
10	5	IRQ holder for PCI steering
11	6	IRQ holder for PCI steering
12	7	PS/2 Compatible Mouse Port
13	8	Numeric Data Processor
14	9	Primary IDE Channel
15	10	Secondary IDE Channel

IRQ assignments for this motherboard

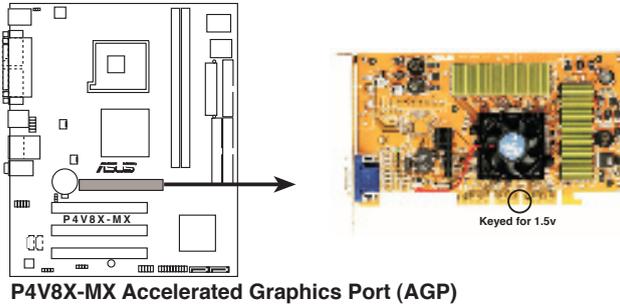
	A	B	C	D	E	F	G	H
PCI slot 1	—	used	—	—	—	—	—	—
PCI slot 2	—	—	used	—	—	—	—	—
PCI slot 3	—	—	—	used	—	—	—	—
Onboard USB Controller 1	—	—	—	—	—	shared	—	—
Onboard USB Controller 2	—	—	—	—	—	shared	—	—
Onboard USB Controller 3	—	—	—	—	—	shared	—	—
Onboard USB Controller 4	—	—	—	—	—	shared	—	—
Onboard AC97 Audio	—	—	—	—	—	—	used	—
Onboard LAN	—	—	—	—	—	—	—	used



When using PCI cards on shared slots, ensure that the drivers support “Share IRQ” or that the cards do not need IRQ assignments; otherwise, conflicts will arise between the two PCI groups, making the system unstable and the card inoperable.

1.8.3 AGP slot

The motherboard has an Accelerated Graphics Port (AGP) slot that supports +1.5 V 8X AGP graphics card. Note the notches on the card golden fingers to ensure that they fit into the AGP slot.



1.8.4 PCI slots

The PCI slots support cards such as a LAN card, SCSI card, USB card, and other cards that comply with PCI specifications. The figure shows a LAN card installed on a PCI slot.



1.9 Jumpers

1. Clear RTC RAM (CLRRTC)

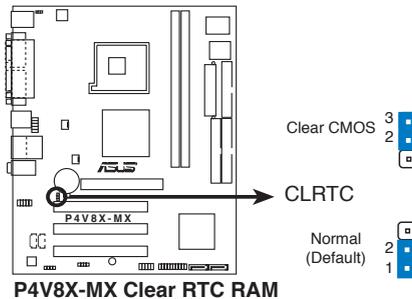
This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS, which include system setup information such as system passwords.

To erase the RTC RAM:

- a. Turn OFF the computer and unplug the power cord.
- b. Remove the onboard battery.
- c. Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep the cap on pins 2-3 for about 5~10 seconds, then move the cap back to pins 1-2.
- d. Reinstall the battery.
- e. Plug the power cord and turn ON the computer.
- f. Hold down the key during the boot process and enter BIOS setup to re-enter data. Please save all data before you exist.



Except when clearing the RTC RAM, never remove the cap on CLRRTC jumper default position. Removing the cap will cause system boot failure!

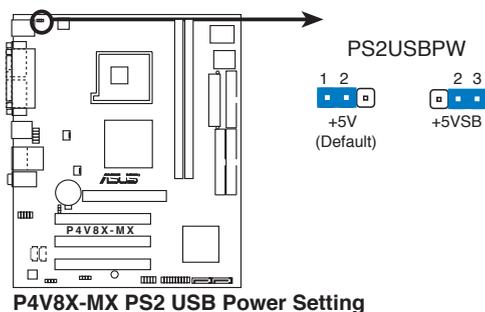


2. PS2/USB Device Wake-up (3-pin PS2USBPW)

This jumper allows you to enable or disable the USB/PS2 keyboard or mouse wake-up feature. Set this jumper to +5V to wake up the computer from S1 sleep mode (CPU stopped, DRAM refreshed, system running in low power mode) using the connected keyboard, mouse or USB devices. Set this jumper to pins 2-3 (+5VSB) to wake up from S3 and S4 sleep modes (no power to CPU, DRAM in slow refresh, power supply in reduced power mode).



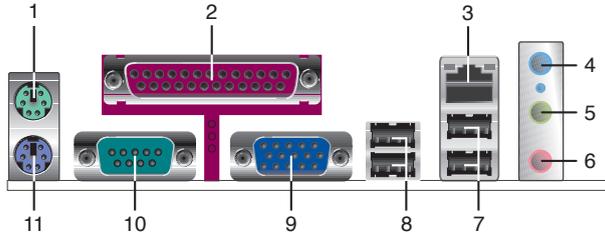
The versions which are after 1.01 version can support S3.



1. This device wake-up feature requires a power supply that can provide 500mA on the +5VSB lead for each USB, keyboard and mouse devices, otherwise, the system will not power up.
2. The total current consumed must NOT exceed the power supply capability (+5VSB) whether under normal condition or in sleep mode.
3. Only PCB 2.00 or later version can support S3 function.

1.10 Connectors

1.10.1 Rear panel connectors



1. PS/2 mouse port (green). This port is for a PS/2 mouse.
2. Parallel port. This 25-pin port connects a parallel printer, a scanner, or other devices.
3. LAN (RJ-45) port. This port allows 10/100 Mbps connection to a Local Area Network (LAN) through a network hub.
4. Line In port (light blue). This port connects a tape, CD, DVD player or other audio sources. In 4/6-channel mode, the function of this port becomes Surround (Rear Speaker) Out.
5. Line Out port (lime). This port connects a headphone or a speaker. In 4/6-channel mode, the function of this port becomes Front Speaker Out.
6. Microphone port (pink). This port connects a microphone. In 6-channel mode, the function of this port becomes Bass/Center.



The functions of the Line Out, Line In, and Microphone ports change when you select the 4 or 6-channel audio configuration as shown in the following table.

Audio 2, 4, or 6-channel configuration

Port	Headset/2-channel	4-channel	6-channel
Light Blue	Line In	Rear Speaker Out	Rear Speaker Out
Lime	Line Out	Front Speaker Out	Front Speaker Out
Pink	Mic In	Mic In	Bass/Center

7. USB 2.0 ports 3 and 4. These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
8. USB 2.0 ports 1 and 2. These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
9. Video Graphics Adapter port. This 15-pin port is for a VGA monitor or other VGA-compatible devices.
10. Serial connector. This 9-pin COM1 port is for pointing devices or other serial devices.
11. PS/2 keyboard port (purple). This port is for a PS/2 keyboard.

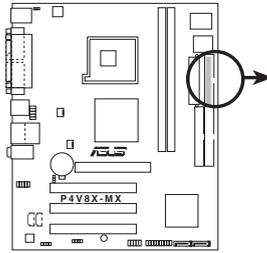
1.10.2 Internal connectors

1. Floppy disk drive connector (34-1 pin FLOPPY)

This connector is for the provided floppy disk drive (FDD) signal cable. Insert one end of the cable to this connector, then connect the other end to the signal connector at the back of the floppy disk drive.



Pin 5 on the connector is removed to prevent incorrect cable connection when using a FDD cable with a covered Pin 5.



P4V8X-MX Floppy Disk Drive Connector

FLOPPY

NOTE: Orient the red markings on the floppy ribbon cable to PIN 1.

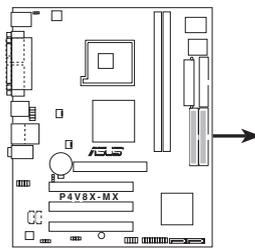
PIN 1

2. IDE connectors (40-1 pin PRI_IDE, SEC_IDE)

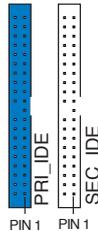
This connector is for an Ultra DMA 133 signal cable. The Ultra DMA 133 signal cable has three connectors: a blue connector for the IDE connector on the motherboard, a black connector for an Ultra DMA 133/100/66 IDE slave device (optical drive/hard disk drive), and a gray connector for an Ultra DMA 133/100/66 IDE master device (hard disk drive). If you install two hard disk drives, you must configure the second drive as a slave device by setting its jumper accordingly. Refer to the hard disk documentation for the jumper settings.



- Pin 20 on the IDE connector is removed to match the covered hole on the Ultra DMA cable connector. This prevents incorrect insertion when you connect the IDE cable.
- Use the 80-conductor IDE cable for Ultra DMA 133/100/66 IDE devices.



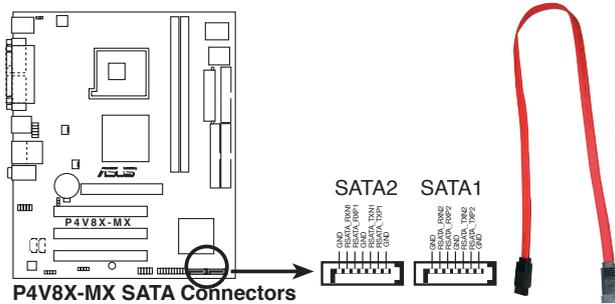
P4V8X-MX IDE Connectors



NOTE: Orient the red markings (usually zigzag) on the IDE ribbon cable to PIN 1.

3. Serial ATA connectors (7-pin SATA1, SATA2)

These connectors are for the Serial ATA signal cables for Serial ATA hard disk drives.



P4V8X-MX SATA Connectors



Important notes on Serial ATA

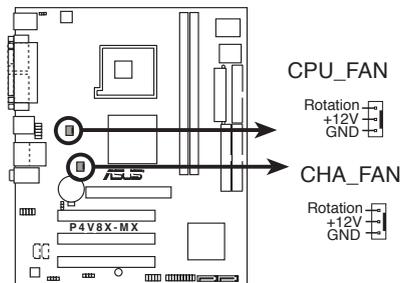
- You must install Windows® 2000 SP4, Windows® XP SP1, Windows® 2003, or newer OS versions before using Serial ATA hard disk drives.
- The Serial ATA interface is not supported when using Windows® 98SE/Me operating system.

4. CPU and chassis fan connectors (3-pin CPU_FAN, CHA_FAN)

The fan connectors support cooling fans of 350 mA~740 mA (8.88 W max.) or a total of 1 A~2.22 A (26.64 W max.) at +12V. Connect the fan cables to the fan connectors on the motherboard, making sure that the black wire of each cable matches the ground pin of the connector.



Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! Do not place jumper caps on the fan connectors!



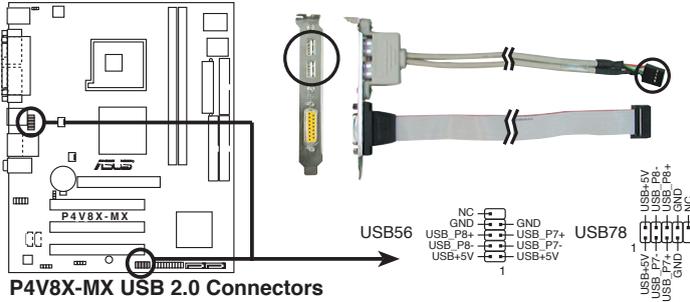
P4V8X-MX CPU Fan Connectors

5. USB connectors (10-1 pin USB56, USB78)

These connectors are for USB 2.0 ports. Connect the USB module cable to any of these connectors, then install the module to a slot opening at the back of the system chassis.



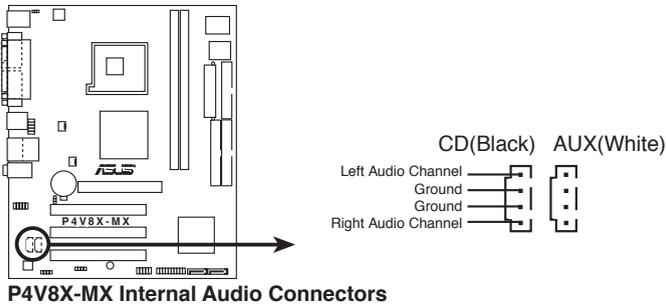
The USB module is purchased separately.



Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard!

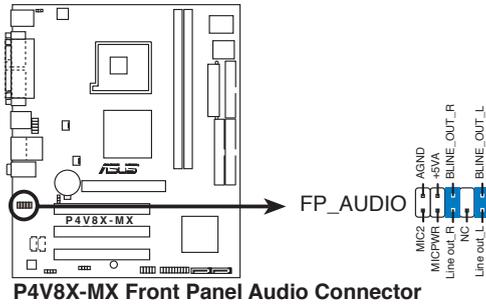
6. Internal audio connectors (4-pin CD, AUX)

These connectors allow you to receive stereo audio input from sound sources such as a CD-ROM, TV tuner, or MPEG card.



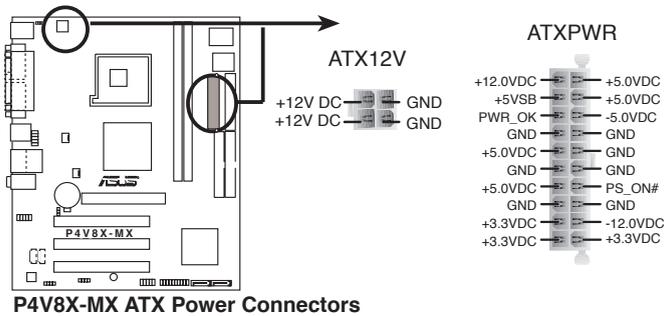
7. Front panel audio connectors (10-1 pin FP_AUDIO)

This connector is for the front panel audio cable. This connector supports the front panel audio I/O ports.



8. ATX power connector (20-pin ATXPWR and 4-pin ATX 12V)

This connectors are for the 20-pin ATX power and 4-pin ATX 12V supply plugs. The plug from the power supply is designed to fit this connector in only one orientation. Find the proper orientation and push down firmly until the connector completely fit.

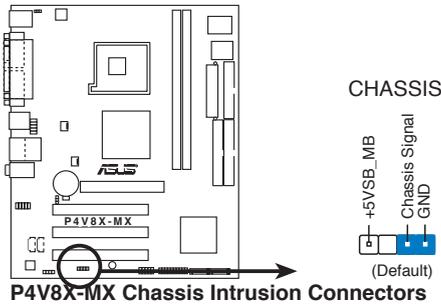


If you will need to replace the power supply in the future, make sure that your new ATX 12V power supply can provide 8 A on the +12 V lead and at least 1 A on the +5 V standby lead (+5VSB). The minimum recommended wattage is 230W, or 300W for a fully configured system. The system may become unstable and may experience difficulty powering up if the power supply is inadequate.

9. Chassis intrusion connector (4-1 pin CHASSIS)

This lead is for a chassis designed with intrusion detection feature. This requires an external detection mechanism such as a chassis intrusion sensor or microswitch. When you remove any chassis component, the sensor triggers and sends a high-level signal to this lead to record a chassis intrusion event.

By default, the pins labeled “Chassis Signal” and “Ground” are shorted with a jumper cap. If you wish to use the chassis intrusion detection feature, remove the jumper cap from the pins.

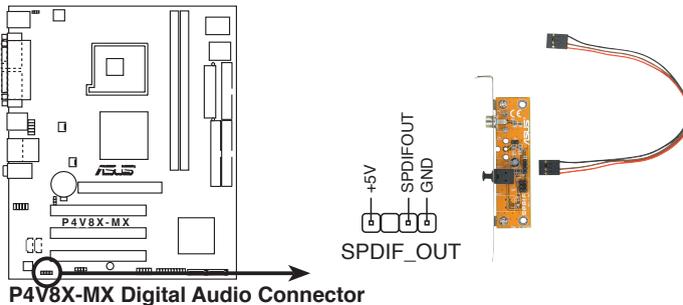


10. Digital audio connector (3- pin SPDIF)

This connector is for the S/PDIF audio module that allows digital sound input.

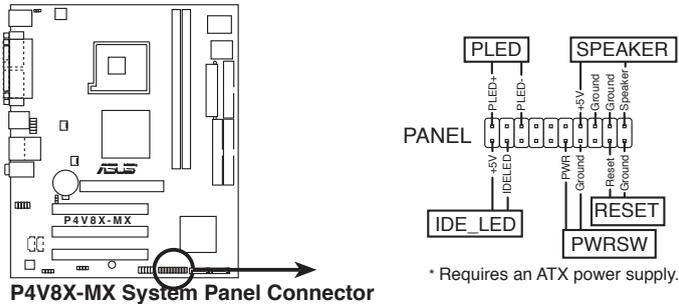


- Use 75 ohm impedance matched coaxial cables for your S/PDIF connection.
- The S/PDIF module is purchased separately.



11. System panel connector (20-pin PANEL)

This connector supports several chassis-mounted functions.



- **System power LED (3-1 pin PLED)**

This connector is for the system power LED. Connect the chassis power LED cable to this connector. The system power LED lights up when you turn on the system power, and blinks when the system is in sleep mode.

- **System warning speaker (4-pin SPEAKER)**

This connector is for the chassis-mounted system warning speaker. The speaker allows you to hear system beeps and warnings.

- **Reset button (2-pin RESET)**

This connector is for the chassis-mounted reset button for system reboot without turning off the system power.

- **ATX power button/soft-off button (2-pin PWRBTN)**

This connector is for the system power button. Pressing the power button turns the system on or puts the system in sleep or soft-off mode depending on the BIOS settings. Pressing the power switch for more than four seconds while the system is ON turns the system OFF.

- **System Management Interrupt (2-pin SMI)**

This connector is for the chassis-mounted suspend switch that allows you to manually place the system into a suspend mode, or “green” mode. When in suspend mode, the system activity is instantly decreased to save power and to expand the life of certain system components.

- **Hard disk drive activity LED (2-pin HDLED)**

This connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. The IDE LED lights up or flashes when data is read from or written to the HDD.

This chapter tells how to change the system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

BIOS Setup **2**

2.1 Managing and Updating Your BIOS

The following utilities allow you to manage and update the motherboard Basic Input/Output System (BIOS) setup.

1. **AFUDOS** (Updates the BIOS in DOS mode using a bootable floppy disk.)
2. **ASUS EZ Flash** (Updates the BIOS using a floppy disk during POST.)
3. **ASUS CrashFree BIOS 2** - Updates the BIOS using a bootable floppy disk or the motherboard support CD.

Refer to the corresponding section for each utility.



- Save a copy of the original motherboard BIOS file to a bootable floppy disk in case you need to restore the BIOS in the future. Copy the original motherboard BIOS using the AFUDOS utility.
- Refer to the system builder's website for details about updating the BIOS.

2.1.1 Creating a bootable floppy disk

1. Do either one of the following to create a bootable floppy disk.

DOS environment

Insert a 1.44MB floppy disk into the drive. At the DOS prompt, type:

format A:/S then press <Enter>.

Windows® XP environment

- a. Insert a 1.44MB floppy disk into the floppy disk drive.
 - b. From your Windows® desktop, click on **Start**, then select **My Computer**.
 - c. Select the **3 1/2 Floppy Drive** icon.
 - d. Click **File** from the menu, then select **Format. A Format 3 1/2 Floppy Disk** window appears.
 - e. Select **Create an MS-DOS startup disk** from the format options field, then click **Start**.
2. Copy the original (or the latest) motherboard BIOS to the bootable floppy disk.

2.1.2 Using AFUDOS to copy the current BIOS

The AFUDOS.EXE utility can also be used to copy the current system BIOS settings to a floppy or hard disk. The copy can be used as a backup in case the system BIOS fails or gets corrupted.

1. At the DOS prompt, type the command line:

afudos /o[filename]

where "filename" can be any user-provided filename of not more than eight alphanumeric characters for the main filename and three alphanumeric characters for the extension name.

Press <Enter>.



The BIOS information on the screen is for reference only. What you see on your screen may not be exactly the same as shown.

Main filename	Extension name
<pre>A:\>afudos /oMYBIOS03.rom AMI Firmware Update Utility - Version 1.10 Copyright (C) 2002 American Megatrends, Inc. All rights reserved. Reading flash 0x0008CC00 (9%)</pre>	

2. The utility will copy the current system BIOS by default to the floppy disk. Make sure that the floppy disk is not write-protected and has enough space (at least 600KB) to store the file.

```
A:\>afudos /oMYBIOS03.rom
AMI Firmware Update Utility - Version 1.10
Copyright (C) 2002 American Megatrends, Inc. All rights reserved.
Reading flash ..... done

A:\>
```

When the BIOS copy process is complete, the utility returns to the DOS prompt.

2.1.3 Using AFUDOS to update the BIOS

The AFUDOS is a DOS-based application that lets you update the BIOS file using a bootable floppy diskette. AFUDOS also allows you to copy the original BIOS file to a floppy diskette.

To update the BIOS using the AFUDOS.EXE:

1. Download the latest BIOS file from the website provided by the system builder.



Write the BIOS filename on a piece of paper. You need to type the exact BIOS file name at the prompt.

2. Copy the AFUDOS.EXE utility from the support CD to the bootable floppy disk that contains the BIOS file.
3. Boot the system from the floppy disk.

- At the DOS prompt, type the command line:

afudos /i[filename.rom]

where [filename.rom] means the latest (or original) BIOS file that you copied to the bootable floppy disk.

- Press <Enter>. The screen displays the status of the update process.



The BIOS information on the screen is for reference only. What you see on your screen may not be exactly the same as shown.

```
A:\>afudos /iP4V8X-MX.rom
AMI Firmware Update Utility - Version 1.10
Copyright (C) 2002 American Megatrends, Inc. All rights reserved.
  Reading file . . . . done
  Erasing flash . . . done
  Writing flash . . . 0x0008CC00 (9%)
```



DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

When the BIOS update process is complete, the utility returns to the DOS prompt.

```
A:\>afudos /iP4V8X-MX.rom
AMI Firmware Update Utility - Version 1.10
Copyright (C) 2002 American Megatrends, Inc. All rights reserved.
  Reading file . . . . done
  Erasing flash . . . done
  Writing flash . . . 0x0008CC00 (9%)
  Verifying flash .. done
A:\>
```

- Reboot the system from the hard disk.

2.1.4 Using ASUS EZ Flash to update the BIOS

The ASUS EZ Flash feature allows you to easily update the BIOS without having to go through the long process of booting from a floppy disk and using a DOS-based utility. The EZ Flash is built-in the BIOS LPC chip so it is accessible by simply pressing <Alt> + <F2> during the Power-On Self Tests (POST).

To update the BIOS using ASUS EZ Flash:

1. Visit the system builder website to download the latest BIOS file for your motherboard and rename it to **P4V8X-MX.ROM**. Save the BIOS file to a floppy disk.
2. Reboot the system.
3. To launch EZ Flash, press <Alt> + <F2> during POST to display the following.

```
User recovery requested. Starting BIOS recovery...
Checking for floppy...
```



- If there is no floppy disk in the drive, the error message "Floppy not found!" appears.
- If the correct BIOS file is not found in the floppy disk, the error message "P4V8X-MX.ROM not found!" is displayed.

4. Insert the floppy disk that contains the BIOS file. If the **P4V8X-MX.ROM** file is found in the floppy disk, EZ Flash performs the BIOS update process and automatically reboots the system when done.



DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

```
User recovery requested. Starting BIOS recovery...
Checking for floppy...
Floppy found!
Reading file "p4v8x-mx.rom". Completed.
Start flashing...
Flashed successfully. Rebooting.
```

2.1.5 ASUS CrashFree BIOS 2 utility

The ASUS CrashFree BIOS 2 is an auto recovery tool that allows you to restore the BIOS file when it fails or gets corrupted during the updating process. You can update a corrupted BIOS file using the motherboard support CD or the floppy disk that contains the updated BIOS file.



- Prepare the motherboard support CD or the floppy disk containing the updated motherboard BIOS before using this utility.
- Make sure that you rename the original or updated BIOS file in the floppy disk to P4V8X-MX.ROM.

Recovering the BIOS from a floppy disk

To recover the BIOS from a floppy disk:

1. Turn on the system.
2. Insert the floppy disk with the original or updated BIOS file to the floppy disk drive.
3. The utility displays the following message and automatically checks the floppy disk for the original or updated BIOS file.

```
Bad BIOS checksum. Starting BIOS recovery...
Checking for floppy...
```

When found, the utility reads the BIOS file and starts flashing the corrupted BIOS file.

```
Bad BIOS checksum. Starting BIOS recovery...
Checking for floppy...
Floppy found!
Reading file "P4V8X-MX.ROM". Completed.
Start flashing...
```



DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

4. Restart the system after the utility completes the updating process.

Recovering the BIOS from the support CD

To recover the BIOS from the support CD:

1. Remove any floppy disk from the floppy disk drive, then turn on the system.
2. Insert the support CD to the optical drive.
3. The utility displays the following message and automatically checks the floppy disk for the original or updated BIOS file.

```
Bad BIOS checksum. Starting BIOS recovery...
Checking for floppy...
```

When no floppy disk is found, the utility automatically checks the optical drive for the original or updated BIOS file. The utility then updates the corrupted BIOS file.

```
Bad BIOS checksum. Starting BIOS recovery...
Checking for floppy...
Floppy not found!
Checking for CD-ROM...
CD-ROM found!
Reading file "P4V8X-MX.ROM". Completed.
Start flashing...
```



DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

4. Restart the system after the utility completes the updating process.



The recovered BIOS may not be the latest BIOS version for this motherboard. Visit the ASUS website (www.asus.com) to download the latest BIOS file.

2.2 BIOS Setup Program



The BIOS software is constantly being updated so the BIOS setup screens and descriptions in this section are for reference purposes only, and may not exactly match what you see on your screen.

This motherboard supports a programmable Low Pin Count (LPC) chip that you can update using the provided utility described in section “2.1 Managing and updating your BIOS.”

Use the BIOS Setup program when you are installing a motherboard, reconfiguring your system, or prompted to “Run Setup”. This section explains how to configure your system using this utility.

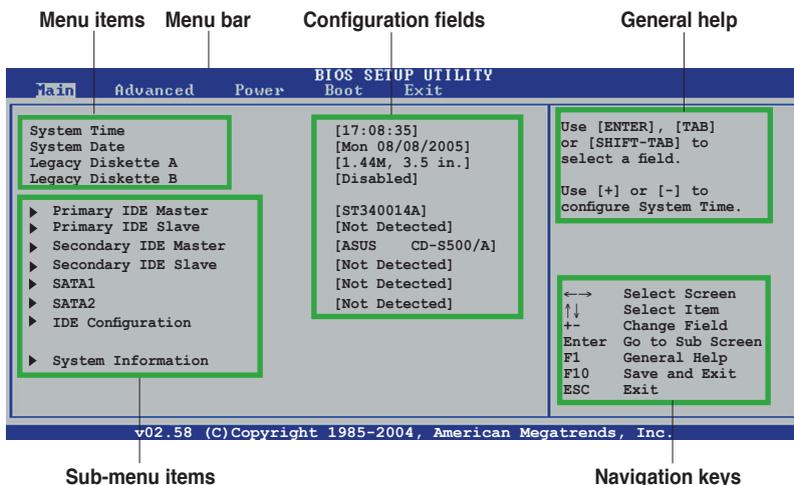
Even if you are not prompted to use the Setup program, you can change the configuration of your computer in the future. For example, you can enable the security password feature or make changes to the power management settings. This requires you to reconfigure your system using the BIOS Setup program so that the computer can recognize these changes and record them in the CMOS RAM of the LPC chip.

The LPC chip on the motherboard stores the Setup utility. When you start up the computer, the system provides you with the opportunity to run this program. Press <Delete> during the Power-On Self Test (POST) to enter the Setup utility; otherwise, POST continues with its test routines.

To enter Setup after POST, restart the system by pressing <Ctrl+Alt+Delete>, or by pressing the reset button on the system chassis. You can also restart by turning the system off and then back on. Do this last option only if the first two fail.

The Setup program is designed to make it as easy to use as possible. Being a menu-driven program, it lets you scroll through the various sub-menus and make your selections among the predetermined choices.

2.2.1 BIOS menu screen



2.2.2 Menu bar

The menu bar on top of the screen has the following main items:

- Main** For changing the basic system configuration
- Advanced** For changing the advanced system settings
- Power** For changing the advanced power management (APM) configuration
- Boot** For changing the system boot configuration
- Exit** For selecting the exit options and loading default settings

To select an item on the menu bar, press the right or left arrow key on the keyboard until the desired item is highlighted.

2.2.3 Navigation keys

At the bottom right corner of a menu screen are the navigation keys for that particular menu. Use the navigation keys to select items in the menu and change the settings.



Some of the navigation keys differ from one screen to another.

2.2.4 Menu items

The highlighted item on the menu bar displays the specific items for that menu. For example, selecting **Main** shows the Main menu items.

The other items (Advanced, Power, Boot, and Exit) on the menu bar have their respective menu items.

2.2.5 Sub-menu items

A solid triangle before each item on any menu screen means that the item has a sub-menu. To display the sub-menu, select the item, then press <Enter>.

2.2.6 Configuration fields

These fields show the values for the menu items. If an item is user-configurable, you can change the value of the field opposite the item. You cannot select an item that is not user-configurable.

A configurable field is enclosed in brackets, and is highlighted when selected. To change the value of a field, select it then press <Enter> to display a list of options. Refer to “2.2.7 Pop-up window”.

2.2.7 Pop-up window

Select a menu item then press <Enter> to display a pop-up window with the configuration options for that item.

2.2.8 Scroll bar

A scroll bar appears on the right side of a menu screen when there are items that do not fit on the screen. Press the Up/Down arrow keys or <PageUp> / <PageDown> keys to display the other items on the screen.

2.2.9 General help

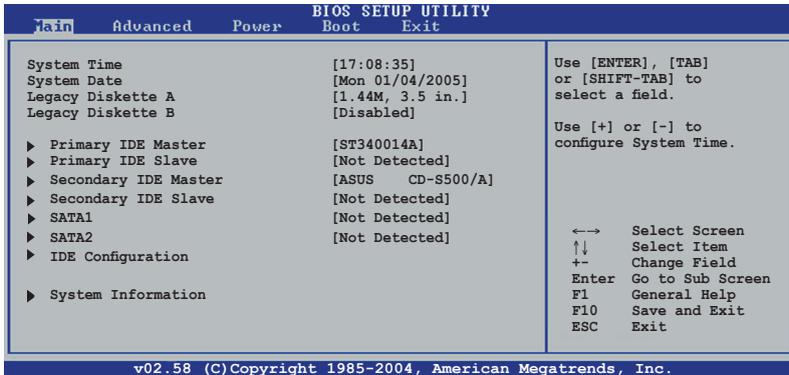
At the top right corner of the menu screen is a brief description of the selected item.

2.3 Main Menu

When you enter the BIOS Setup program, the Main menu screen appears, giving you an overview of the basic system information.



Refer to section “2.2.1 BIOS menu screen” for information on the menu screen items and how to navigate through them.



2.3.1 System Time [xx:xx:xxxx]

Allows you to set the system time.

2.3.2 System Date [Day xx/xx/xxxx]

Allows you to set the system date.

2.3.3 Legacy Diskette A [1.44M, 3.5 in.]

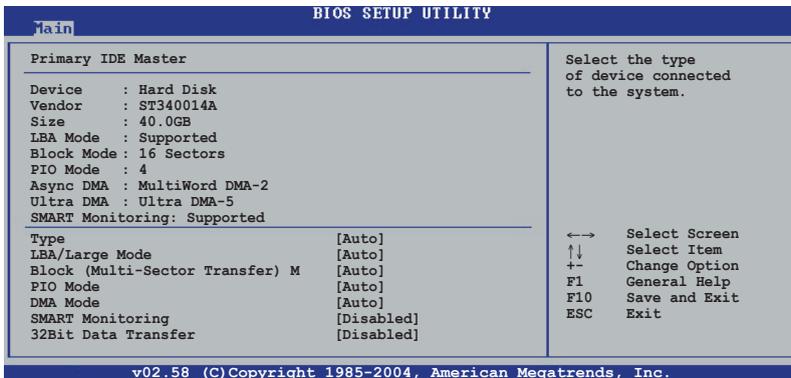
Sets the type of floppy drive installed. Configuration options: [Disabled] [360K, 5.25 in.] [1.2M, 5.25 in.] [720K, 3.5 in.] [1.44M, 3.5 in.] [2.88M, 3.5 in.]

2.3.4 Legacy Diskette B [Disabled]

Sets the type of floppy drive installed. Configuration options: [Disabled] [360K, 5.25 in.] [1.2M, 5.25 in.] [720K, 3.5 in.] [1.44M, 3.5 in.] [2.88M, 3.5 in.]

2.3.5 Primary/Secondary IDE Master/Slave, SATA1/SATA2

While entering Setup, BIOS automatically detects the presence of IDE devices. There is a separate sub-menu for each IDE device. Select a device item then press <Enter> to display the IDE device information.



The BIOS automatically detects the values opposite the dimmed items (Device, Vendor, Size, LBA Mode, Block Mode, PIO Mode, Async DMA, Ultra DMA, and SMART monitoring). These values are not user-configurable. These items show N/A if no IDE device is installed in the system.

Type [Auto]

Selects the type of IDE drive. Configuration options: [Not Installed] [Auto] [CDROM] [ARMD]

LBA/Large Mode [Auto]

Enables or disables the LBA/Large mode. Setting to Auto enables the LBA/Large mode if the device supports this mode, and if the device was not previously formatted with LBA mode disabled. Configuration options: [Disabled] [Auto]

Block (Multi-Sector Transfer) M [Auto]

Enables or disables data multi-sectors transfers. When set to Auto, the data transfer from and to the device occurs multiple sectors at a time if the device supports multi-sector transfer feature. When set to Disabled, the data transfer from and to the device occurs one sector at a time. Configuration options: [Disabled] [Auto]

PIO Mode [Auto]

Selects the PIO mode. Configuration options: [Auto] [0] [1] [2] [3] [4]

DMA Mode [Auto]

Selects the DMA mode. Configuration options: [Auto] [SWDMA0] [SWDMA1] [SWDMA2] [MWDMA0] [MWDMA1] [MWDMA2] [UDMA0] [UDMA1] [UDMA2] [UDMA3] [UDMA4] [UDMA5]

SMART Monitoring [Disabled]

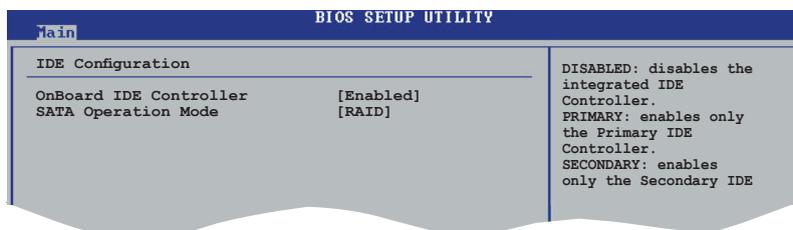
Sets the Smart Monitoring, Analysis, and Reporting Technology. Configuration options: [Auto] [Disabled] [Enabled]

32Bit Data Transfer [Disabled]

Enables or disables 32-bit data transfer. Configuration options: [Disabled] [Enabled]

2.3.6 IDE Configuration

The items in this menu allow you to set or change the configurations for the IDE devices installed in the system. Select an item then press Enter if you wish to configure the item.



OnBoard IDE Controller [Enabled]

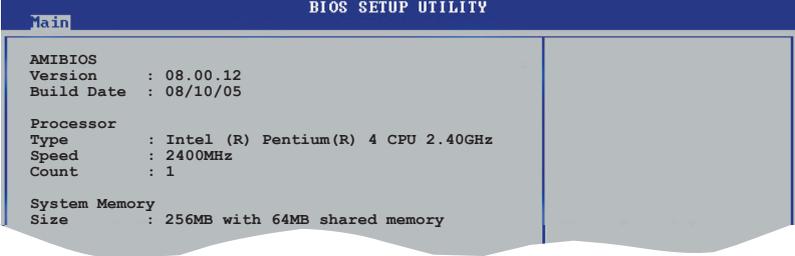
Allows selection of the IDE operation mode depending on the operating system (OS) that you installed. Configuration options: [Disabled] [Enabled]

SATA Operation Mode [RAID]

Allows you to set SATA Operation Mode. Configuration options: [non-RAID] [RAID]

2.3.7 System Information

This menu gives you an overview of the general system specifications. The items in this menu are auto-detected by the BIOS.



```
BIOS SETUP UTILITY
Main
-----
AMIBIOS
Version      : 08.00.12
Build Date   : 08/10/05

Processor
Type         : Intel (R) Pentium(R) 4 CPU 2.40GHz
Speed        : 2400MHz
Count        : 1

System Memory
Size         : 256MB with 64MB shared memory
```

AMI BIOS

Displays the auto-detected BIOS information.

System Memory

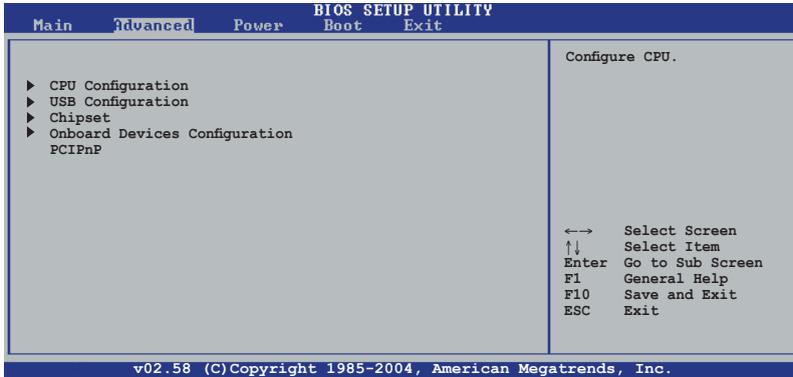
Displays the auto-detected system memory.

2.4 Advanced menu

The Advanced menu items allow you to change the settings for the CPU and other system devices.

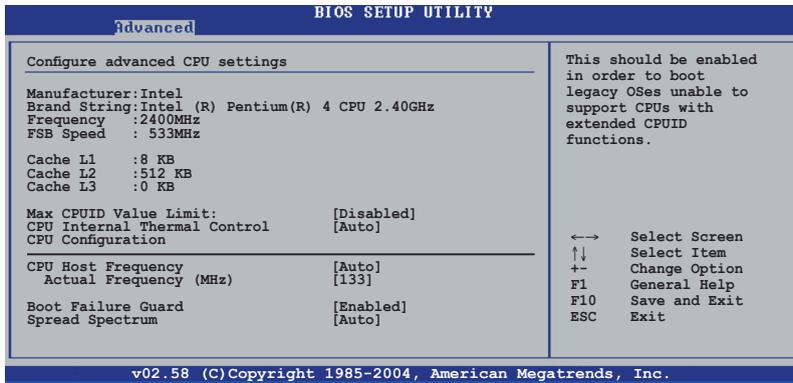


Take caution when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.



2.4.1 CPU Configuration

The items in this menu show the CPU-related information that the BIOS automatically detects.



Max CPUID Value Limit [Disabled]

Enable this item to boot legacy operating systems that cannot support CPUs with extended CPUID functions. Configuration options: [Disabled] [Enabled]

CPU Internal Thermal Control [Auto]

Disables or sets the CPU internal control. Configuration options: [Auto] [Disabled]

CPU Host Frequency [Auto]

While entering setup, BIOS auto detects the present CPU host frequency of this motherboard. Configuration options: [Auto] [Manual]

Spread Spectrum [Auto]

Allows you to enable or disable the clock generator spread spectrum. Configuration options: [Disabled] [Auto]

CPU group delay [Auto]

Configuration options: [Auto] [None] [Delay 500ps] [Delay 1000ps] [Delay 1500ps]

CPU-CS group delay [Auto]

Configuration options: [Auto] [None] [Delay 500ps] [Delay 1000ps] [Delay 1500ps]

3V66 group delay [Auto]

Configuration options: [Auto] [None] [Delay 500ps] [Delay 1000ps] [Delay 1500ps]

PCI & PCI-F group delay [Auto]

Configuration options: [Auto] [None] [Delay 500ps] [Delay 1000ps] [Delay 1500ps]

DDR/SDRAM group delay [Auto]

Configuration options: [Auto] [None] [Delay 500ps] [Delay 1000ps] [Delay 1500ps]

PCI to 3V66 delay [Auto]

Configuration options: [Auto] [Delay 2ns] [Delay 3ns]

SDRAM-F group delay [Auto]

Configuration options: [Auto] [None] [Delay 500ps] [Delay 1000ps] [Delay 1500ps]

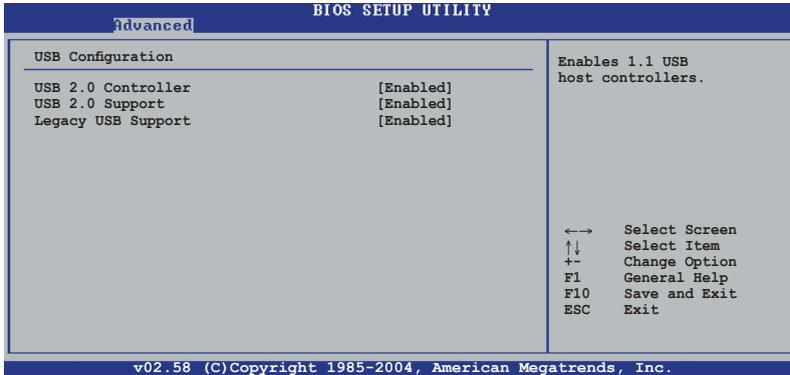
CPU Thermal Throttling [Enabled]

Select [Enabled] to enable P4 CPU internal thermal control mechanism to keep the CPU from overheated. Configuration options: [Enabled] [Disabled]

Max CPUID Value Limit: [Disabled]

Enable this item to boot legacy operating systems that cannot support CPUs with extended CPUID functions. Configuration options: [Disabled] [Enabled]

2.4.2 USB Configuration



USB 2.0 Controller [Enabled]

Allows you to enable or disable the USB 2.0 Controller. Configuration options: [Disabled] [Enabled]

USB 2.0 Ports Support [Enabled]

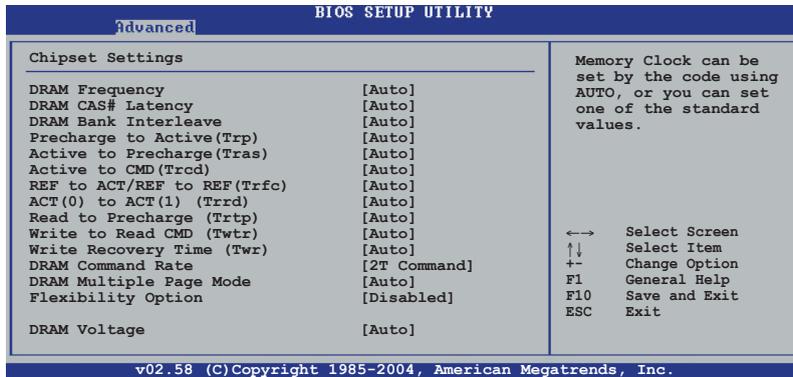
Allows you to enable or disable the USB 2.0 ports. Configuration options: [Enabled] [Disabled]

Legacy USB Support [Enabled]

Allows you to enable or disable support for legacy USB devices. Setting to Auto allows the system to detect the presence of USB devices at startup. If detected, the USB controller legacy mode is enabled. If no USB device is detected, the legacy USB support is disabled. Configuration options: [Disabled] [Enabled] [Auto]

2.4.3 Chipset

The Chipset menu allows you to change the advanced chipset settings. Select an item then press <Enter> to display the sub-menu.



DRAM Frequency [Auto]

Allows you to set the DDR operating frequency. If you select [Auto], the motherboard will detect the memory module(s) inserted and assigns appropriate frequency automatically. Configuration options: [Auto] [133MHz (DDR266)] [166MHz (DDR333)] [200MHz (DDR400)]

DRAM CAS# Latency [Auto]

This item controls the latency between the SDRAM read command and the time the data actually becomes available. Configuration options: [Auto] [2.0] [2.5] [3.0]

DRAM Bank Interleave [Auto]

Allows you to select the DRAM Bank Interleave. Configuration options: [Auto] [Disabled] [2-Way] [4-Way] [8-Way]

Precharge to Active(Trp) [Auto]

Configuration options: [Auto] [2T] [3T] [4T] [5T]

Active to Precharge(Tras) [Auto]

Configuration options: [Auto] [5T] [6T] [7T] [8T] [9T] [10T] [11T] [12T] [13T] [14T] [15T] [16T] [17T] [18T] [19T]

Active to CMD(Trcd) [Auto]

Configuration options: [Auto] [2T] [3T] [4T] [5T]

REF to ACT/REF to REF(Trfc) [Auto]

Configuration options: [Auto] [8T] [9T] [10T] [11T] [12T] [13T] [14T] [15T] [16T] [17T] [18T] [19T] [20T] [21T] [22T]

ACT(0) to ACT(1) (Trrd) [Auto]

Configuration options: [Auto] [2T] [3T] [4T] [5T]

Read to Precharge (Trtp) [Auto]

Configuration options: [Auto] [2T] [3T]

Write to Read CMD (Twtr) [Auto]

Configuration options: [Auto] [1T] [2T]

Write Recovery Time (Twr) [Auto]

Configuration options: [Auto] [2T] [3T] [4T] [5T]

DRAM Command Rate [2T Command]

Configuration options: [2T Command] [1T Command]

DRAM Multiple Page Mode [Auto]

Allows you to enable or disable the DRAM Multiple Page Mode. Configuration options: [Auto] [Enabled] [Disabled]

Flexibility Option [Disabled]

The default value of this option is [Disabled]. It allows better tolerance for memory compatibility when it is set to [Enabled]. Configuration options: [Disabled] [Enabled]

DRAM Voltage [Auto]

Allows you to select the DRAM Voltage. The default value of this feature is set to [Auto]. Configuration options: [Auto] [Normal] [High]

Onboard AGP Share Memory [Auto]

Allows you to select [8MB], [16MB], [32MB], [64MB] as the Onboard AGP share Memory. When the total memory is equal or above 256MB, the share memory size will be [64MB]; otherwise, please set the share memory size to [32MB]. Configuration options: [8MB] [16MB] [32MB] [64MB]

Primary Graphics Adapter [PCI]

Allows you to select [PCI] or [AGP] as the primary graphics adapter. Configuration options: [PCI] [AGP]

AGP Aperture Size [64MB]

It refers to a section of the PCI memory address range used for graphics memory. It is recommended to leave this field at the default value unless the installed AGP card's specifications requires other sizes. Configuration options: [32MB] [64MB] [128MB] [256MB]

AGP Mode [Auto]

The default value of this feature is set to [Auto]. Configuration options: [Auto] [4X]

AGP Fast Write [Disabled]

Allows you to disable or enable the feature of AGP Fast Write protocol support. Configuration options: [Disabled] [Enabled]

AGP 3.0 Calibration [Auto]

Configuration options: [Auto] [Disabled] [Enabled]

AGP Staggered Delay [Auto]

Configuration options: [Auto] [None] [Delay 1ns]

AGP GADSTB Output Delay [Auto]

Configuration options: [Auto] [None] [Delay 150 psec] [Delay 300 psec] [Delay 450 psec]

V-Link Speed [Normal]

Configuration options: [Normal] [Fast]

PCI Delay Transaction [Enabled]

Allows you to disable or enable the PCI Delay Transaction. Configuration options: [Disabled] [Enabled]

IDE Drive Strength [Normal]

Configuration options: [Lowest] [Low] [Normal] [Highest]

IDE Read Prefetch Buffer [Auto]

Configuration options: [Auto] [Disabled] [Enabled]

OnBoard LAN [Enabled]

Allows you to enable or disable the OnBoard LAN controller. Configuration options: [Disabled] [Enabled]

OnBoard AC'97 Audio [Auto]

Allows you to enable or disable the OnBoard AC'97 Audio CODEC. Configuration options: [Auto] [Disabled] [Enabled]

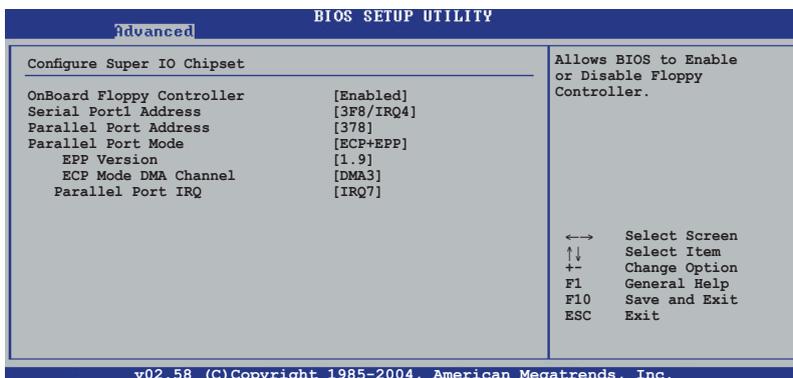
Thermal Throttling Temperature [Auto]

Allows you to set the Thermal Throttling Temperature. Configuration options: [Auto] [Disabled] [50°C] [55°C] [60°C] [65°C] [70°C] [75°C]

Thermal Throttling Duty Cycle [Auto]

Configuration options: [Auto] [12.50%] [25.00%] [37.50%] [50.00%] [62.50%] [75.00%] [87.50%]

2.4.4 Onboard Devices Configuration



Onboard Floppy Controller [Enabled]

Enables or disables the Onboard Floppy Controller. Configuration options: [Enabled] [Disabled]

Serial Port1 Address [3F8/IRQ4]

Allows you to select the Serial Port1 base address. Configuration options: [Disabled] [3F8/IRQ4][2F8/IRQ3] [3E8/IRQ4] [2E8/IRQ3]

Parallel Port Address [378]

Allows you to select the Parallel port base addresses. Configuration options: [Disabled] [378] [278]

Parallel Port Mode [ECP+EPP]

Allows you to select the Parallel port mode. Configuration options: [Normal] [Bi-Directional] [EPP+ECP]

Parallel Port IRQ [IRQ7]

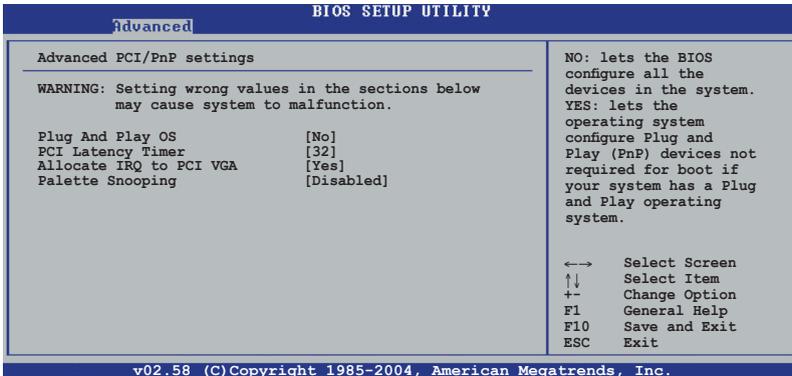
Allows you to select the Parallel Port IRQ. Configuration options: [IRQ5] [IRQ7]

2.4.5 PCI PnP

The PCI PnP menu items allow you to change the advanced settings for PCI/PnP devices. The menu includes setting IRQ and DMA channel resources for either PCI/PnP or legacy ISA devices.



Take caution when changing the settings of the PCI/PnP menu items. Incorrect field values can cause the system to malfunction.



Plug And Play O/S [No]

When set to [No], BIOS configures all the devices in the system. When set to [Yes] and if you installed a Plug and Play operating system, the operating system configures the Plug and Play devices not required for boot. Configuration options: [No] [Yes]

PCI Latency Timer [64]

Allows you to select the value in units of PCI clocks for the PCI device latency timer register. Configuration options: [32] [64] [96] [128] [160] [192] [224] [248]

Allocate IRQ to PCI VGA [Yes]

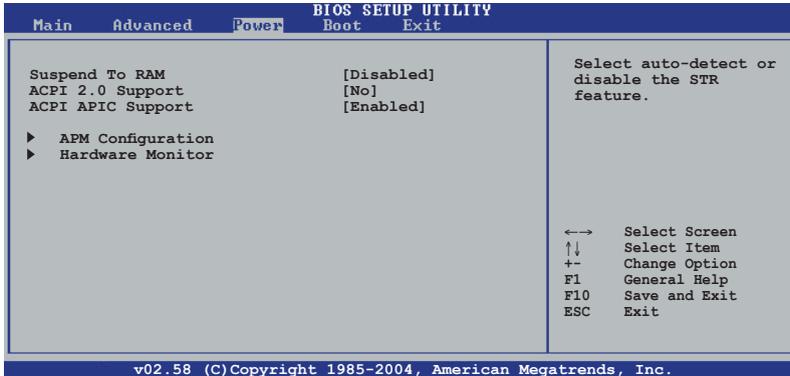
When set to [Yes], BIOS assigns an IRQ to PCI VGA card if the card requests for an IRQ. When set to [No], BIOS does not assign an IRQ to the PCI VGA card even if requested. Configuration options: [Yes] [No]

Palette Snooping [Disabled]

When set to [Enabled], the palette snooping feature informs the PCI devices that an ISA graphics device is installed in the system so that the latter can function correctly. Configuration options: [Disabled] [Enabled]

2.5 Power menu

The Power menu items allow you to change the power settings. Select an item then press <Enter> to display the configuration options.



Suspend To RAM [Auto]

Allows you to select RAM to be used for system suspend. Configuration options: [Disabled] [Auto]

ACPI 2.0 Support [No]

Allows you to add more tables for ACPI 2.0 specifications. Configuration options: [No] [Yes]

ACPI APIC Support [Enabled]

Enables or disables the ACPI support in the ASIC. When set to Enabled, the ACPI APIC table pointer is included in the RSDT pointer list. Configuration options: [Disabled] [Enabled]

2.5.1 APM Configuration



Restore on AC Power Loss [Power off]

When set to Power Off, the system goes into off state after an AC power loss. When set to Power On, the system goes on after an AC power loss. Configuration options: [Power Off] [Power On]

Ring-In Power On [Disabled]

Allows you to enable or disable the ring-in power on. Configuration options: [Disabled] [Enabled]

PCI Devices Power On [Disabled]

Allows you to enable or disable the PCI devices power on. Configuration options: [Disabled] [Enabled]

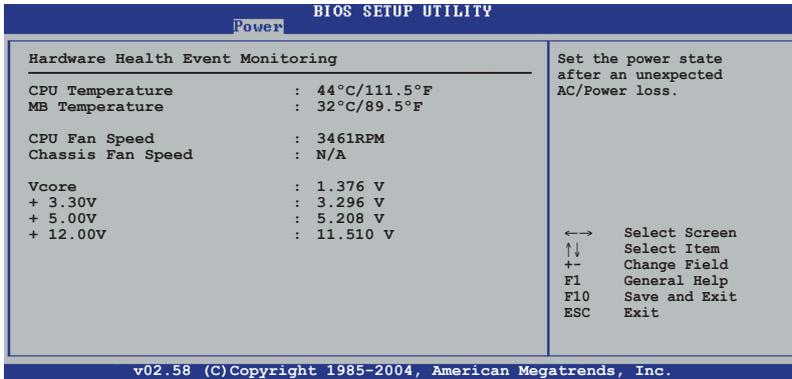
PS/2 Keyboard Power On [Disabled]

Allows you to use any key on the keyboard to turn on the system. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead. Configuration options: [Disabled] [Any Key]

RTC Alarm Power On [Disabled]

Allows you to enable or disable RTC to generate a wake event. When this item is set to Enabled, the items RTC Alarm Date, RTC Alarm Hour, RTC Alarm Minute, and RTC Alarm Second appear with set values. Configuration options: [Disabled] [Enabled]

2.5.2 HardWare Monitor



CPU Temperature [xxx°C/xxx°F]

MB Temperature [xxx°C/xxx°F]

The onboard hardware monitor automatically detects and displays the CPU and motherboard temperatures.

CPU Fan Speed [xxxxRPM]

The onboard hardware monitor automatically detects and displays the CPU fan speed in rotations per minute (RPM). If the fan is not connected to the motherboard, the specific field shows N/A.

Chassis Fan Speed [N/A]

The onboard hardware monitor automatically detects and displays the chassis fan speed in rotations per minute (RPM). If the fan is not connected to the chassis, the specific field shows N/A.



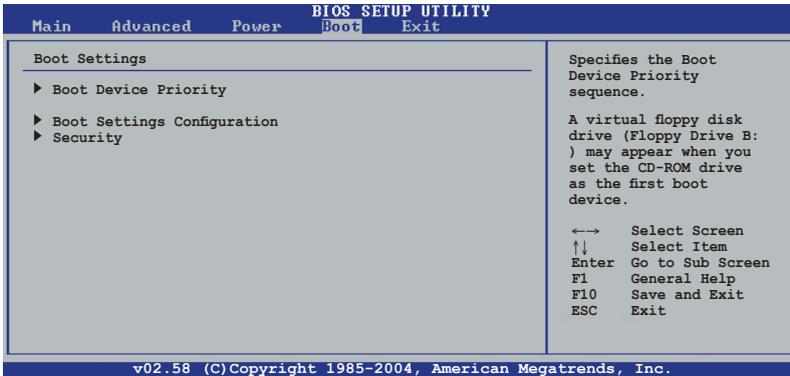
Some CPU fans with a 4-pin cable do not comply with Intel®'s PWM fan specification. When using this type of CPU fan, you can not reduce the CPU fan speed even if you set the CPU Q-Fan Mode to [PWM].

VCORE Voltage, 3.3V Voltage, 5V Voltage, 12V Voltage

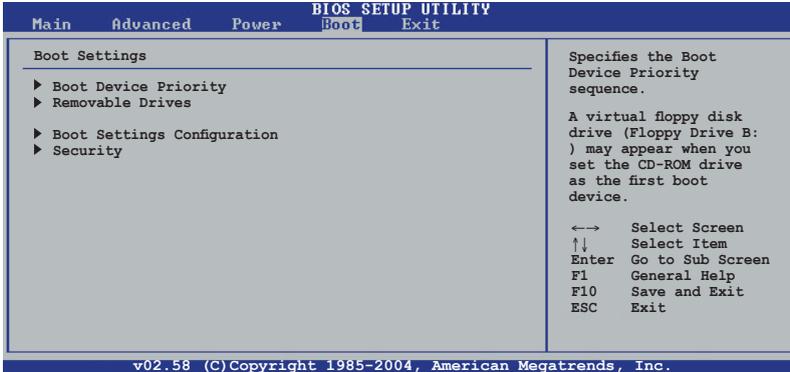
The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators.

2.6 Boot menu

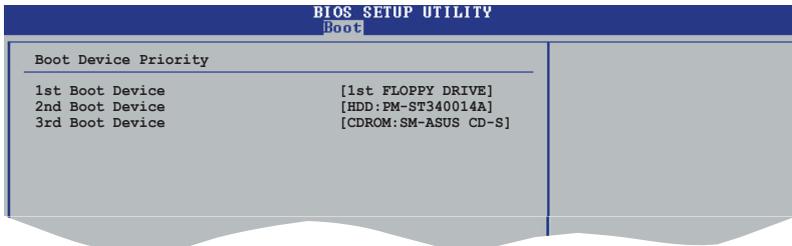
The Boot menu items allow you to change the system boot options. Select an item then press <Enter> to display the sub-menu.



A Hide option will display if removable boot device is detected.



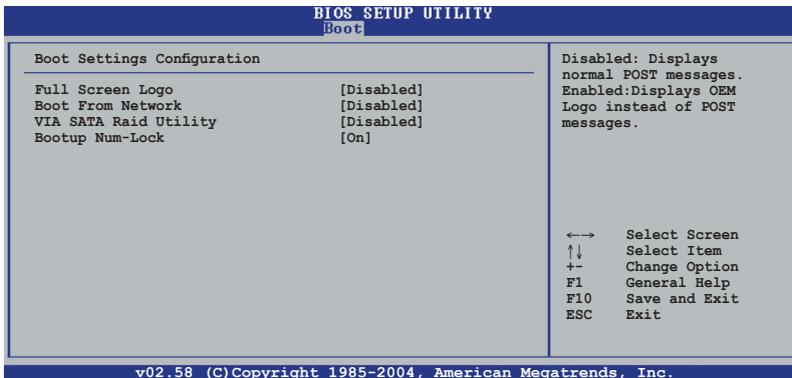
2.6.1 Boot Device Priority



1st ~ xxth Boot Device [1st FLOPPY DRIVE]

These items specify the boot device priority sequence from the available devices. The number of device items that appear on the screen depends on the number of devices installed in the system. Configuration options: [xxxxx Drive] [Disabled]

2.6.2 Boot Settings Configuration



Full Screen Logo [Disabled]

Allows you to enable or disable the full screen logo display feature. Configuration options: [Disabled] [Enabled]



Set this item to [Enabled] to use the ASUS MyLogo™ feature.

Boot From Network [Disabled]

Allows you to enable or disable the boot from network option. Configuration options: [Disabled] [Enabled]

VIA SATA Raid Utility [Disabled]

Allows you to enable or disable the VIA SATA Raid Utility. Configuration options: [Disabled] [Enabled]

Bootup Num-Lock [On]

Allows you to select the power-on state for the NumLock. Configuration options: [Off] [On]

2.6.3 Security

The Security menu items allow you to change the system security settings. Select an item then press <Enter> to display the configuration options.



Change Supervisor Password

Select this item to set or change the supervisor password. The Supervisor Password item on top of the screen shows the default **Not Installed**. After you have set a password, this item shows **Installed**.

To set a Supervisor Password:

1. Select the Change Supervisor Password item and press <Enter>.
2. On the password box that appears, type a password composed of at least six letters and/or numbers, then press <Enter>.
3. Confirm the password when prompted.

The message "Password Installed" appears after you successfully set your password. The Supervisor Password item now shows "Installed". To change the supervisor password, follow the same steps as in setting a user password.

To clear the supervisor password, select the Change Supervisor Password then press Enter. The message "Password Uninstalled" appears.

To clear the supervisor password, select the Change Supervisor Password then press Enter. The message "Password Uninstalled" appears.

Change User Password

Select this item to set or change the user password. The Supervisor Password item on top of the screen shows the default Not Installed. After you set a password, this item shows Installed.

To set a password:

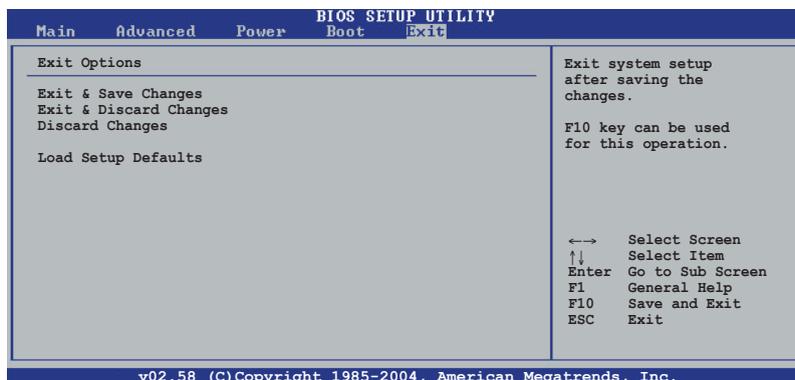
1. Select the Change User Password item and press <Enter>.
2. On the password box that appears, type a password composed of at least six letters and/or numbers, then press <Enter>.
3. Confirm the password when prompted.

The message "Password Installed" appears after you successfully set your password.

To change the user password, follow the same steps as in setting a user password

2.7 Exit menu

The Exit menu items allow you to load the optimal or failsafe default values for the BIOS items, and save or discard your changes to the BIOS items.



Pressing <Esc> does not immediately exit this menu. Select one of the options from this menu or <F10> from the legend bar to exit.

Exit & Save Changes

Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. The CMOS RAM is sustained by an onboard backup battery and stays on even when the PC is turned off. When you select this option, a confirmation window appears. Select [Yes] to save changes and exit.



If you attempt to exit the Setup program without saving your changes, the program prompts you with a message asking if you want to save your changes before exiting. Pressing <Enter> saves the changes while exiting.

Exit & Discard Changes

Select this option only if you do not want to save the changes that you made to the Setup program. If you made changes to fields other than system date, system time, and password, the BIOS asks for a confirmation before exiting.

Discard Changes

This option allows you to discard the selections you made and restore the previously saved values. After selecting this option, a confirmation appears. Select [Yes] to discard any changes and load the previously saved values.

Load Setup Defaults

This option allows you to load the default values for each of the parameters on the Setup menus. When you select this option, or if you press <F5>, a confirmation window appears. Select [Yes] to load the default values. Select Exit & Save Changes or make other changes before saving the values to the non-volatile RAM.

This chapter describes the contents of the support CD that comes with the motherboard package.

Software Support **3**

3.1 Installing an operating system

This motherboard supports Windows® 98SE/ME/2000/XP operating systems (OS). Always install the latest OS version and corresponding updates to maximize the features of your hardware.



Motherboard settings and hardware options vary. Use the setup procedures presented in this chapter for reference only. Refer to your OS documentation for detailed information.

3.2 Support CD information

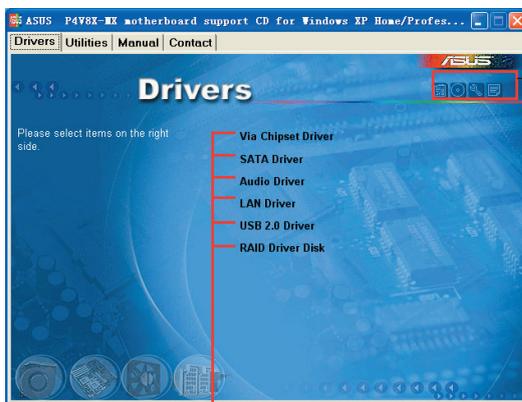
The support CD that came with the motherboard package contains the drivers, software applications, and utilities that you can install to avail all motherboard features.



The contents of the support CD are subject to change at any time without notice. Visit the ASUS website(www.asus.com) for updates.

3.2.1 Running the support CD

Place the support CD to the optical drive. The CD automatically displays the Drivers menu if Autorun is enabled in your computer.



Click an icon to display support CD/motherboard information

Click an item to install



If Autorun is NOT enabled in your computer, browse the contents of the support CD to locate the file ASSETUP.EXE from the BIN folder. Double-click the ASSETUP.EXE to run the CD.

3.2.2 Drivers menu

The drivers menu shows the available device drivers if the system detects installed devices. Install the necessary drivers to activate the devices.

Via Chipset Driver

Install Chipset Driver.

SATA Driver

Install SATA Driver.

C-Media's Xear 3D Driver

Install C-Media's Xear 3D Driver.

LAN Driver

Install LAN Driver.

USB 2.0 Driver

Install USB 2.0 Driver.

RAID Driver Disk

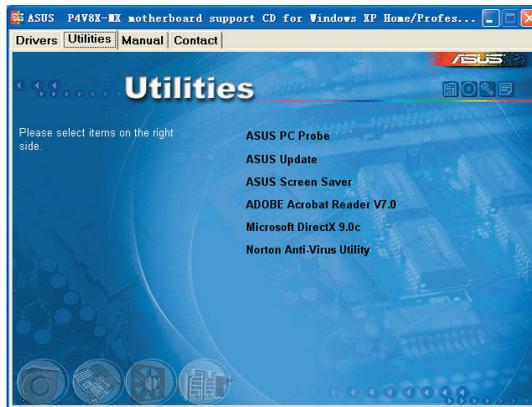
Install RAID Driver Disk.



The screen display and drivers option may not be the same for different operating system versions.

3.2.3 Utilities menu

The Utilities menu shows the applications and other software that the motherboard supports.



ASUS PC Probe

ASUS PC Probe can monitor Fan Speed, Voltage, and CPU Temperature to keep your PC safe.

ASUS Update

ASUS Update can help user to download and flash BIOS. Please install Network Card and TCP/IP network driver first, otherwise ASUS Update can not work properly.

ASUS Screen Saver

Bring life to your idle screen by installing the ASUS screen saver.

ADOBE Acrobat Reader V7.0

The Adobe Acrobat® Reader V7.0 is for opening, viewing, and printing documents in Portable Document Format (PDF).

Microsoft DirectX 9.0c

The Microsoft DirectX® 9.0c is a multimedia technology that enhances computer graphics and sounds. DirectX® improves the multimedia features of your computer so you can enjoy watching TV and movies, capturing videos, or playing games in your computer.

Anti-Virus Utility

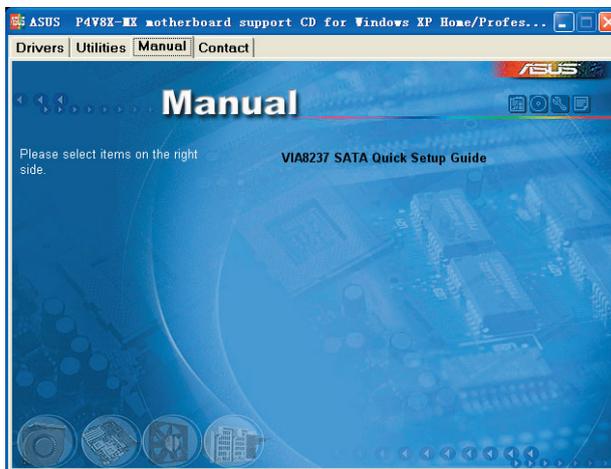
The anti-virus application scans, identifies, and removes computer viruses. View the online help for detailed information.

3.2.4 Manual menu

The Manual menu contains a list of supplementary user manuals. Click an item to open the folder of the user manual



Install the Adobe® Acrobat® Reader from the Utilities menu before opening the manual files.



Raid User's Manual

Please install first Adobe Acrobat, then open the VIA8237 SATA Quick Setup Guide.

3.2.5 Contacts menu

Click the Contact tab to display the ASUS contact information. You can also find this information on the inside front cover of this user guide.



3.3 VIA RAID configurations

The motherboard includes a high performance IDE RAID controller integrated in the VIA VT8237R southbridge chipset. It supports RAID 0, RAID 1 and JBOD with two independent Serial ATA channels.

RAID 0 (called Data striping) optimizes two identical hard disk drives to read and write data in parallel, interleaved stacks. Two hard disks perform the same work as a single drive but at a sustained data transfer rate, double that of a single disk alone, thus improving data access and storage. Use of two new identical hard disk drives is required for this setup.

RAID 1 (called Data mirroring) copies and maintains an identical image of data from one drive to a second drive. If one drive fails, the disk array management software directs all applications to the surviving drive as it contains a complete copy of the data in the other drive. This RAID configuration provides data protection and increases fault tolerance to the entire system. Use two new drives or use an existing drive and a new drive for this setup. The new drive must be of the same size or larger than the existing drive.

JBOD (Spanning) stands for Just a Bunch of Disks and refers to hard disk drives that are not yet configured as a RAID set. This configuration stores the same data redundantly on multiple disks that appear as a single disk on the operating system. Spanning does not deliver any advantage over using separate disks independently and does not provide fault tolerance or other RAID performance benefits.



If you use either Windows® XP or Windows® 2000 operating system (OS), copy first the RAID driver from the support CD to a floppy disk before creating RAID configurations. Refer to section “5.5 Creating a RAID driver disk” for details.

3.3.1 Installing hard disks

The motherboard supports Ultra DMA 133/100/66/33 and Serial ATA hard disk drives. For optimal performance, install identical drives of the same model and capacity when creating a disk array.

Installing Serial ATA (SATA) hard disks

To install the SATA hard disks for a RAID configuration:

1. Install the SATA hard disks into the drive bays.
2. Connect the SATA signal cables.
3. Connect a SATA power cable to the power connector on each drive.

3.3.2 VIA RAID configurations

The motherboard includes a high performance IDE RAID controller integrated in the VIA VT8237R PLUS southbridge chipset. It supports RAID 0 and RAID 1 with two independent Serial ATA channels.

Setting the BIOS RAID items

After installing the hard disk drives, make sure to set the necessary RAID items in the BIOS before setting your RAID configuration.

To set the BIOS RAID items:

1. Boot the system and press during the Power-On Self-Test (POST) to enter the BIOS Setup Utility.
2. From the Main > IDE Configuration menu in the BIOS, then Set the SATA Operation Mode item as Enabled.
3. Save your changes and exit Setup.

Entering the VIA Tech RAID BIOS Utility

1. Boot up your computer.
2. During POST, press <Tab> to enter VIA RAID configuration utility. The following menu options will appear.



The RAID BIOS setup screens shown in this section are for reference only, and may not exactly match the items on your screen.

Create Array

From the VIA RAID BIOS utility main menu, select Create Array then press <Enter>. The main menu items on the upper-left corner of the screen are replaced with create array menu options.

```
VIA Tech. VT8237 Series SATA RAID BIOS Ver x.xx

▶ Auto Setup For Data Security
▶ Array Mode RAID 1 (Mirroring)
▶ Select Disk Drives
▶ Start Create Process

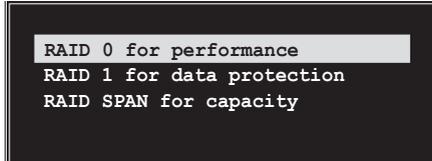
Create a RAID array with
the hard disks attached to
VIA RAID controller

F1 : View Array/Disk Status
↑,↓ : Move to next item
Enter : Confirm the selection
ESC : Exit

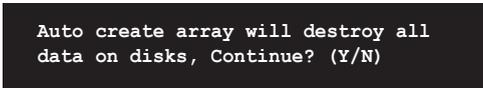
Channel      Drive Name   Array Name Mode  Size(GB) Status
Serial_Ch0 Master XXXXXXXXXXXX  ARRAY 0  SATA  999.99  XXXXXXXX
Serial_Ch1 Master XXXXXXXXXXXX  ARRAY 0  SATA  999.99  XXXXXXXX
```

RAID 0 for performance

1. From the create array menu, select Array Mode, then press <Enter>. The supported RAID configurations appear on a pop-up menu.



2. Select RAID 0 for performance then press <Enter>. From this point, you may choose to auto-configure the RAID array by selecting Auto Setup for Performance or manually configure the RAID array for striped sets. If you want to auto-configure, proceed to the next step, otherwise, skip to step 5.
3. Select Auto Setup for Performance and press <Enter>. The following confirmation message appears.

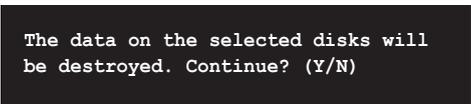


4. Press <Y> to confirm or <N> to return to the configuration options. If you selected <Y>, proceed to step 9.
5. Select Disk Drives, then press <Enter>. Use arrow keys to select disk drive, then press <Enter> to mark selected drive. An asterisk appears before a selected drive.
6. Select Block Size, then press <Enter> to set array block size. A list of valid array block sizes are displayed on a pop-up menu.



TIP: For server systems, use of a lower array block size is recommended. For multimedia computer systems used mainly for audio and video editing, a higher array block size is recommended for optimum performance.

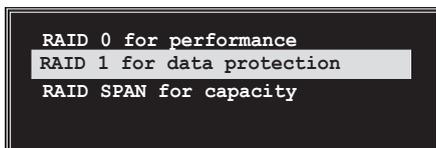
- Use arrow keys to move selection bar on items and press <Enter> to select.
7. Select Start Create Process and press <Enter> to set up hard disk for RAID system. The following confirmation message appears:



8. Press <Y> to confirm or <N> to return to the configuration options.
9. Press <Esc> to go back to main menu.

RAID 1 for data protection

1. From the create array menu, select Array Mode, then press <Enter>. The supported RAID configurations appear on a pop-up menu.

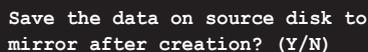


2. Select RAID 1 for data protection then press <Enter>.
3. From this point, you can auto-configure the RAID array by selecting Auto Setup for Data Security or manually configure the RAID array for mirrored sets. If you want to auto-configure, proceed to the next step, otherwise, skip to step 6.
4. Select Auto Setup for Data Security and press <Enter>. The following confirmation message appears.

A black rectangular box with white text that reads: 'Auto create array will destroy all data on disks, Continue? (Y/N)'.

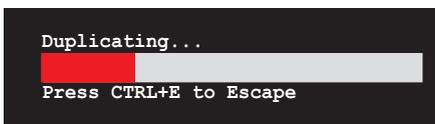
Auto create array will destroy all data on disks, Continue? (Y/N)

5. Press <Y> to confirm or <N> to return to the configuration options. If you selected <Y>, proceed to step 11.
6. Select Select Disk Drives, then press <Enter>. Use arrow keys to select disk drive/s, then press <Enter>. An asterisk appears before a selected drive.
7. Select Start Create Process and press <Enter> to setup hard disk for RAID system. The following inquiry appears:

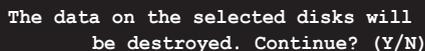
A black rectangular box with white text that reads: 'Save the data on source disk to mirror after creation? (Y/N)'.

Save the data on source disk to mirror after creation? (Y/N)

8. If you select <Y> the utility will duplicate your data. Press <Y> anytime if you want to exit the duplication process.



9. If you select <N>, the following confirmation message appears.

A black rectangular box with white text that reads: 'The data on the selected disks will be destroyed. Continue? (Y/N)'.

The data on the selected disks will be destroyed. Continue? (Y/N)

10. Press <Y> to confirm or <N> to return to the configuration options.
11. Press <Esc> to go back to main menu.

3.4 Creating a RAID driver disk

A floppy disk with the RAID driver is required when installing Windows® 2000/XP operating system on a hard disk drive that is included in a RAID set. You can create a RAID driver disk using your motherboard support CD.

To create a RAID driver disk:

1. Insert the motherboard support CD into the CD-ROM drive.
2. When the Drivers menu appears, click RAID Driver Disk to create a VIA 8237 RAID PLUS Driver Disk

Or

Browse the contents of the support CD to locate the driver disk utility and go to \Drivers\Chipset\MakeDisk\MakeDisk for the VIA RAID driver disk utility.



Refer to section "5.2.2 Drivers menu" for details.

3. Insert floppy disk to floppy disk drive.
4. Follow succeeding screen information to complete process.
5. Write-protect the floppy disk to avoid computer virus infection.

To install the RAID driver:

1. During the OS installation, the system prompts you to press the F6 key to install third-party SCSI or RAID driver.
2. Press <F6> then insert the floppy disk with RAID driver into the floppy disk drive.
3. Follow the succeeding screen instructions to complete the installation.