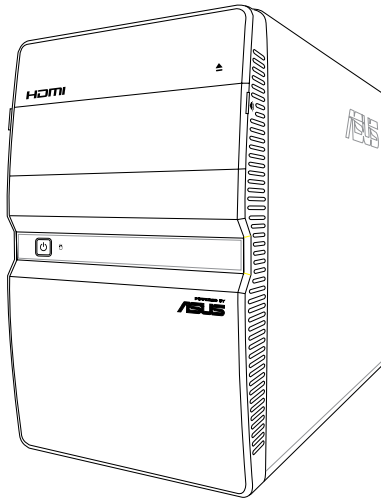


**ASUS**<sup>®</sup>

**T5-P5G41E**

*ASUS PC (Desktop Barebone)*



E5386

First Edition V1

February 2010

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# Notices

## 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>.

## Canadian Department of Communications Statement

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

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

# Safety information

## Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

## Operation safety

- Before installing devices into the system, carefully read all the documentation that came with the package.
- Before using the product, ensure that 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.
- When using the product, do not block any air inlet/outlet in the chassis.
- The maximum environmental temperature is 35°C.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

### ***Lithium-Ion Battery Warning***

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

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

### ***LASER PRODUCT WARNING***

## **CLASS 1 LASER PRODUCT**

## **About this guide**

### **Audience**

This guide provides general information and installation instructions about ASUS T5-P5G41E barebone system. This guide is intended for experienced users and integrators with hardware knowledge of personal computers.

### **How this guide is organized**

This guide contains the following parts:

**1. Chapter 1: System introduction**

This chapter gives a general description of ASUS T5-P5G41E. 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 information**

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

## Conventions used in this guide



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



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



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



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

## Where to find more information

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

### 1. **ASUS Websites**

The ASUS websites worldwide provide updated information on ASUS hardware and software products. Refer to the ASUS contact information.

### 2. **Optional Documentation**

Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

# System package contents

Check your T5-P5G41E system package for the following items.



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

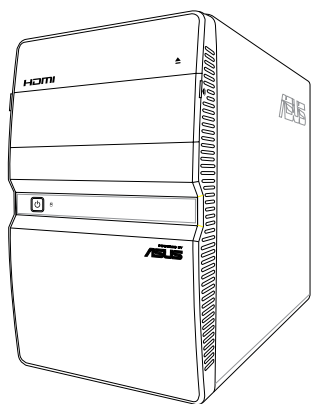
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Item description
<b>1. ASUS T5-P5G41E barebone system with</b>
<ul style="list-style-type: none"><li>• ASUS motherboard</li></ul>
<ul style="list-style-type: none"><li>• Peak 380W PFC power supply unit</li></ul>
<ul style="list-style-type: none"><li>• Front I/O card and 3-in-1 storage card reader</li></ul>
<b>2. Cables</b>
<ul style="list-style-type: none"><li>• AC power cord</li></ul>
<ul style="list-style-type: none"><li>• Serial ATA cable</li></ul>
<b>3. Support DVD</b>
<b>4. Installation Manual</b>



# Chapter 1

This chapter gives a general description of ASUS T5-P5G41E. 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 buying an ASUS T5-P5G41E!

ASUS T5-P5G41E is an all-in-one barebone system with a versatile home entertainment feature.

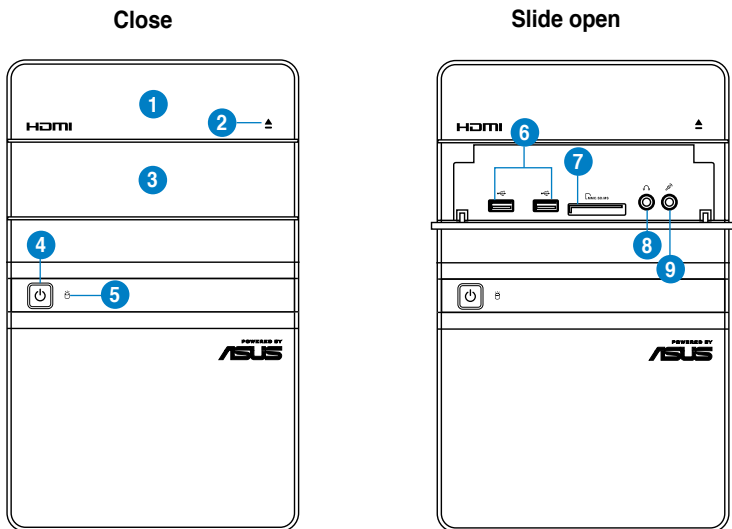
The system comes in a stylish mini-tower casing, and powered by an ASUS motherboard that supports the Intel® processor in the 775-land package with 800/1066/1333 MHz FSB and up to 8 GB system memory.








With audio functions, extensive connectivity, and Gigabit LAN capability, the T5-P5G41E is designed for the sophisticated.

With these and many more, the T5-P5G41E definitely delivers the cutting edge technology for your computing and multimedia needs!

## 1.2 Front panel

The front panel includes the system control button, system LEDs, and LED panel. The storage card reader slots, and several I/O ports are located inside the front panel cover.



1. **Optical disk drive bay (empty).** You may install an optical disk drive in this bay.
2. **Optical disk drive eject button** . Press this button to eject the optical disk drive tray.
3. **Front I/O ports cover.** Push downwards to open the front I/O ports cover to display the input/output ports.
4. **Power button** . Press this button to turn the system on/off.
5. **HDD LED** . This LED lights up when data is read from or written to the hard disk drive.
6. **USB 2.0 ports**  **2.0.** These Universal Serial Bus 2.0 (USB 2.0) ports are available for connecting USB 2.0 devices such as a mouse, printer, scanner, camera, PDA, and others.
7. **MultiMediaCard / Secure Digital™ / Memory Stick™ card slot**  MMC.SD.MS.  
This slot is for a MultiMediaCard / Secure Digital™ / Memory Stick™ storage card.
8. **Headphone port** . This port connects a headphone with a stereo mini-plug.
9. **Microphone port** . This Mic (pink) port connects a microphone.



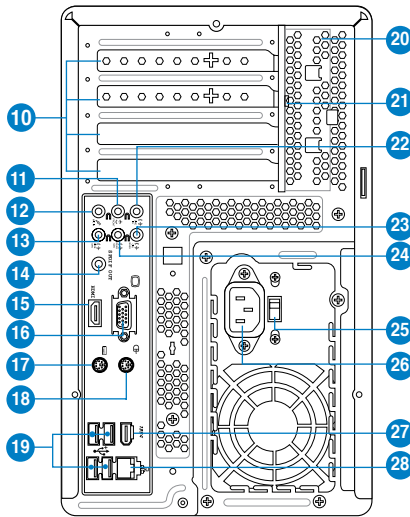
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The information provided is intended as a general guide for reference.  
Specifications depend on the barebone system you purchased.

---

## 1.3 Rear panel

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



10. **Expansion slot covers.** Remove these covers when installing expansion cards.
11. **Rear speaker Out port (black).** This port connects the rear speakers in a 4-channel, 6-channel, or 8-channel audio configuration.
12. **Side Speaker Out port (gray).** This port connects the side speakers in an 8-channel audio configuration.
13. **Microphone port (pink).** This port connects a microphone.
14. **Coaxial S/PDIF Out port.** This port connects an external audio output device via a coaxial S/PIF cable
15. **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.
16. **Video Graphics Adapter (VGA) port.** This 15-pin port is for a VGA monitor or other VGA-compatible devices.
17. **PS/2 keyboard port (purple).** This purple 6-pin connector is for a PS/2 keyboard.
18. **PS/2 mouse port (green).** This green 6-pin connector is for a PS/2 mouse.

19. **USB 2.0 ports.** These Universal Serial Bus 2.0 (USB 2.0) ports are available for connecting USB 2.0 devices such as a mouse, printer, scanner, camera, PDA, and others.
20. **Chassis vents.** These vents are for the fan that provides ventilation inside the system chassis.
21. **Expansion card lock.** This lock secures installed expansion cards.
22. **Center/Subwoofer port (orange).** This port connects the center/subwoofer speakers.
23. **Line In port (light blue).** This Line In port connects a tape player or other audio sources. In 6-channel mode, the function of this port becomes Surround output.
24. **Line Out port (lime).** This Line Out port connects a headphone or a speaker. In 4/6-channel mode, the function of this port becomes Front Speaker Out.
25. **Voltage selector.** This switch allows you to adjust the system input voltage according to the voltage supply in your area.
26. **Power connector.** This connector is for a power cable and plug.
27. **6-pin IEEE 1394a port .** This port provides high-speed connectivity for IEEE 1394a-compliant audio/video devices, storage peripherals, and other PC devices.
28. **LAN port.** This port allows connection to a Local Area Network (LAN) through a network hub.



Refer to the audio configuration table below for the function of the audio ports in a 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

## 1.4 Internal components

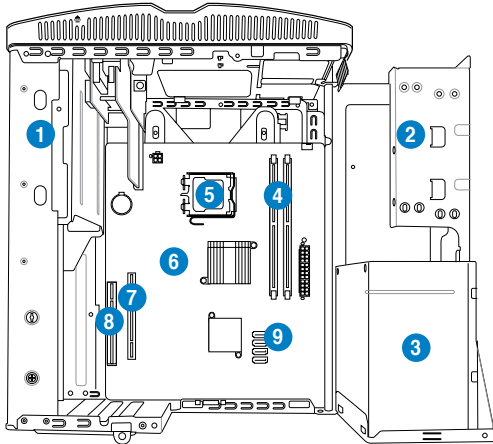
The illustration below is the internal view of the system when you remove the top cover and the power supply unit. The installed components are labeled for your reference.



---

The illustration shows an open chassis lifted at a 90° angle.

---



1. 5.25-inch optical drive cage
2. 3.5-inch hard disk drive cage
3. Power supply unit
4. DIMM sockets
5. CPU socket
6. ASUS motherboard
7. PCI Express x16 slot
8. PCI slot
9. Serial ATA connectors

# 1.5 Qualified Vendors Lists (QVL)

## DDR3-1333 MHz Qualified Vendors List (QVL)

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)	
								A*	B*
A-Data	AD31333001GOU	1024MB	SS	A-Data	AD30908C8D-151C E0906	-	-	-	-
A-Data	AD31333G001GOU	3072MB(Kit of 3)	SS	-	-	8-8-8-24	1.65-1.85V	-	-
A-Data	AD31333002GOU	2048MB	DS	A-Data	AD30908C8D-151C E0903	-	-	-	-
A-Data	AD31333G002GMU	2048MB	DS	-	-	8-8-8-24	1.65-1.85V	-	-
Corsair	CM3X1024-1333C9DHX	1024MB	SS	-	-	9-9-9-24	1.60V	-	-
Corsair	CM3X1024-1333C9	1024MB	SS	-	-	-	-	-	-
Corsair	TR3X3G1333C9 G	3072MB(Kit of 3)	SS	-	-	9-9-9-24	1.50V	-	-
Corsair	TR3X3G1333C9 G	3072MB(Kit of 3)	SS	-	-	9-9-9-24	1.50V	-	-
Corsair	TR3X3G1333C9	3072MB(Kit of 3)	SS	-	-	9	1.5V	-	-
Corsair	CM3X1024-1333C9DHX	1024MB	DS	Corsair	-	-	-	-	-
Corsair	CM3X2048-1333C9DHX	2048MB	DS	-	-	-	-	-	-
Corsair	TW3X4G1333C9 G	4096MB(Kit of 2)	DS	-	-	9-9-9-24	1.50V	-	-
Crucial	CT12864BA1339.8FF	1024MB	SS	Micron	9FF22D9KPT	9	-	-	-
Crucial	BL12864TA1336.8SFB1	2048MB(Kit of 2)	SS	-	-	6-6-6-20	1.8V	-	-
Crucial	CT12864BA1339.8SFD	3072MB(Kit of 3)	SS	Micron	8XD22D9JNM	9	-	-	-
Crucial	CT25664BA1339.16FF	2048MB	DS	Micron	9KF27D9KPT	9	-	-	-
Crucial	BL25664ABA1336.16SFB1	4096MB(Kit of 2)	DS	-	-	6-6-6-20	1.8V	-	-
Crucial	BL25664BA1336.16SFB1	4096MB(Kit of 2)	DS	-	-	6-6-6-20	1.8V	-	-
Crucial	BL25664BN1337.16FF (XMP)	6144MB(Kit of 3)	DS	-	-	7-7-7-24	1.65V	-	-
Crucial	CT25664BA1339.16SFD	6144MB(Kit of 3)	DS	Micron	8UD22D9JNM	9	-	-	-
ELPIDA	EBJ10UE8EDF0-DJ-F	1024MB	SS	ELPIDA	J1108EDSE-DJ-F	-	1.35V(low voltage)	-	-
ELPIDA	EBJ21UE8EDF0-DJ-F	2048MB	DS	ELPIDA	J1108EDSE-DJ-F	-	1.35V(low voltage)	-	-
G.SKILL	F3-10600CL8D-2GBHK	1024MB	SS	G.SKILL	-	-	-	-	-
G.SKILL	F3-10600CL9D-2GBPK	1024MB	SS	G.SKILL	-	-	-	-	-
G.SKILL	F3-10666CL7T-3GBPK	3072MB(Kit of 3)	SS	-	-	7-7-7-18	1.5~1.6V	-	-
G.SKILL	F3-10666CL9T-3GBNQ	3072MB(Kit of 3)	SS	-	-	9-9-9-24	1.5~1.6V	-	-
G.SKILL	F3-10600CL7D-2GBPI	1024MB	DS	G.SKILL	-	-	-	-	-
G.SKILL	F3-10600CL9D-2GBNQ	1024MB	DS	G.SKILL	-	-	-	-	-
G.Skill	F3-10666CL8D-4GBHK	4096MB(Kit of 2)	DS	-	-	8-8-8-21	1.5-1.6V	-	-
G.SKILL	F3-10666CL7T-6GBPK	6144MB(Kit of 3)	DS	-	-	7-7-7-18	1.5~1.6V	-	-
G.SKILL	F3-10666CL9T-6GBNQ	6144MB(Kit of 3)	DS	-	-	9-9-9-24	1.5V~1.6V	-	-
GEIL	DDR3-1333 CL9-9-9-24	1024MB	SS	-	-	9	-	-	-
GEIL	GV34GB1333C7DC	2048MB	DS	-	-	7-7-7-24	1.5V	-	-
GEIL	GG34GB1333C9DC	4096MB(Kit of 2)	DS	GEIL	GL1L128M88BA12N	9-9-9-24	1.3V(low voltage)	-	-
GEIL	DDR3-1333 CL9-9-9-24	6144MB(Kit of 3)	DS	-	-	9	1.5V	-	-
Kingmax	FLFD45F-B8MF9	1024MB	SS	Micron	8HD22D9JNM	-	-	-	-
Kingmax	FLFD45F-B8MH9 MAES	1024MB	SS	Micron	9CF22D9KPT	-	-	-	-
Kingmax	FLFE85F-B8MF9	2048MB	DS	Micron	8HD22D9JNM	-	-	-	-
Kingmax	FLFE85F-B8MH9 MEES	2048MB	DS	Micron	9GF27D9KPT	-	-	-	-
Kingston	KVR1333D3N9/2G	2048MB	DS	Qimonda	IDSH1G-03A1F1C-13H	-	1.5V	-	-
Micron	MT8JTF12864AZ-1G4F1	1024MB	SS	Micron	9FF22D9KPT	9	-	-	-
Micron	MT8JTF12864AY-1G4D1	3072MB(Kit of 3)	SS	Micron	8XD22D9JNM	9	-	-	-
Micron	MT16JTF25664AY-1G1D1	2048MB	DS	Micron	8LD22 D9JNM	-	-	-	-
Micron	MT18JTF25664AZ-1G4F1	2048MB	DS	Micron	9KF27D9KPT	9	-	-	-
Micron	MT16JTF25664AY-1G4D1	6144MB(Kit of 3)	DS	Micron	8UD22D9JNM	9	-	-	-
OCZ	OCZ3P13332GK	2048MB(Kit of 2)	SS	-	-	7-7-7-20	1.8V	-	-
OCZ	OCZ3X1333LV3GK(XMP)	3072MB(Kit of 3)	SS	-	-	-	1.6V	-	-
OCZ	OCZ3G13334GK	4096MB(Kit of 2)	DS	-	-	-	1.7V	-	-
OCZ	OCZ3P13334GK	4096MB(Kit of 2)	DS	-	-	7-7-7-20	1.8V	-	-
OCZ	OCZ3P1333LV4GK	4096MB(Kit of 2)	DS	-	-	7-7-7-20	1.65V	-	-
OCZ	OCZ3RPX1333EB4GK	4096MB(Kit of 2)	DS	-	-	6-5-5-20	1.85V	-	-
OCZ	OCZ3X13334GK(XMP)	4096MB(Kit of 2)	DS	-	-	7-7-7-20	1.75V	-	-
OCZ	OCZ3G1333LV6GK	6144MB(Kit of 3)	DS	-	-	9-9-9-20	1.65V	-	-
OCZ	OCZ3P1333LV6GK	6144MB(Kit of 3)	DS	-	-	7-7-7-20	1.65V	-	-
OCZ	OCZ3X1333LV6GK(XMP)	6144MB(Kit of 3)	DS	-	-	8-8-8-20	1.60V	-	-
PSC	AL7F8G73D-DG1	1024MB	SS	PSC	A3P1GF3DGF928M9B05	-	-	-	-
PSC	AL8F8G73D-DG1	2048MB	DS	PSC	A3P1GF3DGF928M9B05	-	-	-	-
SAMSUNG	M378B2873DZ1-CH9	1024MB	SS	Samsung	K4B1G0846D-HCH9	-	-	-	-

continued on the next page

## DDR3-1333 MHz Qualified Vendors List (QVL)

Vendor	Part No.	Size	SS/ DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)	
								A*	B*
SAMSUNG	M378B2873DZ1-CH9	1024MB	SS	SAMSUNG	SEC 846 HCH9 K4B1G0846D	-	-	*	*
SAMSUNG	M378B2873EH1-CH9	1024MB	SS	Samsung	SEC 913 HCH9 K4B1G0846E	-	-	*	*
SAMSUNG	M378B5673DZ1-CH9	2048MB	DS	Samsung	K4B1G0846D-HCH9	-	-	*	*
SAMSUNG	M378B5673EH1-CH9	2048MB	DS	Samsung	SEC 913 HCH9 K4B1G0846E	-	-	*	*
Super Talent	W1333X2GB8	1024MB	SS	-	-	-	-	*	*
Transcend	TS256MLK64V3U	2048MB	DS	Micron	9GF27D9KPT	-	-	*	*
Transcend	TS256MLK64V3U	2048MB	DS	-	SEC816HCH9K4B1G0846D	-	-	*	*
ASINT	SLY3128M8-EDJ	1024MB	SS	ASINT	DDRII1208-DJ 0844	-	-	*	*
ASINT	SLY3128M8-EDJE	1024MB	SS	ELPIDA	J1108BASE-DJ-E	-	-	*	*
ASINT	SLY3128M8-EDJ	2048MB	DS	ASINT	DDRII1208-DJ 0844	-	-	*	*
ASINT	SLZ3128M8-EDJE	2048MB	DS	ELPIDA	J1108BASE-DJ-E	-	-	*	*
BUFFALO	FSX1333D3G-K2G	1024MB	SS	-	-	7-7-7-20	-	*	*
BUFFALO	FSX1333D3G-2G	2048MB	DS	-	-	7-7-7-20	-	*	*
Century	PC3-10600 DDR3-1333 9-9-9	1024MB	SS	Micron	8FD22D9JNM	-	-	*	*
Century	PC3-10600 DDR3-1333 9-9-9	2048MB	DS	Micron	8DD22D9JNM	-	-	*	*
Elixir	M2Y2G64C88HA9N-CG	2048MB	DS	-	-	7-7-7-20	-	*	*
Kingtiger	2GB DIMM PC3-10666	2048MB	DS	Samsung	SEC 904 HCH9 K4B1G0846D	-	-	*	*
Kingtiger	KTG2G1333PG3	2048MB	DS	-	-	-	-	*	*
PATRIOT	PSD31G13332H	1024MB	DS	-	-	9	-	*	*
PATRIOT	PSD31G13332	1024MB	DS	Patriot	PM64M8D38U-15	-	-	*	*
PATRIOT	PSD32G13332H	2048MB	DS	-	-	-	-	*	*
PATRIOT	PDC34G1333ELK	4096MB(Kit of 2)	DS	-	-	9-9-9-24	1.5V	*	*
SILICON POWER	SP001GBLTU133S01	1024MB	SS	NANYA	NT5CB128M8AN-CG	9	-	*	*
SILICON POWER	SP001GBLTU133S02	1024MB	SS	elixir	N2CB1680AN-C6	9	-	*	*
SILICON POWER	SP002GBLTU133S02	2048MB	DS	elixir	N2CB1680AN-C6	9	-	*	*
TAKEMS	TMS1GB364D081-107EY	1024MB	SS	-	-	7-7-7-20	1.5V	*	*
TAKEMS	TMS1GB364D081-138EY	1024MB	SS	-	-	8-8-8-24	1.5V	*	*
TAKEMS	TMS2GB364D081-107EY	2048MB	DS	-	-	7-7-7-20	1.5V	*	*
TAKEMS	TMS2GB364D081-138EY	2048MB	DS	-	-	8-8-8-24	1.5V	*	*
TAKEMS	TMS2GB364D082-138EW	2048MB	DS	-	-	8-8-8-24	1.5V	*	*



## DDR3-1066MHz capability

Vendor	Part No.	Size	SS/ DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)	
								A*	B*
Crucial	CT12864BA1067.8FF	1024MB	SS	Micron	9GF22D9KPT	7	-	•	•
Crucial	CT25664BA1067.16FF	2048MB	DS	Micron	9HF22D9KPT	7	-	•	•
ELPIDA	EBJ10UE8EDF0-AE-F	1024MB	SS	ELPIDA	J1108EDSE-DJ-F	-	1.35V(low voltage)	•	•
Elpida	EBJ51UD8BAFA-AC-E	512MB	SS	Elpida	J5308BASE-AC-E	-	-	•	•
Elpida	EBJ51UD8BAFA-AE-E	512MB	SS	Elpida	J5308BASE-AC-E	-	-	•	•
Elpida	EBJ11UD8BAFA-AE-E	1024MB	DS	Elpida	J5308BASE-AC-E	-	-	•	•
ELPIDA	EBJ21UE8EDF0-AE-F	2048MB	DS	ELPIDA	J1108EDSE-DJ-F	-	1.35V(low voltage)	•	•
Kingston	KVR1066D3N7/1G	1024MB	SS	Kingston	D1288JEKAPGA7U	7	1.5V	•	•
Kingston	KVR1066D3N7/2G	2048MB	DS	Kingston	D1288JEKAPGA7U	7	1.5V	•	•
Micron	MT8JTF12864AZ-1G1F1	1024MB	SS	Micron	9GF22D9KPT	7	-	•	•
Micron	MT16JTF25664AZ-1G1F1	2048MB	DS	Micron	9HF22D9KPT	7	-	•	•
SAMSUNG	M378B2873EH1-CF8	1024MB	SS	Samsung	SEC 901 HCF8 K4B1G0846E	-	-	•	•
SAMSUNG	M378B5273BH1-CF8	4096MB	DS	SAMSUNG	846 K4B2G0846B-HCF8	-	-	•	•
Elixir	M2Y2G64CBHA9N-BE	2048MB	DS	-	-	7-7-7-20	-	•	•
Kingtiger	2GB DIMM PC3-8500	2048MB	DS	Hynix	H5TQ1G83AFP G7C	-	-	•	•



### SS - Single-sided / DS - Double - sided

#### DIMM support:

- **A\***: Supports one module inserted into either slot as Single-channel memory configuration.
- **B\***: Supports one pair of modules inserted into both the blue slots as one pair of Dual-channel memory configuration.

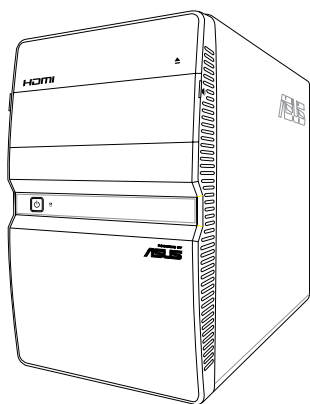


Visit the ASUS website at [www.asus.com](http://www.asus.com) for the latest QVL.



# 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 / 64-bit XP / Vista / 64-bit Vista / Windows® 7 Operating Systems (OS). Always install the latest OS version and corresponding updates so you can maximize the features of your hardware.



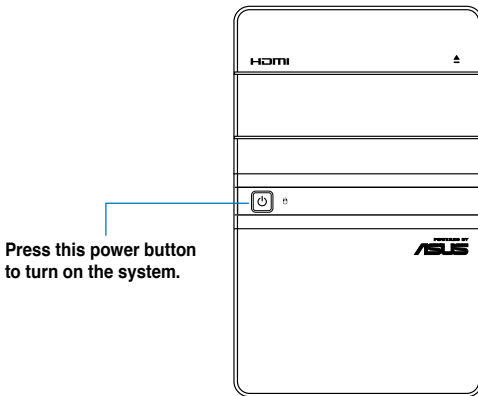
---

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

---

## 2.2 Powering up

The system power button is located on the front panel. Press the system power button (⏻) to enter the OS.



---

In Windows® OS, pressing the ⏻ button shuts down, restarts, or puts the system in sleep mode (S3) depending on the OS setting.

---

## 2.3 Support DVD information

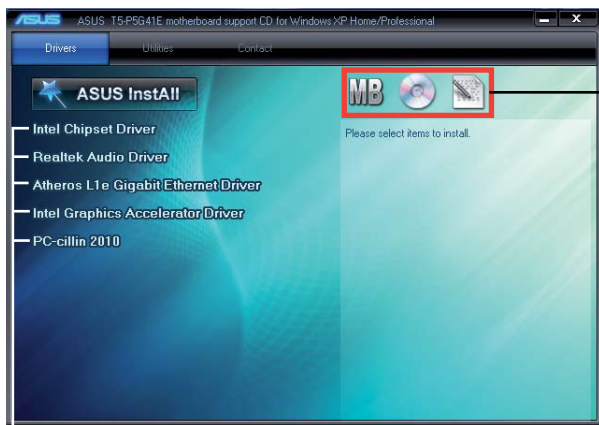
The support DVD that came with the system contains useful software and several utility drivers that enhance the system features.



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



Click an icon to display Support DVD/motherboard information

Click an item to install



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.

## 2.3.2 Drivers menu

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



### **ASUS InstAll**

Allows you to easily install all necessary drivers for your system.

### **Intel Chipset Driver**

Installs the Intel® Chipset driver.

### **Realtek Audio Driver**

Installs the Realtek audio driver.

### **Atheros L1E Gigabit Ethernet Driver**

Installs the Atheros L1E Gigabit Ethernet driver.

### **Intel Graphics Accelerator Driver**

Installs the Intel® Graphics Accelerator Driver.

### **PC-cillin 2010**

Installs the PC-cillin 2010.

### 2.3.3 Utilities menu

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



#### **ASUS InstAll**

Allows you to easily install all bundled utilities for this motherboard.

#### **ASUS Update**

Installs the ASUS Update that allows you to update the motherboard BIOS and drivers. This utility requires an Internet connection either through a network or an Internet Service Provider (ISP). See page 4-2 for details.

#### **ASUS AI Manager**

Installs the ASUS AI Manager.

#### **Adobe Reader 9**

Installs the Adobe Reader 9 that allows you to open, view, and print documents in Portable Document Format (PDF).

#### **Internet Radio**

Installs the Internet Radio utility.

#### **ASUS Express Gate Installer**

Installs the ASUS Express Gate.

#### **FarStone Utility**

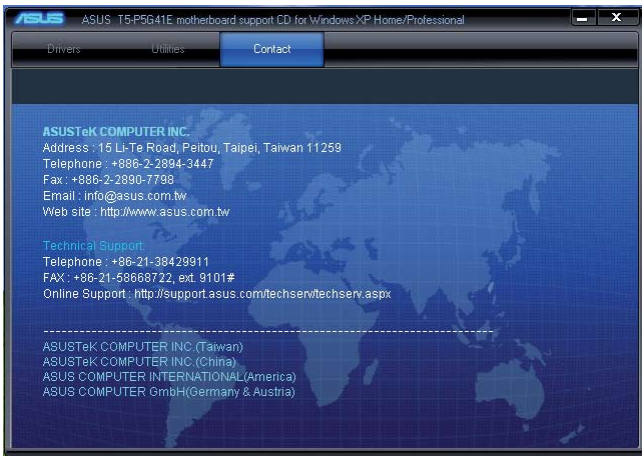
Installs the FarStone Utility.

## Microsoft DirectX 9.0c

Installs the Microsoft® DirectX 9.0c driver. The Microsoft® DirectX 9.0c is a multimedia technology that enhances computer graphics and sound. DirectX® improves the multimedia features of your computer so you can enjoy watching TV and movies, capturing videos, or playing games on your computer. Visit the Microsoft website at [www.microsoft.com](http://www.microsoft.com) for updates.

### 2.3.4 ASUS contact information

The Contact tab displays the ASUS contact information.





## 2.4 Software information

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

### 2.4.1 ASUS Express Gate

ASUS Express Gate is an instant-on environment that gives you quick access to the Internet. Eight seconds after powering on your computer, you can instantly surf the Internet, use Skype or other Express Gate applications without entering the Windows® OS.



- 
- The actual boot time depends on the system configuration.
  - Download the latest Express Gate version from the ASUS website at [www.asus.com](http://www.asus.com).
- 

### Installing ASUS Express Gate



- 
- Ensure to install ASUS Express Gate from the motherboard Support DVD before use.
  - ASUS Express Gate supports installation on SATA HDDs, USB HDDs, and flash drives with at least 1.2GB free disk space. When installing ASUS Express Gate on USB HDDs and flash drives, connect the drives to the motherboard USB port before turning on the computer.
  - ASUS Express Gate supports SATA devices in IDE mode only.
  - ASUS Express Gate supports SATA devices connected to **motherboard chipset-controlled onboard SATA ports** only. All onboard extended SATA ports and external SATA ports are NOT supported. See section 3.2 **Motherboard layout** for the exact location of the onboard SATA ports.
  - Ensure that your monitor supports the screen resolution of 1024 x 768 before using ASUS Express Gate; otherwise, it will not launch after you power on your computer and your computer boots to the OS directly.
- 

#### To install Express Gate on your computer:

1. Place the Support DVD into the optical drive. The **Drivers** menu appears if Autorun is enabled on your computer.
2. Click the **Utilities** tab, then click **ASUS Express Gate**.
3. Select your preferred language, then click **OK**.
4. The InstallShield Wizard for Express Gate appears. Click **Next** to continue.
5. Select the target drive where you want to install Express Gate. If you have multiple partitions installed on your computer, it is recommended to install Express Gate in **Drive C**. Click **Next** to continue.
6. Follow the onscreen instructions to complete the installation.

## The Splash Screen

The Express Gate's splash screen appears eight seconds after you power on your computer.



The actual boot time depends on the system configuration.




Click an application icon to enter the Express Gate environment and launch the selected application

Turn off the computer

Continue booting to the existing OS when the timer above the Exit icon counts down to zero (0); click to immediately enter the existing OS



- To enter the motherboard BIOS Setup program, click **Exit** on the splash screen and then hold down **<Del>** during POST.
- Click  in the Express Gate environment for the detailed software instructions.

## Splash screen hot keys

Key	Function
<PAUSE/BREAK>	Power off
<ESC>	Continue to boot OS

## Express Gate environment hot keys

Key	Function
<Alt> + <Tab>	Switch between applications
<Ctrl> + <Alt> + <Del>	Bring the Power-Off dialog box
<Ctrl> + <Alt> + <Print Screen>	Save screen snapshots to file



When you are using ASUS Express Gate for the first time, launch an application from the splash screen, a first-time wizard will appear and guide you through basic Express Gate configurations including language, date, and time.

## Using the LaunchBar

The LaunchBar allows you to launch applications and configure the Express Gate settings. The LaunchBar can be configured to auto-hide and dock at the bottom or



Launches the **Web Browser** for quick access to the Internet. You can view PDF files from the web pages or your USB storage device.



---

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

---



Launches the **Online Games**.



Launches the **Photo Manager**.



Launches the **Chat** instant messaging tool.



Launches the **Skype** application which allows you to chat with or call other people on Skype.



---

The indicator under an application icon indicates that the application is running. If an application stops responding, right-click its icon then select **Close** to force it to close.

---

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



Displays your Express Gate version.



Launches the help file.



Launches the **Configuration Panel** which allows you to specify network settings and other settings.



Configures the network.



Adjusts the volume.



This icon appears only when a removable storage device / USB drive is connected. Left-click this icon to launch the **File Manager** window. Right-click it to eject the removable storage device / USB drive.




Exits ASUS Express Gate. Click **Yes** to enter the operating system you installed on the hard disk drive.



Powers off the computer.

## Accessing the Internet

To configure the network settings:

1. Click **Configuration Panel**  on the LaunchBar.
2. Click **Network**.
3. Make the proper network configurations. Each network interface is enabled immediately after you tick the **Enable** checkbox.



The number of the LAN ports vary with the motherboard.

- **LAN settings**

If you connect your computer to a home router that is connected to your DSL/ cable modem, enable all the LAN ports. Express Gate automatically uses the connected port.



If you plug the network cable into a different port while Express Gate is running (e.g. move the cable from LAN1 to LAN2, restart Express Gate to activate the new setting.

If your computer does not automatically get network settings from a DHCP server, click **Setup** to configure the static IP settings manually. If your computer automatically gets network settings from a DHCP server, skip this step.

- **WiFi settings (if supported)**

If you want to connect to a wireless network, click **Setup** to configure the WiFi options. In the **WiFi** tab of the **Advanced Network Settings** box, key in the network name of the wireless access point in the **SSID** field. If Security is enabled on the wireless access point, select the corresponding security algorithm from the dropdown list such as WEP or WAP in the **Encryption Type** field, and key in the password. Click **OK** to enable WiFi and establish the wireless connection.

- **xDSL / Cable dial-up (PPPoE) settings:**

If you use a network cable connected directly to your DSL/cable modem, click **Setup** to configure the xDSL/cable dial-up settings. Choose whether the DSL/cable modem is connected to your computer's LAN port. Key in the username and password for your 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.

## Using the Online Games

Express Gate introduces a **Splashtop Gaming** portal site which provides interesting games in different categories.



---

Enable the Internet connection to use the Online Games feature.

---

## Using the Photo Manager

**Photo Manager** allows you to view pictures saved on your hard drive or external storage devices. You can view pictures in thumbnail view, in an enlarged view individually, in a filename/data list view, or play them in a slideshow. JPEG, GIF, BMP, and PNG formats are supported. Refer to the online Help for details.



---

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

---

## Restoring to factory settings

To restore Express Gate to the factory settings:

1. Click **Configuration Panel** on the LaunchBar.
2. Click **Environment Settings**.
3. Click **Restore** from the **General** tab. A confirmation dialog box appears. Click **Yes** to immediately restart Express Gate to finish clearing system settings. All bookmarks, network settings, and other changes you made will be cleared.



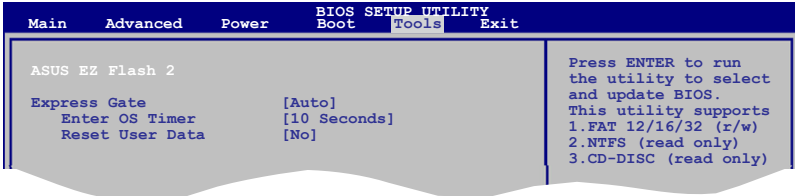
---

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

---

## Configuring Express Gate in BIOS Setup

To enter the motherboard BIOS Setup program, click **Exit** on the splash screen and then hold down **<Del>** during POST. Go to the **Tools** menu to configure Express Gate. Refer to **4.7.2 Express Gate** for details.



## Repairing Express Gate

In case Express Gate does not start normally, reinstall the software or use the repair utility to repair Express Gate.

To repair Express Gate:

Click **Start > All Programs > Express Gate > Express Gate Installer > Repair this software.**



## 2.4.2 ASUS AI Manager

ASUS AI Manager allows you to launch AI Disk, AI Security, AI Booting, and AI Probe easily.

### Installing AI Manager

To install AI Manager on your computer:

1. Place the Support DVD into the optical drive. The DVD automatically displays the **Drivers** menu if Autorun is enabled on your computer.



If Autorun is NOT enabled on your computer, browse the contents of the Support DVD to locate the file **ASETUP.EXE** from the **BIN** folder. Double-click **ASETUP.EXE** to run the DVD.

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

### Launching AI Manager

You can launch AI Manager right after installation or anytime from the Windows® desktop.

To launch AI Manager from the Windows® desktop, click **Start > All Programs > ASUS > AI Manager > AI Manager v1.xx.xx**. The AI Manager Quick Bar appears.



After launching the application, the AI Manager icon appears in the Windows® taskbar. Right-click this icon for more options.




### AI Manager Quick Bar

Click the Main, My favorites, Support, and Information icon from the Quick Bar to show the corresponding menu.



Click  to switch between a full-screen AI Manager window and the Quick bar.

Click  to keep AI Manager in the taskbar.

Click  to close AI Manager.

## Main

Launch AI Disk, AI Security, AI Booting, and AI Probe from the Main menu. Click the small triangle to open or close the Main menu.



Click to open/close the Main menu

### *AI Disk*

AI Disk allows you to easily clear the temporary IE files, IE URLs, IE cookies, IE history list, Recycle Bin, and recently opened files list. Select the item that you want to clear, then click **Apply**.





### AI Security

AI Security allows you to set passwords to lock your removable storage devices such as a USB flash disk and a CD/DVD disk, which ensures more security for your data.

To lock a device:

1. If you are using AI Security for the first time, key in a password consisting of up to 20 alphanumeric characters.
2. Confirm your password.
3. Key in your password hint (optional).
4. Click **OK**.



5. Select the device you want to lock, then click **Apply**.



6. Key in your password, then click **OK**. The device you selected cannot be accessed without the password.

To unlock a device:

1. Deselect the device you locked, then click **Apply**.
2. Key in your password, then click **OK**.

To change your password, click **Change Password** and follow the onscreen instructions.

### AI Booting

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



To decide the boot sequence:

1. Select a device, then specify the boot sequence of the device by clicking the left/right button.
2. When done, press Apply.

### AI Probe

AI Probe automatically detects the motherboard and CPU temperatures, CPU fan speed, and CPU voltage. It also allows you to adjust these values manually.



## My favorites

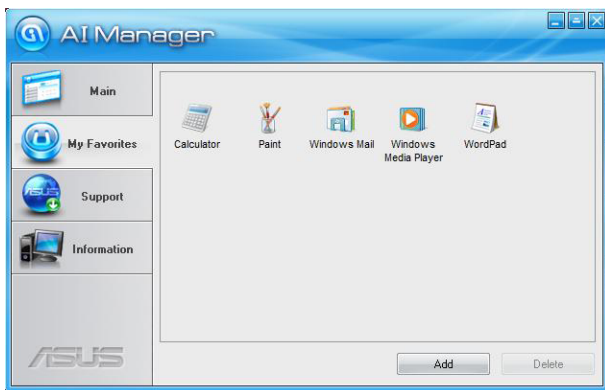
Add your favorite applications to the **My Favorites** menu.

To add an application:

1. Click **Add** and then from the succeeding screen select the application you want to add to the **My Favorites** menu.
2. Click **Open**. The application you selected is added and its icon appears.

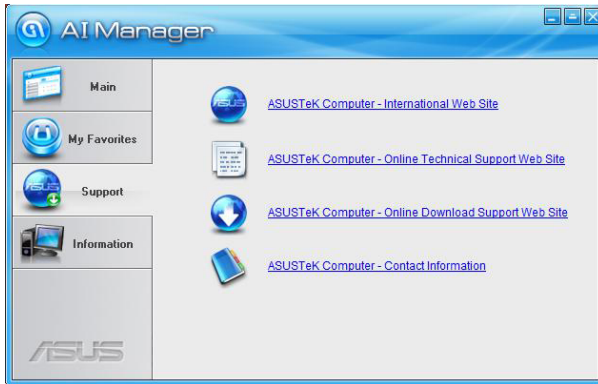
Right-click an icon in the **My Favorites** menu to open, delete, or rename the corresponding application.

Double-click an icon to open the corresponding application.



## Support

The **Support** menu displays links to the ASUS international website, online technical support website, online download support website, and contact information website.



## Information

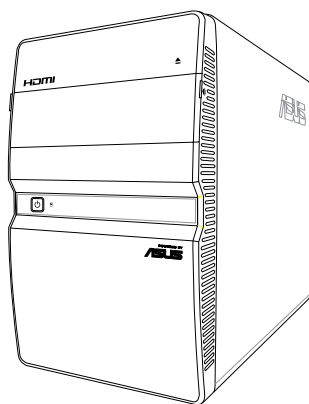
The **Information** menu displays the general information of your system, motherboard, CPU, BIOS, memory, and other devices installed.





# 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.

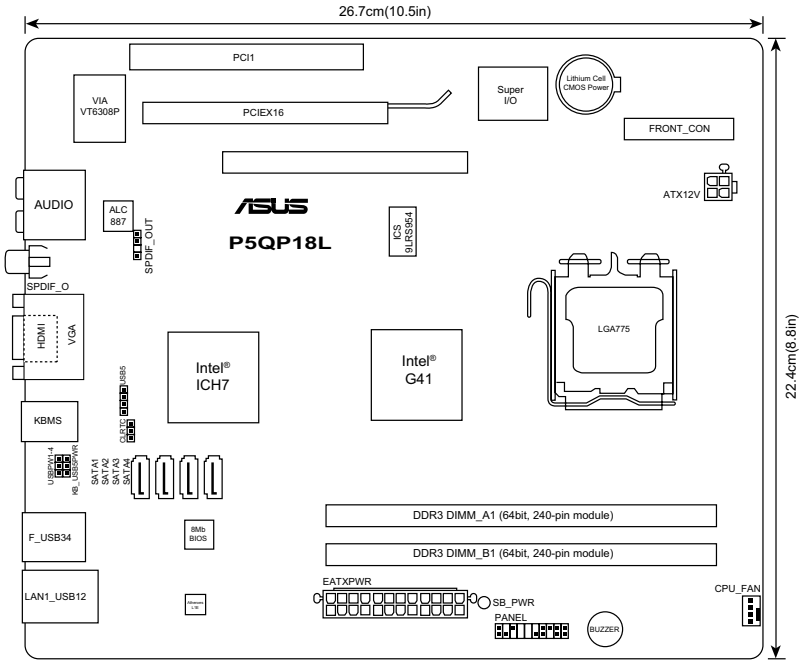


# Motherboard info

### 3.1 Introduction

The motherboard comes already installed in ASUS T5-P5G41E system. This chapter provides technical information about the motherboard for future upgrades or system reconfiguration.

### 3.2 Motherboard layout

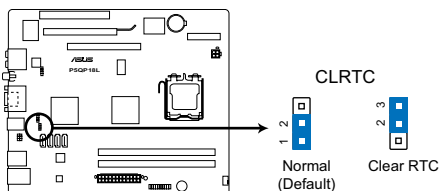




## 3.3 Jumpers

### 1. Clear RTC RAM (3-pin CLRRTC)

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



**P5QP18L Clear RTC RAM**

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 **<Del>** key during the boot process and enter BIOS setup to re-enter data.



---

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

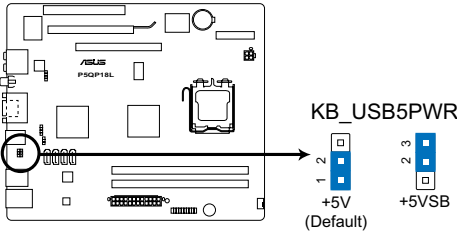
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- If the steps above do not help, remove the onboard battery and move the jumper again to clear the CMOS RTC RAM data. After clearing the CMOS, reinstall the battery.
  - You do not need to clear the RTC when the system hangs due to overclocking. For 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.
-

## 2. Keyboard / USB device wake-up (3-pin KB\_USB5PWR)

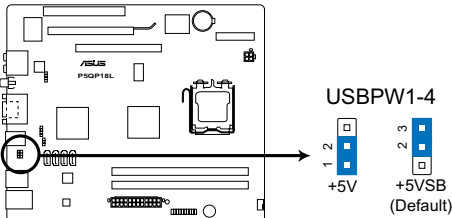
This jumper allows you to enable or disable the keyboard / USB device wake-up features. Set this jumper to pins 2-3 (+5VSB) to wake up the computer when you press a key on the keyboard, or using the USB devices connected to the onboard USB connector. This feature requires an ATX power supply that can supply at least 1A on the +5VSB lead, and a corresponding setting in the BIOS.



**P5QP18L Keyboard/USB Device Wake-up**

## 3. USB device wake-up (3-pin USBPW1-4)

Set this jumper to +5V to wake up the computer from S1 sleep mode (CPU stopped, DRAM refreshed, system running in low power mode) using the connected 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).



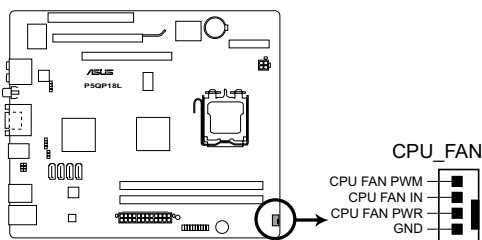
**P5QP18L USB Device Wake Up**

## 3.4 Connectors

This section describes and illustrates the connectors on the motherboard.

### 1. CPU fan connector (4-pin CPU\_FAN)

Connect the fan cable to the fan connector on the motherboard, ensuring that the black wire of each cable matches the ground pin of the connector.



**P5QP18L CPU fan connector**



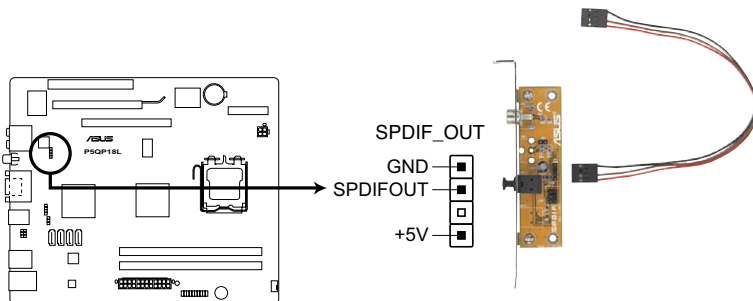
Do not forget to connect the fan cable to the fan connector. Insufficient air flow within the system may damage the motherboard components. These are not jumpers! DO NOT place jumper caps on the fan connectors!



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

### 2. Digital audio connector (4-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.



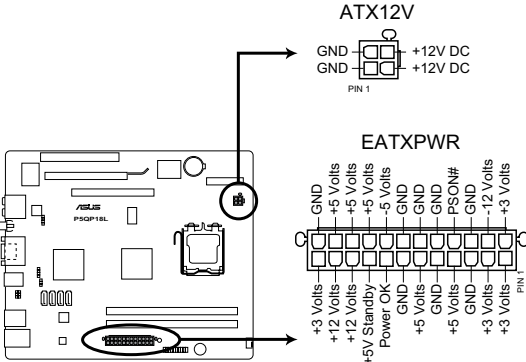
**P5QP18L Digital audio connector**



The S/PDIF out module is purchased separately.

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

These connectors are for the 24-pin and 4-pin power plugs from the power supply unit. The plugs from the power supply unit are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.



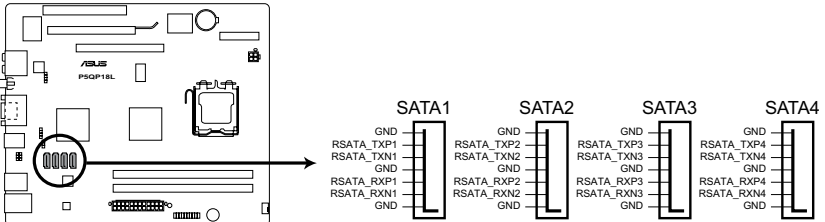
**P5QP18L ATX power connectors**



- 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.

#### 4. Serial ATA connectors (7-pin SATA1~4)

These connectors are for the Serial ATA signal cables for Serial ATA 3Gb/s hard disk drives and optical disk drives. The Serial ATA 3Gb/s is backward compatible with the Serial ATA 1.5Gb/s specification. The data transfer rate of the Serial ATA 3Gb/s is faster than the standard parallel ATA (133 Mb/s).



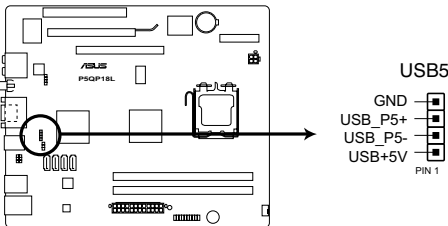
#### P5QP18L SATA connectors



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

#### 5. USB connector (10-1 pin USB5)

This connector is for a USB 2.0 port. Connect the USB module cable to this connector, then install the module to a slot opening at the back of the system chassis. This USB connector complies with USB 2.0 specification that supports up to 480 Mbps connection speed.



#### P5QP18L USB2.0 connector



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

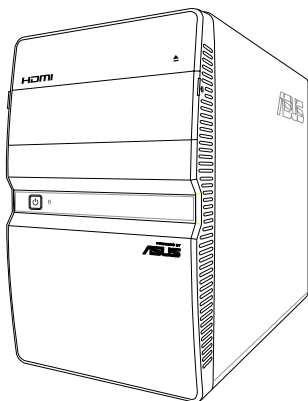


The USB module cable is purchased separately.



# Chapter 4

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



## 4.1 Managing and updating your BIOS

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

1. **ASUS Update:** Updates the BIOS in Windows® environment.
2. **ASUS EZ Flash 2:** Updates the BIOS using a USB flash drive.
3. **ASUS CrashFree BIOS 3:** Restores the BIOS using the motherboard support DVD or a USB flash drive when the BIOS file fails or gets corrupted.

Refer to the corresponding sections for details on these utilities.



---

Save a copy of the original motherboard BIOS file to a USB flash drive 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. The ASUS Update utility allows you to:

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

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



---

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

---

### Installing ASUS Update

To install ASUS Update:

1. Place the support DVD in the optical drive.
2. From the **Main** menu, click the **Utilities** tab, and then click **ASUS Update VX.XX.XX**.
3. The ASUS Update utility is copied to your system.

### Updating the BIOS through the Internet



---

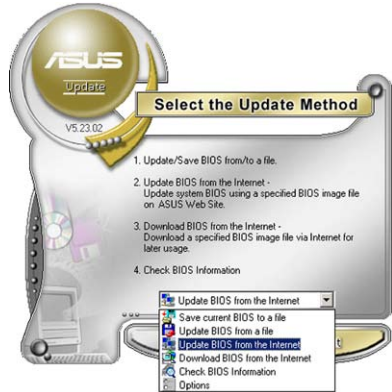
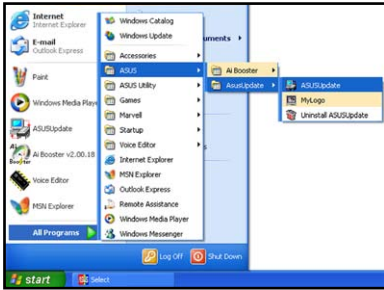
Quit all Windows® applications before you update the BIOS using this utility.

---



To update the BIOS through the Internet

1. From the Windows® desktop, click **Start > Programs > ASUS > ASUSUpdate > ASUSUpdate**. The ASUS Update main window appears.
2. Select **Update BIOS from the Internet** from the drop-down menu, and then click **Next**.



3. Select the ASUS FTP site nearest you to avoid network traffic, or click **Auto Select**. Click **Next**.
4. From the FTP site, select the BIOS version that you wish to download. Click **Next**.



5. Follow the onscreen instructions to complete the update process.

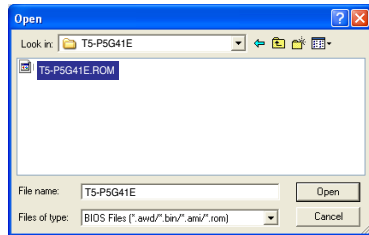
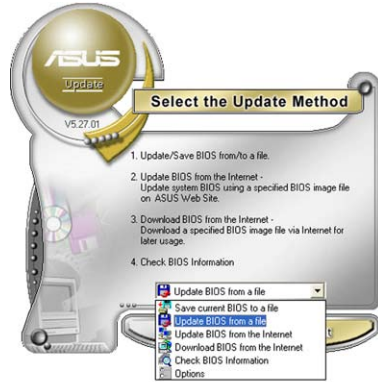


The ASUS Update utility is capable of updating itself through the Internet. Always update the utility to avail all its features.

## Updating the BIOS through a BIOS file

To update the BIOS through a BIOS file

1. From the Windows® desktop, click **Start > Programs > ASUS > ASUSUpdate > ASUSUpdate**. The ASUS Update main window appears.
2. Select **Update BIOS from a file** from the dropdown menu, then click **Next**.
3. Locate the BIOS file from the Open window, then click **Open**.
4. Follow the onscreen instructions to complete the update process.



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 **4.8 Exit Menu** for details.

## 4.1.2 ASUS EZ Flash 2

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

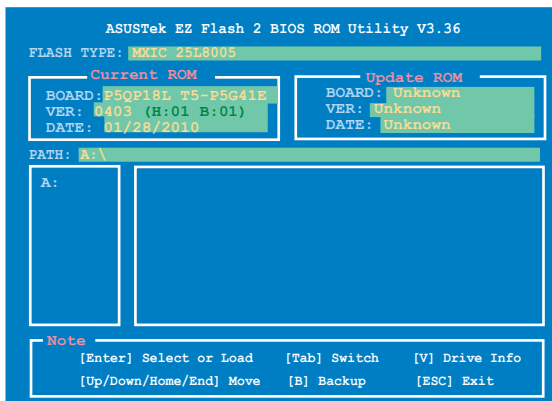


Before you start using this utility, download the latest BIOS file from the ASUS website at [www.asus.com](http://www.asus.com).

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.



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



- This function supports USB flash disks with **FAT 32/16** format and single partition only.
- 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 **T5P5G41E.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](http://www.asus.com).
  - The removable devices 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 **4.8 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>+<Del> 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.



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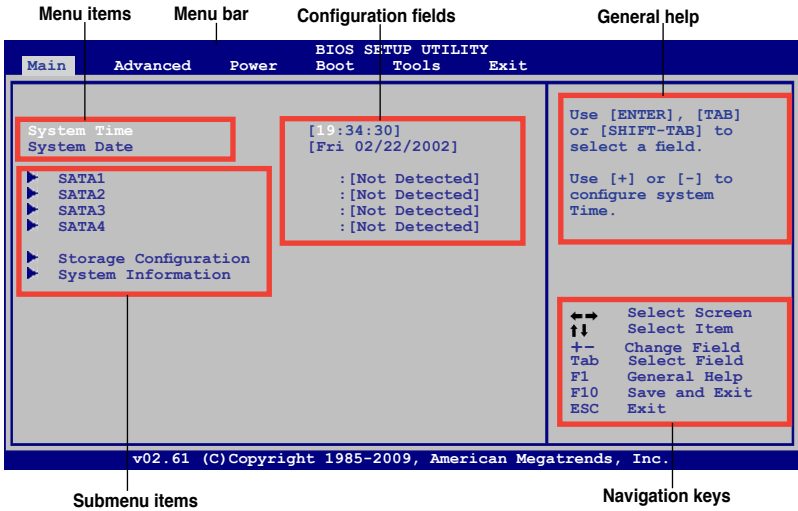
Using the **power button**, **reset button**, or the <Ctrl>+<Alt>+<Del> keys to force reset from a running operating system can cause damage to your data or system. We recommend that you always shut down the system properly from the operating system.

---



- The default BIOS settings for this motherboard apply to 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 **4.8 Exit Menu**.
  - The BIOS setup screens in this chapter are for reference only. They may not exactly match what you see on your screen.
  - Visit the ASUS website at [www.asus.com](http://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 setting EZ Flash 2 and Express Gate
- 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.



- The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.
- Visit the ASUS website ([www.asus.com](http://www.asus.com)) to download the latest BIOS information.

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

## 4.2.5 Sub-menu items

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

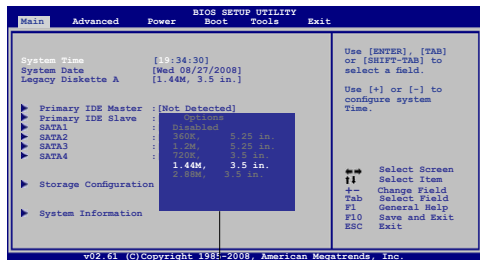
## 4.2.6 Configuration fields

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

## 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

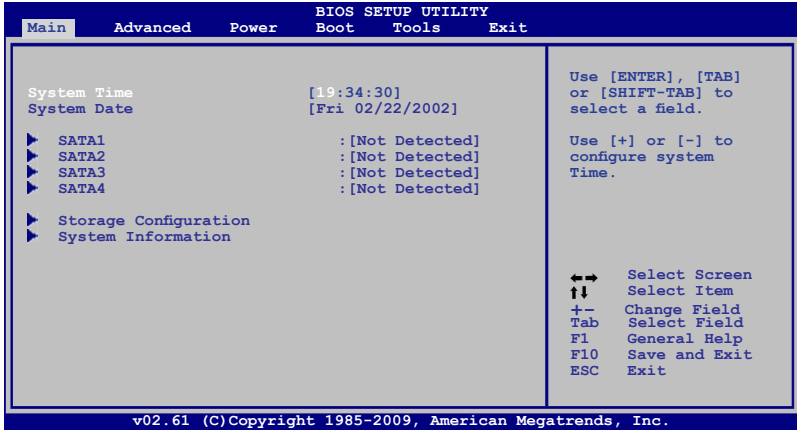
At the top right corner of the menu screen is a brief description of the selected item.

## 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.

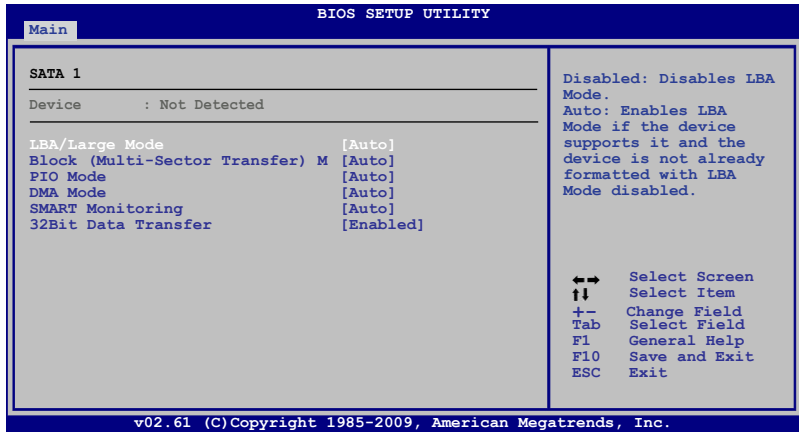
### 4.3.2 System Date [Day xx/xx/xxxx]

Allows you to set the system date.



### 4.3.3 SATA1~4

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 Not Detected if no SATA device is installed in the system.

#### LBA/Large Mode [Auto]

Enables or disables the LBA mode. Setting this item 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 this item is 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 this item is 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]

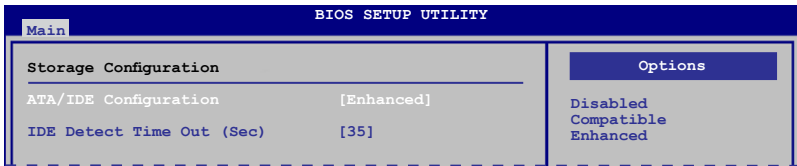
Sets the Smart Monitoring, Analysis, and Reporting Technology.  
Configuration options: [Auto] [Disabled] [Enabled]

### 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.



### ATA/IDE Configuration [Enhanced]

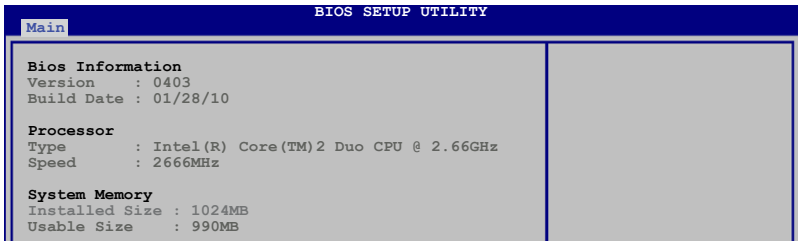
Allows you to set the ATA/IDE configuration.  
Configuration options: [Disabled] [Compatible] [Enhanced]

### 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 SETUP UTILITY
Main
-----
Bios Information
Version      : 0403
Build Date   : 01/28/10

Processor
Type         : Intel(R) Core(TM)2 Duo CPU @ 2.66GHz
Speed        : 2666MHz

System Memory
Installed Size : 1024MB
Usable Size   : 990MB
```

### BIOS Information

Displays the auto-detected BIOS information.

### Processor

Displays the auto-detected CPU specification.

### System Memory

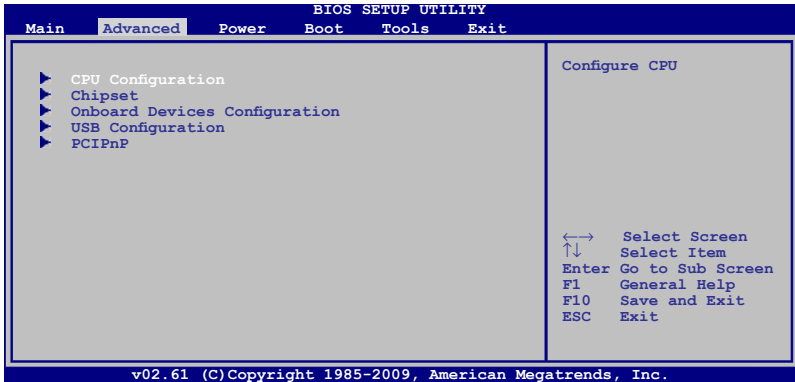
Displays the auto-detected system memory.

## 4.4 Advanced menu

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

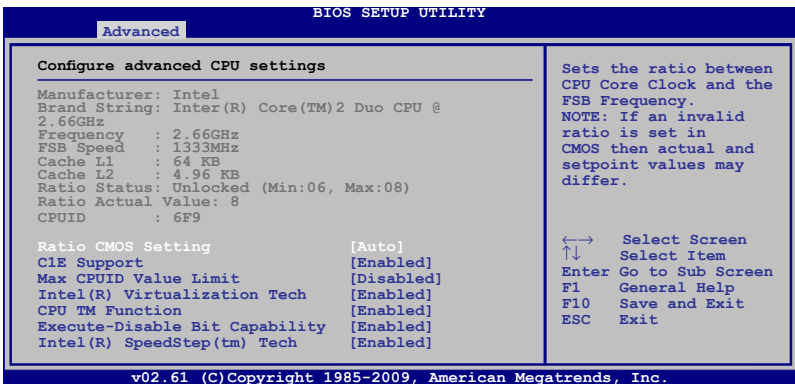


Take caution when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.



### 4.4.1 CPU Configuration

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



## Ratio CMOS Setting [Auto]

Sets the ration between CPU core clock and the FSB frequency. Configuration option: [Auto]



- If an invalid ratio is set in CMOS then 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(R) 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]



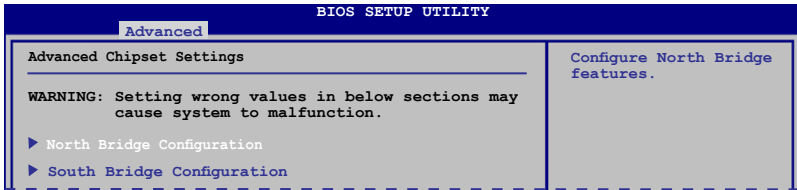
The following item appears only when you installed an Intel® Pentium® 4 or later CPU that supports the Enhanced Intel SpeedStep® Technology (EIST).

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

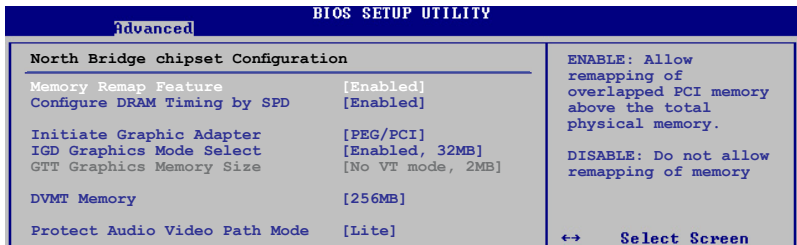
Allows you to use the Enhanced Intel® SpeedStep® Technology. When set to **[Enabled]**, you can adjust the system power settings in the operating system to use the EIST feature. Set this item to **[Disabled]** if you do not want to use the EIST. Configuration options: [Enabled] [Disabled]

## 4.4.2 Chipset

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



### North Bridge Configuration



#### Memory Remap Feature [Enabled]

Allows you to enable or disable the remapping of overlapped PCI memory above the total physical memory. Configuration options: [Disabled] [Enabled]

#### Configure DRAM Timing by SPD [Enabled]

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

#### Initiate Graphic Adapter [PEG/PCI]

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

#### IGD Graphics Mode Select [Enabled, 32MB]

Allows you to select the amount of system memory used by the Internal graphics device. Configuration options: [Disabled] [Enabled, 32MB] [Enabled, 48MB] [Enabled, 64MB] [Enabled, 128MB] [Enabled, 256MB]

#### GTT Graphics Memory Size [No VT mode, 2MB]

This item is not user-configurable.

#### DVMT Memory [256MB]

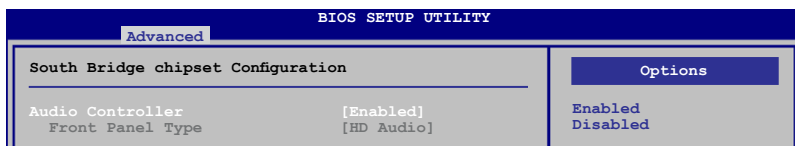
Allows you to select the DVMT memory. Configuration options: [128MB] [256MB] [Maximum DVMT]

### Protect Audio Video Path Mode [Lite]

Allows you to select the Protected Audio-Video Path (PAVP) mode.

Configuration options: [Disabled] [Lite] [Paranoid]

## North Bridge Configuration



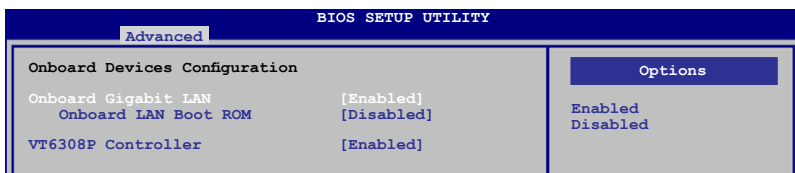
### Audio Controller [Enabled]

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

### **Front Panel Type [HD Audio]**

This item is not user-configurable. Configuration option: [HD Audio]

## 4.4.3 Onboard Devices Configuration



### **Onboard Gigabit LAN [Enabled]**

Allows you to enable or disable the onboard Gigabit LAN controller.

Configuration options: [Enabled] [Disabled]

### Onboard LAN Boot 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]

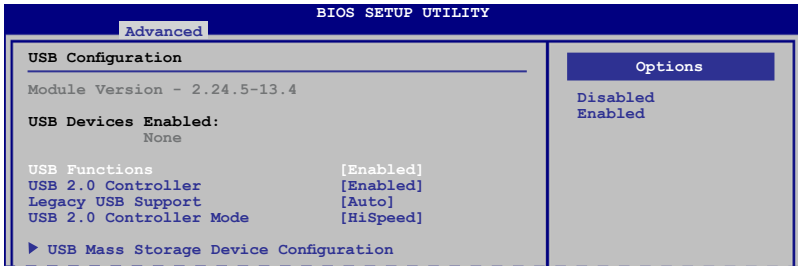
### **VT6308P Controller [Enabled]**

Allows you to enable or disable the VT6308P Controller.

Configuration options: [Disabled] [Enabled]

## 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]

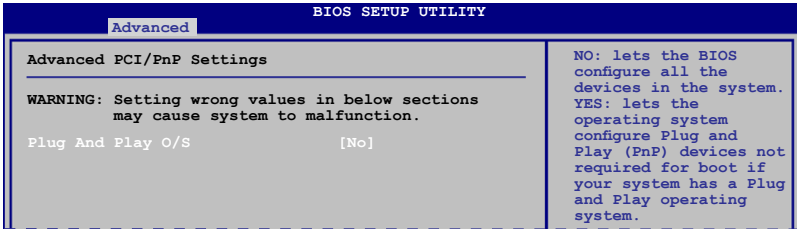
#### *Emulation Type [Auto]*

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



## 4.4.5 PCIPnP

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.



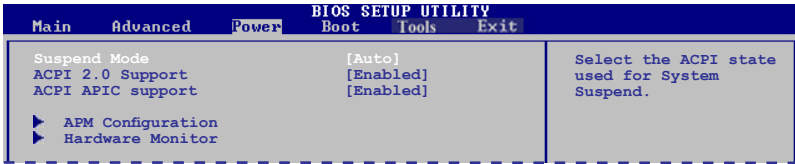
Take caution when changing the settings of the PCI PnP menu items. Incorrect field values can cause the system to malfunction.

### 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 Configuration and Power Interface (ACPI) and 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.

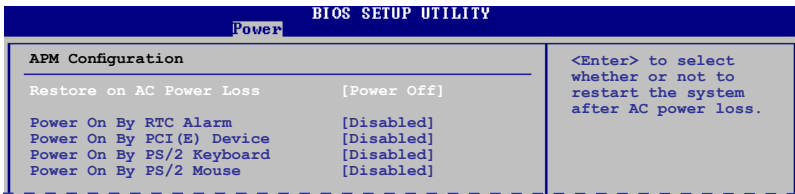
### 4.5.2 ACPI 2.0 Support [Enabled]

Allows you to add more tables for Advanced Configuration as per 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 RSDDT 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 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]

### Power On By PCI (E) Device [Disabled]

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

### Power On By PS/2 Keyboard [Disabled]

Allows you to use specific keys on the keyboard to turn on the system. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead. Configuration options: [Disabled] [Space Bar] [Ctrl-Esc] [Power Key]

### Power On By PS/2 Mouse [Disabled]

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

## 4.5.5 Hardware Monitor

BIOS SETUP UTILITY	
Power	
Hardware Monitor	CPU Temperature
CPU Temperature	[43°C/109°F]
MB Temperature	[31°C/87.5°F]
CPU Fan Speed	[3515RPM]
CPU Q-Fan Control	[Enabled]
VCORE Voltage	[ 1.360V]
3.3V Voltage	[ 3.320V]
5V Voltage	[ 5.053V]
12V Voltage	[12.251V]

### **CPU Temperature [xxx°C/xxx°F]**

### **MB Temperature [xxx°C/xxx°F]**

The onboard hardware monitor automatically detects and displays the CPU / MB temperature. Select Ignored if you do not wish to display the detected temperature.

### **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 [Enabled]**

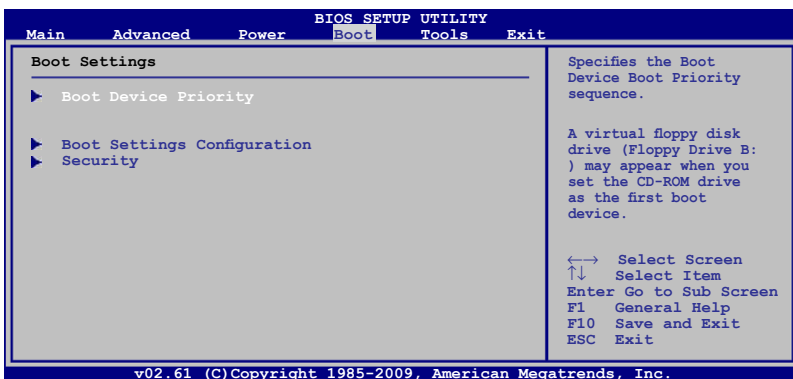
Allows you to enable or disable the CPU Q-Fan function. Configuration options: [Disabled] [Enabled]

### **VCORE Voltage, 3.3V Voltage, 5V Voltage, 12V Voltage**

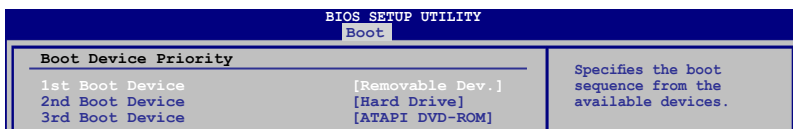
The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators.

## 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 [Removable]

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

BIOS SETUP UTILITY	
Boot	
<b>Boot Settings Configuration</b>	
Quick Boot	[Enabled]
Full Screen Logo	[Enabled]
AddOn ROM Display Mode	[Force BIOS]
Bootup Num-Lock	[On]
Wait For 'F1' If Error	[Enabled]
Hit 'DEL' Message Display	[Enabled]

Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.

### 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]



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Set this item to **[Enabled]** to use the ASUS MyLogo 2™ feature.

---

### Add On ROM Display Mode [Force BIOS]

Sets the display mode for option ROM. Configuration options: [Force BIOS] [Keep Current]

### Bootup Num-Lock [On]

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

Configuration options: [Off] [On]

### Wait for 'F1' If Error [Enabled]

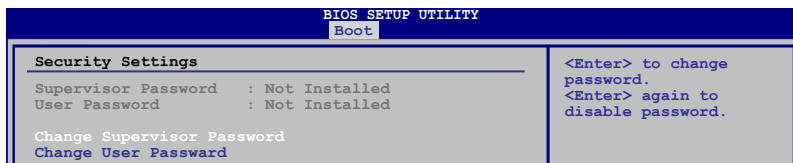
When set to Enabled, the system waits for the F1 key to be pressed when error occurs. Configuration options: [Disabled] [Enabled]

### 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. In 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.

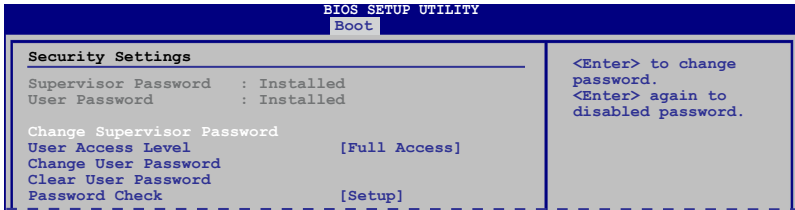
To change the supervisor password, follow the same steps in setting a supervisor password.

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 **3.3 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. In 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.

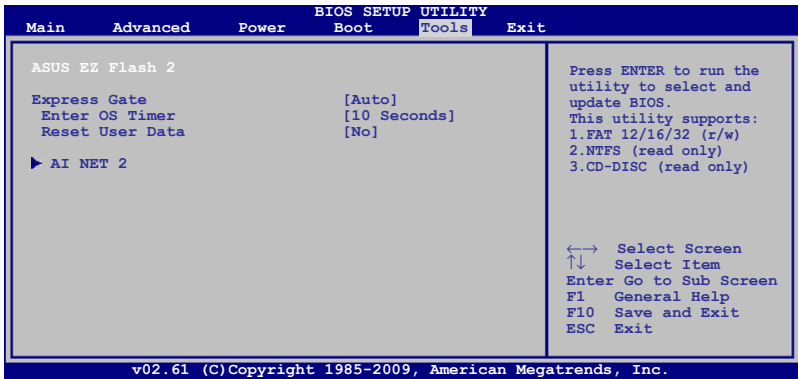
## Password Check [Setup]

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]



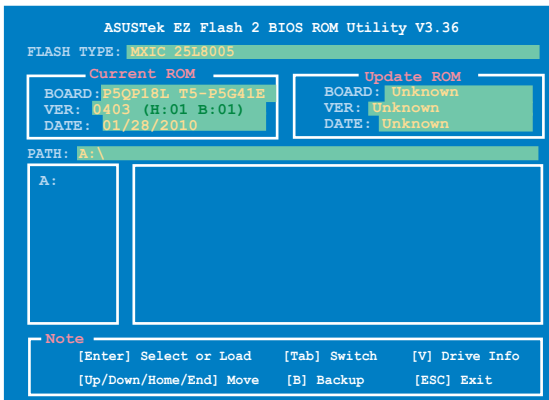
## 4.7 Tools menu

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



### 4.7.1 ASUS EZ Flash 2

Allows you to run ASUS EZ Flash 2. When you press <Ok>, a confirmation message appears. Use the left/right arrow key to select between [Yes] or [No], then press <Ok> to confirm your choice.



### 4.7.2 Express Gate [Auto]

Allows you to enable or disable the ASUS Express Gate feature. The ASUS Express Gate feature is a unique instant-on environment that provides quick access to the Internet browser and Skype. Configuration options: [Enabled] [Disabled] [Auto]

#### *Enter OS Timer [10 Seconds]*

Sets countdown duration that the system waits at the Express Gate's first screen before starting Windows or other installed OS. Choose **[Prompt User]** to stay at the first screen of Express Gate for user action. Configuration options: [Prompt User] [1 second] [3 seconds] [5 seconds] [10 seconds] [15 seconds] [20 seconds] [30 seconds]

#### *Reset User Data [No]*

Allows you to clear Express Gate's user data. Configuration options: [No] [Reset]

When setting this item to **[Reset]**, ensure to save the setting to the BIOS so that the user data will be cleared the next time you enter the Express Gate. User data includes the Express Gate's settings as well as any personal information stored by the web browser (bookmarks, cookies, browsing history, etc.). This is useful in the rare case where corrupt settings prevent the Express Gate environment from launching properly.



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

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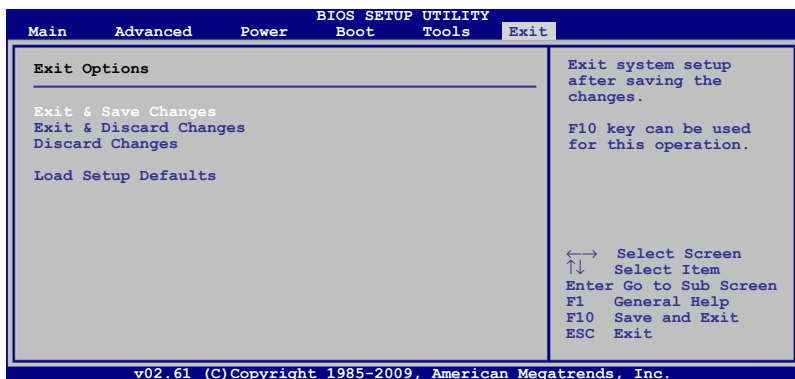
### 4.7.3 AI NET 2

#### **Check Atheros LAN cable [Disabled]**

Enables or disables checking of the Atheros 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.

