ASUS
P2-M2A690G
ASUS PC (Desktop Barebone)
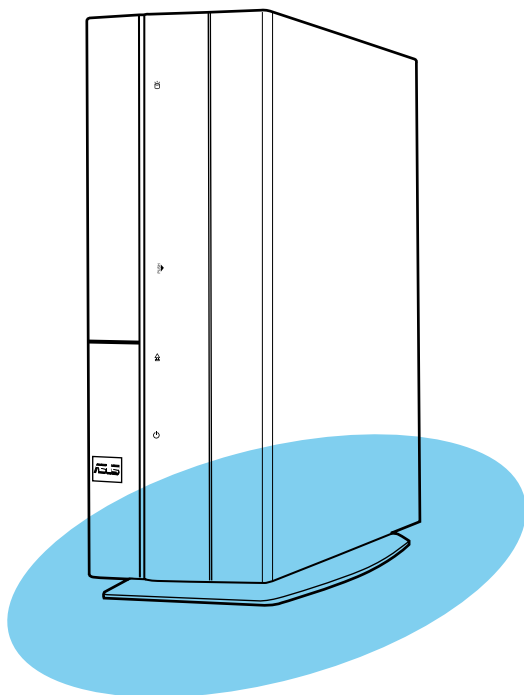
E3329

First Edition
September 2007

Table of contents

Table of contents

Table of contents

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.

> 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: Explosionsgetahr bei unsachgemäßen Austausch der Batterie. Ersatz nur durch denselben oder einem vom Hersteller empfohlenem ähnljchen 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 ASUS P2-M2A690G 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 ASUS P2-M2A690G. The chapter lists 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 P2-M2A690G system package for the following items.

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

Item description
1. **ASUS P2-M2A690G barebone system** with
• ASUS motherboard
• CPU fan and heatsink assembly
• CompactFlash card reader
• 3-in-1 storage card reader
• PCI riser card
• 200W power supply unit
2. **Cable**
• Power cable and plug
• Serial ATA power cable and signal cable
• IDE cable
3. **CDs**
• Support CD
• Software CD
• Recover PRO CD (only support Windows® 2000 / XP)
4. **Quick installation Guide**

This chapter gives a general
description of ASUS P2-M2A690G.
The chapter lists the system features
including introduction on the front and
rear panel, and internal components.

System introduction
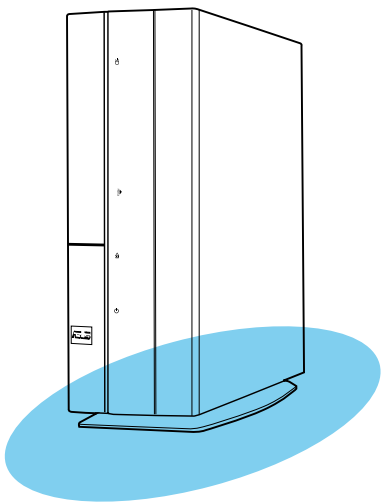
1.1 Welcome!

Thank you for choosing ASUS P2-M2A690G!

ASUS P2-M2A690G is an all-in-one barebone system with a versatile home entertainment feature.

The system comes in a stylish casing and powered by the ASUS motherboard that supports the AMD® Athlon64, AMD® Sempron, or AMD® Athlon 64 X2 processor.

The system supports up to 4 GB of system memory using DDR2-800 / 667 / 533 DIMMs, high-resolution graphics via integrated graphics controller, Serial ATA, USB 2.0, and 8-channel audio features.

1.2 Front panel

The front panel includes the optical drive bays, power button, and several I/O ports.

Close
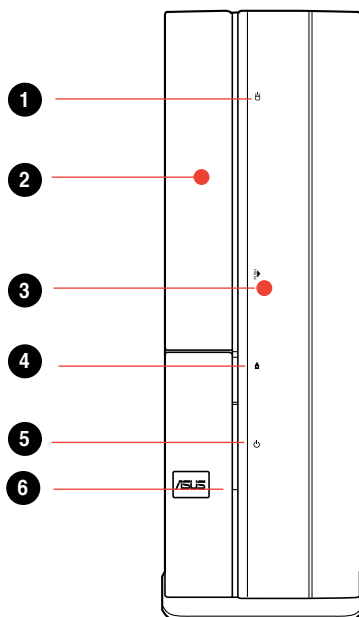
Open
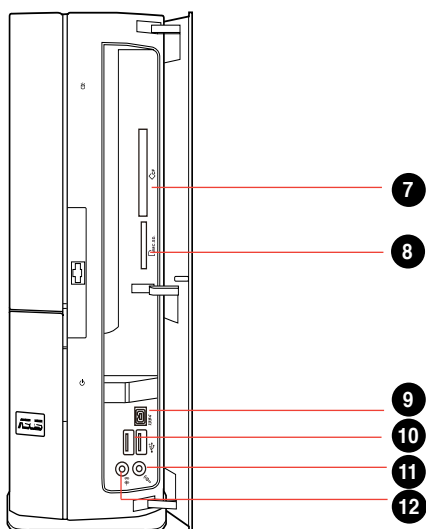
1. **HDD LED.** This LED lights up when data is read from or written to the hard disk drive.

2. **Optical drive bay cover**

3. **Front panel cover.** Push to open the front panel.

4. **Optical drive eject button**

5. **Power button.** Press this button to turn the system on.

6. **Power LED**

7. **CompactFlashTM Card slot**

8. **3 in i card reader**

9. **4-pin IEEE 1394 port**

10. **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.

11. **Microphone port (pink).** This port connects a microphone.

12. **Headphone port (lime).** This port connects a headphone or a speaker.

1.3 Rear panel

The system rear panel includes the power connector and several I/O ports that allow convenient connection of devices.
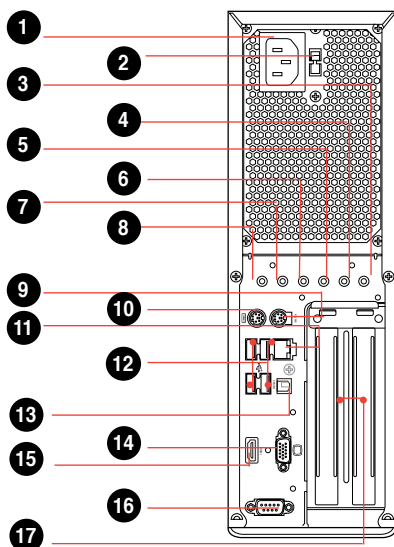
Setting the switch to 115V in a 230V environment or 230V in a 115 environment will seriously damage the system!

1. **Power connector**

2. **Voltage selector.** This switch allows you to adjust the system input voltage according to the voltage supply in your area. If the voltage supply in your area is 100-127V, set this switch to 115V. If the voltage supply in your area is 200-240V, set this switch to 230V.

3. **Center/Sub (yellow orange).** This port connects the center/subwoofer speakers.

4. **Surr-Side (black).** This port connects the side speakers in an 8-channel audio configuration.

5. **Surr-Rear (grey).** This port connects the rear speakers on a 4-channel, 6-channel, or 8-channel audio configuration.

6. **Line In port (light blue).** This port connects the tape, CD, DVD player, or other audio sources.

7. **Line Out port (lime).** This port connects a headphone or a speaker. In 4-channel and 6-channel configuration, the function of this port becomes Front Speaker Out.

8. **Microphone port (pink).** This port connects a microphone.

9. **PS/2 mouse port.** This green 6-pin connector is for a PS/2 mouse.

10. **PS/2 keyboard port.** This purple 6-pin connector is for a PS/2 keyboard.

11. **LAN (RJ-45) port.** This port allows Gigabit connection to a Local Area Network (LAN) through a network hub.

12. **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.

13. **SPDIF Out port.** This port connects an external audio output device via an optical S/PDIF cable.

14. **VGA port**

15. **HDMI port**

16. **Serial port**

17. **PCI slot metal brackets**

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

Audio 2, 4, 6 or 8-channel configuration

Port	Headset 2-channel	4-channel	6-channel	8-channel
Light Blue	Line In	Line In	Line In	Line In
Lime	Line Out	Front Speaker Out	Front Speaker Out	Front Speaker Out
Pink	Mic In	Mic In	Mic In	Mic In
Gray	•	Rear Speaker Out	Rear Speaker Out	Rear Speaker Out
Black	•	•	•	Side Speaker Out
Yellow Orange	•	•	Center/Subwoofer	Center/Subwoofer

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.
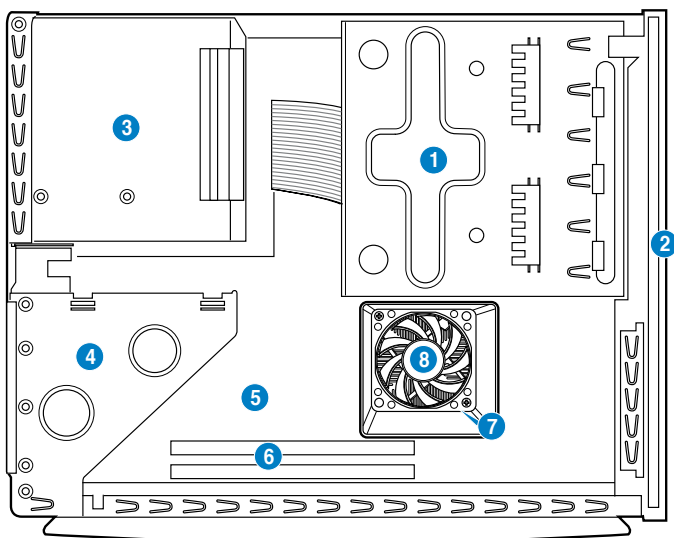
1. 5.25-inch optical drive and
   3.5 inch hard disk drive cage
2. Front panel cover
3. Power supply unit
4. PCI card riser bracket (connected
   to the motherboard PCI slot)

5. ASUS motherboard
6. DIMM sockets
7. AM2 socket (under the CPU fan
   and heatsink assembly)
8. CPU fan and heatsink assembly

Chapter 2

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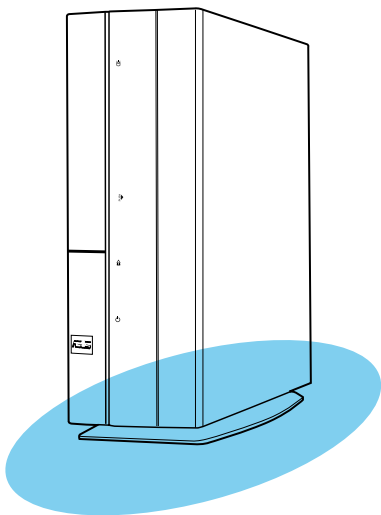
2.1   Preparation

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

Basic components to install

1.   Central Processing Unit (CPU)
2.   DDR2 Dual Inline Memory Module (DIMM)
3.   Expansion card(s)
4.   Hard disk drive
5.   Optical 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 ensure that the standby power LED is OFF before installing any system component.

SB_PWR

ON
Standby
Power

OFF
Powered
Off

M2R68L Onboard LED
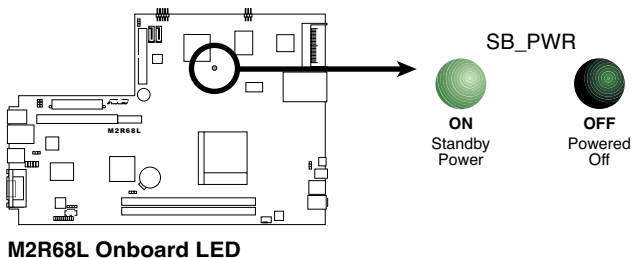
2.3   Removing the side cover

1.   Remove the cover screws. Keep
      the screws for later use.
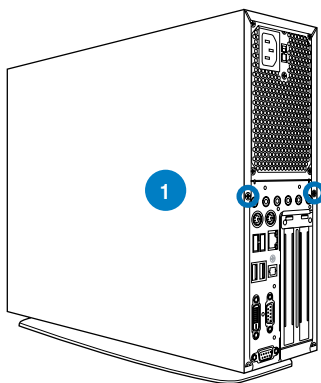
2.   Pull the cover slightly toward the
      rear panel.
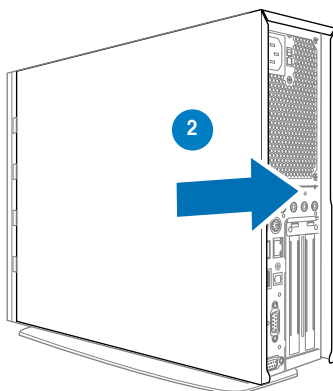
3.   Lift the cover, then set aside.
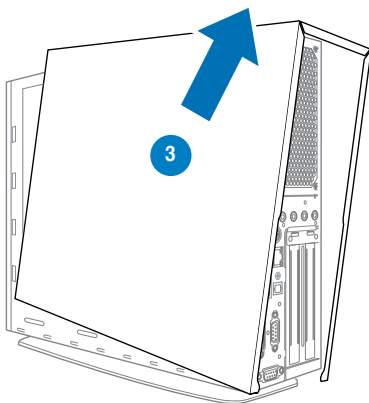
2.4   Removing the front panel cover

1.   Lift the front panel cover hooks outward.
2.   Carefully remove the front panel cover, then set it aside.
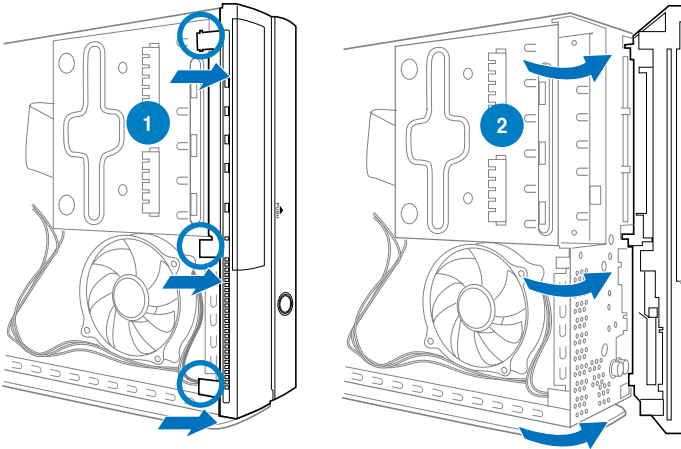
2.5   Removing the storage drive assembly

1.   Lay the system on its side, then locate and remove three storage drive assembly screws.
2.   Lift the storage drive assembly, then set aside.
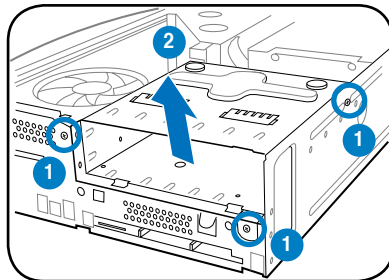
2.6 Removing the CPU fan and heatsink

1. Disconnect the CPU fan cable.
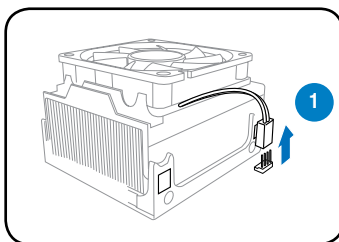
2. Remove two screws securing the blower to the CPU fan. Set the blower aside.
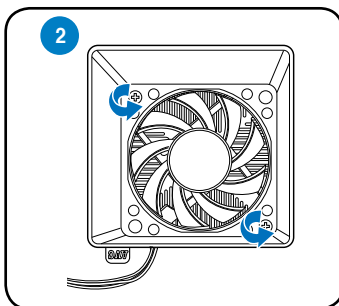
3. Unhook and slide out the metal clips that secure the fan and heatsink assembly to the retention module.

metal handles

retention module

metal clips

hook
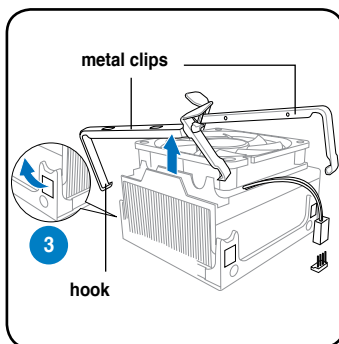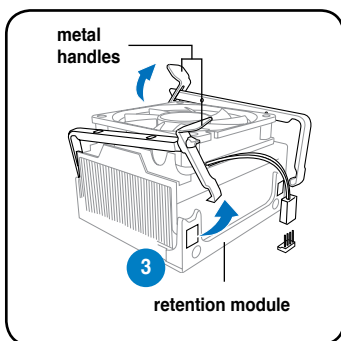
4. Lift the CPU fan and heatsink assembly, then set aside.
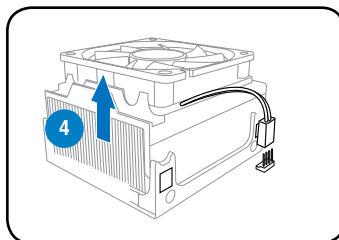
2.7 Central Processing Unit (CPU)

2.7.1 Overview

The motherboard comes with a 940-pin AM2 socket designed for the AMD Athlon™ 64 X2 / Athlon™ 64 / Sempron™ processor.

> The AM2 socket has a different pinout from the 940-pin socket designed for the AMD Opteron™ processor. Ensure than you use a CPU that is designed for the AM2 socket. The CPU fits in only one correct orientation. DO NOT force the CPU into the socket to prevent bending the pins the CPU!

2.7.2 Installing CPU

To install a CPU:

1.   Locate the AM2 CPU socket on the motherboard.
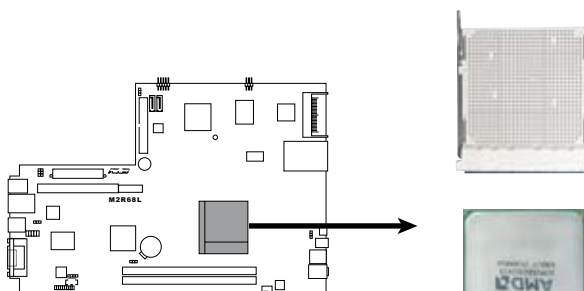
M2R68L CPU Socket AM2

2.   Press the CPU socket lever sideways, then lift it up to a 90º-100º angle.
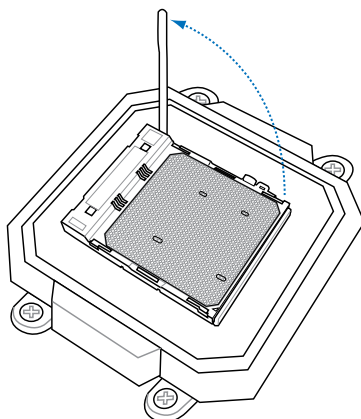
3. Match the gold triangle on the CPU with the small triangle on the socket. Insert the CPU into the socket until it fits in place.
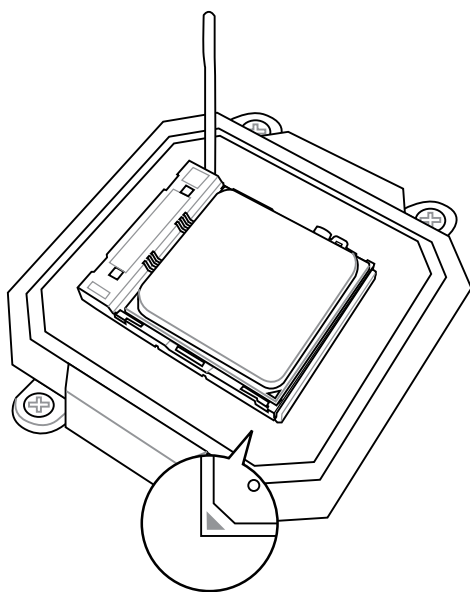
4. Push down the socket lever to secure the CPU
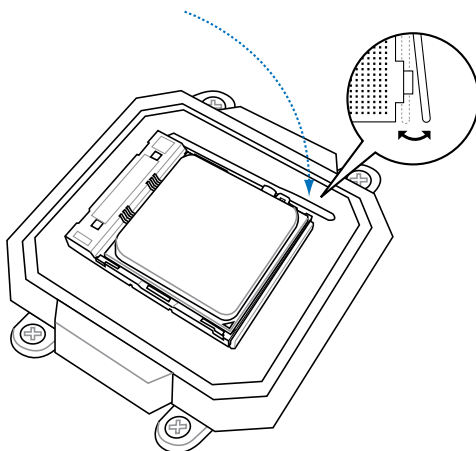
Ensure to install the CPU fan, blower and heatsink assembly on top of the installed CPU.

2.7.3   ReInstalling the CPU fan and heatsink assembly

The AMD Athlon™ 64 / AMD Athlon™ 64 X2 / AMD Sempron™ processor requires a specially designed heatsink and fan assembly to ensure optimum thermal condition and performance.

Follow these steps to reinstall the CPU fan and heatsink assembly:

1.   Position the CPU fan and heatsink assembly on top of the installed CPU.

metal handles
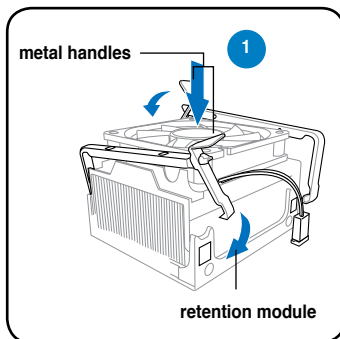
retention module

• The retention module base is already installed on the motherboard upon purchase.

• You do not have to remove the retention module base when installing the CPU or installing other motherboard components.

---

2.   Connect the CPU cable to the CPU fan connector on the motherboard.
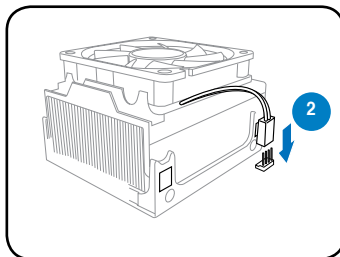
3. Align the metal clips to the side rail of the CPU fan and heatsink assembly, with the locking levers in the reverse orientation.

4. Snap the hook of each metal clip into the hold of the retention module.

metal clips

3

4
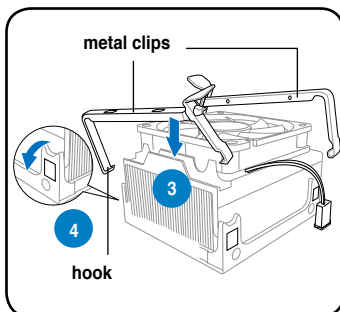
hook

5. Carefully press down the locking lever and hook its end into the retention module.

6. Position the blower on top of the CPU fan and heatsink assembly.

7. Secure the blower to the CPU fan and heatsink assembly with the screws you removed earlier.

6

7

7
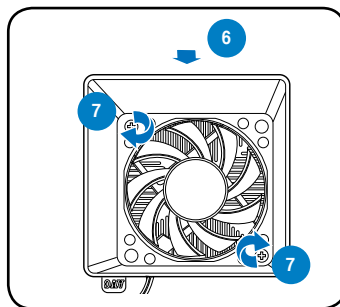
Do not forget to connect the CPU fan connector! Hardware monitoring errors can occur if you fail to plug this connector.

2.8 Installing a DIMM

The system motherboard comes with two Double Data Rate 2 (DDR2) Dual Inline Memory Module (DIMM) sockets.

The following figure illustrates the location of the sockets:

M2R68L 240-pin DDR2 DIMM Sockets
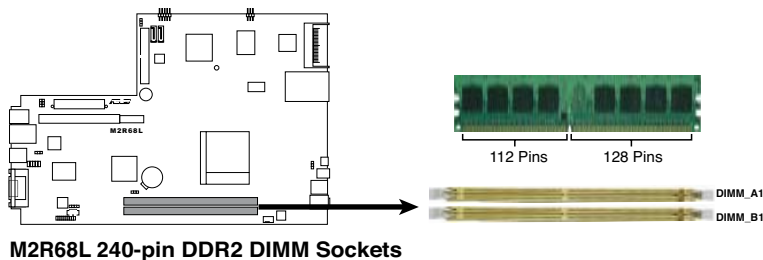
2.8.1 Memory configurations

You may install up to 4 GB system memory using 256 MB, 512 MB, 1 GB, and 2 GB DDR2 DIMMs.

- Install only **identical** (the same type and size) DDR2 memory modules.

- Install only ASUS-certified memory modules. Refer to the DDR2 Qualified Vendors List (QVL) on the next page for details. Visit the ASUS website for the latest DDR2 QVL.

- Always install DIMMs with the same CAS latency. For optimum compatibility, we recommend that you obtain memory modules from the same vendor.

Qualified Vendors Lists (QVL)

DDR2-800

Size	Vendor	Model	CL	Brand	SS/DS	Component	DIMM Support A	B
512MB	Kingston	KVR800D2N5/512	N/A	Samsung	SS	K4T51083QC-ZCE7	•	•
512MB	Kingston	KVR800D2N5/512	N/A	Promos	SS	V59C1512804QBF25S0054707PEBPA	•	•
1G	Kingston	KVR800D2N5/1G	N/A	Samsung	DS	K4T51083QC-ZCE7	•	•
1G	Kingston	KHX6400D2LL/1G	N/A	Kingston	DS	Heat-Sink Package	•	•
1G	Kingston	KVR800D2N5/1G	N/A	Nanya	DS	NT5TU64M8BE-25C62321800CP	•	•
512MB	Samsung	KR M378T6553CZ3-CE7	N/A	Samsung	SS	K4T51083QC-ZCE7	•	•
1G	Samsung	KR M378T2953CZ3-CE7	N/A	Samsung	DS	K4T51083QC-ZCE7	•	•
256MB	Qimonda	HYS64T32001HU-2.5-A	N/A	Qimonda	SS	HYB18T256800AF25SSS49313	•	•
512MB	Qimonda	HYS64T64020HU-2.5-A	N/A	Qimonda	DS	HYB18T256800AF25SSS25063	•	
512MB	Corsair	CM2X512A-6400	5	Corsair	SS	Heat-Sink Package	•	•
1G	Corsair	CM2X1024-6400	5	Corsair	DS	Heat-Sink Package	•	
512MB	HY	HYMP564U64AP8-S6 AA	N/A	Hynix	SS	HY5PS12821AFP-S6	•	•
512MB	HY	HYMP564U64BP8-S5 AB	N/A	Hynix	SS	HY5PS12821BFP-S5	•	•
512MB	HY	HYMP564U64CP8-S5 AB	5	Hynix	SS	HY5PS12821CFP-S5	•	
1G	HY	HYMP512U64AP8-S6 AA	N/A	Hynix	SS	HY5PS12821AFP-S6	•	•
1G	HY	HYMP512U64BP8-S5 AB	5	Hynix	DS	HY5PS12821BFP-S5	•	•
1G	HY	HYMP512U64CP8-S5 AB	5	Hynix	DS	HY5PS12821CFPS5	•	
512MB	VDATA	M2GVD6G3H3160I1E53	N/A	VDATA	SS	VD29608A8A-25EG30648	•	•
1G	VDATA	M2GVD6G3I4170I1E53	N/A	VDATA	DS	VD29608A8A-25EG30647	•	
512MB	PSC	AL6E8E63B-8E1K	5	PSC	SS	A3R12E3HEF641B9A05	•	•
1G	PSC	AL7E8E63B-8E1K	5	PSC	DS	A3R12E3HEF641B9A05	•	•
512MB	AENEON	AET660UD00-25DB98X	N/A	AENEON	SS	AET93F25DB 0621	•	•
1G	AENEON	AET760UD00-25DB97X	5	AENEON	DS	AET93R25DB 0640	•	•
512MB	SIS	SLY264M8-JGE-3	N/A	SIS	SS	DDRII6408-8E 7212	•	•
1G	SIS	SLY264M8-JGE-3	N/A	SIS	DS	DDRII6408-8E 7301	•	•
512MB	TAKEMS	TMS51B264C081-805EP	5	takeMS	SS	MS18T51280-2.5P0710	•	
1G	TAKEMS	TMS1GB264C081-805AE	5	takeMS	DS	MS18T51280-25FEA0709A	•	
1G	TAKEMS	TMS1GB264C081-805EP	5	takeMS	DS	MS18T51280-2.5P0716	•	•
512MB	VERITECH	GTU512HLTXX4EG	N/A	Veritech	SS	VTD264M8PC4G03A169045648	•	•
1G	VERITECH	GTU01GHLTXX4EG	N/A	Veritech	DS	VTD264M8PC4G03A169045648	•	
1G	UMAX	1GB,DDR2,PC6400	5	UMAX	DS	U2S12D30TP-8E	•	•

DDR2-667

Size	Vendor	Model	CL	Brand	SS/DS	Component	DIMM Support A	B
256MB	Kingston	KVR667D2N5/256	N/A	Elpida	SS	E2508AB-6E-E	•	•
512MB	Kingston	KVR667D2N5/512	N/A	Kingston	SS	D6408TE8WL-27	•	•
1G	Kingston	KVR667D2N5/1G	N/A	Kingston	DS	D6408TE8WL-3	•	•
512MB	Samsung	KR M378T6553CZ0-CE6	N/A	Samsung	SS	K4T51083QC	•	•
512MB	Samsung	KR M378T6453FZ0-CE6	N/A	Samsung	DS	K4T56083QF-ZCE6	•	•
512MB	Samsung	M378T6553CZ3-CE6	N/A	Samsung	SS	K4T51083QC-ZCE6	•	•
1G	Samsung	M378T2953CZ3-CE6	N/A	Samsung	DS	K4T51083QC-ZCE6	•	•
1G	Samsung	KR M378T2953CZ0-CE6	N/A	Samsung	DS	K4T51083QC-ZCE6	•	•
256MB	Qimonda	HYS64T32000HU-3S-A	N/A	Qimonda	SS	HYB18T512160AF-3SSSS17310	•	•

DDR2-667

Size	Vendor	Model	CL	Brand	SS/DS	Component	A	B
512MB	Qimonda	HYS64T32000HU-3S-A	N/A	Qimonda	SS	HYB18T5128000AF-3SSSS27416	•	
512MB	Qimonda	HYS64T64000HU-3S-A	N/A	Qimonda	SS	HYB18T512800AF3SFSS05346	•	•
1G	Qimonda	HYS64T128020HU-3S-A	N/A	Qimonda	DS	HYB18T512800AF3SSSS28104	•	•
512MB	Corsair	VS512MB667D2	N/A	Corsair	DS	MIII0052532M8CEC	•	•
512MB	Corsair	CM2X512-5400C4	4	Corsair	SS	Heat-Sink Package	•	•
1G	Corsair	VS1GB667D2	N/A	Corsair	DS	MID095D62864M8CEC	•	•
256MB	HY	HYMP532U64CP6-Y5 AB	5	Hynix	SS	HY5PS121621CFP-Y5	•	•
512MB	HY	HYMP564U64AP8-Y4 AA	N/A	Hynix	SS	HY5PS12821AFP-Y4	•	•
512MB	HY	HYMP564U64AP8-Y5 AA	N/A	Hynix	SS	HY5PS12821AFP-Y5	•	•
1G	HY	HYMP512U64AP8-Y5 AB	N/A	Hynix	DS	HY5PS12821AFP-Y5	•	•
1G	HY	HYMP512U64CP8-Y5 AB	5	Hynix	DS	HY5PS12521CFP-Y5	•	•
512MB	Kingmax	KLCC28F-A8EB5	N/A	Elpida	SS	E5108AE-6E-E	•	•
v512MB	Kingmax	KLCC28F-A8KB5	N/A	Kingmax	SS	KKEA88B4LAUG-29DX	•	•
1G	Kingmax	KLCD48F-A8KB5	N/A	Kingmax	DS	KKEA88B4LAUG-29DX	•	•
512MB	Apacer	78.91092.420	N/A	Elpida	SS	E5108AE-6E-E	•	•
512MB	Apacer	AU512E667C5KBGC	5	Apacer	SS	AM4B5708MIJS7E0627B	•	•
512MB	Apacer	AU512E667C5KBGC	5	Apacer	SS	AM4B5708GQJS7E06332F	•	•
1G	Apacer	AU01GE667C5KBGC	N/A	Apacer	DS	AM4B5708GQJS7E0636B	•	•
1G	Apacer	78.01092.420	5	Elpida	DS	E5108AE-6E-E	•	•
1G	Apacer	AU01GE667C5KBGC	5	Apacer	DS	AM4B5708MIJS7E0627B	•	•
512MB	ADATA	M20EL5G3H3160B1C0Z	N/A	Elpida	SS	E5108AE-6E-E	•	•
512MB	ADATA	M20AD5G3H3166I1C52	N/A	ADATA	SS	AD29608A8A-3EG20648	•	•
1G	ADATA	M2OAD5G3I4176I1C52	N/A	ADATA	DS	AD29608A8A-3EG20645	•	•
512MB	VDATA	M2GVD5G3H31A4I1C52	N/A	VDATA	SS	VD29608A8A-3EC20615	•	•
512MB	VDATA	M2YVD5G3H31P4I1C52	N/A	VDATA	SS	VD29608A8A-3EG20627	•	•
512MB	VDATA	M2GVD5G3H166I1C52	N/A	VDATA	SS	VD29608A8A-3EG20637	•	•
1G	VDATA	M2GVD5G3I41P6I1C52	N/A	VDATA	DS	VD29608A8A-3EG20627	•	•
1G	VDATA	M2GVD5G3I41C4I1C52	N/A	VDATA	DS	VD29608A8A-3EC20620	•	•
1G	VDATA	M2GVD5G3I4176I1C52	N/A	VDATA	DS	VD29608A8A-3EG20641	•	•
512MB	PSC	AL6E8E63B-6E1K	5	PSC	SS	A3R12E3GEF637BLC5N	•	•
1G	PSC	AL7E8E63B-6E1K	5	PSC	DS	A3R12E3GEF637BLC5N	•	•
256MB	Nanya	NT256T64UH4A1FY-3C	N/A	Nanya	SS	NT5TU32M16AG-3C	•	•
512MB	Nanya	NT512T64U88A1BY-3C	N/A	Nanya	SS	NT5TU64M8AE-3C	•	•
512MB	MDT	MDT 512MB	4	MDT	SS	18D51280D-30648	•	•
1G	MDT	MDT 1024MB	4	MDT	DS	18D51200D-30646	•	•
1G	MDT	MDT 1024MB	4	MDT	DS	18D51280D-30646E	•	•
1G	PQI	DDR2-667U 1G	N/A	Hynix	DS	HY5PS12821BFP-E3 A	•	•
512MB	AENEON	AET660UD00-30DA98Z	N/A	AENEON	SS	AET93F30DA 0552	•	•
512MB	AENEON	AET660UD00-30DB97X	5	AENEON	SS	AET93R300B 0634	•	•
1G	AENEON	AET760UD00-30DA98Z	N/A	AENEON	DS	AET93F30DA8EE47414G 0540	•	•
512MB	AENEON	AET660UD00-30DA98Z	N/A	AENEON	SS	AET93F300A 0606	•	•
1G	AENEON	AET760UD00-30DA98Z	N/A	AENEON	DS	AET93F30DA 0604	•	•
1G	AENEON	AET760UD00-30DB97X	5	AENEON	DS	AET93R300B 0639	•	•
512MB	TAKEMS	TMS51B264C081-665QI	5	takeMS	SS	MS18T51280-3	•	•
512MB	TAKEMS	TMS51B264C081-665AP	5	takeMS	SS	MS18T51280-3S0627D	•	
1G	TAKEMS	TMS1GB264C081-665QI	5	takeMS	DS	MS18T51280-3	•	•

DDR2-667

Size	Vendor	Model	CL	Brand	SS/DS	Component	DIMM Support A	B
1G	TAKEMS	TMS1GB264C081-665AE	5	takeMS	DS	MS18T51280-3SEA07100	•	
1G	TAKEMS	TMS1GB264C081-665AP	5	takeMS	DS	MS18T51280-3SP0717A	•	•
512MB	VERITECH	GTP512HLTM45EG	N/A	VERITECH	SS	VTD264M8PC6G01A164129621	•	•
1G	VERITECH	GTP01GHLTM55EG	N/A	VERITECH	DS	VTD264M8PC6G01A164129621	•	•
512MB	GEIL	GX21GB5300DC	4	GEIT	SS	Heat-Sink Package		
512MB	TEAM	TVDD512M667C5	N/A	TEAM	SS	T2D648MT-6	•	•
1G	TEAM	TVDD1.02M667C4	N/A	TEAM	DS	T2D648PT-6	•	•
512MB	Century	CENTURY 512MB	N/A	Nanya	SS	NT5TU64M8AE-3C	•	
512MB	Century	CENTURY 512MB	N/A	Hynix	SS	HY5PS12821AFP-Y5	•	
1G	Century	CENTURY 1G	N/A	Hynix	DS	HY5PS12821AFP-Y5	•	
1G	Century	CENTURY 1G	N/A	Nanya	DS	NT5TU64M8AE-3C	•	•
512MB	KINGBOX	512MB 667MHz	N/A	KINGBOX	SS	EPD264082200-4	•	
1G	KINGBOX	DDRII 1G 667MHz	N/A	KINGBOX	DS	EPD264082200-4	•	

DDR2-533

Size	Vendor	Model	CL	Brand	SS/DS	Component	DIMM Support A	B
256MB	Kingston	KVR533D2N4/256	N/A	Elpida	SS	E5116AB-5C-E	•	•
256MB	Kingston	KVR533D2N4/256	N/A	Elpida	SS	E5116AF-5C-E	•	•
512MB	Kingston	KVR533D2N4/512	N/A	Hynix	DS	HY5PS56821F-C4	•	•
512MB	Kingston	KVR533D2N4/512	N/A	Infineon	SS	HYB18T512800AF3733336550	•	•
1G	Kingston	KVR533D2N4/1G	N/A	Kingston	DS	D6408TE7BL-37	•	•
256MB	Samsung	M378T3253FG0-CD5	N/A	Samsung	SS	K4T56083QF-GCD5	•	•
512MB	Samsung	M378T6553BG0-CD5	4	Samsung	SS	K4T51083QB-GCD5	•	•
256MB	Qimonda	HYS64T32000HU-3.7-A	4	Qimonda	SS	HYB18T512160AF-3.7AFSS31270	•	•
512MB	Qimonda	HYS64T64000GU-3.7-A	4	Qimonda	SS	HYB18T512800AC37SSS11511	•	•
512MB	Qimonda	HYS64T64000HU-3.7-A	N/A	Qimonda	SS	HYB18T512800AF37SSS12079	•	•
512MB	Qimonda	HYS64T64000HU-3.7-A	N/A	Qimonda	SS	HYB18T512800AF37FSS29334	•	•
256MB	HY	HYMP532U64CP6-C4 AB	4	Hynix	SS	HY5PS121621CFP-C4	•	•
1G	HY	HYMP512U64CP8-C4 AB	4	Hynix	DS	HY5PS12821CFP-C4	•	•
512MB	Micron	MT 16HTF6464AG-53EB2	4	Micron	DS	D9BOM	•	•
512MB	Micron	MT 16HTF6464AG-53EB2	4	Micron	DS	Z9BQT	•	•
1G	Micron	MT 16HTF12864AY-53EA1	4	Micron	DS	D9CRZ	•	•
512MB	Corsair	VS512MB533D2	N/A	Corsair	DS	MIII0052532M8CEC	•	•
512MB	Elpida	EBE51UD8ABFA-5C-E	N/A	Elpida	SS	E5108AB-5C-E	•	•
512MB	Kingmax	KLBC28F-A8KB4	N/A	Kingmax	SS	KKEA88B4IAK-37	•	•
256MB	Kingmax	KLBB68F-36EP4	N/A	Elpida	SS	E5116AB-5C-E	•	•
512MB	Kingmax	KLBC28F-A8EB4	N/A	Elpida	SS	E5108AE-5C-E	•	•
512MB	PQI	MEAB-323LA	N/A	PQI	SS	D2-E04180W025	•	•
1G	PQI	MEAB-423LA	N/A	PQI	DS	D2-E04230W107		
512MB	AENEON	AET660UD00-370A98Z	4	AENEON	SS	AET93F370A G 0513	•	•
256MB	AENEON	AET560UD00-370A98Z	4	AENEON	SS	AET94F370AWVV34635G0520		
512MB	AENEON	AET660UD00-370A98Z	4	AENEON	SS	AET93F370A 3VV36328G 0522		
512MB	AENEON	AET660UD00-370A98X	N/A	AENEON	SS	AET93F370A 0518	•	•
512MB	AENEON	AET660UD00-370A88S	N/A	AENEON	DS	AET82F370A 0550	•	

DDR2-533

Size	Vendor	Model	CL	Brand	SS/DS	Component	DIMM Support A	B
512MB	AENEON	AET660UD00-370B97X	4	AENEON	SS	AET93R370B 0640	•	•
1G	AENEON	AET760UD00-370A98Z	N/A	AENEON	DS	AET93F370A 0551	•	•
1G	AENEON	AET760UD00-370A98S	N/A	AENEON	DS	AET92F370A 0606	•	
1G	AENEON	AET760UD00-370B97X	4	AENEON	DS	AET93R370B 0640	•	•
1G	AENEON	AET760UD00-370B97S	4	AENEON	DS	AET92R370B 0644	•	•
2G	AENEON	AET860UD00-370A08X	N/A	AENEON	DS	AET03F370AFVV26176G 0542		•
256MB	TAKEMS	TMS25B264B161-534KQ	4	takeMS	SS	MS18T51216-3.70711		•
512MB	TAKEMS	TMS51B264C081-534QI	4	takeMS	SS	MS18T51280-3.7	•	•
512MB	TAKEMS	TMS51B264C081-534AP	4	takeMS	SS	MS18T51280-3.7P0704D	•	•
v512MB	TAKEMS	TMS51B264C081-534AE	4	takeMS	SS	MS18T51280-3.7EA07100	•	•
1G	TAKEMS	TMS1GB264C081-534AE	4	takeMS	DS	MS18T51280-3.7EA0651D		
1G	TAKEMS	TMS1GB264C081-534QI	4	takeMS	DS	MS18T51280-3.7	•	•
1G	TAKEMS	TMS1GB264C081-534AP	4	takeMS	DS	MS18T51280-3.7P0645D		•
512MB	REMAXEL	RML1040EG38D6F-533	4	Elpida	SS	E5108AG-5C-E		•
512MB	VERITECH	GTP512HLTM46DG	N/A	VERITECH	SS	VTD264M8PC6G01A164129621	•	•
1G	VERITECH	GTP01GHLTM56DG	N/A	VERITECH	DS	VTD264M8PC6G01A164129621	•	•

Side(s): SS - Single-sided

DS - Double-sided

CL: CAS Latency

DIMM support:

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

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

2.8.2 Installing a DDR2 DIMM

Ensure 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 DDR2 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.

DDR2 DIMM notch

Unlocked retaining clip
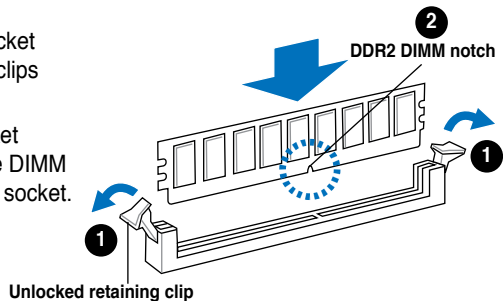
A DDR2 DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket to avoid damaging the DIMM.

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

Locked Retaining Clip
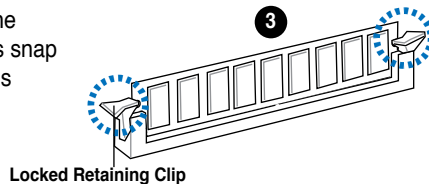
2.8.3 Removing a DDR2 DIMM

Follow these steps to remove a DIMM:

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

DDR2 DIMM notch
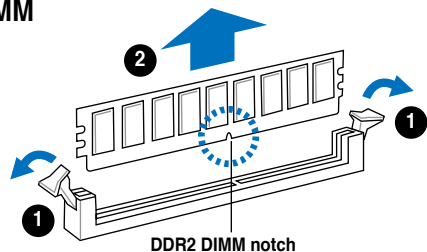
Support the DIMM lightly with your fingers when pressing the retaining clips. The DIMM might get damaged when it flips out with extra force.

2. Remove the DIMM from the socket.

2.9   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.

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

2.9.1   PCI slot

This system has one PCI slot that supports cards such as a LAN card, SCSI card, USB card, and other cards that comply with PCI specifications.

2.9.2   PCI Express x1 slot

This system has one PCI Express x1 slot that supports cards such as a PCI Express x1 network card, SCSI card, and other cards that comply with the PCI Express specifications.

2.9.3   Installing an expansion card

1.   Lift the PCI riser card assembly.
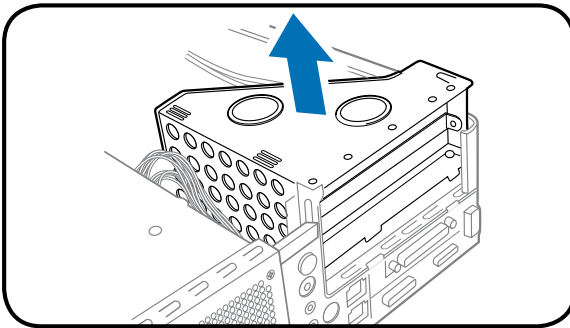
2. Remove the metal cover opposite the slot that you intend to use.
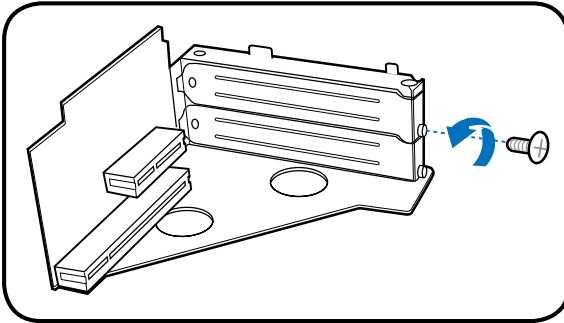
3. Insert the card connector to the slot, then press the card firmly until it fits in place. Secure the card with a screw.
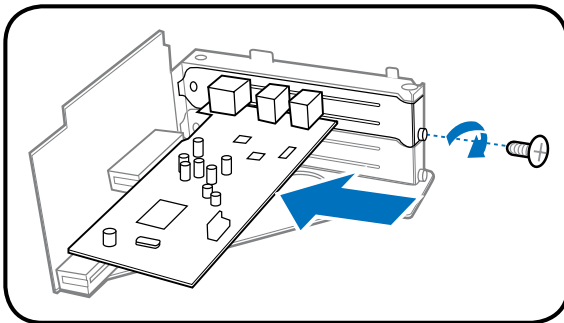
4. Reinstall the PCI riser card assembly. Ensure that the riser card connector sits properly on the motherboard PCI slot.
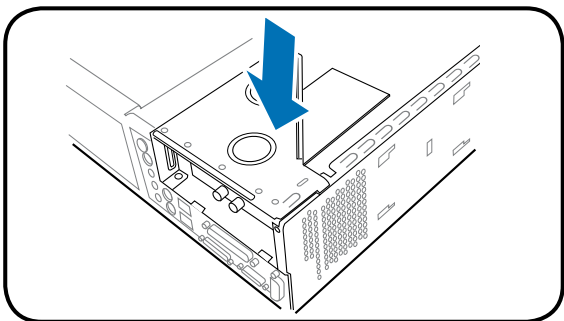
2.10 Installing an optical drive

Follow these steps to install an optical drive:

1. Turn the storage drive assembly upside down with the 3.5-inch bay on top of the 5.25-inch bay.

2. Insert the optical drive upside down to the 5.25-inch bay, then secure it with two screws on both sides.
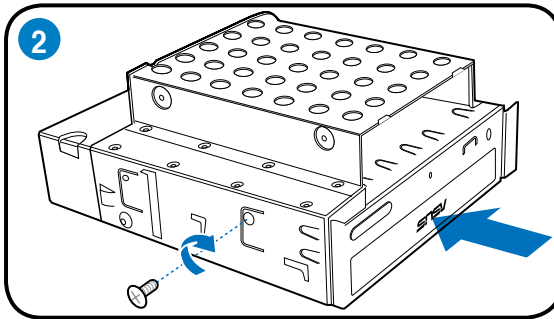
3. Turn the storage drive assembly, insert the hard disk drive upside down to the 3.5-inch bay, then secure it with two screws on both sides.
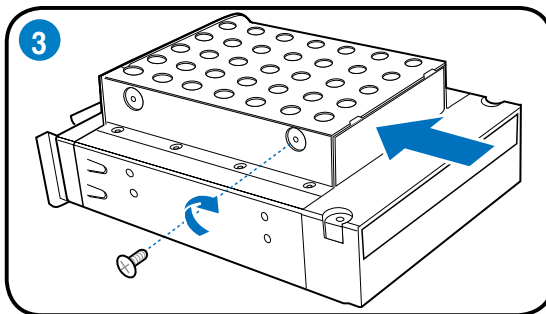
2.11 Reinstalling the storage drive assembly

Before reinstalling the storage drive assembly, connect the IDE / SATA and power plugs to the IDE / SATA and power connectors at the back of the drives.

1. Connect the black plug of the IDE cable to the optical drive, then the gray plug to the hard disk drive. If you have the SATA HDD, connect the SATA cable to the SATA HD.

2. Connect the 4-pin power plugs to the power connectors at the back of the drives.

3. Install the storage drive assembly to the chassis.
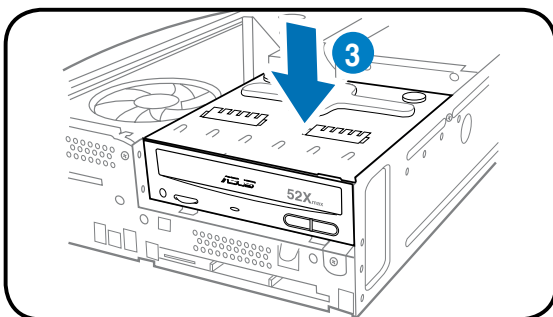
4. Secure the storage drive assembly with three screws.
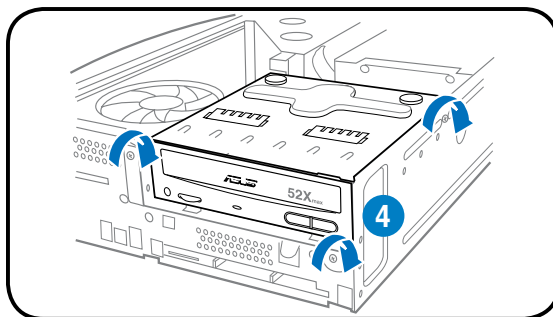
2.12 Installing the foot stand

1. Match the foot stand hooks to the holes on the chassis.
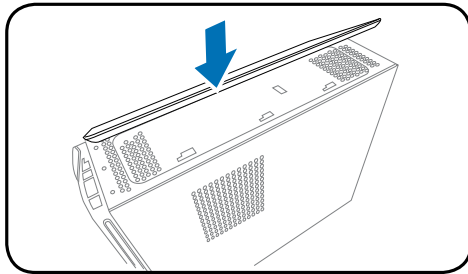
2. Pull the foot stand to the direction of the arrow until the lock clicks in place.
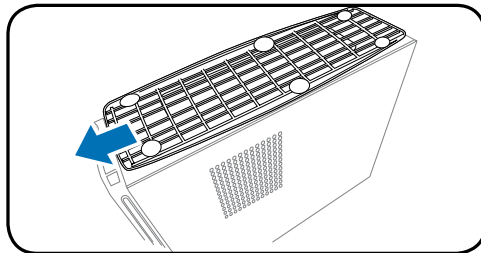
To remove the foot stand, lift the lock, then slightly push the foot stand to the direction of the rear panel until it disengages from the chassis.

2.13 Reinstalling the front panel cover and the cover

Refer to the section of Removing the front panel cover and follow the instructions in reverse.

Refer to the section of Removing the cover and follow the instructions in reverse.

Chapter 3

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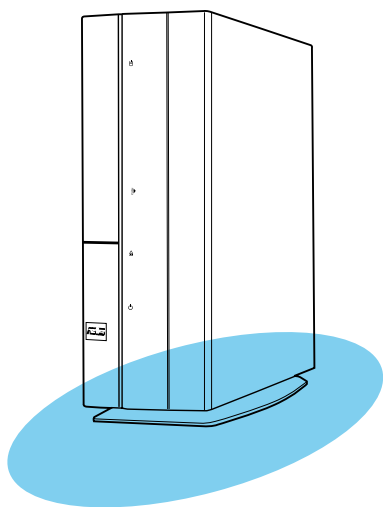
Starting up

3.1   Installing an operating system

The barebone system supports Windows® 2000 / XP / Vista 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 ON the system
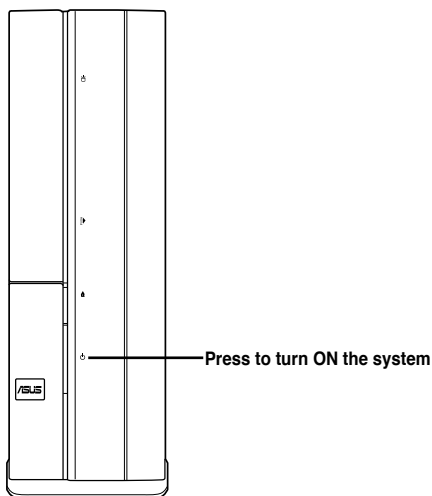
3.3   Support CD information

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

- Screen display and driver options may not be the same for different operating system versions.

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

3.3.1   Running the support CD

To begin using the support CD, place the CD in your optical drive. The CD automatically displays the **Drivers** menu if Autorun is enabled in your computer.

Click an icon to display support CD/motherboard information

Click an item to install

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

ASUS InstALL - Installation Wizard for Drivers

Automatically installs all the necessary drivers for this motherboard.

Attansic L1 Gigabit Ethernet Driver

Installs the Attansic L1 Gigabit Ethernet driver.

ATI Display Driver

Installs the ATI display driver.

Realtek Audio Driver

Allows you to install the Realtek audio driver.

ATI HDMI Driver

Installs the ATI HDMI.

3.3.2 Utilities menu

The Utilities menu shows the applications that the motherboard supports.

ASUS InstAll - Installation Wizard for Utilities

Installs the ASUS InstAll - Installation Wizard Utilities.

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 Screen Saver

Installs ASUS Screen Saver.

ASUS Cool'n'Quiet Utility

Installs the ASUS Cool'n'Quiet Utility.

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.

3.3.3 Make disk menu

The Make disk menu shows the drivers that the motherboard supports.

Make ATI RAID/AHCI x86_x64_WinXP Driver

Allows you to make ATI RAID/AHIC x86_x64_WinXP driver.

Make ATI RAID/AHCI Vista32 Driver

Allows you to make ATI RAID/AHCI Vista32 driver.

Make ATI RAID/AHCI Vista64 Driver

Allows you to make ATI RAID/AHCI Vista64 driver.

3.3.4 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.

3.4   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.

ASUS PC Probe II

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

Click to close the Preference panel

Button	Function
CONFIG	Opens the **Configuration** window
	Opens the **Report** window
DMI	Opens the **Desktop Management Interface** window
PCI	Opens the **Peripheral Component Interconnect** window
WMI	Opens the **Windows Management Instrumentation** window
USAGE	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.
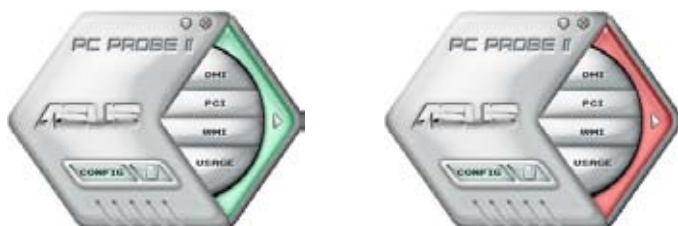
When displayed, the monitor panel for that sensor also turns red. Refer to the **Monitor panels** section for details.

Preferences

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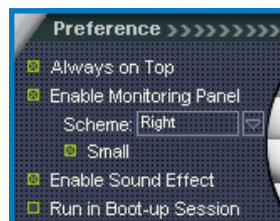
Hardware monitor panels

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
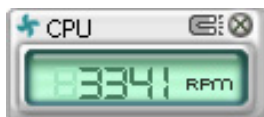
Small display

Changing the monitor panels position
To change the position of the monitor panels on 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.
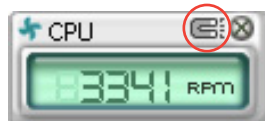
Adjusting the sensor threshold value
You can adjust the sensor threshold value in the monitor panel by clicking the arrow buttons. You can also adjust the threshold values using the **Config** window.

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

Click to increase value

Click to decrease value
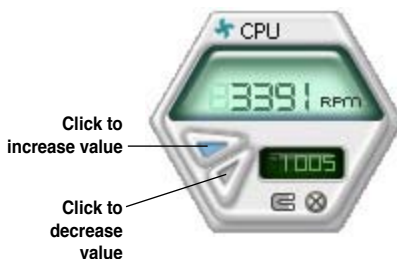
Monitoring sensor alert

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

Small display

Large display

WMI browser

Click to display the Windows Management Instrumentation (WMI) 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 to display the Desktop Management Interface (DMI) 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 Peripheral Component Interconnect (PCI) 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.
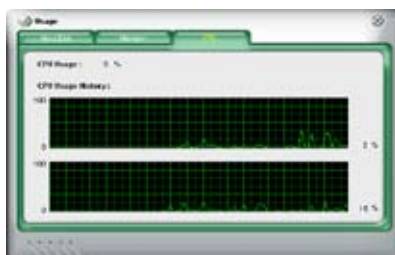
Hard disk drive space usage
The **Hard Disk** tab displays the used and available hard disk drive space. The left panel of the tab lists all logical drives. Click a hard disk drive to display the information on the right panel. The pie chart at the bottom of the window represents the used (blue) and the available HDD space.
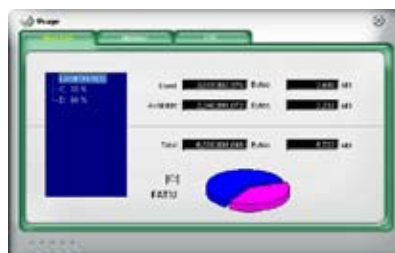
Memory usage

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.

Configuring PC Probe II

Click [CONFIG] to view and adjust the sensor threshold values.

The **Config** window has two tabs: **Sensor/Threshold** and **Preference**. The **Sensor/Threshold** tab enables you to activate the sensors or to adjust the sensor threshold values. The **Preference** tab allows you to customize sensor alerts, change temperature scale, or enable the Q-Fan feature.*

Loads the default threshold values for each sensor

Applies your changes

Cancels or ignores your changes

Loads your saved configuration

Saves your configuration

*Available on some motherboards only.

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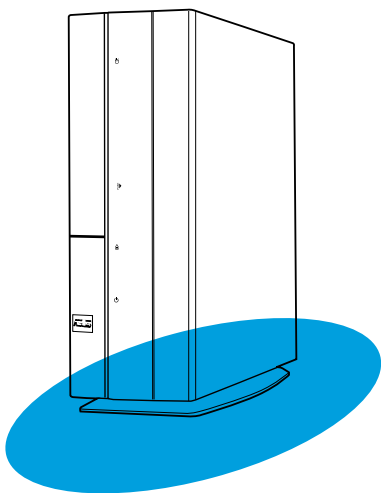
Motherboard info

4.1 Introduction

The P2-M2A690G barebone system comes with an ASUS motherboard. This chapter provides technical information about the motherboard for future upgrades or system reconfiguration.

4.2 Motherboard layout
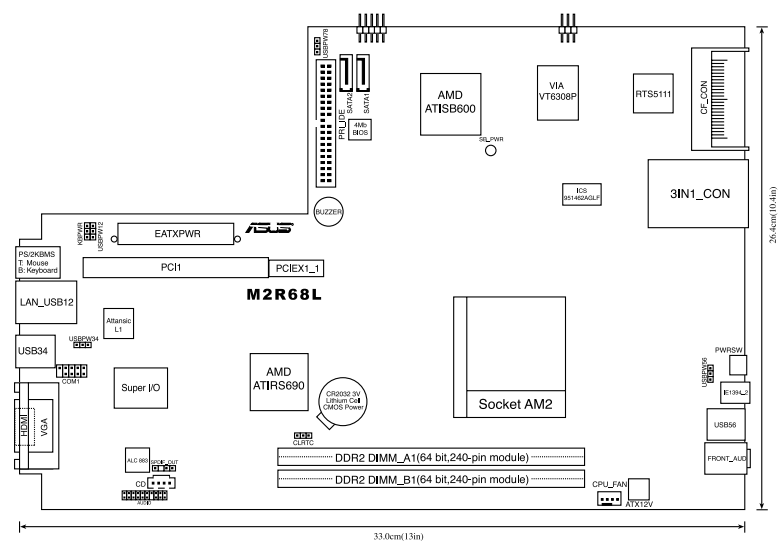
4.3   Jumpers

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. Re-install the battery.
   5. Plug the power cord and turn ON the computer.
   6. Hold down the <Del> key during the boot process and enter BIOS setup to reenter data.

CLRTC

1 2   2 3

Normal   Clear RTC
(Default)

M2R68L Clear RTC RAM
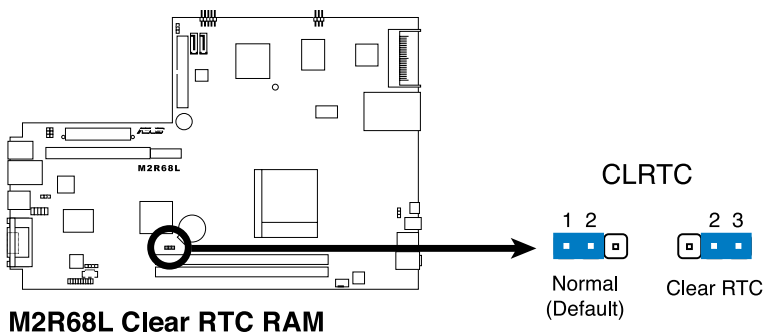
Except when clearing the RTC RAM, never remove the cap on CLRTC jumper default position. Removing the cap will cause system boot failure.

2. 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).

USBPW78

+5V
(Default)   +5VSB

USBPW12   USBPW56

+5V   +5VSB   +5V   +5VSB
(Default)   (Default)

USBPW34

M2R68L USB Device Wake Up

1 2   2 3

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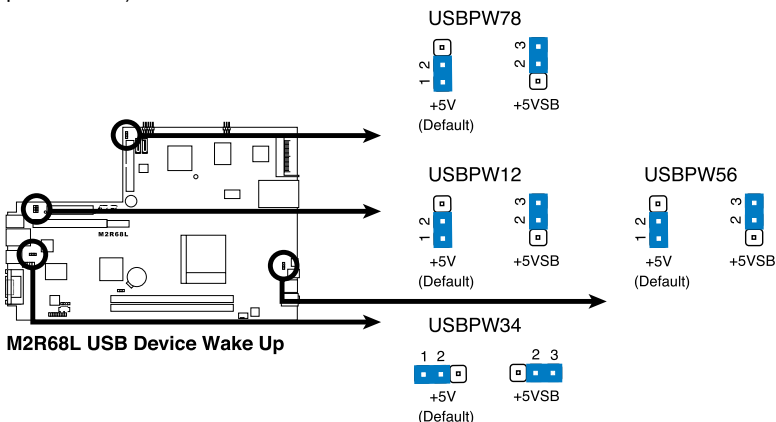
> • The USB device wake-up feature requires a power supply that can provide 500mA on the +5VSB lead for each USB port. Otherwise, the system would not power up.
>
> • The total current consumed must NOT exceed the power supply capability (+5VSB) whether under normal condition or in sleep mode.

3. 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.

KBPWR

+5V   +5VSB
(Default)

M2R68L Keyboard Power Setting
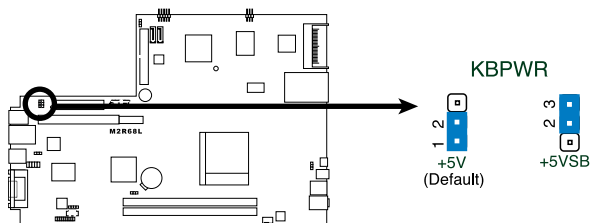
4.4 Connectors

1. Serial ATA connectors (9-pin SATA1, SATA2)

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

- Only Windows® 2000 Service Pack 4 / Windows® XP Service Pack1 and above support 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.

SATA2   SATA1

GND	RSATA_RXN1
RSATA_RXN2	RSATA_RXP1
RSATA_RXP2	GND
GND	RSATA_TXN1
RSATA_TXN2	RSATA_TXP1
RSATA_TXP2	GND
GND	
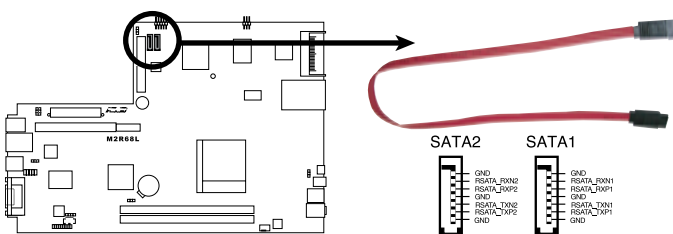
M2R68L SATA Connectors

2. COM port connector (10-1pin COM1)

This connector is for a serial (COM) port. Connect the serial port module cable to this connector, then install the module to a slot opening at the back of the system chassis.

COM1

PIN1
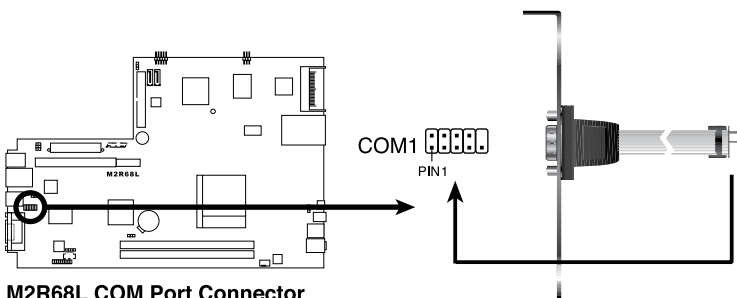
M2R68L COM Port Connector

3   IDE connectors (40-1 pin PRI_IDE)

The onboard IDE connectors are for Ultra DMA 133/100/66 signal cable(s). There are three connectors on each Ultra DMA 133/100/66 signal cable: blue, black, and gray. Connect the blue connector to the motherboard's IDE connector, then select one of the following modes to configure your device(s).

PRI_IDE
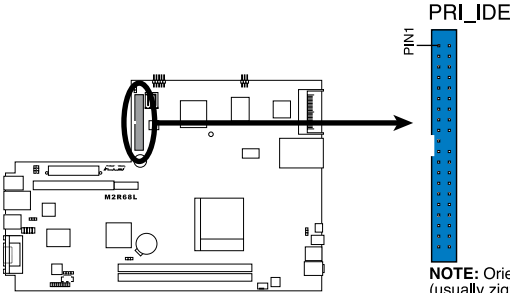
M2R68L IDE Connector

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

	Drive jumper setting	Mode Cable of device(s)	Cable connector
Single device	Cable-Select or Master	-	Black
Two devices	Cable-Select	Master Slave	Black Gray
	Master Slave	Master Slave	Black or gray

- •   Pin 20 on the IDE connector is removed to match the covered hole on the Ultra DMA cable connector. This prevents incorrect insertion when you connect the IDE cable.

- •   Use the 80-conductor IDE cable for Ultra DMA 133 / 100 / 66 IDE devices.

If any device jumper is set as "Cable-Select", ensure that all other device jumpers have the same setting.

4. **CPU Fan connectors (3-pin CPU_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, ensuring that the black wire of each cable matches the ground pin of the connector.

    M2R68L CPU Fan Connector
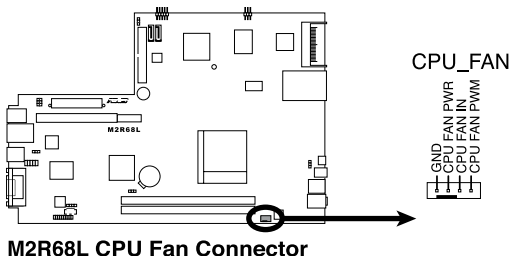
    Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! Do not place jumper caps on the fan connectors!

5. **USB connector (10-1 pin USB78)**

    These connectors are for USB 2.0 ports. You can connect a USB/GAME module cable to the connectors, then install the module to a slot opening at the back of the system chassis. These USB connectors comply with USB 2.0 specification that supports up to 480 Mbps connection speed.

    M2R68L USB 2.0 Connectors
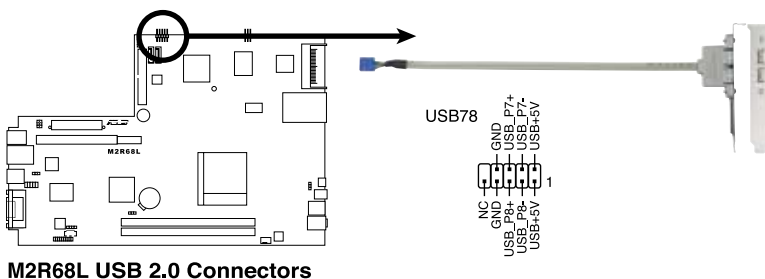
6. ATX power connectors (24-pin EATXPWR, 4-pin ATX12V)

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.

EATXPWR

+3 Volts
+3 Volts
Ground
+5 Volts
Ground
Ground
Power OK
+5V Standby
+12 Volts
+12 Volts
+3 Volts

+3 Volts
-12 Volts
Ground
PSON#
Ground
Ground
Ground
-5 Volts
+5 Volts
+5 Volts
+5 Volts
Ground
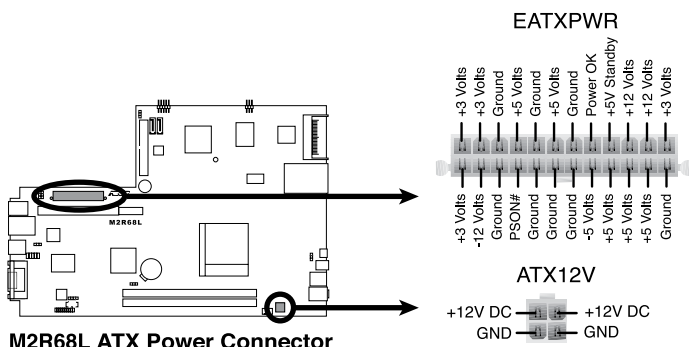
M2R68L ATX Power Connector

ATX12V

+12V DC —— +12V DC
GND —— GND

• Do not forget to connect the 4-pin ATX +12 V power plug. Otherwise, the system will not boot.

• Use of a PSU with a higher power output is recommended when configuring a system with more power-consuming devices. The system may become unstable or may not boot up if the power is inadequate.

• Ensure that your power supply unit (PSU) can provide at least the minimum power required by your system.

7. Internal audio connectors (4-pin CD)

This connector allows you to receive stereo audio input from sound sources such as a CD-ROM, TV tuner, or MPEG card.

CD
(black)

Right Audio Channel
Ground
Ground
Left Audio Channel

M2R68L Internal Audio Connector
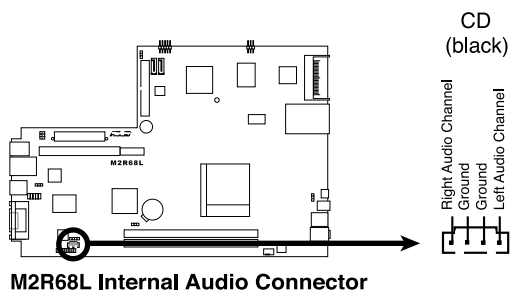
Enable the CD-IN function in the audio utility when using this connector.

8. Back audio connector (20-1 pin Back_Audio Connector)

AUDIO

BCAZ CEN L
BCAZ LEF R
SENSE CN1
BCAZ SURBL
BCAZ SURBR
SENSE SURB
BCAZ SUR L
BCAZ SUR R
SENSE SUR
AGND_A

BCAZ LIN1 L
BCAZ LIN1 R
SENSE LIN1
BCAZ FRONT L
BCAZ FRONTR
SENSE FRONT
BCAZ MIC1 L
BCAZ MIC1R
SENSE MIC1
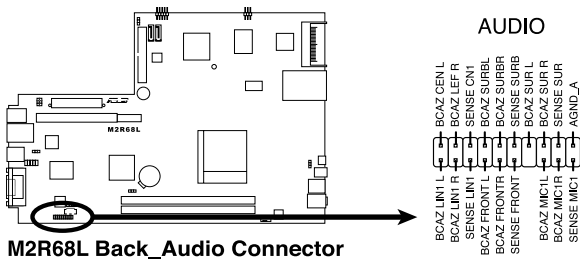
M2R68L Back_Audio Connector

We recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high-definition audio capability.

9. Digital audio connector (4-1 pin SPDIF_OUT)

This connector is for an additional Sony/Philips Digital Interface (S/PDIF) port(s). Connect the S/PDIF module cable to this connector, then install the module to a slot opening at the back of the system chassis.

+5V
SPDIFOUT
GND

SPDIF_OUT
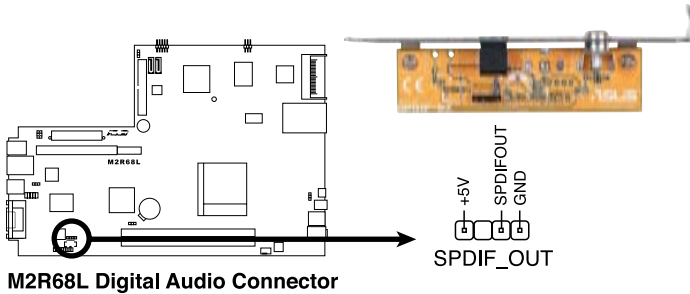
M2R68L Digital Audio Connector

The S/PDIF module is purchased separately.

10. Power button with LED (5-pin LED_CON)

This connector supports the Power and HDD activity LEDs in the system front panel.

LED_CON

PLED+
HD_LED+

1

PLED-
PLED#
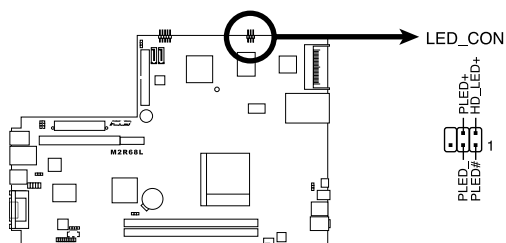
M2R68L LED Connector

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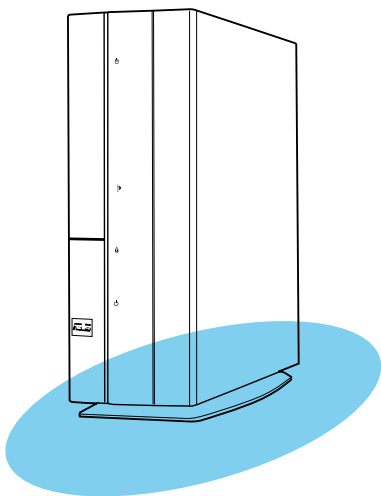
BIOS setup

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 Update:** Updates the BIOS in Windows® environment.
2. **ASUS EZ Flash 2:** Updates the BIOS using a floppy disk or USB flash disk.
3. **ASUS AFUDOS:** Updates the BIOS in DOS mode using a bootable floppy disk.
4. **ASUS CrashFree BIOS 3:** Updates the BIOS using a bootable floppy disk, USB flash disk or the motherboard support CD when the BIOS file fails or gets corrupted.

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 utilitiies.

All the floppy devices mentioned in this chapter are USB floppy devices.

5.1.1 ASUS Update utility

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.
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.
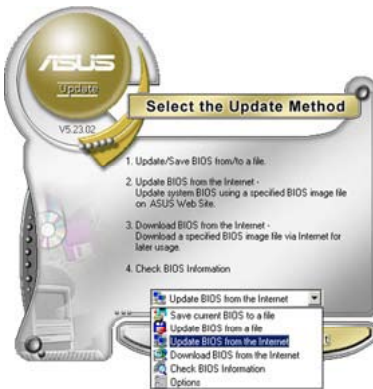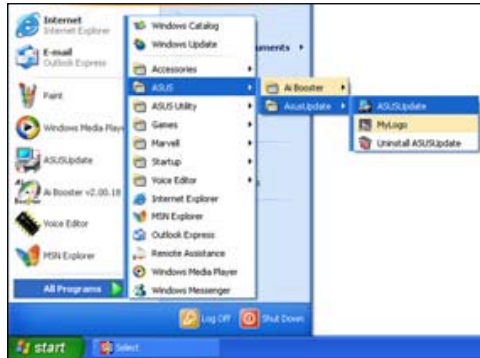
2. Select **Update BIOS** from the Internet option from the drop-down menu, then click **Next.**

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 Open.

4. Follow the screen instructions to complete the update process.
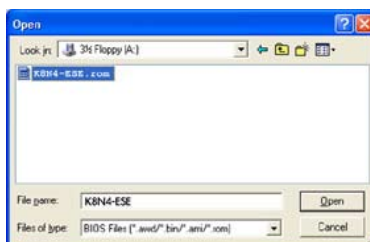
5.1.2 Creating a bootable floppy disk

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

> The floppy device used here is a USB floppy device.

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 the screen instructions to continue.

Windows® Vista environment

a. Insert a formatted, high density 1.44 MB floppy disk to the floppy disk drive.

b. Click ![Windows icon] from the Windows® desktop, then select **Computer**.

c. Right-click **Floppy Disk Drive** then click **Format** to display the **Format 3 1/2 Floppy** dialog box.

d. Select the **Create an MS-DOS startup disk** check box.

e. Click **Start**.

2. Copy the original or the latest motherboard BIOS file to the bootable floppy disk.

5.1.3 ASUS EZ Flash 2 utility

ASUS EZ Flash 2 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 2 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 2:

1. Download the latest BIOS file from ASUS website (www.asus.com), or obtain it from the support CD.

2. Save the BIOS file to a floppy disk, then boot the system from floppy disk.

3. Press <Alt> + <F2> during POST, the following screen appears:

```
           ASUSTek EZ Flash 2 BIOS ROM Utility B312

     FLASH TYPE: Winbond W25P/X80 (8MB)

        ┌──── Current BOM ────┐      ┌──── Update BOM ────┐
        BOARD: M2R68L                 BOARD: Unknown
        VER: 0401                     VER: Unknown
        DATE:05/04/2006               DATE: Unkonwn

     PATH: D:\
        ┌─────┐  ┌─────────────────────────────────────────┐
        A:       TRASHE~1           <DIR>
        B:       P5B.ROM            1048576 2002-01-01 00:01:32
        C:       M2R68L.BIN          524288 2006-05-04 22:43:12
        D:
        E:
        F:
        G:
        H:
        └─────┘

        ┌─ Note ──────────────────────────────────────────┐
        [Enter] Select        [S] Save          [ESC] Exit
        [Tab] Switch          [Up/Down/Home/End] Move
```
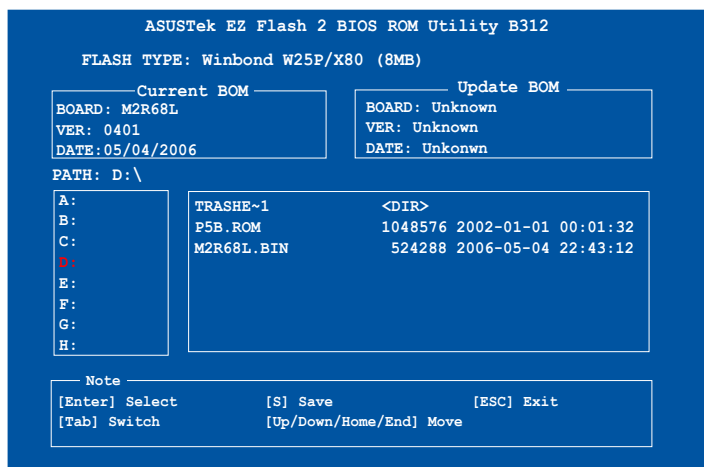
4. Select the floppy disk from the **PATH:** text box, then select the BIOS file's name from the text box on the right side (see figure below). Then press <Enter> on your keyboard.

```
              ASUSTek EZ Flash 2 BIOS ROM Utility B312

        FLASH TYPE: Winbond W25P/X80 (4MB)
   ┌──── Current BOM ────┐        ┌──── Update BOM ────┐
   │ BOARD: M2R68L       │        │ BOARD: Unknown      │
   │ VER: 0105           │        │ VER: Unknown        │
   │ DATE:05/04/2006     │        │ DATE: Unkonwn       │
   PATH: D:\
   ┌─────┐  ┌──────────────────────────────────────────┐
   │ A:  │  │ TRASHE~1            <DIR>                  │
   │ B:  │  │ P5B.ROM             1048576 2002-01-01 00:01:32│
   │ C:  │  │ M2R68L.BIN           524288 2006-05-04 22:43:12│
   │ D:  │  │                                            │
   │ E:  │  │                                            │
   │ F:  │  │                                            │
   │ G:  │  │                                            │
   │ H:  │  │                                            │
   └─────┘  └──────────────────────────────────────────┘
   ┌── Note ──────────────────────────────────────────────┐
   │ [Enter] Select       [S] Save              [ESC] Exit │
   │ [Tab] Switch         [Up/Down/Home/End] Move          │
   └──────────────────────────────────────────────────────┘
```

5. An "Are you sure to update BIOS?" message appears.Select "Yes", press <Enter> on your keyboard, and the EZ Flash 2 utility will perform BIOS update process. The process may take a few minutes to complete.

Do not shut down or reset the system while updating the BIOS to prevent system boot failure!

5.1.4 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:

> • Ensure that the USB Flash has at least 1024KB free space to save the file.
>
> • The succeeding BIOS screens are for reference only. The actual BIOS screen displays may not be 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 USB Flash.

   ```
   A:\>afudos /oOLDBIOS1.rom
   AMI Firmware Update Utility - Version 1.19(ASUS V2.07(03.11.24BB))
   Copyright (C) 2002 American Megatrends, Inc. All rights reserved.
      Reading flash ..... done
      Write to file...... ok
   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 /iM2R68L.ROM
```

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

```
A:\>afudos /iM2R68L.ROM
AMI Firmware Update Utility - Version 1.19(ASUS V2.07(03.11.24BB))
Copyright (C) 2002 American Megatrends, Inc. All rights reserved.

    WARNING!! Do not turn off power during flash BIOS
    Reading file ....... done
    Reading flash ...... done

    Advance Check ......
    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 /iM2R68L.ROM
AMI Firmware Update Utility - Version 1.19(ASUS V2.07(03.11.24BB))
Copyright (C) 2002 American Megatrends, Inc. All rights reserved.

    WARNING!! Do not turn off power during flash BIOS
    Reading file ....... done
    Reading flash ...... done

    Advance Check ......
    Erasing flash ...... done
    Writing flash ...... done
    Verifying flash .... done

    Please restart your computer

A:\>
```

5.1.5   ASUS CrashFree BIOS 3 utility

ASUS CrashFree BIOS 3 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, the floppy disk or the USB flash disk that contains the updated BIOS file.

> •   Prepare the motherboard support CD, the floppy disk, or the USB flash disk containing the updated motherboard BIOS before using this utility.
>
> •   Ensure that you rename the original or updated BIOS file in the floppy disk or the USB flash disk to **M2R68L.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 "M2R68L.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.

> Install memory module in DIMM_A1 or DIMM_B1 slots.

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 "M2R68L.ROM". Completed.
Start flashing...
```

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.

Recovering the BIOS from the USB flash disk

To recover the BIOS from the USB flash disk:

1. Insert the USB flash disk that contains the BIOS file to the USB port.
2. Turn on the system.
3. The utility will automatically checks the devices for the BIOS file. When found, the utility reads the BIOS file and starts flashing the corrupted BIOS file.
4. Restart the system after the utility completes the updating process.

> • Only the USB flash disk with FAT 32/16 format and single partition can support ASUS CrashFree BIOS 3. The device size should be smaller than 8GB.
>
> • DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

5.2 BIOS setup program

This motherboard supports a programmable Low-Pin Count (LPC) 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 LPC chip.

The LPC chip on the motherboard stores the Setup utility. When you start up the computer, the system provides you with the opportunity to run this program. Press <Del> 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, reboot the system by doing any of the following procedures:

- Restart using the OS standard shut-down procedure.
- Press <Ctrl>+<Alt>+<Del> simultaneously.
- Press the reset button on the system chassis.
- Press the power button to turn the system off then back on.

> Using the **power button**, **reset button**, or the **<Ctrl>+<Alt>+<Del>** keys to force reset from a running operating system can cause damage to the data or system. We recommend to always shut-down the system properly from the operating system.

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 "5.8 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.

5.2.1 BIOS menu screen

Menu items   Menu bar   Configuration fields   General help

```
                              BIOS SETUP UTILITY
  Main     Advanced    Power    Boot    Tools    Exit

  Main Settings                                        Use [ENTER], [TAB]
                                                       or [SHIFT-TAB] to
  System Time              [00:15:10]                  select a field.
  System Date              [Wed 07/11/2007]
                                                       Use [+] or [-] to
                                                       configure system time.

▶ Primary IDE Master        :[Not Detected]
▶ Primary IDE Slave         :[Not Detected]
▶ SATA1                     :[Not Detected]
▶ SATA2                     :[Not Detected]            ←→    Select Screen
▶ SATA Configuration                                   ↑↓    Select Item
                                                       +-    Change Option
▶ System Information                                   F1    General Help
                                                       F10   Save and Exit
                                                       ESC   Exit

              v00.00 (C)Copyright 1985-2002, American Megatrends, Inc.
```

Sub-menu items   Navigation keys

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
Tools	For setting EZ Flash and spread spectrum.
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.
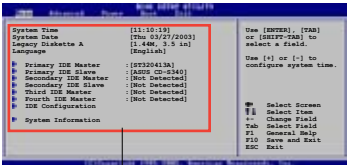
Main menu items

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 "2.2.7 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.
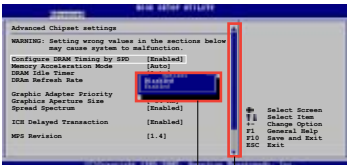
Pop-up window

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.

```
                       BIOS SETUP UTILITY
  Main    Advanced    Power    Boot    Tools    Exit

  Main Settings                                           Use [ENTER], [TAB]
                                                          or [SHIFT-TAB] to
  System Time                    [00:15:10]               select a field.
  System Date                    [Wed 07/11/2007]
                                                          Use [+] or [-] to
  ▶ Primary IDE Master           :[Not Detected]          configure system time.
  ▶ Primary IDE Slave            :[Not Detected]
  ▶ SATA1                        :[Not Detected]
  ▶ SATA2                        :[Not Detected]
  ▶ SATA Configuration
                                                          ←→    Select Screen
  ▶ System Information                                    ↑↓    Select Item
                                                          +-    Change Option
                                                          F1    General Help
                                                          F10   Save and Exit
                                                          ESC   Exit

            v00.00 (C)Copyright 1985-2002, American Megatrends, Inc.
```

5.3.1 System Time [xx:xx:xxxx]

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   Primary IDE Master/Slave, SATA1/SATA2

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.

```
                          BIOS SETUP UTILITY
    Main     Advanced     Power     Boot     Exit

    Primary IDE Master                                  Select the type
                                                        of device connected
    Device      : Not Detected                          to the system

    Type                              [Auto]
    LBA/Large Mode                    [Auto]
    Block(Multi-Sector Transfer) M    [Auto]
    PIO Mode                          [Auto]
    DMA Mode                          [Auto]
    SMART Monitoring                  [Auto]
    32Bit Data Transfer               [Enabled]
                                                    ←→    Select Screen
                                                    ↑↓    Select Item
                                                    +-    Change Option
                                                    F1    General Help
                                                    F10   Save and Exit
                                                    ESC   Exit

          v00.00 (C)Copyright 1985-2002, American Megatrends, Inc.
```

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

32Bit Data Transfer [Enabled]

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

5.3.4   SATA Configuration

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

```
                         BIOS SETUP UTILITY
  Main

  Storage Configuration                               Options
  OnChip SATA Channel          [Enabled]
  OnChip SATA Type             [SATA]         Disabled
                                              Enabled
```
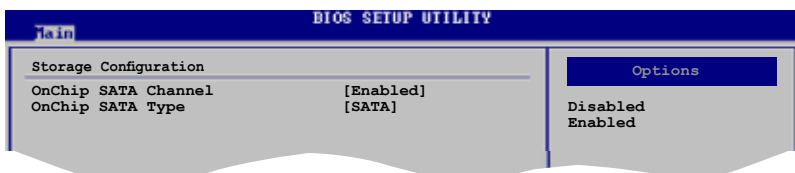
OnChip SATA Channel [Enabled]

Allows you to enable or disable OnChip SATA channel. Configuration options: [Enable] [Disable]

OnChip SATA Type [SATA]

Allows you to select OnChip SATA type. Configuration options: [SATA] [Legacy IDE] [AHCI]

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.

```
                         BIOS SETUP UTILITY
 Main

  AMIBIOS
  Version   : 0401
  Build Date : 06/04/07

  Processor
  Type      : AMD Sempron (tm) Processor 3200+
  Speed     : 1800 MHz
  Count     : 1
                                                ←→   Select Screen
  System Memory                                 ↑↓   Select Item
  Installed Size: 512MB                         +-   Change Option
  Usable Size  : 448MB                          F1   General Help
                                                F10  Save and Exit
                                                ESC  Exit
```

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.

```
                    BIOS SETUP UTILITY
        Advanced

 Advanced Settings                            Configure CPU

 ▶ CPU Configuration
 ▶ Chipset
 ▶ Onboard Devices Configuration
 ▶ PCIPnP
 ▶ USB Configuration


                                         ←→    Select Screen
                                         ↑↓    Select Item
                                         +-    Change Option
                                         F1    General Help
                                         F10   Save and Exit
                                         ESC   Exit

            (C)Copyright 1985-2002, American Megatrends, Inc.
```

5.4.1 CPU Configuration

```
                    BIOS SETUP UTILITY
  Main   Advanced   Power   Boot   Exit

 CPU Configuration                            This option should
 Module Version: 13.06                        remain disabled for
 AGESA Version: 02.08.00                      the normal operation.
 Physucak Count: 1                            The driver developer
 Logical Count: 1                             may enable it for
                                              texting purpose.
 AMD Serpron (tm) Processsor 3200+
 Revision: F2
 Cache L1: 64KB
 Cache L2: 128KM
 Speend  : 1800MHz
 Current FSB Multiplier: 9x
 Maximum FSB Multiplier: 9x
 Able to Change Fre.: Yes
 uCode Patch Level: 0x62                      ←→    Select Screen
 GAGT Error Reporting      [Disabled]         ↑↓    Select Item
 Microcode Updation        [Enabled]          Enter Go to Sub-screen
 Secure Virtual Machine    [Enabled]          F1    General Help
 Cool 'n' Quiet            [Enabled]          F10   Save and Exit
 AMD Live!                 [Disabled]          ESC   Exit
```

GART Error Reporting [Disabled]

Allows you to enable or disable the GART error reporting. But this option should remain disabled for the normal operation. You may enable it for testing purpose. Configuration options: [Enable] [Disable]

Microcode Updation [Enabled]

Allows you to enable or disable microcode updation.
Configuration options: [Enable] [Disable]

Secure Virtual Machine [Enabled]

Allows you to enable or disable AMD secure virtual machine.
Configuration options: [Enable] [Disable]

Cool 'n' Quiet [Enabled]

Allows you to enable or disable the generation of ACPI_PPC, _PSS, AND _PCT
objects. Configuration options: [Enable] [Disable]

AMD Live! [Disabled]

Allows you to enable or disable AMD Live. Configuration options: [Enable]
[Disable]

5.4.2   Chipset

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

```
                         BIOS SETUP UTILITY
       Advanced

  Chipset Configuration                        Memory Options &
                                               Information

  ▶ Memory Controller
  ▶ Internal Graphics
```

Memory Controller

```
                         BIOS SETUP UTILITY
       Advanced

  Memory Controller

  ▶ Memory Configuration
  Power Down Control          [Auto]


  Memory CLK                  :667 MHz
  CAS Latency (Tcl)           :5.0
  RAS/CAS Delay (Trcd)        :5 CLK
  Min Active RAS (Tras)       :15CLK
  RAS/RAS Delay (Trrd)        :3 CLK            ↔   Select Screen
  Row Cycle (Trc)             :21 CLK           ↑↓  Select Item
  Asynchronous Latency        :6 ns            ←   Change Option
```

```
                            BIOS SETUP UTILITY
    Advanced

   Memory Configuration                              Select the DRAM
                                                     Frequency programming
   Memory Setting: 333MHz-5.0-5-5-15-2T              method. If Auto,
                                                     the DRAM speed will
   Memclock Mode                   [Auto]            be based on SPDs.
   CAS Latency (CL)                [Auto]            If Limit, the DRAM
   TRCD                            [Auto]            spe will not exceed
   TRP                             [Auto]            the specified value.
   TRAS                            [Auto]            If Manual, the DRAMs
   Command Timing (2T mode)        [ 2T]             specified will be
   MCT Timing Mode                 [Auto]            programmed regardless
   Bank Interleaving               [Auto]
   Enable Clock to ALL DIMMs       [Disabled]    ←→    Select Screen
   MemClk Tristate C3/ATLVID       [Disabled]    ↑↓    Select Item
   DQS Signal Training Control     [Enabled]     +-    Change Option
   Memory Hole Remapping           [Enabled]     F1    General Help
                                                 F10   Save and Exit
                                                 ESC   Exit
```

Memclock Mode [Auto]

Allows you to select the DRAM Frequency programming method.
Configuration options: [Auto] [Limit] [Manual]

CAS Latency (CL) [Auto]

Allows you to select the CAS Latency (CL). Configuration options: [Auto]
[3.0] [4.0] [5.0] [6.0]

TRCD [Auto]

Allows you to select the TRCD. Configuration options: [Auto] [3 CLK] [4
CLK] [5 CLK] [6 CLK]

TRP [Auto]

Allows you to select the TRP. Configuration options: [Auto] [3 CLK] [4 CLK]
[5 CLK] [6 CLK]

TRAS [Auto]

Allows you to select the TRAS. Configuration options: [Auto] [5 CLK] [6
CLK] [7 CLK] [8 CLK] [9 CLK] [10 CLK] [11 CLK] [12 CLK]

Command Timing (2T mode) [Auto]

Allows you to select the command timing. Configuration options: [Auto] [
1T] [2T]

MCT Timing Mode [Auto]

Allows you to select the MCT timing mode. Configuration options: [Auto]
[Manual]

Bank Interleaving [Auto]

Allows you to enable or disable the bank memory interleaving. If set to
AUTO, the memory will be checked which executes 64 or 128-bits mode.
Configuration options: [Disabled] [Auto]

Enable Clock to All DIMMs [Disabled]

Allows you to enable or disable unused clocks to all DIMMs even memory
slots are not populated. Configuration options: [Disabled] [Enabled]

MemClk Tristate c3/ATLVID [Disabled]

Allows you to enable or disable MemClk Tri-Stating during C3 and Alt VID.
Configuration options: [Disabled] [Enabled]

DQS SignalTraining Control [Enabled]

Allows you to enable or disable DQS signaltraining control. Turning this off
requires custom memory timings programming. Training is automatically
disabled if CS Sparing is enabled.Configuration options: [Disabled]
[Enabled]

Memory Hole Remapping [Enabled]

Allows you to enable or disable memory remapping around memory hole.
Configuration options: [Disabled] [Enabled]

Power Down Control [Auto]
Allows DIMMs to enter power down mode by deasserting the clock enable
signal when DIMMs are not in use. Configuration options: [Auto] [Disable]

Internal Graphics

```
                          BIOS SETUP UTILITY
     Advanced

   Internal Graphics
                                                    Options
   Internal Graphics Mode       [UMA]
      UMA Frame Buffer Size      [Auto]              UMA
      Current UMS Size           [64MB]
   Primary Video Controller      [PCI/IGFX]

   HDMI AUDIO                     [Enabled]
```
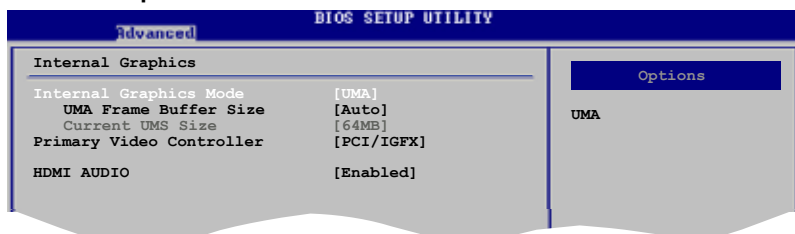
Internal Graphics Mode [UMA]
This item automatically detects the internal graphics mode.

UMA Frame Buffer Size [Auto]

Allows you to select UMA frame buffer size. Configuration options: [Auto]
[32MB] [64MB] [128MB] [256MB]

Primary Video Controller [PCI/IGFX]
Allows you to select the primary video controller.
Configuration options: [PCI/IGFX] [IGFX/PCI]

HDMI AUDIO [Enabled]
Allows you to enable or disable the HDMI audio.
Configuration options: [Disabled] [Enabled]

5.4.3   Onboard Devices Configuration

```
                        BIOS SETUP UTILITY
        Advanced

 Configure ITE8718 Super IO Chipset              Allows BIOS to Select
                                                 Serial Port1 Base
 Serial Port                   [Enabled]         Addresses.

 Configure Onboard Device

 HDAudio Controller            [Enabled]
 Fire1394 Controller           [Enabled]
 Card Reader Controller        [Enabled]
 OnBoard LAN Controller        [Enabled]
    OnBoard LAN Boot ROM       [Disabled]
```
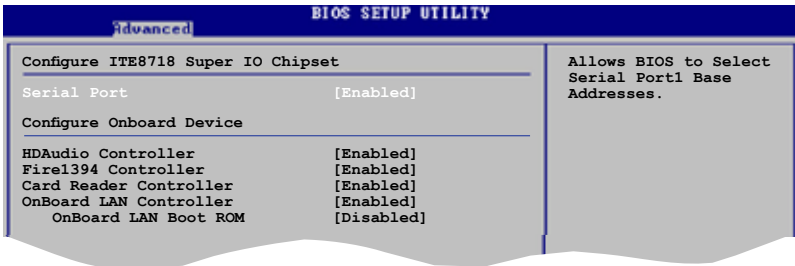
Serial Port [Enabled]

Allows you to enable or disable BIOS to select serial Port1 base addresses.
Configuration options: [Enabled] [Disabled]

HDAudio Controller [Enabled]

Allows you to enable or disable the HD audio. Configuration options: [Enabled]
[Disabled]

Fire1394 Controller [Enabled]

Allows you to enable or disable the Fire1394. Configuration options: [Disabled]
[Enabled]

Card Reader Controller [Enabled]

Allows you to enable or disable the card reader. Configuration options: [Disabled]
[Enabled]

OnBoard LAN Controller [Enabled]

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

> *OnBoard LAN Boot ROM [Disabled]*
> Allows you to enable or disable the onboard LAN boot rom.
> Configuration options:[Disabled] [Enabled]

5.4.4 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.

```
                        BIOS SETUP UTILITY
     Advanced

  Advanced PCI/PnP Settings                          NO: lets the BIOS
                                                     congifure all the
  WARNING: Setting wrong values in below sections    devuces in the
          may cause system to malfunction.           system. YES: lets
                                                     the operating system
  Plug And Play O/S             [No]                  configure Plug and Play
  PCI Latency Timer            [64]                   (PnP) devices not
  Allocate IRQ to PCI VGA      [Yes]                  required for boot if
  Palette Snooping             [Disabled]             your system has a Plug
                                                     and Play operating
  IRQ-3  assigned to           [PCI Device]           system.
  IRQ-4  assigned to           [PCI Device]
  IRQ-5  assigned to           [PCI Device]          ←→  Select Screen
  IRQ-7  assigned to           [PCI Device]          ↑↓  Select Item
  IRQ-9  assigned to           [PCI Device]          +-   Change Option
  IRQ-10 assigned to           [PCI Device]          F1   General Help
  IRQ-11 assigned to           [PCI Device]          F10  Save and Exit
  IRQ-14 assigned to           [PCI Device]          ESC  Exit
  IRQ-15 assigned to           [PCI Device]

                  (C)Copyright 1985-2002, American Megatrends, Inc.
```

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 pallete 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]

5.4.5 USB Configuration

The items in this menu allow you to change the USB-related features. Select an item then press <Enter> to display the configuration options.

```
                          BIOS SETUP UTILITY
        Advanced

   USB Configuration                              Options

   Module Version - 2.24.0-12.4
                                               Disabled
   USB Devices Enabled:                         Enabled
      None
   USB 1.1 OHCI Controllers        [Enabled]
   USB 2.0 Controller              [Enabled]
   Legacy USB Support              [Auto]
   USB 2.0 Controller Mode         [HiSpeed]
   BIOS EHCI Hand-Off              [Enabled]
```
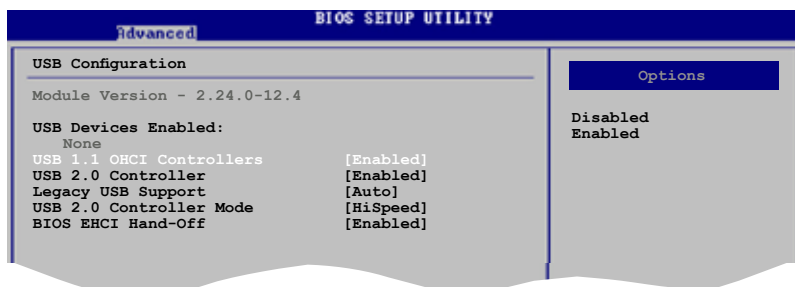
The Module Version and USB Devices Enabled items show the auto-detected values. If no USB device is detected, the item shows None.

USB 1.1 OHCI Controllers [Enabled]

Allows you to enable or disable the USB1.1 OHCI devices.
Configuration options: [Disabled] [Enabled]

USB 2.0 EHCI Controllers [Enabled]

Allows you to enable or disable the USB2.0 EHCI devices.
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]

USB 2.0 Controller Mode [HiSpeed]

Allows you to configure the USB 2.0 controller in HiSpeed (480Mbps) or FullSpeed (12Mbps). 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: [Enabled] [Disabled]

Do not disable the BIOS EHCI Hand-Off option if you are running a Windows® operating system with USB device.

5.5   Power menu

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

```
                        BIOS SETUP UTILITY
  Main    Advanced    Power    Boot    Tools    Exit

  Suspend Mode                  [Auto]                    Select the ACPI state
  ACPI Support                  [ACPI v1.0]               used for System
  ACPI APIC Support             [Enabled]                 Suspend.

  ▶  APM Configuration
  ▶  Hardware Monitor
```
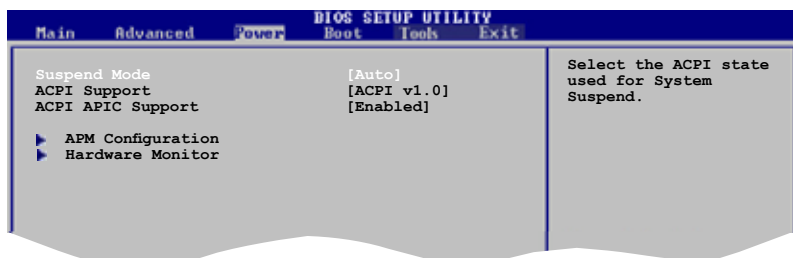
5.5.1   Suspend Mode [Auto]

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   ACPI Support [ACPI v1.0]

Allows you to select ACPI support. Configuration options: [ACPI v1.0] [ACPI v2.0] [ACPI v3.0]

5.5.3   ACPI APIC Support [Enabled]

Allows you to enable or disable the Advanced Configuration and Power Interface (ACPI) support in the Application-Specific Integrated Circuit (ASIC). When set to Enabled, the ACPI APIC table pointer is included in the RSDT pointer list. Configuration options: [Disabled] [Enabled]

5.5.4 APM Configuration

```
                        BIOS SETUP UTILITY
               Power

 APM Configuration                                        Options

 Restore on AC Power Loss      [Always Off]        Always Off
 Resume From S5 By PME#         [Disabled]         Always On
 Resume From S5 By Ring         [Disabled]         Last State
 Resume From S5 By PS/2 KB/MS   [Disabled]
 Resume From S5 By RTC Alarm    [Disabled]
```
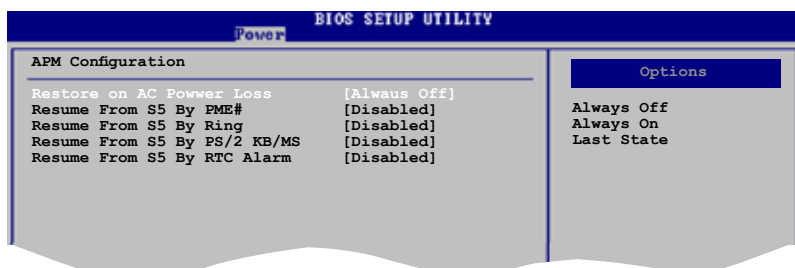
Restore on AC Power Loss [Always Off]

When set to Always Off, the system goes into off state after an AC power loss. When set to Always 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: [Always Off] [Always On] [Last State]

Resume From S5 By PME# [Disabled]

Allows you to enable or disable PME wake from sleep states.
Configuration options: [Disabled] [Enabled]

Resume From S5 By Ring [Disabled]

Allows you to enable or disable ring to generate a wake event.
Configuration options: [Disabled] [Enabled]

Resume From S5 By PS/2 KB/MS [Disabled]

Allows you to enable or disable PS/2 keyboard/mouse to generate a wake event.
Configuration options: [Disabled] [Enabled]

Resume From S5 By 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]

5.5.5   Hardware Monitor

```
                        BIOS SETUP UTILITY
              Power
 ┌─────────────────────────────────────────┬───────────────────────┐
 │ Hardware Monitor                         │ CPU Temperature       │
 │                                          │                       │
 │ CPU Temperature          [40°C/104°F]    │                       │
 │ MB Temperature           [59°C/138°F]    │                       │
 │                                          │                       │
 │ CPU Fan Speed            [2177RPM]        │                       │
 │                                          │                       │
 │ VCORE Voltage           [ 1.408V]        │                       │
 │ 3.3V Voltage            [ 3.328V]        │                       │
 │ 5V Voltage              [ 4.899V]        │  ←→  Select Screen    │
 │ 12V Voltage             [11.985V]        │  ↑↓  Select Item      │
 │                                          │  +-  Change Option    │
 │ Smart Q-FAN Function     [Enabled]       │  F1  General Help     │
 │                                          │  F10 Save and Exit    │
 │                                          │  ESC Exit             │
 └─────────────────────────────────────────┴───────────────────────┘
            (C)Copyright 1985-2002, American Megatrends, Inc.
```

CPU Temperature [xxxC/xxxF]
MB Temperature [xxxC/xxxF]

The onboard hardware monitor automatically detects and displays the motherboard and CPU temperatures. Select [Ignored] if you do not wish to display the detected temperatures. Configuration options: [Ignored] [xxxC/xxxF]

CPU Fan Speed [xxxxRPM] or [N/A] 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. Configuration options: [Ignored] [xxxRPM]

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

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

Smart Q-FAN Function [Enabled]

Allows you to enable or disable Q-Fan function that monitors the CPU/System temperature and smartly adjust the fan speed. 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.

```
                        BIOS SETUP UTILITY
   Main    Advanced    Power    Boot    Exit

  Boot Settings                                  Specifies the Boot
                                                 Device Priority
   ▶ Boot Device Priority                        sequence.

   ▶ Boot Settings Configuration                 A virtual floppy disk
   ▶ Security                                    drive (Floopy Drive B:
                                                 ) may appear when you
                                                 set the CD-ROM drive
                                                 as the first boot
                                                 device

                                                 ←→   Select Screen
                                                 ↑↓   Select Item
                                                 Enter Go to Sub-screen
                                                 F1    General Help
                                                 F10   Save and Exit
                                                 ESC   Exit

              (C)Copyright 1985-2002, American Megatrends, Inc.
```

5.6.1 Boot Device Priority

```
                        BIOS SETUP UTILITY
   Main    Advanced    Power    Boot    Tools    Exit

  Boot Device Priority                           Specifies the boot
                                                 sequence from the
   1st Boot Device       [Removable Dev.]        available devices.
   2nd Boot Device       [ATAPI CD-ROM]
   3rd Boot Device       [Hard Drive]
```

1st ~ 3rd Boot Device

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: [Removable Dev.] [ATAPI CD-ROM] [Hard Drive] [Disable]

5.6.2   Boot Settings Configuration


```
                          BIOS SETUP UTILITY
                              Boot
┌─────────────────────────────────────────────────┬──────────────────────┐
│  Boot Settings Configuration                     │ Allows BIOS to skip  │
│                                                  │ certain tests while  │
│  Quick Boot                     [Enabled]        │ booting. This will   │
│  Full Screen Logo               [Enabled]        │ decrease the time    │
│  AddOn ROM Display Mode         [Force BIOS]     │ needed to boot the   │
│  Bootup Num-Lock                [On]             │ system.              │
│  PS/2 Mouse Support             [Auto]           │                      │
│  Wait For 'F1' If Error         [Enabled]        │                      │
│  Hit 'DEL' Message Display      [Enabled]        │                      │
│  Interrupt 19 Capture           [Disabled]       │                      │
└─────────────────────────────────────────────────┴──────────────────────┘
```
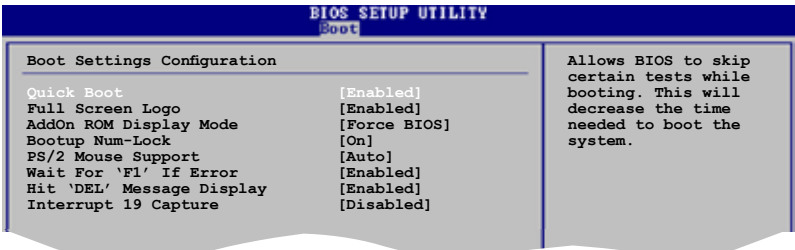
Quick Boot [Enabled]

Enabling this item allows the BIOS to skip some Power-On Self-Test (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]

This 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.

```
                         BIOS SETUP UTILITY
                           Boot

   Security Settings                           <Enter> to change
                                               password.
   Supervisor Password   : Not Installed       <Enter> again to
   User Password         : Not Installed       disabled password.

   Change Supervisor Password
   Change User Password
```
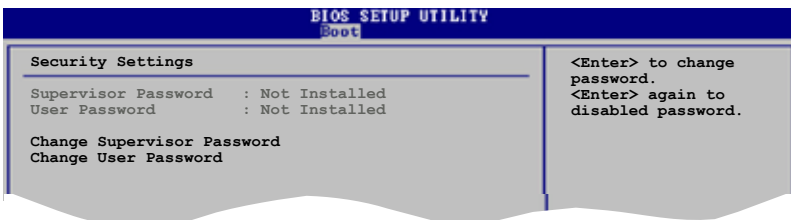
Change Supervisor Password

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 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 forgot your BIOS password, you can clear it by erasing the CMOS Real Time Clock (RTC) RAM. See section "4.3 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.

```
                          BIOS SETUP UTILITY
                    Power

 Security Settings

 Supervisor Password   : Not Installed
 User Password         : Not Installed

 Change Supervisor Password
 User Access Level              [Full Access]
 Change User Password
 Clear User Password
 Password Check                 [Setup]
```

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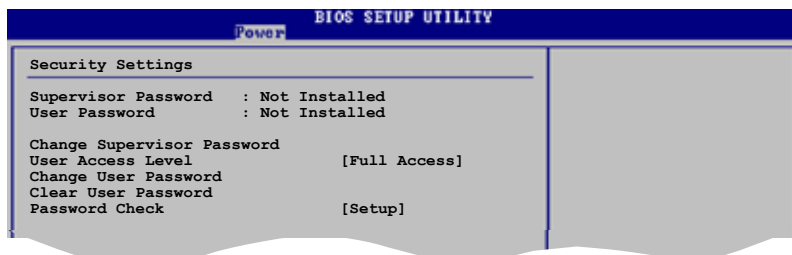
To change the user password, follow the same steps as in setting a user password.
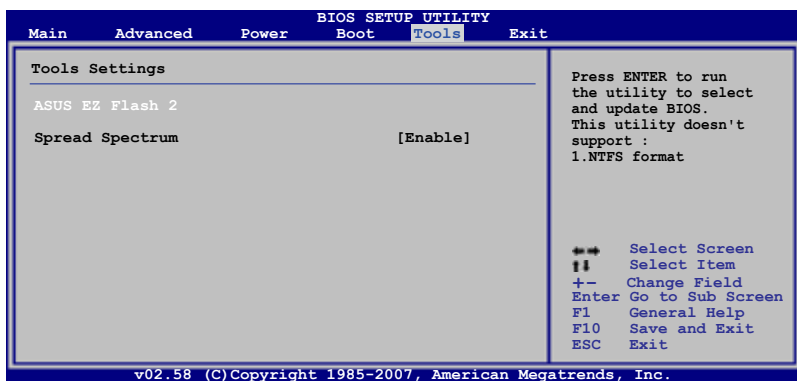
Clear User Password

Select this item to clear the user password.

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]
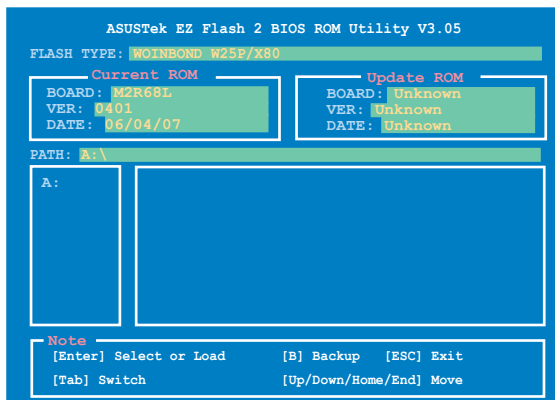
5.7   Tools menu

The Tools menu items allow you to launch special functions. Select an item then press <Enter> to display the sub-menu.

```
                          BIOS SETUP UTILITY
   Main      Advanced      Power      Boot      Tools      Exit

   Tools Settings                                      Press ENTER to run
                                                       the utility to select
   ASUS EZ Flash 2                                     and update BIOS.
                                                       This utility doesn't
   Spread Spectrum                   [Enable]          support :
                                                       1.NTFS format




                                                       ➡➡   Select Screen
                                                       ⬆⬇   Select Item
                                                       +-   Change Field
                                                       Enter Go to Sub Screen
                                                       F1   General Help
                                                       F10  Save and Exit
                                                       ESC  Exit

        v02.58 (C)Copyright 1985-2007, American Megatrends, Inc.
```

5.7.1   ASUS EZ Flash 2

Allows you to run ASUS EZ Flash 2. When you press <Enter>, a confirmation message appears. Use the left/right arrow key to select between [Yes] or [No], then press <Enter> to confirm your choice. See page 5-6, section 5.1.3 for details.

```
              ASUSTek EZ Flash 2 BIOS ROM Utility V3.05

   FLASH TYPE: WOINBOND W25P/X80
   ┌─── Current ROM ───┐        ┌─── Update ROM ───┐
   │ BOARD: M2R68L      │        │ BOARD: Unknown    │
   │ VER: 0401          │        │ VER: Unknown      │
   │ DATE: 06/04/07     │        │ DATE: Unknown     │
   └────────────────────┘        └───────────────────┘
   PATH: A:\

   ┌ A:             ┬                                ┐
   │                │                                │
   │                │                                │
   │                │                                │
   │                │                                │
   └── Note ────────┴────────────────────────────────┘
     [Enter] Select or Load     [B] Backup    [ESC] Exit

      [Tab] Switch              [Up/Down/Home/End] Move
```

| | • | This function cannot support IDE CD-ROM, IDE DVD-ROM, or External SATA devices. |
| | • | This function only supports FAT 32/16 format. |

5.7.2   Spread Spectrum

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

5.8   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.

```
                     BIOS SETUP UTILITY
 Main    Advanced    Power    Boot    Exit

  Exit Options                              Exit system setup
                                            after saving the
  Exit & Save Changes                       changes.
  Exit & Discard Changes
  Discard Changes                           F10 key can be used
                                            for this operation.
  Load Setup Defaults


                                            ← →   Select Screen
                                            ↑ ↓   Select Item
                                            Enter Go to Sub-screen
                                            F1    General Help
                                            F10   Save and Exit
                                            ESC   Exit

          (C)Copyright 1985-2002, American Megatrends, Inc.
```

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.