

**P5Q3 Deluxe/  
WiFi-AP@n**

**ASUS**<sup>®</sup>

**Motherboard**

E3783

First Edition V1

May 2008

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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.



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

---

## Canadian Department of Communications Statement

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

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

# Safety information

## Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If 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.
- Make sure 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, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.



---

This symbol of the crossed out wheeled bin indicates that the product (electrical, electronic equipment and mercury-containing button cell battery) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

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# 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: Hardware information**  
This chapter lists the hardware setup procedures that you have to perform when installing system components. It includes description of the switches, jumpers, and connectors on the motherboard.

## 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>

**Command**

Means that you must type the command exactly as shown, then supply the required item or value enclosed in brackets.

Example: At the DOS prompt, type the command line:

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

```
afudos /iP5Q3DLX.ROM
```

# P5Q3 Deluxe/WiFi-AP@n specifications summary

<b>CPU</b>	LGA775 socket for Intel® Core™2 Quad / Core™2 Extreme / Core™2 Duo / Pentium® dual-core / Celeron® dual-core / Celeron® Processors Compatible with Intel® 05B/05A/06 processors Intel® next generation 45nm Multi-Core CPU * Refer to <a href="http://www.asus.com">www.asus.com</a> for Intel CPU support list
<b>Chipset</b>	Intel® P45 / ICH10R with Intel® Fast Memory Access Technology
<b>System Bus</b>	1600 / 1333 / 1066 / 800 MHz
<b>Memory</b>	4 x DIMM, max. 16GB, DDR3 1600/ 1333/ 1066/ 800 MHz, non-ECC, un-buffered memory Dual channel memory architecture Supports Intel® Extreme Memory Profile (XMP) * Refer to <a href="http://www.asus.com">www.asus.com</a> or this user manual for the Memory QVL (Qualified Vendors Lists)
<b>Expansion Slots</b>	2 x PCI Express 2.0 x16 slots, support ATI CrossFireX™ Technology at x8 speed (PCIe 2.0 x16_1 blue, PCIe 2.0 x16_2 black*) 1 x PCI Express x16 slot at max. x4 speed (black)** 2 x PCI Express x1 slots 2 x PCI slots * PCIe 2.0 x16_2 slot (black, at max. x8 link) **If any other PCI Express x1 slot is occupied, this slot will downgrade to max. x1 speed.
<b>Storage</b>	<b>Intel® ICH10R Southbridge:</b> - 6 x SATA 3.0 Gb/s ports - Intel® Matrix Storage supporting SATA RAID 0,1, 5, and 10 <b>Marvell 88SE6121 controller:</b> - 1 x Ultra DMA 133/100/66 for up to 2 PATA devices - 1 x External SATA 3.0 Gb/s port (SATA On-the-Go) <b>Silicon Image SIL5723 controller (Drive Xpert Technology):</b> - 2 x SATA 3.0 Gb/s ports - Supports EZ Backup and Super Speed functions
<b>LAN</b>	Dual Gigabit LAN controllers Marvell® 88E8056/88E8001 Gigabit LAN controller, featuring AI NET2, Teaming, Redundant
<b>Wireless LAN (WiFi-AP Edition only)</b>	ASUS WiFi-AP@n - 300 Mbps* IEEE 802.11n (Draft) and backwards compatible with IEEE 802.11g/b - Software Access Point mode *300 Mbps is IEEE 802.11n draft specification. Actual throughput varies depending on the wireless environment and other parameters.

(continued on the next page)

# P5Q3 Deluxe/WiFi-AP@n specifications summary

<b>USB</b>	10 x USB 2.0 ports (4 ports at mid-board, 6 ports at back panel)
<b>IEEE 1394</b>	LSI® L-FW3227 1394a controller supports 2 x IEEE 1394a ports (one at midboard; one at back panel)
<b>Audio</b>	ADI® AD2000B 8-channel High Definition Audio CODEC <ul style="list-style-type: none"> <li>- Supports Jack-Detecting, Multi-streaming, and Front Panel Jack-Retasking technology</li> <li>- Coaxial / Optical S/PDIF out ports at back I/O</li> <li>- ASUS Noise Filter</li> </ul>
<b>ASUS AI Lifestyle Unique features</b>	<p><b>ASUS Power Saving Solution:</b></p> <ul style="list-style-type: none"> <li>- ASUS EPU-Six Engine</li> <li>- ASUS 16-Phase Power Design</li> <li>- ASUS AI Nap</li> </ul> <p><b>AI Lifestyle Features:</b></p> <ul style="list-style-type: none"> <li>- ASUS Express Gate SSD</li> <li>- ASUS WiFi-AP@n</li> <li>- ASUS AI Direct Link</li> </ul> <p><b>ASUS Quiet Thermal Solution:</b></p> <ul style="list-style-type: none"> <li>- ASUS Fanless Design: Heat-pipe solution</li> <li>- ASUS Fanless Design: Stack Cool 2</li> <li>- ASUS Fan Xpert</li> <li>- ASUS Optional Fan for Water-cooling or Passive-Cooling only</li> </ul> <p><b>ASUS Crystal Sound:</b></p> <ul style="list-style-type: none"> <li>- AI Audio 2</li> <li>- ASUS Noise Filtering</li> </ul> <p><b>ASUS EZ DIY:</b></p> <ul style="list-style-type: none"> <li>- ASUS Drive Xpert</li> <li>- DieHard BIOS</li> <li>- ASUS Q-Shield</li> <li>- ASUS Q-Connector</li> <li>- ASUS O.C. Profile</li> <li>- ASUS EZ Flash 2</li> </ul>
<b>BIOS Features</b>	16 Mb AMI BIOS, PnP, DMI 2.0, WfM 2.0, SM BIOS 2.4, Multi-language BIOS
<b>Manageability</b>	WOL by PME, WOR by PME, WOR by Ring, Chassis Intrusion, PXE
<b>ASUS Stylish Features</b>	ASUS MyLogo 3 Multi-language BIOS

*(continued on the next page)*

# P5Q3 Deluxe/WiFi-AP@n specifications summary

<b>ASUS Exclusive Overclocking Features</b>	<p>ASUS AI Booster utility Precision Tweaker 2:</p> <ul style="list-style-type: none"> <li>- vCore: Adjustable CPU voltage at 0.00625V increment</li> <li>- vDIMM: 64-step DRAM voltage control</li> <li>- vChipset (N.B.): 48-step DRAM voltage control</li> <li>- vCPU PLL: 64-step reference voltage control</li> <li>- vFSB Termination: 40-step Front Side Bus voltage control</li> </ul> <p>SFS (Stepless Frequency Selection)</p> <ul style="list-style-type: none"> <li>- FSB tuning from 200MHz up to 800MHz at 1MHz increment</li> <li>- PCI Express frequency tuning from 100MHz up to 180MHz at 1MHz increment</li> </ul> <p>Overclocking Protection:</p> <ul style="list-style-type: none"> <li>- ASUS C.P.R.(CPU Parameter Recall)</li> </ul>
<b>Back Panel I/O Ports</b>	<p>1 x PS/2 Keyboard / Mouse combo port 1 x S/PDIF Out (Coaxial + Optical) 1 x External SATA 1 x IEEE1394a 2 x RJ45 ports 6 x USB 2.0/1.1 2 x WiFi-AP@n antenna jacks 8-channel Audio I/O</p>
<b>Internal I/O Connectors</b>	<p>2 x USB connectors support additional 4 USB ports 1 x Floppy disk drive connector 1 x COM connector 1 x IDE connector 6 x SATA connectors (red) 2 x Drive Xpert SATA connectors (Orange) 1 x CPU Fan connector 3 x Chassis Fan connectors 1 x Power Fan connector 1 x IEEE1394a connector Front panel audio connector 1 x S/PDIF Out Header Chassis Intrusion connector CD audio in 24-pin ATX Power connector 8-pin ATX 12V Power connectors System Panel (Q-Connector) 1 x Power on switch 1 x Reset switch</p>

*(continued on the next page)*

# P5Q3 Deluxe/WiFi-AP@n specifications summary

<b>Support DVD Contents</b>	Drivers ASUS PC Probe II ASUS Update ASUS AI Suite Image-Editing Suite Anti-virus software (OEM version)
<b>Form Factor</b>	ATX Form Factor, 12"x 9.6" (30.5cm x 24.4cm)

\*Specifications are subject to change without notice.

This chapter describes the motherboard features and the new technologies it supports.

# 1 Product introduction

# Chapter summary

# 1

1.1	Welcome! .....	1-1
1.2	Package contents.....	1-1
1.3	Special features.....	1-2

## 1.1 Welcome!

Thank you for buying an ASUS® P5Q3 Deluxe/WiFi-AP@n 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 P5Q3 Deluxe/WiFi-AP@n
I/O modules	1 x Multi-function module (1-port IEEE 1394a and 2-port USB 2.0 module)
Cables	1 x Serial ATA power cable for 2 devices 6 x Serial ATA signal cables 1 x Ultra DMA 133/100/66 cable 1 x Floppy disk drive cable
Accessories	ASUS Q-Shield (I/O shield) 1 x ASUS Optional Fans for Water-Cooling or Passive-Cooling only 1 x ASUS Q-Connector Kit (USB, 1394, system panel; Retail version only) 2 x WiFi-AP@n omni-directional antennae
Application DVD	ASUS motherboard support DVD
Documentation	User guide ASUS WiFi-AP@n manual



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

## 1.3 Special features

### 1.3.1 Product highlights

#### Green ASUS



This motherboard and its packaging comply with the European Union's Restriction on the use of Hazardous Substances (RoHS). This is in line with the ASUS vision of creating environment-friendly and recyclable products/packagings to safeguard consumers' health while minimizing the impact on the environment.

#### Intel® Core™2 Extreme / Core™ 2 Quad / Core™2 Duo Processor Support



This motherboard supports the latest Intel® Core™ 2 Extreme / Core™ 2 Quad / Core™ 2 Duo processors in the LGA775 package. It is excellent for multi-tasking, multi-media and enthusiastic gamers with 1600 / 1333 / 1066 / 800 MHz FSB. The Intel® Core™ 2 series processor is one of the most powerful CPUs in the world. This motherboard also supports Intel® CPUs in the new 45nm manufacturing process.

#### Intel P45 Chipset



The Intel® P45 Express Chipset is the latest chipset designed to support 16GB of dual-channel DDR3 1600/ 1333/ 1066/ 800 architecture, 1600/ 1333/ 1066/ 800 FSB (Front Side Bus), PCIe 2.0, and multi-core CPUs. It especially includes Intel® Fast Memory Access technology that significantly optimizes the use of available memory bandwidth and reduces the latency of the memory accesses.

#### DDR3 memory support



The motherboard supports DDR3 memory that features data transfer rates of 1600 /1333 / 1066 / 800 MHz to meet the higher bandwidth requirements of the latest 3D graphics, multimedia, and Internet applications. The dual-channel DDR3 architecture doubles the bandwidth of your system memory to boost system performance. Furthermore, this motherboard does not restrict the memory size across two channels. Users may install different memory size DIMMs into the two channels and enjoy dual-channel and single-channel functions at the same time. This new feature optimizes the use of available memory size. See page 2-13 for details.

## PCIe 2.0

This motherboard supports the latest PCIe 2.0 device for twice the current speed and bandwidth. This enhances system performance while still providing backward compatibility to PCIe 1.0 devices. See page 2-17 for details.

## Serial ATA 3 Gb/s technology and SATA-On-The-Go

This motherboard supports the next-generation hard drives based on the Serial ATA (SATA) 3 Gb/s storage specification, delivering enhanced scalability and doubling the bus bandwidth for high-speed data retrieval and saves. The external SATA port located at the back I/O provides smart setup and hot-plug functions. Easily backup photos, videos and other entertainment contents to external devices. See pages 2-23, 2-27, and 2-28 for details.

## IEEE 1394a support

The IEEE 1394a interface provides high speed digital interface for audio/video appliances such as digital television, digital video camcorders, storage peripherals & other PC portable devices. See pages 2-22 and 2-29 for details.

## S/PDIF digital sound ready

This motherboard provides convenient connectivity to external home theater audio systems via coaxial and optical S/PDIF-out (SONY-PHILIPS Digital Interface) jacks. It allows to transfer digital audio without converting to analog format and keeps the best signal quality. See pages 2-22 and 2-35 for details.

## Dual Gigabit LAN solution

The integrated dual Gigabit LAN design allows a PC to serve as a network gateway for managing traffic between two separate networks. This capability ensures rapid transfer of data from WAN to LAN without any added arbitration or latency. See page 2-22 for details.

## High Definition Audio

Enjoy high-end sound quality on your PC! The onboard 8-channel HD audio (High Definition Audio, previously codenamed Azalia) CODEC enables high-quality 192KHz/24-bit audio output that simultaneously sends different audio streams to different destinations. You can now talk to your partners on the headphone while playing multi-channel network games. See pages 2-22 and 2-23 for details.

## 1.3.2 ASUS AI Lifestyle unique features

### ASUS Express Gate SDD

Taking only 5 seconds to go online from bootup, Express Gate is the one-stop gateway to instant fun! It's a unique motherboard built-in OS. You can utilize the most popular Instant Messengers (IM) like MSN, Skype, Google talk, QQ, and Yahoo! Messenger to keep in touch with friends, or quickly check on the weather and e-mails just before leaving your house. What's more, the user-friendly picture manager lets you view your pictures without entering Windows at anytime!



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The actual boot depends on the system configurations.

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### ASUS WiFi-AP@n

With spec 300 Mbps transfer rates, WiFi-AP@n supports the latest WiFi specifications, 802.11n (draft), for better signal coverage, stronger signals and faster data transmissions in comparison to previous 802.11b/g standards. With two antennas, you will not suffer from signal loss like before. You can also enjoy the choice to set the device in AP-Mode or Client Mode. Refer to the bundled ASUS WiFi-AP@n manual for more details.

### AI Direct Link

AI Direct Link can easily and efficiently transfer large amounts of data via the network cable - saving up to 70% of the total time taken. With AI Direct Link, it becomes easy to backup or share large data files like movies or other media content.

### ASUS Power Saving Solution

ASUS Power Saving solution intelligently and automatically provides balanced computing power and energy consumption.

### ASUS EPU-6 Engine

The new ASUS EPU - the world's first power saving engine, has been upgraded to a new six engine version, which provides total system power savings by detecting current PC loadings and intelligently moderating power in real-time. With auto phase switching for components (which includes the CPU, VGA card, memory, chipset, drives and system fan), the EPU automatically provides the most appropriate power usage via intelligent acceleration and overclocking - helping save power and money.

## ASUS 16-Phase Power Design



The breakthrough technology of 16-phase VRM design is bringing to the ASUS motherboards. 16-phase power design can reach the power efficiency up to 96%+, and dispel heat generated by VRM module effectively, and lower temperature 36°C+ compared to other VRM solution. With all Japanese-made best quality power components such as low RDS (on) MOSFETs, Ferrite core chokes with lower hysteresis loss, and high quality conductive polymer capacitors, ASUS 16-phase VRM design also ensure longer component life, minimum power loss, and help to reach the superior overclocking score ever than before.

## AI Nap



With AI Nap, the system can continue running at minimum power and noise when you are temporarily away. To wake the system and return to the OS environment, simply click the mouse or press a key.

## ASUS Quiet Thermal Solution

ASUS Quiet Thermal solution makes system more stable and enhances the overclocking capability.

### Fanless Design - Stack Cool 2



ASUS Stack Cool 2 is a fan-less and zero-noise cooling solution that lowers the temperature of critical heat generating components. The motherboard uses a special design on the printed circuit board (PCB) to dissipate heat these critical components generate.

### Fanless Design - Pure Copper Heat-pipe



The Heat Pipe design effectively directs the heat generated by the chipsets to the heatsink near the back IO ports, where it can be carried away by existing airflow from CPU fan or bundled optional fan. The purpose of the innovative heat pipe design on this motherboard is that the groundbreaking fanless design does not have lifetime problems as a chipset fan does. Furthermore, it provides options for users to install side-flow fan or passive cooler. The Heat Pipe design is the most reliable fanless thermal solution to date.



DO NOT uninstall the heat-pipe by yourself. Doing so may bend the tubing and affect the heat dissipation performance.



For optimal cooling performance, remove the protect film attached on the ICH10R southbridge before use.

### Optional Fan (for Water-Cooling or Passive-Cooling only)



The optional fan is specifically designed to provide sufficient airflow over the CPU power modules and chipset area when water-cooling or passive-cooling is utilized, ensuring effective heat dissipation for the entire system. See page 2-38 for details.

### Fan Xpert



ASUS Fan Xpert intelligently allows users to adjust both the CPU and chassis fan speed according to different ambient temperature, which is caused by different climate conditions in different geographic regions and system loading. Built-in variety of useful profiles offer flexible controls of fan speed to achieve a quiet and cool environment.

## ASUS Crystal Sound

This feature can enhance speech-centric applications like Skype, online game, video conference and recording.

### AI Audio 2



AI Audio 2 creates a virtual center channel that expands the overall sound field without introducing a picket fencing effect. Preserving the dialogue or solo performances with downmixing from multichannels will allow you to experience true-to-life high quality audio.

### Noise Filter



This feature detects repetitive and stationary noises (non-voice signals) like computer fans, air conditioners, and other background noises then eliminates it in the incoming audio stream while recording.

## ASUS EZ DIY

ASUS EZ DIY feature collection provides you easy ways to install computer components, update the BIOS or back up your favorite settings.

### ASUS Drive Xpert



Without drivers or BIOS setups, the ASUS exclusive Drive Xpert is ideal for anyone who needs to secure data on their hard drives or enhance hard drive performances without the hassles of complicated configurations. With Drive Xpert's user-friendly graphical user interface, users can easily arrange hard drive backups or enhance their hard drive transfer rates - making sure that data is looked after every moment, every day.

### ASUS Q-Shield



The specially designed ASUS Q-Shield provides conductivity to best protect your motherboard against static electricity damage and shields it against Electronic Magnetic Interference (EMI). Without the usual "fingers" present, this new design is convenient and safe to install.

### ASUS Q-Connector



ASUS Q-Connector allows you to easily connect or disconnect the chassis front panel cables to the motherboard. This unique module eliminates the trouble of connecting the system panel cables one at a time and avoiding wrong cable connections. See page 2-37 for details.

### ASUS O.C. Profile



The motherboard features the ASUS O.C. Profile that allows users to conveniently store or load multiple BIOS settings. The BIOS settings can be stored in the CMOS or a separate file, giving users freedom to share and distribute their favorite settings.

### ASUS DieHard BIOS



The ASUS DieHard BIOS consists of two BIOS chips, a main BIOS and a backup BIOS. The ASUS DieHard BIOS can restore corrupted main BIOS data from the backup BIOS automatically. The technology saves users the hassle of recovering the BIOS file or buying a replacement BIOS chip.

### ASUS EZ Flash 2



EZ Flash 2 is a user-friendly BIOS update utility. Simply press the predefined hotkey to launch the utility and update the BIOS without entering the OS. Update your BIOS easily without preparing a bootable diskette or using an OS-based flash utility.

### ASUS MyLogo3™



This feature allows you to convert your favorite photo into a 256-color boot logo for a more colorful and vivid image on your screen.

## ASUS Multi-language BIOS

The multi-language BIOS allows you to select the language of your choice from the available options. The localized BIOS setup menu helps you configure your system easier and faster.

### 1.3.3 ASUS Intelligent Performance and Overclocking features

#### AI Booster

The ASUS AI Booster allows you to overclock the CPU speed in Windows environment without the hassle of booting the BIOS.



#### Precision Tweaker 2

Allows the user to adjust the NB Voltage, FSB termination Voltage, CPU PLL Voltage and the DRAM Voltage in 0.02v steps to finetune voltages to achieve the most precise setting for the ultimate customized overclocking configuration.

#### C.P.R. (CPU Parameter Recall)

The C.P.R. feature of the motherboard BIOS allows automatic re-setting to the BIOS default settings in case the system hangs due to overclocking. When the system hangs due to overclocking, C.P.R. eliminates the need to open the system chassis and clear the RTC data. Simply shut down and reboot the system, and the BIOS automatically restores the CPU default setting for each parameter.

This chapter lists the hardware setup procedures that you have to perform when installing system components. It includes description of the jumpers and connectors on the motherboard.

# Hardware 2 information

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## 2.1 Before you proceed

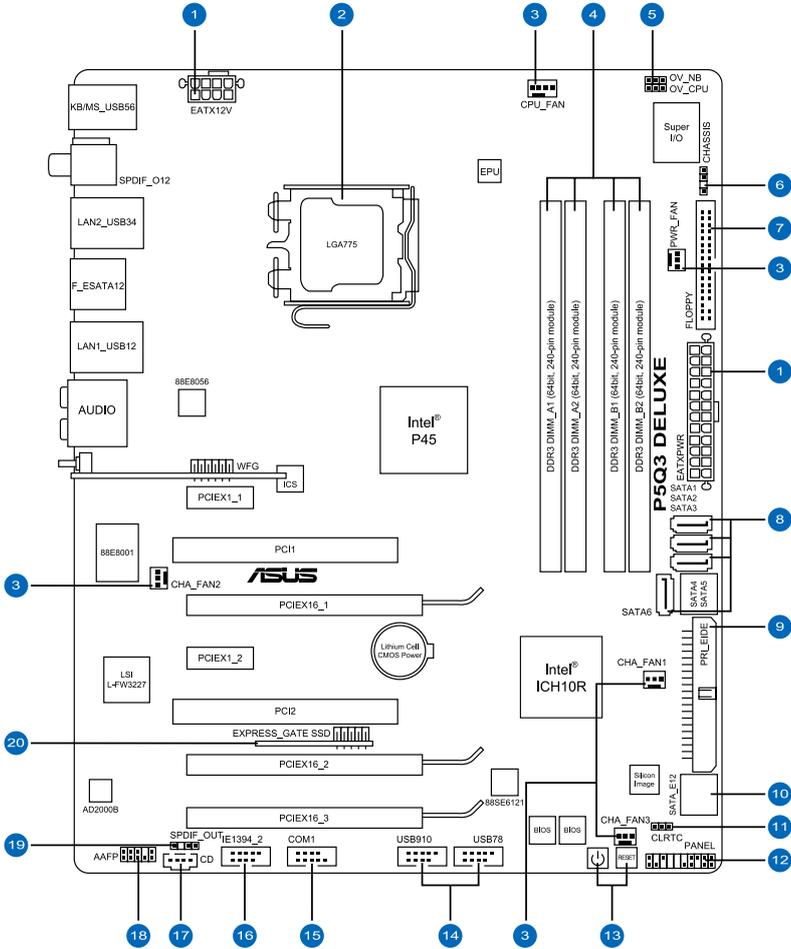
Take note of the following precautions before you install motherboard components or change any motherboard settings.



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

## 2.2 Motherboard overview

### 2.2.1 Motherboard layout



Refer to **2.8 Connectors** for more information about rear panel connectors and internal connectors.

## 2.2.2 Layout contents

Connectors/Jumpers/Slots		Page
1.	ATX power connectors (24-pin EATXPWR, 8-pin EATX12V)	2-32
2.	LGA775 CPU Socket	2-6
3.	CPU, Chassis, and Power Fan connectors (4-pin CPU_FAN, 3-pin PWR_FAN, 3-pin CHA_FAN1-3)	2-30
4.	DDR3 DIMM slots	2-12
5.	CPU / Northbridge overvoltage setting (3-pin OV_CPU; 3-pin OV_NB)	2-20
6.	Chassis intrusion connector (4-1 pin CHASSIS)	2-31
7.	Floppy disk drive connector (34-1 pin FLOPPY)	2-25
8.	ICH10R Serial ATA connectors [red] (7-pin SATA1-6)	2-27
9.	IDE connector (40-1 pin PRI_IDE)	2-26
10.	SIL5723 Serial ATA connectors (7-pin SATA_E1-2)	2-28
11.	Clear RTC RAM (3-pin CLRTC)	2-19
12.	System panel connector (20-8 pin PANEL)	2-36
13.	Onboard switches (Power-on switch, Reset switch)	2-21
14.	USB connectors (10-1 pin USB 78, USB 910)	2-29
15.	Serial port connector (10-1 pin COM1)	2-35
16.	IEEE 1394a port connector (10-1 pin IE1394_2)	2-29
17.	Optical drive audio connector (4-pin CD)	2-34
18.	Front panel audio connector (10-1 pin AAFP)	2-31
19.	Digital audio connector (4-1 pin SPDIF_OUT, for ASUS HDMI VGA card)	2-35
20.	Express_Gate SSD	

## 2.2.3 Placement direction

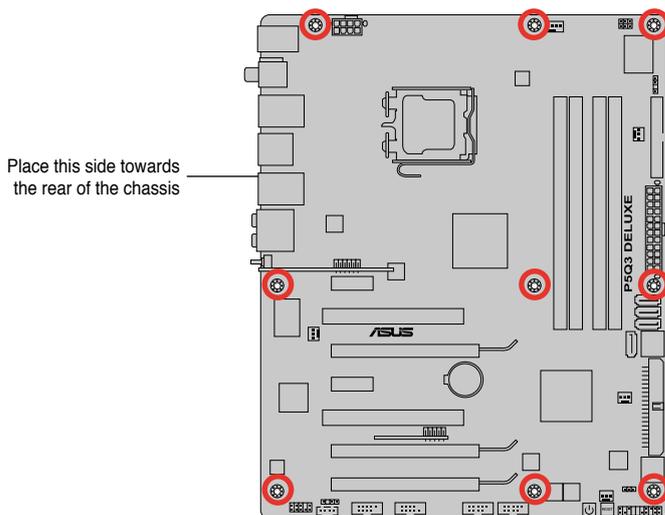
When installing the motherboard, make sure that you place it into the chassis in the correct orientation. The edge with external ports goes to the rear part of the chassis as indicated in the image below.

## 2.2.4 Screw holes

Place nine (9) 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.



## 2.3 Central Processing Unit (CPU)

The motherboard comes with a surface mount LGA775 socket designed for the Intel® Core™2 Quad / Core™2 Extreme / Core™2 Duo / Pentium® dual-core / Celeron® dual-core / Celeron® Processors.



- 
- Make sure that all power cables are unplugged before installing the CPU.
  - If installing a dual-core CPU, connect the chassis fan cable to the CHA\_FAN1 connector to ensure system stability.
  - Due to the chipset limitation, we recommend you use FSB 800MHz CPU or above.
- 

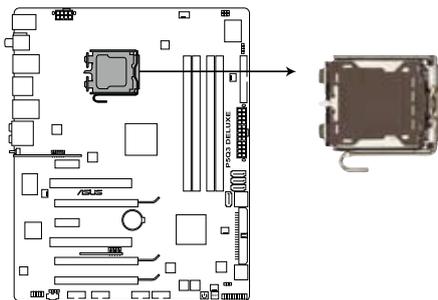


- 
- Upon purchase of the motherboard, make sure that the PnP cap is on the socket and the socket contacts are not bent. Contact your retailer immediately if the PnP cap is missing, or if you see any damage to the PnP cap/socket contacts/motherboard components. ASUS will shoulder the cost of repair only 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 LGA775 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.
-

## 2.3.1 Installing the CPU

To install a CPU:

1. Locate the CPU socket on the motherboard.



**P5Q3 DELUXE CPU socket 775**

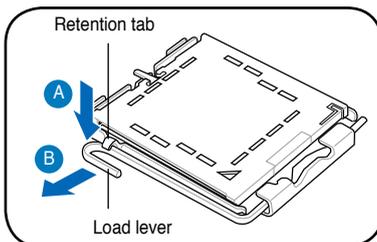


Before installing the CPU, make sure that the cam box is facing towards you and the load lever is on your left.

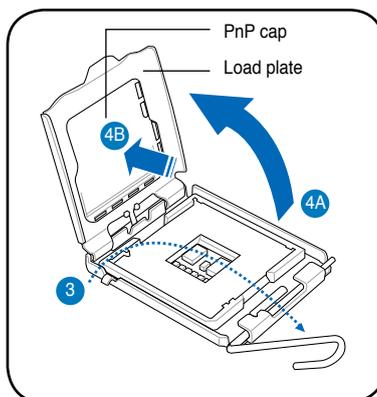
2. Press the load lever with your thumb (A), then move it to the left (B) until it is released from the retention tab.



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



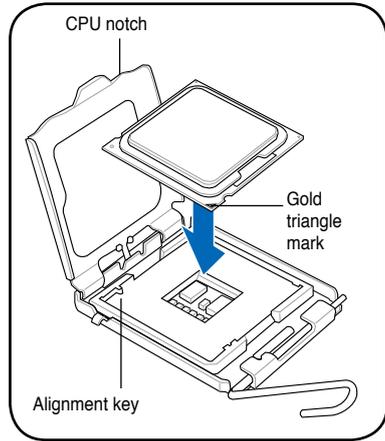
3. Lift the load lever in the direction of the arrow to a 135° angle.
4. Lift the load plate with your thumb and forefinger to a 100° angle (4A), then push the PnP cap from the load plate window to remove (4B).



5. Position the CPU over the socket, making sure that the gold triangle is on the bottom-left corner of the socket then fit the socket alignment key into the CPU notch.



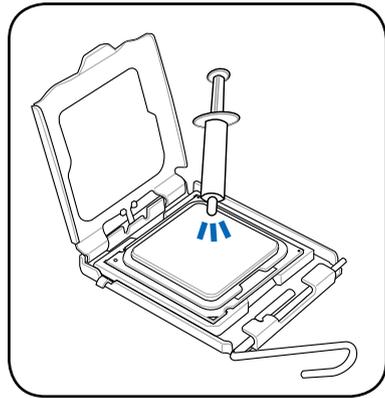
The CPU fits in only one correct orientation. DO NOT force the CPU into the socket to prevent bending the connectors on the socket and damaging the CPU!



6. Apply several drops of thermal paste 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.

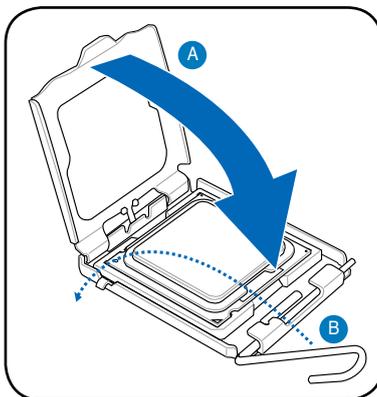


The Thermal Interface Material is toxic and inedible. If it gets into your eyes or touches your skin, ensure to wash it off immediately, and seek professional medical help.



To prevent contaminating the paste, DO NOT spread the paste with your finger directly.

7. Close the load plate (A), then push the load lever (B) until it snaps into the retention tab.



---

The motherboard supports Intel® LGA775 processors with the Intel® Enhanced Memory 64 Technology (EM64T), Enhanced Intel SpeedStep® Technology (EIST), and Hyper-Threading Technology. Refer to the Appendix for more information on these CPU features.

---

## 2.3.2 Installing the CPU heatsink and fan

The Intel® LGA775 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, make sure that you use only Intel®-certified multi-directional heatsink and fan.
- Your Intel® LGA775 heatsink and fan assembly comes in a push-pin design and requires no tool to install.
- If you purchased a separate CPU heatsink and fan assembly, make sure that you have properly applied Thermal Interface Material to the CPU heatsink or CPU before you install the heatsink and fan assembly.



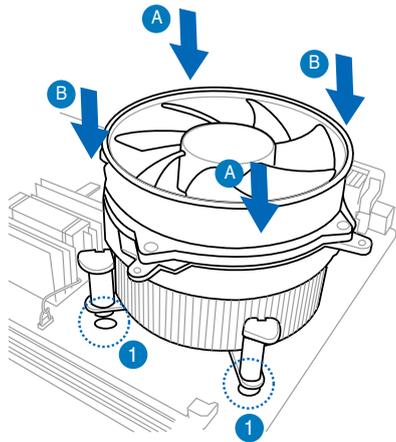
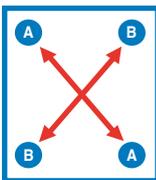
Make sure that you have installed the motherboard to the chassis before you install the CPU fan and heatsink assembly.



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.

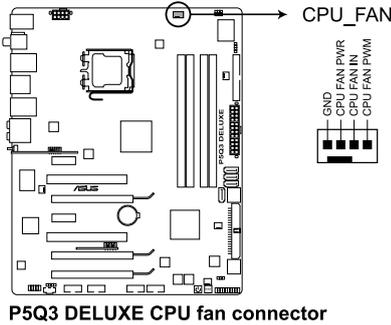
To install the CPU heatsink and fan:

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.

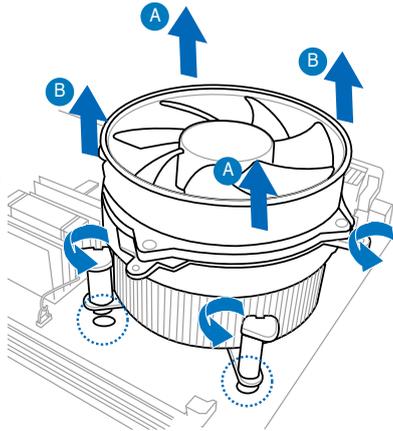
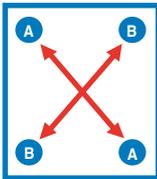


DO NOT forget to connect the CPU fan connector! Hardware monitoring errors can occur if you fail to plug this connector.

### 2.3.3 Uninstalling the CPU heatsink and fan

To uninstall the CPU fan 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.



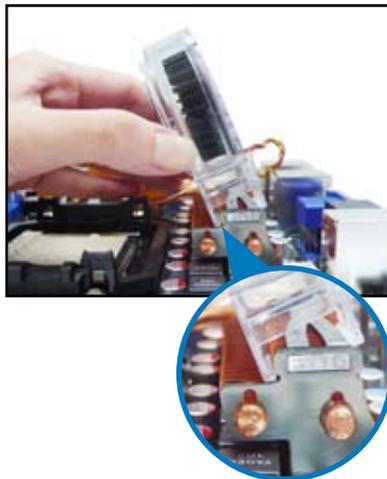
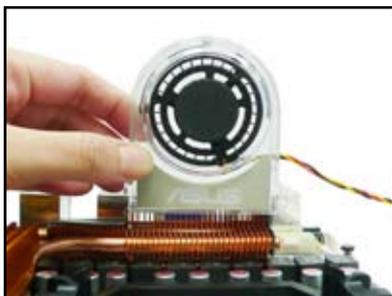
4. Carefully remove the heatsink and fan assembly from the motherboard.

## 2.3.4 Installing the optional fans

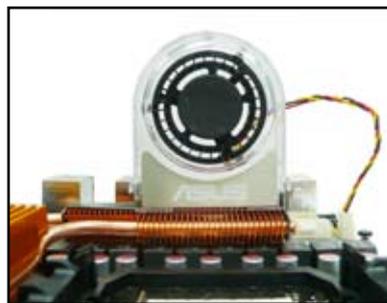
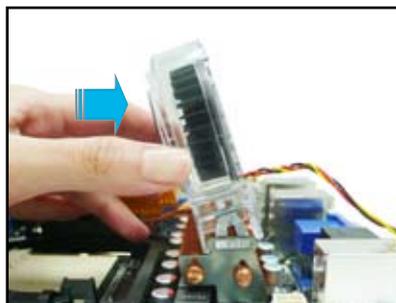


Install the optional fan only if you are using a passive cooler or a water cooler. Installing the optional fan with an active CPU cooler will interfere with the airflow and destabilize the system.

1. Position the fan above the pipe and heatsink assembly.
2. Fit the fan to the grooved edge of the heatsink.



3. Carefully push down the fan until it snugly fits the heatsink, then connect the fan cable.
4. The photo shows the fan installed on the motherboard.



- Plug the optional fan cable to the CHA\_FAN1/2 connector on the motherboard.
- Make sure the optional fan is installed correctly to prevent damage to the fan and motherboard components.

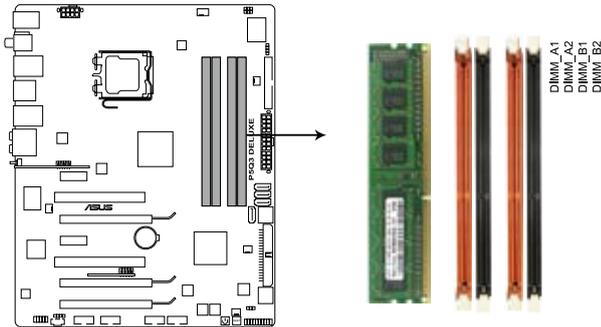
## 2.4 System memory

### 2.4.1 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:



**P5Q3 DELUXE 240-pin DDR3 DIMM sockets**

Channel	Sockets
Channel A	DIMM_A1 and DIMM_A2
Channel B	DIMM_B1 and DIMM_B2

## 2.4.2 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.
- It is recommended to install the memory modules from the yellow slots for better overclocking capability.
- Always install DIMMs with the same CAS latency. For optimum compatibility, it is recommended that you obtain memory modules from the same vendor.
- If you install four 1 GB memory modules, the system may only recognize less than 3GB because the address space is reserved for other critical functions. This limitation appears on Windows® XP/Vista 32-bit operation system which does not support Physical Address Extension (PAE).
- If you install Windows® XP/Vista 32-bit operation system, a total memory of less than 3GB is recommended.
- This motherboard does not support memory modules made up of 128 Mb chips.



- Due to chipset limitation, this motherboard can only support up to 16 GB on the operating systems listed below. You may install a maximum of 4 GB DIMMs on each slot.

### 64-bit

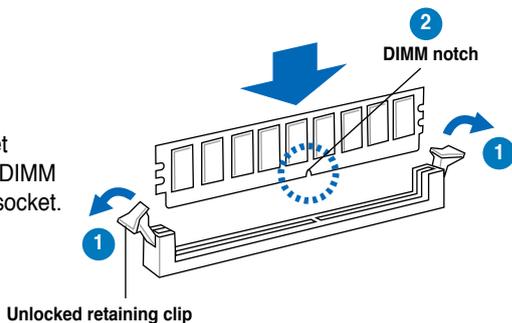
Windows® XP Professional x64 Edition  
Windows® Vista x64 Edition

- The default memory operation frequency is dependent on its SPD. Under the default state, some memory modules for overclocking may operate at a lower frequency than the vendor-marked value.
- The memory modules may require a better cooling system to work stably under full loading (4 DIMMs) or overclocking setting.

## 2.4.3 Installing a DIMM

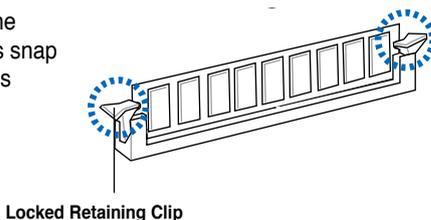
Make sure to unplug the power supply before adding or removing DIMMs or other system components. Failure to do so may cause severe damage to both the motherboard and the components.

1. Unlock a DIMM socket by pressing the retaining clips outward.
2. Align a DIMM on the socket such that the notch on the DIMM matches the break on the socket.



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

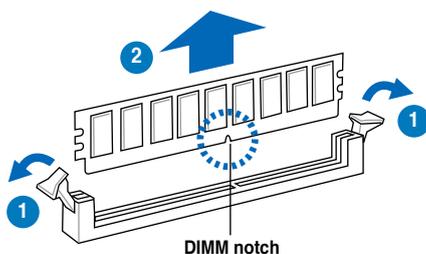
3. Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM is properly seated.



## 2.4.4 Removing a DIMM

Follow these steps to remove a DIMM.

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



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

2. Remove the DIMM from the socket.

## 2.5 Expansion slots

In the future, you may need to install expansion cards. The following sub-sections describe the slots and the expansion cards that they support.



---

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

---

### 2.5.1 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.

### 2.5.2 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 3 for information on BIOS setup.
2. Assign an IRQ to the card. Refer to the tables on the next page.
3. Install the software drivers for the expansion card.



---

When using PCI cards on shared slots, ensure that the drivers support "Share IRQ" or that the cards do not need IRQ assignments. Otherwise, conflicts will arise between the two PCI groups, making the system unstable and the card inoperable. Refer to the table on the next page for details.

---

## 2.5.3 Interrupt assignments

### Standard interrupt assignments

IRQ	Priority	Standard function
0	1	System Timer
1	2	Keyboard Controller
2	–	Redirect to IRQ#9
4	12	Communications Port (COM1)*
5	13	IRQ Holder for PCI Steering*
6	14	Floppy Disk Controller
7	15	Reserved
8	3	System CMOS/Real Time Clock
9	4	IRQ Holder for PCI Steering*
10	5	IRQ Holder for PCI Steering*
11	6	IRQ Holder for PCI Steering*
12	7	Reserved
13	8	Numeric Data Processor
14	9	Primary IDE Channel

\* These IRQs are usually available for PCI devices.

### IRQ assignments for this motherboard

	A	B	C	D	E	F	G	H
PCIE1_1	–	–	shared	–	–	–	–	–
PCIE1_2	–	–	–	shared	–	–	–	–
PCIE16_1	shared	–	–	–	–	–	–	–
PCIE16_2	shared	–	–	–	–	–	–	–
PCIE16_3	shared	–	–	–	–	–	–	–
LAN (8056)	–	shared	–	–	–	–	–	–
LAN (8001)	–	–	shared	–	–	–	–	–
Marvell 6121	shared	–	–	–	–	–	–	–
PCI_1	shared	–	–	–	–	–	–	–
PCI_2	–	shared	–	–	–	–	–	–
USB controller 1	–	–	–	–	–	–	–	shared
USB controller 2	–	–	–	shared	–	–	–	–
USB controller 3	–	–	shared	–	–	–	–	–
USB controller 4	shared	–	–	–	–	–	–	–
USB controller 5	shared	–	–	–	–	–	–	–
USB controller 6	–	–	–	–	–	shared	–	–
USB 2.0 controller 1	–	–	–	–	–	–	–	shared
USB 2.0 controller 2	–	–	shared	–	–	–	–	–
SATA controller 1	–	–	shared	–	–	–	–	–
SATA controller 2	–	–	–	shared	–	–	–	–
Audio Azalia	–	–	–	–	–	–	shared	–

## 2.5.4 PCI slots

The PCI slots support cards such as a LAN card, SCSI card, USB card, and other cards that comply with PCI specifications. Refer to the figure below for the location of the slot.

## 2.5.5 PCI Express x1 slots

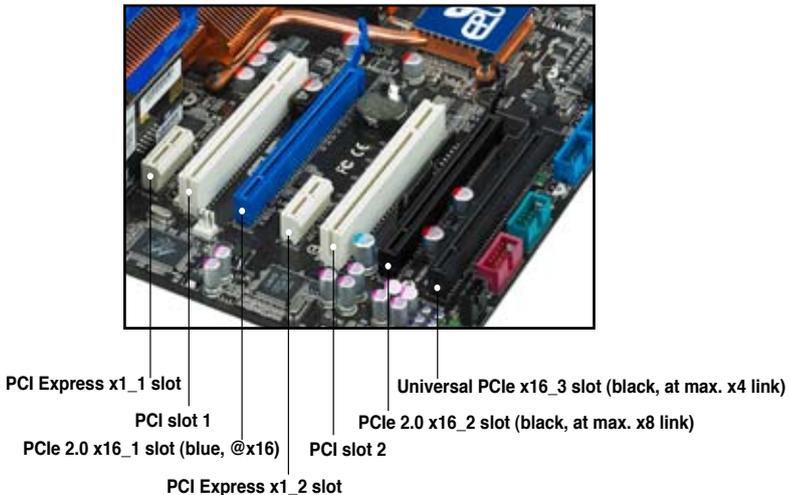
This motherboard supports PCI Express x1 network cards, SCSI cards and other cards that comply with the PCI Express specifications. Refer to the figure below for the location of the slot.

## 2.5.6 PCI Express 2.0 x16 slots

This motherboard has two PCI Express 2.0 x16 slots that support PCI Express x16 2.0 graphic cards complying with the PCI Express specifications. Refer to the figure below for the location of the slots.

## 2.5.7 Universal PCI Express x16 slot

This motherboard also supports one Universal PCI Express x16 slot with a maximum speed of x4 link. Refer to the figure below for the location of the slot.





- 
- In single VGA card mode, use first the PCIe 2.0 x16\_1 slot (blue) for a PCI Express x16 graphics card to get better performance.
  - In CrossFireX™ mode, use the PCIe 2.0 x16\_1 (blue) and PCIe 2.0 x16\_2 (black) slots for PCI Express x16 graphics cards to get better performance.
  - Use the two PCIe 2.0 x16 slots and the universal PCIe x16 slot for 3-Way CrossFireX™ mode.
  - We recommend that you provide sufficient power when running CrossFireX™ mode. See page 2-32 for details.
  - If one of the PCIe x1 slots is occupied, the universal PCI Express x16 slot (black) will downgrade to max. x1 speed.
  - Connect a chassis fan to the motherboard connector labeled CHA\_FAN1/2/3 when using multiple graphics cards for better thermal environment. See page 2-30 for details.
-

## 2.6 Jumpers

### 1. Clear RTC RAM (CLRTC)

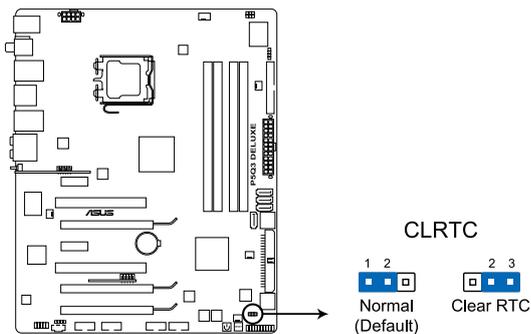
This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS, which include system setup information such as system passwords.

To erase the RTC RAM:

1. Turn OFF the computer and unplug the power cord.
2. Remove the onboard battery.
3. Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep the cap on pins 2-3 for about 5-10 seconds, then move the cap back to pins 1-2.
4. Reinstall the battery.
5. Plug the power cord and turn ON the computer.
6. Hold down the <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!



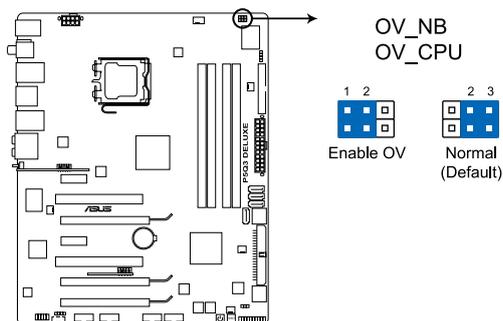
**P5Q3 DELUXE Clear RTC RAM**



- 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.

## 2. CPU / Northbridge overvoltage setting (3-pin OV\_CPU, 3-pin OV\_NB)

These jumpers allow you to enable or disable the advanced CPU and Northbridge overvoltage settings in BIOS. Read the following information before you change the jumper settings. Set to pins 1-2 to activate the advanced CPU / Northbridge overvoltage feature.



**P5Q3 DELUXE CPU/Northbridge overvoltage setting**

	OV_CPU	OV_NB
Pins 2-3 (Default)	up to 1.70V	up to 1.91V
Pins 1-2 (OV Enabled)	up to 2.10V	up to 2.21V



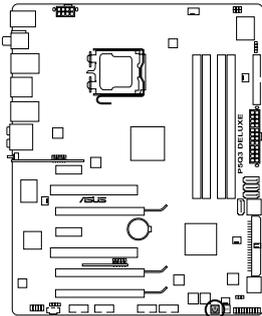
- Before you change the jumper settings for extra-high overvoltage ability, use the BIOS items first to adjust the desired CPU and Northbridge performance. Make sure your system functions well under the highest BIOS voltage settings before you change the setting of these two jumpers.
- DO NOT set the OV\_CPU jumper to pins 1-2 when you install a new CPU and have not booted for the first time. Doing so may cause the system to halt. For system failure due to the wrong setting of the OV\_CPU jumper, shut down the computer and move the cap back to pins 2-3.
- The system may need a better cooling system (for example, a water-cooling system) to work stably under high voltage settings.

## 2.7 Onboard switches

Onboard switches allow 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. Power-on switch

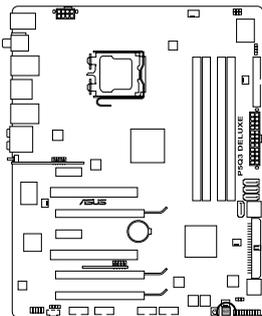
Press the power-on switch to wake/power up the system.



**P5Q3 DELUXE Power on switch**

### 2. Reset switch

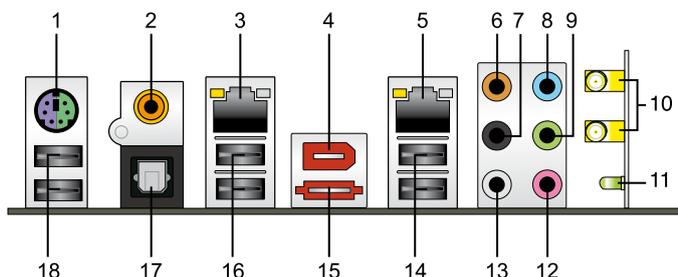
Press the reset switch to reboot the system.



**P5Q3 DELUXE Reset switch**

## 2.8 Connectors

### 2.8.1 Rear panel connectors

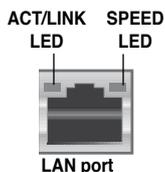


1. **PS/2 keyboard / mouse combo port.** This port is for a PS/2 keyboard or a PS/2 mouse.
2. **Coaxial S/PDIF Out port.** This port connects an external audio output device via a coaxial S/PDIF cable.
3. **LAN 2 (RJ-45) port.** This Marvell® LAN port allows Gigabit connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications.
4. **IEEE 1394a port.** This 6-pin IEEE 1394a port provides high-speed connectivity for audio/video devices, storage peripherals, PCs, or portable devices.
5. **LAN 1 (RJ-45) port.** This Marvell® LAN port allows Gigabit connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications.

**\*To compliant with Energy Star 4.0, this port does not support WOL (Wake on LAN) function.**

#### LAN port LED indications

Activity 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



6. **Center/Subwoofer port (orange).** This port connects the center/subwoofer speakers.
7. **Rear Speaker Out port (black).** This port connects the rear speakers in a 4-channel, 6-channel, or 8-channel audio configuration..
8. **Line In port (light blue).** This port connects the tape, CD, DVD player, or other audio sources.

9. **Line Out port (lime).** This port connects a headphone or a speaker. In 4-channel, 6-channel, and 8-channel configuration, the function of this port becomes Front Speaker Out.
10. **Wireless LAN ports.** These ports are on the onboard wireless LAN module that allow you to set up a wireless network and exchange information with other wireless devices without tagging cables and wires. Connect the moveable omni-directional antennas to these ports.
11. **Wireless LAN Activity LED.** The wireless module comes with an activity LED.
12. **Microphone port (pink).** This port connects a microphone.
13. **Side Speaker Out port (gray).** This port connects the side speakers in an 8-channel audio configuration.



Refer to the audio configuration table below for the function of the audio ports in 2, 4, 6, or 8-channel configuration.

### Audio 2, 4, 6, or 8-channel configuration

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

14. **USB 2.0 ports 1 and 2.** These 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
15. **External SATA port.** This port connects to an external a Serial ATA hard disk drive. To configure a RAID0 or RAID1, connect an external Serial ATA hard disk drive to the External SATA port.



The external SATA port supports external SATA 3.0 Gb/s devices. Longer cables support higher power requirements to deliver signal up to two meters away, and enables improved hot-swap function.





- 
- DO NOT insert a different connector to the external SATA port.
  - DO NOT unplug the external Serial ATA box when a RAID 0 or RAID 1 is configured.
- 



- 
- Before creating a RAID set using Serial ATA hard disks, make sure that you have connected the Serial ATA signal cable and installed Serial ATA hard disk drives; otherwise, you cannot enter the JMicron RAID utility and SATA BIOS setup during POST.
  - If you intend to create a RAID configuration using this connector, set the J-Micron eSATA/PATA Controller Mode in the BIOS to [RAID].
  - When using hot-plug and NCQ, set the J-Micron eSATA/PATA Controller Mode in the BIOS to [AHCI].
  - Before creating a RAID set, refer to the manual bundled in the motherboard support DVD.
- 

16. **USB 2.0 ports 3 and 4.** These 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
17. **Optical S/PDIF Out port.** This port connects an external audio output device via an optical S/PDIF cable.
18. **USB 2.0 ports 5 and 6.** These 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.

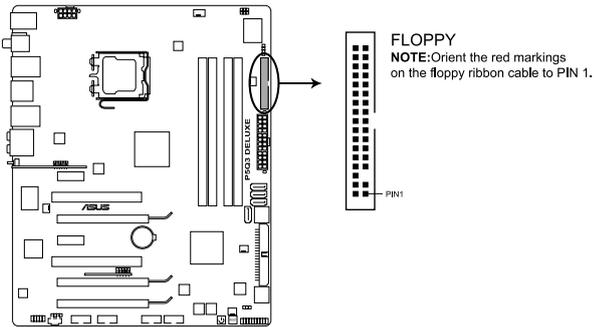
## 2.8.2 Internal connectors

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

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



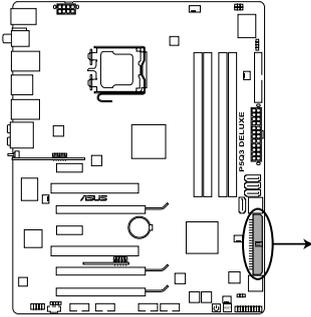
Pin 5 on the connector is removed to prevent incorrect cable connection when using a FDD cable with a covered Pin 5.



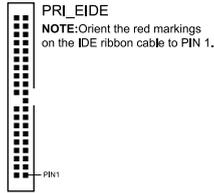
**P5Q3 DELUXE Floppy disk drive connector**

## 2. IDE connector (40-1 pin PRI\_E IDE)

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



**P5Q3 DELUXE EIDE 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.

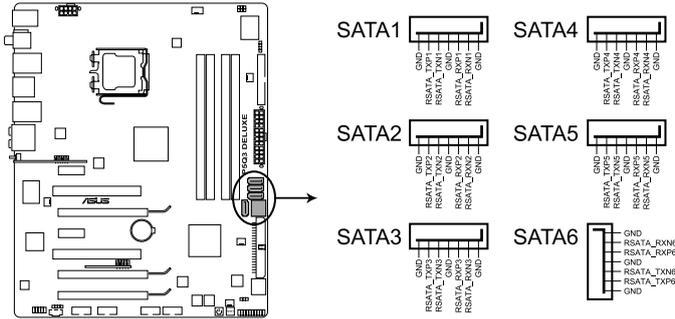


If any device jumper is set as "Cable-Select," make sure all other device jumpers have the same setting.

### 3. ICH10R Serial ATA connectors (7-pin SATA 1-6 [red])

These connectors are for the Serial ATA signal cables for Serial ATA hard disk 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® ICH10R RAID controller.



**P5Q3 DELUXE SATA connectors (ICH10R)**



- 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 the manual bundled in the motherboard support DVD.

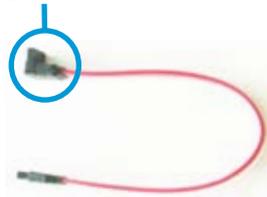


- You must install the Windows® XP Service Pack 1 before using Serial ATA hard disk drives. The Serial ATA RAID feature (RAID 0, 1, 5, and 10) is available only if you are using Windows® XP or later version.
- When using the connectors in Standard IDE mode, connect the primary (boot) hard disk drive to the SATA1/2/5 connector.



Connect the right-angle side of SATA signal cable to SATA device. Or you may connect the right-angle side of SATA cable to the onboard SATA port to avoid mechanical conflict with huge graphics cards.

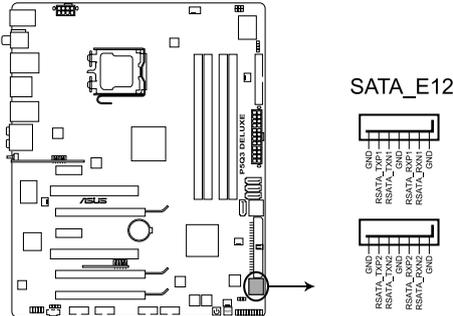
right angle side



When using hot-plug and NCQ, set the **Configure SATA as** in the BIOS to [AHCI].

#### 4. SIL5723 Serial ATA connectors [orange] (7-pin SATA\_E1-2)

These connectors are for the Serial ATA signal cables for Serial ATA hard disk drives. If you installed Serial ATA hard disk drives, you can create a **EZ Backup** or a **Super Speed** configuration with the Drive Xpert Technology through the onboard Silicon Image® SIL5723 controller.



**P5Q3 DELUXE SATA connectors (Silicon Image®)**



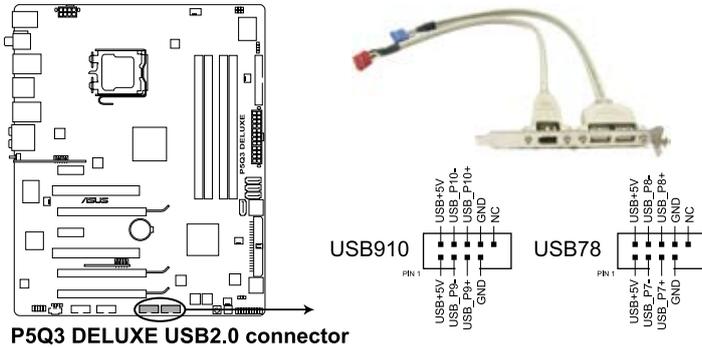
- The SATA\_E1 and SATA\_E2 ports are for SATA hard drives only. ATAPI device is not supported.
- Make necessary backup before using the **Drive Xpert** function:  
All original data of the SATA\_E2 hard drive will be erased for **EZ Backup** setup.  
All original data of the two hard drives will be erased for **Super Speed** setup.



Before using the Drive Xpert technology, make sure that you have connected the SATA signal cables and installed SATA hard disk drives.

## 5. USB connectors (10-1 pin USB 78, USB 910)

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



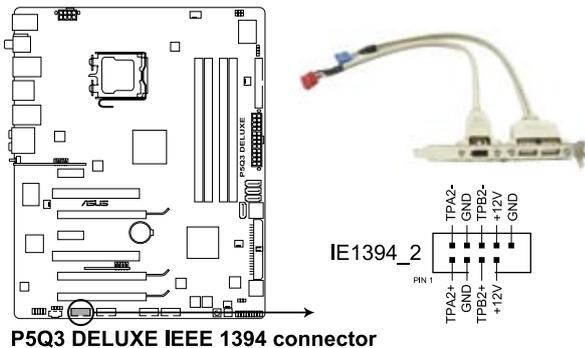
Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard!



If your chassis supports front panel USB ports, you can attach a front panel USB cable to these connectors. Connect the USB cable to ASUS Q-Connector (USB, blue) first, and then install the Q-Connector (USB) to the USB connector onboard.

## 6. IEEE 1394a port connector (10-1 pin IE1394\_2)

This connector is for an IEEE 1394a port. Connect the IEEE 1394a module cable to this connector, then install the module to a slot opening at the back of the system chassis.





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



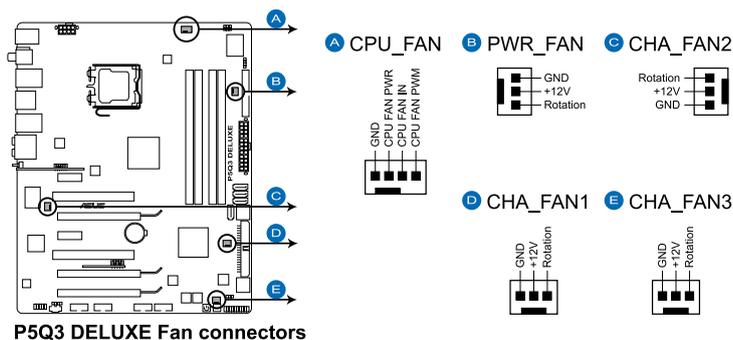
You can attach a FireWire/1394 cable to this connector if your chassis supports the front panel IEEE1394 port. Connect the 1394 cable to ASUS Q-Connector (1394, red) first, and then install the Q-Connector (1394) to the 1394 connector onboard.

## 7. CPU, chassis and power fan connectors (4-pin CPU\_FAN, 3-pin CHA\_FAN1-3, 3-pin PWR\_FAN)

The fan connectors support cooling fans of 350 mA ~ 2000 mA (24 W max.) or a total of 1 A ~ 7 A (84 W max.) at +12V. Connect the fan cables to the fan connectors on the motherboard, making sure that the black wire of each cable matches the ground pin of the connector.



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

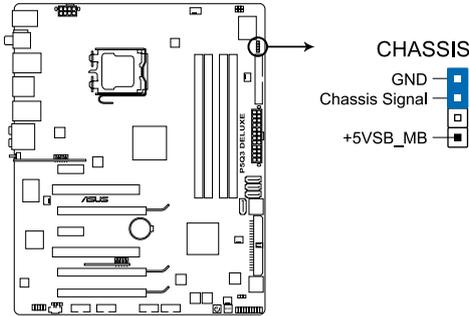


- Only the CPU-FAN and CHA-FAN 1-3 connectors support the ASUS Advanced Q-Fan feature.
- If you install two VGA cards, we recommend that you plug the rear chassis fan cable to the motherboard connector labeled CHA\_FAN1 or CHA\_FAN2 for better thermal environment.

## 8. Chassis intrusion connector (4-1 pin CHASSIS)

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

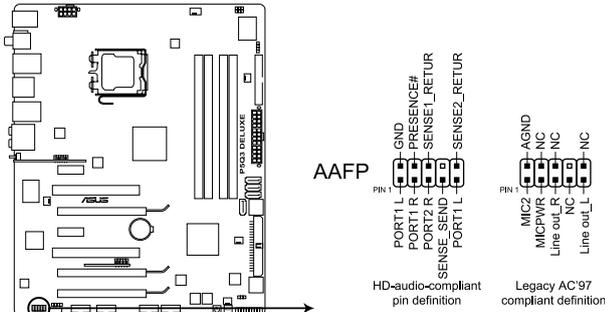
By default, the pin labeled “Chassis Signal” and “Ground” are shorted with a jumper cap. Remove the jumper caps only when you intend to use the chassis intrusion detection feature.



**P5Q3 DELUXE Chassis intrusion connector**

## 9. 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.



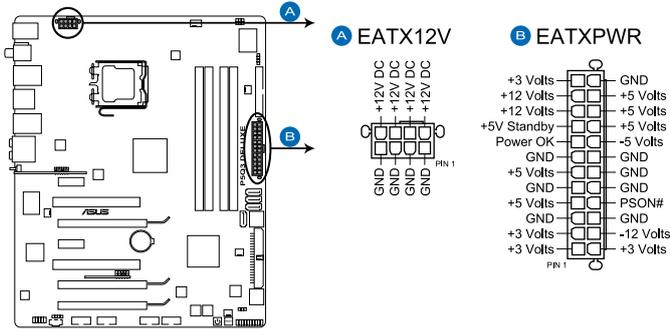
**P5Q3 DELUXE Analog front panel connector**



- 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, make sure that the **Front Panel Type** item in the BIOS is set to [HD Audio]. If you want to connect an AC'97 front panel audio module to this connector, set the item to [AC97]. Refer to page 4-26 or details.

## 10. ATX power connectors (24-pin EATXPWR, 2x4-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.



**P5Q3 DELUXE 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 EATX +12 V power plug; otherwise, the system will not boot.
- Use of a PSU with a higher power output is recommended when configuring a system with more power-consuming devices. The system may become unstable or may not boot up if the power is inadequate.
- 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.
- If you want to use two or more high-end PCI Express x16 cards, use a PSU with 1000 W power or above to ensure the system stability.

### PSU suggested list

PSU suggested list
SilverStone ST1000
Seasonic SS-600HT
Thermaltake W0083RE
Thermaltake PUREPower-600AP
Silverstone SST-ST75ZF
EnerMAX EG701AX-VE (E)(24P)

- If you want to use 3-Way SLI™ configuration, visit the NVIDIA website ([www.nvidia.com](http://www.nvidia.com)) for the qualified PSU vendor list.

## Power supply requirements

Heavy Loading	
<b>CPU</b>	SMF 3.2XE
<b>Memory</b>	1 GB*4
<b>VGA</b>	8800 Ultra*3
<b>SATA-HDD</b>	6
<b>eSATA-HDD</b>	1
<b>IDE-CDROM</b>	1
<b>IDE-HDD</b>	1
<b>USB</b>	4

	+12V_8Pin	+12V_24pin	+5V_24pin	+3V_24pin	+12V_VGA1	+12V_VGA2	+12V_VGA3
Voltage (V)	12.14	12.21	5.22	3.456	12.2	12.2	12.2
Current (A)	11.32	13.71	6.41	6.98	6.51	6.59	6.6
Power (W)	137.425	167.399	33.460	24.123	79.422	80.398	80.52
	SATA-HDD	eSATA-HDD	IDE-CDROM	IDE-HDD	USB	Total PSU	
Voltage (V)	6	1	1	1	4	Po_max(w)	
Current (A)	10.45	10.45	10	12.68	2.5	708.577	
Power (W)	62.7	10.45	10	12.68	10		

Normal Loading	
<b>CPU</b>	KSF 3.0XE
<b>Memory</b>	1 GB*4
<b>VGA</b>	8800 Ultra*2
<b>SATA-HDD</b>	4
<b>eSATA-HDD</b>	1
<b>IDE-CDROM</b>	1
<b>IDE-HDD</b>	0
<b>USB</b>	4

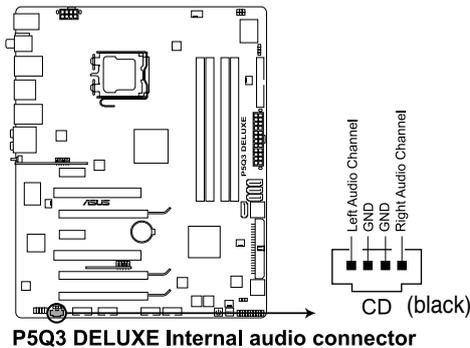
	+12V_8Pin	+12V_24pin	+5V_24pin	+3V_24pin	+12V_VGA1	+12V_VGA2	+12V_VGA3
Voltage (V)	12.14	12.21	5.225	3.455	12.2	12.2	
Current (A)	6.74	8.92	6.22	6.87	6.52	6.82	
Power (W)	81.824	108.913	32.500	23.736	79.544	83.204	0
	SATA-HDD	eSATA-HDD	IDE-CDROM	IDE-HDD	USB	Total PSU	
Voltage (V)	4	1	1	0	4	Po_max(w)	
Current (A)	10.45	10.45	10	12.68	2.5	481.970	
Power (W)	41.8	10.45	10	0	10		

Light Loading	
<b>CPU</b>	Conroe 3.0+EM64T
<b>Memory</b>	1 GB*2
<b>VGA</b>	8800 Ultra*1
<b>SATA-HDD</b>	2
<b>eSATA-HDD</b>	1
<b>IDE-CDROM</b>	1
<b>IDE-HDD</b>	0
<b>USB</b>	4

	+12V_8Pin	+12V_24pin	+5V_24pin	+3V_24pin	+12V_VGA1	+12V_VGA2	+12V_VGA3
Voltage (V)	12.19	12.21	5.22	3.456	12.16		
Current (A)	3.19	5.55	5.04	5.36	6.5		
Power (W)	38.886	67.766	26.309	18.524	79.04	0	0
	SATA-HDD	eSATA-HDD	IDE-CDROM	IDE-HDD	USB	Total PSU	
Voltage (V)	2	1	1	0	4	Po_max(w)	
Current (A)	10.45	10.45	10	12.68	2.5		
Power (W)	20.9	10.45	10	0	10	281.875	

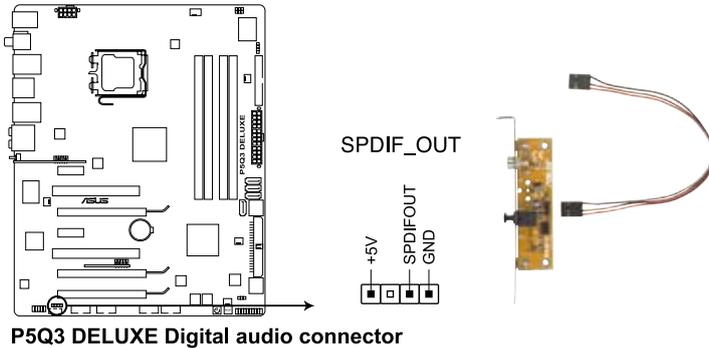
### 11. Optical drive audio connector (4-pin CD)

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



## 12. Digital audio connector (4-1 pin SPDIF, for ASUS HDMI VGA card)

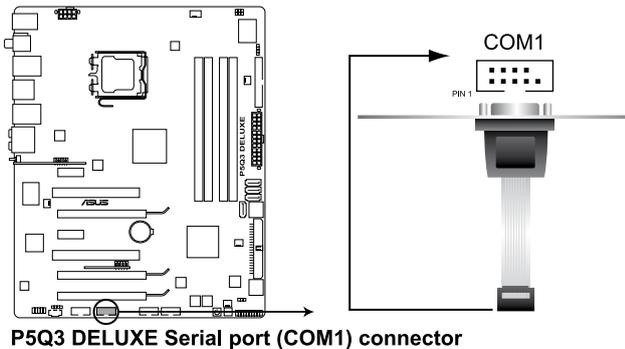
This connector is for an additional Sony/Philips Digital Interface (S/PDIF) port(s). If you are using ASUS HDMI-equipped graphics card, connect the HDMI card to this connector with a S/PDIF out cable.



The ASUS HDMI-equipped graphics card and S/PDIF out cable are purchased separately.

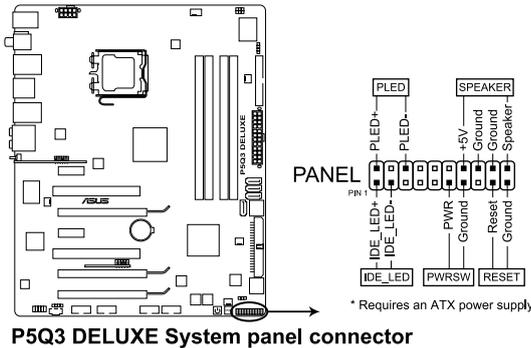
## 13. Serial port connector (10-1 pin COM1)

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.



## 14. System panel connector (20-8 pin PANEL)

This connector supports several chassis-mounted functions.



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

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

- **Hard disk drive activity LED (2-pin IDE\_LED)**

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

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

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

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

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

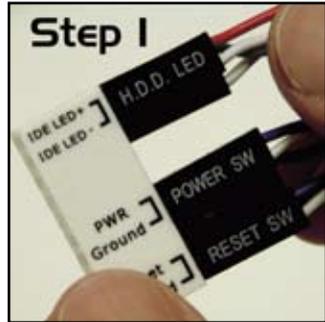
- **Reset button (2-pin RESET)**

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

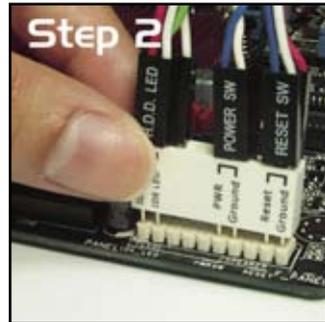
## ASUS Q-Connector (system panel)

You can use the ASUS Q-Connector to connect/disconnect chassis front panel cables in a few steps. Refer to the instructions below to install the ASUS Q-Connector.

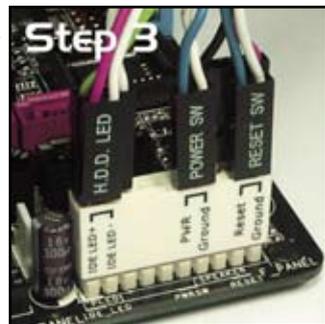
1. Connect the front panel cables to the ASUS Q-Connector.  
Refer to the labels on the Q-Connector to know the detailed pin definitions, then match them to the respective front panel cable labels.



2. Install the ASUS Q-Connector to the system panel connector, making sure the orientation matches the labels on the motherboard.



3. The front panel functions are now enabled. The figure shows the Q-Connector properly installed on the motherboard.



## 2.9 Starting up for the first time

1. After making all the connections, replace the system case cover.
2. Be sure that all switches are off.
3. Connect the power cord to the power connector at the back of the system chassis.
4. Connect the power cord to a power outlet that is equipped with a surge protector.
5. Turn on the devices in the following order:
  - a. Monitor
  - b. External SCSI devices (starting with the last device on the chain)
  - c. System power
6. After applying power, the system power LED on the system front panel case lights up. For systems with ATX power supplies, the system LED lights up when you press the ATX power button. If your monitor complies with “green” standards or if it has a “power standby” feature, the monitor LED may light up or switch between orange and green after the system LED turns on.

The system then runs the power-on self tests or POST. If you do not see anything within 30 seconds from the time you turned on the power, the system may have failed a power-on test. Check the jumper settings and connections or call your retailer for assistance.
7. At power on, hold down the <Delete> key to enter the BIOS Setup.

## 2.10 Turning off the computer

### 2.10.1 Using the OS shut down function

If you are using Windows® Vista™:

1. Click the **Start** button then select **Shut Down**.
2. The power supply should turn off after Windows® shuts down.

If you are using Windows® XP:

1. Click the **Start** button then select **Turn Off Computer**.
2. Click the **Turn Off** button to shut down the computer.
3. The power supply should turn off after Windows® shuts down.

### 2.10.2 Using the dual function power switch

While the system is ON, pressing the power switch for less than four seconds puts the system to sleep mode or to soft-off mode, depending on the BIOS setting. Pressing the power switch for more than four seconds lets the system enter the soft-off mode regardless of the BIOS setting.

