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P5QL PRO

ASUS

Motherboard



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Manual abstract:

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.....A-3 vi 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 may also receive radio frequency energy. This chapter describes the power up sequence and ways of shutting down the system. · Chapter 4: BIOS setup This chapter tells how to change system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

1.2 Package contents ASUS P5QL PRO motherboard 2 x Serial ATA signal cables 1 x Serial ATA power cable 1 x Ultra DMA 133/100/66 cable 1 x Floppy disk drive cable 1 x I/O shield 2 in 1 Q-Connector ASUS motherboard support DVD User guide Check your motherboard package for the following items.

Motherboard Cables Accessories Application CD Documentation If any of the above items is damaged or missing, contact your retailer.

ASUS P5QL PRO 1-1 1.3 1.3.1 Special features 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/packaging to safeguard consumers' health while minimizing the impact on the environment.

Intel® Core™2 Extreme / Core™2 Quad / Core™2 Duo CPU support This motherboard supports the latest Intel® Core™2 processor in the LGA775 package and Intel® next-generation 45nm multi-core processors. With the new Intel® Core™ microarchitecture technology and 1333/1066/800 MHz FSB, the Intel® Core™2 processor is one of the most powerful and energy efficient CPU in the world. See page 2-6 for details. Intel® P43 Chipset The Intel® P43 Express Chipset is designed to support dual-channel DDR2 1066/800/667MHz architecture, 1333/1066/800 FSB (Front Side Bus), PCIe 2.0, and multi-core CPUs.

It supports Intel Fast Memory Access technology that significantly optimizes the use of available memory bandwidth and reduces the latency of the memory accesses. PCI Express 2.0 support This motherboard supports the latest PCIe 2.0 devices for double speed and bandwidth which enhances system performance. FSB 1600 support (O.C.) ASUS's exclusive overclocking design now unleashes the ultimate potential of the Intel® Core™2 processor. With the new Intel 45nm micro-architecture technology and FSB 1600 (O.C.) / 1333 / 1066 / 800 MHz, this motherboard allows you to enjoy the latest technology supported by one of the most powerful and energy efficient CPUs in the world.

1-2 Chapter 1: Product Introduction Serial ATA 3Gb/s technology This motherboard supports the next-generation hard drives based on the Serial ATA (SATA) 3Gb/s storage specification, delivering enhanced scalability and doubling the bus bandwidth for high-speed data retrieval and saves. 1.3.2 ASUS unique features ASUS AI Life Features Express Gate 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! - - The actual boot time depends on the system configuration. ASUS Express Gate supports file uploading from SATA HDDs, ODDs and USB drives and downloading to USB drives only. ASUS Power Saving Solution ASUS Power Saving solution intelligently and automatically provides balanced computing power and energy consumption. ASUS EPU-4 Engine The new ASUS EPU - the world's first power saving engine, has been upgraded to a new four-engine version, which provides total system power savings by detecting current PC loadings and intelligently moderating power in real-time. The EPU automatically provides the most appropriate power usage for the CPU, VGA card, hard drives, and CPU cooler fan - helping save power and money.

ASUS P5QL PRO 1-3 AI Nap With AI Nap, users can instantly snooze your PC without terminating the tasks. The system will continue operating at minimum power and noise when user is temporarily away. It keeps downloading files or running applications in quietest state while you are sleeping. Simply click keyboard or mouse, you can swiftly wake up the system in a few seconds. ASUS Quiet Thermal Solution ASUS Quiet Thermal solution makes system more stable and enhances the overclocking capability.

Fan Xpert ASUS Fan Xpert intelligently allows users to adjust the CPU 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. 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 with easy ways to install computer components, update the BIOS or back up your favorite settings.

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 plugging in one cable one at a time, making connection quick and accurate. 1-4 Chapter 1: Product Introduction 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 overclocking settings. See page 4-38 for details. ASUS CrashFree BIOS 3 The ASUS CrashFree BIOS 3 allows users to restore corrupted BIOS data from a bootable floppy disk, a USB flash disk or the motherboard support DVD containing the BIOS file.

See page 4-8 for details. 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. See page 4-5 and 4-37 for details. ASUS P5QL PRO 1-5 1.3.3 ASUS Stylish features ASUS MyLogo2™ 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. See page 5-10 for details. 1.

3.4 ASUS Intelligent 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. See page 5-24 for details. Precision Tweaker This feature allows you to fine tune the CPU/memory voltage and gradually increase the memory Front Side Bus (FSB) and PCI Express frequency at 1MHz increment to achieve maximum system performance. See page 4-17 to 4-22 for details. 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 failure.



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When the system hangs due to overclocking failure, 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 settings for each parameter. 1-6 Chapter 1: Product Introduction 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 information 2 Chapter summary 2 2.

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To prevent damage to the socket pins, do not remove the PnP cap unless you are installing a CPU. P5QL PRO Retention tab A B Load lever 3. Lift the load lever in the direction of the arrow to a 135° angle. 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). 3 4B PnP cap Load plate 4. 4A ASUS P5QL PRO 2-7 5. Position the CPU over the socket, ensuring that the gold triangle is on the bottom-left corner of the socket then fit the socket alignment key into the CPU notch. CPU notch Gold triangle mark Alignment key 6.

Apply several drops of 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 preapplied thermal paste. If so, skip this step. DO NOT eat the Thermal Interface Material. If it gets into your eyes or touches your skin, ensure that you wash it off immediately, and seek professional medical help. To prevent contaminating the paste, DO NOT spread the paste with your finger directly. 2-8 Chapter 2: Hardware information 7. Close the load plate (A), then push the load lever (B) until it snaps into the retention tab. A B The motherboard supports Intel® LGA775 processors with the Intel® Enhanced Intel SpeedStep® Technology (EIST) and Hyper-Threading Technology. Refer to the Appendix for more information on these CPU features.

ASUS P5QL PRO 2-9 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, ensure 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. · 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.

Push down two fasteners at a time in a diagonal sequence to secure the heatsink and fan assembly in place. A B A B B 2. A 1 B A 1 The type of CPU heatsink and fan assembly may differ, but the installation steps and functions should remain the same. The illustration above is for reference only. 2-10 Chapter 2: Hardware information 3. Connect the CPU fan cable to the connector on the motherboard labeled CPU_FAN. P5QL PRO CPU_FAN GND CPU_FAN PWR CPU_FAN IN CPU_FAN PWM P5QL PRO CPU Fan Connector Do not forget to connect the CPU fan connector! Hardware monitoring errors can occur if you fail to plug this connector. 2.3.3 1.

2. 3. Uninstalling the CPU heatsink and fan A B B To uninstall the CPU heatsink and fan Disconnect the CPU fan cable from the connector on the motherboard. Rotate each fastener counterclockwise. Pull up two fasteners at a time in a diagonal sequence to disengage the heatsink and fan assembly from the motherboard. A B A B A 4. Carefully remove the heatsink and fan assembly from the motherboard. ASUS P5QL PRO 2-11 2.4 2.4.

1 System memory Overview The motherboard comes with four Double Data Rate 2 (DDR2) Dual Inline Memory Modules (DIMM) sockets. The figure illustrates the location of the DDR2 DIMM sockets: DIMM_B1 DIMM_B2 DIMM_A1 DIMM_A2 P5QL PRO P5QL PRO 240-pin DDR2 DIMM Sockets Channel Channel A Channel B Sockets DIMM_A1 and DIMM_A2 DIMM_B1 and DIMM_B2 2.4.2 Memory configurations You may install 512MB, 1GB, 2GB, and 4GB unbuffered non-ECC DDR2 DIMMs into the DIMM sockets. Recommended Memory Configurations Mode Single-Channel Dual-channel (1) Dual-channel (2) Sockets DIMM_A1 Populated Populated Populated DIMM_A2 Populated DIMM_B1 Populated Populated Populated DIMM_B2 Populated 2-12 128 Pins 112 Pins Chapter 2: Hardware information · 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. 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 are using a Windows 32-bit version operating system (e.

g. 32-bit Windows XP, 32-bit Vista) without the Physical Address Extension (PAE) support, the system will allocate a certain amount of memory space for system devices. We recommend that you install only a maximum of 3GB system memory when using a Windows 32-bit version operating system without the PAE. The excess over 3GB of installed memory will not cause any problem; however, the system can not use this excess memory space and the system will display less than the total size of physical memory installed. This motherboard does not support memory modules made up of 128 Mb chips. . . . This motherboard can support up to 16GB on the operating systems listed below. You may install a maximum of 4GB 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. To operate at the vendormarked or at a higher frequency,

see section 4.

4 Ai Tweaker menu for manual memory frequency adjustment. The memory modules may require a better cooling system to work stably under full loading (4 DIMMs) or overclocking setting. Some old-version DDR2-800 DIMMs may not match Intel®'s On-Die-Termination (ODT) requirement and will automatically downgrade to run at DDR2-667. If this happens, contact your memory vendor to check the ODT value. Due to chipset limitation, DDR2-800 with CL=4 will be downgraded to run at DDR2-667 by default setting. If you want to operate with lower latency, adjust the memory timing manually. . . .

ASUS P5QL PRO 2-13 P5QL PRO Motherboard Qualified Vendors Lists (QVL) DDR2-1066MHz capability Size 512MB 512MB 1G 1G 1G 1G 1G 1G 1G 1G 2G 512MB 1G Vendor Kingston Kingston Kingston Kingston Qimonda Kingmax Transcend GEIL GEIL GEIL GEIL AENEON AENEON Part No. KHX8500D2/512 KVR1066D2N7/512 KHX8500D2K2/2GN KVR1066D2N7/1G KHX8500D2/1G HYS64T128020EU-19F-C KLED48F-A8K15 TX1066QLJ-2GK1GB GB22GB8500C5DC GB24GB8500C5QC GE22GB1066C5DC GE24GB1066C5QC GB24GB8500C5DC AXT660UD00-19DC97X AXT760UD00-19DC97X CL N/A N/A N/A N/A N/A 6 N/A 5 5 5 5 5 5 5 Chip Brand Kingston Elpida Kingston Elpida Kingston Qimonda Kingmax Transced GEIL GEIL GEIL GEIL GEIL AENEON AENEON SS/ DS SS SS DS DS DS DS DS SS SS DS DS DS SS DS Chip No.



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Set to +5VSB to wake up from S3 and S4 sleep modes (no power to CPU, DRAM in slow refresh, power supply in reduced power mode). The USBPW1-4 and PS2_USBPW56 jumpers are for the rear USB ports.

The USBPW7-10 and USB1112 jumpers are for the internal USB connectors that you can connect to additional USB ports. 12 P5QL PRO +5VSB (Default) +5VSB USBPW1-4 23 P5QL PRO +5VSB (Default) +5VSB 12 USBPW1112 23 12 USBPW7-10 23 +5V (Default) +5VSB +5V (Default) +5VSB P5QL PRO USB Device Wake Up 2-22 Chapter 2: Hardware information · The USB device wake-up feature requires a power supply that can provide 500mA on the +5VSB lead for each USB port; otherwise, the system would not power up. The total current consumed must NOT exceed the power supply capability (+5VSB) whether under normal condition or in sleep mode. 2.7 2.

7.1 1 Connectors Rear panel connectors 2 3 4 5 6 7 13 12 11 10 9 8 1. 2. PS/2 mouse port (green). This port is for a PS/2 mouse.

LAN (RJ-45) port. Supported by Gigabit LAN controller, this port allows Gigabit connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications. LAN port LED indications ACT/LINK LED Status Description OFF No link YELLOW Linked BLINKING Data activity SPEED LED Status Description OFF 10 Mbps connection ORANGE 100 Mbps connection GREEN 1 Gbps connection ACT/LINK SPEED LED LED LAN port 3. 4. 5. 6. Rear Speaker Out port (black). This port connects the rear speakers in a 4-channel, 6-channel, or 8-channel audio configuration. Center/Subwoofer port (orange).

This port connects the center/subwoofer speakers. Line In port (light blue). This port connects the tape, CD, DVD player, or other audio sources. 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. ASUS P5QL PRO 2-23 7. 8. Microphone port (pink). This port connects a microphone.

Side Speaker Out port (gray). This port connects the side speakers in an 8-channel audio configuration. Refer to the audio configuration table on the next page for the function of the audio ports in 2, 4, 6, or 8-channel configuration. Audio 2, 4, 6, or 8-channel configuration Port Light Blue Lime Pink Orange Black Gray Headset 2-channel Line In Line Out Mic In 4-channel Line In Front Speaker Out Mic In Rear Speaker Out 6-channel Line In Front Speaker Out Mic In Center/Subwoofer Rear Speaker Out 8-channel Line In Front Speaker Out Mic In Center/Subwoofer Rear Speaker Out Side Speaker Out 9. USB 2.0 ports 1 and 2. These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices. 10. USB 2.0

ports 3 and 4. These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices. 11. Coaxial S/PDIF Out port. This port connects an external audio output device via a coaxial S/PDIF cable. 12. USB 2.0 ports 5 and 6. These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0

devices. 13. PS/2 keyboard port (purple). This port is for a PS/2 keyboard. 2-24 Chapter 2: Hardware information 2.7.2 1. Internal connectors 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.

P5QL PRO FLOPPY PIN1 P5QL PRO Floppy Disk Drive Connector NOTE: Orient the red markings on the floppy ribbon cable to PIN 1. 2. 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. P5QL PRO GND SPDIFOUT SPDIF_OUT P5QL PRO Digital Audio Connector The S/PDIF module is purchased separately.

+5V ASUS P5QL PRO 2-25 3. IDE connector (40-1 pin PRI_EIDE) The onboard IDE connector is for the Ultra DMA 133/100/66 signal cable. There are three connectors on each Ultra DMA 133/100/66 signal cable: blue, black, and gray. Connect the blue connector to the motherboard's IDE connector, then select one of the following modes to configure your device. Drive jumper setting Single device Two devices Cable-Select or Master Cable-Select Master Slave Mode of device(s) Master Slave Master Slave Cable connector Black Black Gray Black or gray · Pin 20 on the IDE connector is removed to match the covered hole on the Ultra DMA cable connector.

This prevents incorrect insertion when you connect the IDE cable. Use the 80-conductor IDE cable for Ultra DMA 133/100/66 IDE devices. · If any device jumper is set as "Cable-Select," make sure all other device jumpers have the same setting. P5QL PRO P5QL PRO IDE Connector 2-26 PRI_IDE Chapter 2: Hardware information 4. Serial ATA connectors (7-pin SATA1-6) These connectors are for the Serial ATA signal cables for Serial ATA hard disk drives.

SATA6 P5QL PRO SATA4 GND RSATA_TXP4 RSATA_TXN4 GND RSATA_RXN4 RSATA_RXP4 GND SATA2 GND RSATA_TXP2 RSATA_TXN2 GND RSATA_RXN2 RSATA_RXP2 GND GND RSATA_RXP1 RSATA_RXN1 GND RSATA_TXN1 RSATA_TXP1 GND GND RSATA_TXP6 RSATA_TXN6 GND RSATA_RXN6 RSATA_RXP6 GND GND RSATA_RXP5 RSATA_RXN5 GND RSATA_TXN5 RSATA_TXP5 GND P5QL PRO SATA Connectors 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 ASUS P5QL PRO GND RSATA_RXP3 RSATA_RXN3 GND RSATA_TXN3 RSATA_TXP3 GND SATA5 SATA3 SATA1 2-27 5. USB connectors (10-1 pin USB78, USB910, USB1112) These connectors are for USB 2.0 ports.

Connect the USB module cable to any of these connectors, then install the module to a slot opening at the back of the system chassis. These USB connectors comply with USB 2.0 specification that supports up to 480 Mbps connection speed. P5QL PRO USB+5V USB_P12 USB_P12 + GND NC USB1112 1

USB+5V USB_P11 USB_P11 + GND USB78 USB+5V USB_P8 USB_P8 + GND NC 1 USB+5V USB_P7 USB_P7 + GND USB910 1 USB+5V USB_P9 USB_P9 + GND P5QL PRO USB 2.0 Connectors Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard! You can connect the front panel USB cable to the ASUS Q-Connector (USB, blue) first, and then install the Q-Connector (USB) to the USB connector onboard if your chassis supports front panel USB ports. The USB module cable is purchased separately. 6. Optical drive audio connector (4-pin CD) These connectors allow you to receive stereo audio input from sound sources such as a CD-ROM, TV tuner, or MPEG card.



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CD (black) P5QL PRO P5QL PRO Internal Audio Connector 2-28 Left Audio Channel Ground Ground Right Audio Channel Chapter 2: Hardware information USB+5V USB_P10 USB_P10 + GND NC 7.

CPU, chassis, and power fan connectors (4-pin CPU_FAN, 3-pin CHA_FAN, 3-pin PWR_FAN) The fan connectors support cooling fans of 350 mA~2000 mA (24 W max.) or a total of 1 A~7 A (84 W max.) at +12V. Connect the fan cables to the fan connectors on the motherboard, 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! CHA_FAN P5QL PRO GND +12V Rotation CPU_FAN GND CPU FAN PWR CPU FAN IN CPU FAN PWM PWR_FAN Rotation +12V GND P5QL PRO Fan Connectors Only the CPU_FAN connector supports the ASUS Q-FAN feature. 8. 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.

P5QL PRO COM1 PIN1 P5QL PRO COM Port Connector The serial port module is purchased separately. ASUS P5QL PRO 2-29 9. 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. CHASSIS P5QL PRO +5VSB_MB (Default) P5QL PRO Intrusion Connector 10. Front panel audio connector (10-1 pin AAFP) This connector is for a chassis-mounted front panel audio I/O module that supports either HD Audio or legacy AC '97 audio standard.

Connect one end of the front panel audio I/O module cable to this connector. AAFP HD-audio-compliant pin definition GND PRESENSE# SENSE1_RETUR SENSE2_RETUR Chassis Signal GND Legacy AC '97 compliant definition P5QL PRO AGND NC NC PORT1L PORT1R PORT2R SEBSE_SEND PORT2L

P5QL PRO Front Panel Audio Connector · We recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high-definition audio capability. 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]. See section 4.5.3 Onboard Devices Configuration for details. Chapter 2: Hardware information 2-30 MIC2 MICPWR Line out_R NC Line out_L NC 11. ATX power connectors (24-pin EATXPWR, 4-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. ATX12V +12V DC GND P5QL PRO EATXPWR +3 Volts -12 Volts Ground PSON# Ground Ground -5 Volts +5 Volts +5 Volts +5 Volts Ground +3 Volts +3 Volts Ground +5 Volts Ground +5 Volts Ground Power OK +5V Standby +12 Volts +12 Volts +3 Volts +12V DC GND P5QL PRO ATX Power Connector · · · For a fully configured system, we recommend that you use a power supply unit (PSU) that complies with ATX 12 V Specification 2.0 (or later version) and provides a minimum power of 400 W. Do not forget to connect the 4-pin EATX12V 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. The ATX 12 V Specification 2.0-compliant (400W) PSU has been tested to support the motherboard power requirements with the following configuration: CPU: Intel® Pentium® Extreme 3.73GHz Memory: 512 MB DDR2 (x4) Graphics card: ASUS EAX1900XT Parallel ATA device: IDE hard disk drive Serial ATA device: SATA hard disk drive (x2) Optical drive: DVD-RW ASUS P5QL PRO 2-31 12. System panel connector (20-8 pin PANEL) This connector supports several chassis-mounted functions.

PANEL PLED+ PLED- PLED- SPEAKER Speaker Ground Ground +5V P5QL PRO +IDE_LED * Requires an ATX power supply P5QL PRO System Panel Connector IDE_LEDIDE_LED+ Ground Reset Ground PWR RESET PWRSW · 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. 2-32 Chapter 2: Hardware information Q-Connector (system panel)

You can use ASUS Q-Connector to connect / disconnect chassis front panel cables by only a few steps. Directions below shows how to install ASUS Q-Connector. Step1. Connect correct front panel to ASUS Q-Connector first. You can refer to the marking on Q-Connector itself to know the detail pin definition. Step2. Properly install the ASUS Q-Connector to the System panel connector. Step3.

Front panel functions are enabled. ASUS P5QL PRO 2-33 2-34 Chapter 2: Hardware information This chapter describes the power up sequence, the vocal POST messages, and ways of shutting down the system. Powering up 3 Chapter summary 3.1 3.2 Starting up for the first time .

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3-1 Turning off the computer.....

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4. 5. Starting up for the first time After making all the connections, replace the system case cover. Ensure that all switches are off.



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Connect the power cord to the power connector at the back of the system chassis.

Connect the power cord to a power outlet that is equipped with a surge protector. Turn on the devices in the following order: a. b. c. Monitor External SCSI devices (starting with the last device on the chain) 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. While the tests are running, the BIOS beeps (see BIOS beep codes table below) or additional messages appear on the screen.

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 self test. Check the jumper settings and connections or call your retailer for assistance. AMI BIOS beep codes Description VGA detected Quick boot set to disabled No keyboard detected One continuous beep followed by two No memory detected short beeps then a pause (repeated) One continuous beep followed by three No VGA detected short beeps One continuous beep followed by four Hardware component failure short beeps BIOS Beep One short beep 7. At power on, hold down the <Delete> key to enter the BIOS Setup. Follow the instructions in Chapter 4. ASUS P5QL PRO 3-1 3.2 3.2.1 1. 2.

3. Turning off the computer Using the OS shut down function If you are using Windows® XP: Click the Start button then select Turn Off Computer. Click the Turn Off button to shut down the computer. The power supply should turn off after Windows® shuts down. If you are using Windows® Vista: 1. 2. Click the Start button then select ShutDown. The power supply should turn off after Windows® shuts down. 3.2.

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. Refer to section "4.5 Power Menu" for details. 3-2 Chapter 3: Powering up This chapter tells how to change the system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided. BIOS setup 4 Chapter summary 4.1 4.2 4.3 4.

4 4.5 4.6 4.7 4.8 4.9 Managing and updating your BIOS

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.... 4-1 BIOS setup program .

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..... 4-10 Main menu

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..... 4-17 Advanced menu .

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ASUS AFUDOS: Updates the BIOS in DOS mode using a bootable floppy disk. ASUS CrashFree BIOS 3: Updates the BIOS using a bootable floppy disk, a USB flash disk or the motherboard support DVD when the BIOS file fails or gets corrupted. Refer to the corresponding sections for details on these utilities. Save a copy of the original motherboard BIOS file to a bootable floppy disk or a USB flash disk in case you need to restore the BIOS in the future. Copy the original motherboard BIOS using the ASUS Update or AFUDOS utilities. 4.1.1 ASUS Update utility The ASUS Update is a utility that allows you to manage, save, and update the motherboard BIOS in Windows® environment. The ASUS Update utility allows you to: Save the current BIOS file Download the latest BIOS file from the Internet Update the BIOS from an updated BIOS file Update the BIOS directly from the Internet, and View the BIOS version information. This utility is available in the support DVD that comes with the motherboard package. ASUS Update requires an Internet connection either through a network or an Internet Service Provider (ISP). Installing ASUS Update To install ASUS Update: 1. 2.

3. Place the support DVD in the optical drive. The Drivers menu appears. Click the Utilities tab, then click Install ASUS Update. The ASUS Update utility is copied to your system. Quit all Windows® applications before you update the BIOS using this utility. ASUS P5QL PRO 4-1 Updating the BIOS through the Internet To update the BIOS through the Internet: 1. Launch the ASUS Update utility from the Windows® desktop by clicking Start > Programs > ASUS > ASUSUpdate > ASUSUpdate. The ASUS Update main window appears. 2.

Select Update BIOS from the Internet option from the drop-down menu, then click Next. 3. Select the ASUS FTP site nearest you to avoid network traffic, or click Auto Select. Click Next. 4-2 Chapter 4: BIOS setup 4.

5. From the FTP site, select the BIOS version that you wish to download. Click Next. Follow the screen instructions to complete the update process. The ASUS Update utility is capable of updating itself through the Internet.

Always update the utility to avail all its features. Updating the BIOS through a BIOS file To update the BIOS through a BIOS file: 1. 2. Launch the ASUS Update utility from the Windows® desktop by clicking Start > Programs > ASUS > ASUSUpdate > ASUSUpdate. The ASUS Update main window appears. Select Update BIOS from a file option from the drop-down menu, then click Next. 3. 4. Locate the BIOS file from the Open window, then click Open. Follow the screen instructions to complete the update process.

P5QLPRO.ROM P5QLPRO ASUS P5QL PRO 4-3 4.1.2 1. Creating a bootable floppy disk Do any one of the following to create a bootable floppy disk. DOS environment a. b. Insert a 1.44MB floppy disk into the drive. At the DOS prompt, type formatA:/S then press <Enter>.

Windows® XP environment a. b. c. d. e.

Insert a 1.44 MB floppy disk to the floppy disk drive. Click Start from the Windows® desktop, then select My Computer. Select the 3 1/2 Floppy Drive icon. Click File from the menu, then select Format.

A Format 3 1/2 Floppy Disk window appears. Select Create an MS-DOS startup disk from the format options field, then click Start. Windows® Vista environment a. b. c. d. e. 2. Insert a formatted, high density 1.44 MB floppy disk to the floppy disk drive.

Click from the Windows® desktop, then select Computer. Right-click Floppy Disk Drive then click Format to display the Format 3 1/2 Floppy dialog box. Select the Create an MS-DOS startup disk check box. Click Start. Copy the original or the latest motherboard BIOS file to the bootable floppy disk. 4-4 Chapter 4: BIOS setup 4.



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