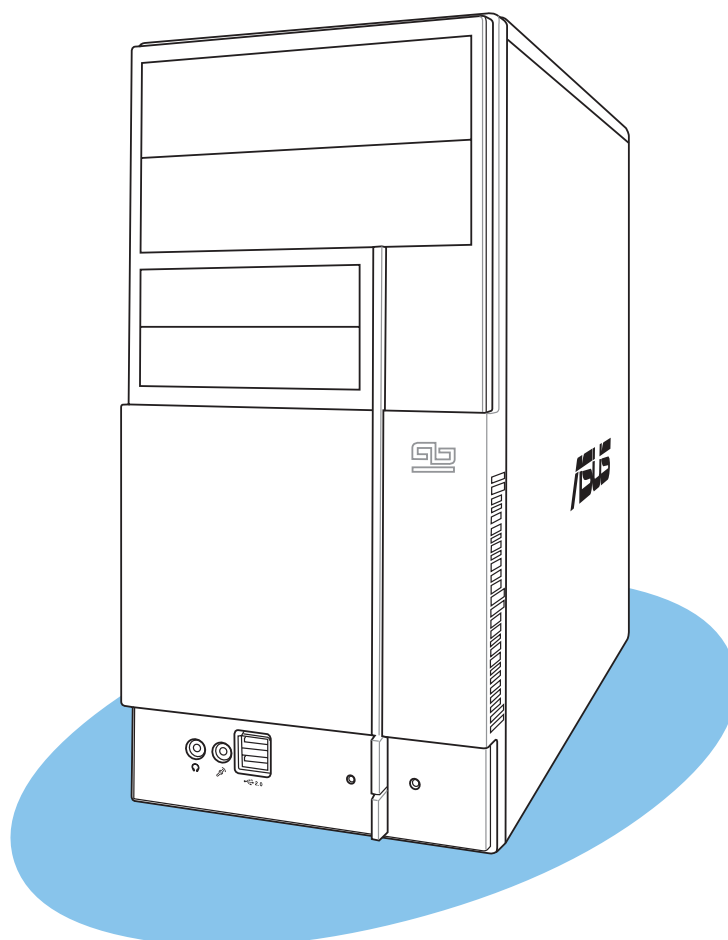


ASUS[®]
Vintage2-AE1
Barebone System



E2207

**First Edition V1
November 2005**

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Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. 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.



WARNING! 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 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 devices into the system, carefully read all the documentation 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.

Lithium-Ion Battery Warning

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

VORSICHT: Explosionsgefahr bei unsachgemäßen Austausch der Batterie. Ersatz nur durch denselben oder einem vom Hersteller empfohlenem ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

LASER PRODUCT WARNING

CLASS 1 LASER PRODUCT

About this guide

Audience

This guide provides general information and installation instructions about the ASUS Vintage2-AE1 barebone system. This guide is intended for experienced users and integrators with hardware knowledge of personal computers.

How this guide is organized

This guide contains the following parts:

1. Chapter 1: System introduction

This chapter gives a general description of the barebone system. The chapter presents the system features including introduction on the front and rear panel, and internal components.

2. Chapter 2: Basic installation

This chapter provides step-by-step instructions on how to install components in the system.

3. Chapter 3: Starting up

This chapter helps you power up the system and install drivers and utilities from the support CD.

4. Chapter 4: Motherboard information

This chapter gives information about the motherboard that comes with the system. This chapter includes the motherboard layout, jumper settings, and connector locations.

5. Chapter 5: BIOS information

This chapter tells how to change system settings through the BIOS Setup menus and describes the BIOS parameters.

Conventions used in 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: Instructions 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.

System package contents

Check your Vintage2-AE1 system package for the following items.



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

1. ASUS Vintage2-AE1 barebone system with

- ASUS motherboard
- 300 W PFC power supply unit
- ASUS chassis
- Front panel I/O board
- Wireless module (*optional*)

2. Cable

- AC power cable

3. Support CD

4. User guide

Chapter 1

This chapter gives a general description of the barebone system. The chapter presents the system features including introduction on the front and rear panel, and internal components.



ASUS Vintage2-AE1

System introduction

1.1 Welcome!

Thank you for choosing the ASUS Vintage2-AE1!

The ASUS Vintage2-AE1 is an all-in-one barebone system with a powerful computing capability, expandability, and versatile connectivity.

The system comes in a stylish mini-tower casing and powered by the ASUS motherboard. The system motherboard supports the latest AMD Athlon™ 64/64FX, and Sempron™ desktop processors in the 939-pin package.

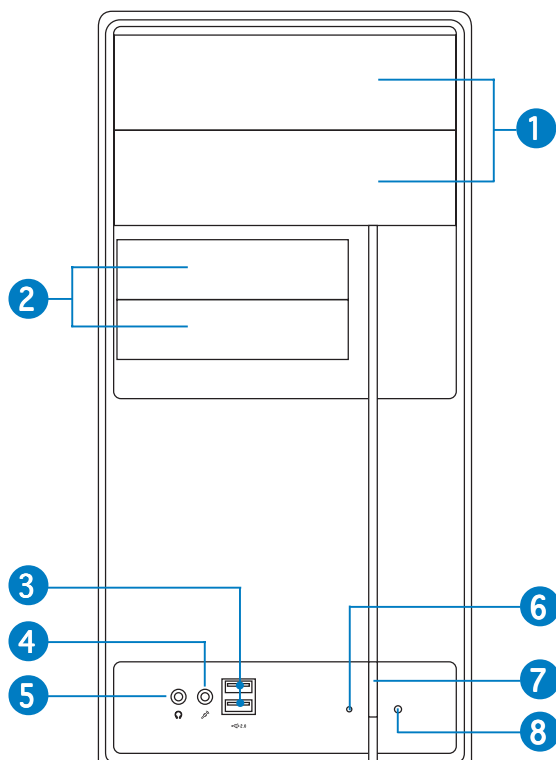
Two DDR DIMM slots support up to 2 GB of system memory using DDR400/333 DIMMs. The system also provides a choice of high-resolution graphics via an integrated graphics controller or via an AGP card (purchased separately).

The system also supports the PCI Express technology with a PCI Express x1 slot, and features a host of storage and connectivity including Serial ATA support, USB 2.0, and 5.1-channel audio capability. As an option, you may also choose to avail of the system's capability to support a wireless module that allows you to share data and media files minus the hassle of wires.

With Vintage2-AE1, you are ahead in the world of power computing.

1.2 Front panel

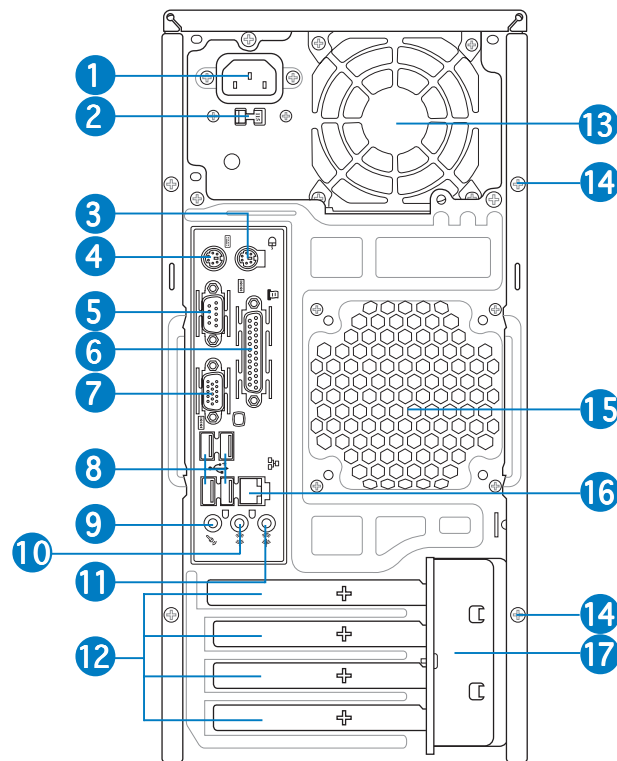
The front panel includes the optical drive bays, floppy disk drive slot, power button, and several I/O ports are located at the front panel.



1. **5.25-inch drive bay cover.** Covers two 5.25-inch bays for optical drives.
2. **3.5-inch drive bay cover.** Covers two 3.5-inch bays for a hard disk and a floppy disk drive.
3. **USB 2.0 ports.** These Universal Serial Bus 2.0 (USB 2.0) ports are available for connecting USB 2.0 devices such as a mouse, printer, scanner, camera, PDA, and others.
4. **Microphone port.** This Mic (pink) +port connects a microphone.
5. **Headphone port.** This Line In (green) port connects a headphone with a stereo mini-plug.
6. **Hard disk drive activity LED.**
7. **Power button.** Press this button to turn the system on.
8. **Reset button.** Press this button to reboot the system without turning off the power.

1.3 Rear panel

The system rear panel includes the power connector and several I/O ports that allow convenient connection of devices.



1. **Power connector.** This connector is for the power cable and plug.
2. **Voltage selector.** This switch allows you to adjust the system input voltage according to the voltage supply in your area. See the next section before adjusting this selector.
3. **PS/2 mouse port.** This green 6-pin connector is for a PS/2 mouse.
4. **PS/2 keyboard port.** This purple 6-pin connector is for a PS/2 keyboard.
5. **Serial port .** This port connects a mouse, modem, or other devices that conforms with serial specification.
6. **Parallel port.** This 25-pin port connects a printer, scanner, or other devices.
7. **VGA port.** This port connects a VGA monitor.
8. **USB 2.0 ports 1, 2, 3 and 4.** These 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
9. **Microphone port (pink).** This port connects a microphone.
10. **Line Out port (lime).** This port connects a headphone or a speaker.
11. **Line In port (light blue).** This port connects the tape, CD, DVD player, or other audio sources.



Refer to the audio configuration table below for the function of the audio ports in 2, 4, or 6-channel configuration.

Audio 2, 4, or 6-channel configuration

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

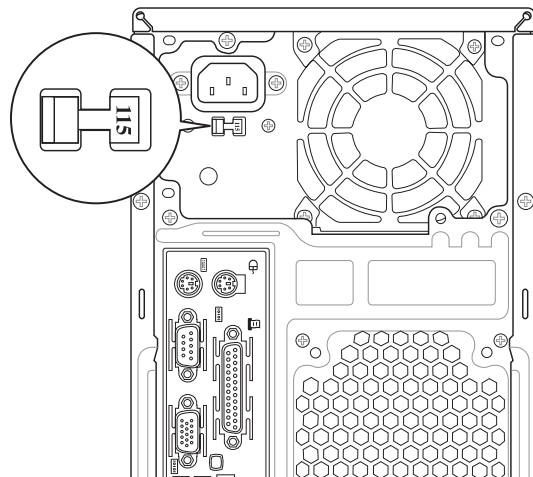
- 12. Expansion slot metal brackets.** Covers the expansion card slots. Remove the metal bracket only when installing an expansion card.
- 13. Power supply unit fan vent.** This vent is for the PSU fan that provides ventilation inside the power supply unit.
- 14. Cover screws.** Secure the side cover to the chassis.
- 15. Chassis fan vent.** This vent is for the fan that provides ventilation inside the system chassis.
- 16. LAN (RJ-45) port.** This port allows Gigabit connection to a Local Area Network (LAN) through a network hub.
- 17. Metal bracket lock.** Secures the expansion card metal bracket to the chassis.

Selecting the voltage

The system's power supply unit has a 115 V/230 V voltage selector switch located beside the power connector. Use this switch to select the appropriate system input voltage according to the voltage supply in your area.

If the voltage supply in your area is 100-127 V, set the switch to 115 V.

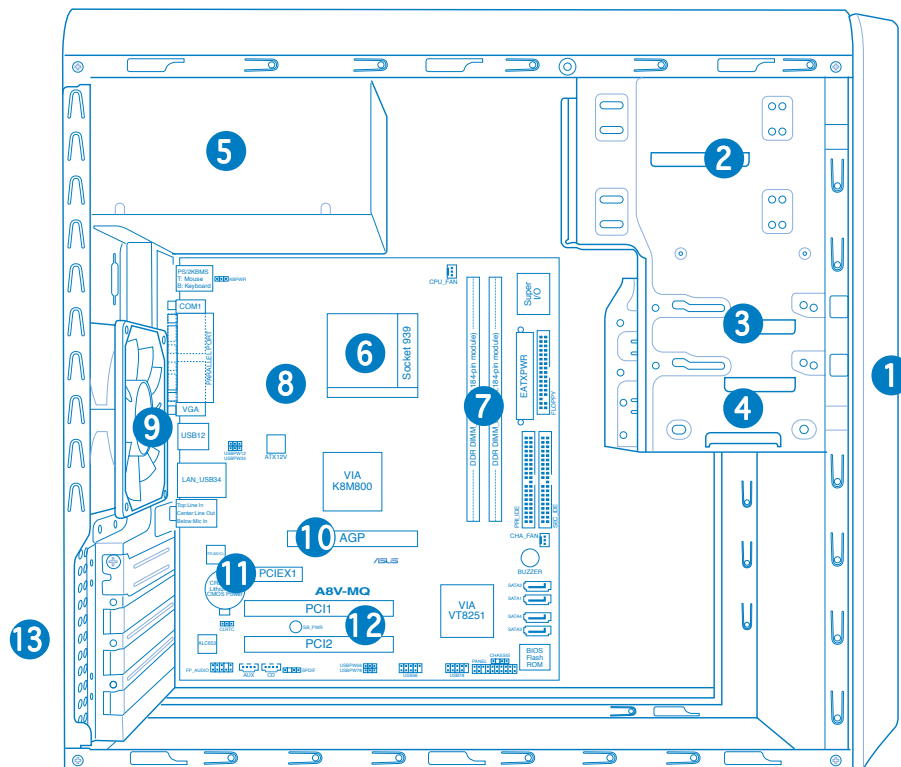
If the voltage supply in your area is 200-240 V, set the switch to 230 V.



Setting the switch to 115 V in a 230 V environment or 230 V in a 115 V environment will seriously damage the system!

1.4 Internal components

The illustration below is the internal view of the system when you remove the top cover and the power supply unit. The installed components are labeled for your reference. Proceed to Chapter 2 for instructions on installing additional system components.



1. Front panel cover
2. 5.25-inch optical drive bays
3. Hard disk drive bay
4. Floppy disk drive bay
5. Power supply unit
6. CPU socket
7. DIMM sockets
8. ASUS motherboard
9. Chassis fan
10. AGP slot
11. PCI Express x1 slot
12. PCI slots
13. Metal bracket lock

Chapter 2

This chapter provides step-by-step instructions on how to install components in the system.



ASUS Vintage2-AE1

Basic installation

2.1 Preparation

Before you proceed, make sure that you have all the components you plan to install in the system.

Basic components to install:

1. Central processing unit (CPU)
2. DDR Dual Inline Memory Module (DIMM)
3. Expansion card(s)
4. Hard disk drive
5. Optical drive
6. Floppy disk drive

Tool

Phillips (cross) screw driver

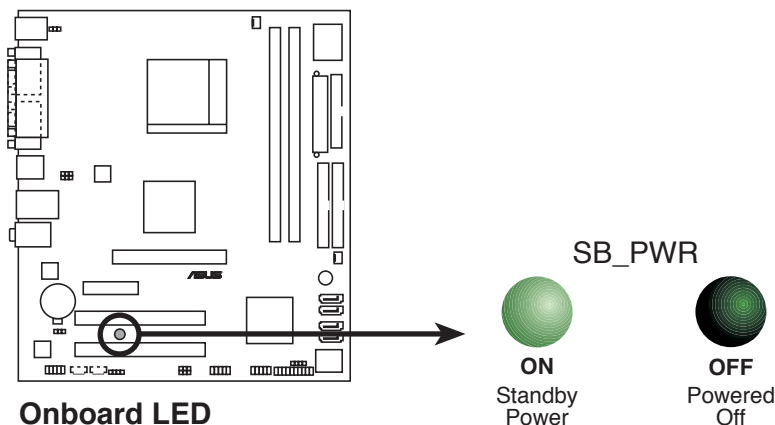
2.2 Before you proceed

Take note of the following precautions before you install components into the system.



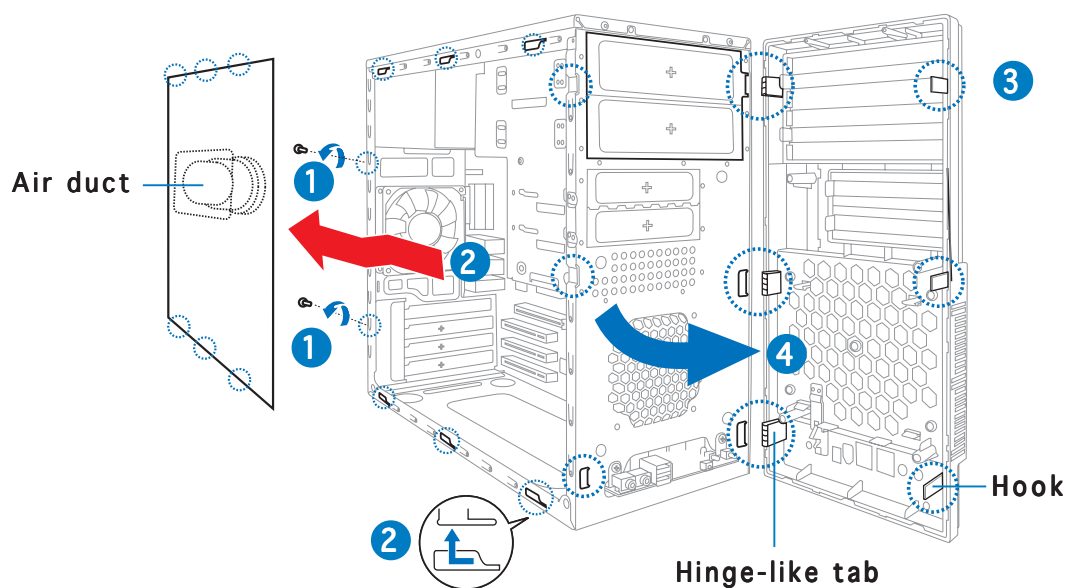
- Use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity.
- Hold components by the edges to avoid touching the ICs on them.
- Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.

The motherboard comes with an onboard standby power LED. This LED lights up to indicate that the system is ON, in sleep mode or in soft-off mode, and not powered OFF. Unplug the power cable from the power outlet and make sure that the standby power LED is OFF before installing any system component.



2.3 Removing the side cover and front panel assembly

1. Remove the cover screws on the rear panel.
2. Pull the side cover toward the rear panel until its hooks disengage from the chassis. Set the side cover aside.
3. Locate the front panel assembly hooks, then lift them until they disengage from the chassis.
4. Swing the front panel assembly to the right, until the hinge-like tabs on the right side of the assembly are exposed.
5. Remove the front panel assembly, then set aside.



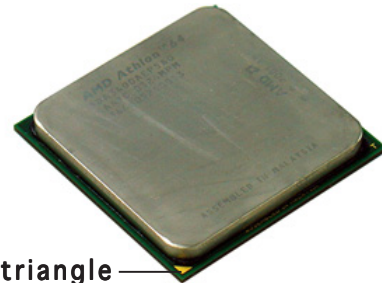
2.4 Central Processing Unit (CPU)

2.4.1 Overview

The motherboard comes with a surface mount 939-pin Zero Insertion Force (ZIF) socket designed for the AMD Athlon™ 64/64FX or Sempron™ processor.

The 128-bit-wide data paths of these processors can run applications faster than processors with only 32-bit or 64-bit wide data paths.

Take note of the marked corner (with gold triangle) on the CPU. This mark should match a specific corner on the socket to ensure correct installation.



Gold triangle

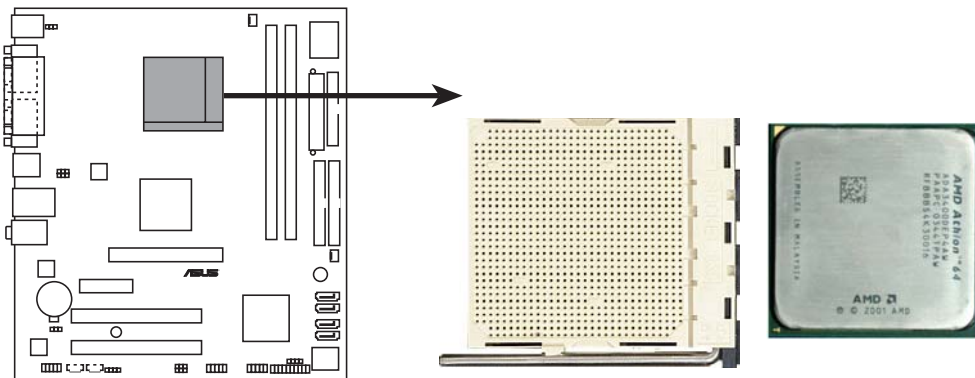


Vintage2-AE1 does not support dual-core processors.

2.4.2 Installing the CPU

To install a CPU:

1. Locate the CPU socket on the motherboard.

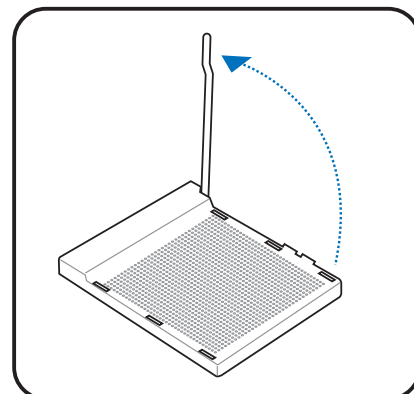


CPU Socket 939

2. Unlock the socket by pressing the lever sideways, then lift it up to a 90°-100° angle.



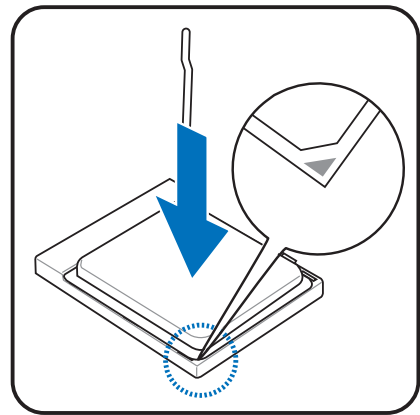
Make sure that the socket lever is lifted up to 90°-100° angle, otherwise the CPU does not fit in completely.



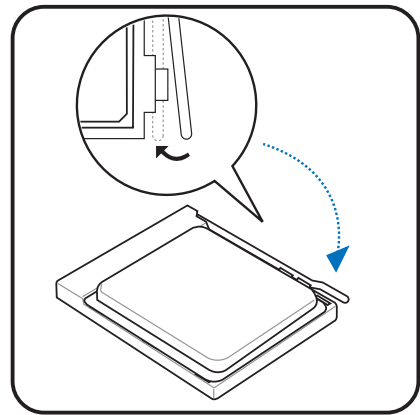
3. Position the CPU above the socket such that the CPU corner with the gold triangle matches the socket corner with a small triangle.
4. Carefully insert the CPU into the socket until it fits in place.



The CPU fits only in one correct orientation. DO NOT force the CPU into the socket to prevent bending the pins and damaging the CPU!



5. When the CPU is in place, push down the socket lever to secure the CPU. The lever clicks on the side tab to indicate that it is locked.

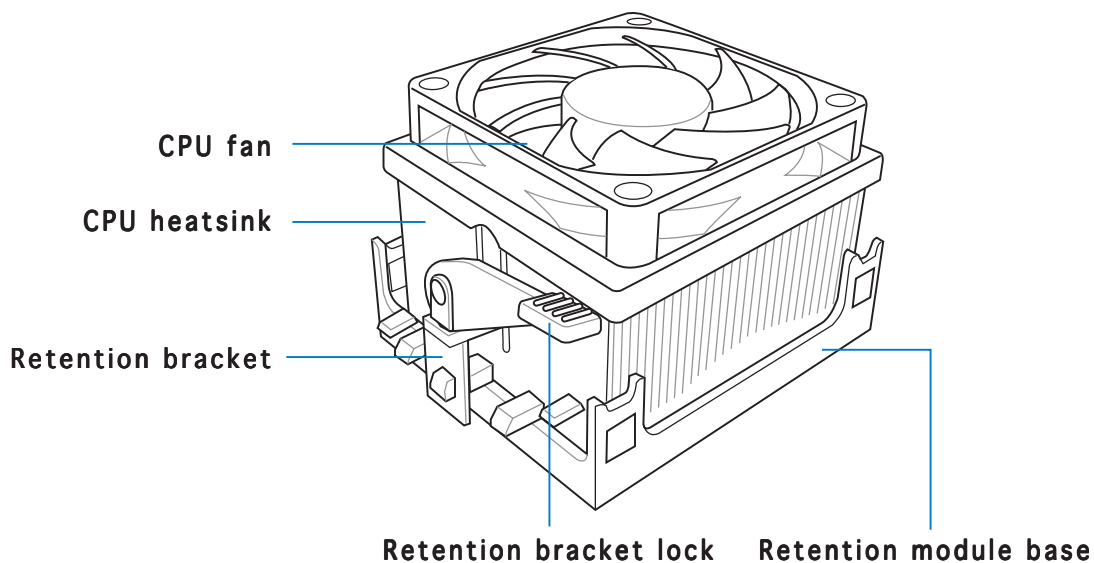


2.4.3 Installing the CPU fan and heatsink assembly

The AMD Athlon™ 64FX/64 or Sempron™ processor requires a specially designed CPU fan and heatsink assembly to ensure optimum thermal condition and performance.



- Your boxed CPU heatsink and fan assembly should come with installation instructions for the CPU, heatsink, and the retention mechanism. If the instructions in this section do not match the CPU documentation, follow the latter.
- The retention module base is already installed on the motherboard. You do not have to remove the retention module base when installing the CPU or installing other motherboard components.
- If you purchased a separate CPU fan and heatsink assembly, make sure that a thermal interface material is properly applied to the CPU surface or the heatsink bottom before you install the CPU fan and heatsink assembly.



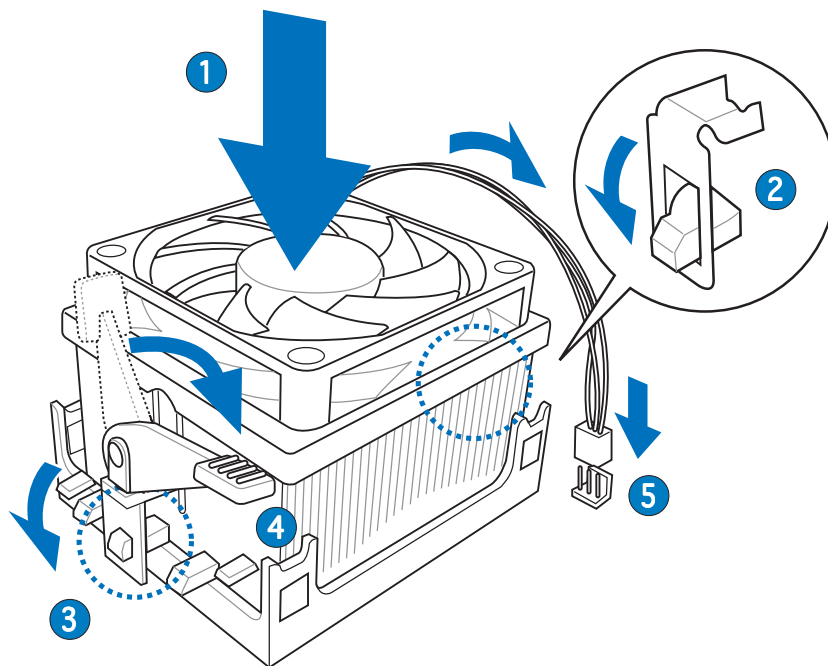
To install the CPU fan and heatsink assembly:

1. Place the heatsink on top of the installed CPU.



Make sure that the fan and heatsink assembly perfectly fits the retention mechanism module base; otherwise you can not lock the retention bracket.

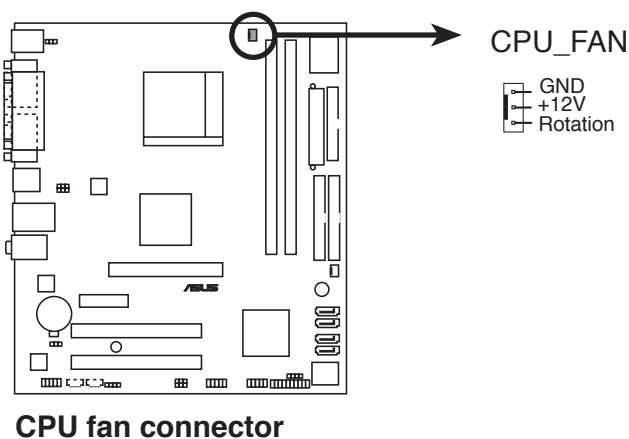
2. Attach one end of the retention bracket to the retention module base.
3. Attach the other end of the retention bracket (near the retention bracket lock) to the retention module base until it clicks in place.
4. Push down the retention bracket lock on the retention mechanism to secure the fan and heatsink to the module retention module base.



5. Connect the CPU fan cable to the connector labeled CPU_FAN on the motherboard.



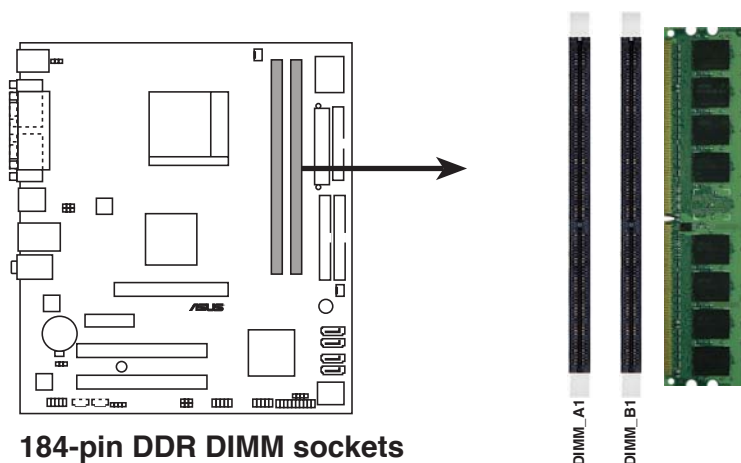
Do not forget to connect the CPU fan connector! Hardware monitoring error can occur if you fail to plug this connector.



2.5 Installing a DIMM

The system motherboard comes with two Double Data Rate (DDR) Dual Inline Memory Module (DIMM) sockets.

The following figure illustrates the location of the sockets:



2.5.1 Memory configurations

You may install 128 MB, 256 MB, 512 MB, and 1 GB unbuffered ECC/non-ECC DDR DIMMs into the DIMM sockets using the memory configurations in this section.

- Installing DDR DIMMs other than the recommended configurations may cause memory sizing error or system boot failure. Use any of the recommended configurations on the next page.
- Install only identical (the same type and size) DDR DIMM pairs for each channel.
- Always install DIMMs with the same CAS latency. For optimum compatibility, it is recommended that you obtain memory modules from the same vendor.
- Due to chipset limitation, this motherboard does not support DIMM modules with less than or equal to 128 Mb memory chips.

Recommended memory configurations

CPU	Mode	Sockets	
		DIMM_A1 (black)	DIMM_B1 (black)
Single-core	Single-channel	—	Populated
	Dual-channel	Populated	Populated
Dual-core	Single-channel	Populated	—
	Single-channel	—	Populated
	Dual-channel	Populated	Populated

DDR400 Qualified Vendors List

Size	Vendor	Model	Brand	Side(s)	Component	CL	DIMM support	
							A	B
256 MB	KINGSTON	KVR400X72C3A/256	Mosel	SS	V58C2256804SAT5(ECC)	–	•	
512 MB	KINGSTON	KVR400X72C3A/512	Mosel	DS	V58C2256804SAT5(ECC)	–		
512 MB	KINGSTON	KHX3200A/512	–	DS	N/A	–	•	•
1024 MB	KINGSTON	KHX3200ULK2/1G	–	DS	N/A	2		
256 MB	KINGSTON	KVR400X64C3A/256	–	SS	D3208DL3T-5A	–	•	•
256 MB	KINGSTON	KVR400X64C3A/256	–	SS	A2S56D30BTP511ALM09	–	•	
512 MB	KINGSTON	KVR400X64C3A/512	–	DS	V58C2256804SAT5	–		•
512 MB	KINGSTON	KVR400X64C3A/512	–	SS	HY5DU12822BT-D43	–	•	•
1024 MB	KINGSTON	KVR400X64C3A/1G	–	DS	HYB25D512800BE-5B	–	•	•
256 MB	SAMSUNG	M381L3223ETM-CCC	SAMSUNG	SS	K4H560838E-TCCC(ECC)	3ECC		
512 MB	SAMSUNG	M381L6423ETM-CCC	SAMSUNG	DS	K4H560838E-TCCC(ECC)	–	•	•
256 MB	SAMSUNG	M368L3223ETM-CCC	SAMSUNG	SS	K4H560838E-TCCC	–	•	•
256 MB	SAMSUNG	M368L3223FTN-CCC	SAMSUNG	SS	K4H560838F-TCCC	3	•	•
512 MB	SAMSUNG	M368L6423FTN-CCC	SAMSUNG	DS	K4H560838F-TCCC	3	•	•
512 MB	SAMSUNG	M368L6523BTM-CCC	SAMSUNG	SS	K4H510838B-TCCC	3	•	•
256 MB	MICRON	MT8VDDT3264AG-40BCB	MICRON	SS	MT46V32M8TG-5BC	–	•	•
512 MB	MICRON	MT16VDDT6464AG-40BCB	MICRON	DS	MT46V32M8TG-5BC	–	•	•
256 MB	Infineon	HYS64D32300HU-5-C	Infineon	SS	HYB25D256800CE-5C	3	•	•
512 MB	Infineon	HYS64D64320HU-5-C	Infineon	DS	HYB25D256800CE-5C	–	•	•
256 MB	Infineon	HYS64D32301HU-5-C	Infineon	SS	HYB25D512160CE-5C	3	•	•
512 MB	Infineon	HYS64D64300HU-5-C	Infineon	SS	HYB25D512800CE-5C	3	•	•
1024 MB	Infineon	HYS64D128320HU-5-C	Infineon	DS	HYB25D512800CE-5B	3	•	•
256 MB	CORSAIR	CMX256A-3200C2PT	Winbond	SS	W942508BH-5	2	•	•
512 MB	CORSAIR	CMX512-3200C2	Winbond	DS	–	2	•	•
512 MB	CORSAIR	VS512MB400	VALUE seLecTDS	VS32M8-5		2.5	•	•
1024 MB	CORSAIR	TWINX2048-3200C2	–	DS	–	3	•	•
256 MB	Hynix	HYMD232646D8J-D43	Hynix	SS	HY5DU56822DT-D43	3	•	•
512 MB	Hynix	HYMD264646D8J-D43	Hynix	DS	HY5DU56822DT-D43	3	•	•
256 MB	TwinMOS	M2G9I08AIATT9F081AADT	TwinMOS	SS	TMD7608F8E50D	2.5		
512 MB	TwinMOS	M2G9J16AJATT9F081AADT	TwinMOS	DS	TMD7608F8E50D	2.5		
256 MB	TwinMOS	M2G9I08A8ATT9F081AADT	TwinMOS	SS	TMD7608F8E50D	2.5		
512 MB	TwinMOS	M2G9J16A8ATT9F081AADT	TwinMOS	DS	TMD7608F8E50D	2.5		
256 MB	Transcend	TS32MLD64V4F3	SAMSUNG	SS	K4H560838F-TCCC	3		
512 MB	Transcend	TS64MLD64V4F3	SAMSUNG	DS	K4H560838F-TCCC	3		
1024 MB	Transcend	TS128MLD64V4J	SAMSUNG	DS	K4H510838B-TCCC	3		
256 MB	Apacer	77.10636.33G	Infineon	SS	HYB25D256800CE-5C	3		
512 MB	Apacer	77.10736.33G	Infineon	DS	HYB25D256800CE-5C	3		
256 MB	Apacer	77.10639.60G	ProMOS	SS	V58C2256804SCT5B	2.5		
512 MB	Apacer	77.10739.60G	ProMOS	DS	V58C2256804SCT5B	2.5		
256 MB	A DATA	MDOSS6F3G31YOK1EOZ	SAMSUNG	SS	K4H560838E-TCCC	3		
512 MB	A DATA	MDOSS6F3H41YON1EOZ	SAMSUNG	DS	K4H560838F-TCCC	3		
256 MB	A DATA	MDOHY6F3G31YON1EOZ	Hynix	SS	HY5DU56822CT-D43	3		
512 MB	A DATA	MDOHY6F3H41YON1EOZ	Hynix	DS	HY5DU56822CT-D43	3		
256 MB	A DATA	MDOAD5F3G31YOD1EO2	–	SS	ADD8608A8A-5B	2.5		
512 MB	A DATA	MDOAD5F3H41YOD1EO2	–	DS	ADD8608A8A-5B	2.5		
256 MB	Winbond	W9425GCDB-5	Winbond	SS	W942508CH-5	3		
512 MB	Winbond	W9451GCDB-5	Winbond	DS	W942508CH-5	–		
256 MB	PSC	AL5D8B53T-5B1K	PSC	SS	A2S56D30BTP	2.5		
512 MB	PSC	AL6D8B53T-5B1K	PSC	DS	A2S56D30BTP	2.5		
256 MB	KINGMAX	MPXB62D-38KT3R	–	SS	KDL388P4LA-50	–		
512 MB	KINGMAX	MPXC22D-38KT3R	–	DS	KDL388P4LA-50	–		

Size	Vendor	Model	Brand	Side(s)	Component	CL	DIMM support	
							A	B
256 MB	NANYA	NT256D64S88C0G-5T	-	SS	NT5DS32M8CT-5T	3		
512 MB	NANYA	NT512D64S8HC0G-5T	-	DS	NT5DS32M8CT-5T	3		
256 MB	NANYA	NT256D64SH4B0G-5T	-	SS	NT5DS32M16BT-5T	3		
512 MB	NANYA	NT512D64S88B0G-5T	-	DS	NT5DS64M8BT-5T	3		
1024 MB	NANYA	NT1GD64S8HB0G-5T	-	DS	NT5DS64M8BT-5T	-		
256 MB	CENTURY	DXV6S8SSCCE3K27E	SAMSUNG	SS	K4H560838E-TCCC	-		
512 MB	CENTURY	DXV2S8SSCCE3K27E	SAMSUNG	DS	K4H560838E-TCCC	-		
256 MB	CENTURY	DXV6S8EL5BM3T27C	-	SS	DD2508AMTA	-		
512 MB	CENTURY	DXV2S8EL5BM3T27C	-	DS	DD2508AMTA	-		
256 MB	CENTURY	DXV6S8EL5B	-	SS	DD2508AMTA	-		
256 MB	CENTURY	DXV6S8HxD43B	-	SS	HY5DU56822BT-D43	-		
256 MB	CENTURY	DXV6S8HxD43D	-	SS	HY5DU56822DT-D43	-		
512 MB	CENTURY	DXV2S8EL5B	-	DS	DD2508AMTA	-		
512 MB	CENTURY	DXV2S8HxD43B	-	DS	HY5DU56822BT-D43	-		
512 MB	CENTURY	DXV2S8HxD43D	-	DS	HY5DU56822DT-D43	-		
256 MB	CENTURY	DXV6S8EL5B/HP	-	SS	DD2508AKTA-5B-E	-		
512 MB	CENTURY	DXV2S8EL5B/HP	-	DS	DD2508AKTA-5B-E	-		
256 MB	KINGSTON	KVR400X72C3A/256	Mosel	SS	V58C2256804SAT5(ECC)	-	•	
256 MB	CENTURY	DXV6S8MC5B	-	SS	MT46V32M8TG-5BG	-		
512 MB	CENTURY	DXV2S8MC5B	-	DS	MT46V32M8TG-5BG	-		
256 MB	elixir	M2U25664DS88C3G-5T	elixir	SS	N2DS25680CT-5T	3		
512 MB	elixir	M2U51264DS8HC1G-5T	elixir	DS	N2DS25680CT-5T	3		
256 MB	Kreton	-	VT	SS	VT3225804T-5	-		
512 MB	Kreton	-	VT	DS	VT3225804T-5	-		
256 MB	Veritech	VU256FLTM25C	VT	SS	VT56DD32M8PC-5	3		
512 MB	Veritech	VU512FLTM25C	VT	DS	VT56DD32M8PC-5	3		
256 MB	Pmi	MD44256VIT3208GMHA01	MOSEL	SS	V58C2256804SAT5B	2.5		
512 MB	Pmi	MD44512VIT3208GATA03	MOSEL	DS	V58C2256804SAT5B	2.5		
256 MB	ProMOS	V826632K24SCTG-D0	-	SS	V58C2256804SCT5B	2.5		
512 MB	ProMOS	V826664K24SCTG-D0	-	DS	V58C2256804SCT5B	2.5		
256 MB	Deutron	AL5D8C53T-5B1T	PSC	SS	A2S56D30CTP	2.5		
512 MB	Deutron	AL6D8C53T-5B1T	PSC	DS	A2S56D30CTP	2.5		
256 MB	GEIL	GL5123200DC	-	SS	GL3LC32G88TG-35	-		
512 MB	GEIL	GL1GB3200DC	-	DS	GL3LC32G88TG-35	-		
256 MB	GEIL	GLX2563200UP	-	SS	GL3LC32G88TG-5A	-		
256 MB	GEIL	GD3200-512DC	-	SS	WLCSP Package	-		
256 MB	crucial	BL3264Z402.8TG	Ballistix	SS	-	2		
512 MB	crucial	BL6464Z402.16TG	Ballistix	DS	-	2		
256 MB	Novax	96M425653CE-40TB6	CEON	SS	C2S56D30TP-5	2.5		
512 MB	Novax	96M451253CE-40TB6	CEON	DS	C2S56D30TP-5	2.5		
256 MB	Aeneon	AED560UD00-500C88X	Aeneon	SS	AED83T500	3		
256 MB	V-DATA	MDYVD6F4G2880B1E0H	-	SS	VDD9616A8A-5C	-		

Legend:

SS - Single Sided **DS** - Double Sided **CL** - CAS Latency

A - supports one module inserted into either slot, in a Single-channel memory configuration.

B - supports one pair of modules inserted into both slots as one pair of Dual-channel memory configuration.



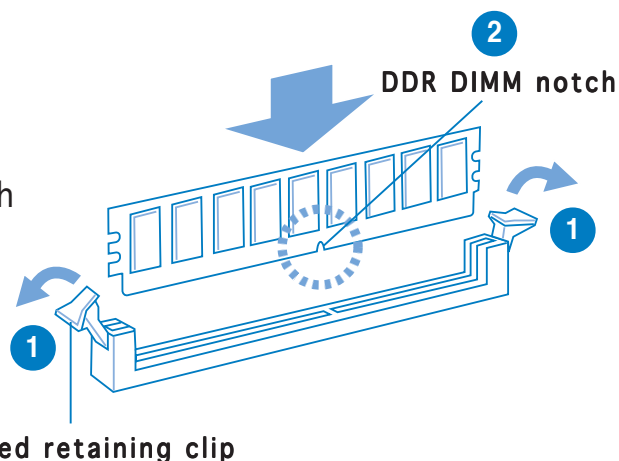
Visit the ASUS website (www.asus.com) for the latest Qualified Vendors List.

2.5.2 Installing a DIMM



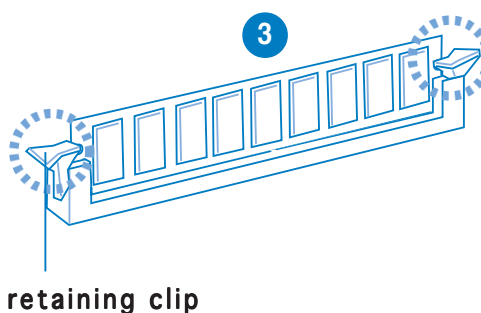
Make sure to unplug the power supply before adding or removing DIMMs or other system components. Failure to do so may cause severe damage to both the motherboard and the components.

1. Unlock a DIMM socket by pressing the retaining clips outward.
2. 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.

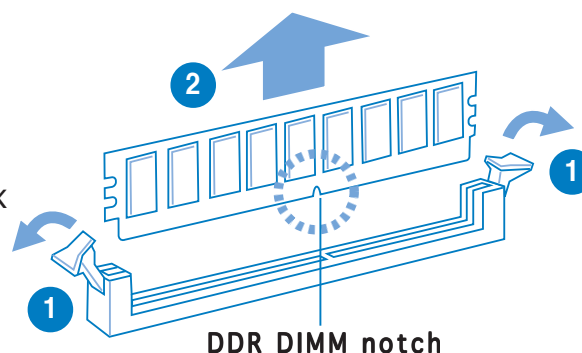
3. Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM is properly seated.



2.5.3 Removing a DIMM

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.

2.6 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.



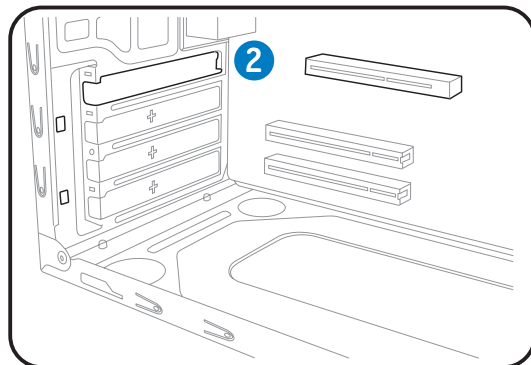
Make sure to unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage motherboard components.

2.6.1 Installing an expansion card

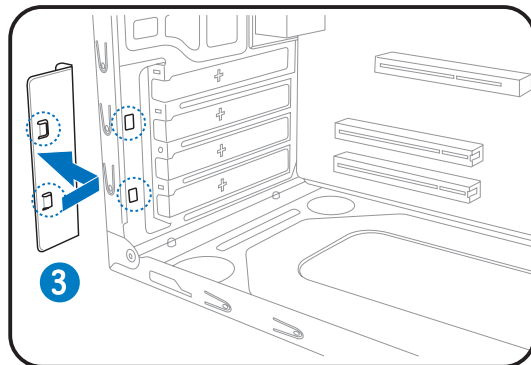
To install an expansion card:

1. Before installing the expansion card, read the documentation that came with it and make the necessary hardware settings for the card.

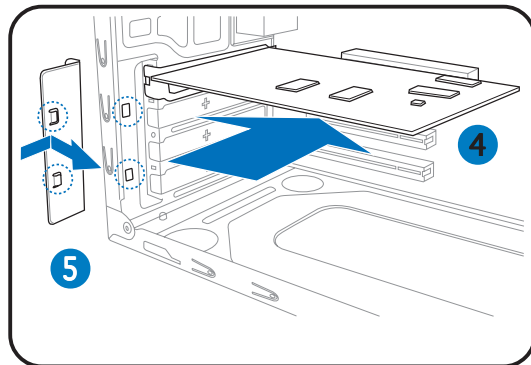
2. Remove the metal bracket opposite the slot that you intend to use. Keep the screw for later use.



3. Remove the metal bracket lock.



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.



2.6.2 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 5 for information on BIOS setup.
2. Assign an IRQ to the card. Refer to the tables below.
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	-	Programmable interrupt
3	11	Communications Port (COM2)*
4	12	-
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	MIDI port*
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

* These IRQs are usually available for ISA or PCI devices.

IRQ assignments for this motherboard

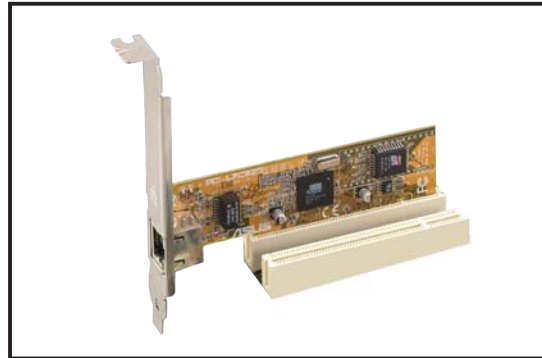
	A	B	C	D	E	F	G	H
PCI slot 1	shared	—	—	—	—	—	—	—
PCI slot 2	—	shared	—	—	—	—	—	—
IDE (0, 0f, 0)	—	shared	—	—	—	—	—	—
USB controller 1	shared	—	—	—	—	—	—	—
USB controller 2	—	—	shared	—	—	—	—	—
USB controller 3	—	used	—	—	—	—	—	—
USB controller 4	—	—	—	shared	—	—	—	—
USB 2.0 controller	—	—	shared	—	—	—	—	—
AC'97	—	—	shared	—	—	—	—	—
Ethernet	shared	—	—	—	—	—	—	—
AGP	shared	—	—	—	—	—	—	—
PCIe x1	shared	—	—	—	—	—	—	—



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.

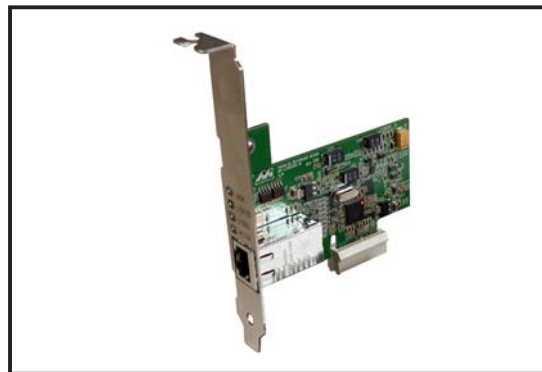
2.6.3 PCI slots

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.



2.6.4 PCI Express x1 slot

This motherboard supports PCI Express x1 network cards, SCSI cards and other cards that comply with the PCI Express specifications. The following figure shows a network card installed on the PCI Express x1 slot.

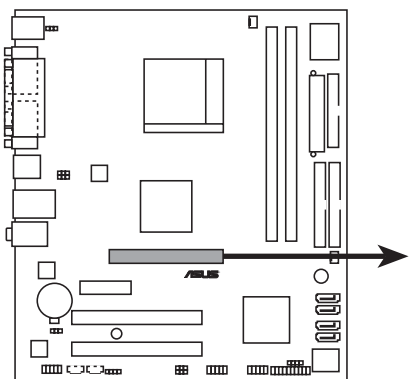


2.6.5 AGP 8X slot

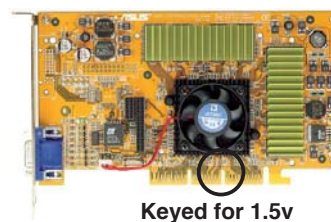
This motherboard has an Accelerated Graphics Port (AGP) slot that supports AGP 8X (+0.8V) and AGP 4X (+1.5V) cards. When you buy an AGP card, make sure that you ask for one with +0.8V or +1.5V specification.



- Install only +0.8V or +1.5V AGP cards. This motherboard does not support +3.3V AGP cards.
- You can only use either the AGP slot or the PCI Express x1 slot. If you installed an AGP card, the card will block the PCI Express x1 slot.

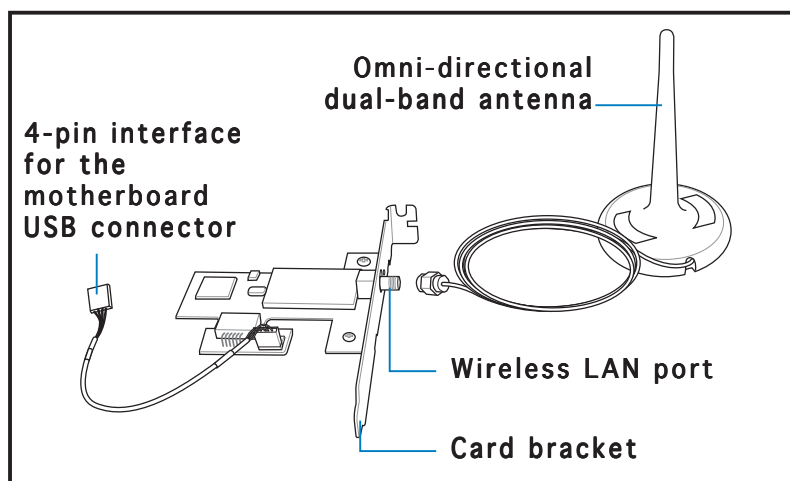


Accelerated Graphics Port (AGP)



2.6.6 Wireless LAN module (*optional*)

This motherboard supports an optional LAN module that allows you to set up a wireless network and exchange information with other wireless devices without tangling cables and wires. Connect the omni-directional dual-band antenna to this module.



To install the optional wireless LAN module:

1. Follow steps 1 ~ 3 of section “2.6.1 Installing an expansion card.”
2. Align the wireless module card bracket with the slot opening on the rear panel.
3. Secure the bracket with a screw.
4. Connect the 4-pin blue end of the cable from the CON1 connector on the wireless LAN module to the USB connector on the motherboard. See page 4-9 for the location of the USB connector.
5. Connect the omni-directional dual-band antenna to the wireless LAN port.



See section “3.4.5 Using the Wireless LAN module” for information on the Wireless LAN utility and device driver installation.

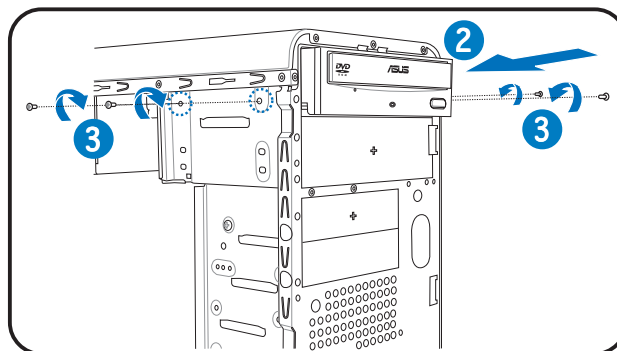
2.7 Installing storage drives

2.7.1 Optical drive

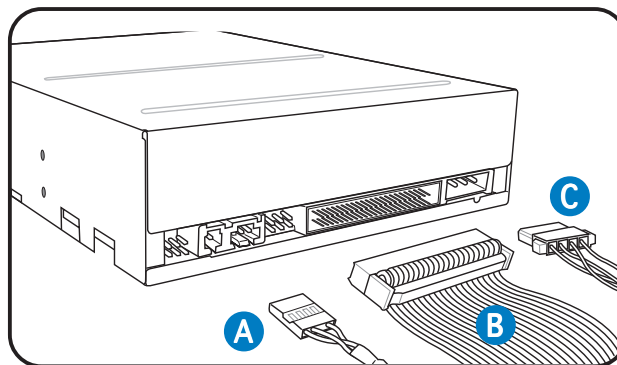
The system supports up to two 5.25" optical drives such as CD-ROM, CD-RW, DVD-ROM, and DVD-RW drives.

To install an optical drive:

1. Place the chassis upright, then remove the upper 5.25" drive bay metal plate cover.
2. Insert the optical drive to the bay, then carefully push the drive until its screw holes align with the holes on the bay.
3. Secure the optical drive with two screws on both sides of the bay.



4. Connect the audio (A), IDE (B), and power (C) plugs to connectors at the back of the drive.



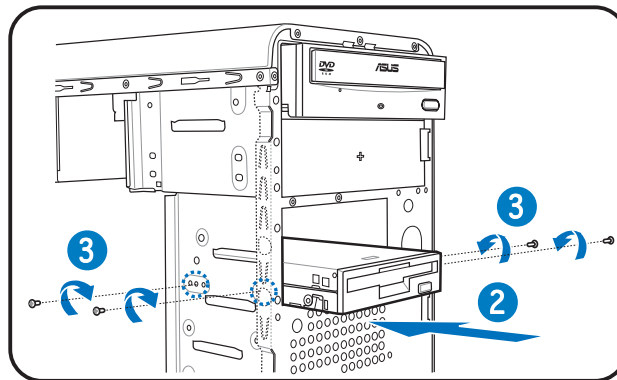
5. Connect the other end of the IDE cable to the secondary IDE connector (labeled SEC_IDE) on the motherboard. See page 4-6 for the connector location.
6. Connect the other end of the audio cable to the 4-pin connector labeled CD on the motherboard. See page 4-9 for the connector location.

2.7.2 Floppy disk drive

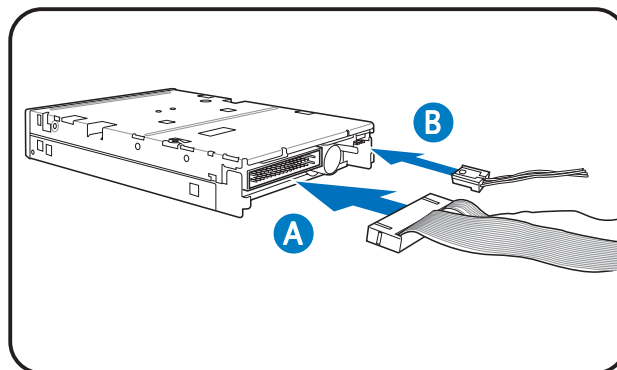
The system supports a 3.5" floppy disk drive.

To install a floppy disk drive:

1. Place the chassis upright, then remove the lower 3.5" drive bay metal plate cover.
2. Insert the floppy disk drive to the bay, then carefully push the drive until its screw holes align with the holes on the bay.
3. Secure the floppy disk drive with two screws on both sides of the bay.



4. Connect the signal (A) and power (B) plugs to connectors at the back of the drive.



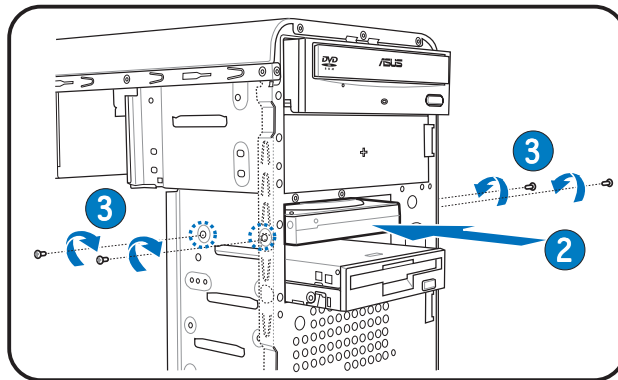
5. Connect the other end of the floppy cable to the floppy disk drive connector (labeled FLOPPY) on the motherboard. See page 4-6 for the connector location.

2.7.3 Hard disk drive

The system supports a 3.5" IDE or SATA hard disk drive.

To install a hard disk drive:

1. Place the chassis upright, then remove the upper 3.5" drive bay metal plate cover.
2. Insert the hard disk drive to the bay, then carefully push the drive until its screw holes align with the holes on the bay.
3. Secure the hard disk drive with two screws on both sides of the bay.

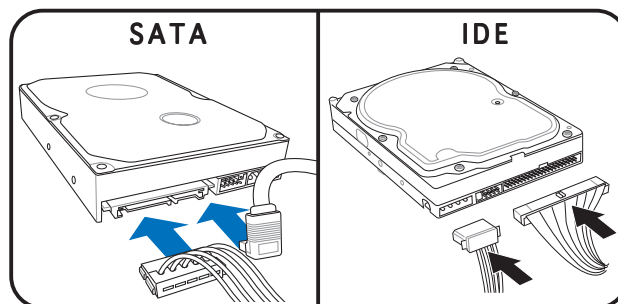


4. **For SATA HDD:** Connect the SATA signal and power plugs to the connectors at the back of the drive.



Some Serial ATA HDDs have two power connectors (legacy 4-pin and SATA power 15-pin). Depending on the available power supply plugs, use **only one** of the power connectors. Connecting a power plug on both connectors could damage the drive.

For IDE HDD: Connect the IDE and power plugs to the connectors at the back of the drive.



5. **For SATA HDD:** Connect the other end of the Serial ATA cable to a SATA connector on the motherboard. See page 4-7 for the location of the Serial ATA connectors.

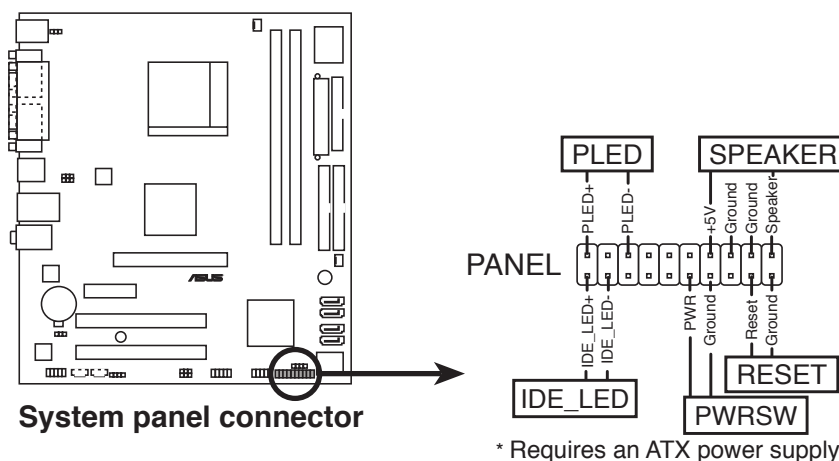
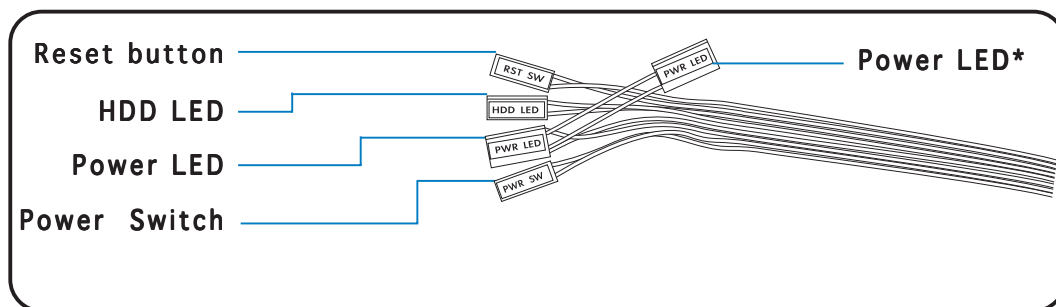
For IDE HDD: Connect the other end of IDE cable to the connector (labeled PRI_IDE) on the motherboard. See page 4-6 for the location of the IDE connectors.

2.8 Connecting cables

You may have disconnected some cables when you installed system components. Connect these cables before you replace the chassis cover.

Front panel buttons and LEDs

Connect the **reset button**, **power switch**, **power LED**, and **HDD LED** cables to their respective leads in the system panel connector on the motherboard. See page 4-12 for the system panel descriptions.

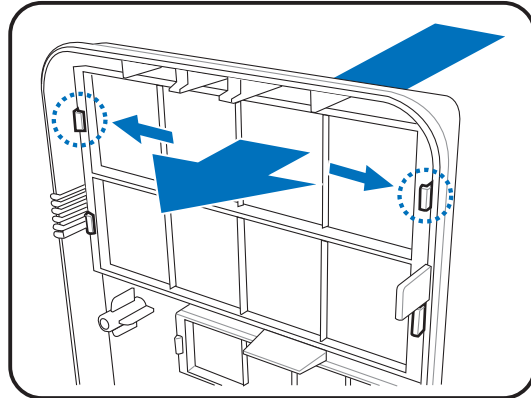


*The extra 2-pin power LED is for other Vintage2 models.

2.9 Removing the bay covers

If you installed an optical and/or floppy disk drive, remove the bay cover(s) on the front panel assembly before reinstalling it to the chassis. To do this:

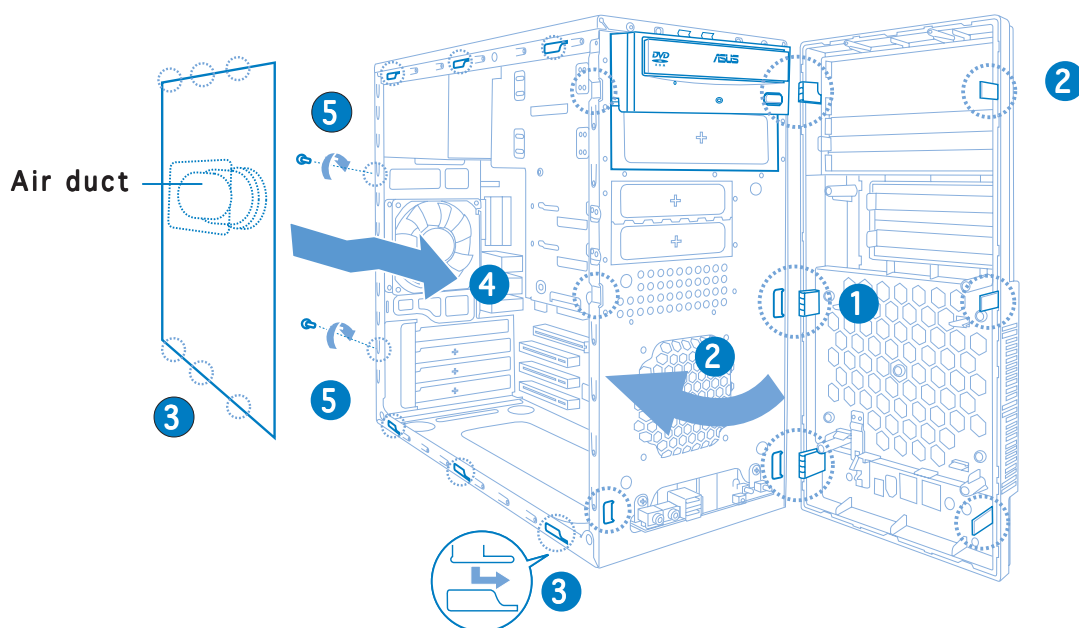
1. Locate the bay cover locks.
2. Press the locks outward to release the bay cover.
3. Push the bay cover inward, then set it aside.
4. Follow the same instructions to remove the 3.5" drive bay cover.



2.10 Reinstalling the front panel assembly and side cover

To reinstall the front panel assembly and side cover:

1. Insert the front panel assembly hinge-like tabs to the holes on the right side of the chassis.
2. Swing the front panel assembly to the left, then insert the hooks to the chassis until the front panel assembly fits in place.
3. Insert the side cover hooks to the chassis top and bottom holes.
4. Push the side cover to the direction of the front panel until it fits in place.
5. Secure the cover with two screws you removed earlier.



Chapter 3

This chapter helps you power up the system and install drivers and utilities from the support CD.



ASUS Vintage2-AE1

Starting up

3.1 Installing an operating system

The barebone system supports Windows® 2000/XP operating systems (OS). Always install the latest OS version and corresponding updates so you can maximize the features of your hardware.

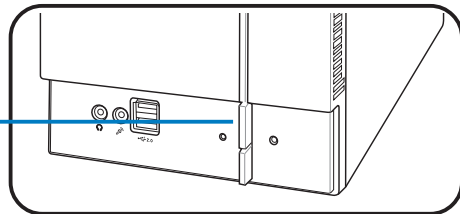


Because motherboard settings and hardware options vary, use the setup procedures presented in this chapter for general reference only. Refer to your OS documentation for more information.

3.2 Powering up

Press the system power button (⏻) to enter the OS.

Press to turn the system on



3.3 Support CD information

The support CD that came with the system contains useful software and several utility drivers that enhance the system features.



The contents of the support CD are subject to change at any time without notice. Visit the ASUS website regularly for updates.

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

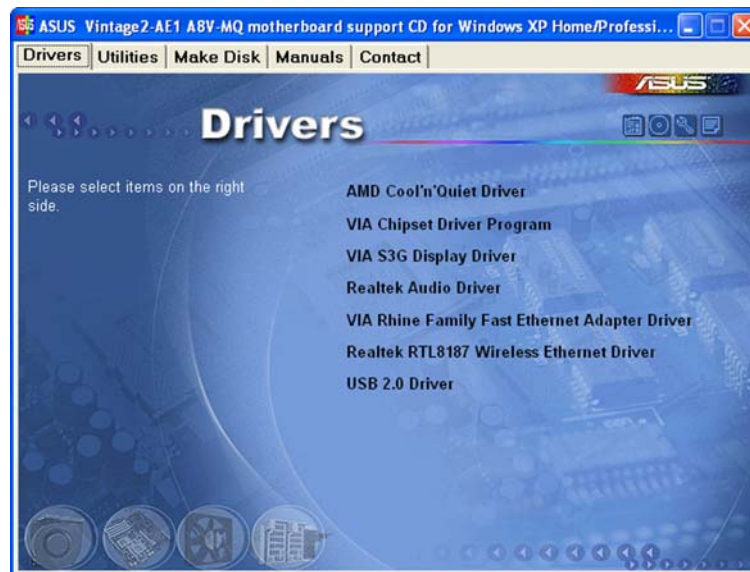


Click an icon to display support CD/motherboard information

Click an item to install

3.3.1 Drivers menu

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



AMD Cool 'n' Quiet Driver

Installs the AMD Cool 'n' Quiet driver.

VIA Chipset Driver Program

Installs the VIA Chipset Driver program.

VIA S3G Display Driver

Installs the VIA S3G display driver.

Realtek Audio Driver

Executes the wizard to install the Realtek® ALC653 audio driver and application.

VIA Rhine Family Fast Ethernet Adapter Driver

Installs the VIA Rhine Family Fast Ethernet Adapter driver.

USB 2.0 Driver

Installs the USB 2.0 driver.

Realtek RTL8187 Wireless Ethernet Driver

Installs the wireless LAN driver for the optional wireless LAN module.



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

3.3.2 Utilities menu

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



ASUS PC Probe II

This smart utility monitors the fan speed, CPU temperature, and system voltages, and alerts you of any detected problems. This utility helps you keep your computer in healthy operating condition.

ASUS Update

The ASUS Update utility allows you to update the motherboard BIOS in a Windows® environment. This utility requires an Internet connection either through a network or an Internet Service Provider (ISP).

ASUS Cool 'n' Quiet Utility

This item installs the ASUS Cool 'n' Quiet utility.

ASUS Screen Saver

Installs 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

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 on your computer.



Microsoft Windows XP Service Pack 2 already includes Microsoft Direct X 9.0c. If your system is Microsoft Windows XP Service Pack 2-embedded, skip Microsoft Direct X 9.0c installation.

Anti-virus utility

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



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

3.3.3 Make Disk menu

The Make Disk menu allows you to make a RAID driver disk.

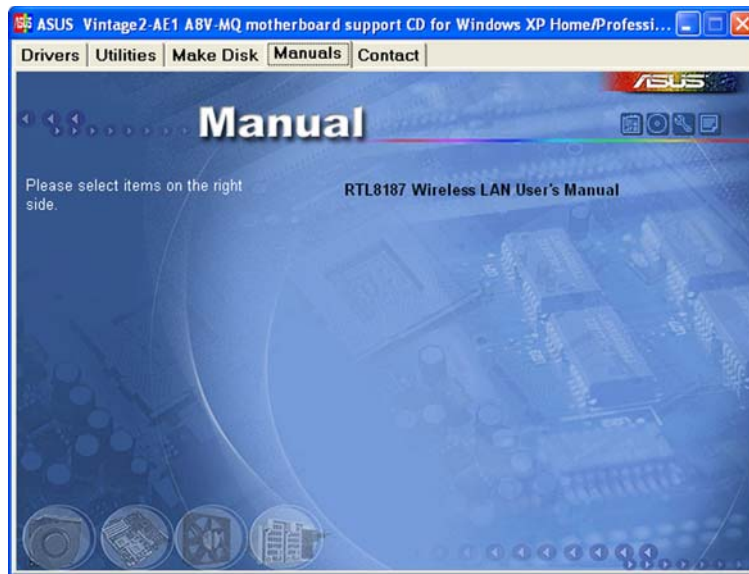


Make VIA RAID Driver Disk

Allows you to create a VIA RAID driver disk.

3.3.4 Manuals menu

The Make Disk menu allows you to make a RAID driver disk.

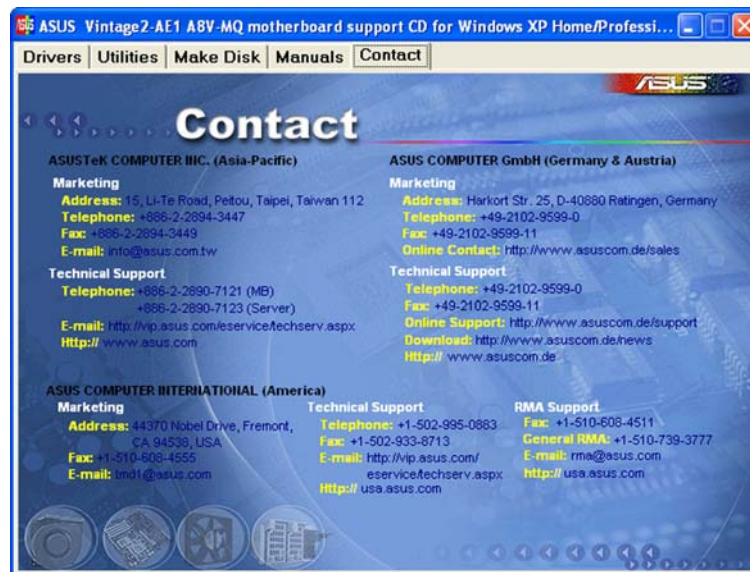


RTL8187 Wireless LAN User's Manual

Allows you to open the Realtek® RTL8187 Wireless LAN user's manual.

3.3.5 ASUS Contact information

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.

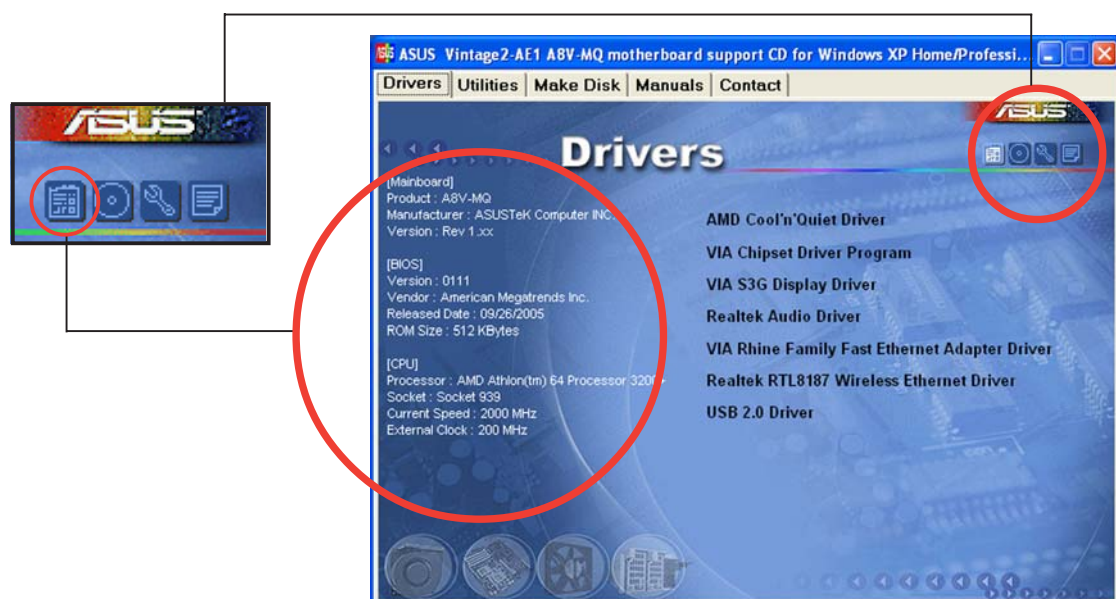


3.3.6 Other information

The icons on the top right corner of the screen give additional information on the motherboard and the contents of the support CD. Click an icon to display the specified information.

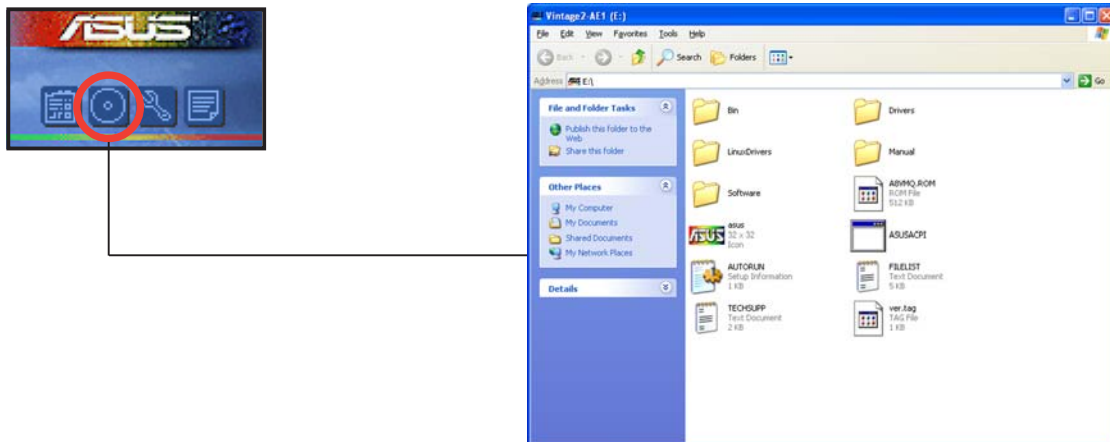
Motherboard Info

Displays the general specifications of the motherboard.



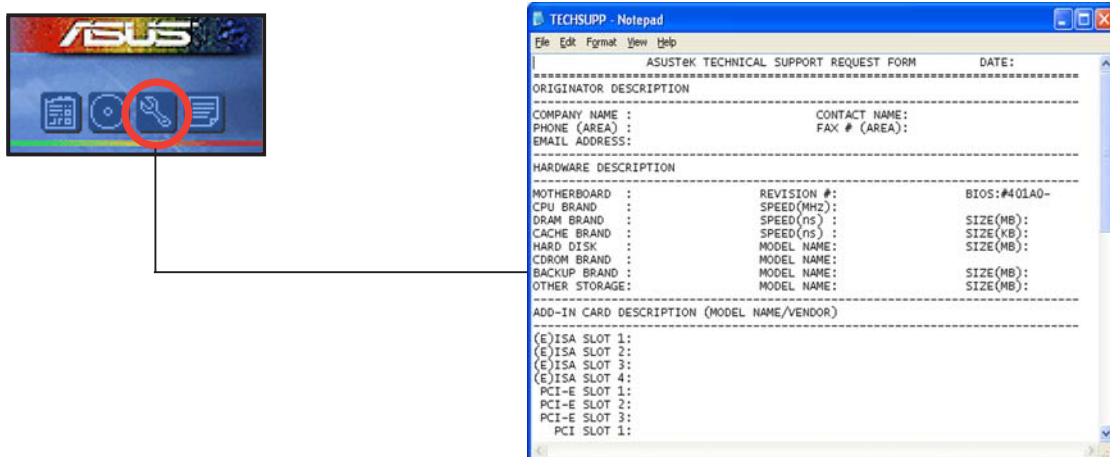
Browse this CD

Displays the support CD contents in graphical format.



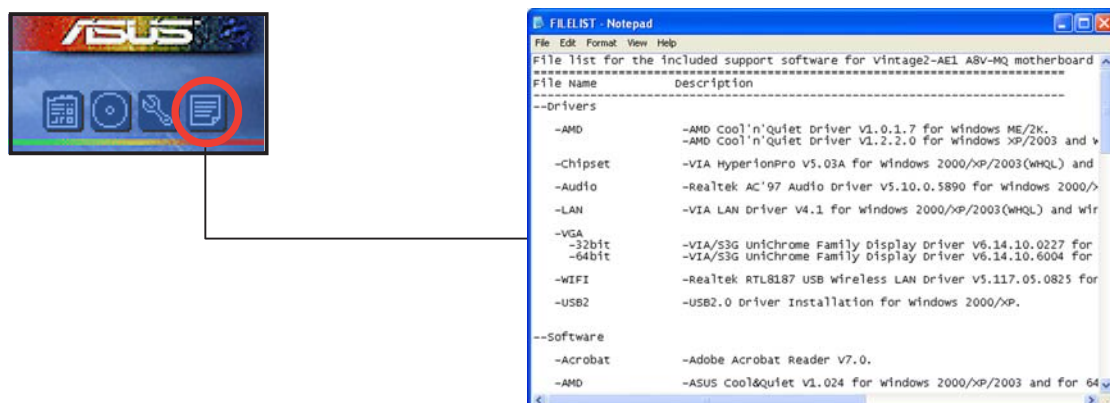
Technical support Form

Displays the ASUS Technical Support Request Form that you have to fill out when requesting technical support.



Filelist

Displays the contents of the support CD and a brief description of each in text format.



3.4 Software information

Most of the applications in the support CD have wizards that will conveniently guide you through the installation. View the online help or readme file that came with the software for more information.

3.4.1 ASUS PC Probe II

PC Probe II is a utility that monitors the computer's vital components, and detects and alerts you of any problem with these components. PC Probe II senses fan rotations, CPU temperature, and system voltages, among others. Because PC Probe II is software-based, you can start monitoring your computer the moment you turn it on. With this utility, you are assured that your computer is always at a healthy operating condition.

Installing PC Probe II

To install PC Probe II on your computer:

1. Place the support CD to the optical drive. The **Drivers** installation tab appears if your computer has an enabled Autorun feature.



If Autorun is not enabled in your computer, browse the contents of the support CD to locate the setup.exe file from the ASUS PC Probe II folder. Double-click the setup.exe file to start installation.

2. Click the **Utilities** tab, then click **ASUS PC Probe II**.
3. Follow the screen instructions to complete installation.

Launching PC Probe II

You can launch the PC Probe II right after installation or anytime from the Windows® desktop.

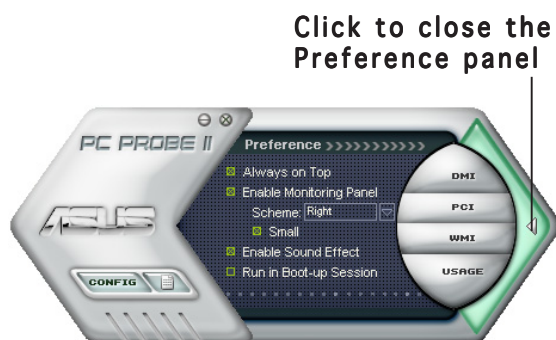
To launch the PC Probe II from the Windows® desktop, click **Start > All Programs > ASUS > PC Probe II > PC Probe II V1.00.43**. The PC Probe II main window appears.










After launching the application, the PC Probe II icon appears in the Windows® taskbar. Click this icon to close or restore the application.

Using PC Probe II

Main window

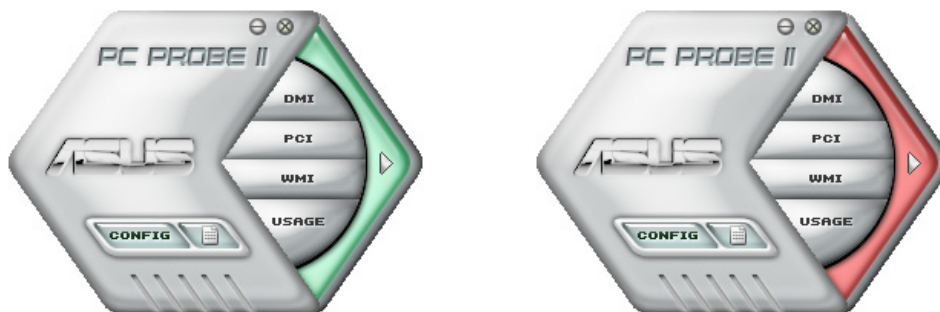
The PC Probe II main window allows you to view the current status of your system and change the utility configuration. By default, the main window displays the **Preference** section. You can close or restore the **Preference** section by clicking on the triangle on the main window right handle.



Button	Function
	Opens the Configuration window
	Opens the Report window
	Opens the Desktop Management Interface window
	Opens the Peripheral Component Interconnect window
	Opens the Windows Management Instrumentation window
	Opens the hard disk drive, memory, CPU usage window
	Shows/Hides the Preference section
	Minimizes the application
	Closes the application

Sensor alert

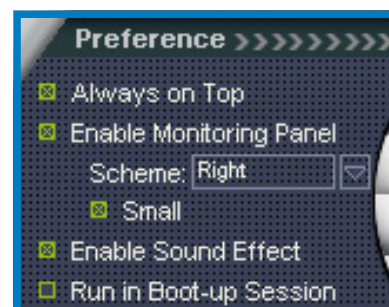
When a system sensor detects a problem, the main window right handle turns red, as the illustrations below show.



When displayed, the monitor panel for that sensor also turns red. Refer to the **Monitor panels** section for details.

Preferences

You can customize the application using the Preference section in the main window. Click the box before each preference to activate or deactivate.



Hardware monitor panels

The hardware monitor panels display the current value of a system sensor such as fan rotation, CPU temperature, and voltages.

The hardware monitor panels come in two display modes: hexagonal (large) and rectangular (small). When you check the **Enable Monitoring Panel** option from the **Preference** section, the monitor panels appear on your computer's desktop.



Large display



Small display

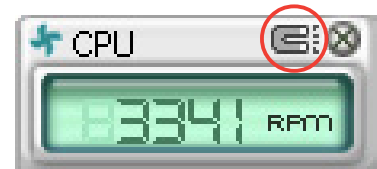
Changing the monitor panels position

To change the position of the monitor panels in the desktop, click the arrow down button of the **Scheme** options, then select another position from the list box. Click **OK** when finished.





Moving the monitor panels

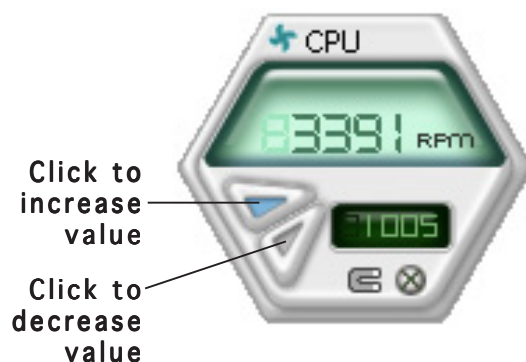
All monitor panels move together using a magnetic effect. If you want to detach a monitor panel from the group, click the horseshoe magnet icon. You can now move or reposition the panel independently.



Adjusting the sensor threshold value

You can adjust the sensor threshold value in the monitor panel by clicking the  or  buttons. You can also adjust the threshold values using the **Config** window.

You cannot adjust the sensor threshold values in a small monitoring panel.



Monitoring sensor alert

The monitor panel turns red when a component value exceeds or is lower than the threshold value. Refer to the illustrations below.



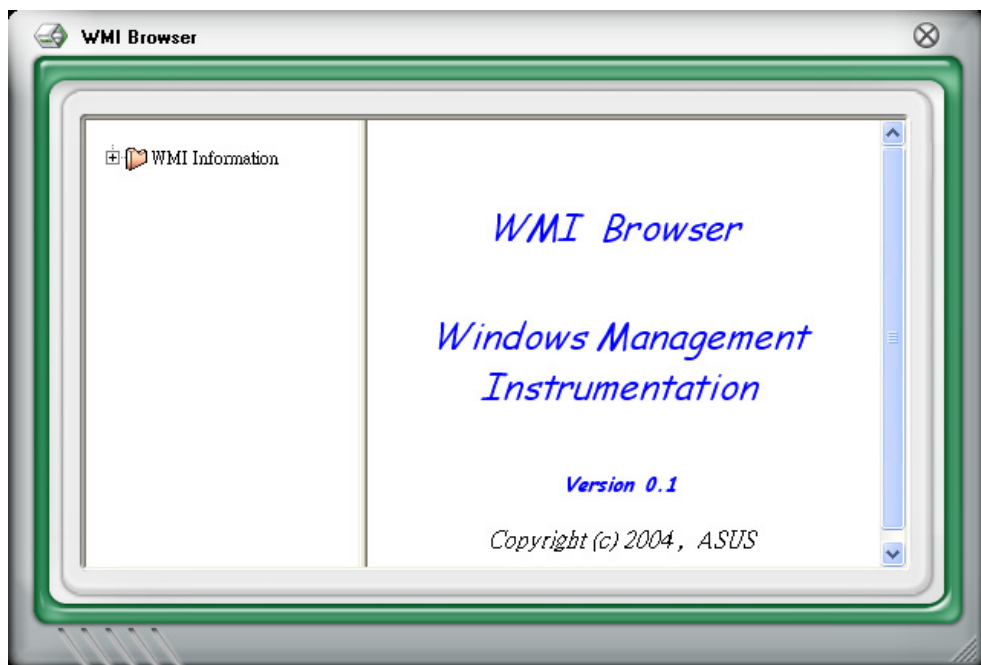
Large display



Small display

WMI browser

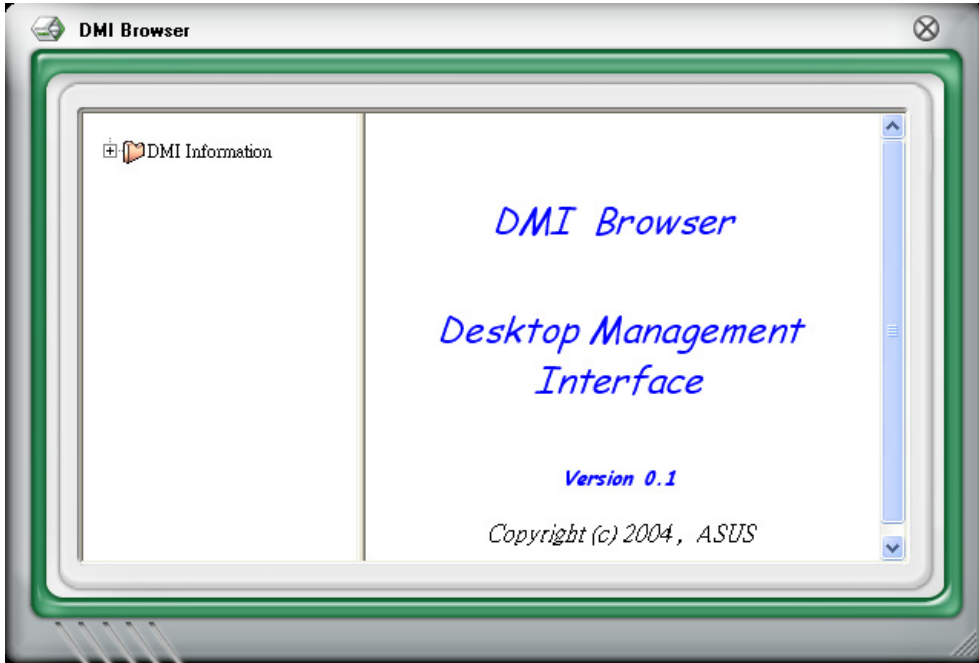
Click **WMI** to display the WMI (Windows Management Instrumentation) browser. This browser displays various Windows® management information. Click an item from the left panel to display on the right panel. Click the plus sign (+) before **WMI Information** to display the available information.



You can enlarge or reduce the browser size by dragging the bottom right corner of the browser.

DMI browser

Click **DMI** to display the DMI (Desktop Management Interface) browser. This browser displays various desktop and system information. Click the plus sign (+) before **DMI Information** to display the available information.



PCI browser

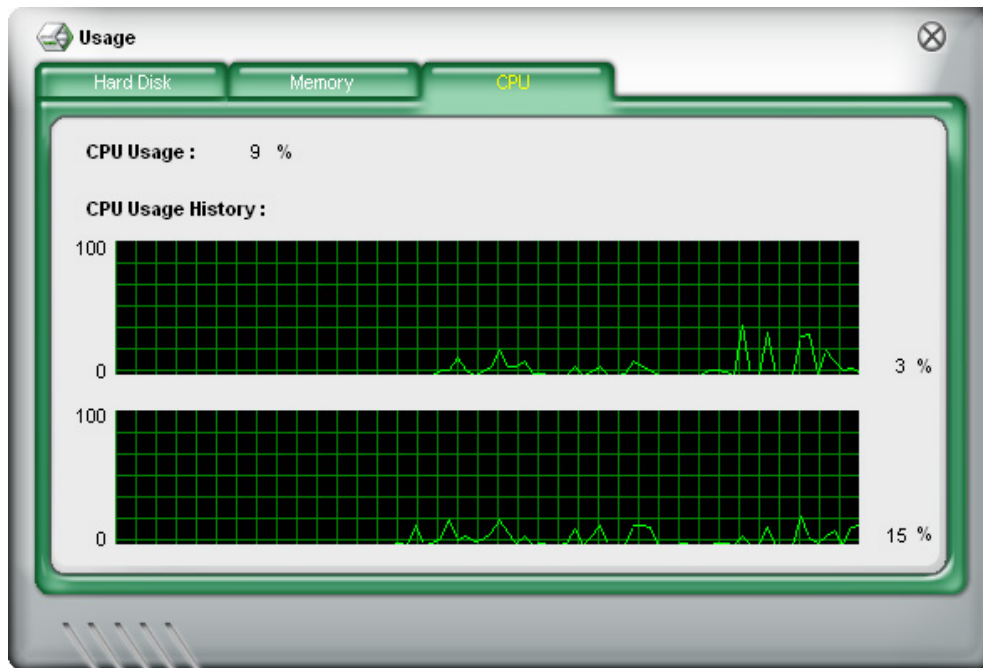
Click **PCI** to display the PCI (Peripheral Component Interconnect) browser. This browser provides information on the PCI devices installed on your system. Click the plus sign (+) before the **PCI Information** item to display available information.

Usage

The **Usage** browser displays real-time information on the CPU, hard disk drive space, and memory usage. Click **USAGE** to display the Usage browser.

CPU usage

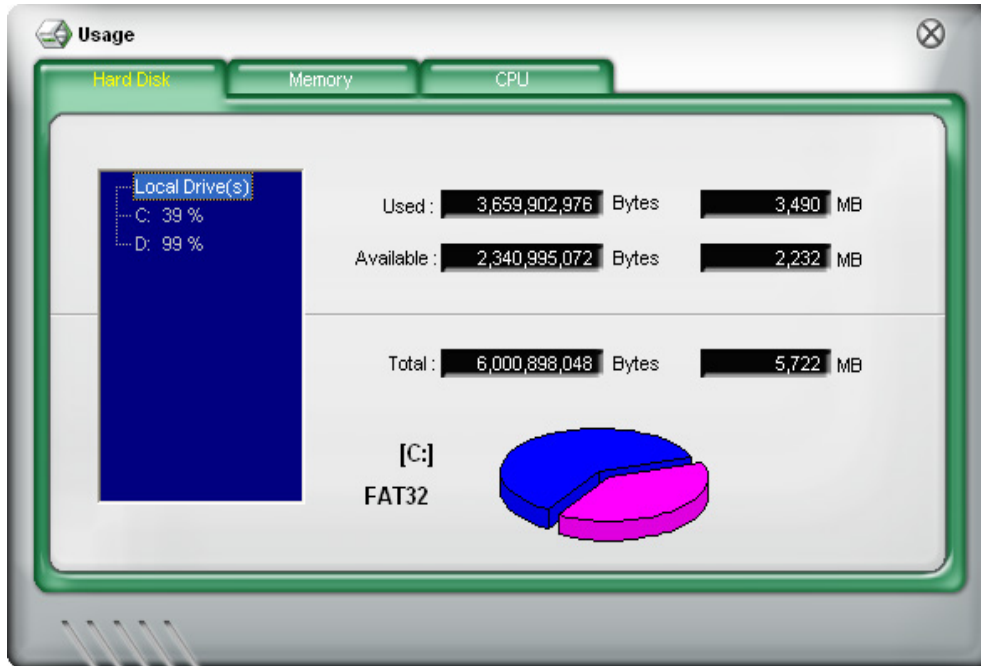
The **CPU** tab displays real-time CPU usage in line graph representation. If the CPU has an enabled Hyper-Threading*, two separate line graphs display the operation of the two logical processors.



*On Intel® CPUs only.

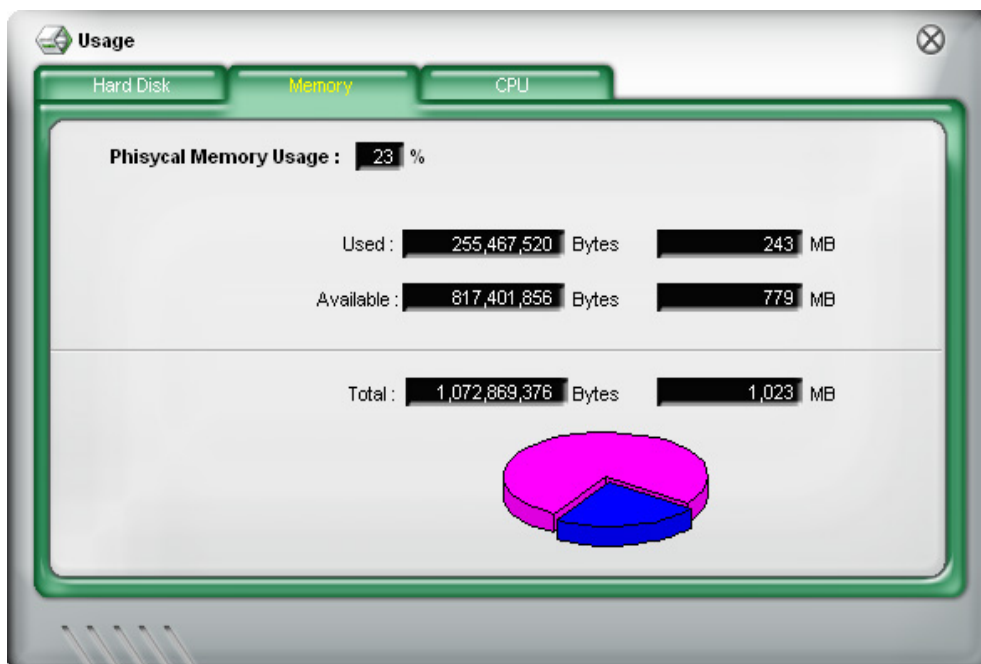
Hard disk drive space usage

The **Hard Disk** tab displays the used and available hard disk drive space. The left panel of the tab lists all logical drives. Click a hard disk drive to display the information on the right panel. The pie chart at the bottom of the window represents the used (blue) and the available HDD space.



Memory usage

The Memory tab shows both used and available physical memory. The pie chart at the bottom of the window represents the used (blue) and the available physical memory.



3.4.2 Cool ‘n’ Quiet!™ Technology



- Make sure to install the Cool ‘n’ Quiet!™ driver and application before using this feature.
- The AMD Cool ‘n’ Quiet!™ technology supports AMD Athlon™ XP and higher processors only.

The system motherboard supports the AMD Cool ‘n’ Quiet!™ Technology that dynamically and automatically change the CPU speed, voltage, and amount of power depending on the CPU loading.

Enabling Cool ‘n’ Quiet!™ Technology

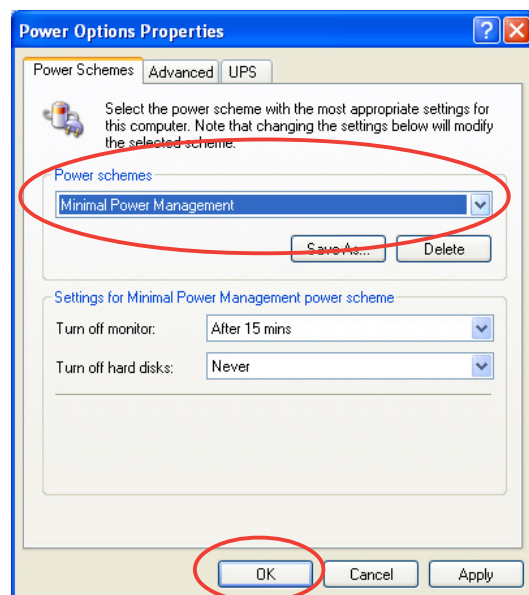
To enable Cool ‘n’ Quiet!™ Technology:

1. Turn on the system and enter BIOS by pressing the key during the Power On Self-Tests (POST).
2. Go to the **Advanced** menu > **CPU Configuration**, then set the **Cool ‘n’ Quiet** item to **Enabled**. See section “5.4 Advanced Menu” for details.
3. Go to the **Power** menu, then set the **ACPI 2.0 Support** item to **Yes**. See section “5.5 Power Menu” for details.
4. Save your changes, then exit the BIOS Setup.
5. Set the **Power Option Properties** depending on the operating system. Refer to the next section for details.

Setting the power options

Windows® 2000/XP

1. From the Windows® 2000/XP operating system, click the **Start** button. Select **Settings**, then **Control Panel**.
2. Make sure the Control Panel is set to Classic View.
3. Double-click the **Display** icon in the Control Panel then select the **Screen Saver** tab.
4. Click the **Power...** button. The following dialog box appears.
5. From the **Power schemes** combo list box, select **Minimal Power Management**.
6. Click **OK** to effect settings.



Launching the Cool 'n' Quiet!™ application

The motherboard support CD includes the Cool 'n' Quiet!™ software application that enables you to view your system's real-time CPU frequency and core voltage.



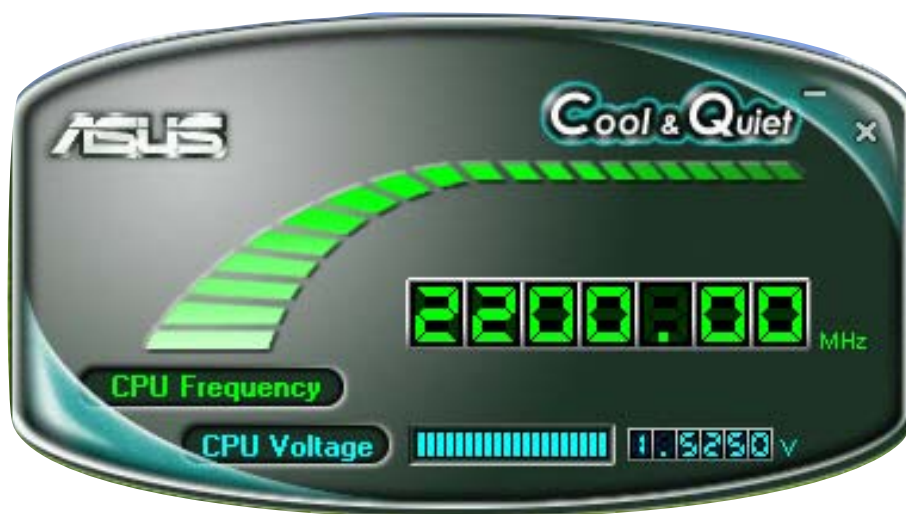
Make sure to install the Cool 'n' Quiet!™ software from the motherboard support CD. Refer to section "3.3.2 Utilities menu", for details.

To launch the Cool 'n' Quiet!™ application:

Windows® XP OS

1. Click the **Start** button.
2. Select **All Programs > ASUS > Cool & Quiet > Cool & Quiet > Cool & Quiet V1.024**.

The Cool 'n' Quiet!™ application window appears and displays the current CPU frequency and core voltage. Click (X) to close the window or (-) to minimize.



3.4.3 ASUS Update utility

The ASUS Update is a utility that allows you to manage, save, and update the motherboard BIOS in Windows® environment. The ASUS Update utility allows you to:

- Save the current BIOS file
- Download the latest BIOS file from the Internet
- Update the BIOS from an updated BIOS file
- Update the BIOS directly from the Internet, and
- View the BIOS version information.

This utility is available in the support CD that comes with the motherboard package.



ASUS Update requires an Internet connection either through a network or an Internet Service Provider (ISP).

Installing ASUS Update

To install ASUS Update:

1. Place the support CD in the optical drive. The **Drivers** menu appears.
2. Click the **Utilities** tab, then click **Install ASUS Update VX.XX.XX**. See section “3.3.2 Utilities menu” for the **Utilities** screen menu.
3. The ASUS Update utility is copied to your system.

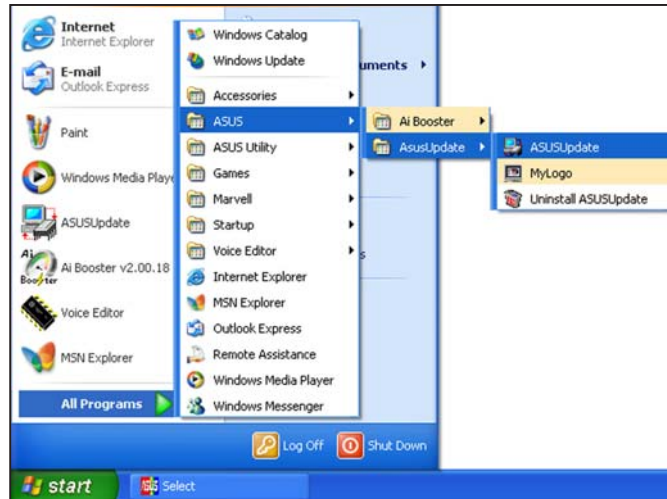


Quit all Windows® applications before you update the BIOS using this utility.

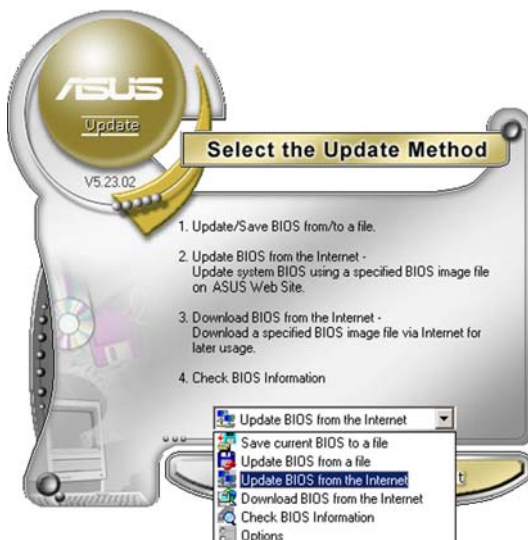
Updating the BIOS through the Internet

To update the BIOS through the Internet:

1. Launch the ASUS Update utility from the Windows® desktop by clicking **Start > Programs > ASUS > ASUSUpdate > ASUSUpdate**. The ASUS Update main window appears.



2. Select **Update BIOS from the Internet** option from the drop-down menu, then click **Next**.
3. Select the ASUS FTP site nearest you to avoid network traffic, or click **Auto Select**. Click **Next**.



4. From the FTP site, select the BIOS version that you wish to download. Click **Next**.
5. Follow the screen instructions to complete the update process.



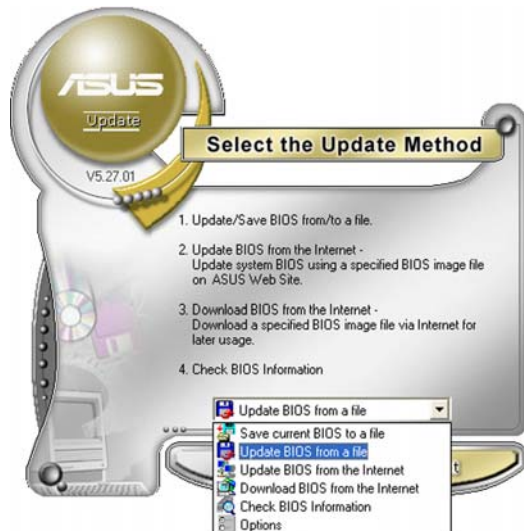
The ASUS Update utility is capable of updating itself through the Internet. Always update the utility to avail all its features.



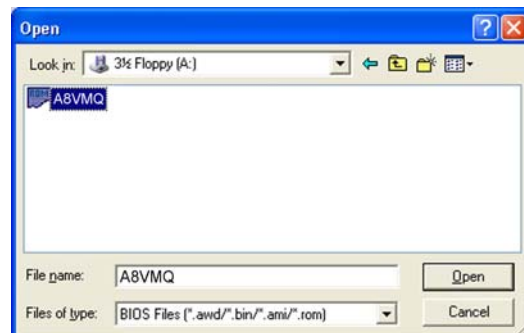
Updating the BIOS through a BIOS file

To update the BIOS through a BIOS file:

1. Launch the ASUS Update utility from the Windows® desktop by clicking **Start > Programs > ASUS > ASUSUpdate > ASUSUpdate**. The ASUS Update main window appears.
2. Select **Update BIOS from a file** option from the drop-down menu, then click **Next**.



3. Locate the BIOS file from the **Open** window, then click **Save**.
4. Follow the screen instructions to complete the update process.



3.4.4 ASUS MyLogo™

The ASUS MyLogo™ utility lets you customize the boot logo. The boot logo is the image that appears on screen during the Power-On Self-Tests (POST). The ASUS MyLogo™ is automatically installed when you install the **ASUS Update** utility from the support CD. See section “3.3.2 Utilities menu” for details.



- Before using the ASUS MyLogo™, use the AFUDOS BIOS Flash utility to make a copy of your original BIOS file, or obtain the latest BIOS version from the ASUS website. See section “5.1.3 AFUDOS utility.”
- Make sure that the BIOS item **Full Screen Logo** is set to [Enabled] if you wish to use ASUS MyLogo2. See section “5.6.2 Boot Settings Configuration”.
- You can create your own boot logo image in GIF, JPG, or BMP file formats.

To launch the ASUS MyLogo™:

1. Launch the ASUS Update utility. Refer to section “3.4.3 ASUS Update utility” for details.
2. Select **Options** from the drop down menu, then click **Next**.
3. Check the option **Launch MyLogo to replace system boot logo before flashing BIOS**, then click **Next**.
4. Select **Update BIOS from a file** from the drop down menu, then click **Next**.
5. When prompted, locate the new BIOS file, then click **Next**. The ASUS MyLogo window appears.
6. From the left window pane, select the folder that contains the image you intend to use as your boot logo.



7. When the logo images appear on the right window pane, select an image to enlarge by clicking on it.



8. Adjust the boot image to your desired size by selecting a value on the **Ratio** box.



9. When the screen returns to the ASUS Update utility, flash the original BIOS to load the new boot logo.
10. After flashing the BIOS, restart the computer to display the new boot logo during POST.

3.4.5 Using the Wireless LAN module



- The wireless LAN module is an optional item.
 - For detailed information on using the Wireless LAN module, view/download the RTL8187 Wireless LAN User's Manual on the motherboard support CD.
-

The wireless IEEE 802.11 b/g LAN module is installed on the rear panel. See page 2-15 for details on how to install the module.

Wi-Fi antenna

The wireless LAN port on the module accommodates a moveable omni-directional dual-band antenna to maximize your wireless coverage.

To install the antenna:

1. Locate the wireless LAN antenna port on the rear panel.
2. Connect the antenna twist-on connector (female) to the wireless LAN antenna port (male).
3. Place the antenna at an elevated location to enhance your wireless coverage.



- Do not place the antenna under your table or in a closed compartment.
 - The speed of wireless transmission decreases as you move farther from the access point. To achieve faster data transmission, minimize the distance between the antenna and the access point (Infrastructure mode) or other wireless device.
-

Operating range

The operating range is dependent on the operating environment. Every home or office layout varies in obstacles, barriers, or wall types that could reflect or absorb radio signals. For example, two wireless devices in an open space can achieve an operating distance of up to 200 ft, while the same devices can only achieve up to 80 ft when used indoors.

By default, the device automatically adjusts the data rate to maintain an operational wireless transmission. Therefore, a wireless device that is close to the access point may operate at higher speeds while a wireless device far from the access point may operate at lower speeds.

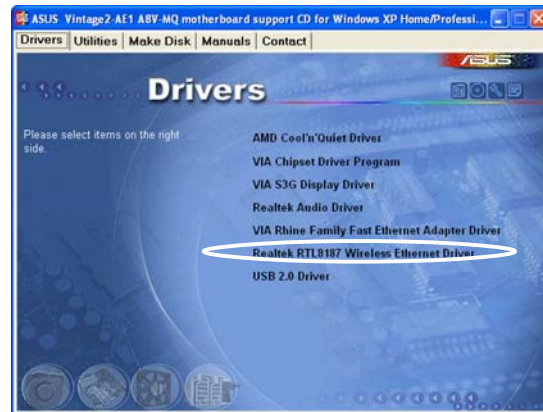
Driver installation



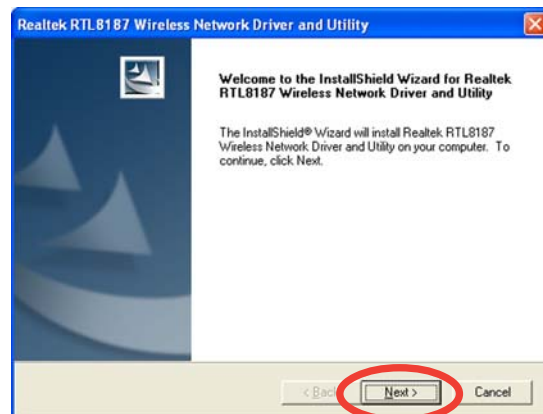
If you are using a Windows® operating system, your computer auto-detects the wireless LAN module during start-up and displays an **Add New Hardware Wizard** window. Click **Cancel** then proceed with the following instructions.

To install the wireless LAN driver:

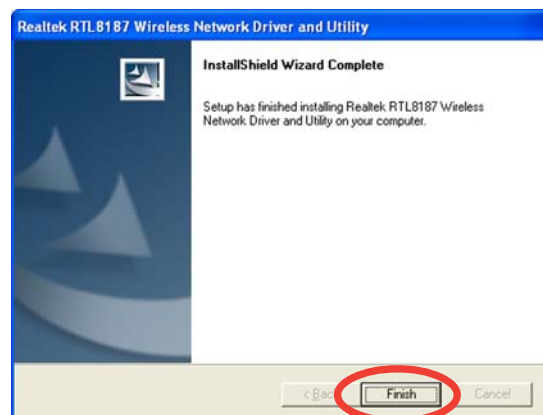
1. Place the WiFi-TV card support CD into the optical drive.
2. The CD automatically displays the Drivers menu.
3. Click **Realtek RTL8187 Wireless Ethernet Driver**.



4. The **Realtek RTL8187 Wireless Network Driver and Utility** installation window appears. Click **Next**.



4. Follow succeeding screen instructions to complete installation.
6. When finished, restart your computer.



Network setup

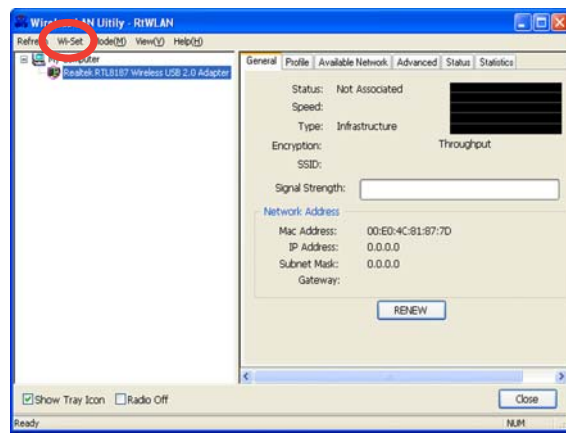
You can use the wireless LAN module in various wireless network configurations. After installing the wireless LAN adapter drivers to your computer, select the most appropriate configuration for your home or office wireless network.

To set up a wireless network:

1. Launch the Realtek RTL8187 Wireless Network Driver and Utility by double-clicking the icon on your desktop.



2. The **Wireless LAN Utility-RtWLAN** opens. Click the **Wi-Set** item.



3. Select the Operation Mode. **Station** allows you to connect to a wireless network. **AP** allows you to set up a wireless network. Follow succeeding screen instructions and key in values for the required parameters.



4. Click **Finish** to complete setup.



Configuration options

Below are some of the wireless network configurations that you can use for your wireless LAN module.



The following descriptions are for reference only and may not exactly match your actual network configuration.

Ad-hoc mode

When in **Ad-hoc** mode, the wireless LAN module connects to another wireless device (also called a **station**) within its operating range. Select this configuration when no access point (AP) is present in your wireless network.

Infrastructure mode

In **Infrastructure** mode, the wireless network is centered on an access point (AP) that provides a central link for wireless clients to communicate with each other or with a wired network.

In this setup, the wireless LAN module functions as a wireless client/station that connects to an AP to establish connection to a wired or wireless LAN.

Software Access Point (Soft AP)

In this mode, the wireless LAN module becomes the access point that connects wireless clients to the Internet or network printer.

Set to this mode if you are using Windows® 2000/XP/2003 Server operating system. The Soft AP feature can support an unlimited number of wireless clients and is ideal for homes with several computers but with only a single Internet connection and/or one printer.

Wireless bridge (Wireless Distribution System)

In this setup, the wireless LAN module connects two or more APs while maintaining connection to its wireless clients. The wireless bridge feature is a cost-effective solution that integrates several wireless networks.

Chapter 4

This chapter gives information about the motherboard that comes with the system. This chapter includes the motherboard layout, jumper settings, and connector locations.

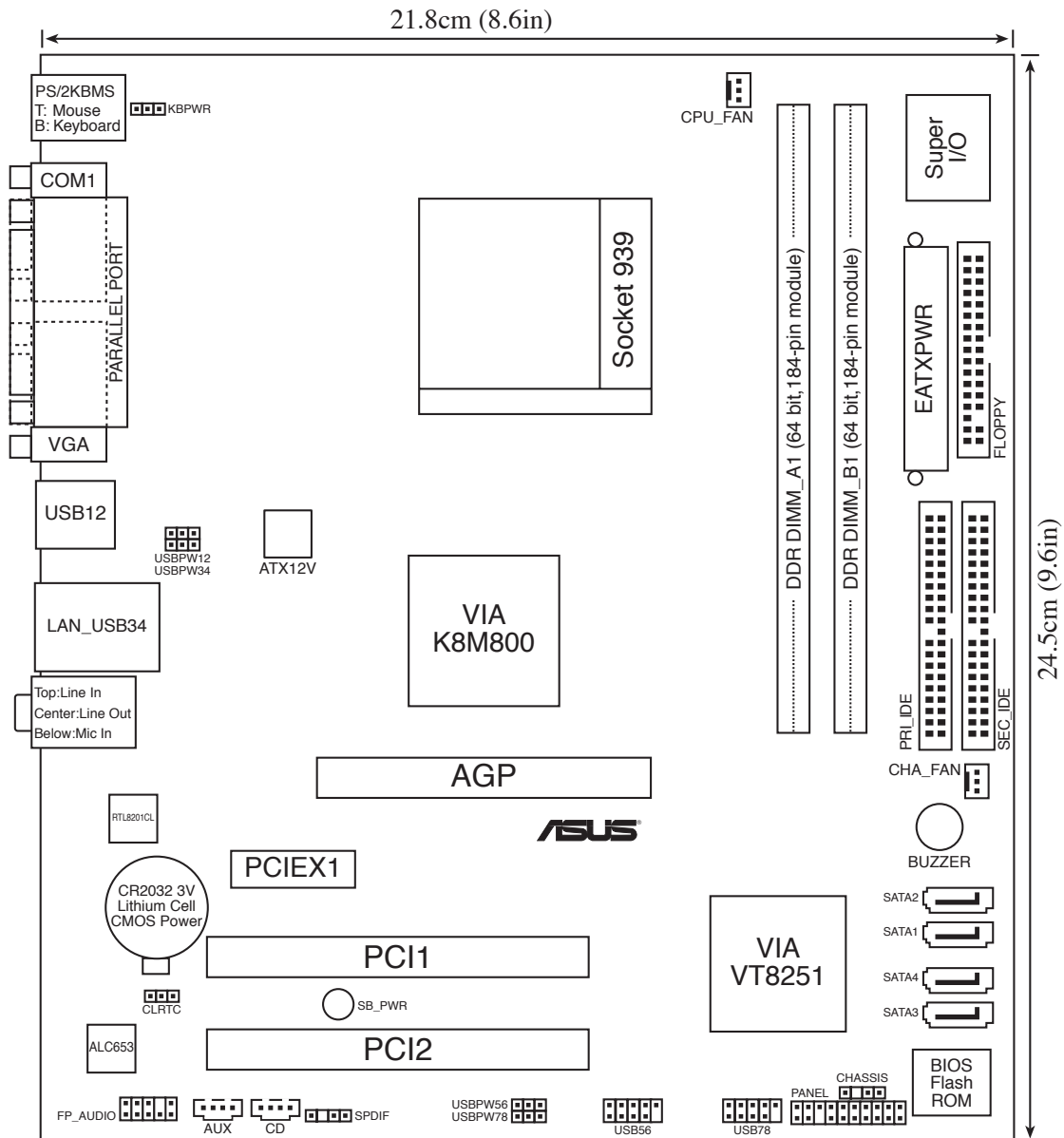


ASUS Vintage2-AE1

4.1 Motherboard information

The barebone system comes with an ASUS motherboard. This chapter provides technical information about the motherboard for future upgrades or system reconfiguration.

Motherboard layout



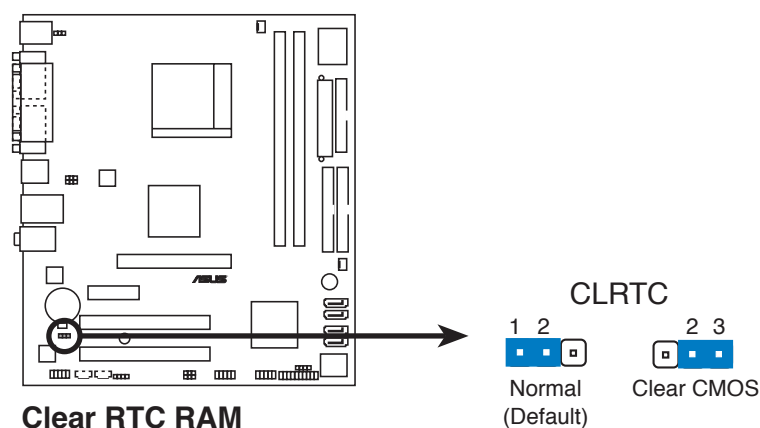
4.2 Jumpers

1. Clear RTC RAM (CLRTC)

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 the CMOS, which includes the system setup information such as system passwords.

To erase the RTC RAM:

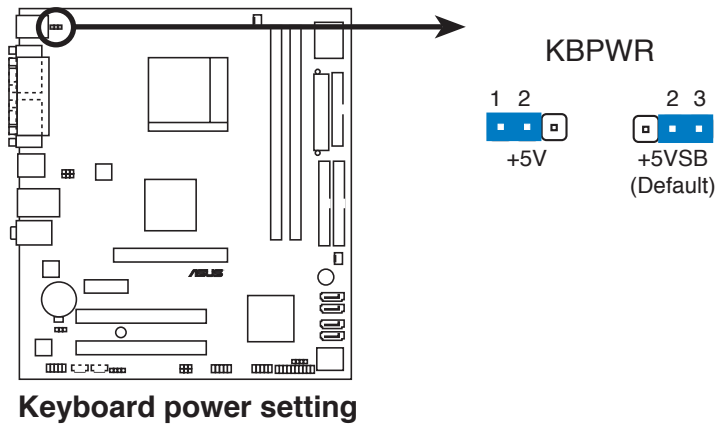
1. Turn OFF the computer and unplug the power cord.
2. Remove the battery.
3. Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep the cap on pins 2-3 for about 5-10 seconds, then move the cap back to pins 1-2.
4. Reinstall the battery.
5. Plug the power cord and turn ON the computer.
6. Hold down the key during the boot process and enter BIOS setup to re-enter data.



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

2. Keyboard power (3-pin KBPWR)

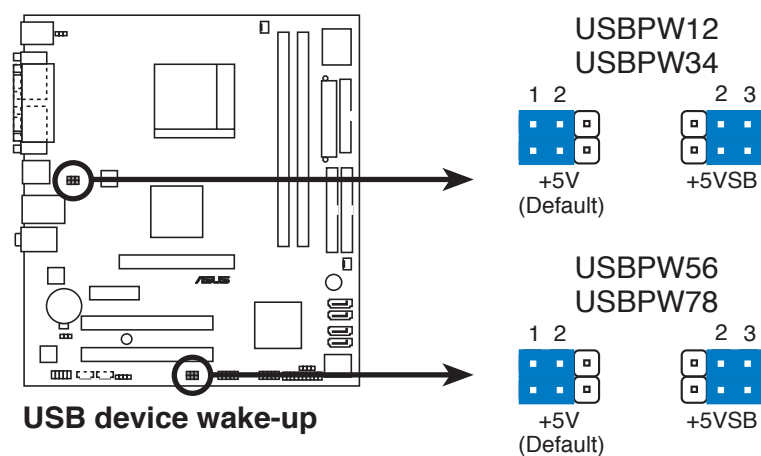
This jumper allows you to enable or disable the keyboard wake-up feature. Set this jumper to pins 2-3 (+5VSB) if you wish to wake up the computer when you press a key on the keyboard (the default is the Space Bar). This feature requires an ATX power supply that can supply at least 1A on the +5VSB lead, and a corresponding setting in the BIOS.



3. USB device wake-up (3-pin USBPW12, USBPW34, USBPW56, USBPW78)

Set these jumpers to +5V to wake up the computer from S1 sleep mode (CPU stopped, DRAM refreshed, system running in low power mode) using the connected USB devices. Set to +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 USBPW12 and USBPW34 jumpers are for the rear USB ports. The USBPW56 and USBPW78 jumper is for the internal USB connectors that you can connect to additional USB ports.



- The USB device wake-up feature requires a power supply that can provide 500mA on the +5VSB lead for each USB port; otherwise, the system would not power up.
- The total current consumed must NOT exceed the power supply capability (+5VSB) whether under normal condition or in sleep mode.

4.3 Connectors

4.3.1 Rear panel connectors

Refer to section “1.3 Rear panel” for details on the rear panel connectors.

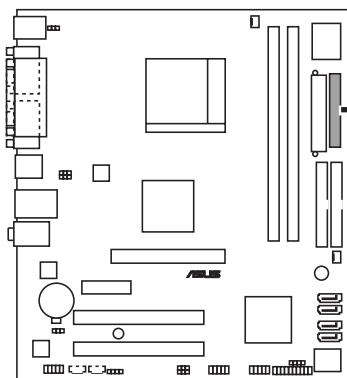
4.3.2 Internal connectors

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

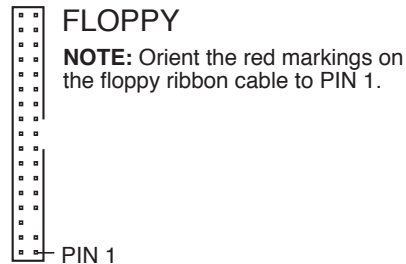
This connector is for the provided floppy disk drive (FDD) signal cable. Insert one end of the cable to this connector, then connect the other end to the signal connector at the back of the floppy disk drive.



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



Floppy disk drive connector

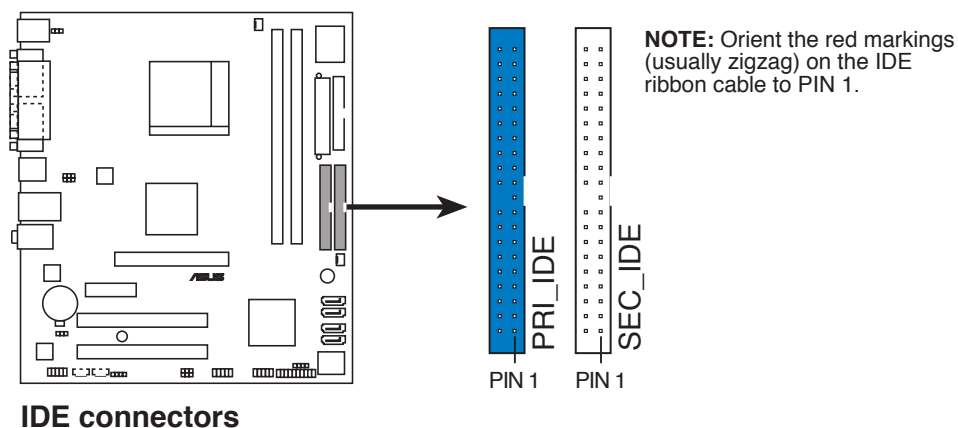


2. IDE connectors (40-1 pin PRI_IDE, SEC_IDE)

This connector is for an Ultra DMA 100/66 signal cable. The Ultra DMA 100/66 signal cable has three connectors: a blue connector for the primary IDE connector on the motherboard, a black connector for an Ultra DMA 100/66 IDE slave device (optical drive/hard disk drive), and a gray connector for an Ultra DMA 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.

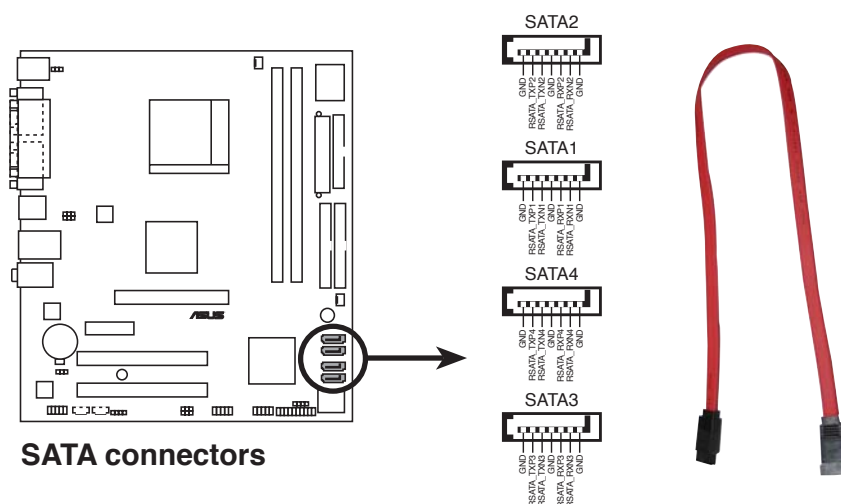


- Pin 20 on the IDE connector is removed to match the covered hole on the Ultra DMA cable connector. This prevents incorrect insertion when you connect the IDE cable.
- Use the 80-conductor IDE cable for Ultra DMA 100/66 IDE devices.



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

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



Important notes on Serial ATA

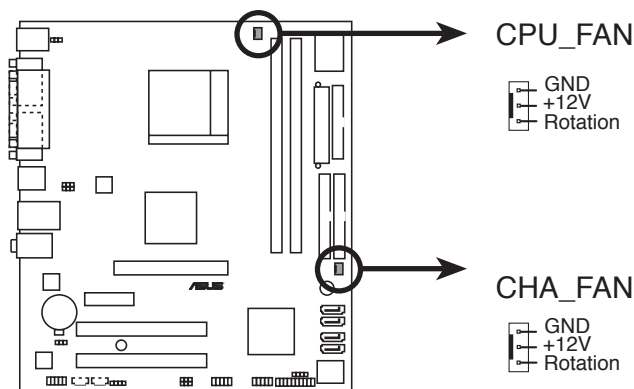
- You must install Windows® 2000 Service Pack 4 or the Windows® XP Service Pack1 before using Serial ATA hard disk drives.
- When using the connectors in standard IDE mode, connect the primary (boot) hard disk drive to the SATA1 or SATA2 connector.

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.



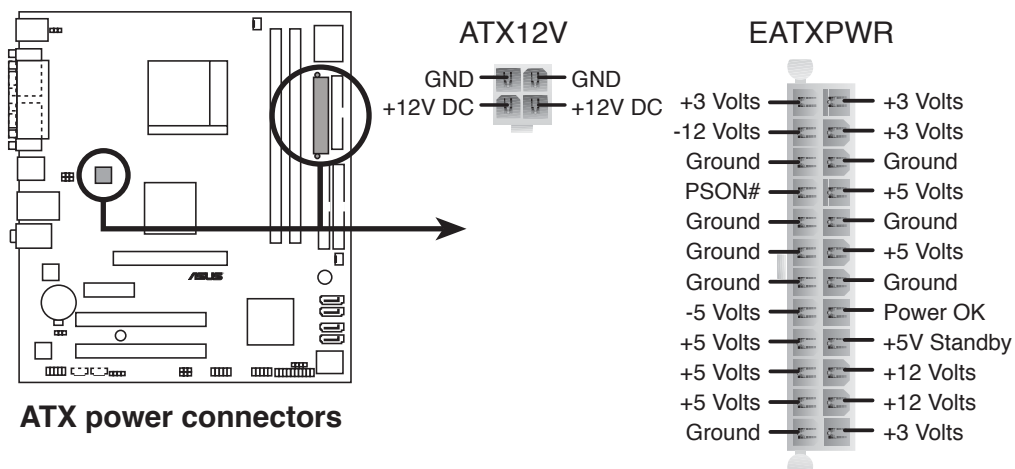
Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! Do not place jumper caps on the fan connectors!



Fan connectors

5. ATX power connectors (24-pin ATXPWR, 4-pin ATX12V)

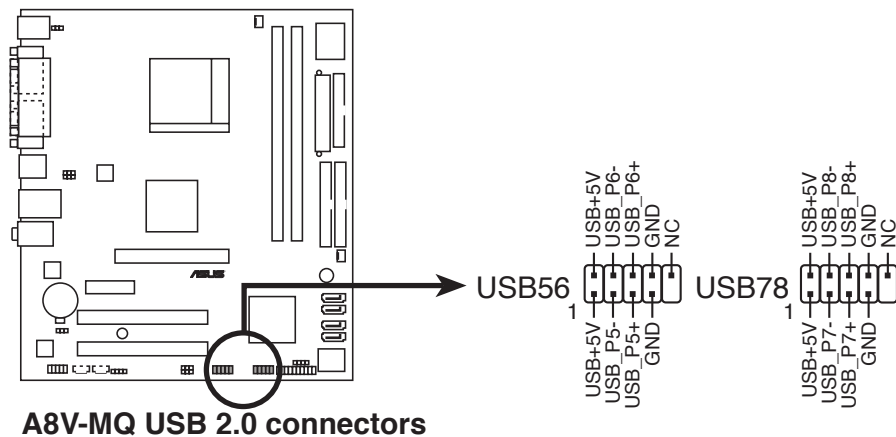
These connectors are for ATX power supply plugs. The plugs from the power supply are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.



ATX power connectors

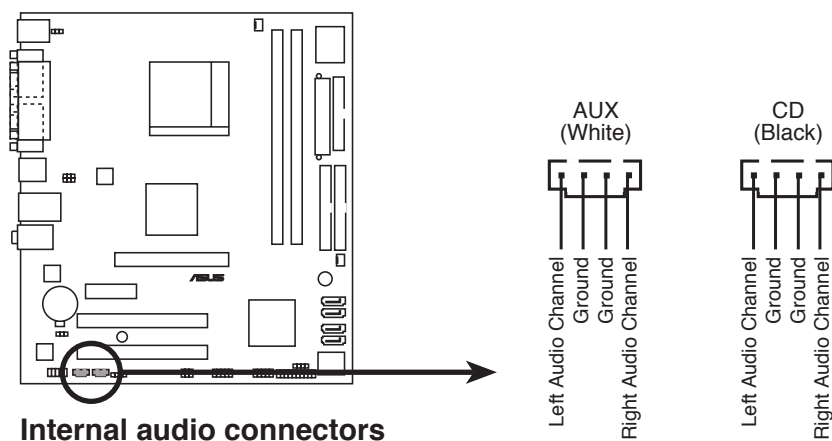
6. USB connectors (10-1 pin USB56, USB78)

These connectors are for USB 2.0 ports. These USB connectors comply with USB 2.0 specification that supports up to 480 Mbps connection speed.



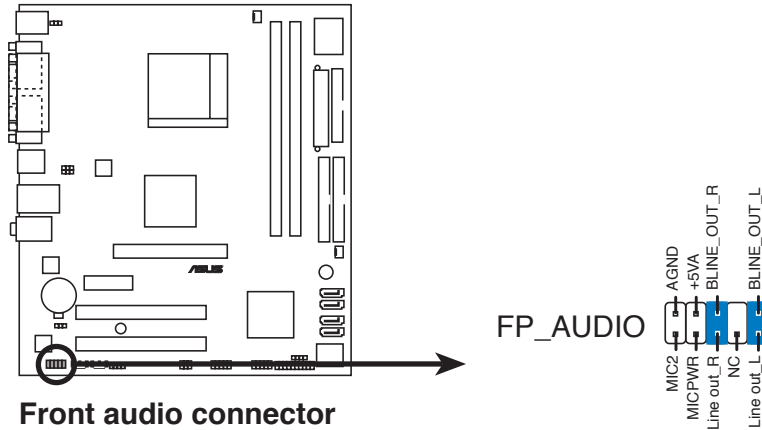
7. Internal audio connectors (4-pin CD [black], AUX [white])

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



8. Front panel audio connector (10-1 pin FP_AUDIO)

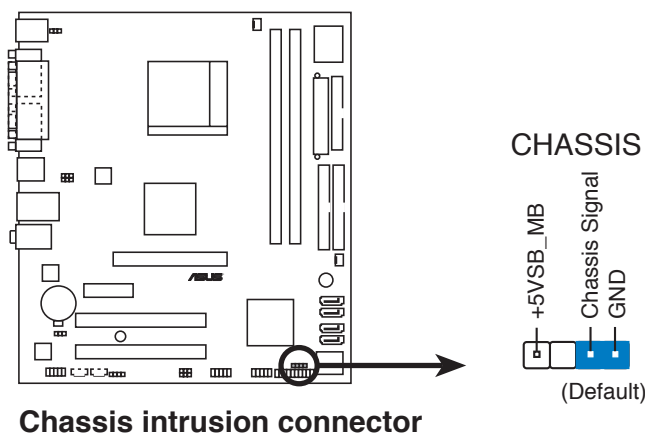
This connector is for a chassis-mounted front panel audio I/O module that supports AC'97 audio standard.



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

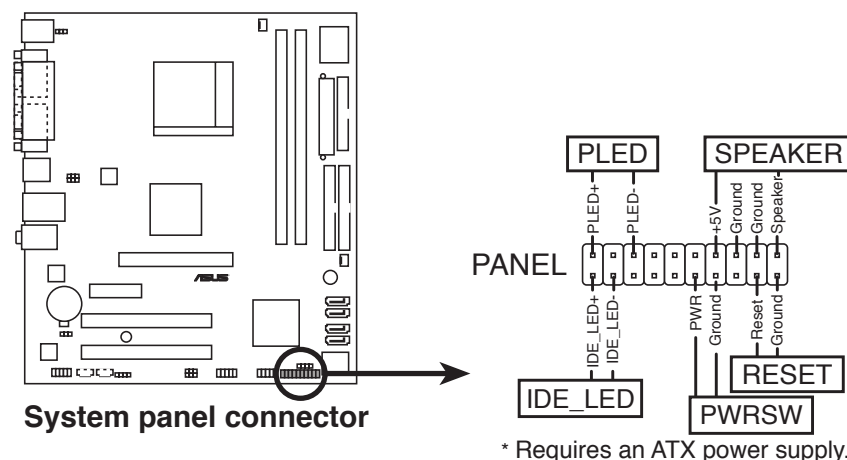
This connector is for a chassis-mounted intrusion detection sensor or switch. Connect one end of the chassis intrusion sensor or switch cable to this connector. The chassis intrusion sensor or switch sends a high-level signal to this connector when a chassis component is removed or replaced. The signal is then generated as a chassis intrusion event.

By default, the pins labeled “Chassis Signal” and “Ground” are shorted with a jumper cap. Remove the jumper caps only when you intend to use the chassis intrusion detection feature.



10. System panel connector (20-1 pin PANEL)

This connector supports several chassis-mounted functions.



The system panel connector is color-coded for easy connection. Refer to the connector description below for details.

- **System power LED (Green 3-pin PLED)**
This 3-pin 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.
- **Hard disk drive activity (Red 2-pin IDE_LED)**
This 2-pin 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.
- **System warning speaker (Orange 4-pin SPEAKER)**
This 4-pin connector is for the chassis-mounted system warning speaker. The speaker allows you to hear system beeps and warnings.
- **Power/Soft-off button (Yellow 2-pin PWRSW)**
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.
- **Reset button (Blue 2-pin RESET)**
This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power.

Chapter 5

This chapter tells how to change system settings through the BIOS Setup menus and describes the BIOS parameters.



ASUS Vintage2-AE1

BIOS setup

5.1 Managing and updating your BIOS

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

1. **ASUS 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 when the BIOS file fails or gets corrupted.)
4. **ASUS Update** (Updates the BIOS in Windows® environment. See section 3.4.3)

Refer to the corresponding sections for details on these utilities.



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 ASUS Update or AFUDOS utilities.

5.1.1 Creating a bootable floppy disk

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

DOS environment

- a. Insert a 1.44MB floppy disk into the drive.
- b. At the DOS prompt, type `format A: /S` then press <Enter>.

Windows® XP environment

- a. Insert a 1.44 MB floppy disk to the floppy disk drive.
- b. Click **Start** from the Windows® desktop, 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**.

Windows® 2000 environment

To create a set of boot disks for Windows® 2000:

- a. Insert a formatted, high density 1.44 MB floppy disk into the drive.
- b. Insert the Windows® 2000 CD to the optical drive.
- c. Click **Start**, then select **Run**.

- d. From the Open field, type
`D:\bootdisk\makeboot a:`
assuming that D: is your optical drive.
 - e. Press <Enter>, then follow screen instructions to continue.
2. Copy the original or the latest motherboard BIOS file to the bootable floppy disk.

5.1.2 ASUS EZ Flash utility

The ASUS EZ Flash feature allows you to 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 utility is built-in the BIOS chip so it is accessible by pressing <Alt> + <F2> during the Power-On Self Tests (POST).

To update the BIOS using EZ Flash:

1. Visit the ASUS website (www.asus.com) to download the latest BIOS file for the motherboard and rename the same to **A8VMQ.ROM**.
2. Save the BIOS file to a floppy disk, then restart the system.
3. Press <Alt> + <F2> during POST to display the following.

```
EZFlash starting BIOS update
Checking for floppy...
```

4. Insert the floppy disk that contains the BIOS file to the floppy disk drive. When the correct BIOS file is found, EZ Flash performs the BIOS update process and automatically reboots the system when done.

```
EZFlash starting BIOS update
Checking for floppy...
Floppy found!
Reading file "A8VMQ.ROM". Completed.
Start erasing.....|
Start programming...|
Flashed successfully. Rebooting.
```



- Do not shut down or reset the system while updating the BIOS to prevent system boot failure!
- A "Floppy not found!" error message appears if there is no floppy disk in the drive. A "**A8VMQ.ROM not found!**" error message appears if the correct BIOS file is not found in the floppy disk. Make sure that you rename the BIOS file to A8VMQ.ROM.

5.1.3 AFUDOS utility

The AFUDOS utility allows you to update the BIOS file in DOS environment using a bootable floppy disk with the updated BIOS file. This utility also allows you to copy the current BIOS file that you can use as backup when the BIOS fails or gets corrupted during the updating process.

Copying the current BIOS

To copy the current BIOS file using the AFUDOS utility:



- Make sure that the floppy disk is not write-protected and has at least 600 KB free space to save the file.
- The succeeding BIOS screens are for reference only. The actual BIOS screen displays may not be exactly the same as shown.

1. Copy the AFUDOS utility (afudos.exe) from the motherboard support CD to the bootable floppy disk you created earlier.
2. Boot the system in DOS mode, then at the prompt type:

afudos /o[filename]

where the [filename] is any user-assigned filename not more than eight alphanumeric characters for the main filename and three alphanumeric characters for the extension name.

```
A:\>afudos /oOLDBIOS1.ROM
```

Main filename Extension name

3. Press <Enter>. The utility copies the current BIOS file to the floppy disk.

```
A:\>afudos /oOLDBIOS1.ROM
AMI Firmware Update Utility - Version 1.10
Copyright (C) 2002 American Megatrends, Inc. All rights reserved.
Reading flash ..... done
A:\>
```

The utility returns to the DOS prompt after copying the current BIOS file.

Updating the BIOS file

To update the BIOS file using the AFUDOS utility:

1. Visit the ASUS website (www.asus.com) and download the latest BIOS file for the motherboard. Save the BIOS file to a bootable floppy disk.



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

2. Copy the AFUDOS utility (afudos.exe) from the motherboard support CD to the bootable floppy disk you created earlier.
3. Boot the system in DOS mode, then at the prompt type:

```
afudos /i[filename]
```

where [filename] is the latest or the original BIOS file on the bootable floppy disk.

```
A:\>afudos /iA8VMQ.ROM
```

4. The utility verifies the file and starts updating the BIOS.

```
A:\>afudos /iA8VMQ.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 to prevent system boot failure!

5. The utility returns to the DOS prompt after the BIOS update process is completed. Reboot the system from the hard disk drive.

```
A:\>afudos /iA8VMQ.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:\>
```

5.1.4 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 **A8VMQ.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 "A8VMQ.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 "A8VMQ.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.

5.2 BIOS setup program

This motherboard supports a programmable firmware chip that you can update using the provided utility described in section “5.1 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 change 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 firmware hub.

The firmware hub 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 during the Power-On-Self-Test (POST) to enter the Setup utility; otherwise, POST continues with its test routines.

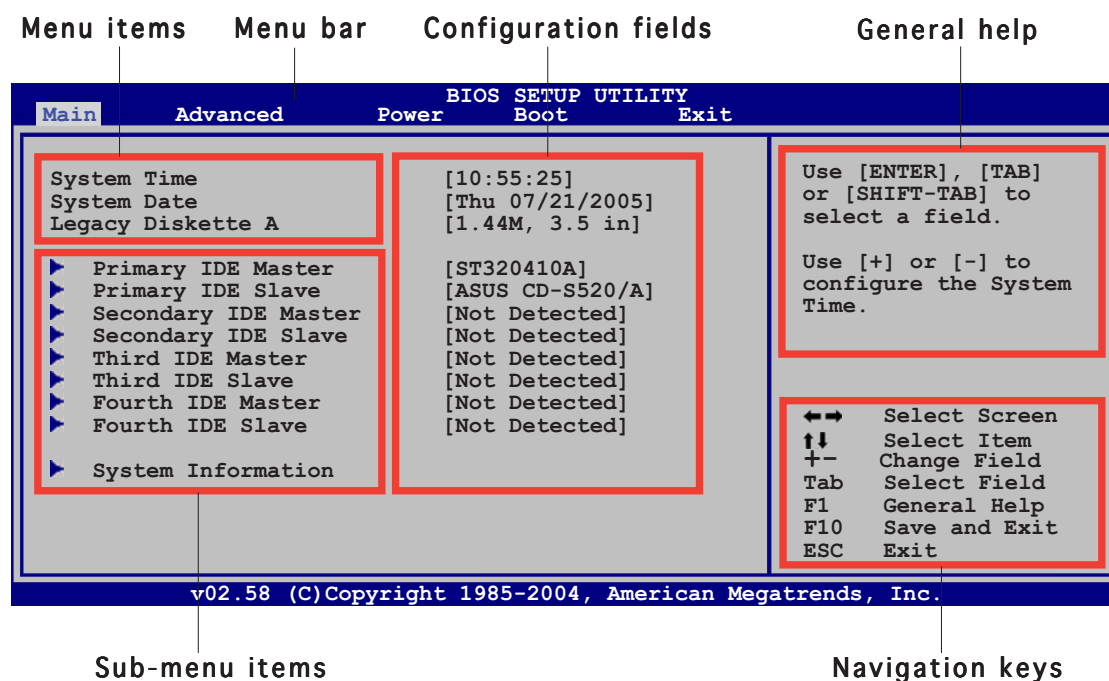
If you wish to enter Setup after POST, restart the system by pressing <Ctrl+Alt+Delete>, or by pressing the reset button on the system chassis. You can also restart by turning the system off and then back on. Do this last option only if the first two failed.

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 from the available options using the navigation keys.



-
- The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Select the **Load Default Settings** item under the Exit Menu. See section “5.7 Exit Menu.”
 - The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
 - Visit the ASUS website (www.asus.com) to download the latest BIOS file for this motherboard and .
-

5.2.1 BIOS menu screen



5.2.2 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.

5.2.3 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.

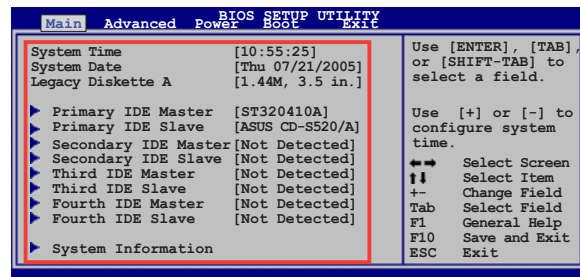


Some of the navigation keys differ from one screen to another.

5.2.4 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.



Main menu items

5.2.5 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 and press <Enter>.

5.2.6 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.

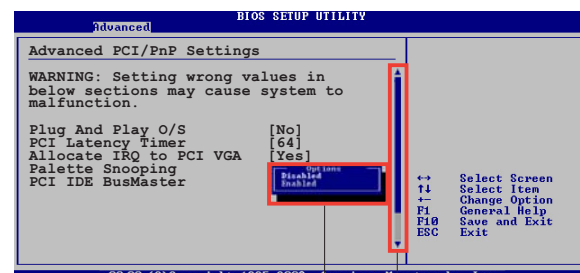
A configurable field is enclosed in brackets, and is highlighted when selected. To change the value of a field, select it then press <Enter> to display a list of options. Refer to “5.2.7 Pop-up window.”

5.2.7 Pop-up window

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

5.2.8 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 <Page Up> /<Page Down> keys to display the other items on the screen.



Pop-up window

Scroll bar

5.2.9 General help

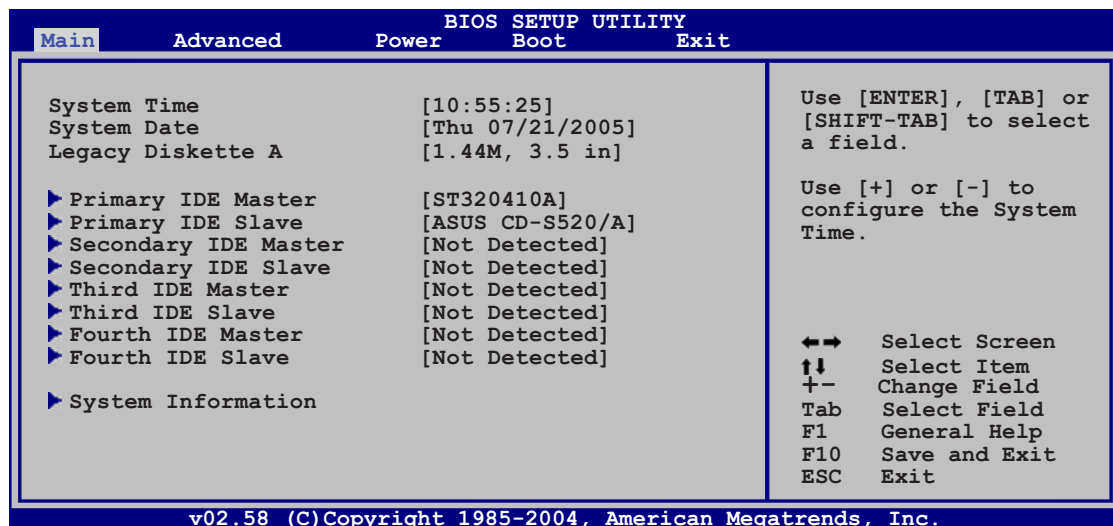
At the top right corner of the menu screen is a brief description of the selected item.

5.3 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 “5.2.1 BIOS menu screen” for information on the menu screen items and how to navigate through them.



5.3.1 System Time [xx:xx:xx]

Allows you to set the system time.

5.3.2 System Date [Day xx/xx/xxxx]

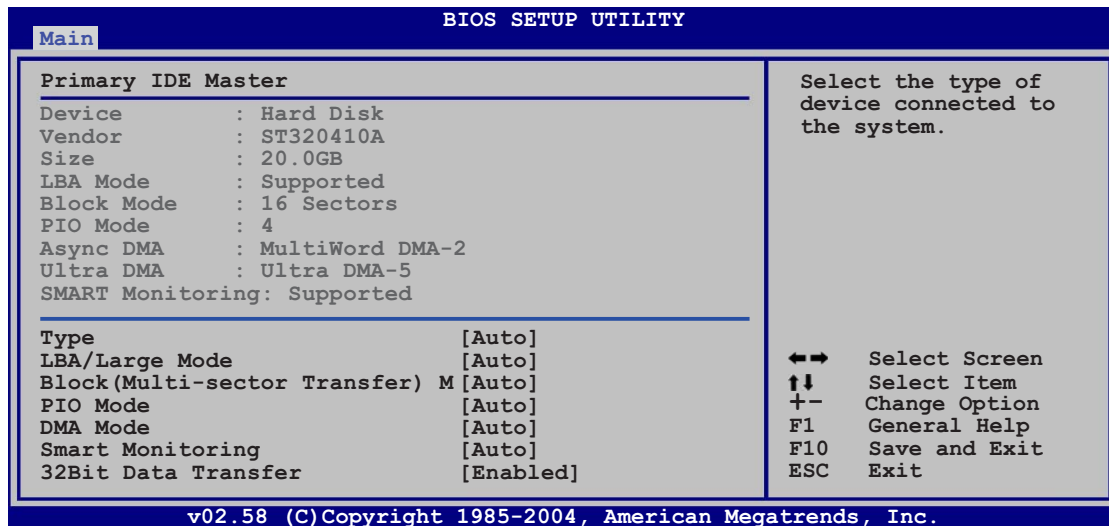
Allows you to set the system date.

5.3.3 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.]

5.3.4 Primary, Secondary, Third, and Fourth IDE Master/Slave

While entering Setup, the 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. Setting to Auto allows automatic selection of the appropriate IDE device type. Select CDROM if you are specifically configuring a CD-ROM drive. Select ARMD (ATAPI Removable Media Device) if your device is either a ZIP, LS-120, or MO drive.

Configuration options: [Not Installed] [Auto] [CDROM] [ARMD]

LBA/Large Mode [Auto]

Enables or disables the LBA mode. Setting to Auto enables the LBA 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 [Auto]

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

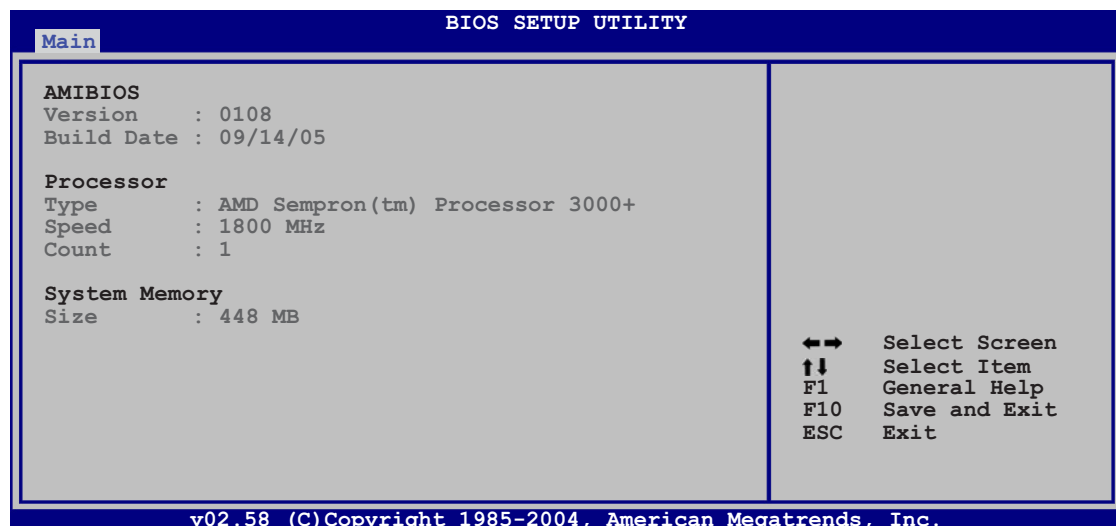
32Bit Data Transfer [Enabled]

Enables or disables 32-bit data transfer.

Configuration options: [Disabled] [Enabled]

5.3.5 System Information

This menu gives you an overview of the general system specifications. The BIOS automatically detects the items in this menu.



AMI BIOS

Displays the auto-detected BIOS information.

Processor

Displays the auto-detected CPU specification.

System Memory

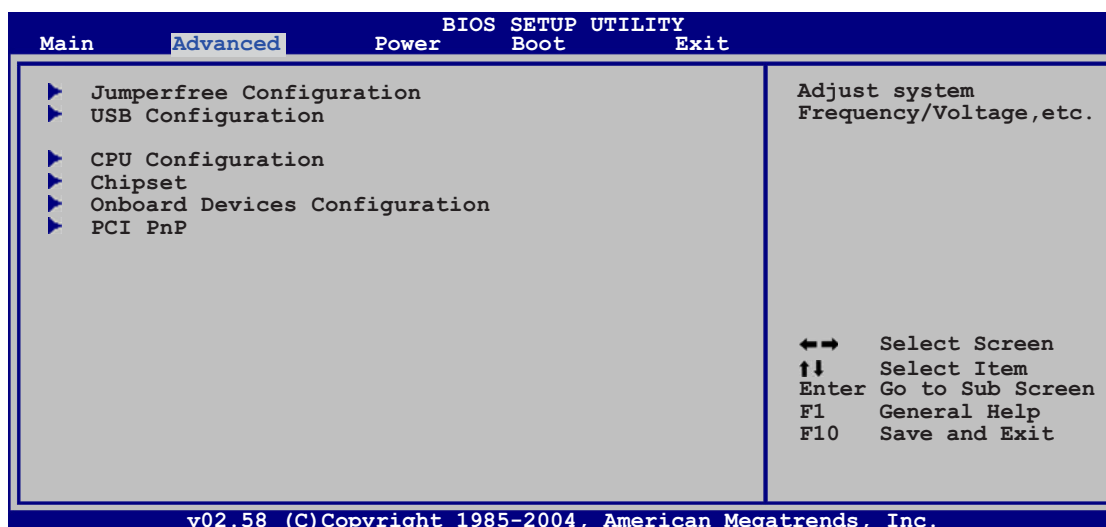
Displays the auto-detected system memory.

5.4 Advanced menu

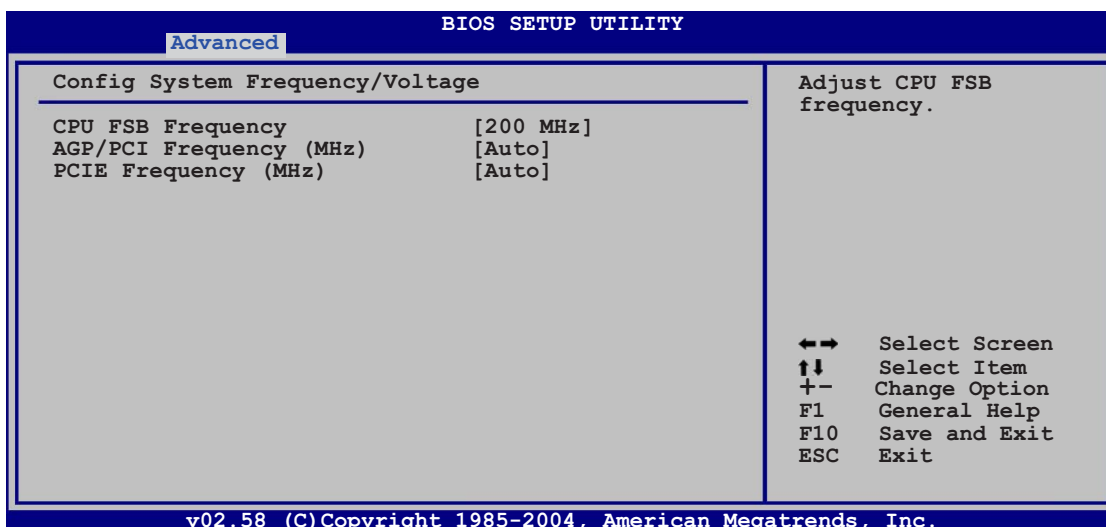
The Advanced menu items allow you to change the settings for the CPU and other system devices.



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



5.4.1 JumperFree Configuration



CPU FSB Frequency [200 MHz]

Allows you to adjust the CPU FSB frequency.

Configuration options: [200 MHz] [201 MHz] [202 MHz]... [300 MHz]

AGP/PCI Frequency (MHz) [Auto]

Allows you to set the AGP/PCI frequency.

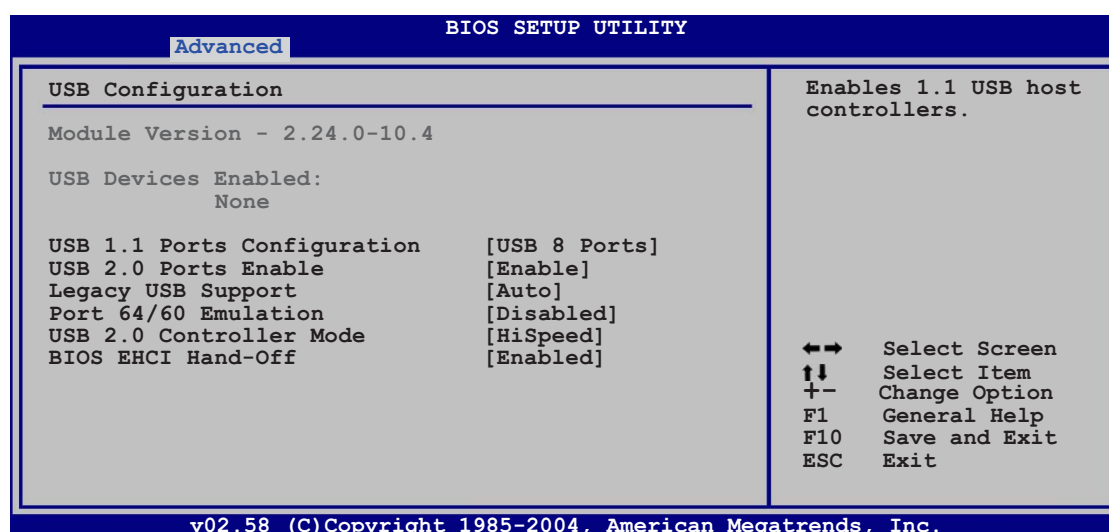
Configuration options: [Auto] [66.66/33.33] [75.4/37.7] [80/40]

PCIE Frequency (MHz) [Auto]

Sets the PCI Express frequency.

Configuration options: [Auto] [Fixed Clock]

5.4.2 USB Configuration



The Module Version and USB Devices Enabled items show the auto-detected values. If no USB device is detected, the item shows None.

USB 1.1 Ports Configuration [USB 8 Ports]

Allows you to choose the number of USB 1.1 ports to enable. Setting to [Disabled] disables the USB 1.1 host controllers.

Configuration options: [Disabled] [USB 2 ports] [USB 4 ports] [USB 6 ports] [USB 8 ports]

USB 2.0 Ports Enable [Enable]

Allows you to enable or disable the USB 2.0 host controllers.

Configuration options: [Disabled] [Enabled]

Legacy USB Support [Auto]

Allows you to enable or disable support for USB devices on legacy operating systems (OS). 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]

Port 64/60 Emulation [Disabled]

Allows you to enable or disable I/O port 60h/64h emulation support. This item should be set to [Enabled] for complete USB keyboard legacy support for non-USB aware operating systems. Configuration options: [Disabled] [Enabled]

USB 2.0 Controller Mode [HiSpeed]

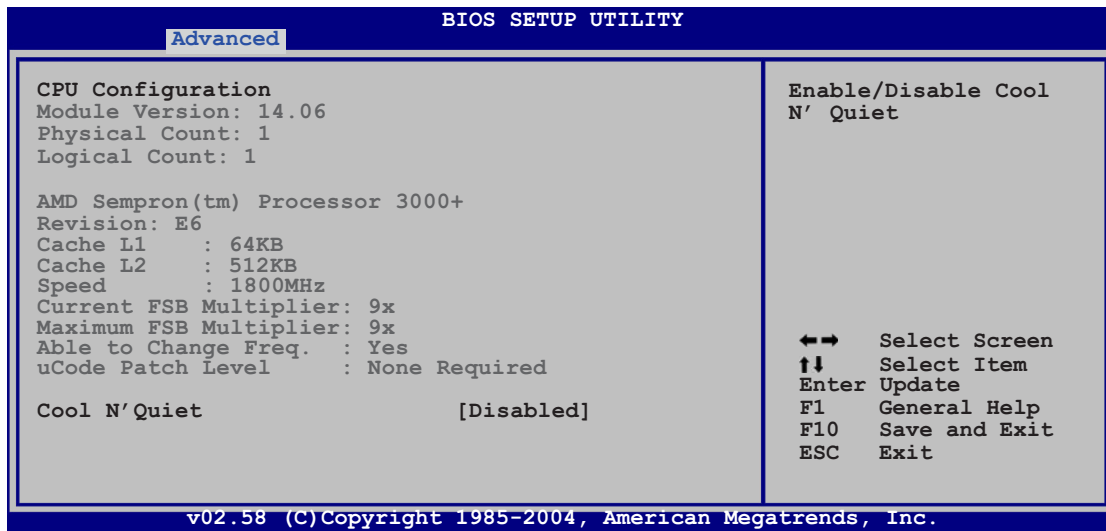
Allows you to set the USB 2.0 controller mode to HiSpeed (480 Mbps) or FullSpeed (12 Mbps). Configuration options: [FullSpeed] [HiSpeed]

BIOS EHCI Hand-Off [Enabled]

Allows you to enable support for operating systems without an EHCI hand-off feature. Configuration options: [Disabled] [Enabled]

5.4.3 CPU Configuration

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

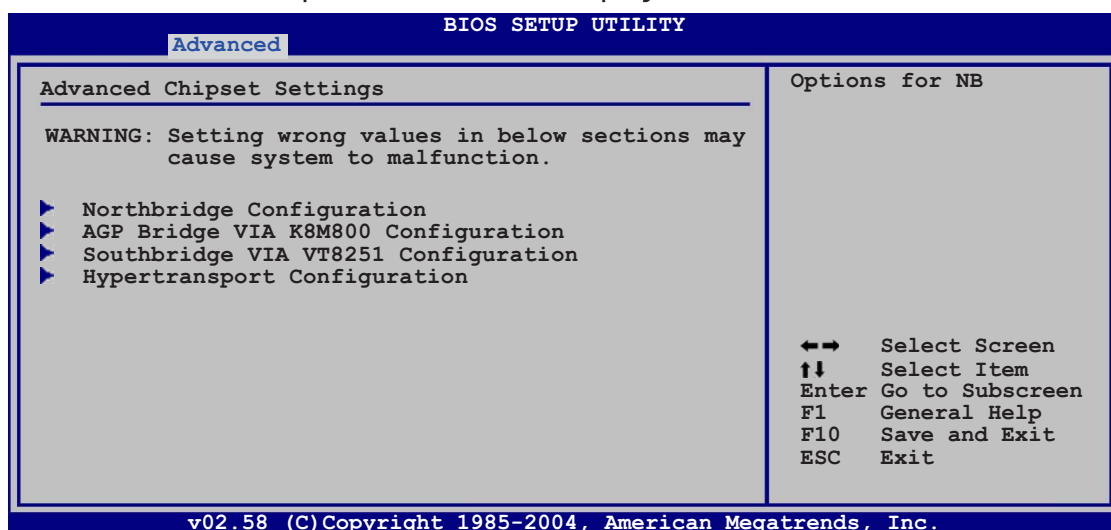


Cool 'n' Quiet [Disabled]

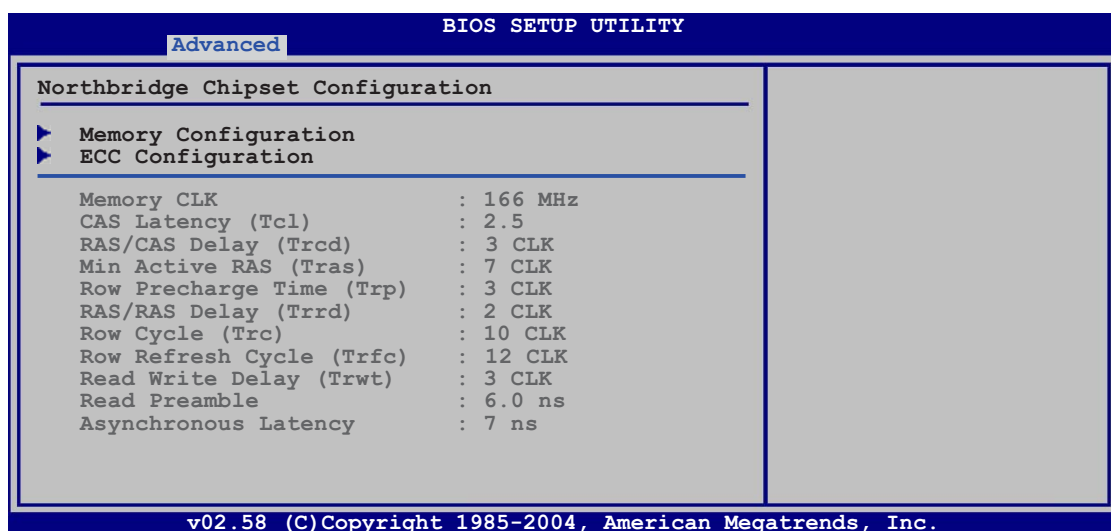
Allows you to enable or disable the AMD Cool 'n' Quiet technology feature. Configuration options: [Enabled] [Disabled]

5.4.4 Chipset

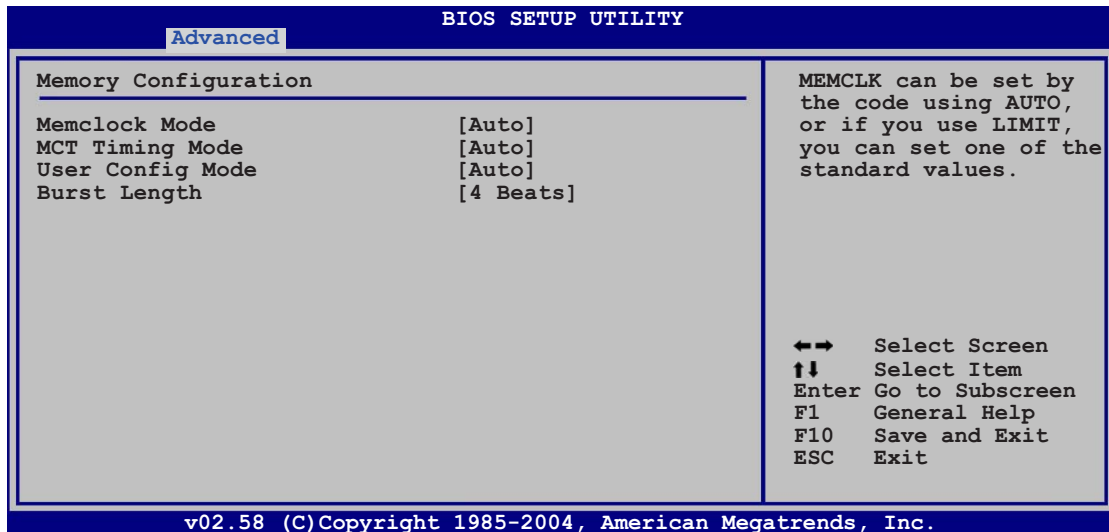
The Chipset menu allows you to change the advanced chipset settings. Select an item then press <Enter> to display the sub-menu.



Northbridge Configuration



Memory Configuration



Memclock Mode [Auto]

[Auto] allows the BIOS to set the memclock mode automatically.

[Limit] allows you to select from any of the standard values.

Configuration options: [Auto] [Limit]



The following item appears when the **Memclock Mode** item is set to [Limit].

Memclock Value [100 MHz]

Allows you to set the memclock value.

Configuration options: [100 MHz] [133 MHz] [166 MHz]
[183 MHz] [200 MHz] [216 MHz] [233 MHz] [250 MHz]

MCT Timing Mode [Auto]

[Auto] allows the BIOS to set the MCT timing mode automatically.

[Manual] allows you to set the values by yourself.

Configuration options: [Auto] [Manual]



The following items appear when the **MCT Timing Mode** item is set to [Manual].

CAS Latency (CL) [2.5]

Configuration options: [2.0] [2.5] [3.0]

TRAS [8 CLK]

Configuration options: [5 CLK] [6 CLK]... [15 CLK]

TRP [4 CLK]

Configuration options: [2 CLK] [3 CLK]... [6 CLK]

TRCD [4 CLK]

Configuration options: [2 CLK] [3 CLK]... [6 CLK]

TRRD [2T]

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

TRC [12 T]

Configuration options: [7T] [8T] [9T]... [22T]

TRFC [24 T]

Configuration options: [9T] [10T] [11T]... [24T]

TRWT [4 CLK]

Configuration options: [1 CLK] [2 CLK]... [6 CLK]

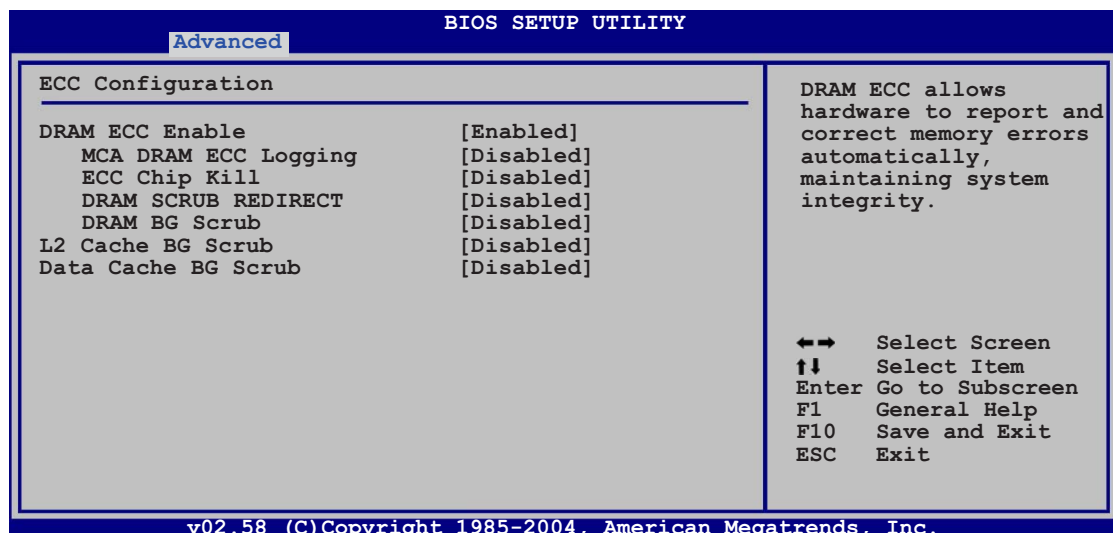
User Config Mode [Auto]

Configuration options: [Auto] [Manual]

Burst length [4 Beats]

Sets the burst length.

Configuration options: [8 Beats] [4 Beats] [2 Beats]

ECC ConfigurationDRAM ECC Enable [Enabled]

Allows you to enable or disable DRAM ECC, which allows the hardware to report and correct memory errors automatically to maintain system integrity. Configuration options: [Disabled] [Enabled]

MCA DRAM ECC Logging [Disabled]

Allows you to enable or disable MCA DRAM ECC logging/reporting. Configuration options: [Disabled] [Enabled]

ECC Chip Kill [Disabled]

Allows you to enable or disable ECC chip kill. Configuration options: [Disabled] [Enabled]

DRAM SCRUB REDIRECT [Disabled]

Allows you to enable or disable DRAM scrub redirect, which allows the system to correct DRAM ECC errors immediately when they occur, even if background scrubbing is on. Configuration options: [Disabled] [Enabled]

DRAM BG Scrub [Disabled]

Allows DRAM scrubbing to correct memory errors so later reads are correct. Doing this while memory is not being used improves performance. Configuration options: [Disabled] [40ns] [80ns] [160ns] [320ns] [640ns] [1.28us] [2.56us] [5.12us] [10.2us] [20.5 us] [41.0us] [81.9us] [163.8us] [327.7us] [655.4us] [1.31ms] [2.62ms] [5.24ms] [10.49ms] [20.97ms] [42.00ms] [84.00ms]



When AMD's node interleave feature is enabled, the BIOS will force DRAM scrub-off.

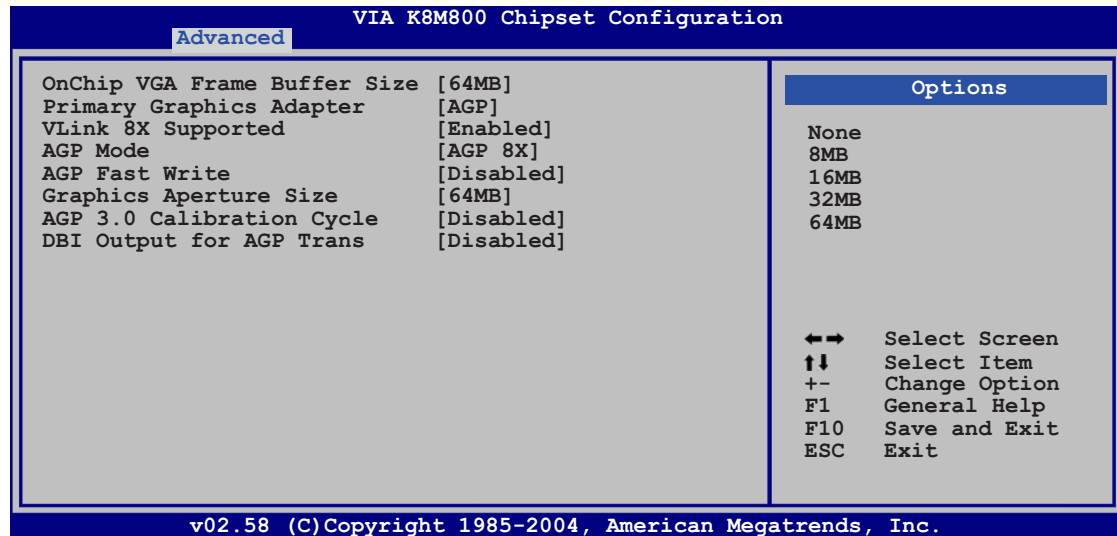
L2 Cache BG Scrub [Disabled]

Allows the L2 Data Cache RAM to be corrected while idle. Configuration options: [Disabled] [40ns] [80ns] [160ns] [320ns] [640ns] [1.28us] [2.56us] [5.12us] [10.2us] [20.5 us] [41.0us] [81.9us] [163.8us] [327.7us] [655.4us] [1.31ms] [2.62ms] [5.24ms] [10.49ms] [20.97ms] [42.00ms] [84.00ms]

Data Cache BG Scrub [Disabled]

Allows the L1 Data Cache RAM to be corrected while idle. Configuration options: [Disabled] [40ns] [80ns] [160ns] [320ns] [640ns] [1.28us] [2.56us] [5.12us] [10.2us] [20.5 us] [41.0us] [81.9us] [163.8us] [327.7us] [655.4us] [1.31ms] [2.62ms] [5.24ms] [10.49ms] [20.97ms] [42.00ms] [84.00ms]

AGP Bridge VIA K8M800 Configuration



OnChip VGA Frame Buffer Size [64MB]

Allows you to set the frame buffer size of the onchip VGA.

Configuration options: [None] [8MB] [16MB] [32MB] [64MB]

Primary Graphics Adapter [AGP]

Allows selection of the graphics controller to use as a primary boot device. Configuration options: [PCI] [AGP]

VLink 8X Supported [Enabled]

Allows you to enable or disable VLink 8X support.

Configuration options: [Disabled] [Enabled]

AGP Mode [AGP 8X]

Allows you to set the AGP mode.

Configuration options: [AGP 8X] [AGP 4X]

AGP Fast Write [Disabled]

Allows you to enable or disable the AGP Fast Write feature.

Configuration options: [Disabled] [Enabled]

Graphics Aperture Size [64MB]

Allows you to set the graphics aperture size.

Configuration options: [256MB] [128MB] [64MB] [32MB]

AGP 3.0 Calibration Cycle [Disabled]

Configuration options: [Disabled] [Enabled]

DBI Output for AGP Trans [Disabled]

Configuration options: [Disabled] [Enabled]

SouthBridge VIA VT8251 Configuration

VIA VT8251 South Chipset Configuration			
Advanced			
* Serial ATA IDE Controller	[SATA]	Options Disabled SATA RAID AHCI	
* LAN Controller	[Enabled]		
LAN BIOS Execute	[Disabled]		
OnChip AC'97 Audio	[Auto]		
AC'97 Variable Sample Rate	[Enabled]		←→ Select Screen ↑↓ Select Item +- Change Option F1 General Help F10 Save and Exit ESC Exit
v02.58 (C)Copyright 1985-2004, American Megatrends, Inc.			

Serial ATA IDE Controller [SATA]

Allows you to set the Serial ATA mode.

Configuration options: [Disabled] [SATA] [RAID] [AHCI]

Serial-ATA BOOTROM [Disabled]

Allows you to enable or disable the Serial ATA BootROM.

Configuration options: [Disabled] [Enabled]



The above item appears only when the **Serial ATA IDE Controller** item is set to [RAID] or [AHCI]

LAN Controller [Enabled]

Allows you to enable or disable the onboard LAN.

Configuration options: [Disabled] [Enabled]

LAN BIOS Execute [Disabled]

Allows you to enable or disable the BIOS execute feature of the onboard LAN. Configuration options: [Disabled] [Enabled]

OnChip AC'97 Audio [Auto]

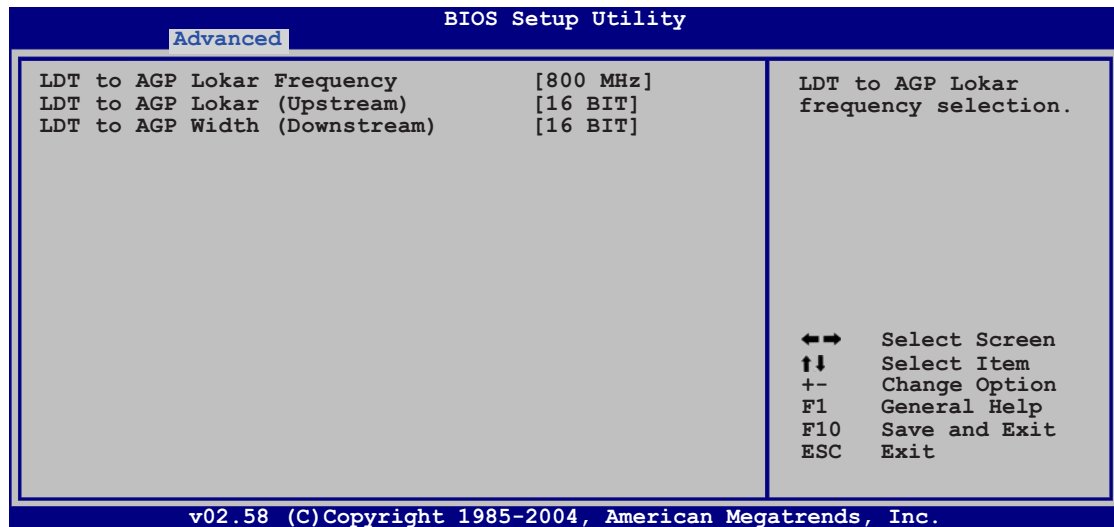
Enables or disables the AC'97 CODEC.

Configuration options: [Disabled] [Auto]

AC'97 Variable Sample Rate [Enabled]

Configuration options: [Disabled] [Enabled]

HyperTransport Configuration



LDT to AGP Lokar Frequency [800 MHz]

Allows you to set the LDT to AGP Lokar Frequency.

Configuration options: [200 MHz] [400 MHz] [600 MHz] [800 MHz]

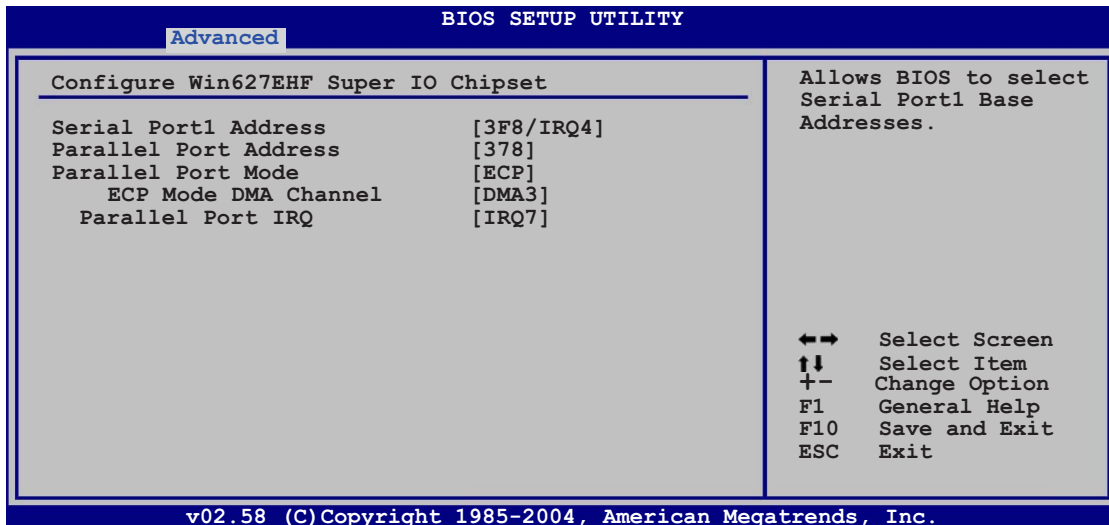
LDT to AGP Lokar (Upstream) [16 BIT]

Configuration options: [8 BIT] [16 BIT]

LDT to AGP Width (Downstream) [16 BIT]

Configuration options: [8 BIT] [16 BIT]

5.4.5 Onboard Devices Configuration



Serial Port1 Address [3F8/IRQ4]

Allows you to select the Serial Port1 base address.

Configuration options: [Disabled] [2F8/IRQ3] [3F8/IRQ4] [3E8/IRQ4] [2E8/IRQ3]

Parallel Port Address [378]

Allows you to select the Parallel Port base addresses.

Configuration options: [Disabled] [378] [278] [3BC]

Parallel Port Mode [ECP]

Allows you to select the Parallel Port mode.

Configuration options: [Normal] [Bi-directional] [EPP] [ECP]

ECP Mode DMA Channel [DMA3]

Appears only when the Parallel Port Mode is set to [ECP]. This item allows you to set the Parallel Port ECP DMA.

Configuration options: [DMA0] [DMA1] [DMA3]

EPP Version [1.9]

Allows selection of the Parallel Port EPP version. This item appears only when the **Parallel Port Mode** is set to **EPP**.

Configuration options: [1.9] [1.7]

Parallel Port IRQ [IRQ7]

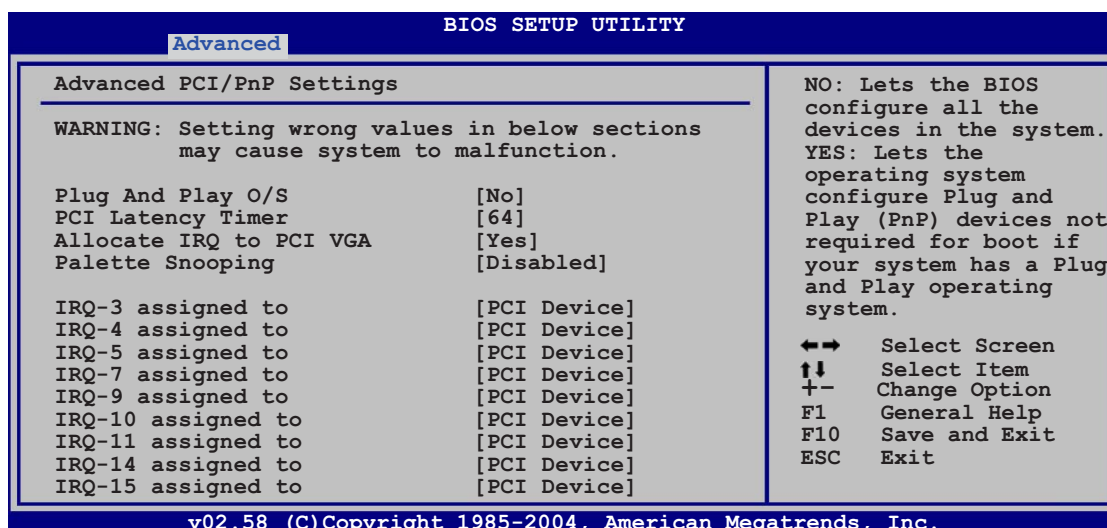
Configuration options: [IRQ5] [IRQ7]

5.4.6 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, and setting the memory size block for 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 install 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: [No] [Yes]

Palette Snooping [Disabled]

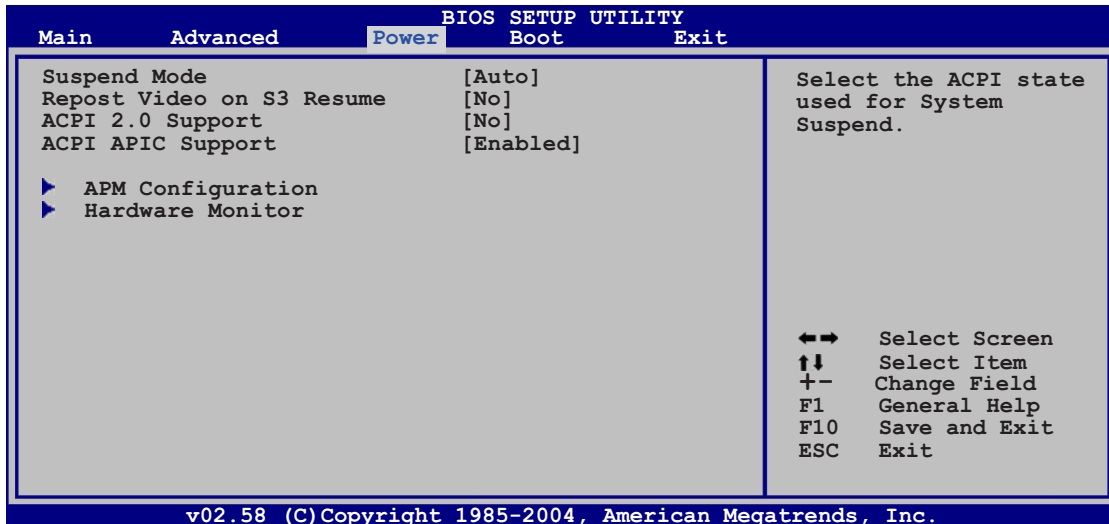
When set to [Enabled], the palette snooping feature informs the PCI devices that an ISA graphics device is installed in the system so that the latter can function correctly. Configuration options: [Disabled] [Enabled]

IRQ-xx assigned to [PCI Device]

When set to [PCI Device], the specific IRQ is free for use of PCI/PnP devices. When set to [Reserved], the IRQ is reserved for legacy ISA devices. Configuration options: [PCI Device] [Reserved]

5.5 Power menu

The Power menu items allow you to change the settings for the Advanced Power Management (APM). Select an item then press <Enter> to display the configuration options.



5.5.1 Suspend Mode [Auto]

Allows you to select the Advanced Configuration and Power Interface (ACPI) state to be used for system suspend.

Configuration options: [S1 (POS) Only] [S3 Only] [Auto]

5.5.2 Repost Video on S3 Resume [No]

Determines whether to invoke VGA BIOS POST on S3/STR resume.

Configuration options: [No] [Yes]

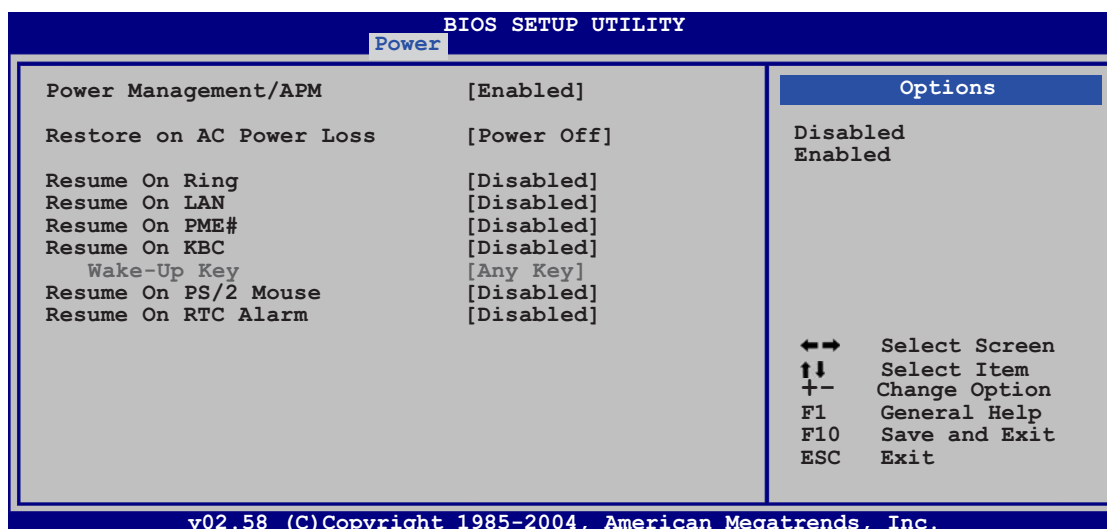
5.5.3 ACPI 2.0 Support [No]

Allows you to add more tables for Advanced Configuration and Power Interface (ACPI) 2.0 specifications. Configuration options: [No] [Yes]

5.5.4 ACPI APIC Support [Enabled]

Allows you to enable or disable the Advanced Configuration and Power Interface (ACPI) support in the Advanced Programmable Interrupt Controller (APIC). When set to Enabled, the ACPI APIC table pointer is included in the RSDT pointer list. Configuration options: [Disabled] [Enabled]

5.5.5 APM Configuration



Power Management/APM [Enabled]

Allows you to enable or disable the advanced power management feature.
Configuration options: [Disabled] [Enabled]

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. When set to Last State, the system goes into either off or on state, whatever the system state was before the AC power loss.
Configuration options: [Power Off] [Power On] [Last State]

Resume On Ring [Disabled]

When set to [Enabled], the system enables the RI to generate a wake event while the computer is in Soft-off mode.
Configuration options: [Disabled] [Enabled]

Resume On LAN [Disabled]

When set to [Enabled], this parameter allows you to turn on the system through a PCI LAN or modem card. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead.
Configuration options: [Disabled] [Enabled]

Resume On PME# [Disabled]

When set to [Enabled], the system enables the PME to generate a wake event while the computer is in Soft-off mode.
Configuration options: [Disabled] [Enabled]

Resume On KBC [Disabled]

Configuration options: [Disabled] [Enabled]

Wake-Up Key [Any Key]

Allows you to use any key or a specific 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: [Any Key] [Specific Key]

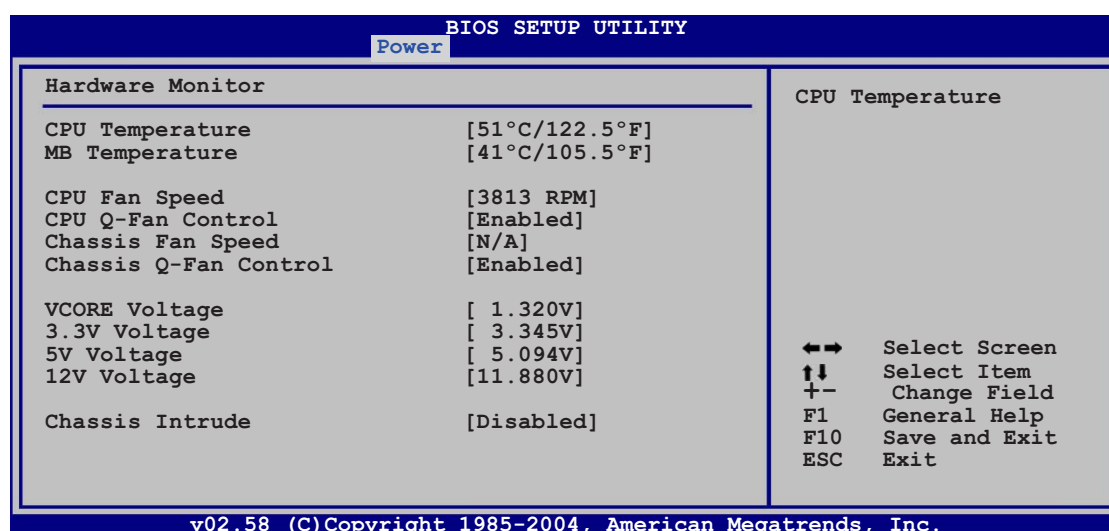
Power On By PS/2 Mouse [Disabled]

When set to [Enabled], this parameter allows you to use the PS/2 mouse to turn on the system. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead. Configuration options: [Disabled] [Enabled]

Resume On RTC Alarm [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]

5.5.6 Hardware Monitor



CPU Temperature [xxx°C/xxx°F] or [Ignored]

MB Temperature [xxx°C/xxx°F] or [Ignored]

The onboard hardware monitor automatically detects and displays the motherboard and CPU temperatures. Select Disabled if you do not wish to display the detected temperatures.

CPU Fan Speed [xxxxRPM] or [Ignored]

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 field shows N/A.

CPU Q-Fan Control [Enabled]

Allows you to enable or disable the ASUS Q-Fan feature that smartly adjusts the fan speeds for more efficient system operation. Configuration options: [Disabled] [Enabled]

Chassis Fan Speed [xxxxRPM] or [Ignored]

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 motherboard, the field shows N/A.

Chassis Q-Fan Control [Enabled]

Allows you to enable or disable the ASUS Q-Fan feature that smartly adjusts the chassis fan speed for more efficient system operation. Configuration options: [Disabled] [Enabled]

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

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

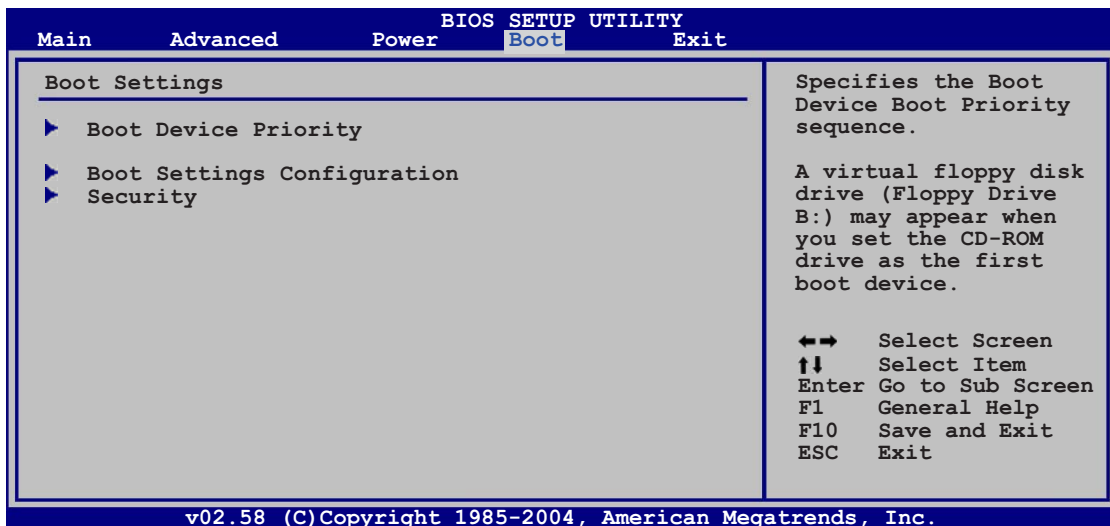
Chassis Intrude [Disabled]

Allows you to enable or disable the chassis intrusion function.

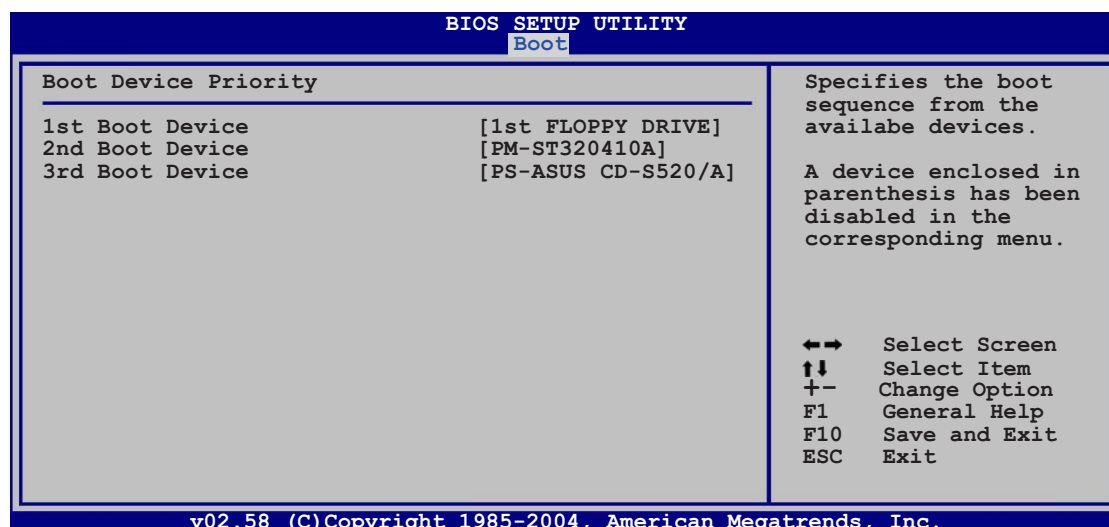
Configuration options: [Disabled] [Enabled]

5.6 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.



5.6.1 Boot Device Priority

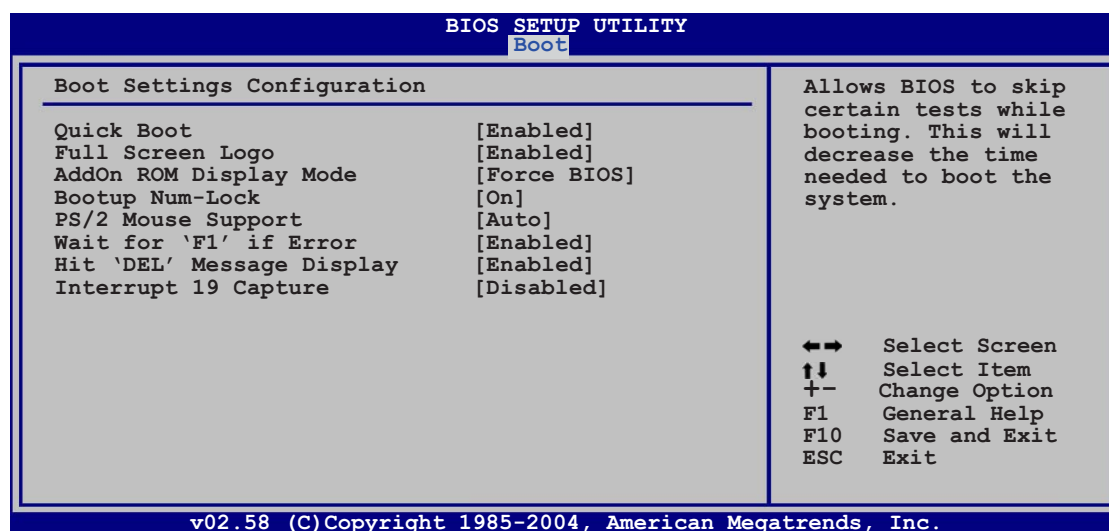


1st ~ xxth Boot Device [1st Floppy Drive]

These items specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.

Configuration options: [xxxxx Drive] [Disabled]

5.6.2 Boot Settings Configuration



Quick Boot [Enabled]

Enabling this item allows the BIOS to skip some power on self tests (POST) while booting to decrease the time needed to boot the system. When set to [Disabled], BIOS performs all the POST items.

Configuration options: [Disabled] [Enabled]

Full Screen Logo [Enabled]

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.

Add On ROM Display Mode [Force BIOS]

Sets the display mode for option ROM.

Configuration options: [Force BIOS] [Keep Current]

Bootup Num-Lock [On]

Allows you to select the power-on state for the NumLock.

Configuration options: [Off] [On]

PS/2 Mouse Support [Auto]

Allows you to enable or disable support for PS/2 mouse.

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

Wait for 'F1' If Error [Enabled]

When set to Enabled, the system waits for the F1 key to be pressed when error occurs. Configuration options: [Disabled] [Enabled]

Hit 'DEL' Message Display [Enabled]

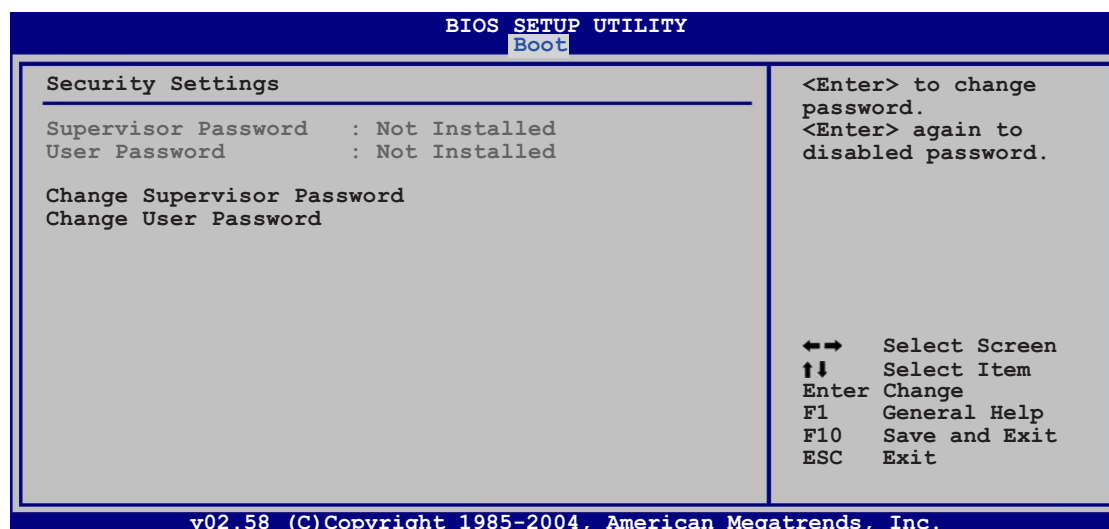
When set to Enabled, the system displays the message "Press DEL to run Setup" during POST. Configuration options: [Disabled] [Enabled]

Interrupt 19 Capture [Disabled]

When set to [Enabled], this function allows the option ROMs to trap Interrupt 19. Configuration options: [Disabled] [Enabled]

5.6.3 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 set a password, this item shows **Installed**.

To set a Supervisor Password:

1. Select the Change Supervisor Password item and press <Enter>.
2. From the password box, 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.

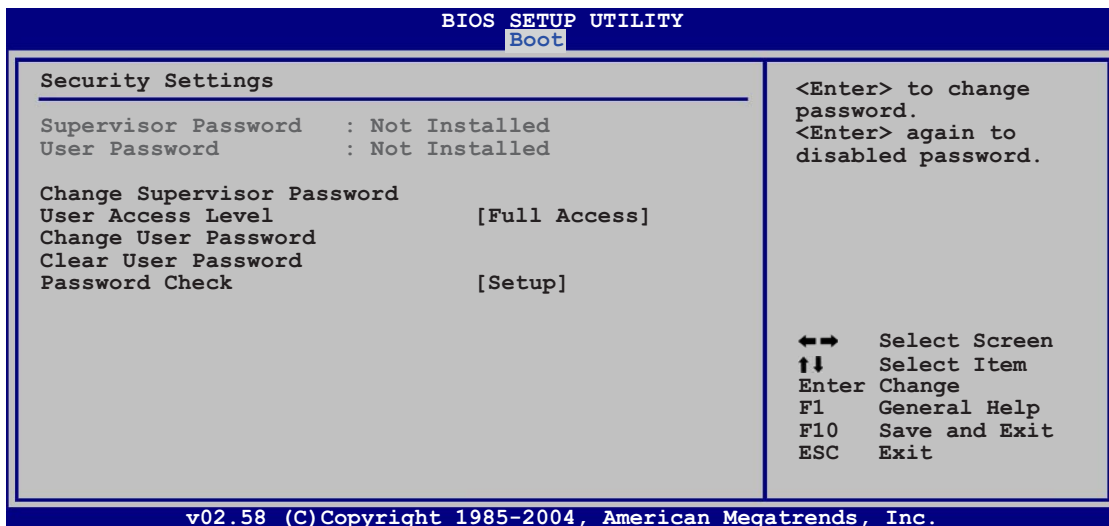
To change the supervisor password, follow the same steps as in setting a user password.

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



If you forget your BIOS password, you can clear it by erasing the CMOS Real Time Clock (RTC) RAM. See section "4.2 Jumpers" for information on how to erase the RTC RAM.

After you have set a supervisor password, the other items appear to allow you to change other security settings.



User Access Level (Full Access]

This item allows you to select the access restriction to the Setup items. Configuration options: [No Access] [View Only] [Limited] [Full Access]

No Access prevents user access to the Setup utility.

View Only allows access but does not allow change to any field.

Limited allows changes only to selected fields, such as Date and Time.

Full Access allows viewing and changing all the fields in the Setup utility.

Change User Password

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

To set a User 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 set your password successfully.

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

Clear User Password

Select this item to clear the user password.

Configuration options: [Setup] [Always]

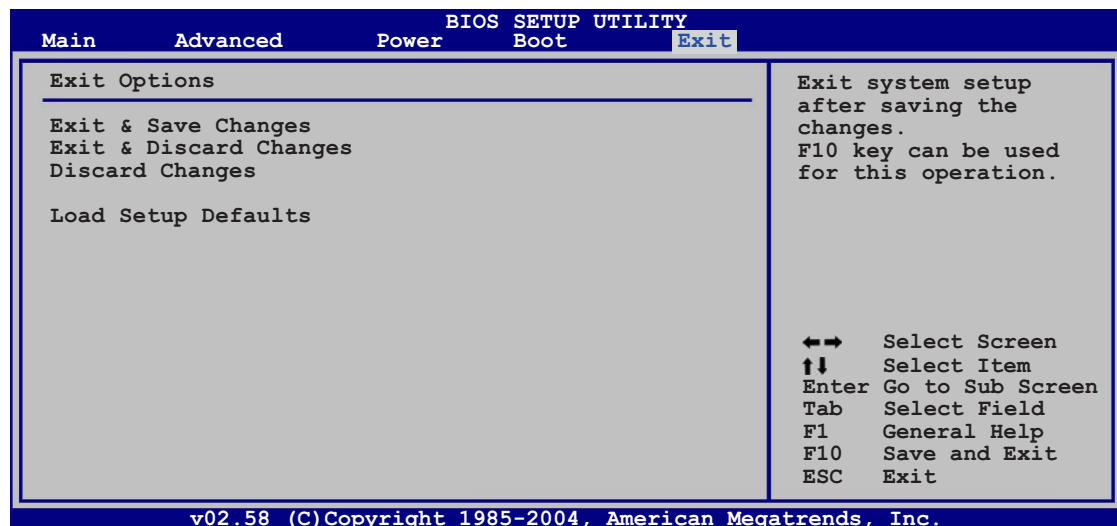
Password Check [Setup]

When set to [Setup], BIOS checks for user password when accessing the Setup utility. When set to [Always], BIOS checks for user password both when accessing Setup and booting the system.

Configuration options: [Setup] [Always]

5.7 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. An onboard backup battery sustains the CMOS RAM so it stays on even when the PC is turned off. When you select this option, a confirmation window appears. Select **[Ok]** 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. Press <Enter> to save 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 **[Ok]** 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 **[Ok]** to load default values. Select **Exit & Save Changes** or make other changes before saving the values to the non-volatile RAM.