P7P55D-E LX

Motherboard

E5147

First Edition
December 2009

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Notices

Federal Communications Commission Statement

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

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

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

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

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.

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.

Safety information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.

- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.

- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.

- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.

- Ensure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.

- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.

- Before using the product, ensure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.

- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.

- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.

- Place the product on a stable surface.

- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

About this guide

This user guide contains the information you need when installing and configuring the motherboard.

How this guide is organized

This guide contains the following parts:

*   **Chapter 1: Product introduction**

    This chapter describes the features of the motherboard and the new technology it supports.

*   **Chapter 2: BIOS information**

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

Where to find more information

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

1. **ASUS websites**

    The ASUS website provides 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.

Conventions used in this guide

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

DANGER/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 help you complete a task.

Typography

Bold text	Indicates a menu or an item to select.
Italics	Used to emphasize a word or a phrase.
<Key>	Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key. Example: <Enter> means that you must press the Enter or Return key.
<Key1>+<Key2>+<Key3>	If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: <Ctrl>+<Alt>+<D>

P7P55D-E LX specifications summary

CPU	LGA1156 socket for Intel® Core™ i7 / Core™ i5 / Core™ i3 processors Supports Intel® Turbo Boost Technology * Refer to www.asus.com for Intel CPU support list
Chipset	Intel® P55 Express Chipset
Memory	4 x DIMM, max. 16GB, DDR3 2200(O.C.)* / 1600 / 1333 / 1066 MHz, non-ECC, un-buffered memory Dual channel memory architecture Supports Intel® Extreme Memory Profile (XMP) * Hyper DIMM support is subject to the physical characteristics of individual CPUs. Some hyper DIMMs only support one DIMM per channel. Please refer to Memory QVL for details. ** Refer to www.asus.com or this user manual for the Memory QVL (Qualified Vendors Lists)
Expansion Slots	1 x PCI Express 2.0 x 16 slot 4 x PCI Express 2.0 x1 slots (2.5GT/s) 2 x PCI slots

Storage	**Intel® P55 Express Chipset:**
	  - 6 x SATA 3.0 Gb/s ports
	  - Intel® Matrix Storage Technology supporting SATA RAID 0,1, 5, and 10
	
	JMicron® JMB361 SATA & PATA controller
	  - 1 x Ultra DMA 133/100/66 for up to 2 PATA devices
	  - 1 x eSATA 3.0 Gb/s port (SATA on-the-go)
	
	Marvell® PCIe SATA 6Gb/s controller:
	  - 2 x SATA 6.0 Gb/s ports (gray)

LAN	Realtek® 8112L Gigabit LAN controller featuring AI NET2

USB	**NEC USB 3.0 controller:**
	  - 2 x USB 3.0 ports (blue; at back panel)
	
	Intel® P55 Express Chipset:
	  - 12 x USB 2.0 ports (6 ports at mid-board, 6 ports at back panel)

Audio	VIA® VT1708S 8-channel High Definition Audio CODEC
	  - Supports Jack-Detection, Multi-streaming, and Front Panel Jack-Retasking
	  - Optical S/PDIF out port at back I/O

(continued on the next page)

P7P55D-E LX specifications summary

ASUS Q-Design	ASUS Q-LED (DRAM) ASUS Q-Slot ASUS Q-DIMM
ASUS Unique Features	**ASUS IO Level UP for Ultra Performance** - True USB 3.0 or True SATA 6Gb/s Support **ASUS Xtreme Design** **ASUS Exclusive Overclocking Features** - CPU Level UP, TurboV and Turbo Key **ASUS Exclusive Features** - MemOK! - Express Gate - ASUS EPU **ASUS Quiet Thermal Solution:** - ASUS Fanless Design: Stylish Heat-sink solution - ASUS Fanless Design: Stack Cool 3 - ASUS Fan Xpert **ASUS Crystal Sound:** - ASUS Noise Filter **ASUS EZ DIY:** - ASUS Q-Shield - ASUS O.C. Profile - ASUS CrashFree BIOS 3 - ASUS EZ Flash 2 - ASUS My Logo 2 - Multi-language BIOS
ASUS Exclusive Overclocking Features	**Precision Tweaker 2:** - vCore: Adjustable CPU voltage at 0.00625V increment - vIMC: Adjustable IMC at 0.02V increment - vDRAM Bus: 41-step DRAM voltage control - vPCH: 23-step chipset voltage control - vCPU PLL: 36-step reference voltage control **SFS (Stepless Frequency Selection):** - Internal Base Clock tuning from 80MHz up to 500MHz at 1MHz increment - PCI Express frequency tuning from 100MHz up to 200MHz at 1MHz increment **Overclocking Protection:** - ASUS C.P.R.(CPU Parameter Recall)

P7P55D-E LX specifications summary

Back Panel I/O Ports	1 x PS/2 Keyboard port (Purple) 1 x PS/2 Mouse port (Green) 1 x Optical S/PDIF Out 1 x eSATA 3.0 Gb/s port (SATA on-the-go) 1 x RJ45 port 2 x USB 3.0/2.0 ports (blue) 6 x USB 2.0/1.1 ports (black) 8-channel Audio I/O
Internal I/O Connectors	3 x USB connectors support additional 6 USB ports 1 x IDE connector 2 x SATA 6.0Gb/s connectors (gray) 6 x SATA 3.0Gb/s connectors 1 x CPU Fan connector 2 x Chassis Fan connectors (1 x 4-pin, 1 x 3-pin) 1 x Power Fan connector 1 x COM port connector 1 x Front panel audio connector 1 x S/PDIF Out Header 1 x 24-pin ATX Power connector 1 x 8-pin ATX 12V Power connectors 1 x System Panel 1 x MemOK! button 1 x IO Level UP button
BIOS Features	16 Mb Flash ROM, AMI BIOS, PnP, DMI 2.0, WfM 2.0, SM BIOS 2.5, ACPI 2.0a, Multi-language BIOS, ASUS EZ Flash 2, ASUS CrashFree BIOS 3
Manageability	WfM 2.0, DMI 2.0, WOL by PME, WOR by PME, PXE
Support DVD Contents	Drivers ASUS Utilities ASUS Update Anti-virus software (OEM version)
Form Factor	ATX Form Factor, 12"x 8.6" (30.5cm x 21.8cm)

*Specifications are subject to change without notice.

Chapter 1

Product introduction

1.1 Welcome!

Thank you for buying an ASUS® P7P55D-E LX motherboard!

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

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

1.2 Package contents

Check your motherboard package for the following items.

Motherboard	ASUS P7P55D-E LX motherboard
Cables	2 x Serial ATA 3.0Gb/s signal cable
	1 x Serial ATA 6.0Gb/s signal cable
	1x Ultra DMA 133/100 cable
Accessories	1 x Q-Shield
Application DVD	ASUS motherboard support DVD
Documentations	User manual

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

1.3 Special features

1.3.1 Product highlights

Intel® LGA1156 Lynnfield / Clarkdale Processor Ready

This motherboard supports the latest Intel® Lynnfield / Clarkdale processors in LGA1156 package, which has memory and PCI Express controller integrated to support 2-channel (4 DIMMs) DDR3 memory and 16 PCI Express 2.0 lanes, enabling higher graphics performance. Intel® Lynnfield / Clarkdale processor is one of the most powerful and energy efficient CPU in the world.

Intel® P55

The Intel® P55 Express Chipset is the latest one-chipset design to support the latest 1156 socket Intel® Core™ i7 / Core™ i5 / Core™ i3 processors. Intel P55 provides improved performance by utilizing serial point-to-point links, allowing increased bandwidth and stability.

IO Level UP

Turn on IO Level UP to boost the USB 3.0 or SATA 6Gb/s data transfer rate to up to 500MB/s! Users can flexibly switch between full-speed PCIe x16 mode for their graphics cards and IO Level UP for rapid data throughput.

True USB 3.0 Support

Experience ultra-fast data transfers at 4.8Gbps with USB 3.0—the latest connectivity standard. Built to connect easily with next generation components and peripherals, USB 3.0 transfers data 10X faster and is also backward compatible with USB 2.0 components.

True SATA 6Gb/s Support

Supporting next-generation Serial ATA (SATA) storage interface, this motherboard delivers up to 6.0Gb/s data transfer rates. Additionally, get enhanced scalability, faster data retrieval, double the bandwidth of current bus systems.

1.4 Before you proceed

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

- Unplug the power cord from the wall socket before touching any component.

- Before handling components, use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, to avoid damaging them due to static electricity.

- Hold components by the edges to avoid touching the ICs on them.

- Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.

- Before you install or remove any component, ensure that the ATX power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, or components.

1.5 Motherboard overview

1.5.1 Placement direction

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

1.5.2 Screw holes

Place six (6) screws into the holes indicated by circles to secure the motherboard to the chassis.

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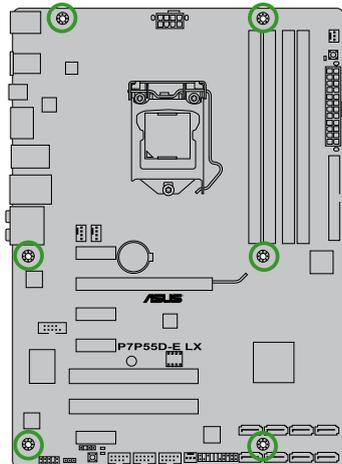
1.5.3 Motherboard layout

> Ensure that you install the motherboard into the chassis in the correct orientation. The edge with external ports goes to the rear part of the chassis.

Place this side towards the rear of the chassis.
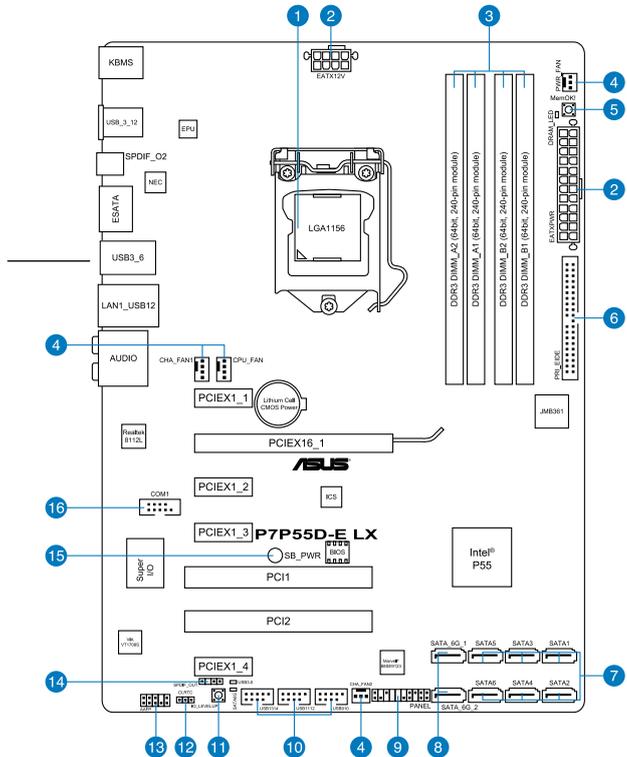
1.5.4 Layout contents

	Connectors/Jumpers/Slots/LED	Page		Connectors/Jumpers/Slots/LED	Page
1.	LGA1156 CPU Socket	1-4	9.	System panel connector (20-8 pin PANEL)	1-24
2.	ATX power connectors (24-pin EATXPWR, 8-pin EATX12V)	1-22	10.	USB connectors (10-1 pin USB910, USB1112, USB1314)	1-25
3.	DDR3 DIMM slots	1-9	11.	IO_LEVELUP switch	1-20
4.	CPU, chassis, and power fan connectors (4-pin CPU_FAN, 4-pin CHA_FAN1, 3-pin CHA_FAN2, 3-pin PWR_FAN)	1-22	12.	Clear RTC RAM (3-pin CLRTC)	1-18
5.	MemOK! switch	1-19	13.	Front panel audio connector (10-1 pin AAFP)	1-23
6.	JMicron® JMB361 IDE Connector (40-1 pin PRI_IDE [Blue])	1-27	14.	Digital audio connector (4-1 pin SPDIF_OUT)	1-26
7.	Intel® P55 Serial ATA connectors (7-pin SATA 1-6)	1-23	15.	Standby power LED	1-28
8.	Marvell® Serial ATA 6.0 Gb/s connectors (7-pin SATA_6G_1/2 [gray])	1-26	16.	Serial port connector (10-1 pin COM1)	1-25

1.6   Central Processing Unit (CPU)

The motherboard comes with a surface mount LGA1156 socket designed for the
Intel® Core™ i7 / Core™ i5 / Core™ i3 Processors.

Ensure that all power cables are unplugged before installing the CPU.

• Upon purchase of the motherboard, ensure that the PnP cap is on the socket and the socket contacts are not bent. Contact your retailer immediately if the PnP cap is missing, or if you see any damage to the PnP cap/socket contacts/motherboard components. ASUS will shoulder the cost of repair only if the damage is shipment/transit-related.

• Keep the cap after installing the motherboard. ASUS will process Return Merchandise Authorization (RMA) requests only if the motherboard comes with the cap on the LGA1156 socket.

• The product warranty does not cover damage to the socket contacts resulting from incorrect CPU installation/removal, or misplacement/loss/incorrect removal of the PnP cap.

1.6.1   Installing the CPU

To install a CPU:

1.   Locate the CPU socket on the motherboard.
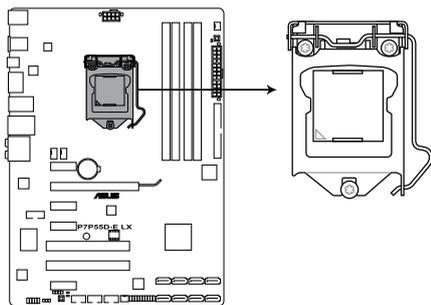
P7P55D-E LX CPU LGA1156

2.   Press the load lever with your thumb (A), and then move it to the right (B) until it is released from the retention tab.

To prevent damage to the socket pins, do not remove the PnP cap unless you are installing a CPU.

Load lever

A

B

Retention tab
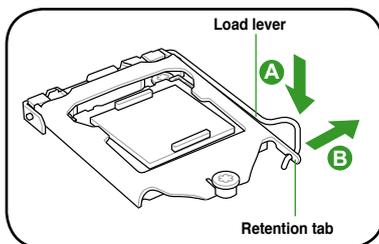
3. Lift the load lever in the direction of the arrow until the load plate is completely lifted.

Load plate
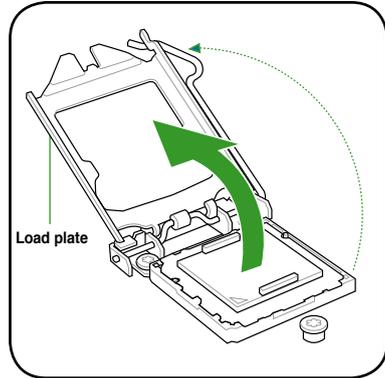
4. Remove the PnP cap from the CPU socket by lifting the tab only.

PnP cap

Cap tab
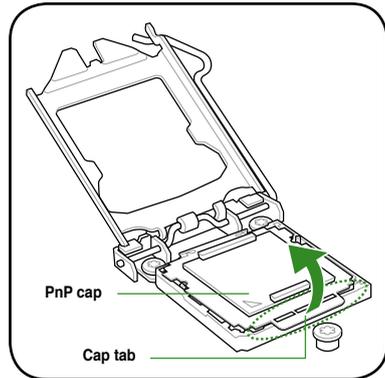
5. Position the CPU over the socket, ensuring that the gold triangle is on the bottom-left corner of the socket, and then fit the socket alignment keys into the CPU notches.

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

CPU notches

Gold triangle mark

Alignment keys
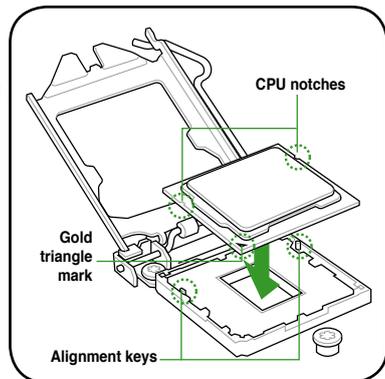
6. Apply some Thermal Interface Material to the exposed area of the CPU that the heatsink will be in contact with, ensuring that it is spread in an even thin layer.

> Some heatsinks come with pre-applied thermal paste. If so, skip this step.

> The Thermal Interface Material is toxic and inedible. DO NOT eat it. If it gets into your eyes or touches your skin, wash it off immediately, and seek professional medical help.
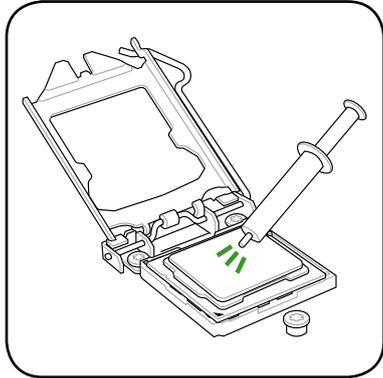
7. Close the load plate (A), and then push down the load lever (B), ensuring that the front edge of the load plate slides under the retention knob (C).
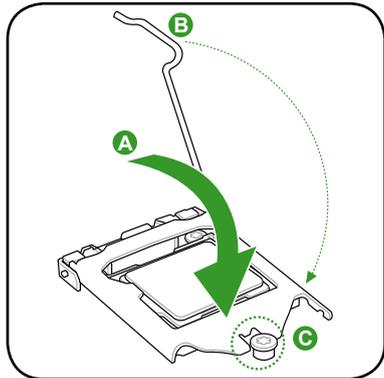
8. Insert the load lever under the retention tab.
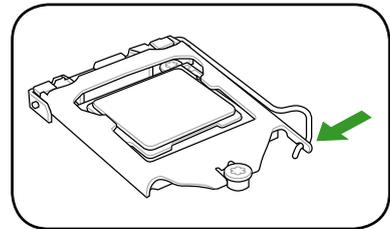
1.6.2 Installing the CPU heatsink and fan

The Intel® LGA1156 processor requires a specially designed heatsink and fan assembly to ensure optimum thermal condition and performance.

- When you buy a boxed Intel® processor, the package includes the CPU fan and heatsink assembly. If you buy a CPU separately, ensure that you use only Intel®-certified multi-directional heatsink and fan.

- Your Intel® LGA1156 heatsink and fan assembly comes in a push-pin design and requires no tool to install.

- Use an LGA1156-compatible CPU heatsink and fan assembly only. The LGA1156 socket is incompatible with the LGA775 and LGA1366 sockets in size and dimension.

If you purchased a separate CPU heatsink and fan assembly, ensure that the Thermal Interface Material is properly applied to the CPU heatsink or CPU before you install the heatsink and fan assembly.

Ensure that you have installed the motherboard to the chassis before you install the CPU fan and heatsink assembly.

To install the CPU heatsink and fan:

1. Place the heatsink on top of the installed CPU, making sure that the four fasteners match the holes on the motherboard.

2. Push down two fasteners at a time in a diagonal sequence to secure the heatsink and fan assembly in place.
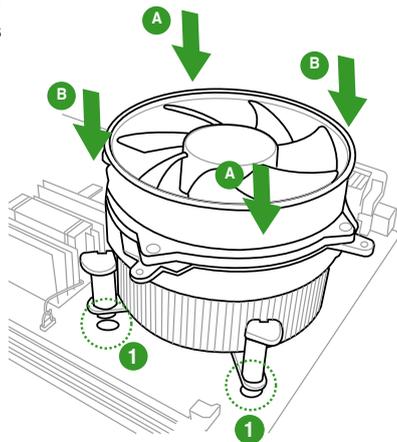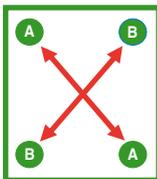
Orient the heatsink and fan assembly such that the CPU fan cable is closest to the CPU fan connector.

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

CPU_FAN

GND
CPU FAN PWR
CPU FAN IN
CPU FAN PWM

P7P55D-E LX CPU Fan connector
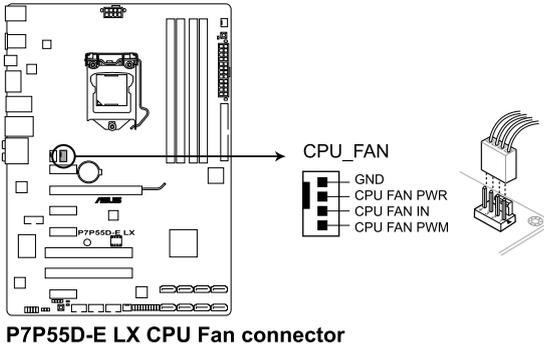
DO NOT forget to connect the CPU fan connector! Hardware monitoring errors can occur if you fail to plug this connector.

1.6.3   Uninstalling the CPU heatsink and fan

To uninstall the CPU heatsink and fan:

1.   Disconnect the CPU fan cable from the connector on the motherboard.

2.   Rotate each fastener counterclockwise.

3.   Pull up two fasteners at a time in a diagonal sequence to disengage the heatsink and fan assembly from the motherboard.
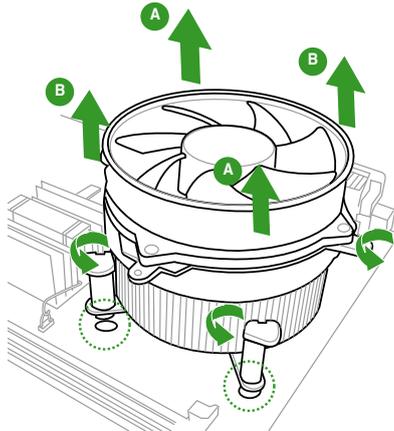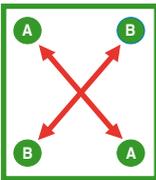
4.   Carefully remove the heatsink and fan assembly from the motherboard.

1.7 System memory

1.7.1 Overview

The motherboard comes with four Double Data Rate 3 (DDR3) Dual Inline Memory Modules (DIMM) sockets.

A DDR3 module has the same physical dimensions as a DDR2 DIMM but is notched differently to prevent installation on a DDR2 DIMM socket. DDR3 modules are developed for better performance with less power consumption.
The figure illustrates the location of the DDR3 DIMM sockets:
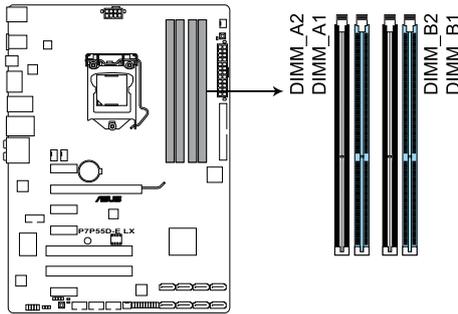
P7P55D-E LX 240-pin DDR3 DIMM sockets

Recommended memory configurations

One DIMM:

Install only one memory module in slot **A1** or **B1** as a single-channel operation.

DIMM_A1

DIMM_B1
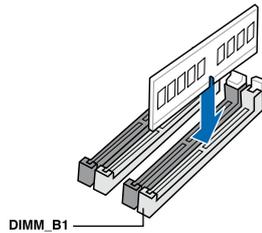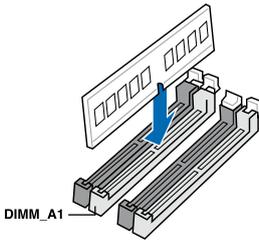
Two DIMMs (dual-channel operation):

DIMM_A1
DIMM_B1

Four DIMMs (dual-channel operation):

DIMM_A2
DIMM_A1
DIMM_B2
DIMM_B1
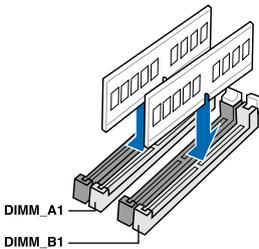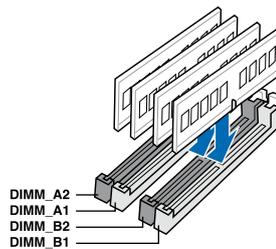
1.7.2 Memory configurations

You may install 1GB, 2GB and 4GB unbuffered and non-ECC DDR3 DIMMs into the DIMM sockets.

- You may install varying memory sizes in Channel A and Channel B. The system maps the total size of the lower-sized channel for the dual-channel configuration. Any excess memory from the higher-sized channel is then mapped for single-channel operation.

- Due to Intel spec definition, X.M.P. DIMMs are supported for one DIMM per channel only.

- According to Intel CPU spec, DIMM voltage below 1.65V is recommended to protect the CPU.

- According to Intel CPU spec, CPUs with a core frequency of 2.66G support the maximum DIMM frequency of up to DDR3-1333. To use DIMMs of a higher frequency with a 2.66G CPU, enable the DRAM O.C. Profile feature in BIOS. Refer to section **Ai Overclock Tuner** for details.

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

- Due to the memory address limitation on 32-bit Windows OS, when you install 4GB or more memory on the motherboard, the actual usable memory for the OS can be about 3GB or less. For effective use of memory, we recommend that you do any of the following:
  - Use a maximum of 3GB system memory if you are using a 32-bit Windows OS.
  - Install a 64-bit Windows OS when you want to install 4GB or more on the motherboard.
    For more details, refer to the Microsoft® support site at
    http://support.microsoft.com/kb/929605/en-us.

- This motherboard does not support DIMMs made up of 512Mb (64MB) chips or less (Memory chip capacity counts in Megabit, 8 Megabit/Mb = 1 Megabyte/MB).

- The default memory operation frequency is dependent on its Serial Presence Detect (SPD), which is the standard way of accessing information from a memory module. Under the default state, some memory modules for overclocking may operate at a lower frequency than the vendor-marked value. To operate at the vendor-marked or at a higher frequency, refer to section **2.4 Ai Tweaker menu** for manual memory frequency adjustment.

- For system stability, use a more efficient memory cooling system to support a full memory load (4 DIMMs) or overclocking condition.

P7P55D-E LX Motherboard Qualified Vendors Lists (QVL) DDR3-1067MHz capability for CPU at 2.66, 2.8 and 2.93GHz

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing Lable(Bios)	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
CORSAIR	CM3X1024-1066C7	1024MB	DS	N/A	Heat-Sink Package	7	1.1	•	•	•
Crucial	CT12864BA1067.8FF	1024MB	SS	MICRON	D9KPT	7(1066-7-7-7-20)		•	•	•
Crucial	CT12864BA1067.8SFD	1024MB	SS	MICRON	D9JNL	7		•	•	•
Crucial	CT12872BA1067.9FF	1024MB	SS	MICRON	D9KPT(ECC)	7(1066-9-9-9-25)		•	•	•
Crucial	CT25664BA1067.16FF	2048MB	DS	MICRON	D9KPT	7(1066-7-7-7-20)		•	•	•
Crucial	CT25664BA1067.16SFD	2048MB	DS	MICRON	D9JNL	7		•	•	•
Crucial	CT25672BA1067.18FF	2048MB	DS	MICRON	D9KPT(ECC)	7(1066-7-7-7-20)		•	•	•
ELPIDA	EBJ10UE8BAW0-AE-E	1024MB	SS	ELPIDA	J1108BABG-DJ-E	7(1066-7-7-7-20)		•	•	•
ELPIDA	EBJ11RD8BAFA-AE-E	1024MB	DS	ELPIDA	J5308BASE-AC-E(ECC)	7		•	•	•
ELPIDA	EBJ11UD8BAFA-AG-E	1024MB	DS	ELPIDA	J5308BASE-AC-E	8		•	•	•
ELPIDA	EBJ21UE8BAW0-AE-E	2048MB	DS	ELPIDA	J1108BABG-DJ-E	7(1066-7-7-7-20)		•	•	•
Hynix	HMT112U6AFP8C-G7N0	1024MB	SS	HYNIX	H5TQ1G83AFPG7C	7		•	•	•
Hynix	HYMT112U64ZNF8-G7	1024MB	SS	HYNIX	HY5TQ1G831ZNFP-G7	7		•	•	•
Hynix	HMT125U6AFP8C-G7N0	2048MB	DS	HYNIX	H5TQ1G83AFPG7C	7		•	•	•
Hynix	HYMT125U64ZNF8-G7	2048MB	DS	HYNIX	HY5TQ1G831ZNFP-G7	7		•	•	•
KINGSTON	KVR1066D3N7/1G	1024MB	SS	ELPIDA	J1108BABG-DJ-E	1066-7-7-7-20	1.5	•	•	•
KINGSTON	KVR1066D3N7/2G	2048MB	DS	ELPIDA	J1108BABG-DJ-E	1066-7-7-7-20	1.5	•	•	•
KINGSTON	KVR1066D3N7/4G	4096MB	DS	SAMSUNG	K4B2G0846B-HCF8	1066-7-7-7-20	1.5	•	•	•
MICRON	MT8JTF12864AY-1G1D1	1024MB	SS	MICRON	7VD22	7		•	•	•
MICRON	MT8JTF12864AZ-1G1F1	1024MB	SS	MICRON	8ZF22 D9KPV	7(1066-7-7-7-20)		•	•	•
MICRON	MT8JTF12864AZ-1G1F1	1024MB	SS	MICRON	D9KPT	7(1066-7-7-7-20)		•	•	•
MICRON	MT9JSF12872AZ-1G1F1	1024MB	SS	MICRON	D9KPT(ECC)	7(1066-9-9-9-25)		•	•	•
MICRON	MT16JTF25664AY-1G1D1	2048MB	DS	MICRON	7VD22	7		•	•	•
MICRON	MT16JTF25664AZ-1G1F1	2048MB	DS	MICRON	8ZF22 D9KPV	7(1066-7-7-7-20)		•	•	•
MICRON	MT16JTF25664AZ-1G1F1	2048MB	DS	MICRON	D9KPT	7(1066-7-7-7-20)		•	•	•
MICRON	MT18JSF25672AZ-1G1F1	2048MB	DS	MICRON	D9KPT(ECC)	7(1066-7-7-7-20)		•	•	•
SAMSUNG	M378B5273BH1-CF8	4096MB	DS	SAMSUNG	K4B2G0846B-HCF8	8(7-7-7-20)	1.5	•	•	•
Transcend	TS256MLK64V1U	2048MB	DS	ELPIDA	J1108BABG-AE-E	7(1066-7-7-7-20)		•	•	•
Asint	SLY3128M8-EAE	1024MB	SS	Asint	DDRIII1208-AE	(7-7-7-20)		•	•	•
Asint	SLZ3128M8-EAE	2048MB	DS	Asint	DDRIII1208-AE	(7-7-7-20)		•	•	•
WINTEC	3DU3191A-10	1024MB	DS	Qimonda	IDSH51-03A1F1C-10F	7		•	•	•

P7P55D-E LX Motherboard Qualified Vendors Lists (QVL) DDR3-1333MHz capability for CPU at 2.66, 2.8 and 2.93GHz

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing Dimm(Bios)	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
A-DATA	AD133301GOU	1024MB	SS	A-DATA	AD30908C8D-15IG	1333-9-9-9-24		•	•	•
A-DATA	AD1333002GOU	2048MB	DS	A-DATA	AD30908C8D-15IG	1333-9-9-9-24		•	•	•
A-DATA	AD31333E002G0U	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	7-7-7-20(1333-9-9-9-24)	1.65-1.85	•		
Apacer	78.01GC6.420	1024MB	SS	ELPIDA	J1108BABG-DJ-E	(1333-9-9-9-24)		•	•	•
Apacer	78.01GC6.9L0	1024MB	SS	Apacer	AM5D5808AEWSBG	9(1333-9-9-9-24)		•	•	•
Apacer	78.01GC8.422	1024MB	SS	ELPIDA	J1108BABG-DJ-E(ECC)	(1333-9-9-9-24)		•	•	
Apacer	78.A1GC6.421	2048MB	DS	ELPIDA	J1108BABG-DJ-E	(1333-9-9-9-24)		•	•	•
Apacer	78.A1GC6.9L1	2048MB	DS	Apacer	AM5D5808AEWSBG	9(1333-9-9-9-24)		•	•	•
Apacer	78.A1GC8.423	2048MB	DS	ELPIDA	J1108BABG-DJ-E(ECC)	(1333-9-9-9-24)		•	•	•
CORSAIR	TR3X3G1333C9 (Ver2.1)	3072MB(Kit of 3)	SS	N/A	Heat-Sink Package	9-9-9-24(1333-9-9-9-24)	1.5	•	•	•
CORSAIR	CM3X1024-1333C9DHX	1024MB	DS	N/A	Heat-Sink Package	(1333-9-9-9-24)	1.1	•	•	•
CORSAIR	BoxP/N:TWIN3X2048-1333C9 (CM3X1024-1333C9)Ver1.1	2048MB(Kit of 2)	DS	N/A	Heat-Sink Package	9-9-9-24(1066-7-7-7-20)	1.70	•	•	•
CORSAIR	BoxP/N: TW3X4G1333C9DHX (CM3X2048-1333C9DHX)Ver3.2	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	9-9-9-24(1066-7-7-7-20)	1.70	•	•	•
CORSAIR	TR3X6G1333C9 (Ver2.1)	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	9-9-9-24(1333-9-9-9-24)	1.5	•	•	•
Crucial	CT12864BA1339.8FF	1024MB	SS	MICRON	D9KPT	9(1333-9-9-9-24)		•	•	•
Crucial	CT12864BA1339.8SFD	1024MB	SS	MICRON	MT8JF12864AY-1G4D1	(1333-9-9-9-24)		•	•	•
Crucial	CT12872BA1339.9FF	1024MB	SS	MICRON	D9KPT(ECC)	9(1333-9-9-9-24)		•	•	•
Crucial	CT25664BA1339.16FF	2048MB	DS	MICRON	D9KPT	9(1333-9-9-9-24)		•	•	•

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing Dimm(Bios)	Voltage	DIMM socket support (Optional) A*	B*	C*
Crucial	CT25672BA1339.18FF	2048MB	DS	MICRON	D9KPT(ECC)	9(1333-9-9-9-24)		•	•	•
Crucial	BL25664BA1336.16SFB1	4096MB(Kit of 2)	DS	NA	Heat-Sink Package	6-6-6-20(1333-9-9-9-24)	1.8	•	•	•
ELPIDA	EBJ10UE8BAW0-DJ-E	1024MB	SS	ELPIDA	J1108BABG-DJ-E	9(1333-9-9-9-24)		•	•	•
ELPIDA	EBJ21UE8BAW0-DJ-E	2048MB	DS	ELPIDA	J1108BABG-DJ-E	9(1333-9-9-9-24)		•	•	•
G.SKILL	F3-10600CL7D-2GBPI	2048MB(Kit of 2)	SS	N/A	Heat-Sink Package	(1337-7-7-7-18)	1.65	•	•	
G.SKILL	F3-10600CL8D-2GBHK	2048MB(Kit of 2)	SS	N/A	Heat-Sink Package	(1337-8-8-8-22)	1.65	•	•	
G.SKILL	F3-10666CL7T-6GBPK(XMP)	2048MB	DS	N/A	Heat-Sink Package	7-7-7-18(1333-7-7-7-18)	1.5-1.6	•	•	
G.SKILL	F3-10666CL8D-4GBHK(XMP)	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	8-8-8-21(1333-7-7-7-20)	1.5-1.6	•	•	
G.SKILL	F3-10666CL9T-6GBNQ	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	9-9-9-24(1333-9-9-9-24)	1.5	•	•	•
GEIL	GV34GB1333C7DC	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	7-7-7-24(1333-8-8-8-28)	1.5	•	•	•
Hynix	HMT112U6BFR8C-H9	1024MB	SS	Hynix	H5TQ1G83BFR	9(1333-9-9-9-24)		•	•	•
Hynix	HMT125U6BFR8C-H9	2048MB	DS	Hynix	H5TQ1G83BFR	9(1333-9-9-9-24)		•	•	•
Hynix	HMT125U6BFR8C-H9	2048MB	DS	Hynix	H5TQ1G83BFRH9C	9(1333-9-9-9-24)		•	•	•
KINGMAX	FLFD45F-B8EE9	1024MB	SS	ELPIDA	J1108BASE-DJ-E	(1333-9-9-9-24)		•	•	•
KINGSTON	KVR1333D3N9/1G	1024MB	SS	ELPIDA	J1108BABG-DJ-E	9(1066-8-7-7-20)	1.5	•	•	•
KINGSTON	KVR1333D3N9/2G	2048MB	SS	ELPIDA	J1108BABG-DJ-E	1333-9-9-9-24	1.5	•	•	•
KINGSTON	KVR1333D3N9/2G	2048MB	DS	ELPIDA	J1108BABG-DJ-E	9(1066-8-7-7-20)	1.5	•	•	•
MICRON	MT8JTF12864AY-1G4BYES	1024MB	SS	MICRON	Z9HWR	(1333-9-9-9-24)		•	•	•
MICRON	MT8JTF12864AZ-1G4F1	1024MB	SS	MICRON	9FF22 D9KPT	9(1066-8-8-8-20)		•	•	•
MICRON	MT8JTF12864AZ-1G4F1	1024MB	SS	MICRON	D9KPT	9(1333-9-9-9-24)		•	•	•
MICRON	MT9JSF12872AZ-1G4F1	1024MB	SS	MICRON	D9KPT(ECC)	9(1333-9-9-9-24)		•	•	•
MICRON	MT16JF25664AZ-1G4F1	2048MB	DS	MICRON	D9KPT	9(1333-9-9-9-24)		•	•	•
MICRON	MT16JTF25664AZ-1G4F1	2048MB	DS	MICRON	9FF22 D9KPT	9(1066-8-8-8-20)		•	•	•
MICRON	MT18JSF25672AZ-1G4F1	2048MB	DS	MICRON	D9KPT(ECC)	9(1333-9-9-9-24)		•	•	•
OCZ	OCZ3RPX1333EB2GK	1024MB	SS	N/A	Heat-Sink Package	(1066-6-5-5-20)		•		
OCZ	OCZ3G1333LV3GK	3072MB(Kit of 3)	SS	N/A	Heat-Sink Package	9-9-9(1066-7-7-7-20)	1.65	•	•	
OCZ	OCZ3P1333LV3GK	3072MB(Kit of 3)	SS	N/A	Heat-Sink Package	7-7-7(1066-7-7-7-16)	1.65	•	•	
OCZ	OCZ3P13332GK	1024MB	DS	N/A	Heat-Sink Package	7-7-7-20(1333-9-9-9-20)		•		
OCZ	OCZ3P13334GK	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	7(1333-7-7-7-20)	1.8	•	•	
OCZ	OCZ3G1333LV6GK	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	9-9-9(1066-7-7-7-20)	1.65	•	•	
OCZ	OCZ3P1333LV6GK	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	7-7-7(1066-7-7-7-20)	1.65	•	•	
OCZ	OCZX1333LV6GK(XMP)	6144MB(Kit of 3)	DS	NA	Heat-Sink Package	8-8-8(1066-7-7-7-16)	1.6	•	•	
SAMSUNG	M378B2873DZ1-CH9	1024MB	SS	SAMSUNG	K4B1G0846D	9(1333-9-9-9-24)		•	•	•
SAMSUNG	M378B2873EH1-CH9	1024MB	SS	SAMSUNG	K4B1G0846E	1066-8-7-7-20		•	•	•
SAMSUNG	M391B2873DZ1-CH9	1024MB	SS	SAMSUNG	K4B1G0846D(ECC)	9(1333-9-9-9-24)		•	•	•
SAMSUNG	M378B5673DZ1-CH9	2048MB	DS	SAMSUNG	K4B1G0846D	9(1333-9-9-9-24)		•	•	•
SAMSUNG	M378B5673EH1-CH9	2048MB	DS	SAMSUNG	K4B1G0846E	1066-8-7-7-20		•	•	•
SAMSUNG	M391B5673DZ1-CH9	2048MB	DS	SAMSUNG	K4B1G0846D(ECC)	9(1333-9-9-9-24)		•	•	•
SAMSUNG	M378B5273BH1-CH9	4096MB	DS	SAMSUNG	K4B2G0846B-HCH9	9(1333-9-9-9-24)		•	•	•
Super Talent	W1333UX2GB(XMP)	2048MB(Kit of 2)	SS	N/A	Heat-Sink Package	8(1333-8-8-8-24)	1.8	•	•	•
Transcend	TS128MLK64V3U	1024MB	SS	SAMSUNG	K4B1G0846D	9(1333-9-9-9-24)		•	•	•
Transcend	TS256MLK64V3U	2048MB	DS	SAMSUNG	K4B1G0846D	9(1333-9-9-9-24)		•	•	•
Asint	SLY3128M8-EDJ	1024MB	SS	Asint	DDRIII1208-DJ	(9-9-9-24)		•	•	•
Asint	SLY3128M8-EDJE	1024MB	SS	ELPIDA	J1108BASE-DJ-E	1066-8-8-8-20		•	•	•
Asint	SLZ3128M8-EDJ	2048MB	DS	Asint	DDRIII1208-DJ	(9-9-9-24)		•	•	•
Asint	SLZ3128M8-EDJE	2048MB	DS	ELPIDA	J1108BASE-DJ-E	1066-8-8-8-20		•	•	•
ASUS	N/A	1024MB	DS	N/A	Heat-Sink Package	(1333-9-9-9-24)		•	•	•
BUFFALO	FSX1333D3G-1G	1024MB	SS	N/A	Heat-Sink Package	(1066-7-7-7-20)		•		
BUFFALO	FSH1333D3G-T3G(XMP)	3072MB(Kit of 3)	SS	N/A	Heat-Sink Package	7-7-7-20(1066-8-7-7-20)		•		
BUFFALO	FSX1333D3G-2G	2048MB	DS	N/A	Heat-Sink Package	(1066-7-7-7-20)		•		
Patriot	PDC32G1333LLK	1024MB	SS	PATRIOT	Heat-Sink Package	7(1337-7-7-7-20)	1.7	•		
Patriot	PVT33G1333ELK	3072MB(Kit of 3)	SS	N/A	Heat-Sink Package	9-9-9-24(1066-7-7-7-20)	1.65	•	•	
Patriot	PVS34G1333ELK	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	9-9-9-24(1066-7-7-7-20)	1.5	•	•	
Patriot	PVS34G1333LLK	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	7-7-7-20(1066-7-7-7-20)	1.7	•	•	
Patriot	PVT36G1333ELK	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	9-9-9-24(1066-7-7-7-20)	1.65	•	•	
Silicon Power	SP001GBLTU133S02	1024MB	SS	S-POWER	I0YT3E0	9(1333-9-9-9-24)		•	•	•
Silicon Power	SP002GBLTU133S02	2048MB	DS	S-POWER	I0YT3E0	9(1333-9-9-9-24)		•	•	•

P7P55D-E LX Motherboard Qualified Vendors Lists (QVL) DDR3-1600MHz capability for CPU at 2.66GHz

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing Dimm(Bios)	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
A-DATA	AD31600E001GMU	3072MB(Kit of 3)	SS	N/A	Heat-Sink Package	8-8-8-24(1333-9-9-9-24)	1.65-1.85	•	•	•
A-DATA	AD31600F002GMU(XMP)	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	7-7-7-20(1333-9-9-9-24)	1.75-1.85	•	•	•
CORSAIR	TR3X3G1600C8D(XMP)Ver2.1	3072MB(Kit of 3)	SS	N/A	Heat-Sink Package	8-8-8-24(1601-8-8-8-24)	1.65	•	•	
CORSAIR	TR3X3G1600C8D	3072MB(Kit of 3)	SS	N/A	Heat-Sink Package	8-8-8-24(1600-8-8-8-24)	1.65	•	•	
CORSAIR	TR3X3G1600C9(XMP)Ver1.1	3072MB(Kit of 3)	SS	N/A	Heat-Sink Package	9-9-9-24(1601-9-9-9-24)	1.65	•	•	
CORSAIR	BoxP/N: TW3X4G1600C9DHXNV (CM3X2G1600C9DHXNV)Ver4.1	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	(1333-9-9--9-24)	1.80	•	•	•
CORSAIR	TR3X6G1600C8D(XMP)Ver2.1	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	8-8-8-24(1601-8-8-8-24)	1.65	•	•	•
CORSAIR	TR3X6G1600C8D	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	8-8-8-24(1600-8-8-8-24)	1.65	•	•	•
CORSAIR	TR3X6G1600C9(XMP)Ver2.1	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	9-9-9-24(1601-9-9-9-24)	1.65	•	•	•
Crucial	BL12864BA1608.8SFB(XMP)	1024MB	SS	N/A	Heat-Sink Package	(1601-8-8-8-24)	1.8	•	•	•
G.SKILL	F3-12800CL9D-2GBNQ	2048MB(Kit of 2)	SS	N/A	Heat-Sink Package	(1333-9-9-9-24)	1.6	•	•	•
G.SKILL	F3-12800CL8T-6GBHK(XMP)	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	8-8-8-21(1333-8-8-8-21)	1.6-1.65	•	•	•
G.SKILL	F3-12800CL8T-6GBPI(XMP)	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	8-8-8-21(1066-8-8-8-20)	1.6~1.65	•	•	•
G.SKILL	F3-12800CL9T-6GBNQ	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	9-9-9-24(1601-9-9-9-24)	1.5-1.6	•	•	•
GEIL	GV34GB1600C8DC	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	8-8-8-28(1600-8-8-8-28)	1.6	•	•	•
KINGMAX	FLGD45F-B8KG9-NAES	1024MB	SS	KINGMAX	KFB8FNGXF-ANX-12A	9(1600-9-8-9-28)	1.5	•	•	•
KINGMAX	FLGE85F-B8KG9-NEES	2048MB	DS	KINGMAX	KFB8FNGXF-ANX-12A	9(1600-9-8-9-28)	1.5	•	•	•
KINGSTON	KHX12800D3LLK3/3GX(XMP)	3072MB(Kit of 3)	SS	N/A	Heat-Sink Package	1600-8-8-8-20	1.65	•	•	•
KINGSTON	KHX12800D3K2/4G	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	9(1333-9-9-9-24)	1.9	•	•	•
KINGSTON	KHX12800D3LLK3/6GX(XMP)	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	(1066-8-8-8-20)	1.65	•	•	•
OCZ	OCZ3P1600EB1G	1024MB	SS	N/A	Heat-Sink Package	7-6-6-24(1333-7-7-7-20)		•	•	
OCZ	OCZ3G1600LV3GK	3072MB(Kit of 3)	SS	N/A	Heat-Sink Package	8-8-8(1066-7-7-7-20)	1.65	•	•	
OCZ	OCZ3P1600LV3GK	3072MB(Kit of 3)	SS	N/A	Heat-Sink Package	7-7-7(1066-7-7-7-20)	1.65	•	•	
OCZ	OCZ3P16004GK	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	7-7-7(1333-7-7-7-20)	1.9	•	•	
OCZ	OCZ3P1600EB4GK	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	7-7-6(1333-7-7-7-20)	1.8	•	•	
OCZ	OCZ3G1600LV6GK	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	8-8-8(1066-7-7-7-16)	1.65	•	•	
OCZ	OCZ3X1600LV6GK(XMP)	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	8-8-8(1066-7-7-7-16)	1.65	•	•	
Cell Shock	CS322271	2048MB(Kit of 2)	DS	N/A	Heat-Sink Package	7-7-7-14(1066-7-7-7-20)	1.7-1.9	•	•	•
Mushkin	996657	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	7-7-7-20		•	•	•
Mushkin	998659(XMP)	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	9-9-9-24(1333-9-9-9-24)	1.5-1.6	•	•	•
Patriot	PVT33G1600ELK	3072MB(Kit of 3)	SS	N/A	Heat-Sink Package	9-9-9-24(1066-7-7-7-20)	1.65	•	•	•
Patriot	PVS34G1600ELK	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	9-9-9-24(1066-7-7-7-20)	1.8	•	•	•
Patriot	PVS34G1600LLK(XMP)	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	7-7-7-20(1066-7-7-7-20)	1.9	•	•	•
Patriot	PVS34G1600LLKN	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	7-7-7-20(1066-7-7-7-20)	2.0	•	•	•
Patriot	PVT36G1600ELK	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	9-9-9-24(1066-7-7-7-20)	1.65	•	•	•
Patriot	PVT36G1600ELK	6144MB(Kit of 3)	DS	N/A	Heat-Sink Package	9-9-9-24(1600-7-7-7-20)	1.65	•	•	•
PQI	MFADR401PA0102(XMP)	2048MB	DS	SAMSUNG	K4B1G08460	1066-8-8-8-20		•	•	•

P7P55D-E LX Motherboard Qualified Vendors Lists (QVL) DDR3-1625MHz capability for CPU at 2.66GHz

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing Dimm(Bios)	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
KINGSTON	KHX13000D3LLK2/2GN(EPP)	2048MB(Kit of 2)	SS	N/A	Heat-Sink Package		1.9	•	•	•
KINGSTON	KHX13000D3LLK2/2GX(XMP)	2048MB(Kit of 2)	SS	N/A	Heat-Sink Package		1.9	•	•	•
KINGSTON	KHX13000D3LLK2/2GXN	2048MB(Kit of 2)	SS	N/A	Heat-Sink Package		1.9	•	•	

P7P55D-E LX Motherboard Qualified Vendors Lists (QVL) DDR3-1625MHz capability for CPU at 2.8 and 2.93GHz

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing Lable(Bios)	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
KINGSTON	KHX13000D3LLK2/2GN(EPP)	2048MB(Kit of 2)	SS	N/A	Heat-Sink Package		1.9	•	•	•
KINGSTON	KHX13000D3LLK2/2GX(XMP)	2048MB(Kit of 2)	SS	N/A	Heat-Sink Package		1.9	•	•	•
KINGSTON	KHX13000D3LLK2/2GXN	2048MB(Kit of 2)	SS	N/A	Heat-Sink Package		1.9	•	•	•

P7P55D-E LX Motherboard Qualified Vendors Lists (QVL) DDR3-1800MHz capability for CPU at 2.66GHz

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing Dimm(Bios)	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
Apacer	78.0AGCD-CDZ(XMP)	2GB(Kit of 2)	SS	N/A	Heat-Sink Package	8-8-8-24(1800-8-8-8-24)	1.8	•	•	
CORSAIR	BoxP/N:TW3X4G1800C8DF (CM3X2G1800C8D)Ver4.1	4GB(Kit of 2)	DS	N/A	Heat-Sink Package	8-8-8-24	1.80	•	•	
KINGSTON	KHX14400D3/1G	1GB	SS	N/A	Heat-Sink Package		1.9	•	•	
KINGSTON	KHX14400D3K2/2GN(EPP)	2GB(Kit of 2)	SS	N/A	Heat-Sink Package		1.9	•	•	•
KINGSTON	KHX14400D3K3/3GX(XMP)	3GB(Kit of 3)	SS	N/A	Heat-Sink Package	1800-9-9-9-27	1.65	•	•	
OCZ	OCZ3P18002GK	2GB(Kit of 2)	SS	N/A	Heat-Sink Package	8			•	
OCZ	OCZ3P18004GK	4GB(Kit of 2)	DS	N/A	Heat-Sink Package	8	1.9	•	•	
Transcend	TX1800KLU-2GK(XMP)	2GB(Kit of 2)	SS	N/A	Heat-Sink Package	8		•	•	•
Patriot	PVS32G1800LLKN(EPP)	2GB(Kit of 2)	SS	N/A	Heat-Sink Package	8-8-8-20(1066-7-7-7-20)	1.9	•	•	

P7P55D-E LX Motherboard Qualified Vendors Lists (QVL) DDR3-1800MHz capability for CPU at 2.8 and 2.93GHz

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing Dimm(Bios)	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
Apacer	78.0AGCD-CDZ(XMP)	2048MB(Kit of 2)	SS	N/A	Heat-Sink Package	8-8-8-24(1800-8-8-8-24)	1.8	•	•	
CORSAIR	BoxP/N:TW3X4G1800C8DF (CM3X2G1800C8D)Ver4.1	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	8-8-8-24	1.80	•	•	
KINGSTON	KHX14400D3/1G	1024MB	SS	N/A	Heat-Sink Package		1.9	•	•	
KINGSTON	KHX14400D3K2/2GN(EPP)	2048MB(Kit of 2)	SS	N/A	Heat-Sink Package		1.9	•	•	
KINGSTON	KHX14400D3K3/3GX(XMP)	3072MB(Kit of 3)	SS	N/A	Heat-Sink Package	1800-9-9-9-27	1.65	•	•	
OCZ	OCZ3P18002GK	2048MB(Kit of 2)	SS	N/A	Heat-Sink Package	8			•	
OCZ	OCZ3P18004GK	4096MB(Kit of 2)	DS	N/A	Heat-Sink Package	8	1.9	•	•	
Transcend	TX1800KLU-2GK(XMP)	2048MB(Kit of 2)	SS	N/A	Heat-Sink Package	8		•	•	
Patriot	PVS32G1800LLKN(EPP)	2048MB(Kit of 2)	SS	N/A	Heat-Sink Package	8-8-8-20(1066-7-7-7-20)	1.9		•	•

P7P55D-E LX Motherboard Qualified Vendors Lists (QVL) DDR3-1866MHz capability for CPU at 2.66GHz

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing Dimm(Bios)	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
Apacer	78.0AGCQ.CBZ(XMP)	3GB(Kit of 3)	SS	N/A	Heat-Sink Package	9-9-9-27(1066-8-8-8-20)		•		
Crucial	BL12864BE2009.8SFB3(EPP)	1GB	SS	N/A	Heat-Sink Package	9-9-9-28(1333-9-9-9-24)	2	•	•	•
G.SKILL	F3-16000CL7T-6GBPS(XMP)	6GB(Kit of 3)	DS	N/A	Heat-Sink Package	7-8-7-20(1066-8-8-8-20)	1.65	•	•	
G.SKILL	F3-16000CL9T-6GBPS(XMP)	6GB(Kit of 3)	DS	N/A	Heat-Sink Package	9-9-9-24(1066-8-8-8-20)	1.65	•	•	
KINGSTON	KHX16000D3K2/2GN(EPP)	2GB(Kit of 2)	SS	N/A	Heat-Sink Package		2.0		•	•
KINGSTON	KHX16000D3K3/3GX(XMP)	3GB(Kit of 3)	SS	N/A	Heat-Sink Package	9(1333-9-9-9-24)	1.65	•	•	•
KINGSTON	KHX16000D3ULT1K3/6GX(XMP)	6GB(Kit 0f 3)	DS	N/A	Heat-Sink Package	8(1066-8-8-8-20)	1.65	•	•	•
KINGSTON	KHX16000D3T1K3/6GX(XMP)	6GB(Kit of 3)	DS	N/A	Heat-Sink Package	9(1066-8-8-8-20)	1.65	•	•	•
OCZ	OCZ3FXT20002GK	2GB(Kit of 2)	SS	N/A	Heat-Sink Package	8	1.9	•	•	
OCZ	OCZ3P20002GK(EPP)	2GB(Kit of 2)	SS	N/A	Heat-Sink Package	9	1.9	•	•	
OCZ	OCZ3P2000EB2GK	2GB(Kit of 2)	SS	N/A	Heat-Sink Package	9-8-8(1066-8-7-7-20)	1.8	•	•	
Gingle	9CAASS37AZZ01D1	2BG	DS	N/A	Heat-Sink Package	9-9-9-24			•	•

P7P55D-E LX Motherboard Qualified Vendors Lists (QVL) DDR3-1866MHz capability for CPU at 2.8 and 2.93GHz

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing Dimm(Bios)	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
CORSAIR	TR3X3G1866C9D(XMP)	3GB(Kit of 3)	SS	N/A	Heat-Sink Package	9-9-9-24(1866-9-9-9-24)	1.65	•	•	
CORSAIR	TR3X6G1866C9D	6GB(Kit of 3)	DS	N/A	Heat-Sink Package	9-9-9-24(1866-9-9-9-24)	1.65	•	•	•
KINGSTON	KHX14900D3K3/3GX(XMP)	3GB	SS	N/A	Heat-Sink Package	9(1333-9-9-9-24)	1.65	•	•	
OCZ	OCZ3RPR1866C9LV3GK	3GB(Kit of 3)	SS	N/A	Heat-Sink Package	9-9-9(1066-7-7-7-20)	1.65	•	•	
OCZ	OCZ3RPR1866C9LV6GK	6GB(Kit of 3)	DS	N/A	Heat-Sink Package	9-9-9(1066-7-7-7-20)	1.65	•		•
Super Talent	W1866UX2GB(XMP)	2GB(Kit of 2)	SS	N/A	Heat-Sink Package	8-8-8-24(1333-9-9-9-24)		•	•	
Patriot	PVS32G1866LLK(XMP)	2GB(Kit of 2)	SS	N/A	Heat-Sink Package	8-8-8-24(1066-7-7-7-20)	1.9		•	
Patriot	PVS32G1866LLK(XMP)	2GB(Kit of 2)	SS	N/A	Heat-Sink Package	8-8-8-24(1866-8-8-8-24)	1.9	•	•	

P7P55D-E LX Motherboard Qualified Vendors Lists (QVL) DDR3-2000MHz capability for CPU at 2.66GHz

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing Dimm(Bios)	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
Apacer	78.0AGCQ.CBZ(XMP)	3GB(Kit of 3)	SS	N/A	Heat-Sink Package	9-9-9-27(1066-8-8-8-20)		•		
Crucial	BL12864BE2009.8SFB3(EPP)	1GB	SS	N/A	Heat-Sink Package	9-9-9-28(1333-9-9-9-24)	2	•	•	•
G.SKILL	F3-16000CL7T-6GBPS(XMP)	6GB(Kit of 3)	DS	N/A	Heat-Sink Package	7-8-7-20(1066-8-8-8-20)	1.65	•	•	
G.SKILL	F3-16000CL9T-6GBPS(XMP)	6GB(Kit of 3)	DS	N/A	Heat-Sink Package	9-9-9-24(1066-8-8-8-20)	1.65	•	•	
KINGSTON	KHX16000D3K2/2GN(EPP)	2GB(Kit of 2)	SS	N/A	Heat-Sink Package		2.0		•	•
KINGSTON	KHX16000D3K3/3GX(XMP)	3GB(Kit of 3)	SS	N/A	Heat-Sink Package	9(1333-9-9-9-24)	1.65	•	•	•
KINGSTON	KHX16000D3ULT1K3/6GX(XMP)	6GB(Kit of 3)	DS	N/A	Heat-Sink Package	8(1066-8-8-8-20)	1.65	•	•	•
KINGSTON	KHX16000D3T1K3/6GX(XMP)	6GB(Kit of 3)	DS	N/A	Heat-Sink Package	9(1066-8-8-8-20)	1.65	•	•	•
OCZ	OCZ3FXT20002GK	2GB(Kit of 2)	SS	N/A	Heat-Sink Package	8	1.9	•	•	
OCZ	OCZ3P20002GK(EPP)	2GB(Kit of 2)	SS	N/A	Heat-Sink Package	9	1.9	•	•	
OCZ	OCZ3P2000EB2GK	2GB(Kit of 2)	SS	N/A	Heat-Sink Package	9-8-8(1066-8-7-7-20)	1.8	•	•	
Gingle	9CAASS37AZZ01D1	2GB	DS	N/A	Heat-Sink Package	9-9-9-24			•	•

P7P55D-E LX Motherboard Qualified Vendors Lists (QVL) DDR3-2000MHz capability for CPU at 2.8 and 2.93GHz

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing Dimm(Bios)	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
Apacer	78.0AGCQ.CBZ(XMP)	3GB(Kit of 3)	SS	N/A	Heat-Sink Package	9-9-9-27(1066-8-8-8-20)		•	•	
Crucial	BL12864BE2009.8SFB3(EPP)	1GB	SS	N/A	Heat-Sink Package	9-9-9-28(1333-9-9-9-24)	2	•	•	•
G.SKILL	F3-16000CL7T-6GBPS(XMP)	6GB(Kit of 3)	DS	N/A	Heat-Sink Package	7-8-7-20(1066-8-8-8-20)	1.65	•	•	
G.SKILL	F3-16000CL9T-6GBPS(XMP)	6GB(Kit of 3)	DS	N/A	Heat-Sink Package	9-9-9-24(1066-8-8-8-20)	1.65	•	•	
KINGSTON	KHX16000D3K2/2GN(EPP)	2GB(Kit of 2)	SS	N/A	Heat-Sink Package		2.0	•	•	•
KINGSTON	KHX16000D3K3/3GX(XMP)	3GB(Kit of 3)	SS	N/A	Heat-Sink Package	9(1333-9-9-9-24)	1.65	•	•	•
KINGSTON	KHX16000D3ULT1K3/6GX(XMP)	6GB(Kit of 3)	DS	N/A	Heat-Sink Package	8(1066-8-8-8-20)	1.65	•	•	•
KINGSTON	KHX16000D3T1K3/6GX(XMP)	6GB(Kit of 3)	DS	N/A	Heat-Sink Package	9(1066-8-8-8-20)	1.65	•	•	•
OCZ	OCZ3FXT20002GK	2GB(Kit of 2)	SS	N/A	Heat-Sink Package	8	1.9	•	•	
OCZ	OCZ3P20002GK(EPP)	2GB(Kit of 2)	SS	N/A	Heat-Sink Package	9	1.9	•	•	
OCZ	OCZ3P2000EB2GK	2GB(Kit of 2)	SS	N/A	Heat-Sink Package	9-8-8(1066-8-7-7-20)	1.8	•	•	•
Gingle	9CAASS37AZZ01D1	2GB	DS	N/A	Heat-Sink Package	9-9-9-24		•	•	
Patriot	PVS32G2000LLKN	2GB(Kit of 2)	SS	N/A	Heat-Sink Package	9-9-9-24(1066-7-7-7-20)	2	•	•	

P7P55D-E LX Motherboard Qualified Vendors Lists (QVL) DDR3-2133MHz capability for CPU at 2.8 and 2.93GHz

Vendor	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing Dimm(Bios)	Voltage	DIMM socket support (Optional)		
								A*	B*	C*
G.SKILL	F3-17066CL9T-6GB-T	6GB(Kit of 3)	DS	N/A	Heat-Sink Package	9-9-9-24(1066-8-7-7-20)	1.65	•	•	

Side(s): SS - Single-sided   DS - Double-sided
DIMM support:
- **A***: Supports one (1) module inserted into slot A1 or B1 as Single-channel memory configuration.
- B*: Supports two (2) modules inserted into the blue slots (A1 and B1) as one pair of Dual-channel memory configuration.
- C*: Supports four (4) modules inserted into both the blue and the black slots as two pairs of Dual-channel memory configuration.

- ASUS exclusively provides hyper DIMM support function.

- Hyper DIMM support is subject to the physical characteristics of individual CPUs.

- According to Intel spec definition, DDR3-1600 is supported for one DIMM per channel only. ASUS exclusively provides two DDR3-1600 DIMM support for each memory channel.

- According to Intel CPU spec, CPUs with a core frequency of 2.66G support the maximum DIMM frequency of up to DDR3-1333. To use DIMMs of a higher frequency with a 2.66G CPU, enable the **DRAM O.C. Profile** feature in BIOS. Refer to section **2.4.2 Ai Overclock Tuner** for details.

- Visit the ASUS website for the latest QVL.

1.8 Expansion slot

In the future, you may need to install expansion cards. The following sub-sections describe the slot and the expansion cards that it supports.

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

1.8.1 Installing an expansion card

To install an expansion card:

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

2. Remove the system unit cover (if your motherboard is already installed in a chassis).

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

4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.

5. Secure the card to the chassis with the screw you removed earlier.

6. Replace the system cover.

1.8.2 Configuring an expansion card

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

1. Turn on the system and change the necessary BIOS settings, if any. See Chapter 2 for information on BIOS setup.

2. Assign an IRQ to the card.

3. Install the software drivers for the expansion card.

1.8.3 PCI slots

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

1.8.4 PCI Express x1 slots

This motherboard supports PCI Express x1 network cards, SCSI cards and other cards that comply with the PCI Express specifications.

1.8.5 PCI Express 2.0 x16 slot

This motherboard has one PCI Express 2.0 x16 slot that supports PCI Express x16 2.0 graphic cards complying with the PCI Express specifications.

Refer to section 1-6 Motherboard overview for the location of the expansion slot.

1.9 Jumper

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.

CLRTC

Normal (Default)   Clear RTC

P7P55D-E LX Clear RTC RAM
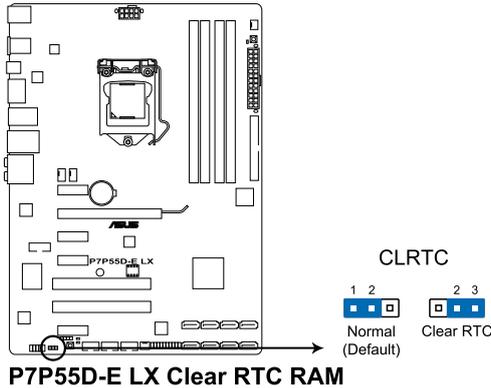
To erase the RTC RAM:

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 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 C.P.R. (CPU Parameter Recall) feature. Shut down and reboot the system so the BIOS can automatically reset parameter settings to default values.
>
> •   Due to the chipset behavior, AC power off is required to enable C.P.R. function. You must turn off and on the power supply or unplug and plug the power cord before rebooting the system.

1.10 Onboard switches

Onboard switch allows you to fine-tune performance when working on a bare or open-case system. This is ideal for overclockers and gamers who continually change settings to enhance system performance.

1.   MemOK! switch

Installing DIMMs that are incompatible with the motherboard may cause system boot failure, and the DRAM_LED near the MemOK! switch lights continuously. Press and hold the MemOK! switch until the DRAM_LED starts blinking to begin automatic memory compatibility tuning for successful boot.
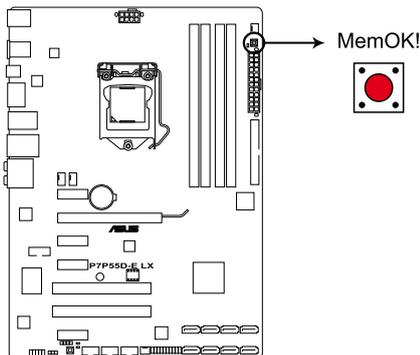
MemOK!

P7P55D-E LX MemOK! switch

- The DRAM_LED also lights when the DIMM is not properly installed. Turn off the system and reinstall the DIMM before using the MemOK! function.

- Press the MemOK! switch under Windows™ OS environment will reboot the computer and start memory tuning.

- During the tuning process, the system loads and tests failsafe memory settings. It takes about 30 seconds for the system to test one set of failsafe settings. If the test fails, the system reboots and test the next set of failsafe settings. The blinking speed of the DRAM_LED increases, indicating different test processes.

- If the installed DIMMs still fail to boot after the whole tuning process, the DRAM_LED lights continuously. Replace the DIMMs with ones recommended in the Memory QVL (Qualified Vendors Lists) in this user manual or on the ASUS website at www.asus.com.

- If you turn off the computer and replace DIMMs during the tuning process, the system continues memory tuning after turning on the computer. To stop memory tuning, turn off the computer and unplog the power cord for about 5–10 seconds.

- If your system fail to boot due to BIOS overclocking, press the MemOK! switch to boot and load BIOS default settings. A messgae will appear during POST reminding you that the BIOS has been restored to its default settings.

- We recommend that you download and update to the latest BIOS version from the ASUS website at www.asus.com after using the MemOK! function.

2.   **IO Level UP**

The IO Level UP switch allows performance boost of the USB 3.0 ports on the rear panel or the onboard SATA 6Gb/s ports. Two LEDs with different colors are provided to indicate different speed mode.

Press the IO Level UP switch and restart the system to light up the **green (USB3.0)** LED. The PCIex16_1 slot (blue) switches to x8 mode, and the two blue USB 3.0 ports on the rear panel switch to PCIe Gen.2 mode (500MB/s).

With the **green (USB3.0)** LED light up, press the IO Level UP switch and restart the system to light up the **blue (SATA6G)** LED. The PCIex16_1 slot (blue) switches to x8 mode, and the two gray onboard SATA 6Gb/s ports switch to PCIe Gen.2 mode (500MB/s).

P7P55D-E LX IO_LEVELUP switch
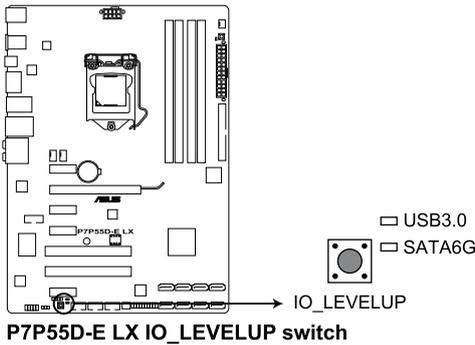
- You may also switch the speed of the USB 3.0 ports or the SATA 6Gb/s ports in BIOS setting. Refer to chapter 3 for details.

- Press the IO Level UP switch during POST will restart the system to apply speed changes.

- If you press the IO Level UP switch in OS environment, you have to manually restart the system to apply speed changes.

1.11 Connectors

1.11.1 Rear panel connectors
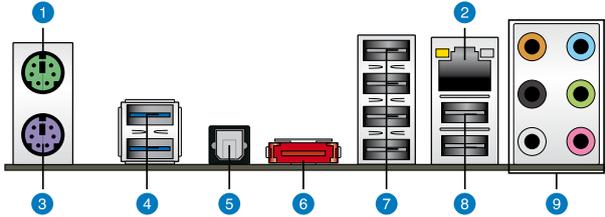
1. **PS/2 mouse port (green).** This port is for a PS/2 mouse.

2. **LAN (RJ-45) port.** This port allows Gigabit connection to a Local Area Network (LAN) through a network hub. Refer to the table on the next page for the LAN port LED indicators.

3. **PS/2 Keyboard port (purple).** This port is for a PS/2 keyboard.

LAN port LED indications

ACT/LINK LED		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
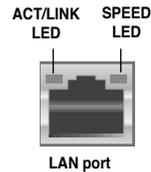
4. **USB 3.0 ports 1 and 2.** These two 4-pin Universal Serial Bus (USB) ports connect to USB 3.0/2.0/1.1 devices.

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

6. **External SATA port.** This port connect to an external Serial ATA hard disk drive. To configure a RAID0 or RAID1, connect external Serial ATA hard disk drives to the External SATA port .

7. **USB 2.0 ports 3, 4, 5 and 6**. These four 4-pin Universal Serial Bus (USB) ports connect to USB 2.0/1.1 devices.

8. **USB 2.0 ports 1 and 2**. These two 4-pin Universal Serial Bus (USB) ports connect to USB 2.0/1.1 devices.

9. **8-channel audio ports.** These ports connects to a multi-speaker audio system.

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

1.11.2 Internal connectors

1. ATX power connectors (24-pin EATXPWR, 8-pin EATX12V)

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.
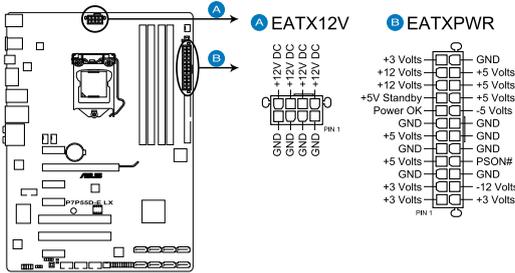
P7P55D-E LX ATX power connectors

• 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 600 W.

• Do not forget to connect the 8-pin EATX12V power plug. Otherwise, the system will not boot.

• If you are uncertain about the minimum power supply requirement for your system, refer to the Recommended Power Supply Wattage Calculator at **http://support.asus. com/PowerSupplyCalculator/PSCalculator.aspx?SLanguage=en-us** for details.

**2. CPU, chassis, and power fan connectors
(4-pin CPU_FAN, 4-pin CHA_FAN1, 3-pin CHA_FAN2, 3-pin PWR_FAN)**

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.
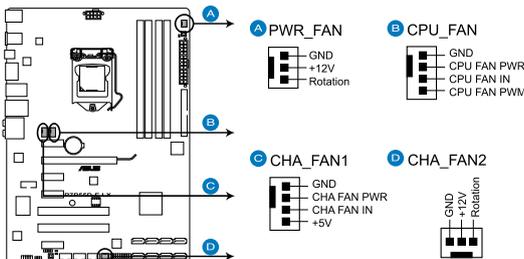
P7P55D-E LX Fan connectors

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!

• The CPU_FAN connector supports the CPU fan of maximum 2A (24 W) fan power.

• Only the CPU_FAN, CHA_FAN 1, and CHA_FAN 2 connectors support the FAN Xpert feature.

3. 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.

P7P55D-E LX Analog front panel connector
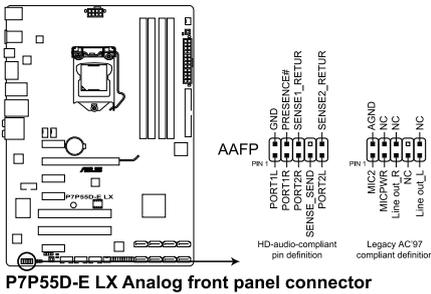
- • We recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high-definition audio capability.

- • If you want to connect a high-definition front panel audio module to this connector, set the **Front Panel Type** item in the BIOS setup to **[HD Audio]**. If you want to connect an AC'97 front panel audio module to this connector, set the item to **[AC97]**. By default, this connector is set to **[HD Audio]**.

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

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

If you installed Serial ATA hard disk drives, you can create a RAID 0, 1, 5, and 10 configuration with the Intel® Matrix Storage Technology through the onboard Intel® P55 chipset.
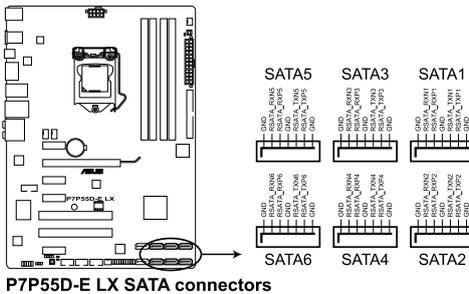
P7P55D-E LX SATA connectors

- These connectors are set to Standard IDE mode by default. In Standard IDE mode, you can connect Serial ATA boot/data hard disk drives to these connectors. If you intend to create a Serial ATA RAID set using these connectors, set the **Configure SATA as** item in the BIOS to [RAID].

- Before creating a RAID set, refer to section **RAID configurations** or the RAID manual bundled in the motherboard support DVD.

- You must install Windows® XP Service Pack 2 or later version before using Serial ATA hard disk drives. The Serial ATA RAID feature (RAID 0, 1, 5, and 10) is available only if you are using Windows® XP SP2 or later version.

- When using hot-plug and NCQ, set the **Configure SATA as** item in the BIOS to [AHCI]. See section **Storage Configuration** for details.

5.   **System panel connector (20-8 pin PANEL)**

This connector supports several chassis-mounted functions.
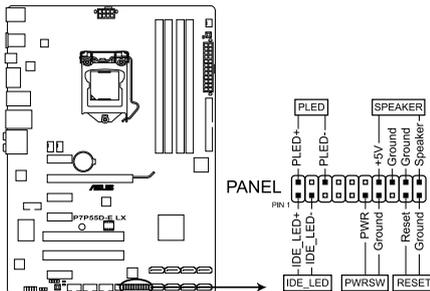
P7P55D-E LX System panel connector

- **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.

6.   **USB connectors (10-1 pin USB910; USB1112; USB1314)**

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.

P7P55D-E LX USB2.0 connectors
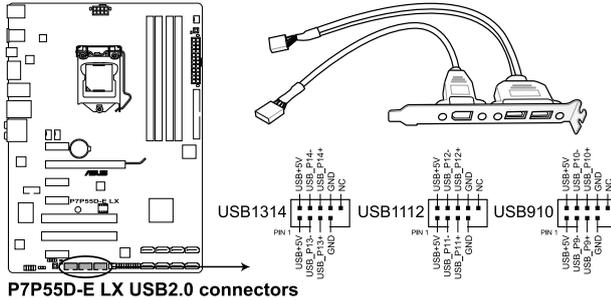
⚠️   Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard!

🖊️   The USB module is purchased separately.

7.   **Serial port connector (10-1 pin COM1)**

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

P7P55D-E LX Serial port (COM1) connector
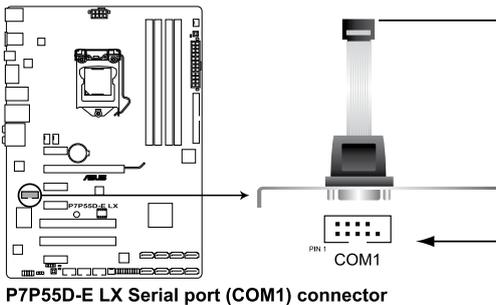
🖊️   The COM module is purchased separately.

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

This connector is for an additional Sony/Philips Digital Interface (S/PDIF) port(s). Connect the S/PDIF Out module cable to this connector, then install the module to a slot opening at the back of the system chassis.
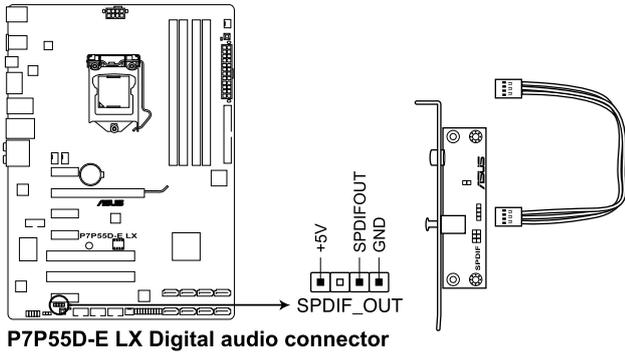
P7P55D-E LX Digital audio connector

> The S/PDIF module is purchased separately.

9. Marvell® Serial ATA 6.0 Gb/s connectors (7-pin SATA_6G_1/2 [gray])

These connectors connect to Serial ATA 6.0 Gb/s hard disk drives via Serial ATA 6.0 Gb/s signal cables.
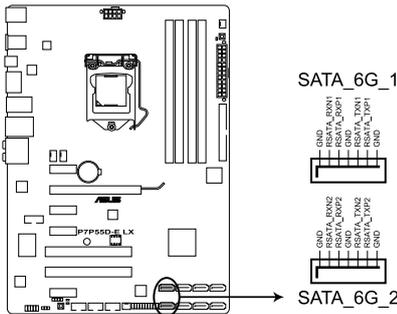
P7P55D-E LX SATA_6G connectors

> • These connectors are set to Standard IDE mode by default. In Standard IDE mode, you can connect Serial ATA boot/data hard disk drives to these connectors.
>
> • You must install Windows® XP Service Pack 2 or later versions before using Serial ATA hard disk drives.
>
> • When using hot-plug and NCQ, set the **Marvell 9123 Controller** item in the BIOS to [AHCI Mode]. Refer to section **Onboard Devices Configuration** for details.

10. JMicron® JMB361 IDE Connector (40-1 pin PRI_IDE [Blue])

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.

PRI_EIDE

PIN1

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

P7P55D-E LX IDE connector
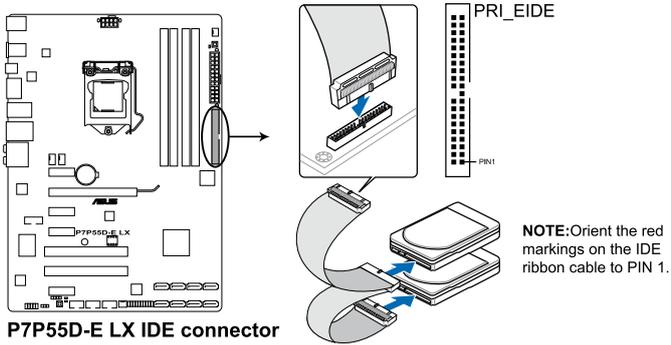
	Drive jumper setting	Mode of device(s)	Cable connector
Single device	Cable-Select or Master	-	Black
Two devices	Cable-Select	Master	Black
		Slave	Gray
	Master	Master	Black or gray
	Slave	Slave	

- 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.

1.11.3   Onboard LEDs

1.   POST State LED

POST State LED checks DRAM during motherboard booting process. If an error is found , the LED next to the error device will continue lighting until the problem is solved. This user-friendly design provides an intuitive way to locate the root problem within seconds.
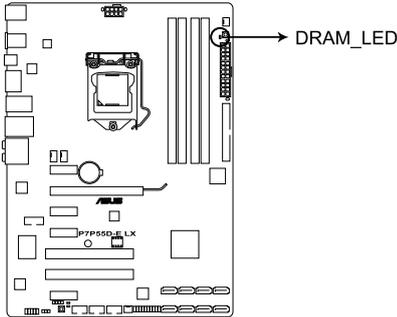
DRAM_LED

P7P55D-E LX DRAM LED

You may disable the POST State LEDs in BIOS. Refer to section **Boot Settings Configuration** for details.

2.   Standby power LED

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

SB_PWR

ON   OFF
Standy Power   Powered Off
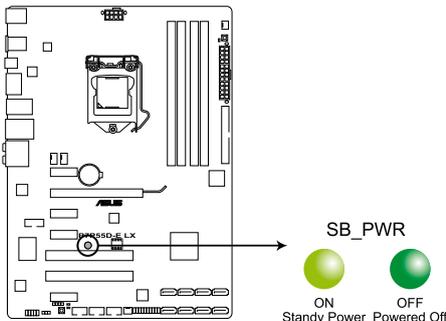
P7P55D-E LX Onboard LED

1.12 Installing an operating system

This motherboard supports Windows® XP/ 64-bit XP/ Vista™/ 64-bit Vista™/ 7/ 64-bit 7 operating systems (OS). Always install the latest OS version and corresponding updates to maximize the features of your hardware.

> • Motherboard settings and hardware options vary. Use the setup procedures presented in this chapter for reference only. Refer to your OS documentation for detailed information.
>
> • Ensure that you install the Windows® XP Service Pack 2 or later versions before installing the drivers for better compatibility and system stability.

1.13 Support DVD information

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

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

1.13.1 Running the support DVD

Place the support DVD into the optical drive. The DVD automatically displays the Highlights menu if Autorun is enabled in your computer. Click each menu tab and select the items you want to install.

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

The Make disk menu contains items to create the RAID/AHCI driver disk.

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

Click the Contact tab to display the ASUS contact information.

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

Click an icon to display 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.

Chapter 2

BIOS setup

2.1 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.

2.1.1 ASUS Update

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.
2. From the **Main** menu, click the **Utilities** tab, and then click Install **ASUS Update VX.XX.XX**.
3. The ASUS Update utility is copied to your system.

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

Updating the BIOS

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, and then click Next.

   b. Select the ASUS FTP site nearest you to avoid network traffic, or click **Auto elect**. Click **Next**.

   c. From the FTP site, select the BIOS version that you wish to download, then click **Next**.

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 update process.

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

> Ensure to load the BIOS default settings to ensure system compatibility and stability. Select the Load Setup Defaults item under the Exit menu. See section **2.9 Exit Menu** for details.

2.1.2   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.

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.

```
        ASUSTek EZ Flash 2 BIOS ROM Utility V4.10
FLASH TYPE: MXIC 25L1605A
         Current ROM                     Update ROM
   BOARD: P7P55D-E-LX              BOARD: Unknown
   VER: 0019                       VER: Unknown
   DATE: 12/02/2009                DATE: Unknown
PATH: A:\

   A:




     Note
   [Enter] Select or Load    [Tab] Switch    [V] Drive Info
   [Up/Down/Home/End] Move   [B] Backup      [Esc] Exit
```
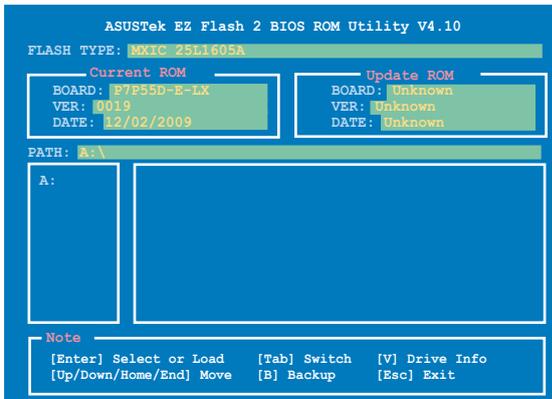
2.	When the correct BIOS file is found, EZ Flash 2 performs the BIOS update process and automatically reboots the system when done.

⚠️	• 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!

## 2.1.3	ASUS CrashFree BIOS 3 utility

The ASUS CrashFree BIOS 3 utility 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 USB flash drive that contains the BIOS file.

✎	The BIOS file in the motherboard support DVD may be older than the BIOS file published on the ASUS official website. If you want to use the newer BIOS file, download the file at support.asus.com and save it to a USB flash drive.

Recovering the BIOS

To recover the BIOS

1.	Turn on the system.
2.	Insert the motherboard support DVD to the optical drive, or the USB flash drive containing the BIOS file to the USB port.
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 power on again.
5.	The system requires you to enter BIOS Setup to recover BIOS setting. To ensure system compatibility and stability, we recommend that you press <F2> to load default BIOS values.

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

2.1.4   ASUS BIOS Updater

The ASUS BIOS Updater allows you to update BIOS in DOS environment. This utility also allows you to copy the current BIOS file that you can use as a backup when the BIOS fails or gets corrupted during the updating process.

> The succeeding utility screens are for reference only. The actual utility screen displays may not be same as shown.

Before updating BIOS

1.   Prepare the motherboard support DVD and a USB flash drive in FAT32/16 format and single partition.

2.   Download the latest BIOS file and BIOS Updater from the ASUS website at http://support.asus.com and save them on the USB flash drive.

> •   NTFS is not supported under DOS environment. Do not save the BIOS file and BIOS Updater to a hard disk drive or USB flash drive in NTFS format.
>
> •   Do not save the BIOS file to a floppy disk due to low disk capacity.

3.   Turn off the computer and disconnect all SATA hard disk drives (optional).

Booting the system in DOS environment

1.   Insert the USB flash drive with the latest BIOS file and BIOS Updater to the USB port.

2.   Boot your computer. When the ASUS Logo appears, press <F8> to show the **BIOS Boot Device Select Menu**. Insert the support DVD into the optical drive and select the optical drive as the boot device.

```
          Please select boot device:

     SATA:XXXXXXXXXXXXXXXX
     CDROM:XXXXXXXXXXXXXX
     USB:XXXXXXXXXXXXXXXX
     Network:XXXXXXXXXXXXX


       ↑ and ↓ to move selection
      ENTER to select boot device
      ESC to boot using defaults
```
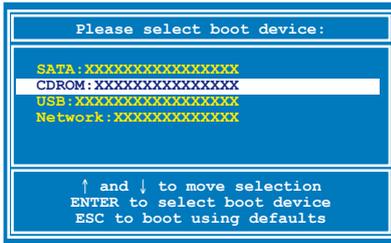
3.   When the **Make Disk** menu appears, select the **FreeDOS command prompt** item by pressing the item number.

4.   At the FreeDOS prompt, type **d:** and press <Enter> to switch the disk from Drive C (optical drive) to Drive D (USB flash drive).

```
     Welcome to FreeDOS (http://www.freedos.org)!
     C:\>d:
     D:\>
```

Backing up the current BIOS

To backup the current BIOS file using the BIOS Updater

Ensure that the USB flash drive is not write-protected and has enough free space to save the file.

1. At the FreeDOS prompt, type **bupdater /o[filename]** and press <Enter>.

```
D:\>bupdater /oOLDBIOS1.rom
```

Filename   Extension

The [filename] is any user-assigned filename with no more than eight alphanumeric characters for the filename and three alphanumeric characters for the extension.

2. The BIOS Updater backup screen appears indicating the BIOS backup process. When BIOS backup is done, press any key to return to the DOS prompt.

```
         ASUSTek BIOS Updater for DOS V1.00b [09/06/22]
FLASH TYPE: MXIC 25L1605A
       Current ROM                        Update ROM
   BOARD: P7P55D-E LX              BOARD: Unknown
   VER: 0019                       VER: Unknown
   DATE: 12/02/2009                DATE: Unknown
PATH: A:\

       BIOS backup is done! Press any key to continue.

    Note
  Saving BIOS:
```
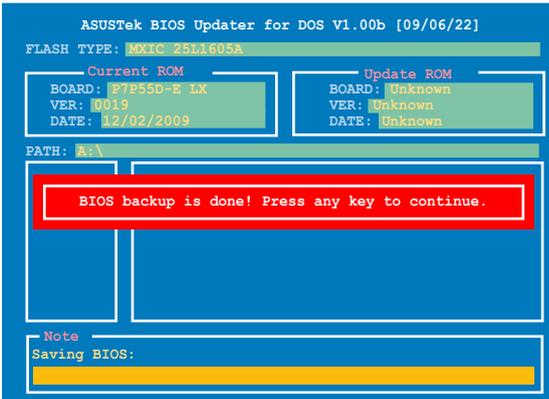
Updating the BIOS file

To update the BIOS file using BIOS Updater

1.   At the FreeDOS prompt, type **bupdater /pc /g** and press <Enter>.

```
D:\>bupdater /pc /g
```

2.   The BIOS Updater screen appears as below.

```
           ASUSTek BIOS Updater for DOS V1.00b [09/06/22]
FLASH TYPE: MXIC 25L1605A
        ┌─ Current ROM ─┐                ┌─ Update ROM ─┐
        BOARD: P7P55D-E LX               BOARD: Unknown
        VER: 0019                        VER: Unknown
        DATE: 12/02/2009                 DATE: Unknown

PATH: A:\

 A:            P7P55D.ROM      2097152 2009-08-06 17:30:48




 ┌─ Note ─┐
 [Enter] Select or Load       [Tab] Switch      [V] Drive Info
 [Up/Down/Home/End] Move       [B] Backup        [Esc] Exit
```
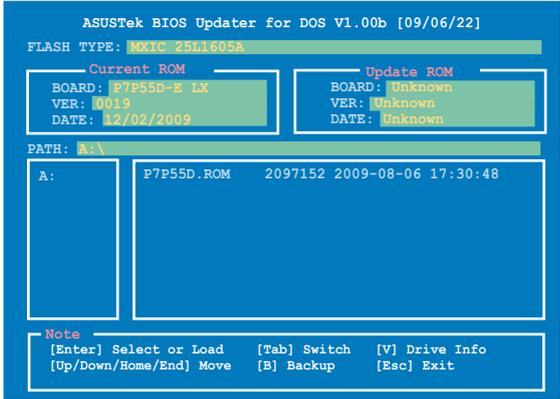
3.   Press <Tab> to switch between screen fields and use the <Up/Down/Home/End> keys to select the BIOS file and press <Enter>. BIOS Updater checks the selected BIOS file and prompts you to confirm BIOS update.

```
           Are you sure to update BIOS?
                   Yes      No
```

4.   Select **Yes** and press <Enter>. When BIOS update is done, press <ESC> to exit BIOS Updater. Restart your computer.

> DO NOT shut down or reset the system while updating the BIOS to prevent system boot failure!

> •   For BIOS Updater version 1.04 or later, the utility automatically exits to the DOS prompt after updating BIOS.
>
> •   Ensure to load the BIOS default settings to ensure system compatibility and stability. Select the **Load Setup Defaults** item under the **Exit** BIOS menu.
>
> •   Ensure to connect all SATA hard disk drives after updating the BIOS file if you have disconnected them.

2.2 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.

> 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 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 Setups Default** item under the Exit Menu. See section **2.9 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.

2.3 Main menu

When you enter the BIOS Setup program, the Main menu screen appears, giving you an overview of the basic system information. You can also set the system time and date and BIOS language in this menu.

> Refer to BIOS menu screen for information on the menu screen items and how to navigate through them.

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

   System Time              [13:51:25]           Use [ENTER], [TAB]
   System Date              [Wed 12/02/2009]     or [SHIFT-TAB] to
   Language                 [English]            select a field.

 ▶ SATA1                    [HDT722516DLA380]    Use [+] or [-] to
 ▶ SATA2                    [Not Detected]       configure system Date.
 ▶ SATA3                    [ATAPI DVD DH1]
 ▶ SATA4                    [Not Detected]
 ▶ SATA5                    [Not Detected]
 ▶ SATA6                    [Not Detected]

 ▶ Storage Configuration
 ▶ System Information
```

2.3.1 SATA 1-6

While entering Setup, the BIOS automatically detects the presence of IDE/SATA devices. There is a separate submenu for each IDE/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 IDE device is installed in the system.

Type [Auto]

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

LBA/Large Mode [Auto]

Enables or disables the LBA mode. Setting 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]

2.3.2 Storage Configuration

The Storage Configuration menu allows you to configure your storage devices. Select an item then press <Enter> to display the submenu.

SATA Configuration [Enhanced]

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] [RAID] [AHCI]

- If you want to use the Serial ATA hard disk drives as Parallel ATA physical storage devices, keep the default setting [IDE].

- If you want the Serial ATA hard disk drives to use the Advanced Host Controller Interface (AHCI), set this item to [AHCI]. The AHCI allows the onboard storage driver to enable advanced Serial ATA features that increases storage performance on random workloads by allowing the drive to internally optimize the order of commands.

- If you want to create a RAID 0, RAID 1, RAID 5, RAID 10, or the Intel® Matrix Storage Technology configuration from the Serial ATA hard disk drives, set this item to [RAID].

Hard Disk Write Protect [Disabled]

Disables or enables device write protection. This will be effective only if the 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]

2.3.3   AHCI Configuration

This menu is the section for AHCI configuration. It appears only when you set the item Configure SATA as from the sub-menu of SATA Configuration to [AHCI].

SATA Port1 [Auto]

Allows you to select the type of device connected to the system.
Configuration options: [Auto] [Not Installed]

SMART Monitoring [Enabled]

Allows you to set the Self-Monitoring, Analysis and Reporting Technology.
Configuration options: [Disabled] [Enabled]

2.3.4   System Information

This menu gives you an overview of the general system specifications. The BIOS automatically detects the BIOS information, CPU specification, and system memory in this menu.

2.4 Ai Tweaker menu

The Ai Tweaker menu items allow you to configure overclocking-related items.

Be cautious when changing the settings of the Ai Tweaker menu items. Incorrect field values can cause the system to malfunction.

The configuration options for this chapter vary depending on the CPU and DIMM model you installed on the motherboard.

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

  Configure System Performance Settings              Warning: this function
  CPU Level UP                    [Auto]             belongs to overclock-
  ------------------------------------------------   ing, and it may cause
  Ai Overclock Tuner              [Auto]             instability.
  CPU Ratio Setting               [Auto]             Select a CPU level,
  Intel(R) SpeedStep(TM) Tech     [Enabled]          and the rest will be
  Intel(R) TurboMode Tech         [Enabled]          auto-adjusted. If you
  Xtreme Phase Full Power Mode    [Auto]             want to adjust more,
  DRAM Frequency                  [Auto]             set Ai Overclock Tuner
  QPI Frequency                   [Auto]             to Manual after you
                                                     select a CPU level.
  ▶ DRAM Timing Control
                                                     ←→     Select Screen
  CPU Differential Amplitude      [Auto]             ↑↓     Select Item
  CPU Clock Skew                  [Auto]             +-     Change Option
                                                     F1     General Help
  ******* Please key in numbers directly! *******   F10    Save and Exit
  CPU Voltage Mode                [Offset]           ESC    Exit

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```

Scroll down to display the following items:

```
    Offset Voltage               [Auto]        ▲
  IMC Voltage                    [Auto]
  DRAM Voltage                   [Auto]
  CPU PLL Voltage                [Auto]
  PCH Voltage                    [Auto]
  ************************************************
  Load-Line Calibration          [Auto]
  CPU Spread Spectrum            [Auto]
  PCIE Spread Spectrum           [Auto]










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```
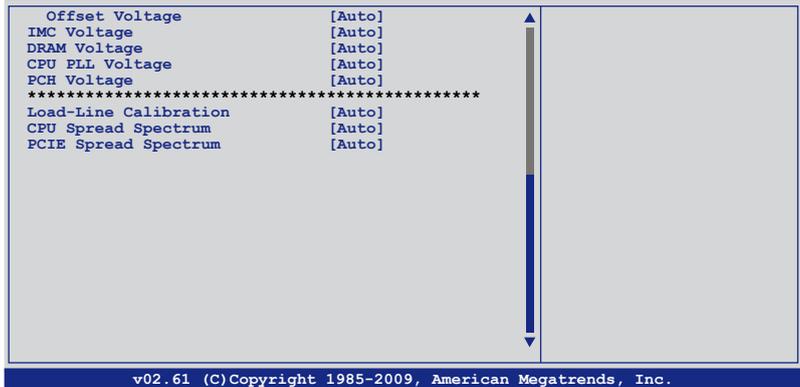
2.4.1 CPU Level Up [Auto]

Allows you to select a CPU level, and the related parameters will be automatically adjusted according to the selected CPU level. If you want to manually configure the settings in detail, set **Ai Overclock Tuner** to [Manual] after selecting a CPU level.
Configuration options: [Auto] [i5-650-3.2G] [i5-661-3.3G] [i5-670-3.46G]

The configuration options vary depending on the CPU model you install on the motherboard.

2.4.2 Ai Overclock Tuner [Auto]

Allows selection of CPU overclocking options to achieve desired CPU internal frequency. Select either one of the preset overclocking configuration options:

Manual	Allows you to individually set overclocking parameters.
Auto	Loads the optimal settings for the system.
D.O.C.P	Overclocks DRAM frequency by adjusting BCLK frequency.
X.M.P.	If you install memory module(s) supporting the eXtreme Memory Profile (X.M.P.) Technology, choose this item to set the profile(s) supported by your memory module(s) for optimizing the system performance.
CPU Level UP	Loads settings for using CPU Level UP.

The configuration options for the following sub-item vary depending on the DIMMs you install on the motherboard.

DRAM O.C. Profile [DDR3-1800MHz]

This item appears only when you set the **Ai Overclock Tuner** item to [D.O.C.P.] and allows you to select a DRAM O.C. profile, which applies different settings to DRAM frequency, DRAM timing and DRAM voltage.
Configuration options: [DDR3-1800MHz] [DDR3-1866MHz] [DDR3-2000MHz] [DDR3-2133MHz] [DDR3-2200MHz]

DRAM Frequency (MHz)	CPU Frequency (GHz)		
	2.66	2.8	2.93
1333	Auto	Auto	Auto
1600	D.O.C.P.	Auto	Auto
Above 1600	D.O.C.P.	D.O.C.P.	D.O.C.P.

- When using DIMMs with a frequncy higher than the Intel® CPU spec, use this ASUS exclusive **DRAM O.C. Profile** function to overclock the DRAM.

- Adjust BCLK frequency to obtain a better performance after applying the D.O.C.P function.

eXtreme Memory Profile [High Performance]

This item appears only when you set the **Ai Overclock Tuner** item to [X.M.P.] and allows you to select the X.M.P. mode supported by your memory module.
Configuration options: [High Performance] [High Frequency]

To obtain the best performance of the X.M.P. DIMM or 1600MHz DIMM, install only one DIMM on each memory channel.

2.4.3 CPU Ratio Setting [Auto]

Allows you to adjust the ratio between CPU Core Clock and BCLK Frequency. Use the <+> and <-> keys to adjust the value. The valid value ranges differently according to your CPU model.

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

When set to [Disabled], the CPU runs at its default speed. When set to [Enabled], the CPU speed is controlled by the operating system. Configuration options: [Disabled] [Enabled]

2.4.5 Intel(R) TurboMode Tech [Enabled]

This item appears only if you set the **CPU Ratio Setting** item to [Auto]. Turbo mode allows processor cores to run faster than marked frequency in specific condition.
Configuration options: [Disabled] [Enabled]

2.4.6 Xtreme Phase Full Power Mode [Auto]

[Auto]   Automatic configuration.
[Enabled]   Enables Full Power Mode to ensure the best CPU overclocking
                performance.

> The following two items appear only when you set the **Ai Overclock Tuner** item to [Manual], [D.O.C.P.] or [X.M.P.].

BCLK Frequency [XXX]

Allows you to adjust the Internal Base Clock (BCLK). Use the <+> and <-> keys to adjust the value. You can also type the desired value using the numeric keypad. The values range from 80 to 500.

PCIE Frequency [XXX]

Allows you to set the PCI Express frequency. Use the <+> and <-> keys to adjust the PCIE frequency. The values range from 100 to 200.

2.4.7 DRAM Frequency [Auto]

Allows you to set the DDR3 operating frequency.
Configuration options: [Auto] [DDR3-800MHz] [DDR3-1066MHz] [DDR3-1333]

> • The **DRAM Frequency** configuration options vary with the **BCLK Frequency** item settings.
>
> • According to Intel CPU spec, CPUs with a core frequency of 2.66G support the maximum DIMM frequency of up to DDR3 1333. To use DIMMs of a higher frequency with a 2.66G CPU, enable the **DRAM O.C. Profile** feature in BIOS. Refer to section **2.4.2 Ai Overclock Tuner** for details.

> ⚠ Selecting a very high DRAM frequency may cause the system to become unstable! If this happens, revert to the default setting.

2.4.8 QPI Frequency [Auto]

Allows you to set the QuickPath Interconnect (QPI) frequency.
Configuration options: [Auto] [3200MHz] [3733MHz] [4800MHz] [5333MHz] [5867MHz]

2.4.9 DRAM Timing Control [Auto]

The items in this menu allow you to set the DRAM timing control features.

The configuration options for some of the following items vary **depending on the DIMMs** you install on the motherboard.

1st Information: 5-5-5-15-4-36-6-5-16

The values vary depending on your settings of the following sub-items:

DRAM CAS# Latency [Auto]
Configuration options: [Auto] [3 DRAM Clock] [4 DRAM Clock] – [10 DRAM Clock] [11 DRAM Clock]

DRAM RAS# to CAS# Delay [Auto]
Configuration options: [Auto] [3 DRAM Clock] [4 DRAM Clock] – [14 DRAM Clock] [15 DRAM Clock]

DRAM RAS# PRE Time [Auto]
Configuration options: [Auto] [3 DRAM Clock] [4 DRAM Clock] – [14 DRAM Clock] [15 DRAM Clock]

DRAM RAS# ACT Time [Auto]
Configuration options: [Auto] [3 DRAM Clock] [4 DRAM Clock] – [30 DRAM Clock] [31 DRAM Clock]

DRAM RAS# to RAS# Delay [Auto]
Configuration options: [Auto] [1 DRAM Clock] – [7 DRAM Clock]

DRAM REF Cycle Time [Auto]
Configuration options: [Auto] [48 DRAM Clock] [60 DRAM Clock] [72 DRAM Clock] [82 DRAM Clock] [88 DRAM Clock] [90 DRAM Clock] [100 DRAM Clock] [110 DRAM Clock] [114 DRAM Clock] [118 DRAM Clock] [122 DRAM Clock] [126 DRAM Clock] [130 DRAM Clock] [134 DRAM Clock] [138 DRAM Clock] [142 DRAM Clock] [150 DRAM Clock] [160 DRAM Clock] [170 DRAM Clock] [180 DRAM Clock] [190 DRAM Clock] [200 DRAM Clock]

DRAM WRITE Recovery Time [Auto]
Configuration options: [Auto] [1 DRAM Clock] – [18 DRAM Clock]

DRAM READ to PRE Time [Auto]
Configuration options: [Auto] [1 DRAM Clock] – [15 DRAM Clock]

DRAM FOUR ACT WIN Time [Auto]
Configuration options: [Auto] [1 DRAM Clock] – [63 DRAM Clock]

DRAM Timing Mode [Auto]
[Auto]   BIOS automatically adjusts the DRAM Timing mode.

[1N]   Setting to [1N] might accelerate the DRAM performance.

[2N]   Setting to [1N] might enhance DRAM overclocking performance.

DRAM WRITE To READ Delay (DR) [Auto]
Configuration options: [Auto] [1 DRAM Clock] – [8 DRAM Clock]

DRAM WRITE To READ Delay (SR) [Auto]
Configuration options: [Auto] [10 DRAM Clock] – [22 DRAM Clock]

DRAM READ To WRITE Delay (S/D) [Auto]
Configuration options: [Auto] [2 DRAM Clock] – [14 DRAM Clock]

DRAM READ To READ Delay (DR) [Auto]
Configuration options: [Auto] [2 DRAM Clock] – [9 DRAM Clock]

DRAM READ To READ Delay (SR) [Auto]
Configuration options: [Auto] [4 DRAM Clock] [6 DRAM Clock]

DRAM WRITE To WRITE Delay (DR) [Auto]
Configuration options: [Auto] [2 DRAM Clock] – [9 DRAM Clock]

DRAM WRITE To WRITE Delay (SR) [Auto]
Configuration options: [Auto] [4 DRAM Clock] [6 DRAM Clock]

2.4.10   CPU Differential Amplitude [Auto]

Different AMP might enhance BCLK overclocking ability.
Configuration options: [Auto] [700mV] [800mV] [900mV] [1000mV]

2.4.11   CPU Clock Skew [Auto]

Adjusting this item may help enhancing BCLK overclocking ability. You may need to adjust the **CPU Clock Skew** item at the same time.
Configuration options: [Auto] [Normal] [Delay 100ps]–[Delay 1500ps]

> Some of the following items are adjusted by typing the desired values using the numeric keypad and press the <Enter> key. You can also use the <+> and <-> keys to adjust the value. To restore the default setting, type [auto] using the keyboard and press the <Enter> key.

2.4.12   CPU Voltage Mode [Offset]

Allows you to set the CPU Voltage Mode. Different sub-items appear according to the **CPU Voltage Mode** item setting. Configuration options: [Offset] [Manual]

Offset Voltage [Auto]

This item appears only when you set the **CPU Voltage Mode** item to [Offset] and allows you to set the Offset voltage. The values range from 0.00625V to 0.50000V with a 0.00625V interval.

Offset Sign [-]

This item appears only when you set the **Offset Voltage** item to a value other than [Auto].

[+]   To offset the voltage by a positive value.

[–]   To offset the voltage by a negative value.

Fixed Voltage [Auto]

This item appears only when you set the **CPU Voltage Mode** item to [Manual] and allows you to set a fixed CPU voltage. The values range from 0.85V to 1.6V with a 0.00625V interval.

> ⚠ Refer to the CPU documentation before setting the CPU Vcore voltage. Setting a high VCore voltage may damage the CPU permanently, and setting a low VCore voltage may make the system unstable.

2.4.13   IMC Voltage [Auto]

Allows you to set the CPU Integrated Memory Controller voltage. The values range from 1.1V to 1.7V with a 0.02V interval.

2.4.14   DRAM Voltage [Auto]

Allows you to set the DRAM voltage. The values range from 1.2V to 2.0V with a 0.02V interval.

> ⚠ According to Intel CPU spec, DIMM voltage below 1.65V is recommended to protect the CPU.

2.4.15   CPU PLL Voltage [Auto]

Allows you to set the CPU PLL voltage. The values range from 1.8V to 2.5V with a 0.02V interval.

2.4.16 PCH Voltage [Auto]

Allows you to set the Platform Controller Hub voltage. The values range from 1.05V to 1.49V with a 0.02V interval.

✎ • The values of the IMC Voltage, DRAM Voltage, CPU PLL Voltage and PCH Voltage items are labeled in different color, indicating the risk levels of high voltage settings. Refer to the table on the next page for details.

• The system may need better cooling system to work stably under high voltage settings.

	Blue	Yellow	Purple	Red
IMC Voltage	1.10V–1.16V	1.18V–1.22V	1.24V–1.30V	1.32V–1.70V
DRAM Voltage	1.20V–1.56V	1.58V–1.62V	1.64V–1.68V	1.70V–2.00V
CPU PLL Voltage	1.80V–1.86V	1.88V–1.92V	1.94V–1.98V	2.00V–2.50V
PCH Voltage	1.05V–1.19V	1.21V–1.31V	1.33V–1.45V	1.47V–1.49V

2.4.17 Load-Line Calibration [Auto]

[Auto]   Automatic configuration.
[Disabled]   Follow Intel specifications.
[Enabled]   Improve CPU VDroop directly.

2.4.18 CPU Spread Spectrum [Auto]

[Auto]   Automatic configuration.
[Disabled]   Enhances the BCLK overclocking ability.
[Enabled]   Sets to [Enabled] for EMI control.

2.4.19 PCIE Spread Spectrum [Auto]

[Auto]   Automatic configuration.
[Disabled]   Enhances the PCIE overclocking ability.
[Enabled]   Sets to [Enabled] for EMI control.

2.5   Advanced menu

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

⚠ Be cautious when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.

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

  ▶  CPU Configuration                              Configure CPU.
  ▶  Uncore Configuration
  ▶  Onboard Devices Configuration
  ▶  USB Configuration
  ▶  PCIPnP

     Intel VT-d                    [Disabled]


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

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```
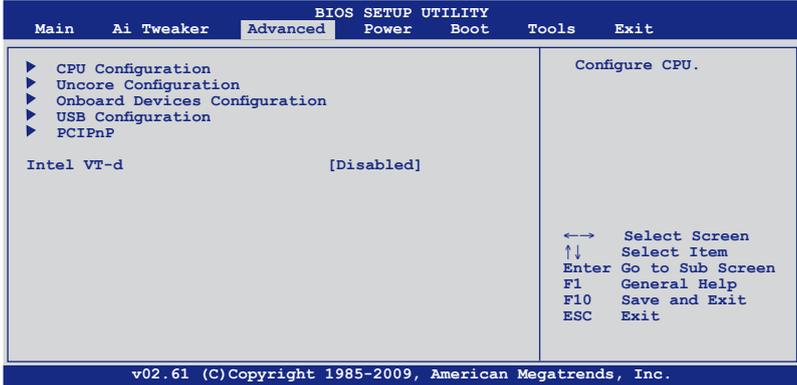
2.5.1   CPU Configuration

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

CPU Ratio Setting [Auto]

Allows you to adjust the ratio between CPU Core Clock and BCLK Frequency. Use the <+> and <-> keys to adjust the value. The valid value ranges differently according to your CPU model.

C1E Support [Enabled]

[Enabled]   Enables the C1E support function. This item should be enabled in order to enable the Enhanced Halt Sate.

[Disabled]   Disables this function.

Hardware Prefetcher [Enabled]

[Enabled]   Enables the Hardware Prefetcher function. This item should be enabled in order to enable the L2 cache (MLC) Streamer Prefetcher for tuning performance of the specific application.

[Disabled]   Disables this function.

Adjacent Cache Line Prefetcher [Enabled]

[Enabled]   Enables the Adjacent Cache Line Prefetcher function. This item should be enabled in order to enable the L2 cache (MLC) Spatial Prefetcher for tuning performance of the specific application.

[Disabled]   Disables this function.

Max CPUID Value Limit [Disabled]

[Enabled]   Allows legacy operating systems to boot even without support for CPUs with extended CPUID functions.

[Disabled]   Disables this function.

Intel(R) Virtualization Tech [Enabled]

[Enabled]   Allows a hardware platform to run multiple operating systems separately and simultaneously, enabling one system to virtually function as several systems.

[Disabled]   Disables this function.

CPU TM function [Enabled]

[Enabled]   Enables the overheated CPU to throttle its clock speed to cool down.

[Disabled]   Disables this function.

Execute Disable Bit [Enabled]

[Enabled]   Enables the No-Execution Page Protection Technology.

[Disabled]   Forces the XD feature flag to always return to zero (0).

Intel(R) HT Technology [Enabled]

[Enabled]   Enables the Intel Hyper-Threading Technology.

[Disabled]   Only one thread per activated CPU core is enabled.

Active Processor Cores [All]

[All]   Activate all CPU cores in the processor package.

[1]   Activate only 1 CPU core in the processor package.

[2]   Activate 2 CPU cores in the processor package.

A20M [Disabled]

[Enabled]   Legacy OSes and APs may need this function enabled.

[Disabled]   Disables this function.

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

[Enabled]   The CPU speed is controlled by the operating system.

[Disabled]   The CPU runs at its default speed.

Intel(R) TurboMode tech [Enabled]

[Enabled]   Allows processor cores to run faster than marked frequency in specific condition.

[Disabled]   Disables this function.

Intel(R) C-STATE Tech [Enabled]

[Enabled]   Allows the CPU to save more power under idle mode. Enable this item only when you install a C-State Technology-supported CPU.

[Disabled]   Disables this function.

C State package limit setting [Auto]

This item appears only when you set the **Intel(R) C-STATE Tech** item to [Enabled]. We recommend that you set this item to [Auto] for BIOS to automatically detect the C-State mode supported by your CPU. Configuration options: [Auto] [C1] [C3] [C6]

2.5.2   Uncore Configuration

The Uncore Configuration menu allows you to change the advanced chipset settings.

Memory Remap Feature [Enabled]

[Disabled]   Do not allow remapping of memory.

[Enabled]   Allows for the segment of system memory that was previously overwritten by PCI
              devices to be remapped above the total physical memory.

Fast MRC [Disabled]

[Enabled]   While cold booting, MRC directly restores memory data from valid NVRAM without
              hardware training.

[Disabled]   The cold booting with memory detection and hardware training.

2.5.3   Onboard Devices Configuration

HDA Controller [Enabled]

[Enabled]   Enables the High Definition Audio Controller.

[Disabled]   Disables the controller.

Front Panel Type [HD Audio]

[AC97]   Set the front panel audio connector (AAFP) mode to legacy AC'97

[HD Audio]   Set the front panel audio connector (AAFP) mode to high-definition audio.

Realtek LAN [Enabled]

[Enabled]   Enables Realtek LAN Controller.

[Disabled]   Disables Realtek LAN Controller.

LAN Boot ROM [Disabled]

This item appears only when you enable the previous item.

[Disabled]   Disables Realtek LAN Boot ROM.

[Enabled]   Enables Realtek LAN Boot ROM.

J-Micron eSATA/PATA Controller [IDE Mode]

[Disabled]   Disables the J-Micron controller.

[IDE Mode]   Set to [IDE Mode] when you want to use the Serial ATA hard disk drives as
              Parallel ATA physical storage devices.

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]

Marvell 9123 Controller [IDE Mode]

[Disabled]   Disables the Marvell controller.

[IDE Mode]   Set to [IDE Mode] when you want to use the Serial ATA hard disk drives as
              Parallel ATA physical storage devices.

[AHCI Mode]   Set to [AHCI] when you want the SATA hard disk drives to use the AHCI
              (Advabced Host Controller Interface). The AHCI allows the onboard storage
              driver to enable advanced Serial ATA features that increases storage
              performance on random workloads by allowing the drive to internally
              optimize the order of commands.

Marvell 9123 Boot ROM [Auto]

This item appears only when you enable the previous item.

[Disabled]   Disables Marvell controller Boot ROM.

[Enabled]   Enables Marvell controller Boot ROM.

Onboard USB 3.0 Controller [Enabled]

[Enabled]   Enables the onboard USB 3.0 controller.
[Disabled]   Disables the onboard USB 3.0 controller.

2.5.4   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 USB Devices Enabled item shows the auto-detected values. If no USB device is detected, the item shows None.

USB Support [Enabled]

[Enabled]   Enables the USB Host Controllers.
[Disabled]   Disables the controllers.

> The following items appear only when you set USB Support to [Enabled].

Legacy USB Support [Auto]

[Disabled]   Disables the function.
[Enabled]   Enables the support for USB devices on legacy operating systems (OS).
[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.

BIOS EHCI Hand-off [Enabled]

[Disabled]   Disables the function.
[Enabled]   Enables the support for operating systems without an EHCI hand-off feature.

2.5.5   PCIPnP

The PCIPnP menu items allow you to change the advanced settings for PCI/PnP devices.

Plug And Play O/S [No]

[Yes]   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.
[No]   When set to [No], BIOS configures all the devices in the system.

2.5.6   Intel VT-d Configuration [Disabled]

[Disabled]   Disables the Intel Virtualization Technology for Directed I/O.
[Enabled]   Enables the Intel Virtualization Technology for Directed I/O.

2.6 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.

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

     Suspend Mode                  [Auto]                 Select the ACPI state
     Repost Video on S3 Resume     [No]                   used for System
     ACPI 2.0 Support              [Disabled]             Suspend.
     ACPI APIC Support             [Enabled]
     EuP Ready                     [Disabled]

   ▶  APM Configuration
   ▶  Hardware Monitor

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


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```
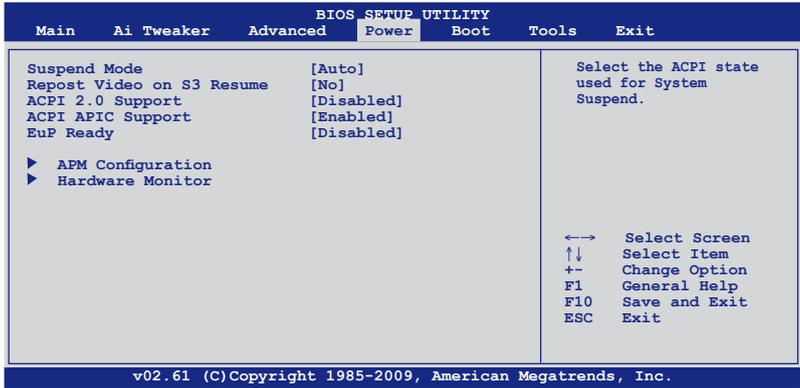
2.6.1 Suspend Mode [Auto]

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

[S1 (POS) only]   Sets the APCI suspend mode to S1/POS (Power On Suspend).

[S3 only]   Sets the APCI suspend mode to S3/STR (Suspend To RAM).

[Auto]   The system automatically configures the ACPI suspend mode.

2.6.2 Repost Video on S3 Resume [No]

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

[No]   The system will not invoke VGA BIOS POST on S3/STR resume.

[Yes]   The system invokes VGA BIOS POST on S3/STR resume.

2.6.3 ACPI 2.0 Support [Disabled]

[Disabled]   When set to [Disabled], the system will not add additional tables as per ACPI 2.0 specifications.

[Enabled]   When set to [Enabled], the system adds additional tables as per ACPI 2.0 specifications.

2.6.4 ACPI APIC Support [Enabled]

[Disabled]   When set to [Disabled], the system disable the Advanced Configuration and Power Interface (ACPI) support in the Advanced Programmable Interrupt Controller (APIC).

[Enabled]   When set to [Enabled], the ACPI APIC table pointer is included in the RSDT pointer list.

2.6.5 EuP Ready [Disabled]

[Disabled]   Disables the Energy Using Products (EuP) Ready function.

[Enabled]   Allows the BIOS to switch off power for WOL, WO_USB, audio, and onboard LEDs at S5 state to get the system ready for the EuP requirement.

2.6.6   APM Configuration

Restore On AC Power Loss [Power Off]

[Power Off]   The system goes into off state after an AC power loss.
[Power On]   The system goes into on state after an AC power loss.
[Last State]   The system goes into either off or on state, whatever the system state was
                 before the AC power loss.

Power On By RTC Alarm [Disabled]

[Disabled]   Disables RTC to generate a wake event.
[Enabled]   When set to [Enabled], the items **RTC Alarm Date (Days) / System Time**
                 will become user-configurable with set values.

Power On By External Modems [Disabled]

[Disabled]   Disables to power up the computer when the external modem receives a
                 call while the computer is in Soft-off mode.
[Enabled]   The computer could be powered up when the external modem receives a
                 call while the computer is in Soft-off mode.

The computer cannot receive or transmit data until the computer and applications are fully
running. Thus, connection cannot be made on the first try. Turning an external modem
off and then back on while the computer is off causes an initialization string that turns the
system power on.

Power On By PCI Devices [Disabled]

[Disabled]   Disables the PME to wake up from S5 by PCI devices.
[Enabled]   Allows you to turn on the system through a PCI LAN or modem card. This
                 feature requires an ATX power supply that provides at least 1A on the
                 +5VSB lead.

Power On By PCIE Devices [Disabled]

Allows you to enable or disable the PCIE devices to generate a wake event.

[Disabled]   Disables the PCIE devices to generate a wake event.
[Enabled]   Enables the PCIE devices to generate a wake event.

Power On By PS/2 Keyboard [Disabled]

[Disabled]   Disables the Power On by a PS/2 keyboard.
[Enabled]   Sets specific keys on the PS/2 keyboard to turn on the system. This feature
                 requires an ATX power supply that provides at least 1A on the +5VSB lead.

Power On By PS/2 Mouse [Disabled]

[Disabled]   Disables the Power On by a PS/2 mouse.
[Enabled]   Enables the Power On by a PS/2 mouse. This feature requires an ATX
                 power supply that provides at least 1A on the +5VSB lead.

2.6.7 Hardware Monitor

CPU/MB Temperature [xxxºC/xxxºF]

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

CPU Fan Speed [xxxxRPM] or [Ignored] / [N/A]
Chassis Fan 1/2 Speed [xxxxRPM] or [Ignored] / [N/A]
Power Fan Speed [xxxxRPM] or [Ignored] / [N/A]

The onboard hardware monitor automatically detects and displays the CPU, chassis, and 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.

CPU Q-Fan Control [Disabled]

[Disabled]   Disables the CPU Q-Fan control feature.
[Enabled]   Enables the CPU Q-Fan control feature.

CPU Fan Profile [Standard]

This item appears only when you enable the **CPU Q-Fan Control** feature and allows you to set the appropriate performance level of the CPU fan.

[Standard]   Sets to [Standard] to make the CPU fan automatically adjust depending on the CPU temperature.
[Silent]   Sets to [Silent] to minimize the fan speed for quiet CPU fan operation.
[Turbo]   Set to [Turbo] to achieve maximum CPU fan speed.
[Manual]   Set to [Manual] to assign detailed fan speed control parameters.

Chassis Q-Fan Control [Disabled]

[Disabled]   Disables the Chassis Q-Fan control feature.
[Enabled]   Enables the Chassis Q-Fan control feature.

Chassis Fan Profile [Standard]

This item appears only when you enable the **Chassis Q-Fan Control** feature and allows you to set the appropriate performance level of the chassis fan.

[Standard]   Sets to [Standard] to make the chassis fan automatically adjust depending on the chassis temperature.
[Silent]   Sets to [Silent] to minimize the fan speed for quiet chassis fan operation.
[Turbo]   Set to [Turbo] to achieve maximum chassis fan speed.

CPU Voltage, 3.3V Voltage, 5V Voltage, 12V Voltage

The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators. Select **Ignored** if you do not want to detect this item.

2.7 Boot menu

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

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

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

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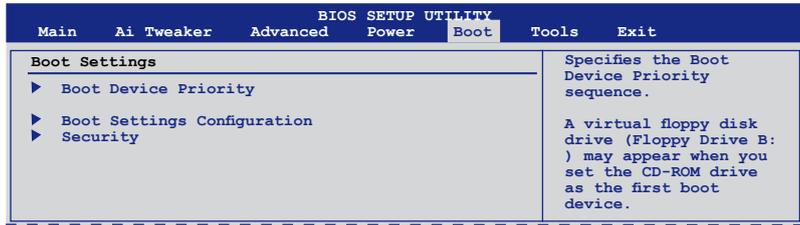
2.7.1   Boot Device Priority

1st ~ xxth Boot Device [Removable Dev.]

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]

2.7.2   Boot Settings Configuration

Quick Boot [Enabled]

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

Full Screen Logo [Enabled]

[Disabled]   Disables the full screen logo display feature.
[Enabled]   Enables the full screen logo display feature.

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

AddOn ROM Display Mode [Force BIOS]

[Force BIOS]   The third-party ROM messages will be forced to display during the boot sequence.
[Keep Current]   The third-party ROM messages will be displayed only if the third-party manufacturer had set the add-on device to do so.

Bootup Num-Lock [On]

[Off]   Sets the power-on state of the NumLock to [Off].
[On]   Sets the power-on state of the NumLock to [On].

Wait For 'F1' If Error [Enabled]

[Disabled]   Disables this function.
[Enabled]   The system waits for the <F1> key to be pressed when error occurs.

Hit 'DEL' Message Display [Enabled]

[Disabled]   Disables this function.
[Enabled]   The system displays the message "Press DEL to run Setup" during POST.

2.7.3 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 as in setting a user password.

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

> If you forget your BIOS password, you can clear clear it by erasing the CMOS Real Time Clock (RTC) RAM. See section **1.9 Jumper** 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.

[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 as in setting a user password.

Clear User Password
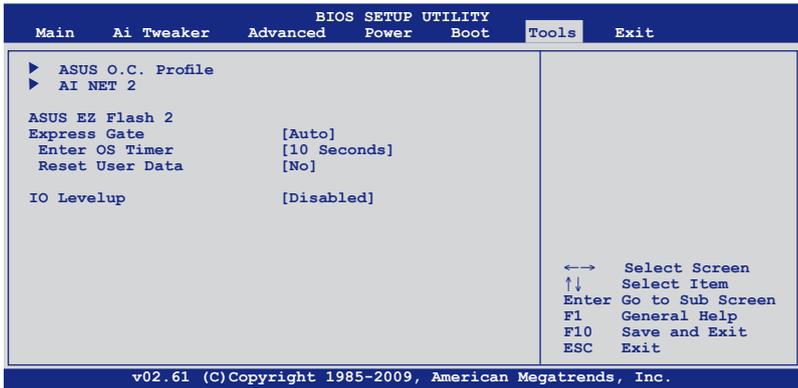
Select this item to clear the user password.

Password Check [Setup]

[Setup]	BIOS checks for user password when accessing the Setup utility.

[Always]	BIOS checks for user password both when accessing Setup and booting the system.

2.8   Tools menu

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

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

 ▶  ASUS O.C. Profile
 ▶  AI NET 2

   ASUS EZ Flash 2
   Express Gate            [Auto]
    Enter OS Timer         [10 Seconds]
    Reset User Data        [No]

   IO Levelup              [Disabled]


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

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```

2.8.1   ASUS O.C. Profile

This item allows you to store or load multiple BIOS settings.

Add Your CMOS Profile

Allows you to save the current BIOS file to the BIOS Flash. In the Name sub-item, type your profile name and press <Enter>, and then choose a profile number to save your CMOS settings in the Save to sub-item.

Load CMOS Profiles

Allows you to load the previous BIOS settings saved in the BIOS Flash. Press <Enter>, and choose a profile to load.

Start O.C. Profile

Allows you to run the utility to save and load CMOS. Press <Enter> to run the utility.

```
              ASUSTek O.C. Profile Utility V2.10a

         ┌───── Current CMOS ─────┐      ┌───── Restore CMOS ─────┐
         │ BOARD: P7P55D-E-LX     │      │ BOARD: Unknown         │
         │ VER:  0019             │      │ VER:  Unknown          │
         │ DATE: 12/02/2009       │      │ DATE: Unknown          │
         └────────────────────────┘      └────────────────────────┘
    PATH: A:\

    ┌ A: ──────┐ ┌───────────────────────────────────────┐
    │          │ │                                        │
    │          │ │                                        │
    │          │ │                                        │
    │          │ │                                        │
    │          │ │                                        │
    └──────────┘ └───────────────────────────────────────┘

    ┌ Note ─────────────────────────────────────────────────┐
    │ [Enter] Select or Load    [Tab] Switch    [V] Drive Info│
    │ [Up/Down/Home/End] Move    [B] Backup    [Esc] Exit     │
    └─────────────────────────────────────────────────────────┘
```
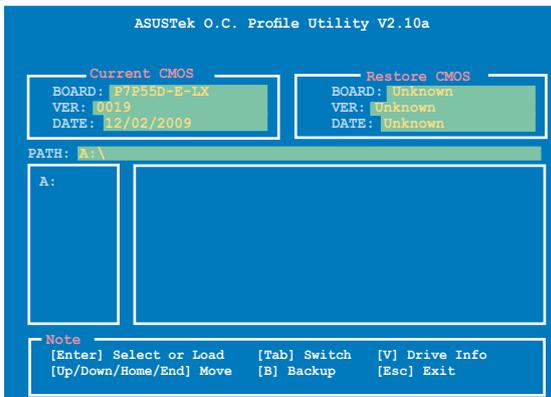
- This function can support devices such as a USB flash disk with FAT 32/16 format and single partition only.

- DO NOT shut down or reset the system while updating the BIOS to prevent the system boot failure!

- We recommend that you update the BIOS file only coming from the same memory/CPU configuration and BIOS version.

- Only the CMO file can be loaded.

2.8.2   AI NET 2

Check Realtek LAN Cable [Disabled]

[Disabled]   BIOS will not check the Realtek LAN cable during the Power-On Self-Test (POST).

[Enabled]   BIOS checks the Realtek LAN cable during the Power-On Self-Test (POST).

2.8.3   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.

2.8.4   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.

[Reset]   When setting this item to [Reset], ensure that you 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 such as bookmarks, cookies, browsing history. This is useful in the rare case where corrupt settings prevent the Express Gate environment from launching properly.

[No]   Set to [No] to disable the Reset User Data function when entering the Express Gate.

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

2.8.5   IO Levelup [Disabled]

[Disabled]   Disables the IO Level UP feature.

[USB 3.0]   Set USB 3.0 ports to the maximum bandwidth. When enabled, the maximum bandwidth of back panel USB 3.0 ports is up to Gen. 2 speed while the blue PCIex16_1 slot operates at x8 mode.

[SATA 6G]   Set SATA 6G ports to the maximum bandwidth. When enabled, the maximum bandwidth of onboard SATA 6G connectors is up to Gen. 2 speed while the blue PCIex16_1 slot operates at x8 mode.

2.9 Exit menu

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

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

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




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

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

Exit & Save Changes

Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. An onboard backup battery sustains the CMOS RAM so it stays on even when the PC is turned off. When you select this option, a confirmation window appears. Select **Ok** to save changes and exit.

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

Exit & Discard Changes

Select this option only if you do not want to save the changes that you made to the Setup program. If you made changes to fields other than System Date, System Time, and Password, the BIOS asks for a confirmation before exiting.

Discard Changes

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

Load Setup Defaults

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