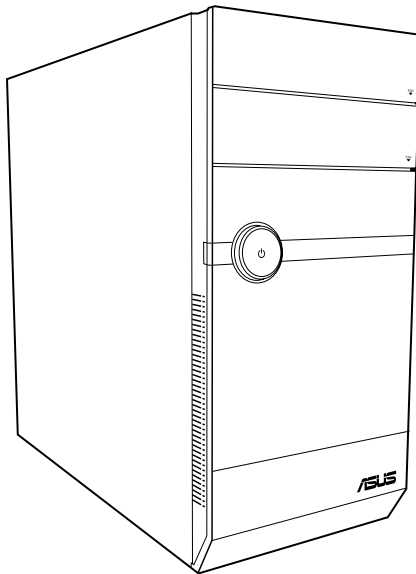




V7-series P5G43M

ASUS PC (Desktop Barebone)

User's Manual



E4966

First Edition V1

August 2009

Copyright © 2009 ASUSTeK Computer Inc. All Rights Reserved.

No part of this manual, including the products and software described in it, may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form or by any means, except documentation kept by the purchaser for backup purposes, without the express written permission of ASUSTeK Computer Inc. ("ASUS").

Product warranty or service will not be extended if: (1) the product is repaired, modified or altered, unless such repair, modification or alteration is authorized in writing by ASUS; or (2) the serial number of the product is defaced or missing.

ASUS PROVIDES THIS MANUAL "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL ASUS, ITS DIRECTORS, OFFICERS, EMPLOYEES OR AGENTS BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING DAMAGES FOR LOSS OF PROFITS, LOSS OF BUSINESS, LOSS OF USE OR DATA, INTERRUPTION OF BUSINESS AND THE LIKE), EVEN IF ASUS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES ARISING FROM ANY DEFECT OR ERROR IN THIS MANUAL OR PRODUCT.

SPECIFICATIONS AND INFORMATION CONTAINED IN THIS MANUAL ARE FURNISHED FOR INFORMATIONAL USE ONLY, AND ARE SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE, AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY ASUS. ASUS ASSUMES NO RESPONSIBILITY OR LIABILITY FOR ANY ERRORS OR INACCURACIES THAT MAY APPEAR IN THIS MANUAL, INCLUDING THE PRODUCTS AND SOFTWARE DESCRIBED IN IT.

Products and corporate names appearing in this manual may or may not be registered trademarks or copyrights of their respective companies, and are used only for identification or explanation and to the owners' benefit, without intent to infringe.

Table of contents

Notices.....	vi
Safety information	vii
About this guide	viii
System package contents.....	x
Chapter 1 System introduction	
1.1 Welcome!	1-2
1.2 Front panel	1-2
1.2.1 V7-P5G43M front panel	1-2
1.3 Rear panel.....	1-4
Voltage selector.....	1-6
1.4 Internal components.....	1-7
1.5 Qualified Vendors Lists (QVL)	1-8
Chapter 2 Starting up	
2.1 Installing an operating system	2-2
2.2 Powering up.....	2-2
2.3 Support DVD information	2-2
2.3.1 Running the support DVD	2-3
2.3.2 Utilities menu	2-4
2.3.3 ASUS Contact information	2-5
2.3.4 Other information	2-6
2.4 Software information	2-8
2.4.1 ASUS AI Manager.....	2-8
2.4.2 ASUS Express Gate	2-14
Chapter 3 Motherboard info	
3.1 Introduction	3-2
3.2 Motherboard layout.....	3-2
3.3 Jumpers	3-3
3.4 Connectors	3-5
Chapter 4 BIOS setup	
4.1 Managing and updating your BIOS	4-2
4.1.1 ASUS Update utility	4-2
4.1.2 ASUS EZ Flash 2 utility.....	4-3

Table of contents

4.1.3	ASUS CrashFree BIOS	4-4
4.2	BIOS setup program	4-5
4.2.1	BIOS menu screen.....	4-6
4.2.2	Menu bar.....	4-6
4.2.3	Navigation keys.....	4-7
4.2.4	Menu items	4-7
4.2.5	Submenu items	4-7
4.2.6	Configuration fields	4-7
4.2.7	Pop-up window	4-7
4.2.8	Scroll bar.....	4-7
4.2.9	General help	4-7
4.3	Main menu	4-8
4.3.1	System Time	4-8
4.3.2	System Date	4-8
4.3.3	SATA 1-6.....	4-8
4.3.4	Storage Configuration	4-9
4.3.5	System Information.....	4-10
4.4	Advanced menu	4-11
4.4.1	CPU Configuration	4-11
4.4.2	Chipset.....	4-12
4.4.3	Onboard Devices Configuration.....	4-13
4.4.4	USB Configuration	4-14
4.4.5	PCI PnP	4-15
4.5	Power menu.....	4-16
4.5.1	Suspend Mode.....	4-16
4.5.2	ACPI 2.0 Support.....	4-16
4.5.3	ACPI APIC Support.....	4-16
4.5.4	APM Configuration.....	4-17
4.5.5	Hardware Monitor	4-17
4.6	Boot menu	4-19
4.6.1	Boot Device Priority	4-19
4.6.2	Boot Settings Configuration	4-19
4.6.3	Security	4-20
4.7	Tools menu	4-22

Table of contents

- 4.7.1 ASUS EZ Flash 2 4-22
 - 4.7.2 AI NET 2..... 4-22
- 4.8 Exit menu 4-23**

Notices

Federal Communications Commission Statement

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

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

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

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



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

Canadian Department of Communications Statement

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

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

REACH

Complying with the REACH (Registration, Evaluation, Authorisation, and Restriction of Chemicals) regulatory framework, we published the chemical substances in our products at ASUS REACH website at <http://green.asus.com/english/REACH.htm>.

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.
- We recommend that you use this product in environments with an ambient temperature below 35°C.

Lithium-Ion Battery Warning

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

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

LASER PRODUCT WARNING

CLASS 1 LASER PRODUCT



DO NOT throw the motherboard in municipal waste. This product has been designed to enable proper reuse of parts and recycling. This symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.



DO NOT throw the mercury-containing button cell battery in municipal waste. This symbol of the crossed out wheeled bin indicates that the battery should not be placed in municipal waste.

About this guide

Audience

This guide provides general information and installation instructions about the ASUS Vintage V7-series P5G43M barebone system. This guide is intended for experienced users and integrators with hardware knowledge of personal computers.

How this guide is organized

This guide contains the following parts:

1. Chapter 1: System introduction

This chapter gives a general description of the ASUS V7-series P5G43M. The chapter lists the system features, including introduction on the front and rear panel, and internal components.

2. Chapter 2: Starting up

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

3. Chapter 3: Motherboard info

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

4. Chapter 4: BIOS setup

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 V7-series P5G43M system package for the following items.

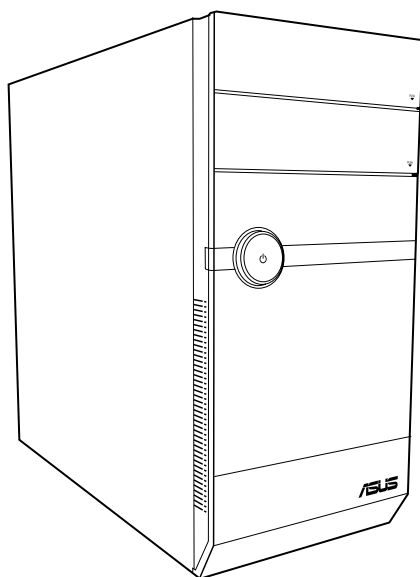


If any of the items is damaged or missing, contact your retailer immediately.

Item description	
1.	ASUS V7-series P5G43M barebone system with <ul style="list-style-type: none">• ASUS motherboard• Power supply unit• ASUS chassis
2.	Cable <ul style="list-style-type: none">• AC power cable
3.	Support DVD
4.	Quick Installation Guide
5.	Telecom Adapter Card (Optional)

Chapter 1

This chapter gives a general description of the ASUS V7-series P5G43M. 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 the ASUS V7-series P5G43M!

The ASUS V7-series P5G43M is an all-in-one barebone system with a versatile home entertainment feature.

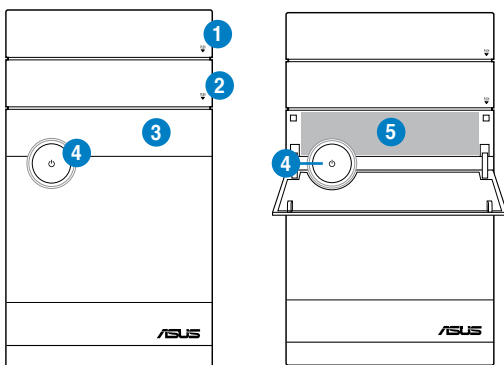
The system comes in a stylish casing and powered by the ASUS motherboard that supports the Intel® Core™2 Extreme / Core™2 Duo / Core™2 Quad / Pentium® dual-core / Celeron® processors in the 775-land package.

The system supports up to 8 GB of system memory using DDR2-1066/800/667 DIMMs. High-resolution graphics via integrated graphics controller or PCI Express x16 slot, Serial ATA, USB 2.0, and 8-channel audio feature the system and take you ahead in the world of power computing.

1.2 Front panel

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

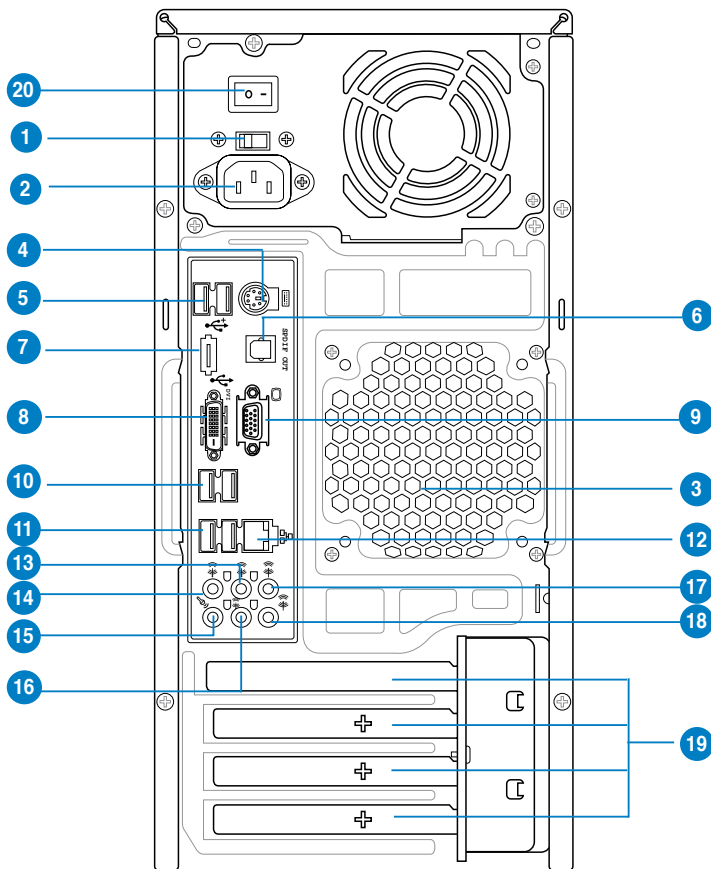
1.2.1 V7-P5G43M front panel



1. **Push button.** Press this button to open the front panel cover.
2. **Push button.** Press this button to open the front panel cover.
3. **Front panel cover.** These bays are for 5.25-inch IDE/SATA optical drivers and 3.5-inch hard disk drivers.
4. **Power button.** Press this button to turn the system on.
5. CF/MemoryStick[®]/,Memory Stick Pro[™] card slot Secure Digital[™]/Multimedia Card slot

1.3 Rear panel

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



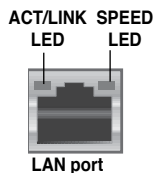
Do NOT cover the rear vent, and the ambient temperature is limited up to 35°C to prevent the system from overheating.

1. **Voltage selector.** This switch allows you to adjust the system input voltage according to the voltage supply in your area. See the section “Voltage selector” on page 1-7 before adjusting this switch.
2. **Power connector.** This connector is for the power cable and plug.
3. **Chassis fan vent.** This vent is for the fan that provides ventilation inside the system chassis.

4. **PS/2 mouse/keyboard port.** This 6-pin connector is for a PS/2 mouse and keyboard.
5. **USB 2.0 ports.** These 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
6. **Optical S/PDIF Out port.** This port connects an external audio output device via an optical S/PDIF cable.
7. **HDMI port.** This port is for a High-Definition Multimedia Interface (HDMI) connector, and is HDCP compliant allowing playback of HD DVD, Blu-Ray and other protected content.
8. **DVI-D Out port.** This port is for any DVI-D compatible device and is HDCP compliant allowing playback of HD DVD, Blu-Ray and other protected content.
9. **Video Graphics Adapter (VGA) port.** This 15-pin port is for a VGA monitor or other VGA-compatible devices.
10. **USB 2.0 ports.** These 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
11. **USB 2.0 ports.** These 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
12. **LAN (RJ-45) port.** This port allows gigabit connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications.

LAN port LED indications

Activity/Link		Speed LED	
Status	Description	Status	Description
OFF	No link	OFF	10 Mbps connection
ORANGE	Linked	ORANGE	100 Mbps connection
BLINKING	Data activity	GREEN	1 Gbps connection



13. **Rear Speaker Out port (black).** This port connects the rear speakers in a 4-channel, 6-channel, or 8-channel audio configuration.
14. **Side Speaker Out port (gray).** This port connects the side speakers in an 8-channel audio configuration.
15. **Microphone port (pink).** This port connects a microphone.
16. **Line Out port (lime).** This port connects a headphone or a speaker. In 4-channel, 6-channel, and 8-channel configuration, the function of this port becomes Front Speaker Out.
17. **Center/Subwoofer port (orange).** This port connects the center/subwoofer speakers.

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



Refer to the audio configuration table below for the function of the audio ports in 2, 4, 6, or 8-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
Orange	—	—	Center/Subwoofer	Center/Subwoofer
Black	—	Rear Speaker Out	Rear Speaker Out	Rear Speaker Out
Gray	—	—	—	Side Speaker Out

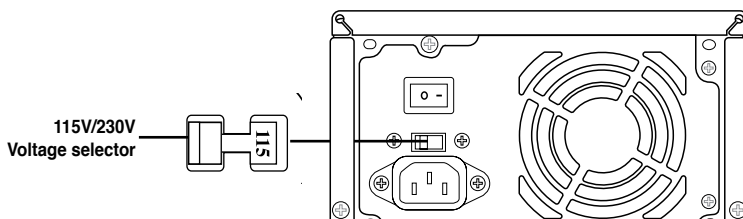
- 19. Expansion slot covers.** Remove these covers when installing expansion cards.
- 20. Power Switch.** This switch is for switching on/off the power supply unit.

Voltage selector

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

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

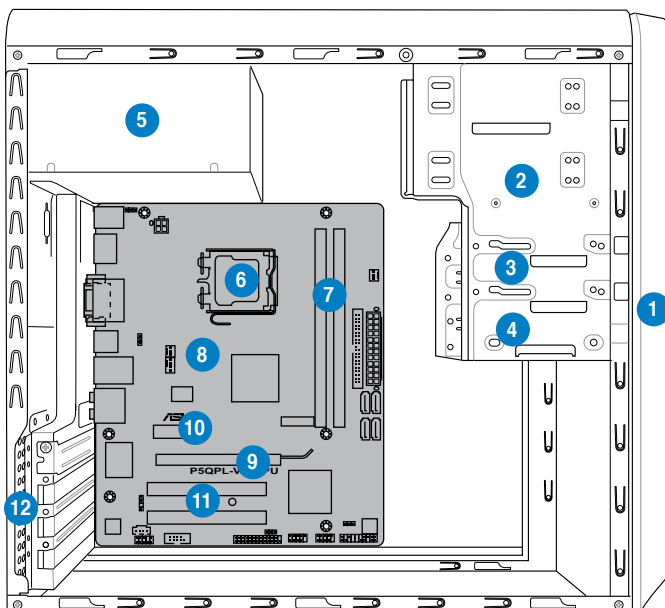
If the voltage supply in your area is 200-240 V, set this switch to 230 V.



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

1.4 Internal components

The illustration below is the internal view of the system when you remove the side cover and the power supply unit. The installed components are labeled for your reference.



- | | |
|---------------------------------|-------------------------|
| 1. Front panel cover | 8. ASUS motherboard |
| 2. 5.25-inch optical drive bays | 9. PCI Express x16 slot |
| 3. 3.5-inch drive bay | 10. PCI Express x1 slot |
| 4. Hard disk drive bay | 11. PCI slots |
| 5. Power supply unit | 12. Metal bracket lock |
| 6. CPU socket | |
| 7. DIMM sockets | |



Refer to the bundled Quick Installation Guide for installing additional system components and get assistance from professionals when you disassemble or assemble the system.

1.5 Qualified Vendors Lists (QVL)

DDR2-1066MHz capability

Vendor	Part No.	Size	SS/ DS	Brand	Chip NO.	Timing DIMM (BIOS)	Voltage	DIMM Support	
								A*	B*
Crucial	BL12864AA1065.8FE5	1024MB	SS	N/A	Heat-Sink Package			•	•
Crucial	CT25664AA1067.16FE1	2048MB	DS	Micron	9DJKH D9JKH	7-7-7-13		•	•
G.SKILL	F2-8500CL5D-2GBPI	2048MB(kit of 2)	SS	N/A	Heat-Sink Package	5-5-5-15	2.1V	•	•
G.SKILL	F2-8500CL5S-1GBPK	1024MB	DS	N/A	Heat-Sink PackageSN: 815130037562	5-5-5-15		•	•
G.SKILL	F2-8500CL5D-2GBPK	2048MB(Kit of 2)	DS	N/A	Heat-Sink Package	5-5-5-15		•	•
G.SKILL	F2-8500CL5D-4GBPI-B	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package			•	•
G.SKILL	F2-8500CL5D-4GBPI	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	5-5-5-15	2.0 ~ 2.1V	•	•
G.SKILL	F2-8500CL5D-4GBPK	4096MB(kit of 2)	DS	N/A	Heat-Sink Package	5-5-5-15		•	•
GEIL	GB22GB8500C5DC	1024MB	SS	GEIL	GL2L128M88BA25AB	5		•	•
GEIL	GB24GB8500C5QC	1024MB	SS	GEIL	GL2L128M88BA25AB	5		•	•
GEIL	GE22GB1066C5DC	1024MB	SS	GEIL	Heat-Sink Package	5		•	•
GEIL	GE24GB1066C5QC	1024MB	SS	GEIL	Heat-Sink Package	5		•	•
GEIL	GB24GB8500C5DC	2048MB	DS	GEIL	GL2L128M88BA25AB	5		•	•
GEIL	GE24GB1066C5DC	2048MB	DS	GEIL	Heat-Sink Package	5		•	•
GEIL	GX24GB8500C5UDC	4096MB(kit of 2)	DS	N/A	Heat-Sink Package	5		•	•
kingmax	KLED48F-B8KU6-NGES	1024MB	SS	kingmax	KKB8FNUXF-DXX-18A	6-6-6-24	1.9V	•	•
kingmax	KLEE88F-B8KU6-NNAS	2048MB	DS	kingmax	KKB8FNUXF-DXX-18A	6-6-6-24	1.9V	•	•
Kingston	KHX8500D2K2/1G	1024MB(Kit of 2)	SS	N/A	Heat-Sink Package	5-5-5-15	2.2V	•	•
Kingston	KHX8500D2K2/1GN(EPP)	1024MB(Kit of 2)	SS	Kingston	Heat-Sink Package	5-5-5-18	1.8V	•	•
Kingston	KHX8500D2K2/2GN(EPP)	1024MB	DS	Kingston	Heat-Sink Package	5-5-5-18	1.8V	•	•
Kingston	KVR1066D2N7/1G	1024MB	DS	Elpida	E5108AJBG-1J-E	7	1.8V	•	•
Kingston	KHX8500D2K2/2G	2048MB(Kit of 2)	DS	N/A	Heat-Sink Package	5-5-5-15	2.2V	•	•
Kingston	KHX8500D2K2/4G	2048MB(Kit of 2)	DS	N/A	Heat-Sink Package	5-5-5-15	2.2V	•	•
OCZ	OCZ2N10662GK(Epp)	2048MB(Kit of 2)	DS	N/A	Heat-Sink Package	5-5-5-15	21.V	•	•
OCZ	OCZ2N1066SR2DK(Epp)	2048MB(Kit of 2)	DS	OCZ	Heat-Sink Package 004820806001601-2	5-5-5-15	2.1 - 2.3V	•	•
OCZ	OCZ2P10664GK	2048MB	DS	N/A	Heat-Sink Package			•	•
OCZ	OCZ2F10664GK	4096MB(kit of 2)	DS	N/A	Heat-Sink Package	6-7-7-20	2.2V	•	•
OCZ	OCZ2RPR10664GK	4096MB(kit of 2)	DS	N/A	Heat-Sink Package	5-5-5-15	2.2V	•	•
PSC	AL8E8G73F-AE1	2048MB	DS	PSC	A3R1GE3FGF907M AT0FTAIWAN-G8E	5-5-5-12		•	•
Qimonda	HYS64T128000EU-1.9-C2	1024MB	DS	Qimonda	HYB18T1G800C2F-1.9FSS25253			•	•
Transcend	TX1066QLU-2GK	2048MB(Kit of 2)	SS	N/A	Heat-Sink Package	5		•	•
Transcend	TX1066QLU-4GK	4096MB(kit of 2)	DS	Transcend	Heat-Sink Package	5		•	•
AENEON	AXT760UD00-19DC97X	2048MB(Kit of 2)	DS		Heat-Sink Package			•	•
AENEON	AXT860UD20-19E	4096MB(Kit of 2)	DS	AENEON	Heat-Sink Package	6		•	•
Elixir	M2Y1G64TU88D5B-BD	1024MB	SS	Elixir	M2TU1G800E-BD	5		•	•
Mushkin	996612	2048MB(kit of 2)	DS	N/A	Heat-Sink Package	5-5-5-15	2.1V	•	•
Mushkin	996619	4096MB(kit of 2)	DS	N/A	Heat-Sink Package	5-5-5-15	2.1V	•	•

DDR2-800MHz capability

Vendor	Part No.	Size	SS/ DS	Brand	ChipNO.	Timing DIMM (BIOS)	Voltage	DIMM Support		
								A*	B*	C*
A-Data	M2GVD6G3H3160Q1E52	512MB	SS	ADATA	VD29608A8A-25EG20813			*	*	*
A-Data	M2OAD6G3H3160Q1E58	512MB	SS	ADATA	AD29608A8A-25EG80812			*	*	*
A-Data	AD2800E001GOU	2048MB(Kitof2)	SS	N/A	Heat-SinkPackage	4-4-4-12		*	*	*
A-Data	M2GVD6G314170Q1E58	1024MB	DS	ADATA	VD29608A8A-25EG80813			*	*	
A-Data	AD2800E002GOU	4096MB(Kitof2)	DS	N/A	Heat-SinkPackage	4-4-4-12	1.9~2.1V	*	*	*
Apacer	78.91GA0.9K5	512MB	SS	Apacer	AM4B5708JQS8E0751C	5		*	*	
Apacer	78.01GA0.9K5	1024MB	SS	Apacer	AM4B5808CQJS8E0749D	5		*	*	
Apacer	78.A1GA0.9K4	2048MB	DS	Apacer	AM4B5808CQJS8E0740E	5		*	*	*
Apacer	78.A1GA0.9K4	2048MB	DS	Apacer	AM4B5808CQJS8E0747D	5		*	*	
Corsair	CMX21024-6400	1024MB	DS	Corsair	Heat-SinkPackage			*	*	
Corsair	XMS2-6400	1024MB	DS	Corsair	Heat-SinkPackage	4		*	*	*
Corsair	XMS2-6400	1024MB	DS	Corsair	Heat-SinkPackage	5		*	*	
Corsair	CM2X2048-6400C5DHX	4096MB(Kitof2)	DS	N/A	Heat-SinkPackage	5		*	*	
Corsair	CM2X2048-6400C5	4096MB(Kitof2)	DS	N/A	Heat-SinkPackage	5		*	*	*
Crucial	BL12864AL80A.8FE5(EPP)	2048MB(Kitof2)	SS	N/A	Heat-SinkPackage	4-4-4-12		*	*	*
Crucial	BL25664AL80A.16FE5(EPP)	4096MB(Kitof2)	DS	N/A	Heat-SinkPackage	4-4-4-12		*	*	*
Crucial	BL25664AR80A.16FE5(EPP)	4096MB(Kitof2)	DS	N/A	Heat-SinkPackage	4-4-4-12		*	*	*
G.SKILL	F2-6400CL5D-1GBNQ	512MB	SS	G.SKILL	Heat-SinkPackageSN: 8151030036642	5-5-5-15		*	*	*
G.SKILL	F2-6400CL4D-2GBPK	1024MB	DS	G.SKILL	Heat-SinkPackage	4		*	*	*
G.SKILL	F2-6400CL5D-2GBNQ	1024MB	DS	G.SKILL	Heat-SinkPackage	5		*	*	*
G.SKILL	F2-6400CL4D-4GBPK	2048MB	DS	G.SKILL	Heat-SinkPackage	4		*	*	*
G.SKILL	F2-6400CL5D-4GBPQ	2048MB	DS	G.SKILL	Heat-SinkPackage	5		*	*	
G.SKILL	F2-6400CL6Q-16GMQ	4096MB	DS	N/A	Heat-SinkPackage	5		*	*	*
GEIL	GB22GB6400C4DC	1024MB	DS	GEIL	GL2L64M088BA30EB	5		*	*	*
GEIL	GB22GB6400C5DC	1024MB	DS	GEIL	GL2L64M088BA30EB	5		*	*	*
GEIL	GB24GB6400C4QC	1024MB	DS	GEIL	GL2L64M088BA30EB	4		*	*	*
GEIL	GB24GB6400C5QC	1024MB	DS	GEIL	GL2L64M088BA30EB	5		*	*	*
GEIL	GE22GB800C4DC	1024MB	DS	GEIL	Heat-SinkPackage	4		*	*	*
GEIL	GE22GB800C5DC	1024MB	DS	GEIL	Heat-SinkPackage	5		*	*	*
GEIL	GE24GB800C4QC	1024MB	DS	GEIL	Heat-SinkPackage	4		*	*	*
GEIL	GE24GB800C5QC	1024MB	DS	GEIL	Heat-SinkPackage	5		*	*	
GEIL	GX22GB6400DC	1024MB	DS	GEIL	Heat-SinkPackage	5		*	*	*
GEIL	GX22GB6400UDC	1024MB	DS	GEIL	Heat-SinkPackage	4		*	*	
GEIL	GB24GB6400C4DC	2048MB	DS	GEIL	GL2L128M88BA25AB	4		*	*	*
GEIL	GB24GB6400C5DC	2048MB	DS	GEIL	GL2L128M88BA25AB	5		*	*	*
GEIL	GB28GB6400C4QC	2048MB	DS	GEIL	GL2L128M88BA25AB	4		*	*	*
GEIL	GB28GB6400C5QC	2048MB	DS	GEIL	GL2L128M88BA25AB	5		*	*	*
GEIL	GE24GB800C4DC	2048MB	DS	GEIL	Heat-SinkPackage	4		*	*	*
GEIL	GE24GB800C5DC	2048MB	DS	GEIL	Heat-SinkPackage	5		*	*	*
GEIL	GE28GB800C4QC	2048MB	DS	GEIL	Heat-SinkPackage	4		*	*	
GEIL	GE28GB800C5QC	2048MB	DS	GEIL	Heat-SinkPackage	5		*	*	*
GEIL	GX22GB6400CUSC	2048MB	DS	GEIL	Heat-SinkPackage	4		*	*	
GEIL	GX22GB6400LX	2048MB	DS	GEIL	Heat-SinkPackage	5		*	*	*
GEIL	GX24GB6400DC	2048MB	DS	GEIL	Heat-SinkPackage	5		*	*	
Kingmax	KLDC28F-A8KI5	512MB	SS	Kingmax	KK48FF1XF-JFS-25A			*	*	
Kingmax	KKB8FFBXF-CFA-25U	1024MB	SS	Kingmax	KLDD48F-B8KB5			*	*	*
Kingmax	KLDE88F-B8KB5	2048MB	DS	kingmax	KKB8FFBXF-CFA-25U			*	*	*

(continued on the next page)

DDR2-800MHz capability

Vendor	Part No.	Size	SS/ DS	Brand	ChipNO.	Timing DIMM (BIOS)	Voltage	DIMM Support		
								A*	B*	C*
Kingston	KVR800D2N6/ 512	512MB	SS	Elpida	E5108AJBG-8E-E	6	1.8V	*	*	*
Kingston	KHX6400D2LLK2/1GN	1024M(Kitof2)	SS	Kingston	Heat-SinkPackage	4-4-4-12	2.0V	*	*	*
Kingston	KHX6400D2LL/1G	1024MB	DS	Kingston	Heat-SinkPackage	4-4-4-12	2.0V	*	*	*
Kingston	KVR800D2N5/1G	1024MB	DS	Kingston	D6408TR4CGL25USL3624 06PECXA	5	1.8V	*	*	*
Kingston	KVR800D2N6/1G	1024MB	DS	Elpida	E5108AJBG-8E-E			*	*	
Kingston	KHX6400D2K2/2G	2048MB(Kitof2)	DS	N/A	Heat-SinkPackage	5-5-5-15	2.0V	*	*	*
Kingston	461625.010819 PTGC	2048MB	DS	Kingston	KVR800D2N6/2G	6	1.8V	*	*	*
Kingston	KHX6400D2/2G	2048MB	DS	Kingston	Heat-SinkPackage	5	1.8V	*	*	*
Kingston	KVR800D2N5/2G	2048MB	DS	Elpida	E1108ACBG-8E-E	5	1.8V	*	*	*
Kingston	KVR800D2N6/4G	4096MB	DS	Elpida	E2108ABSE-8G-E	6		*	*	*
OCZ	OCZ2G800R22GK	1024MB	DS	OCZ	Heat-SinkPackage	5		*	*	*
OCZ	OCZ2P800R22GK	1024MB	DS	OCZ	Heat-SinkPackage	4		*	*	*
OCZ	OCZ2RPR8002GK	1024MB	DS	OCZ	Heat-SinkPackage	4		*	*	*
OCZ	OCZ2VU8004GK	1024MB	DS	OCZ	Heat-SinkPackage	6		*	*	*
OCZ	OCZ2SE8002GK	2048MB(Kitof2)	DS	N/A	Heat-SinkPackage	5-5-5-15	1.8V	*	*	*
OCZ	OCZ2F8004GK	2048MB	DS	N/A	Heat-SinkPackage	5		*	*	
PSC	AL7E8F73C-8E1	1024MB	SS	PSC	A3R1GE3CFF734MAA0E	5		*	*	
PSC	AL8E8F73C-8E1	2048MB	DS	PSC	A3R1GE3CFF734MAA0E	5		*	*	*
PSC	SHG772-AA3G	2048MB	DS	PSC	PL8E8F73C-8E1			*	*	*
PSC	XCP271A3G-A	2048MB	DS	PSC	PL8E8G73E-8E1			*	*	
Qimonda	HYS64T256020EU-2.5-C2	2048MB	DS	Qimonda	HY818T1G800C2F-2.5	5		*	*	*
Samsung	K4T51083QG-HCF7	512MB	SS	Qimonda	M378T6553GZS-CF7	6		*	*	*
Samsung	K4T1G084QQ-HCF7	1024MB	SS	Qimonda	M378T2863QZS-CF7	6		*	*	
Samsung	K4T1G084QQ-HCF7	2048MB	DS	Samsung	M378T5663QZ3-CF7	6		*	*	
Samsung	M378T5263AZ3-CF7	4096MB	DS	Samsung	K4T2G084QA-HCF7			*	*	*
Super Talent	T800UB1GC4	1024MB	DS	Super Talent	Heat-SinkPackage	4		*	*	
Transcend	TS64MLQ64V8J	512MB	SS	Micron	7HD22D9GMH	5		*	*	*
Transcend	JM800QLU-1G	1024MB	SS	Transced	TQ1243PCF8	5		*	*	
Transcend	TS128MLQ64V8U	1024MB	SS	ELPIDA	E1108ACBG-8E-E	5		*	*	*
Transcend	JM800QLJ-1G	1024MB	DS	Transced	TQ123PJF8F0801	5		*	*	
Transcend	JM800QLJ-1G	1024MB	DS	Transcend	TQ123YBF8T0747	5		*	*	*
Transcend	TS128MLQ64V8J	1024MB	DS	Micron	7HD22D9GMH	5		*	*	*
Transcend	JM800QLU-2G	2048MB	DS	Transced	TQ243PCF8	5		*	*	
Transcend	TS256MLQ64V8U	2048MB	DS	Elpida	E1108ACBG-8E-E	5		*	*	*
AENEON	AET76UD00-25DC08X	1024MB	SS	AENEON	AET03R250C0732	5		*	*	*
AENEON	AET86UD00-25DC08X	2048MB	DS	AENEON	AET03R25DC0732	5		*	*	*
ASINT	SLY2128M8-JGE	1024MB	SS	ASINT	DDRll1208-GE8115			*	*	*
ASINT	SLZ2128M8-JGE	2048MB	DS	ASINT	DDRll1208-GE8115			*	*	*
Century	28V0H8	1024MB	DS	Hynix	HY5PS12821CFP-S5	5		*	*	
Elixir	M2Y1G64TU88D5B-AC 0828.GS	1024MB	SS	Elixir	N2TU16800E-AC			*	*	*
ELIXIR	M2Y1G64TU8HB0B-25C	1024MB	DS	ELIXIR	N2TU51280BE- 25C802006Z1DV	5		*	*	*
Elixir	M2Y2G64TU8HD5B-AC 0826.SG	2048MB	DS	Elixir	N2TUG80DE-AC			*	*	*
MDT	MDT 512MB	512MB	SS	MDT	18D51280D-2.50726F	5		*	*	*
MDT	MDT 1024MB	1024MB	DS	MDT	18D51280D-2.50726E	5		*	*	
TAKEMS	TMS51B264C081-805EP	512MB	SS	takeMS	MS18T51280-2.5P0710	5		*	*	*
TAKEMS	TMS1GB264C081-805EP	1024MB	DS	takeMS	MS18T51280-2.5P0716	5		*	*	
UMAX	D48001GP3-63BJU	1024MB	DS	UMAX	U2S12D30TP-8E			*	*	*
UMAX	D48002GP0-73BCU	2048MB	DS	UMAX	U2S24D30TP-8E	5		*	*	*

DDR2-667MHz capability

Vendor	Part No.	Size	SS/ DS	Brand	ChipNO.	Timing DIMM (BIOS)	Voltage	DIMM Support		
								A*	B*	C*
A-Data	M20AD5H3J417011C53	2048MB	DS	ADATA	AD20908A8A-3EG30724			*	*	*
Apacer	78.91G92.9K5	512MB	SS	Apacer	AM4B5708JQS7E0751C	5		*	*	*
Apacer	AU512E667C5KBGC	512MB	SS	Apacer	AM4B5708GQJS7E06332F	5		*	*	*
Apacer	AU512E667C5KBGC	512MB	SS	Apacer	AM4B5708MIJS7E0627B	5		*	*	*
Apacer	78.01G90.9K5	1024MB	SS	Apacer	AM4B5808CQJS7E0751C	5		*	*	*
Apacer	AU01GE667C5KBGC	1024MB	DS	Apacer	AM4B5708GQJS7E0636B			*	*	*
Apacer	AU01GE667C5KBGC	1024MB	DS	Apacer	AM4B5708MIJS7E0627B	5		*	*	*
Apacer	AM4B5808CQJS7E0749B	2048MB	DS	Apacer	78.A1G90.9K4	5		*	*	*
Corsair	VS512MB667D2	512MB	DS	Corsair	MI10052532M8CEC			*	*	*
Corsair	VS1GB667D2	1024MB	DS	Corsair	MID095D62864M8CEC			*	*	*
Corsair	XMS2-5400	1024MB	DS	Corsair	Heat-SinkPackage	4		*	*	*
G.SKILL	F2-5400PHU2-2GBNT	2048MB(Kitof2)	DS	G.SKILL	D264M8CCF0815C7173S	5-5-5-15		*	*	*
G.SKILL	F2-5300CL5D-4GBMQ	4096MB(Kitof2)	DS	G.SKILL	Heat-SinkPackageSN: 8151030036559	5-5-5-15		*	*	*
GEIL	GX21GB5300SX	1024MB	DS	GEIL	Heat-SinkPackage	3		*	*	*
GEIL	GX22GB5300LX	2048MB	DS	GEIL	Heat-SinkPackage	5		*	*	*
GEIL	GX24GB5300LDC	2048MB	DS	GEIL	Heat-SinkPackage	5		*	*	*
Kingmax	KLCC28F-A8KB5	512MB	SS	Kingmax	KKEA88B4LAUG-29DX			*	*	*
Kingmax	KLCD48F-A8KB5	1024MB	DS	Kingmax	KKEA88B4LAUG-29DX			*	*	*
Kingston	KVR667D2N5/512	512MB	SS	Kingston	SO1237650821SBPD6408TR 4CGL25USL074905PECNB	5	1.8V	*	*	*
Kingston	KVR667D2N5/1G	1024MB	DS	Kingston	SO1280420822SOPD6408TR 4CGL25USL156304PECCA	5	1.8V	*	*	*
Kingston	KVR667D2N5/2G	2048MB	DS	Micron	7RE22D9HNL	5-5-5-15	2.0V	*	*	*
Kingston	KVR667D2N5/2G	2048MB	DS	ELPIDA	E1108ACBG-8E-E0813A90CC	5	1.8V	*	*	*
Micron	MT8HTF12864AY-667E1	1024MB	SS	Micron	D9HNL7ZE17	5		*	*	*
PSC	AL6E8E63J-6E1	512MB	SS	PSC	A3R12E3JFF717B9A00	5		*	*	*
PSC	AL7E8F73C-6E1	1024MB	SS	PSC	A3R1GE3CFF734MAA0J	5		*	*	*
PSC	AL6E8E63J-6E1	1024MB	DS	PSC	A3R12E3JFF717B9A01	5		*	*	*
PSC	AL8E8F73C-6E1	2048MB	DS	PSC	A3R1GE3CFF733MAA00	5		*	*	*
Samsung	M378T5263AZ3-CE6	4096MB	DS	Samsung	K4T2G084QA-HCE6			*	*	*
	T667UB1GV	1024MB	DS	SuperTalent	PG64M8-8000750	5		*	*	*
Transcend	JM667QLU-1G	1024MB	SS	Transced	TQ243PCF8T0838	5		*	*	*
Transcend	JM667QLJ-1G	1024MB	DS	Elpida	E5108AJBG-6E-E	5		*	*	*
Transcend	JM667QLU-2G	2048MB	DS	Transced	TQ243PCF8T0834	5		*	*	*
Twinmos	8D-A3JK5MPETP	512MB	SS	PSC	A3R12E3GEF633ACAOY	5		*	*	*
AENEON	AET860UD00-30DB08X	2048MB	DS	AENEON	AET03F30DB0730	5		*	*	*
Asint	SLX264M8-J6E	512MB	SS	Asint	DDRII6408-6E			*	*	*
ASINT	SLY2128M8-J6E	1024MB	SS	ASINT	DDRII1208-6E8115			*	*	*
Century	CENTURY512MB	512MB	SS	Hynix	HY5PS12821AFP-Y5			*	*	*
Century	CENTURY512MB	512MB	SS	Nanya	NT5TU64M8AE-3C			*	*	*
Century	CENTURY1G	1024MB	DS	Hynix	HY5PS12821AFP-Y5			*	*	*
Century	CENTURY1G	1024MB	DS	Nanya	NT5TU64M8AE-3C			*	*	*
ELIXIR	M2Y1G64TU8HA2B-3C	1024MB	DS	elixir	M2TU51280AE- 3C717095R28F	5	1.7-1.9v	*	*	*
Elixir	M2Y1G64TU8HBOB-3C	1024MB	DS	Elixir	N2TU51280BE- 3C639009W1CF	5		*	*	*
KINGBOX	512MB667MHz	512MB	SS	KINGBOX	EPD264082200-4			*	*	*
KINGBOX	DDRII1G667MHz	1024MB	DS	KINGBOX	EPD264082200-4			*	*	*
Leadmax	LRMP512U64A8-Y5	1024MB	DS	Hynix	HY5PS12821CFP-Y5C702AA	5		*	*	*

(continued on the next page)

DDR2 667MHz capability

Vendor	Part No.	Size	SS/ DS	Brand	ChipNO.	Timing DIMM (BIOS)	Voltage	DIMM Support	
								A*	C*
MDT	DDRII512PC667	512MB	DS	MDT	18D51201D-30726E	4		•	• •
MDT	MDT1024MB	1024MB	DS	MDT	18D51280D-30646E	4		•	• •
TAKEMS	TMS51B264C081-665AP	512MB	SS	takeMS	MS18T51280-3S0627D	5		•	• •
TAKEMS	TMS51B264C081-665QI	512MB	SS	takeMS	MS18T51280-3	5		•	• •
TAKEMS	TMS1GB264C081-665AE	1024MB	DS	takeMS	MS18T51280-3SEA07100	5		•	•
TAKEMS	TMS1GB264C081-665AP	1024MB	DS	takeMS	MS18T51280-3SP0717A	5		•	• •
TAKEMS	TMS1GB264C081-665QI	1024MB	DS	takeMS	MS18T51280-3	5		•	•
TEAM	TVDD1.02M667C4	1024MB	DS	TEAM	T2D648PT-6			•	•
UMAX	D46701GP3-63BJU	1024MB	DS	UMAX	U2S12D30YP-6E			•	• •
UMAX	D46702GP0-73BCU	2048MB	DS	UMAX	U2S24D30TP-6E	5		•	•



SS - Single-sided / DS - Double-sided

DIMM support:

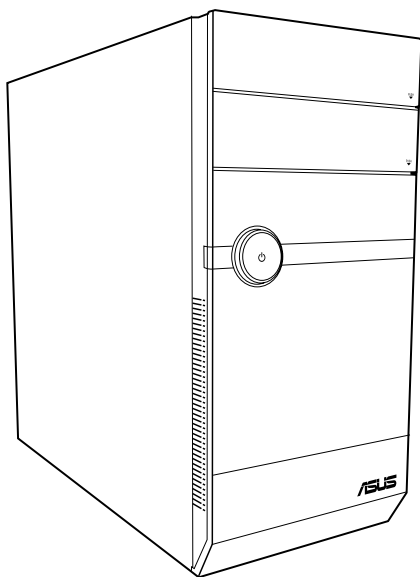
- A*: Supports one module inserted in any slot as Single-channel memory configuration.
- B*: Supports one pair of modules inserted into either the yellow slots or the black slots as one pair of Dual-channel memory configuration.
- C*: Supports four modules inserted into both the yellow and black slots as two pairs of Dual-channel memory configuration.



Visit the ASUS website at <http://support.asus.com> for the latest QVL.

Chapter 2

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



Starting up

2.1 Installing an operating system

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



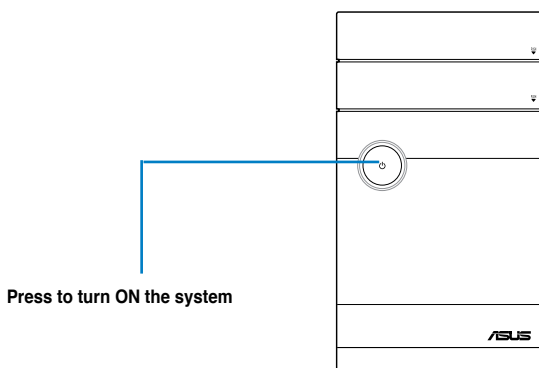
Motherboard settings and hardware options vary. Use the setup procedures presented in this chapter for general reference only. Refer to your OS documentation for more information.



- Windows XP OS setup cannot recognize Serial ATA hard drives in a RAID set without the necessary drivers. Use a RAID driver disk when installing Windows XP OS to a Serial ATA hard drive included in a RAID set.
- From the Windows XP setup screen, press F6 when prompted then follow succeeding screen instructions to install the SATA drivers.

2.2 Powering up

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



2.3 Support DVD information

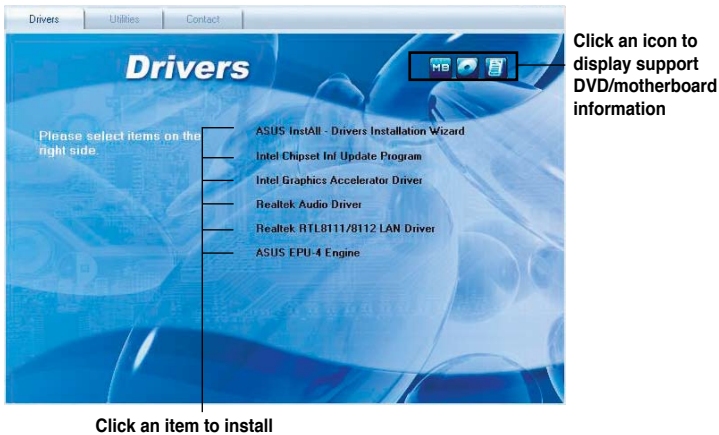
The support DVD that came with the system contains useful software and several utility drivers that enhance the system features.



- Screen display and driver options may not be the same for different operating system versions.
- The contents of the support DVD are subject to change at any time without notice. Visit the ASUS website at www.asus.com for updates.

2.3.1 Running the support DVD

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



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

ASUS InstAll- Drivers Installation Wizard

Launches the ASUS InstAll driver installation wizard.

Intel Chipset Inf Update Program

Installs the Intel® chipset Inf update program.

Intel Graphics Accelerator Driver

Installs the Intel® Graphics accerlerator driver.

Realtek Audio Driver

Installs the Realtek audio driver and application.

Realtek RTL8111/8112 LAN Driver

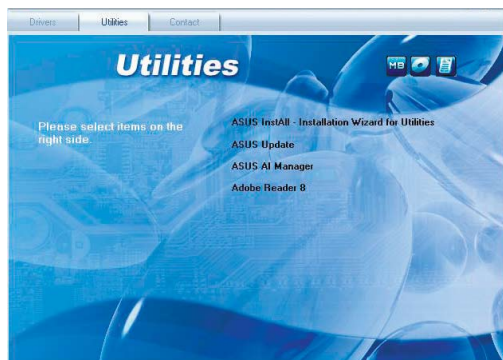
Installs the Realtek® RTL8111/8112 LAN Driver.

ASUS EPU-4 Engine

Installs the ASUS EPU-4 Engine.

2.3.2 Utilities menu

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



ASUS InstAll-Installation Wizard for Utilities

Installs all of the utilities through the Installation Wizard.

ASUS Update

Allows you to download the latest version of the BIOS from the ASUS website.



Before using the ASUS Update, make sure that you have an Internet connection so you can connect to the ASUS website.

ASUS AI Manager

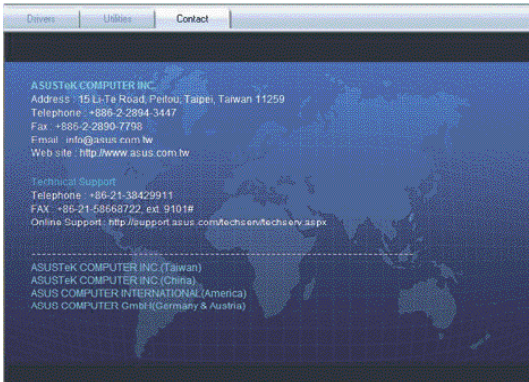
Installs the ASIS AI Manager.

Adobe Acrobat Reader 8

Installs the Adobe® Acrobat® Reader that allows you to open, view, and print documents in Portable Document Format (PDF).

2.3.3 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.



Technical support Form

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



Technupp - Notepad

File Edit Format View Help

ASUSTeK TECHNICAL SUPPORT REQUEST FORM DATE: _____

=====

ORIGINATOR DESCRIPTION

=====

COMPANY NAME : _____

PHONE (AREA) : _____ FAX # (AREA) : _____

EMAIL ADDRESS : _____

HARDWARE DESCRIPTION

=====

MOTHERBOARD :	REVISION #1 :	8005#401AD-
CPU BRAND :	SPEED(MHz) :	
GRAM BRAND :	SPEED(MHz) :	SIZE(MB) :
CACHE BRAND :	SPEED(MHz) :	SIZE(MB) :
HAED O/S :	MODEL NAME :	SIZE(MB) :
COSROM BRAND :	MODEL NAME :	SIZE(MB) :
BACKUP BRAND :	MODEL NAME :	SIZE(MB) :
OTHER STORAGE :	MODEL NAME :	SIZE(MB) :

ADD-IN CARD DESCRIPTION (MODEL NAME/VENDOR)

=====

(E)ISA SLOT 1 :	
(E)ISA SLOT 2 :	
(E)ISA SLOT 3 :	
(E)ISA SLOT 4 :	
PCI-E SLOT 1 :	
PCI-E SLOT 2 :	
PCI-E SLOT 3 :	
PCI-E SLOT 4 :	
PCI SLOT 1 :	
PCI SLOT 2 :	
PCI SLOT 3 :	
PCI SLOT 4 :	
PCI SLOT 5 :	

Filelist

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



Filelist - Notepad

File Edit Format View Help

File list for the included support software for P5K-VM motherboard

=====

File Name	Description

-Drivers	
-Chipset	
-i8p	-Intel(x) chipset software installation utility V8.1.0.1013 for Windows
-VGA	
-xp	-Intel(x) Graphics Media Accelerator Driver V8.14.10.4820 for Windows x
-vista	-Intel(x) Graphics Media Accelerator Driver V7.14.10.1215 for Windows 7
-Audio	
	-Realtek ALC883 Audio driver V5.10.0.5166 for Windows XP & 64bit xp, Vista
	-Realtek ALC883 Audio driver V6.0.1.5371 for Windows Vista and Windows
-Lan	
-8056	
-windows	
-xp_2003_64bit	-Marvell yukon gigabit ethernet driver V8.56.6.3 for Windows xp(Vista)
-VCT	-Marvell yukon VCT Application V2.11.1.3 for Windows xp/ 64bit xp
-i802	-Marvell i802 Driver For XP/Vista V2.02
-Client_32	-Marvell yukon Client 32 driver V7.03
-OOI	-Marvell OOI Driver V7.03
-Network	-Marvell yukon network 4.0 driver V7.03
	-Marvell yukon network 5.1.0 driver V7.03
-Linux	-SCO Unifire 7.1.x driver and openmfx 8.0
-RIS	-Marvell RIS driver V8.56.1.3 for Windows xp
-Vista	-Marvell RIS driver V8.56.1.3 for Windows 64bit xp
	-Marvell yukon gigabit ethernet driver V8.56.4.3 for Windows 32/64bit

2.4 Software information

Most of the applications in the support DVD 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.

2.4.1 ASUS AI Manager

ASUS AI Manager is a utility which gives you quick and easy access to frequently-used applications.

Installing AI Manager

To install AI Manager on your computer:

1. Place the support CD in the optical drive. If Autorun is enabled, the Drivers installation wizard appears.



If Autorun is not enabled in your computer, locate the setup.exe file from the ASUS AI Manager folder in the support CD. Double-click the setup.exe file to start installation.

2. Click the **Utilities** tab, then click **ASUS AI Manager**.
3. Follow the screen instructions to complete the installation.

Launching AI Manager

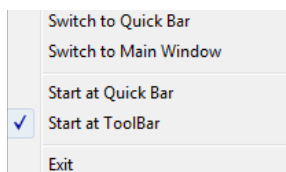
To launch the AI Manager from the Windows® desktop, click **Start > All Programs > ASUS > AI Manager 1.xx.xx > AI Manager**. The AI Manager quick bar appears on the desktop.



After launching the application, the AI Manager icon appears in the Windows® taskbar.






Right-click this icon to switch between quick bar and main window, and to launch the AI Manager either from the quick bar or taskbar.



AI Manager quick bar

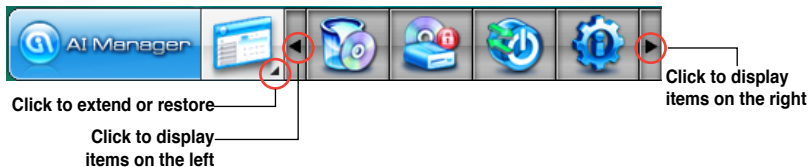
The AI Manager quick bar saves the desktop space and allows you to launch the ASUS utilities or display system information easily. Click any of the Main, My Favorites, Support or Information tab to display the menu's contents.



Click the Maximize/restore button  to switch between full window and quick bar. Click the Minimize button  to keep the AI Manager on the taskbar. Click the Close button  to quit the AI Manager.

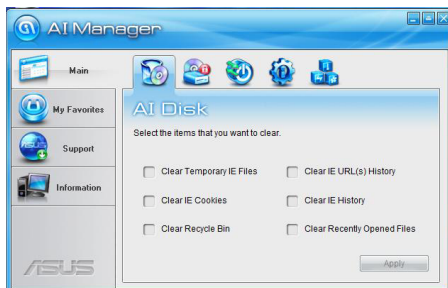
Main

The Main menu contains five utilities: **AI Disk**, **AI Security**, **AI Boosting**, **AI Gear**, and **AI Probe**. Click the arrow on the Main menu icon to browse through the utilities in the main menu.



AI Disk

AI Disk allows you to easily clear temporary IE files, IE cookies, IE URLs, IE history, or the Recycle Bin. Click the AI Disk icon on the quick bar to display the full AI Disk window and select the items you want to clear. Click **Apply** when done.



AI Security

AI Security enables you to set a password to secure your devices, such as USB flash disks and CD/DVD disks, from unauthorized access.



To lock a device:

1. When using AI Security for the first time, you are asked to set a password. Enter a password with at most 20 alphanumeric characters.
2. Confirm the password.
3. Key in the password hint (recommended).
4. When done, click **Ok**.
5. Select the device you want to lock, then click **Apply**.
6. Key in the password you have set previously, then click **Ok**. The selected device is locked and not accessible.



To unlock the selected device:

1. Uncheck the checkbox of the selected device, then click **Apply**.
2. Key in the password you have set previously, then click **Ok**. The selected device is unlocked.

To change password:

Click **Change Password**, then follow the on-screen instructions to change password.

AI Booting

AI Booting allows you to specify the boot device priority sequence.



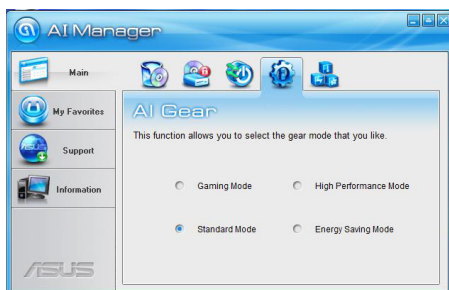
To specify the boot sequence:

1. Select a device, then click on the left/right button to specify the boot sequence.
2. When done, press **Apply**.

AI Gear

AI Gear provides four system performance modes that allows you to select the best settings for your computing needs. This utility adjusts the processor frequency and voltage to minimize system noise and power consumption.

Select your preferred mode, then click **Yes** to confirm your selection.



AI Probe

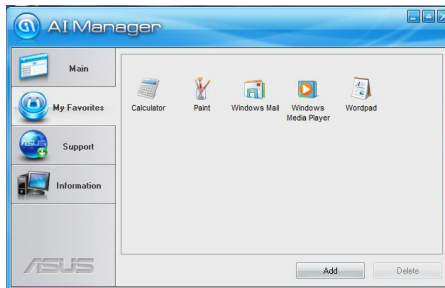
AI Probe automatically detects and displays the motherboard and CPU temperatures, CPU fan speed, and the voltage output. You can adjust the values as you need.

Click the **Temperature**, **Voltage**, or **Fan Speed** tab, then select an item to enable and change the value by dragging the bar.



My Favorites

My Favorites allows you to add applications that you frequently use, saving you from searching for the applications throughout your computer.



To add an application:

1. Click **Add**, then locate the application you want to add to **My Favorites**.
2. Click **Open** on the file location window. The application is added to **My Favorites** list.

Right click on the application icon to launch, delete, or rename the selected application. You can also double click to launch the selected application.

Support

Click any links on the **Support** window to go to the ASUS website, technical support website, download support website, or contact information.



Information

Click the tab on the **Information** window to see the detailed information about your system, motherboard, CPU, BIOS, installed device(s), and memory.



2.4.2 ASUS Express Gate

ASUS Express Gate is an instant-on environment that gives you quick access to the Internet. Within a few seconds of powering on your computer, you will be at the Express Gate menu where you can start the web browser, Skype, or other Express Gate softwares.

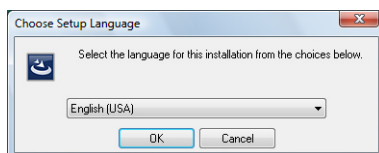
Installing ASUS Express Gate



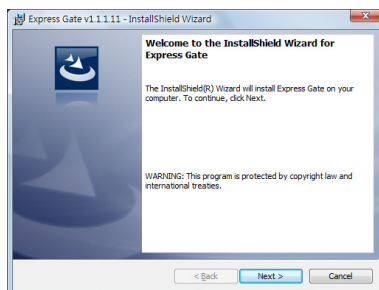
- ASUS Express Gate supports installation on SATA HDDs in **IDE mode** only.
- ASUS Express Gate supports HDDs connected to **motherboard chipset-controlled onboard SATA ports** only. All onboard extended SATA ports and external SATA ports are NOT supported.
- ASUS Express Gate supports installation on USB HDDs and Flash drives, but the software performance may be slower than installed on SATA HDDs.

To install Express Gate on your computer

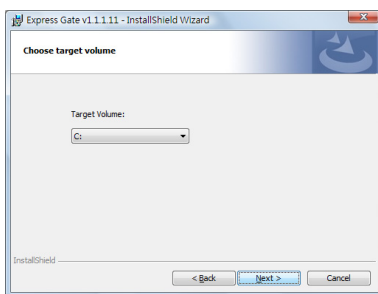
1. Place the support CD/DVD to the optical drive. The **Drivers** installation tab appears if your computer has enabled Autorun feature.
2. Click the **Utilities** tab, then click **ASUS Express Gate Installer**.
3. Select the language for installation and click **OK**.
4. The InstallShield Wizard for Express Gate appears. Click **Next**



to continue.



5. Select the target disk volume for you to install Express Gate. If you have multiple volumes and OS installed in your hard drive, it is recommended to install Express Gate in **Volume C**. Click **Next** to continue.
6. Follow the screen instructions to complete installation.



The First Screen

Express Gate's first screen appears within a few seconds after you power on the computer. From here, you can immediately start the web browser or Skype.

You can also choose to continue booting normally (e.g. to your installed OS such as Windows), enter BIOS setup, or power off.



If you don't make any selection, Express Gate will automatically exit and boot to your normal OS after a certain amount of time. The timer countdown is shown on-screen inside the "boot to OS" button. As you move the mouse or type a key, the countdown stops and the timer disappears, so you can take your time to make a selection.

The Express Gate Environment

The very first time you enter the Express Gate environment (by launching either web or Skype from the first screen), a first time wizard will guide you through basic Express Gate configurations. Basic configurations include language, date and time and screen resolution.



Once inside the Express Gate environment, click on the icons on the LaunchBar, by default at bottom of the screen, to launch or switch between softwares. You can re-arrange, re-size and move windows. Bring a window to the foreground by clicking within it or by clicking on its corresponding software icon. Re-size a window by dragging any of its four corners. Move a window by dragging its title bar.

Besides using the LaunchBar, you can also switch between softwares by pressing <Alt> +<Tab> on the keyboard. You can also right-click anywhere on the desktop to bring up a menu of softwares.

The red triangle on an software icon in the LaunchBar denotes that the software is already running. This means that you can switch to it without any delay. In the rare case where an software stops responding, right-click on its icon to force close it.

Knowing the Express Gate hot-keys

Here is a list of common-used hot-keys for Express Gate.

In the First Screen:

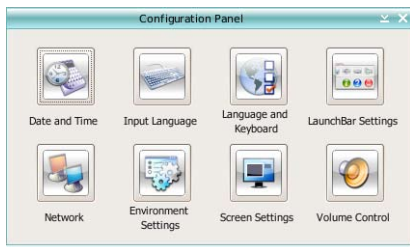
Key	Function
PAUSE/BREAK	Power-off
ESC	Continue to boot OS
DEL	Enter BIOS setup
F8	Enter Boot selection pop-up

In the Express Gate Environment:

Key	Function
<Alt> + <Tab>	Switch between softwares
<Ctrl> + <Alt> + 	Bring up Power-Off dialog box
<Ctrl> + <Alt> + <Print Screen>	Save screen snapshot as picture to file

Using the Configuration Panel

Use the configuration panel to change various Express Gate settings.



Click on an icon to open a particular configuration tool. The following tools are available:

- **Date and Time:** set current date and time as well as time zone.
- **Input Method:** choose your preferred input language and method.
- **Language and Keyboard:** choose your language and keyboard preferences.
- **LaunchBar Settings:** customize your LaunchBar (where it docks, whether it auto-hides, etc.)
- **Network:** Specify how your computer connects to the Internet. Enable the network port. LAN1 refers to the RJ-45 network port on your computer. Also specify whether to use DHCP (most common) or static IP. For PPPoE and wireless (optional), set the login credentials (user name, password, SSID, etc.) as well.
- **Environment Settings:** This function allows you to clear the Express Gate settings, as well as any personal information stored by the web browser (Bookmarks, Cookies, History, etc.). The user data will be reset to the original default configuration.

After you click **Restore System**, a confirmation dialog box will open. If you click "Yes" in the confirmation dialog box, your system will immediately restart and then re-enter Express Gate to finish clearing the settings. This is also useful in the rare case where settings might become corrupted.



The first-time Wizard will run again when you enter the Express Gate environment after clearing its settings.

- **Screen Settings:** Choose the most optimal screen resolution for your display.
- **Volume Control:** Control the volume for your speaker output, microphone input, etc.

Using the LaunchBar

The LaunchBar has several system icons that show you various system statuses and let you configure individual Express Gate settings. The LaunchBar can be configured to auto-hide, if you want more screen space for the softwares. It can also be configured to dock on any of the four sides of the screen.



Starts the **Web Browser** for quick access to the World Wide Web.



Opens the **Online Games** web page.



Starts the **Photo Manager** album / organizer tool.



Starts the **Chat** instant messaging tool.



Start the **Skype** software, which lets you call other people on Skype for free, as well as offering affordable, high quality voice communications to phones all over the world.



Opens **Configuration Panel**, which lets you specify network settings and other preferences.

In the rare case that one of the above softwares stops responding, you can right-click on its icon and then select **Close** to force it to close.

The smaller icons on the right side of the LaunchBar are:



Click on this icon to open the **File Manager** window, which lets you conveniently access the files on a USB drive. If a USB device is detected, the icon contains a green arrow.



ASUS Express Gate supports file uploading from SATA HDDs, ODDs and USB drive and downloading to USB drives only.



Shows network status; click to configure network.



Shows mute status; click to change volume.



Click to choose input language and method as well as keyboard shortcuts (Ctrl-Space by default).



Click to change LaunchBar options (auto-hide, docking position, etc).



Click to show the “ASUS Utility” panel (if supported).



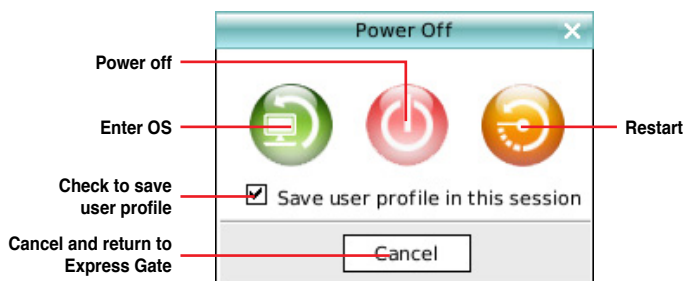
Click to show “About Express Gate.”



Click to open Express Gate Help.



Click to bring up power options window to boot to OS, restart or power down. This window is also shown when you press **Ctrl-Alt-Del** on the keyboard.



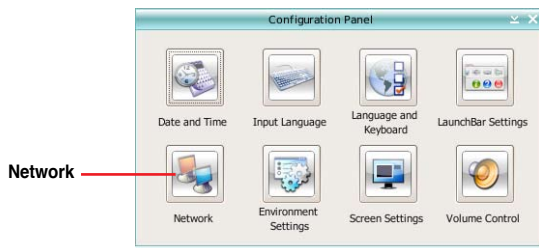
How Do I Get on to the Internet

If Internet doesn't seem to be working in the Express Gate environment, check the following:

1. Open the Configuration Panel.

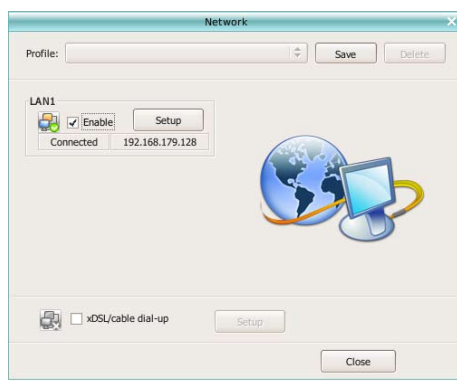


2. Open Network.



3. Make the proper network configurations.

Each network interface is enabled immediately when you check the box next to it.



- If you use a network cable connected to a home router (which is then connected to your DSL/cable modem), enable LAN1.
- The most common scenario is for your computer to automatically obtain network settings (i.e. DHCP). If this is the case, you don't need to click **Setup** for any LAN port. If this is not the case, click **Setup** to configure the static IP settings manually.
- If you use a network cable connected directly to your DSL/cable modem (no router in between), click **Setup** for xDSL/cable dial-up. This method is also referred to as PPPoE. Choose whether the DSL/cable modem is connected to your computer's LAN port. Then enter the username and password for your dial-up account.

Click **OK** to enable xDSL/cable dial-up and establish the PPPoE connection. When PPPoE is enabled, the port it uses will automatically be unchecked and grayed out.

Using the Online Games

Express Gate introduces a **Splashtop Gaming** portal site, which provides many interesting games in different categories. The game titles are updated from time to time. Enjoying these great games is just as easy as it gets!

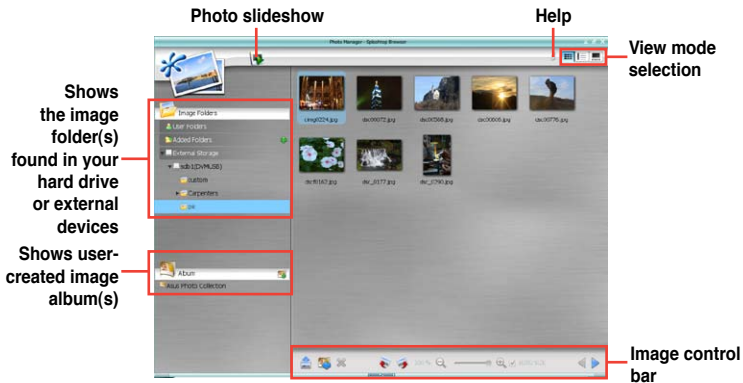


You have to enable the network connection to run the Online Games feature.



Using the Photo Manager

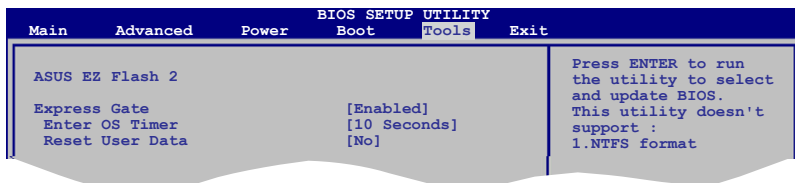
Express Gate provides a easy-to-use **Photo Manager** that allows you to view pictures stored in your hard drive or external storage devices (such as USB dongles, card readers, or optical disks). You can view pictures in thumbnail view; in an enlarged view individually; in a filename/data list view; or play them in a slideshow with background music and fancy transition effects. JPEG, GIF, BMP, and PNG formats are supported. Refer to the on-line Help for detailed software operation.



ASUS Express Gate supports HDDs connected to **motherboard chipset-controlled onboard SATA ports** only. All onboard extended SATA ports and external SATA ports are NOT supported.

Configuring Express Gate in BIOS Setup

Enter BIOS setup by pressing DEL key after powering on or by clicking on the BIOS setup icon on Express Gate's first screen. Express Gate configuration options are under the **Tools** menu. Refer to section 4.7.2 **Express Gate** for details.

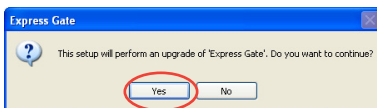


Updating Express Gate

You may update your existing Express Gate software to new versions. New versions of the Express Gate software will be released regularly, adding refinements or new applications. You can find original version of the software on the support DVD or download new versions from the ASUS support website.

To update Express Gate

1. Double-click the Express Gate setup file to start software update.
2. A software update confirmation dialog box appears. Click **Yes** to continue.
3. The InstallShield Wizard for Express Gate appears. Click **Next** to continue.
4. Follow the screen instructions to complete installation.

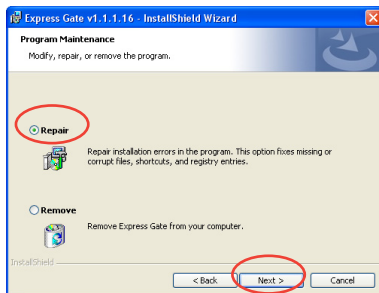


Repairing Express Gate

In case Express Gate cannot start normally, you can repair Express Gate by reinstalling the software or using the repairing utility.

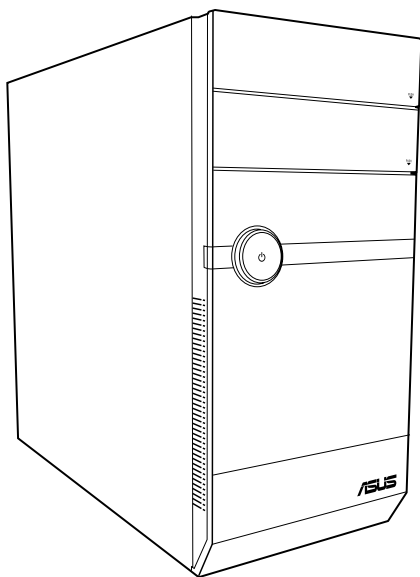
To repair Express Gate

- Click **Start > All Programs > Express Gate > Express Gate Installer > Repair this software**.
- OR
- Double click the Express Gate setup file, choose **Repair**, and click **Next** to continue.



Chapter 3

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

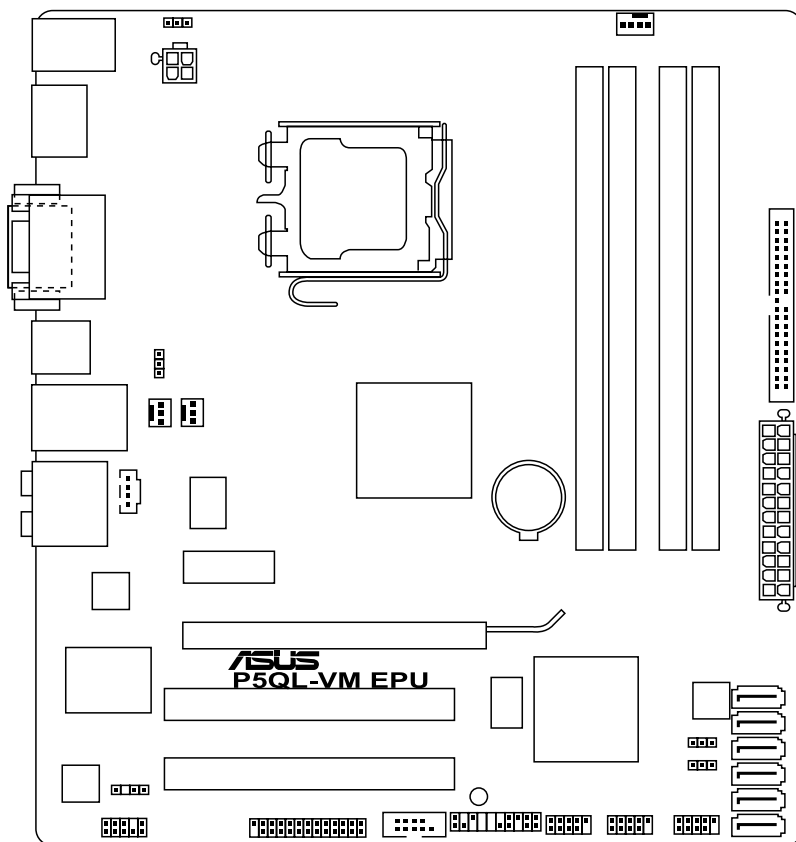


Motherboard info

3.1 Introduction

The Vintage V7-series P5G43M barebone system comes with an ASUS motherboard. This chapter provides technical information about the motherboard for future upgrades or system reconfiguration.

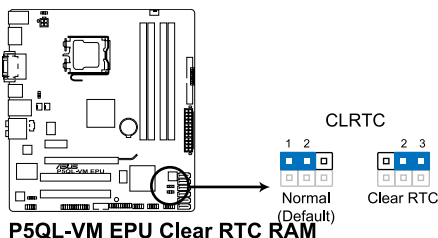
3.2 Motherboard layout



3.3 Jumpers

1. Clear RTC RAM (3-pin 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 CMOS, which include system setup information such as system passwords.



To erase the RTC RAM:

1. Turn OFF the computer and unplug the power cord.
2. 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.
3. Plug the power cord and turn ON the computer.
4. Hold down the key during the boot process and enter BIOS setup to re-enter data.



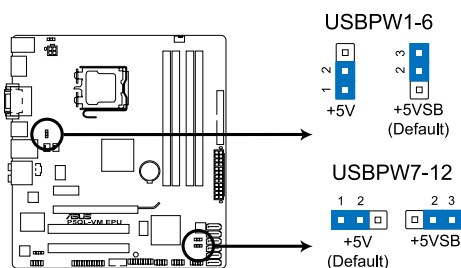
Except when clearing the RTC RAM, never remove the cap on CLRTC jumper default position. Removing the cap will cause system boot failure!



- If the steps above do not help, remove the onboard battery and move the jumper again to clear the CMOS RTC RAM data. After the CMOS clearance, reinstall the battery.
- You do not need to clear the RTC when the system hangs due to overclocking. For system failure due to overclocking, use the CPU Parameter Recall (C.P.R.) feature. Shut down and reboot the system, then the BIOS automatically resets parameter settings to default values.
- Due to the chipset limitation, AC power off is required before you use the C.P.R. function. You must turn off and on the power supply or unplug and plug the power cord before rebooting the system.

2. USB device wake-up (3-pin USBPW1-6, USBPW7-12)

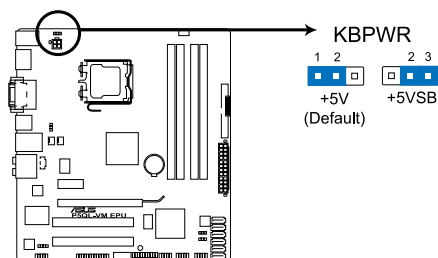
Set the jumpers to +5V to wake up the computer from S1 sleep mode (CPU stopped, DRAM refreshed, system running in low power mode) using the connected USB devices. Set to +5VSB to wake up from S3 and S4 sleep modes (no power to CPU, DRAM in slow refresh, power supply in reduced power mode). USBPW1-6 is for the rear USB ports. USBPW7-12 is for the internal USB connectors that you can connect to additional USB ports.



P5QL-VM EPU USB Device Wake Up

3. Keyboard power (3-pin KBPWR)

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



P5QL-VM EPU Keyboard Power Setting

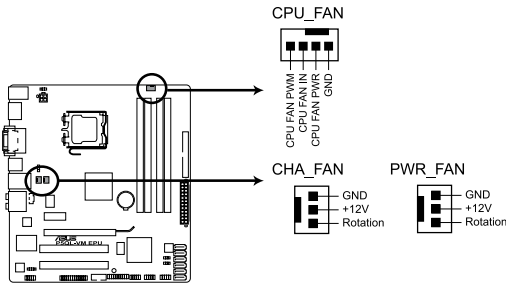
3.4 Connectors

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

The fan connectors support cooling fans of 350 mA~2000 mA (24 W max.) or a total of 1 A~7 A (84 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.



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!



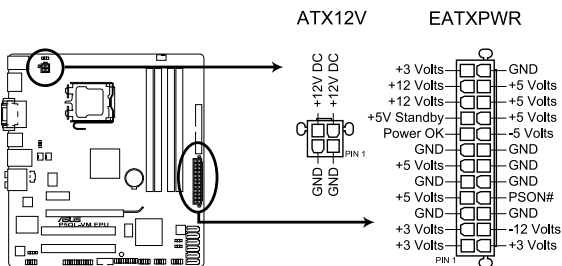
P5QL-VM EPU fan connectors



Only the 4-pin CPU fan connector supports the ASUS Q-FAN feature.

2. ATX power connectors (24-pin EATXPWR, 4-pin ATX12V)

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



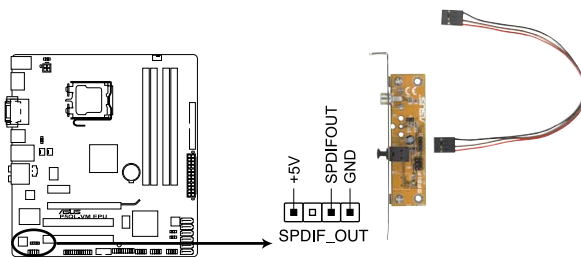
P5QL-VM EPU ATX power connectors



- For a fully configured system, we recommend that you use a power supply unit (PSU) that complies with ATX 12 V Specification 2.0 (or later version) and provides a minimum power of 400 W.
- Do not forget to connect the 4-pin ATX12V power plug. Otherwise, the system will not boot.
- We recommend that you use a PSU with a higher power output when configuring a system with more power-consuming devices or when you intend to install additional devices. The system may become unstable or may not boot up if the power is inadequate.

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

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



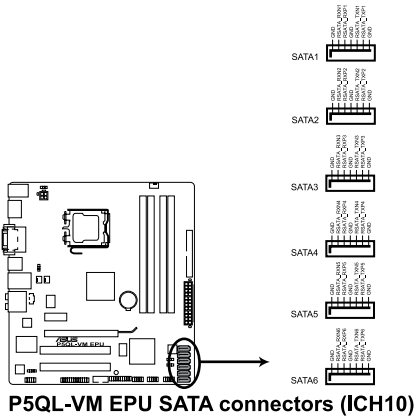
P5QL-VM EPU Digital audio connector



The S/PDIF module is purchased separately.

4. Serial ATA connectors (7-pin SATA1-6)

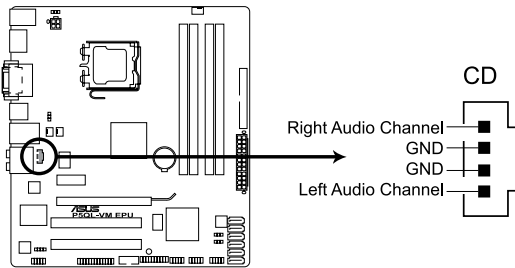
These connectors are for the Serial ATA signal cables for Serial ATA hard disk drives.



Install the Windows® XP Service Pack 2 or later version before using Serial ATA.

5. Optical drive audio connector (4-pin CD)

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



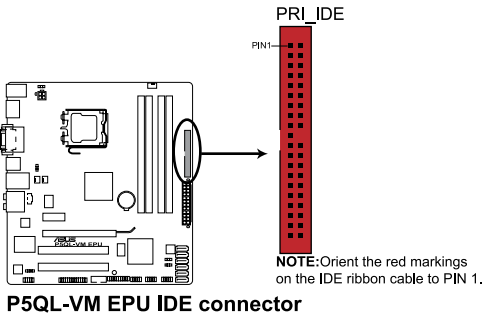
6. IDE connector (40-1 pin PRI_IDE)

The onboard IDE connector is for the Ultra DMA 133/100/66 signal cable. 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.

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



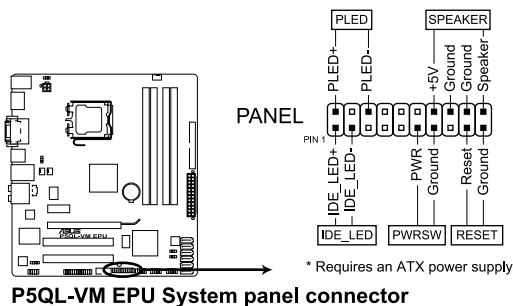
- Pin 20 on the IDE connector is removed to match the covered hole on the Ultra DMA cable connector. This prevents incorrect insertion when you connect the IDE cable.
- Use the 80-conductor IDE cable for Ultra DMA 133/100/66 IDE devices.



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

7. System panel connector (20-8 pin PANEL)

This connector supports several chassis-mounted functions.



- **System power LED (2-pin PLED)**

This 2-pin connector is for the system power LED. Connect the chassis power LED cable to this connector. The system power LED lights up when you turn on the system power, and blinks when the system is in sleep mode.

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

This 2-pin connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. The IDE LED lights up or flashes when data is read from or written to the HDD.

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

This 4-pin connector is for the chassis-mounted system warning speaker. The speaker allows you to hear system beeps and warnings.

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

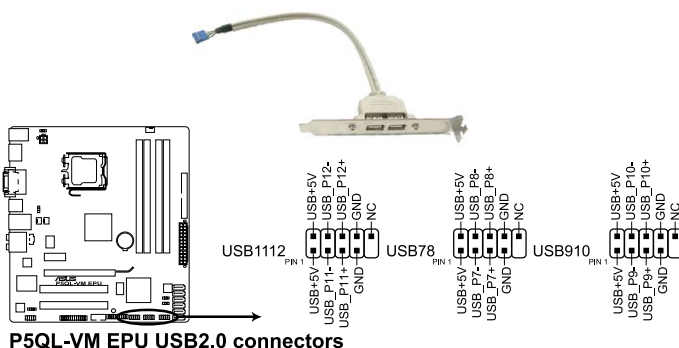
This connector is for the system power button. Pressing the power button turns the system on or puts the system in sleep or soft-off mode depending on the BIOS settings. Pressing the power switch for more than four seconds while the system is ON turns the system OFF.

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

This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power.

8. USB connectors (10-1 pin USB78, USB910, USB1112)

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



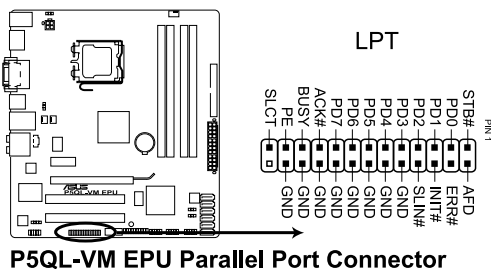
Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard!



The USB module cable is purchased separately.

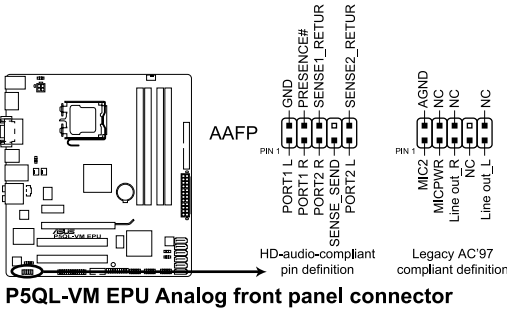
9. LPT connector (26-1 pin LPT)

The LPT (Line Printing Terminal) connector supports devices such as a printer. LPT standardizes as IEEE 1284, which is the parallel port interface on IBM PC-compatible computers.



10. Front panel audio connector (10-1 pin AAFP)

This connector is for a chassis-mounted front panel audio I/O module that supports either HD Audio or legacy AC'97 audio standard. Connect one end of the front panel audio I/O module cable to this connector.



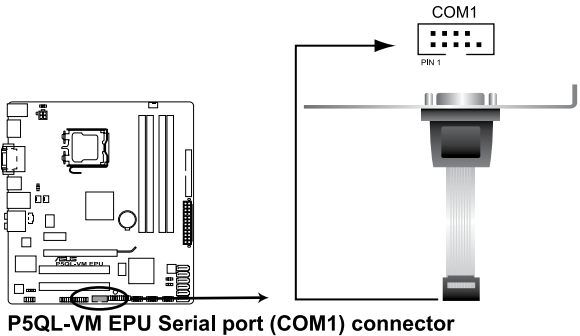
We recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high-definition audio capability.

11. Serial port connectors (10-1 pin COM1)

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

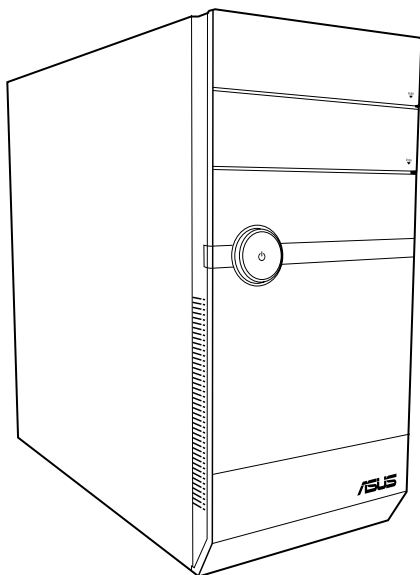


The serial port bracket (COM1) is purchased separately.



Chapter 4

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



BIOS setup

4.1 Managing and updating your BIOS



Save a copy of the original motherboard BIOS file to a USB flash disk in case you need to restore the BIOS in the future. Copy the original motherboard BIOS using the ASUS Update utility.

4.1.1 ASUS Update utility

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



- ASUS Update requires an Internet connection either through a network or an Internet Service Provider (ISP).
 - This utility is available in the support DVD that comes with the motherboard package.
-

Installing ASUS Update

To install ASUS Update:

1. Place the support DVD in the optical drive. The **Drivers** menu appears.
2. Click the **Utilities** tab, then click **Install ASUS Update**.
3. Follow the onscreen instructions to complete the installation.



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

Updating the BIOS

To update the BIOS:

1. From the Windows® desktop, click **Start > Programs > ASUS > ASUSUpdate > ASUSUpdate** to launch the ASUS Update utility.
2. From the dropdown list, select any of the updating process:
Updating from the Internet
 - a. Select **Update BIOS from the Internet**, then click **Next**.
 - b. Select the ASUS FTP site nearest you to avoid network traffic, or click **Auto Select** then click **Next**.
 - c. From the FTP site, select the BIOS version that you wish to download then click **Next**.



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

Updating from a BIOS file

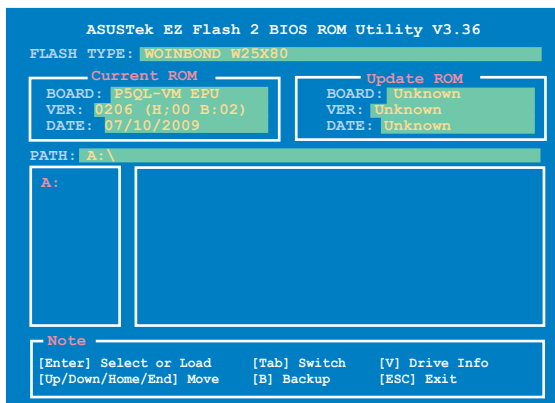
- a. Select **Update BIOS from a file**, then click **Next**.
 - b. Locate the BIOS file from the **Open** window, then click **Open**.
3. Follow the onscreen instructions to complete the updating process.

4.1.2 ASUS EZ Flash 2 utility

The ASUS EZ Flash 2 feature allows you to update the BIOS without using an OS-based utility.

To update the BIOS using EZ Flash 2:

1. Insert the USB flash disk that contains the latest BIOS file to the USB port, then launch EZ Flash 2 in any of these two ways:
 - Press **<Alt> + <F2>** during POST.
 - Enter the BIOS setup program. Go to the **Tools** menu to select **EZ Flash 2** and press **<Enter>** to enable it. Press **<Tab>** to switch between drives until the correct BIOS file is found.



4. When the correct BIOS file is found, EZ Flash 2 performs the BIOS update process and automatically reboots the system when done.



- Only a USB flash disk with **FAT 32/16** format and single partition can support the ASUS EZ Flash 2 utility.
- Do not shut down or reset the system while updating the BIOS to prevent system boot failure!

4.1.3 ASUS CrashFree BIOS

The ASUS CrashFree BIOS 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 restore a corrupted BIOS file using the motherboard support DVD or a removable device that contains the updated BIOS file.



- Before using this utility, rename the BIOS file in the removable device into G1P5G43.ROM.
 - The BIOS file in the support DVD may not be the latest version. Download the latest BIOS file from the ASUS website at www.asus.com.
 - The removable device that ASUS CrashFree BIOS support vary with motherboard models. For motherboards without the floppy connector, prepare a USB flash disk before using this utility.
-

Recovering the BIOS

To recover the BIOS:

1. Turn on the system.
2. Insert the support DVD to the optical drive or the removable device that contains the BIOS file to the USB port or to the floppy disk drive, if supported.
3. The utility automatically checks the devices for the BIOS file. When found, the utility reads the BIOS file and starts flashing the corrupted BIOS file.
4. Turn off the system after the utility completes the updating process and turn on again.



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



Ensure to load the BIOS default settings to ensure system compatibility and stability. Select the Load Setup Defaults item under the Exit menu. Refer to section **5.8 Exit Menu** for details.

4.2 BIOS setup program

Use the BIOS Setup program to update the BIOS or configure its parameters. The BIOS screens include navigation keys and brief online help to guide you in using the BIOS Setup program.

Entering BIOS Setup at startup

To enter BIOS Setup at startup:

- Press <Delete> during the Power-On Self Test (POST). If you do not press <Delete>, POST continues with its routines.

Entering BIOS Setup after POST

To enter BIOS Setup after POST:

- Press <Ctrl>+<Alt>+ simultaneously.
- Press the reset button on the system chassis.
- Press the power button to turn the system off then back on. Do this option only if you failed to enter BIOS Setup using the first two options.

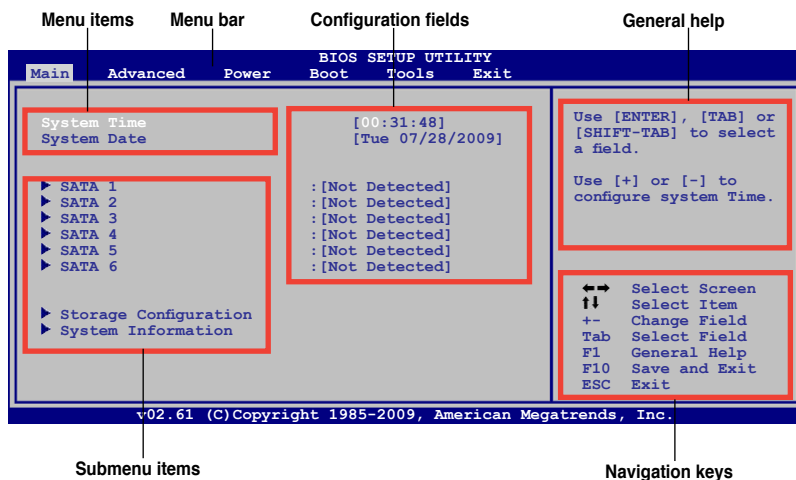


Using the **power button**, **reset button**, or the <Ctrl>+<Alt>+ keys to force reset from a running operating system can cause damage to your data or system. We recommend to always shut down the system properly from the operating system.



-
- 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 Setup Defaults** 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 at www.asus.com to download the latest BIOS file for this motherboard.
-

4.2.1 BIOS menu screen



4.2.2 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 configuring options for special functions.
- 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.

4.2.3 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.

4.2.4 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, Tools, and Exit) on the menu bar have their respective menu items.

4.2.5 Submenu items

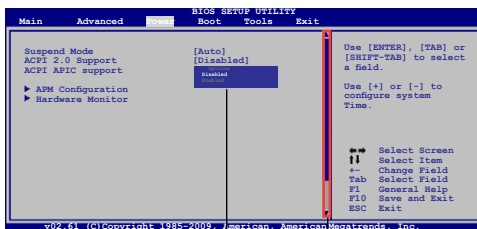
A solid triangle before each item on any menu screen means that the item has a submenu. To display the submenu, select the item and press **<Enter>**.

4.2.6 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 **4.2.7 Pop-up window**.

4.2.7 Pop-up window

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



Pop-up window

Scroll bar

4.2.8 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.

4.2.9 General help

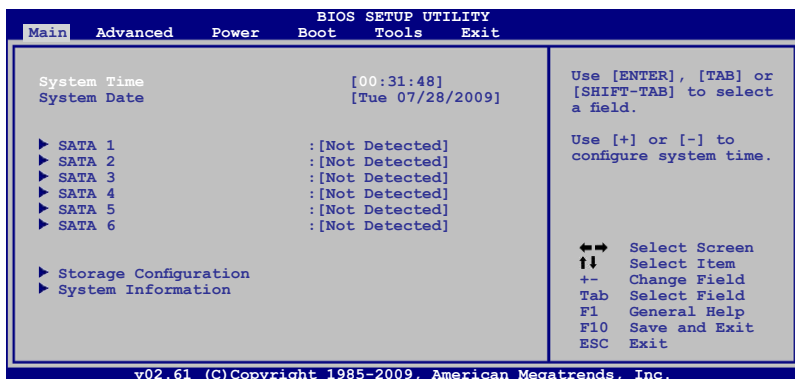
At the top right corner of the menu screen is a brief description of the selected item.

4.3 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 **4.2.1 BIOS menu screen** for information on the menu screen items and how to navigate through them.



4.3.1 System Time [xx:xx:xx]

Allows you to set the system time.

4.3.2 System Date [Day xx/xx/xxxx]

Allows you to set the system date.

4.3.3 SATA 1-6

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

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

Type [Auto]

Selects the type of SATA drive. Setting to [Auto] allows automatic selection of the appropriate SATA device type. Select [CDROM] if you are specifically configuring a CD-ROM drive. Select [ARMD] (ATAPI Removable Media Device) if your device is either a ZIP, LS-120, or MO drive. Configuration options: [Not Installed] [Auto] [CDROM] [ARMD]

LBA/Large Mode [Auto]

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

Block (Multi-sector Transfer) M [Auto]

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

PIO Mode [Auto]

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

DMA Mode [Auto]

Selects the DMA mode. Configuration options: [Auto]

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]

4.3.4 Storage 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 want to configure the item.

SATA Configuration [Enhanced]

Allows you to set the SATA configuration. Configuration options: [Disabled] [Compatible] [Enhanced]

Configure SATA as [IDE]

Sets the configuration for the Serial ATA connectors supported by the Southbridge chip. Configuration options: [IDE] [AHCI]



Due to Intel chipset driver support regulation, the AHCI mode is not supported in Windows XP environment. The AHCI mode is only supported by Windows Vista with OS built-in driver.

Hard Disk Write Protect [Disabled]

Disables or enables device write protection. This will be effective only if device is accessed through BIOS. Configuration option: [Disabled] [Enabled]

IDE Detect Time Out (Sec) [35]

Selects the time out value for detecting ATA/ATAPI devices.

Configuration options: [0] [5] [10] [15] [20] [25] [30] [35]

4.3.5 System Information

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

Bios Information

Displays the auto-detected BIOS information.

Processor

Displays the auto-detected CPU specification.

System Memory

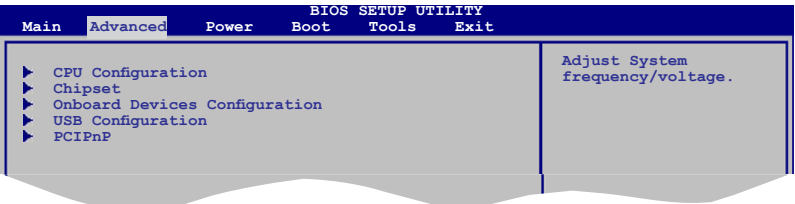
Displays the auto-detected system memory.

4.4 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.



4.4.1 CPU Configuration

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

CPU Ratio Setting [Auto]

Sets the ration between CPU core clock and the FSB frequency.



If an invalid ratio is set in CMOS, then the actual and set values may differ.



Key in ratio numbers directly.

C1E Support [Enabled]

Allows you to enable or disable C1E Support. Configuration options: [Disabled] [Enabled]

Max CPUID Value Limit [Disabled]

Setting this item to **[Enabled]** allows legacy operating systems to boot even without support for CPUs with extended CPUID functions. Configuration options: [Disabled] [Enabled]

Intel® Virtualization Tech [Enabled]

Enables or disables Intel® Virtualization Technology. Virtualization enhanced by Intel® Virtualization Technology allows a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple virtual systems. Configuration options: [Enabled] [Disabled]

CPU TM function [Enabled]

Enables or disables Intel® CPU Thermal Monitor (TM) function, a CPU overheating protection function. When enabled, the CPU core frequency and voltage are reduced when the CPU overheats. Configuration options: [Disabled] [Enabled]

Execute-Disable Bit Capability [Enabled]

Allows you to enable or disable the No-Execution Page Protection Technology. Setting this item to **[Disabled]** forces the XD feature flag to always return to zero (0). Configuration options: [Disabled] [Enabled]



The following item appears only when you installed an Intel® CPU that supports the Enhanced Intel® SpeedStep® Technology (EIST).

Intel(R) SpeedStep(TM) Tech [Enabled]

Allows you to use the Enhanced Intel® SpeedStep® Technology. When set to [Enabled], you can adjust the system power settings in the operating system to use the EIST feature. Set this item to [Disabled] if you do not want to use the EIST. Configuration options: [Enabled] [Disabled]

4.4.2 Chipset

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

North Bridge Configuration

Memory Remap Feature [Enabled]

Allows you to enable or disable the remapping of the overlapped PCI memory above the total physical memory. Enable this option only when you install 64-bit operating system. Configuration options: [Disabled] [Enabled]

Configure DRAM Timing by SPD [Enabled]

Allows you to enable or disable configuring the DRAM Timing by SPD. Configuration options: [Enabled] [Disabled]

Initiate Graphic Adapter [PEG/PCI]

Allows you to decide which graphics controller to use as the primary boot device. Configuration options: [IGD] [PCI/IGD] [PCI/PEG] [PCG/IGD] [PEG/PCI]

IGD Graphics Mode Select [Enabled, 32MB]

Sets the IGD graphics mode.

Configuration options: [Disabled] [Enabled, 32MB] [Enabled, 64MB] [Enabled, 128MB]

DVMT Memory [256MB]

Configuration options: [128MB] [256MB] [Maximum DVMT]

South Bridge Configuration

Audio Controller [Disabled]

Allows you to set the audio controller. Configuration options: [Enabled] [Disabled]

4.4.3 Onboard Devices Configuration

Onboard LAN [Enabled]

Allows you to enable or disable the onboard LAN controller.

Configuration options: [Enabled] [Disabled]

LAN Option ROM [Disabled]

Allows you to enable or disable the boot ROM in the onboard LAN controller.

This item appears only when the Onboard LAN item is set to Enabled.

Configuration options: [Disabled] [Enabled]

JMB368 Controller [Disabled]

Allows you to enable or disable the JMB368 controller.

Configuration options: [Enabled] [Disabled]

Serial Port1 Address [3F8/IRQ4]

Allows you to select the Serial Port1 base address.

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

Parallel Port Address [378]

Allows you to select the Parallel Port base addresses. Configuration options:

[Disabled] [378] [278] [3BC]

Parallel Port Mode [ECP]

Allows you to select the Parallel Port mode.

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

ECP Mode DMA Channel [DMA3]

Appears only when the Parallel Port Mode is set to [ECP]. This item allows you to set the Parallel Port ECP DMA. Configuration options: [DMA0] [DMA1] [DMA3]

Parallel Port IRQ [IRQ7]

Allows you to select parallel port IRQ. Configuration options: [IRQ5] [IRQ7]

4.4.4 USB Configuration

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



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

USB Functions [Enabled]

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

USB 2.0 Controller [Enabled]

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

Legacy USB Support [Auto]

Allows you to enable or disable support for Legacy USB storage devices, including USB flash drives and USB hard drives. 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 Full Speed (12Mbps). Configuration options: [FullSpeed] [HiSpeed]



The following items may only appear when a USB storage device is plugged.

USB Mass Storage Device Configuration

USB Mass Storage Reset Delay [20 Sec]

Allows you to set the maximum time that the BIOS waits for the USB storage device to initialize. Configuration options: [10 Sec] [20 Sec] [30 Sec] [40 Sec]

Emulation Type [Auto]

Allows you to set the emulation type. Configuration options: [Auto] [Floppy] [Forced FDD] [Hard Disk] [CDROM]

4.4.5 PCI PnP

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



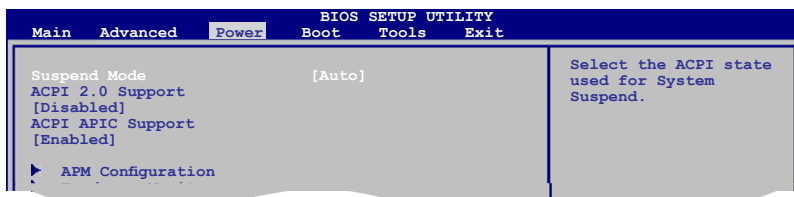
Take caution when changing the settings of the PCI PnP menu items. Incorrect field values can cause the system to malfunction.

Plug and Play O/S [No]

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

4.5 Power menu

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



4.5.1 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]

[S1(POS) Only] - Enables the system to enter the ACPI S1 (Power on Suspend) sleep state. In S1 sleep state, the system appears suspended and stays in a low power mode. The system can be resumed at any time.

[S3 Only] - Enables the system to enter the ACPI S3 (Suspend to RAM) sleep state (default). In S3 sleep state, the system appears to be off and consumes less power than in the S1 state. When signaled by a wake-up device or event, the system resumes to its working state exactly where it was left off.

[Auto] - Detected by OS.

4.5.2 ACPI 2.0 Support [Disabled]

Allows you to add more tables for Advanced Configuration and Power Interface (ACPI) 2.0 specifications. Configuration options: [Disabled] [Enabled]

4.5.3 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]

4.5.4 APM Configuration

Restore on AC Power Loss [Power Off]

When set to **[Power Off]**, the system goes into off state after an AC power loss.

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

Power On By PS/2 Keyboard [Disabled]

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

Resume On Ring [Disabled]

Allows you to enable or disable RI to generate a wake event.

Configuration options: [Disabled] [Enabled]

Resume On PCI Devices [Disabled]

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

Resume On PCIE Devices [Disabled]

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

Resume On RTC Alarm [Disabled]

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

4.5.5 Hardware Monitor

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

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

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

CPU Fan Speed [xxxxRPM] or [Ignored]

The onboard hardware monitor automatically detects and displays the CPU fan speed in rotations per minute (RPM). If the fan is not connected to the motherboard, the field shows **N/A**. Select Ignored if you do not wish to display the detected speed.

CPU Q-Fan Control [Disabled]

Allows you to enable or disable the Q-Fan control. Configuration options:
[Disabled] [Enabled]

Chassis Fan Speed [Ignored] or [N/A]

The onboard hardware monitor automatically detects and displays the Chassis fan speed in rotations per minute (RPM). If the fan is not connected to the motherboard, the field shows **N/A**. Select Ignored if you do not wish to display the detected speed.

Power Fan Speed [Ignored] or [N/A]

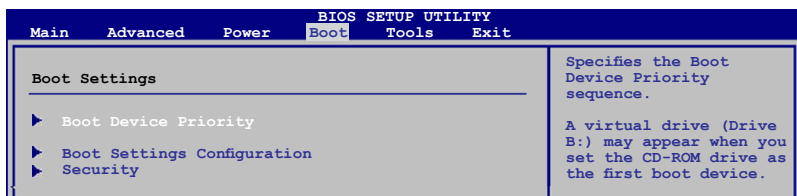
The onboard hardware monitor automatically detects and displays the Power fan speed in rotations per minute (RPM). If the fan is not connected to the motherboard, the field shows **N/A**. Select Ignored if you do not wish to display the detected speed.

VCORE Voltage, 3.3V Voltage, 5V Voltage, 12V Voltage [xxxV] or [Ignored]

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

4.6 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.



4.6.1 Boot Device Priority

1st ~ xxth 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] [Hard Drive] [ATAPI CD-ROM] [Disabled]



- To select the boot device during system startup, press **<F8>** when ASUS Logo appears.
- To access Windows® OS in Safe Mode, do any of the following:
 - Press **<F5>** when ASUS Logo appears.
 - Press **<F8>** after POST.

4.6.2 Boot Settings Configuration

Quick Boot [Enabled]

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

Full Screen Logo [Enabled]

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 MyLogo2™ feature.

AddOn 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]

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]

4.6.3 Security

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

Change Supervisor Password

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

To set a Supervisor Password:

1. Select the **Change Supervisor Password** item and press **<Enter>**.
2. On the password box, key in a password containing up to six letters, or numbers, or both, 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 in setting a supervisor password.

To clear the supervisor password, select the **Change Supervisor Password** then press **<Enter>** twice. The message **Password uninstalled** appears.



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

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, key in a password containing up to six letters, or numbers, or both, 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 in setting a user password.

Clear User Password

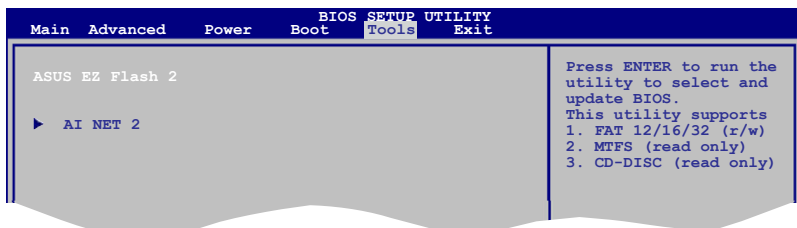
Select this item to clear the user password.

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]

4.7 Tools menu

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



4.7.1 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. Please see section 5.1.2 for details.

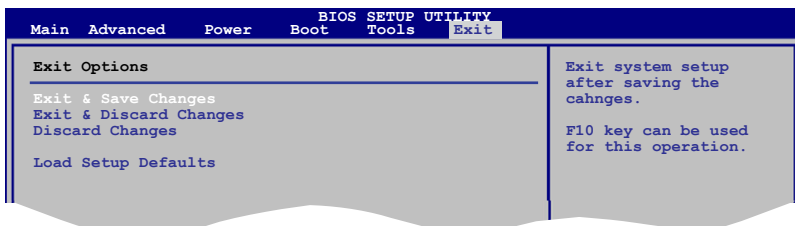
4.7.2 AI NET 2

Check Realtek LAN cable [Disabled]

Enables or disables checking of the Realtek LAN cable during the Power-On Self-Test (POST). Configuration options: [Disabled] [Enabled]

4.8 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.



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.

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.

