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You can read the recommendations in the user guide, the technical guide or the installation guide for ASUS P5GPL-X SE. You'll find the answers to all your questions on the ASUS P5GPL-X SE in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

> **User manual ASUS P5GPL-X SE**
> **User guide ASUS P5GPL-X SE**
> **Operating instructions ASUS P5GPL-X SE**
> **Instructions for use ASUS P5GPL-X SE**
> **Instruction manual ASUS P5GPL-X SE**

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P5GPL-X SE

Motherboard

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Notices

Federal Communications Commission Statement

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

· This device may not cause harmful interference, and

· This device must accept any interference received including interference that may cause undesired operation.

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

· Reorient or relocate the receiving antenna.

· Increase the separation between the equipment and receiver.

· Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

· Consult the dealer or an experienced radio/TV technician for help.

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

Canadian Department of Communications Statement

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

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

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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 detecnnel audio Support Jack Sensing and Enumeration Technology S/PDIF out interface Marvell 88E8001 Gigabit LAN controller Supports up to 8 USB 2.0 ports ASUS C.

P.R. (CPU Parameter Recall) ASUS CPU Lock Free ASUS EZ Flash ASUS CrashFree BIOS 2 ASUS MyLogoTM 4 Mb Flash ROM, AMI BIOS, PnP, DMI2.0, SM BIOS 2.3, WfM2.

0, ACPI 2.0a 1 x Parallel port 1 x LAN (RJ-45) port 4 x USB 2.0 ports 1 x Serial port (COM) 1 x coaxial S/PDIF out 1 x PS/2 keyboard port 1 x PS/2 mouse port 6-channel audio ports Expansion slots Storage Audio LAN USB Special features BIOS features Rear Panel (continued on the next page) x P5GPL-X SE specifications summary Overclocking ASUS CPU Lock Free Technology ASUS AI Overclocking (Intelligent CPU frequency tuner) CPU and Memory voltage adjustable SFS (Stepless Frequency Selection) from 100MHz up to 400MHz at 1MHz increment Adjustable FSB/DDR ratio.

Fixed PCI/PCIe frequencies. ASUS C.P.R.(CPU Parameter Recall) 1 xe (DDR) memory technology, the motherboard supports up to 2GB of system memory using DDR400/333 DIMMs. The ultra-fast 400MHz memory bus delivers the required bandwidth for the latest 3D graphics, multimedia, and Internet applications. See page 1-16 for details.

PCI ExpressTM interface The motherboard fully supports PCI Express, the latest I/O interconnect technology that speeds up the PCI bus. PCI Express features point-to-point serial interconnections between devices and allows higher clockspeeds by carrying data in packets. This high speed interface is software compatible with existing PCI specifications. See page 1-22 for details. Serial ATA technology The motherboard supports the Serial ATA technology through the Serial ATA interfaces and the Intel® ICH6. The SATA specification allows for thinner, more flexible cables with lower pin count, reduced voltage requirement, and up to 150 MB/s data transfer rate. Gigabit LAN support This motherboard comes with a Gigabit LAN controller to meet your growing networking needs. The controller provides faster data bandwidth for your Internet, LAN, and file sharing requirements. See pages 1-26. 6-channel audio The motherboard comes with the ADI AD1986A audio CODEC that provides 6-channel audio, audio jack-sensing and enumeration technology, and S/PDIF out support.

See page 1-26 for details. USB 2.0 technology The motherboard implements the Universal Serial Bus (USB) 2.0 specification, dramatically increasing the connection speed from the 12 Mbps bandwidth on USB 1.1 to a fast 480 Mbps on USB 2.

0. USB 2.0 is backward compatible with USB 1.1. See pages 1-24, 1-27, 1-30 and 2-21 for details.

1-16 Chapter 1: Product introduction Temperature, fan, and voltage monitoring The CPU temperature is monitored by the Winbond Super I/O to prevent overheating and damage. The system fan rotation per minute (RPM) is monitored for timely failure detection. The Winbond Super I/O monitors the voltage levels to ensure stable supply of current for critical components. 1.3.2 Innovative ASUS features CPU Lock Free This feature allows you to adjust the CPU multiplier to 14x. Setting the appropriate BIOS setting automatically reduces the CPU multiplier value for more flexibility when increasing external FSB. See page 2-22 for details. ASUS Hyper Path 2 technology The ASUS Hyper Path 2 technology optimizes the full potential of the Intel® chipset by shortening the latency time between the CPU and the system memory. See page 2-24 for details.

CrashFree BIOS 2 This feature allows you to restore the original BIOS data from the support CD in case when the BIOS codes and data are corrupted. This protection eliminates the need to buy a replacement ROM chip. See details on page 2-6. ASUS Q-Fan technology The ASUS Q-Fan technology smartly adjusts the CPU fan speed according to the system loading to ensure quiet, cool, and efficient operation. See page 2-30 for details. ASUS MyLogoTM This new feature present in the motherboard allows you to personalize and add style to your system with customizable boot logos. See page 2-33. AI NET 2 AI NET 2 is a BIOS-based diagnostic tool that detects and reports Ethernet cable faults and shorts. With this utility, you can easily monitor the condition of the Ethernet cable(s) connected to the Marvell LAN (RJ-45) port. During the bootup process, AI NET 2 immediately diagnoses the LAN cable and can report shorts and faults up to 100 meters away at 1 meter accuracy.

ASUS P5GPL-X SE 1-17 1.4 Before you proceed Take note of the following precautions before you install motherboard components or change any motherboard settings. · · Unplug the power cord from the wall socket before touching any component. Use a grounded wrist strap or touch a safely grounded object or to 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. · · · Onboard LED The motherboard comes with a standby power LED that lights up to indicate that the system is ON, in sleep mode, or in soft-off mode. This is a reminder that you should shut down the system and unplug the power cable before removing or plugging in any motherboard component. The illustration below shows the location of the onboard LED.

P5GPL-X ® SB_PWR ON Standby Power OFF Powered Off P5GPL-X SE Onboard LED 1-18 Chapter 1: Product introduction 1.5 Motherboard overview Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it. Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so can cause you physical injury and damage motherboard components. 1.5.1 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. 1.5.

2 Screw holes Place seven (7) 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. Place this side towards the rear of the chassis P5GPL-X SE ® ASUS P5GPL-X SE 1-19 1.5.3 Motherboard layout 18.2cm (7.2in) PS/2KBMS T: Mouse KBPWR B: Keyboard SPDIF_O ATX12V PARALLEL PORT LGA775 DDR DIMM_A1 (64 bit,184-pin module) DDR DIMM_B1 (64 bit,184-pin module) CHA_FAN CPU_FAN COM1 F_USB12 LAN_USB34 Top:Line In Center:Line Out Below:Mic In Intel 915PL ® Marvell 88E8001 P5GPL-X SE PCIEX16 ® PCI1 Super I/O PCI2 PCI3 SPDIF_OUT USBPW2 AAFP GAME SB_PWR USB78 CLRTC USB56 PANEL 1-20 Chapter 1: Product introduction SATA1 AD1986A PCIEX1_1 CHASSIS CR2032 3V Lithium Cell CMOS Power Intel FWH 4Mb CD FLOPPY SATA2 SATA3 SATA4 Intel ICH6 ® PRI_IDE 30.5cm (12.0in) USBPW1 EATXPWR 1.6 Central Processing Unit (CPU) The motherboard comes with a surface mount LGA775 socket designed for the Intel® Pentium® 4 processor in the 775-land package.

· Your boxed Intel® Pentium® 4 LGA775 processor package should come with installation instructions for the CPU, fan and heatsink assembly. If the instructions in this section do not match the CPU documentation, follow the latter. Upon purchase of the motherboard, make sure that the PnP cap is on the socket and the socket pins are not bent.

Contact your retailer immediately if the PnP cap is missing, or if you see any damage to the PnP cap/socket pins/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 pins resulting from incorrect CPU installation/removal, or misplacement/ loss/incorrect removal of the PnP cap. · · · 1.6.

1 1. Installling the CPU To install a CPU: Locate the CPU socket on the motherboard. P5GPL-X ® P5GPL-X SE CPU Socket 775 Before installing the CPU, make sure that the socket box is facing towards you and the load lever is on your left. ASUS P5GPL-X SE 1-21 2. Press the load lever with your thumb (A) and move it to the left (B) until it is released from the retention tab. A PnP Cap Retention tab Load lever B This side of the cam box should face you. 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 135º angle. 4.

Lift the load plate with your thumb and forefinger to a 100º angle (A), then push the PnP cap from the load plate window to remove (B). B A Load plate 5. Position the CPU over the socket, making sure that the gold triangle is on the bottom-left corner of the socket. The socket alignment key should fit into the CPU notch. Alignment key Gold triangle mark 1-22 Chapter 1: Product introduction 6. Close the load plate (A), then push the load lever (B) until it snaps into the retention tab. B A 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! ASUS P5GPL-X SE 1-23 1.6.2 Installling the CPU heatsink and fan The Intel® Pentium® 4 LGA775 processor requires a specially designed heatsink and fan assembly to ensure optimum thermal condition and performance.

· · Install the motherboard to the chassis before you install the CPU fan and heatsink assembly When you buy a boxed Intel® Pentium® 4 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® Pentium® 4 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 a 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. Fastener Motherboard hole Make sure each fastener is oriented as shown, with the narrow groove directed outward. 1-24 Chapter 1: Product introduction 2. Push down two fasteners at a time in a diagonal sequence to secure the heatsink and fan assembly in place. A B B A B A B A 3.

When the fan and heatsink assembly is in place, connect the CPU fan cable to the connector on the motherboard labeled CPU_FAN. GND CPU FAN PWR CPU FAN IN CPU FAN PWM CPU_FAN P5GPL-X ® P5GPL-X SE CPU fan connector Do not forget to connect the CPU fan connector! Hardware monitoring errors can occur if you fail to plug this connector. ASUS P5GPL-X SE 1-25 1.6.3 1. 2. Uninstalling the CPU heatsink and fan To uninstall the CPU heatsink and fan: Disconnect the CPU fan cable from the connector on the motherboard. 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.

A B B A B A B A 1-26 Chapter 1: Product introduction 4. Remove the heatsink and fan assembly from the motherboard. 5. Rotate each fastener clockwise to reset the orientation. When reset, each fastener should be oriented as shown, with the narrow groove directed outward. ASUS P5GPL-X SE 1-27 1.7 1.7.1 System memory Overview The motherboard comes with two 184-pin Double Data Rate (DDR) Dual Inline Memory Modules (DIMM) sockets. The following figure illustrates the location of the sockets: DIMM_A1 DIMM_B1 P5GPL-X ® P5GPL-X SE 184-pin DDR DIMM sockets 1.

7.2 Memory Configurations You may install 256 MB, 512 MB and 1 GB unbuffered non-ECC DDR DIMMs into the DIMM sockets using the memory configurations in this section. · Installing DDR DIMMs other than the recommended configurations may cause memory sizing error or system boot failure. Use any of the recommended configurations in Table 1. Always install DIMMs with the same CAS latency.

For optimum compatibility, it is recommended that you obtain memory modules from the same vendor. See Table 2 for qualified DDR DIMMs. Due to chipset limitation, DIMM modules with 128 Mb memory chips or double-sided x16 memory chips are not supported in this motherboard. · · 1-28 Chapter 1: Product introduction Recommended memory configurations For dual-channel configuration, the total size of memory module(s) installed per channel must be the same to ensure optimum performance. [DDR_A1(Channel A)= DDR_B1(Channel B)] DDR400 Qualified Vendors List Size 257MB 258MB 256MB 512MB 512MB 1024MB 1024MB 256MB 256MB 256MB 256MB 512MB 512MB 512MB 1024MB 256MB 256MB 512MB 512MB 1024MB 256MB 512MB 512MB 512MB 1024MB 1024MB 256MB 256MB 257MB 256MB 512MB 512MB 512MB 512MB 256MB 512MB 256MB 512MB 512MB 512MB 512MB 256MB 256MB 256MB 256MB 256MB 512MB 512MB 512MB 1024MB 256MB 256MB 512MB 1024MB 256MB 256MB 512MB 512MB 512MB Vendor Hynix Hynix Hynix Hynix Hynix Infineon Infineon Infineon Infineon Infineon Infineon Infineon Infineon Infineon CORSAIR CORSAIR CORSAIR CORSAIR CORSAIR CORSAIR CORSAIR CORSAIR CORSAIR KINGSTON KINGSTON KINGSTON KINGSTON KINGSTON KINGSTON KINGSTON KINGSTON KINGSTON KINGSTON KINGSTON KINGSTON KINGSTON KINGSTON MICRON MICRON MICRON MICRON MICRON MICRON SAMSUNG SAMSUNG SAMSUNG SAMSUNG SAMSUNG SAMSUNG Transcend Transcend Transcend Transcend NANYA NANYA NANYA NANYA NANYA NANYA Model HYMD232646B8J-D43 HYMD232646D8J-D43 AA HYMD232646D8J-D43 DDR400 HYMD264646D8J-D43 AA HYMD264646D8J-D43 DDR400 HYS64D128320HU-5-C HYS64D128320HU-5-C HYS64D32300GU-5-C HYS64D32300HU-5-C HYS64D32300HU-5-C HYS64D32301HU-5-C HYS64D64300HU-5-C HYS64D64320HU-5-C HYS64D64320HU-5-C CMX1024-3200C2 CMX256A-3200C2PT DDR400 CMX256A-3200LL DDR400 CMX512-3200C2 DDR400 CMX512-3200LL TWINX2048-3200C2 DDR400 VS256MB400 VS512MB400 VS512MB400 DDR400 KHX3200A/512 DDR400 KVR400X64C3A/1G KVR400X64C3A/1G DDR400 KVR400X64C3A/256 KVR400X64C3A/256 KVR400X64C3A/256 DDR400 KVR400X64C3A/256 DDR400 KVR400X64C3A/512 KVR400X64C3A/512 KVR400X64C3A/512 DDR400 KVR400X64C3A/512 DDR400 KVR400X72C3A/256 VALUE RAM KVR400X64C3A/512 DDR VALUERAM KVR400X64C3A/256 MT16VDDT6464AG-40BC4 MT16VDDT6464AG-40BCB MT16VDDT6464AG-40BCB MT16VDDT6464AG-40BGB MT8VDDT3264AG-40BCB MT8VDDT3264AG-40BCB M368L3223ETM-CCC M368L3223ETM-CCC M368L3223FTN-CCC M368L6423FTN-CCC M368L6423FTN-CCC M368L6523BTM-CCC TS128MLD64V4J DDR400 TS32MLD64V4F3 TS32MLD64V4F3 DDR400 TS64MLD64V4F3 DDR400 NT1GD64S8HB0G-5T DDR400 NT256D64S88C0G-5T DDR400 NT256D64SH4B0G-5T DDR400 NT512D64S88B0G-5T DDR400 NT512D64S8HB1G-5T NT512D64S8HC0G-5T DDR400 Brand Hynix Hynix N/A Hynix N/A Infineon Infineon Infineon Infineon Infineon Infineon Infineon Infineon Infineon N/A WINBOND N/A WINBOND N/A N/A N/A N/A Value Select N/A Infineon N/A KINGSTON PSC N/A N/A Hynix KINGSTON N/A N/A MOSEL Hynix KINGSTON N/A MICRON Side(s) Component SS SS SS DS DS DS DS SS SS SS SS SS DS DS DS SS SS DS SS DS SS DS DS DS DS DS SS SS SS SS DS DS DS SS SS DS SS DS DS DS DS SS SS SS SS SS DS DS SS DS SS SS SS DS DS SS SS SS DS DS SS DS SS SS DS DS SS SS SS DS DS DIMM support A V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V B V V V V V V V V V V V V V V V V V V V V V V V N/A HY5DU56822DT-D43 HY5DU56822DT-D43 HY5DU56822DT-D43 HY5DU56822DT-D43 HYB25D512800CE-5B HYB25D512800CE-5B HYB25D256800CE-5-C HYB25D256800CE-5-C HYB25D256800CE-5-C HYB25D512160CE-5-C HYB25D512800CE-5-C HYB25D256800CE-5-C HYB25D256800CE-5-C N/A W942508BH-5 N/A N/A N/A N/A VS32M8-5 2B0409 VS32M8-5 2B0412 VS32M8-5 N/A HYB25D512800BE-5B HYB25D512800BE-5B D3208DL3T-5A

A2S56D30BTP A2S56D30BTP511ALM09 D3208DL3T-5A HY5DU12822BT-D43 D3208DHIT-5 V58C2256804SAT5 HY5DU12822BT-D43 V58C2256804SAT5 HY5DU56822BT-D43 D3208DHIT-5 N/A MT46V32M8TG-5BC MT46V32M8TG-5BC MT46V32M8TG-5BG MT46V32M8TG-5BG MT46V32M8TG-5BC K4H560838E-TCCC K4H560838E-TCCC K4H560838F-TCCC K4H560838F-TCCC K4H560838F-TCCC K4H510838B-TCCC K4H510838B-TCCC V58C2256804SAT5B K4H560838F-TCCC K4H560838F-TCCC NT5DS64M8BT-5T NT5DS32M8CT-5T NT5DS32M16BT-5T NT5DS64M8BT-5T NT5DS3232M8BT-5T NT5DS32M8CT-5T V V V V V V V V V V V V V V V V V V V V N/A MICRON SAMSUNG SAMSUNG SAMSUNG SAMSUNG SAMSUNG SAMSUNG SAMSUNG MOSEL SAMSUNG SAMSUNG N/A N/A N/A N/A NANYA N/A V V V V V V V V V V V V V V (Continued on the next page) ASUS P5GPL-X SE 1-17 DDR400 Qualified Vendors List Size 256MB 512MB 256MB 512MB 256MB 512MB 256MB 256MB 256MB 256MB 512MB 512MB 512MB 512MB 512MB 512MB 512MB 256MB 256MB 256MB 256MB 256MB 256MB 256MB 256MB 512MB 256MB 512MB 256MB 512MB 256MB 256MB 256MB 256MB 256MB 512MB 512MB 256MB 512MB 256MB 512MB 256MB 512MB 256MB 256MB 512MB 512MB 256MB 256MB 512MB 512MB 256MB 256MB 512MB 512MB 256MB 512MB Vendor A DATA A DATA A DATA A DATA A DATA A DATA Aeneon APACER APACER BRAIN POWER CENTURY CENTURY CENTURY CENTURY CENTURY CENTURY CENTURY CENTURY CENTURY CENTURY CENTURY CENTURY CENTURY Deutron Deutron elixir elixir GEIL GEIL GEIL GEIL GEIL KINGMAX KINGMAX KINGMAX KINGMAX Kreton Kreton Novax Novax Pmi Pmi ProMOS ProMOS ProMOS PSC TwinMos TwinMos TwinMos TwinMos V-DATA Veritech Veritech Winbond Winbond Winbond Model MDOAD5F3G31Y0D1E02 DDR400 MDOAD5F3H41Y0D1E02 DDR400 MDOHY6F3G31Y0N1E0Z DDR400 MDOHY6F3H41Y0N1E0Z DDR400 MDOSS6F3G31Y0K1E0Z DDR400 MDOSS6F3H41Y0N1E0Z DDR400 AED560UD00-500C88X DDR400 77.

10636.115 DDR400 77.10636.11G DDR400 N/A DXV2S8EL5B DDR400 DXV2S8EL5B/HP DDR400 DXV2S8EL5BM3T27C DDR400 DXV2S8HXD43B DDR400 DXV2S8HXD43D DDR400 DXV2S8MC5B DDR400 DXV2S8SSCCE3K27E DDR400 DXV6S8EL5B DDR400 DXV6S8EL5B/HP DDR400 DXV6S8EL5BM3T27C DDR400 DXV6S8HXD43B DDR400 DXV6S8HXD43D DDR400 DXV6S8MC5B DDR400 DXV6S8SSCCE3K27E DDR400 AL5D8C53T-5B1T DDR400 AL6D8C53T-5B1T DDR400 M2U25664DS88C3G-5T DDR400 M2U51264DS8HC1G-5T DDR400 GD3200-512DC DDR400 GL1GB3200DC DDR400 GL5123200DC DDR400 GLX2563200UP DDR400 N/A 20-T003C1128 MPXB62D-38KT3R DDR400 MPXC22D-38KT3R MPXC22D-38KT3R DDR400 N/A N/A 96M425653CE-40TB6 DDR400 96M451253CE-40TB6 DDR400 MD44256VIT3208GMHA01 DDR400 MD44512VIT3208GATA03 DDR400 V826632K24SCTG-D0 V826632K24SCTG-D0 DDR400 V826664K24SCTG-D0 DDR400 AL6D8B53T-5B1K DDR400 M2G9I08A8ATT9F081AADT DDR400 M2G9I08AIATT9F081AADT DDR400 M2G9J16A8ATT9F081AADT DDR400 M2G9J16AJATT9F081AADT DDR400 MDYVD6F4G2880B1E0H DDR400 VU256FLTM25C DDR400 VU512FLTM25C DDR400 U24512ADWBG6H20 W9425GCDB-5 DDR400 W9451GCDB-5 DDR400 Brand N/A N/A Hynix Hynix SAMSUNG SAMSUNG Aeneon Infineon Infineon N/A N/A N/A N/A N/A N/A N/A SAMSUNG N/A N/A N/A N/A N/A N/A SAMSUNG PSC PSC elixir elixir N/A N/A N/A N/A GEIL MOSEL KINGMAX KINGMAX KINGMAX VT VT CEON CEON Mosel Mosel N/A N/A PSC TwinMos TwinMos TwinMos TwinMos N/A VT VT Winbond Winbond Side(s) Component SS DS SS DS SS DS SS SS SS SS DS DS DS DS DS DS DS SS SS SS SS SS SS SS SS DS SS DS SS DS SS SS SS SS SS DS DS SS DS SS DS SS DS SS SS DS DS SS SS DS DS SS SS DS DS SS DS DIMM support A V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V B V V V V V ADD8608A8A-5B ADD8608A8A-5B HY5DU56822CT-D43 HY5DU56822CT-D43 K4H560838E-TCCC K4H560838E-TCCC AED83T500 HYB25D256800BT-5B HYB25D256800BT-5B K4H560838D-TCC4 DD2508AMTA DD2508AKTA-5B-E DD2508AMTA HY5DU56822BT-D43 HY5DU56822DT-D43 MT46V32M8TG-5BG K4H560838E-TCCC DD2508AMTA DD2508AKTA-5B-E DD2508AMTA HY5DU56822BT-D43 HY5DU56822DT-D43 MT46V32M8TG-5BG K4H560838E-TCCC A2S56D30CTP A2S56D30CTP N2DS25680CT-5T N2DS25680CT-5T WLCSP Package GL3LC32G88TG-35 GL3LC32G88TG-35 GL3LC32G88TG-5A GL3LC32G88TG-5A V58C2256804SAT5B KDL388P4EA-50 KDL388P4LA-50 KDL388P4EA-50 VT3225804T-5 VT3225804T-5 C2S56D30TP-5 C2S56D30TP-5 V58C2256804SAT5B V58C2256804SAT5B V58C2256804SCT5B V58C2256804SCT5B V58C2256804SCT5B A2S56D30BTP TMD7608F8E51D TMD7608F8E50D TMD7608F8E52D TMD7608F8E50D VDD9616A8A-5C VT56DD32M8PC-5 VT56DD32M8PC-5 W942508CH-5 W942508CH-5 V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V Legend: ABSS DS supports one module inserted into either slot, in a Single-channel memory configuration. supports one pair of modules inserted into two slots as one pair of Dual-channel memory configuration. Single-sided Double-sided 1-18 Chapter 1: Product introduction 1.7.3 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. 2 DDR DIMM notch 1.

2. Unlock a DIMM socket by pressing the retaining clips outward. Align a DIMM on the socket such that the notch on the DIMM matches the break on the socket. 1 1 Unlocked retaining clip A DDR 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. Locked Retaining Clip 1.7.4 Removing a DIMM Follow these steps to remove a DIMM.

1. Simultaneously press the retaining clips outward to unlock the DIMM. 2 1 1 DDR DIMM notch 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. 1-19 ASUS P5GPL-X SE 1.8 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. 1.8.1 1. 2. 3. 4. 5. 6. Installing an expansion card To install an expansion card: Before installing the expansion card, read the documentation that came with it and make the necessary hardware settings for the card.

Remove the system unit cover (if your motherboard is already installed in a chassis). Remove the bracket opposite the slot that you intend to use. Keep the screw for later use. Align the card connector with the slot and press firmly until the card is completely seated on the slot. Secure the card to the chassis with the screw you removed earlier. Replace the system cover. 1.8.2 Configuring an expansion card After installing the expansion card, configure it by adjusting the software settings. 1.

2. 3. Turn on the system and change the necessary BIOS settings, if any. See Chapter 2 for information on BIOS setup. Assign an IRQ to the card. Refer to the tables on the next page. Install the software drivers for the expansion card. 1-20 Chapter 1: Product introduction 1.8.3 Interrupt assignments Standard interrupt assignments IRQ 0 1 2 3 5 6 7 8 9 10 11 12 13 14 15 Priority 1 2 · 12 13 14 15 3 4 5 6 7 8 9 10 Standard Function System Timer Keyboard Controller Re-direct to IRQ#9 Communications Port (COM1)* IRQ holder for PCI steering* Floppy Disk Controller Printer Port (LPT1)* System CMOS/Real Time Clock IRQ holder for PCI steering* IRQ holder for PCI steering* IRQ holder for PCI steering* PS/2 Compatible Mouse Port* Numeric Data Processor Primary IDE Channel Secondary IDE Channel * These IRQs are usually available for ISA or PCI devices.

IRQ assignments for this motherboard A PCI slot 1 PCI slot 2 PCI slot 3 Onboard LAN -- -- -- -- -- B -- -- used -- C -- -- -- -- D -- -- -- used E -- -- -- -- F -- used -- -- -- G used -- -- -- -- H -- -- -- -- 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. ASUS P5GPL-X SE 1-21 1.8.4 PCI slots The PCI slots support cards such as a LAN card, SCSI card, USB card, and other cards that comply with PCI specifications. The figure shows a LAN card installed on a PCI slot. 1.8.5 PCI Express x16 slot This motherboard supports PCI Express x16 graphic cards that comply with the PCI Express specifications. The figure shows a graphics card installed on the PCI Express x16 slot.

1.8.6 PCI Express x1 slot This motherboard supports PCI Express x1 network cards, SCSI cards and other cards that comply with the PCI Express specifications. The figure shows a network card installed on the PCI Express x1 slot. 1-22 Chapter 1: Product introduction 1.

9 1. Jumpers 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.

2. 3. 4. 5. 6.

Turn OFF the computer and unplug the power cord. Remove the onboard battery. 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. Re-install the battery.

Plug the power cord and turn ON the computer. 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! P5GPL-X CLRTC 12 Normal (Default) 23 Clear CMOS ® P5GPL-X SE Clear RTC RAM setting 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. ASUS P5GPL-X SE 1-23 2.

USB device wake-up (3-pin USBPW12, USBPW34, USBPW56, USBPW78) Set these jumpers to +5V to wake up the computer from S1 sleep mode (CPU stopped, DRAM refreshed, system running in low power mode) using the connected USB devices. Set to +5VSB to wake up from S3 and S4 sleep modes (no power to CPU, DRAM in slow refresh, power supply in reduced power mode). The USBPW1 jumpers are for the rear USB ports. The USBPW2 jumper is for the internal USB connectors that you can connect to additional USB ports. USBPW1 2 1 3 2 +5VSB +5V (Default) P5GPL-X ® 12 USBPW2 23 P5GPL-X SE USB device wake-up · +5V (Default) +5VSB 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. · 1-24 Chapter 1: Product introduction 3. Keyboard power (3-pin KBPWR) This jumper allows you to enable or disable the keyboard wake-up feature. Set this jumper to pins 2-3 (+5VSB) to wake up the computer when you press a key on the keyboard (the default is the Space Bar). This feature requires an ATX power supply that can supply at least 1A on the +5VSB lead, and a corresponding setting in the BIOS.

KBPWR 2 1 3 2 +5VSB +5V (Default) P5GPL-X ® P5GPL-X SE Keyboard power setting ASUS P5GPL-X SE 1-25 1.10 Connectors 1.10.1 Rear panel connectors 1 2 3 4 5 6 11 1. 2.

3. 10 9 8 7 PS/2 mouse port (green). This port is for a PS/2 mouse. Parallel port. This 25-pin port connects a parallel printer, a scanner, or other devices. LAN (RJ-45) port. This port allows Gigabit connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications. LAN port LED indications ACT/LINK LED Status OFF GREEN BLINKING Description No link Linked Data activity Status OFF ORANGE GREEN SPEED LED Description 10 Mbps connection 100 Mbps connection 1 Gbps connection ACT/LINK SPEED LED LED LAN port 4. 5. 6. Line In port (light blue). This port connects a tape, CD, DVD player, or other audio sources. Line Out port (lime). This port connects a headphone or a speaker.

In 4-channel and 6-channel configuration, the function of this port becomes Front Speaker Out. Microphone port (pink). This port connects a microphone. Refer to the audio configuration table for the function of the audio ports in 2, 4, or 6-channel configuration. Audio 2, 4, or 6-channel configuration Port Light Blue Lime Pink Headset 2-channel Line In Line Out Mic In 4-channel 6-channel Surround Speaker Out Surround Speaker Out Front Speaker Out Mic In Front Speaker Out Bass/Center 1-26 Chapter 1: Product introduction 7. 8. 9. USB 2.0 ports 3 and 4. These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.

0 devices. USB 2.0 ports 1 and 2. These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices. Coaxial S/PDIF Out port. This port connects an external audio output device via a coaxial S/PDIF cable. 10. Serial connector. This 9-pin COM1 port is for serial devices.

11. PS/2 keyboard port (purple). This port is for a PS/2 keyboard. 1.10.2 Internal connectors 1. Primary IDE connector (40-1 pin PRI_IDE) This connector is for an Ultra DMA 100/66 signal cable. The Ultra DMA 100/66 signal cable has three connectors: a blue connector for the primary IDE connector on the motherboard, a black connector for an Ultra DMA 100/66 IDE slave device (optical drive/hard disk drive), and a gray connector for an Ultra DMA 100/66 IDE master device (hard disk drive). If you install two hard disk drives, you must configure the second drive as a slave device by setting its jumper accordingly. Refer to the hard disk documentation for the jumper settings.

· 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 100/66 IDE devices. · PIN 1 PRI_IDE NOTE: Orient the red markings (usually zigzag) on the IDE ribbon cable to PIN 1. P5GPL-X ® P5GPL-X SE IDE connector ASUS P5GPL-X SE 1-27 2. 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 an FDD cable with a covered Pin 5. P5GPL-X FLOPPY PIN 1 NOTE: Orient the red markings on the floppy ribbon cable to PIN 1. ® P5GPL-X SE Floppy disk drive connector 3. CPU and chassis fan connectors (4-pin CPU_FAN, 3-pin CHA_FAN) The fan connectors support cooling fans of 350mA~2000mA (24W max.) or a total of 1A~3.48A (41.36W 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 P5GPL-X ® CPU_FAN P5GPL-X SE Fan connectors 1-28 GND CPU FAN PWR CPU FAN IN CPU FAN PWM GND +12V Rotation Chapter 1: Product introduction 4.

Serial ATA connectors (7-pin SATA1, SATA2, SATA3, SATA4) These connectors are for the Serial ATA signal cables for Serial ATA hard disk drives.

SATA4 GND RSATA_RXN4 RSATA_RXP4 GND RSATA_TXN4 RSATA_TXP4 GND SATA3 SATA2 SATA1 P5GPL-X SE SATA connectors Important notes on Serial ATA · · GND RSATA_TXP2 RSATA_TXN2 GND RSATA_RXP2 RSATA_RXN2 GND GND RSATA_RXN3 RSATA_RXP3 GND RSATA_TXN3 RSATA_TXP3 GND P5GPL-X ® Install the Windows® 2000 Service Pack 4 or the Windows® XP Service Pack1 before using Serial ATA. Plug your Serial ATA boot disk on the master port (SATA1 and SATA2) to support S3 function. Refer to the table below for details. Serial ATA Master/Slave connectors Connector SATA1, SATA2 SATA3, SATA4 Setting Master Slave Use Boot disk Data disk ASUS P5GPL-X SE GND RSATA_TXP1 RSATA_TXN1 GND RSATA_RXP1 RSATA_RXN1 GND 1-29 5. 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 pins 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 P5GPL-X ® (Default) GND Chassis Signal P5GPL-X SE Chassis intrusion connector 6. USB connectors (10-1 pin USB56, USB78) These connectors are for USB 2.0 ports. Connect the USB/GAME module cable to any of these connectors, then install the module to a slot opening at the back of the system chassis. USB+5V USB_P6USB_P6+ GND NC +5VSB_MB P5GPL-X ® USB56 P5GPL-X SE USB 2.0 connectors USB+5V USB_P5USB_P5+ GND Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard! USB/Game module is purchased separately. 1-30 Chapter 1: Product introduction USB+5V USB_P7USB_P7+ GND 1 USB78 1 USB+5V USB_P8USB_P8+ GND NC 7. Optical drive audio connector (4-pin CD) This connector is for the 4-pin audio cable that connects to the audio connector at the back of the optical drive.

P5GPL-X ® P5GPL-X SE CD audio connector ASUS P5GPL-X SE Right Audio Channel Ground Ground Left Audio Channel CD 1-31 8. ATX power connectors (24-pin EATXPWR, 4-pin ATX12V) These connectors are for an ATX power supply. The plugs from the power supply are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit. · It is recommended that you use an ATX 12 V Specification 2.

0-compliant power supply unit (PSU) with a minimum of 350 W power rating. This PSU type has 24-pin and 4-pin power plugs. If you intent to use a PSU with 20-pin and 4-pin power plugs, make sure that the 20-pin power plug can provide at least 15A on +12V and that the PSU has a minimum power rating of 350 W. The system may become unstable or may not boot up if the power is inadequate. Do not forget to connect the 4-pin ATX +12 V power plug; otherwise, the system will not boot up.

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 PSU passed the motherboard power requirement test with the following configuration: CPU : Memory : Graphics card : Parallel ATA devices : Serial ATA device : Optical drive : · Intel® Pentium® 4 3.6 GHz 512 MB DDR (x 4) PCI Express x16 Nvidia EN5900 IDE hard disk drive (x 2) SATA hard disk drive CD-ROM · · · · You must install a PSU with a higher power rating if you intend to install additional devices. EATXPWR +3 Volts +12 Volts GND +12V DC +12 Volts +5V Standby Power OK Ground GND +12V DC +5 Volts Ground +5 Volts Ground +3 Volts +3 Volts ATX12V P5GPL-X ® P5GPL-X SE ATX power connectors Ground +5 Volts +5 Volts +5 Volts -5 Volts Ground Ground Ground PSON# Ground -12 Volts +3 Volts 1-32 Chapter 1: Product introduction 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. Azalia compliant definition GND PRESENCE# SENSE1_RETUR SENSE2_RETUR AAFP Legacy AC'97 compliant definition AGND +5VA BLINE_OUT_R BLINE_OUT_L P5GPL-X ® PORT1 L PORT1 R PORT2 R SENSE_SEND PORT2 L P5GPL-X SE Analog front panel connector Connect a high-definiton front panel audio module to this connector to avail the high-definition audio features of the motherboard. 10.

Digital Audio connector (4-1 pin SPDIF_OUT) This connector is for the S/PDIF audio module to allow digital sound output. Connect one end of the S/PDIF audio cable to this connector and the other end to the S/PDIF module. P5GPL-X ® SPDIF_OUT P5GPL-X SE Digital audio connector The S/PDIF module is purchased separately. ASUS P5GPL-X SE SPDIFOUT GND +5V MIC2 MICPWR Line out_R NC Line out_L 1-33 11. System panel connector (20-pin PANEL) This connector supports several chassis-mounted functions. IDE_LED+ IDE_LED- ® PWR Ground IDE_LED Reset PWRSW P5GPL-X SE System panel connector The sytem panel connector is color-coded for easy connection. Refer to the connector description below for details. · System power LED (Green 3-pin PLED) This 3-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 (Red 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 (Orange 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.

Power/Soft-off button (Yellow 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 (Blue 2-pin RESET) This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power. · · · · · 1-34 Chapter 1: Product introduction Reset Ground P5GPL-X PANEL +5V Ground Ground Speaker PLED PLED+ PLED- SPEAKER This chapter tells how to change the system settings through the BIOS Setup menus.

@@1. 2. 3. 4. @@@@DOS environment a. Insert a 1.44MB floppy disk into the drive. b. At the DOS prompt, type formatA:/S then press <Enter>. Windows® XP environment a.

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

@@@@Insert a formatted, high density 1.44 MB floppy disk into the drive. b. Insert the Windows® 2000 CD to the optical drive. c. Click Start, then select Run. 2-36 Chapter 2: BIOS setup d. @@e. Press <Enter>, then follow screen instructions to continue. 2. @@@@To update the BIOS using EZ Flash: 1. 2. 3. @@Save the BIOS file to a floppy disk, then restart the system. @@@@Floppy found! Reading file "P5GPLXS.ROM". Completed. Start erasing...

....| Start programming...| Flashed successfully. Rebooting. · · Do not shutdown or reset the system while updating the BIOS to prevent system boot failure! A "Floppy not found!" error message appears if there is no floppy disk in the drive.

A "P5GPLXS.ROM not found!" error message appears if the correct BIOS file is not found in the floppy disk. Make sure that you rename the BIOS file to P5GPLXS.ROM. ASUS P5GPL-X SE 2-37 2.

1.3 AFUDOS utility The AFUDOS utility allows you to update the BIOS file in DOS environment using a bootable floppy disk with the updated BIOS file. This utility also allows you to copy the current BIOS file that you can use as backup when the BIOS fails or gets corrupted during the updating process. Copying the current BIOS To copy the current BIOS file using the AFUDOS utility: · · Make sure that the floppy disk is not write-protected and has at least 600 KB free space to save the file. The succeeding BIOS screens are for reference only.

.... done Erasing flash .... done Writing flash ..
.... done Erasing flash .
... done Writing flash .... 0x0008CC00 (9%) Verifying flash .. @@@@@@2.

3. Turn on the system. @@@@Starting BIOS recovery... @@Starting BIOS recovery... Checking for floppy.. . Floppy found! Reading file "P5GPLXS.ROM". Completed. @@@@2.
3. @@Insert the support CD to the optical drive. @@Starting BIOS recovery...
Checking for floppy... When no floppy disk is found, the utility automatically checks the optical drive for the original or updated BIOS file. The utility then updates the corrupted BIOS file. Bad BIOS checksum. Starting BIOS recovery... Checking for floppy.

.. Floppy not found! Checking for CD-ROM... CD-ROM found! Reading file "P5GPLXS.ROM". Completed. @@Doing so can cause system boot failure! 4. Restart the system after the utility completes the updating process.
The recovered BIOS may not be the latest BIOS version for this motherboard. Visit the ASUS website (www.asus.com) to download the latest BIOS file. ASUS P5GPL-X SE 2-41 2.

1.5 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 CD 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 CD in the optical drive. The Drivers menu appears. Click the Utilities tab, then click Install ASUS Update VX.XX.XX. See page 3-4 for the Utilities screen menu. The ASUS Update utility is copied to your system.

Quit all Windows® applications before you update the BIOS using this utility. 2-42 Chapter 2: BIOS setup 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. ASUS P5GPL-X SE 2-43 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. 2-44 Chapter 2: BIOS setup 2.2 BIOS setup program This motherboard supports a programmable firmware chip that you can update using the provided utility described in section "2.1 Managing and updating your BIOS." Use the BIOS Setup program when you are installing a motherboard, reconfiguring your system, or prompted to "Run Setup". This section explains how to configure your system using this utility.

Even if you are not prompted to use the Setup program, you can change the configuration of your computer in the future. For example, you can enable the security password feature or change the power management settings. This requires you to reconfigure your system using the BIOS Setup program so that the computer can recognize these changes and record them in the CMOS RAM of the firmware hub. The firmware hub on the motherboard stores the Setup utility. @@@@@@You can also restart by turning the system off and then back on. Do this last option only if the first two failed. The Setup program is designed to make it as easy to use as possible. @@@@Select the Load Default Settings item under the Exit Menu. @@@@@@@@@@@@For example, selecting Main shows the Main menu items. The other items (Advanced, Power, Boot, and Exit) on the menu bar have their respective menu items.
+Tab F1 F10 ESC Select Screen Select Item Change Field Select Field General Help Save and Exit Exit Main menu items 2.2.5 Sub-menu items A solid triangle before each item on any menu screen means that the item has a sub-menu. To display the sub-menu, select the item and press <Enter>. 2. 2.6 Configuration fields These fields show the values for the menu items.

If an item is userconfigurable, you can change the value of the field opposite the item. You cannot select an item that is not user-configurable. A configurable field is enclosed in brackets, and is highlighted when selected.

To change the value of a field, select it then press <Enter> to display a list of options. Refer to "2.2.7 Pop-up window." 2.2.7 Pop-up window Select a menu item then press <Enter> to display a pop-up window with the configuration options for that item. 2.2.8 Scroll bar Advanced Chipset settings WARNING: Setting wrong values in the sections below may cause system to malfunction.

Configure DRAM Timing by SPD Memory Acceleration Mode DRAM Idle Timer DRAm Refresh Rate Graphic Adapter Priority Graphics Aperture Size Spread Spectrum ICH Delayed Transaction MPS Revision [Enabled] [Auto] [Auto] [Auto] [AGP/PCI] [64 MB] [Enabled] [Enabled] [1.4] +F1 F10 ESC A scroll bar appears on the right side of a menu screen when there are items that do not fit on the screen. Press the Up/Down arrow keys or <Page Up> /<Page Down> keys to display the other items on the screen. Select Screen Select Item Change Option General Help Save and Exit Exit Pop-up window Scroll bar 2.2.9 General help At the top right corner of the menu screen is a brief description of the selected item. ASUS P5GPL-X SE 2-13 2.3 Main menu When you enter the BIOS Setup program, the Main menu screen appears, giving you an overview of the basic system information. Refer to section "2.2. 1 BIOS menu screen" for information on the menu screen items and how to navigate through them. System Time System Date Legacy Diskette A Primary IDE Master Primary IDE Slave Third IDE Master Third IDE Slave Fourth IDE Master Fourth IDE Slave IDE Configuration System Information [11:51:19] [Thu 05/07/2004] [1.44M, 3.5 in] :[ST320413A] :[Not Detected] :[Not Detected] :[Not Detected] :[Not Detected] :[Not Detected] Use [ENTER], [TAB] or [SHIFT-TAB] to select a field. Use [+] or [-] to configure system time.

2.3.1 2.3.2 2. 3.3 System Time [xx:xx:xxxx] System Date [Day xx/xx/xxxx] Legacy Diskette A [1.44M, 3.5 in.] Allows you to set the system time. Allows you to set the system date. Sets the type of floppy drive installed. Configuration options: [Disabled] [360K, 5.25 in.] [1.

2M , 5.25 in.] [720K , 3.5 in.] [1.44M, 3.5 in.] [2.88M, 3.5 in.

] 2-14 Chapter 2: BIOS setup 2.3.4 Primary, Third and Fourth IDE Master/Slave While entering Setup, the BIOS automatically detects the presence of IDE devices. There is a separate sub-menu for each IDE device. Select a device item then press <Enter> to display the IDE device information.

Primary IDE Master Device : Hard Disk Vendor : ST320413A Size : 20.0GB LBA Mode : Supported Block Mode : 16 Sectors PIO Mode : Supported Async DMA : MultiWord DMA-2 Ultra DMA : Ultra DMA-5 SMART Monitoring: Supported Type LBA/Large Mode Block(Multi-sector Transfer) PIO Mode DMA Mode Smart Monitoring 32Bit Data Transfer [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Disabled] The BIOS automatically detects the values opposite the dimmed items (Device, Vendor, Size, LBA Mode, Block Mode, PIO Mode, Async DMA, Ultra DMA, and SMART monitoring). These values are not user-configurable. These items show N/A if no IDE device is installed in the system. Type [Auto] Selects the type of IDE drive.

Setting to Auto allows automatic selection of the appropriate IDE device type. Select CDROM if you are specifically configuring a CD-ROM drive. Select ARMD (ATAPI Removable Media Device) if your device is either a ZIP, LS-120, or MO drive. Configuration options: [Not Installed] [Auto] [CDROM] [ARMD] LBA/Large Mode [Auto] Enables or disables the LBA mode. Setting to Auto enables the LBA mode if the device supports this mode, and if the device was not previously formatted with LBA mode disabled. Configuration options: [Disabled] [Auto] Block (Multi-sector Transfer) [Auto] Enables or disables data multi-sectors transfers. When set to Auto, the data transfer from and to the device occurs multiple sectors at a time if the device supports multi-sector transfer feature. When set to [Disabled], the data transfer from and to the device occurs one sector at a time. Configuration options: [Disabled] [Auto] ASUS P5GPL-X SE 2-15 PIO Mode [Auto] Selects the PIO mode. Configuration options: [Auto] [0] [1] [2] [3] [4] DMA Mode [Auto] Selects the DMA mode.

Configuration options: [Auto] [SWDMA0] [SWDMA1] [SWDMA2] [MWDMA0] [MWDMA1] [MWDMA2] [UDMA0] [UDMA1] [UDMA2] [UDMA3] [UDMA4] [UDMA5] [UDMA6] SMART Monitoring [Auto] Sets the Smart Monitoring, Analysis, and Reporting Technology. Configuration options: [Auto] [Disabled] [Enabled] 32Bit Data Transfer [Disabled] Enables or disables 32-bit data transfer. Configuration options: [Disabled] [Enabled] 2.3.5 IDE Configuration The items in this menu allow you to set or change the configurations for the IDE devices installed in the system. Select an item then press <Enter> if you wish to configure the item. IDE Configuration Onboard IDE Operate Mode Enhanced Mode Support On IDE Detect Time Out (Sec) [Enhanced Mode] [S-ATA] [35] 2-16 Chapter 2: BIOS setup Onboard IDE Operate Mode [Enhanced Mode] Disables or allows selection of the IDE operation mode depending on the installed operating system (OS). Set to [Enhanced Mode] if you are using native OS including Windows® 2000/XP. Configuration options: [Disabled] [Compatible Mode] [Enhanced Mode] Enhanced Mode Support On [S-ATA] Allows you to use native OS on Serial ATA and Parallel ATA ports. It is recommend that you do not change the default setting for better OS compatibility.

In this setting, you may use legacy OS on the Parallel ATA ports only if you do not install any Serial ATA device. The P-ATA+S-ATA and P-ATA options are for advanced users only. If you set to any of these options and encountered problems, revert to the default setting S-ATA. Configuration options: [S-ATA+P-ATA] [S-ATA] [P-ATA] Compatible Mode Option [Primary P-ATA +S-ATA] Allows you to choose the IDE ports to be used. Configuration options: [Primary P-ATA +S-ATA] [S-ATA only] [P-ATA only] The S-ATA and P-ATA options are for advanced users only.

If you set to any of these options and encounter problems, revert to the default setting [Secondary P-ATA+S-ATA]. Configuration options: [S-ATA only] [P-ATA only] [P-ATA+S-ATA] The Combined Mode Option item appears only when the Onboard IDE Operate Mode item is set to [Compatible Mode]. The Onboard IDE Operate Mode and its sub-menu items appear only when the Configure SATA As item is set to [Standard IDE]. IDE Detect Time Out [35] Selects the time out value for detecting ATA/ATAPI devices. Configuration options: [0] [5] [10] [15] [20] [25] [30] [35] ASUS P5GPL-X SE 2-17 2. 3.6 System Information This menu gives you an overview of the general system specifications. The BIOS automatically detects the items in this menu.

AMIBIOS Version : 0106 Build Date : 01/06/06 Processor Type Speed Count : Genuine Intel(R) CPU 3.20GHz : 3200 MHz :1 System Memory Size : 512MB AMI BIOS Displays the auto-detected BIOS information Processor Displays the auto-detected CPU specification System Memory Displays the auto-detected system memory 2-18 Chapter 2: BIOS setup 2.4 Advanced menu The Advanced menu items allow you to change the settings for the CPU and other system devices. Take caution when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction. JumperFree Configuration USB Configuration CPU Configuration Chipset Onboard Devices Configuration PCI PnP Configure CPU. 2.

4.1 JumperFree Configuration Enter F1 F10 ESC Select Screen Select Item Go to Sub-screen General Help Save and Exit Exit Configure System Frequency/Voltage AI Overclocking CPU Clock Free [Auto] [Auto] AI Overclocking [Auto] Allows selection of CPU overclocking options to achieve desired CPU internal frequency. Select either one of the preset overclocking configuration options: Manual - allows you to individually set overclocking parameters. Standard - loads the standard settings for the system. Auto - loads the optimal settings for the system. Overclock Profile - loads overclocking profiles with optimal parameters for stability when overclocking. The following items also appear when the AI Overclocking item is set to [Overclock Profile]. Overclock Options [Overclock 5%] Allows you to set the oveclocking options. Configuration options: [Overclock 5%] [Overclock 10%] [Overclock 15%] [Overclock 20%] [Overclock 30%] [FSB900/DDR1-450] [FSB1000/DDR1-500] ASUS P5GPL-X SE 2-19 CPU Frequency [XXX] Displays the frequency sent by the clock generator to the system bus and PCI bus. The value of this item is auto-detected by the BIOS.

Use the <+> and <-> keys to adjust the CPU frequency. You can also type the desired CPU frequency using the numeric keypad. The values range from 100 to 400. Refer to the table below for the correct Front Side Bus and CPU External Frequency settings. FSB/CPU External Frequency Synchronization Front Side Bus FSB 800 FSB 533 CPU External Frequency 200 MHz 133 MHz DRAM Frequency [Auto] Allows you to set the DDR operating frequency. Configuration options: [Auto] [333MHz] [400MHz] Selecting a very high DRAM frequency may cause the system to become unstable! If this happens, revert to the default setting. The following item appears only when you install a CPU that supports the lock free feature. Only some latest CPUs support this feature. CPU Lock Free [Auto] Allows you to adjust the CPU multiplier to 14x. Setting this item to [Auto] allows the motherboard to automatically reduce the CPU multiplier value for more flexibility when increasing the external FSB.

Configuration options: [Auto] [Disabled] [Enabled] This function works with Intel® Prescott-cored 6xx series Pentium® 4 CPU. PCI Clock Synchronization Mode [Auto] Selects the PCI Clock Synchronization mode. Configuration options: [Auto] [33.33MHz] [To CPU] CPU VCore Voltage [Auto] Allows selection of the CPU VCore voltage. The configuration options vary depending on the CPU installed. Setting to Auto allows the BIOS to detect the VCore voltage of the CPU installed. Refer to the CPU documentation before setting the CPU VCore voltage. A very high Vcore voltage can severely damage the CPU! 2-20 Chapter 2: BIOS setup 2.4.2 USB Configuration The items in this menu allows you to change the USB-related features.

Select an item then press <Enter> to display the configuration options. USB Configuration Module Version - 2.24.0-10.4 USB Devices Enabled: None USB Function Legacy USB Support USB 2.0 Controller USB 2.0 Controller Mode [Enabled] [Auto] [Enabled] [HiSpeed] The Module Version and USB Devices Enabled items show the auto-detected values. If no USB device is detected, the item shows None. USB Function [Enabled] Allows you to enable or disable the USB function. Configuration options: [Disabled] [Enabled] Legacy USB Support [Auto] Allows you to enable or disable support for USB devices on legacy operating systems (OS).

Setting to Auto allows the system to detect the presence of USB devices at startup. If detected, the USB controller legacy mode is enabled. If no USB device is detected, the legacy USB support is disabled. Configuration options: [Disabled] [Enabled] [Auto] USB 2.0 Controller [Enabled] Allows you to enable or disable the USB 2.

0 controller. Configuration options: [Disabled] [Enabled] USB 2.0 Controller Mode [HiSpeed] Allows you to configure the USB 2.0 controller in HiSpeed (480 Mbps) or Full Speed (12 Mbps). Configuration options: [HiSpeed] [Full Speed] ASUS P5GPL-X SE 2-21 2.

4.3 CPU Configuration The items in this menu show the CPU-related information that the BIOS automatically detects. Configure Advanced CPU settings Manufacturer: Intel Brand String: Genuine Intel(R) CPU 3.20GHz Frequency : 3200 MHz FSB Speed : 800 MHz Cache L1 : 16 KB Cache L2 : 1024 KB Cache L3 : 0 KB Ratio Status: Unlocked (Max:16, Min:14) Ratio Actual Value : 16 Ratio CMOS Setting: [18] VID CMOS Setting: [18] CPU Clock Free [Auto] Max CPUID Value Limit: [Disabled] Execute Disable Function [Disabled] Enhanced C1 Control [Auto] Hardware Prefetcher [Enabled] Adjacent Cache Line Prefetch [Enabled] CPU Internal Thermal Control [Auto] Hyper Threading Technology Intel(R) SpeedStep(tm) Tech. [Enabled] [Automatic] Sets the ratio between CPU Core Clock and the FSB Frequency. NOTE: If an invalid ratio is set in CMOS then actual and setpoint values may differ. +F1 F10 ESC +F1 F10 ESC Select Screen Select Item Change Option General Help Save and Exit Exit Select Screen Select Item Change Option General Help Save and Exit Exit Ratio CMOS Setting [18] Sets the ratio between the CPU Core Clock and the Front Side Bus frequency. The default value of this item is auto-detected by BIOS. Use the <+> or <-> keys to adjust the values. VID CMOS Setting [62] Allows you to set the VID CMOS setting at which the processor is to run.

The BIOS auto-detects the default value of this item. Use the <+> or <-> keys to adjust the values. CPU Lock Free [Auto] Allows you to adjust the CPU multiplier to 14x. Setting this item to [Auto] allows the motherboard to automatically reduce the CPU multiplier value for more flexibility when increasing the external FSB. This item appears only when you install a processor with CPU Lock Free feature. Configuration options: [Auto] [Disabled] [Enabled] Max CPUID Value Limit [Disabled] Enable this item to boot legacy operating systems that cannot support CPUs with extended CPUID functions. Configuration options: [Disabled] [Enabled] Execute Disable Function [Disabled] Enables or disables the Execute Disable function. This item appears only when you install a processor with the Execute Disable function.