Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for ASUS P5GC-MX. You'll find the answers to all your questions on the ASUS P5GC-MX in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

> **User manual ASUS P5GC-MX**
> **User guide ASUS P5GC-MX**
> **Operating instructions ASUS P5GC-MX**
> **Instructions for use ASUS P5GC-MX**
> **Instruction manual ASUS P5GC-MX**

P5GC-MX

Motherboard

Manual abstract:

SPECIFICATIONS AND INFORMATION CONTAINED IN THIS MANUAL ARE FURNISHED FOR INFORMATIONAL USE ONLY, AND ARE SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE, AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY ASUS. ASUS ASSUMES NO RESPONSIBILITY OR LIABILITY FOR ANY ERRORS OR INACCURACIES THAT MAY APPEAR IN THIS MANUAL, INCLUDING THE PRODUCTS AND SOFTWARE DESCRIBED IN IT. Products and corporate names appearing in this manual may or may not be registered trademarks or copyrights of their respective companies, and are used only for identification or explanation and to the owners' benefit, without intent to infringe.

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 detect any damage, contact your dealer immediately. · To avoid short ports (four ports at mid-board, four ports at back panel) 1 x Parallel port 1 x Serial port 1 x LAN (RJ-45) port 4 x USB 2.0 ports 1 x VGA port 1 x PS/2 keyboard port 1 x PS/2 mouse port 6-channel high-definition audio I/O port 4 Mb Flash ROM, AMI BIOS, PnP, WfM2.0, DMI2.0, SM BIOS 2.

3 Chipset Front Side Bus Memory VGA Expansion slots Storage Audio LAN USB Rear panel BIOS features (continued on the next page) x P5GC-MX specifications summary Special features ASUS EZ Flash ASUS CrashFree BIOS 2 ASUS MyLogoTM ASUS Q-Fan WfM 2.

0, DMI 2.0, WOL by PME, WOR by PME 2 x USB 2.0 connectors for 4 additional USB 2.0 ports 1 x Floppy disk drive connector 1 x IDE connector for two devices 4 x Serial ATA connectors 1 x CPU fan connector 1 x Chassis fan connector 1 x 24-pin ATX power connector 1 x 4-pin ATX 12 V power connector 1 x CD audio in connector 1 x Chassis intrusion connector 1 x Front panel high-definition audio connle cables with lower pin count, reduced voltage requirement, and up to 300 MB/s data transfer rate. ASUS P5GC-MX 1-3 High Definition Audio Enjoy high-end sound quality on your PC! The onboard HD audio (High Definition Audio, previously codenamed Azalia) CODEC enables high-quality 192KHz/24-bit audio output, and multi-streaming technology that simultaneously sends different audio streams to different destinations. You can now talk to your partners on the headphone while playing multi-channel network games. 1.3.2 Innovative ASUS features ASUS 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 page 2-6 for details. ASUS EZ Flash With the ASUS EZ Flash, you can easily update the system BIOS even before loading the operating system. No need to use a DOS-based utility or boot from a floppy disk. See page 2-3 for details. ASUS Q-Fan technology The ASUS Q-Fan technology smartly adjusts the fan speeds according to the system loading to ensure quiet, cool, and efficient operation. 1-4 Chapter 1: Product introduction 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. P5GC-MX SB_PWR R ON Standby Power OFF Powered Off P5GC-MX Onboard LED ASUS P5GC-MX 1-5 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 Placesix(6)screwsintotheholesindicatedbycirclestosecurethe motherboard to the chassis. Do not overtighten the screws! Doing so can damage the motherboard. Place this side towards the rear of the chassis P5GC-MX 1-6 Chapter 1: Product introduction R 1.5.

3 Motherboard layout 18.3cm(7.2in) PS/2KBMS T: Mouse B: Keyboard ATX12V COM1 PARALLEL PORT LGA775 DDR2 DIMM_A1(64 bit,240-pin module) CPU_FAN DDR2 DIMM_B1(64 bit,240-pin module) CHA_FAN VGA1 4Mb BIOS LAN_USB12 RTM876-660 R SPEAKER Intel MCH 945GC P5GC-MX AUDIO PCIEX1_1 LAN CR2032 3V Lithium Cell CMOS Power PCIEX1_16 Super I/O CD ALC883 AAFP SPDIF_OUT FLOPPY PS2_USBPWR USB56 USB78 SATA1 SATA2 ASUS P5GC-MX SATA3 PCI2 SATA4 Intel ICH7 CLRTC CHASSIS PCI1 SEC_IDE SB_PWR F_PANEL 24.4cm(9.6in) USB34 EATXPWR 1-7 1.6 Central Processing Unit (CPU) The motherboard comes with a surface mount LGA775 socket designed for the CoreTM2 Duo/Pentium® D/Pentium® 4 and Celeron® D processors. · Your boxed Intel® CoreTM2 Duo/Pentium® D/Pentium® 4 or Celeron® D 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. P5GC-MX P5GC-MX 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. 1-8 R Chapter 1: Product introduction 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 ASUS P5GC-MX 1-9 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! The motherboard supports Intel® LGA775 processors with the Intel® Enhanced Memory 64 Technology (EM64T), Enhanced Intel SpeedStep® Technology (EIST), and Hyper-Threading Technology.

1-10 Chapter 1: Product introduction 1.6.2 Installling the CPU heatsink and fan The Intel® CoreTM2 Duo/Pentium® D/Pentium® 4 and Celeron® D processors require 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® CoreTM2 Duo/Pentium® D/Pentium® 4 or Celeron® D LGA775 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 I Intel® CoreTM2 Duo/Pentium® D/Pentium® 4 or Celeron® D 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. ASUS P5GC-MX 1-11 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. CPU_FAN GND CPU FAN PWR CPU FAN IN CPU FAN PWM P5GC-MX P5GC-MX CPU Fan Connector · · Do not forget to connect the CPU fan connector! Hardware monitoring errors can occur if you fail to plug this connector. We recommend you to install the chassis fan for better thermal state.

1-12 R Chapter 1: Product introduction 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 A B B A ASUS P5GC-MX 1-13 4. Remove the heatsink and fan assembly from the motherboard.

5. Rotate each fastener clockwise to reset the orientation. Narrow end of the groove The narrow end of the groove should point outward after resetting. (The photo shows the groove shaded for emphasis.) 1-14 Chapter 1: Product introduction 1.7 1.7.1 System memory Overview The motherboard comes with two Double Data Rate 2 (DDR2) Dual Inline Memory Modules (DIMM) sockets. A DDR2 module has the same physical dimensions as a DDR DIMM but has a 240-pin footprint compared to the 184-pin DDR DIMM. DDR2 DIMMs are notched differently to prevent installation on a DDR DIMM socket.

The figure illustrates the location of the DDR2 DIMM sockets: DIMMA1 DIMMB1 P5GC-MX P5GC-MX 240-pin DDR2 DIMM Sockets Channel Channel A Channel B Sockets DIMM_A1 DIMM_B1 1.7.2 Memory configurations You may install 256 MB, 512 MB, 1 GB, and 2 GB unbuffered non-ECC DDR2 DIMMs into the DIMM sockets. · · For dual-channel configuration, the total size of memory module(s) installed per channel must be the same (DIMM_A1 = DIMM_B1). Always install DIMMs with the same CAS latency.

For optimum compatibility, it is recommended that you obtain memory modules from the same vendor. Refer to the DDR2 Qualified Vendors List on next page for details. This motherboard does not support memory modules made up of 128 Mb chips or double-sided x16 memory modules. . · ASUS P5GC-MX 128 Pins R 112 Pins 1-15 1.

7.3 DDR2 Qualified Vendors List The following table lists the memory modules that have been tested and qualified for use with this motherboard. Visit the ASUS website (www.asus. com) for the latest DDR2 DIMM modules for this motherboard. DDR2 533 Qualified Vendors List Size 256MB 256MB 512MB 512MB 1G 1G 256MB 512MB 256MB 512MB 512MB 512MB 512MB 512MB 1G 512MB 512MB 512MB 512MB 256MB 512MB 512MB 1G 512MB 256MB 512MB 512MB 512MB 512MB 1G 1G 1G 512MB 512MB 1G Vendor Kingston Kingston Kingston Kingston Kingston Kingston Samsung Samsung Qimonda Qimonda Qimonda Qimonda Micron Micron Micron Corsair Elpida Transcend Kingmax Kingmax Kingmax PQI PQI AENEON AENEON AENEON AENEON AENEON AENEON AENEON AENEON REMAXEL VERITECH VERITECH Model KVR533D2N4/256 KVR533D2N4/256 KVR533D2N4/512 KVR533D2N4/512 KVR533D2N4/1G KVR533D2N4/1G M378T3253FG0-CD5 M378T6553BG0-CD5 HYS64T32000HU-3.7-A HYS64T64000GU-3.7-A HYS64T64000HU-3.7-A HYS64T64000HU-3.7-A MT 16HTF6464AG-53EB2 MT 16HTF6464AG-53EB2 MT 16HTF12864AY-53EA1 VS512MB533D2 EBE51UD8ABFA-5C-E 512MB DDR2 533 ECC KLBC28F-A8KB4 KLBB68F-36EP4 KLBC28F-A8EB4 MEAB-323LA MEAB-423LA AET660UD00-370A98Z AET560UD00-370A98Z AET660UD00-370A98Z AET660UD00-370A98X AET660UD00-370A88S AET660UD00-370B97X AET760UD00-370A98Z AET760UD00-370A98S AET760UD00-370B97X RML1040EG38D6F-533 GTP512HLTM46DG GTP01GHLTM56DG Brand Elpida Elpida Hynix Infineon Kingston Micron Samsung Samsung Qimonda Qimonda Qimonda Qimonda Micron Micron Micron Corsair Elpida Micron Kingmax Elpida Elpida PQI PQI AENEON AENEON AENEON AENEON AENEON AENEON AENEON AENEON AENEON Elpida VERITECH VERITECH Side(s) SS SS DS SS DS DS SS SS SS SS SS SS SS DS DS DS DS SS SS SS SS SS SS DS SS SS SS SS DS SS DS DS DS SS SS DS Component E5116AB-5C-E E5116AF-5C-E HY5PS56821F-C4 HYB18T512800AF3733336550 D6408TE7BL-37 5YD11D9GCT K4T56083QF-GCD5 K4T51083QB-GCD5 HYB18T512160AF-3.

7AFSS31270 HYB18T512800AC37SSS11511 HYB18T512800AF37SSS12079 HYB18T512800AF37FSS29334 D9BOM Z9BQT D9CRZ MIII0052532M8CEC E5108AB-5C-E 6ND22D9GCT(ECC) KKEA88B4IAK-37 E5116AB-5C-E E5108AE-5C-E D2-E04180W025 D2-E04230W107 AET93F370A G 0513 AET94F370AWVV34635G0520 AET93F370A 3VV36328G 0522 AET93F370A 0518 AET82F370A 0550 AET93R370B 0640 AET93F370A 0551 AET92F370A 0606 AET93R370B 0640 E5108AG-5C-E VTD264M8PC6G01A164129621 VTD264M8PC6G01A164129621 DIMM support A B · Side(s): SS - Single Sided DIMM Support: DS - Double Sided A - supports one module inserted into either slot, in a Single-channel memory configuration. B - supports one pair of modules inserted into the yellow slots as one pair of Dual-channel memory configuration.

Visit the ASUS website (www.asus.com) for the latest memory Qualified Vendor List (QVL). 1-16 Chapter 1: Product introduction 1.7.4 Installing a DIMM Unplug the power supply before adding or removing DIMMs or other system components. Failure to do so can cause severe damage to both the motherboard and the components. To install a DIMM: 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. Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM is properly seated. 1 3 2 DDR2 DIMM notch 3. Unlocked retaining clip · A DDR2 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. The DDR2 DIMM sockets do not support DDR DIMMs. DO not install DDR DIMMs to the DDR2 DIMM sockets. · 1.

7.5 1. Removing a DIMM 2 Follow these steps to remove a DIMM. Simultaneously press the retaining clips outward to unlock the DIMM. Support the DIMM lightly with your fingers when pressing the retaining clips. The DIMM might get damaged when it flips out with extra force. 1 1 DDR2 DIMM notch 2. Remove the DIMM from the socket. ASUS P5GC-MX 1-17 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. 1-18 Chapter 1: Product introduction 1.

8.3 IRQ 0 1 2 4 5 6 7 8 9 10 11 12 13 14 Interrupt assignments 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 Standard interrupt assignments * These IRQs are usually available for ISA or PCI devices. IRQ assignments for this motherboard A PCI slot 1 PCI slot 2 PCI Express x16 slot PCI Express x1 slot Onboard USB controller 1 Onboard USB controller 2 Onboard USB controller 3 Onboard USB controller 4 Onboard USB 2.0 controller Onboard IDE port Onboard HD audio Onboard LAN B C D E F G H -- -- -- -- -- -- -- -- -- -- -- -- -- -- shared -- -- -- -- -- -- -- -- -- -- non-shared -- shared -- -- -- -- -- -- shared -- -- -- -- -- -- -- -- -- -- -- shared -- -- -- shared -- -- -- -- -- -- shared -- -- -- -- -- -- shared -- -- -- -- -- -- shared -- -- -- -- -- -- shared -- -- -- -- shared -- -- -- -- shared -- -- -- -- -- 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 P5GC-MX 1-19 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. If you install a PCI graphics card, we recommend that you remove the onboard graphics card driver.

1.8.5 PCI Express x1 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.

8.6 PCI Express x16 This motherboard supports one PCI Express x16 graphics card. The figure shows a graphics card installed on the PCI Express x16 slot. 1-20 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! P5GC-MX CLRTC 12 23 Clear RTC R Normal (Default) P5GC-MX Clear RTC RAM ASUS P5GC-MX 1-21 2. USB device wake-up (3-pin PS2_USBPWR) 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 500 mA on the +5VSB lead, and a corresponding setting in the BIOS. P5GC-MX PS2_USBPWR 12 R 23 +5V (Default) +5VSB P5GC-MX USB Device Wake Up The total current consumed must NOT exceed the power supplycapability (+5VSB) whether under normal condition or in sleep mode. 1-22 Chapter 1: Product introduction 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. Supported by Marvell 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 OFF ORANGE 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 the 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 on the next page for the function of the audio ports in 2, 4, or 6-channel configuration. ASUS P5GC-MX 1-23 Audio 2, 4, or 6-channel configuration Port Light Blue Lime Pink Headset 2-channel Line In Line Out Mic In 4-channel Rear Speaker Out Front Speaker Out Mic In 6-channel Rear Speaker Out Front Speaker Out Bass/Center 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. VGA port. This port is for a VGA monitor or other VGA-compatible devices. 10. Serial port. This 9-pin COM1 port is for pointing devices or other serial devices. 11. PS/2 keyboard port (purple). This port is for a PS/2 keyboard. 1.10.2 Internal connectors 1. Floppy disk drive connector (34-1 pin FLOPPY) This connector is for the provided floppy disk drive (FDD) signal cable. Insert one end of the cable to this connector, then connect the other end to the signal connector at the back of the floppy disk drive.

Pin 5 on the connector is removed to prevent incorrect cable connection when using an FDD cable with a covered Pin 5. P5GC-MX FLOPPY PIN1 NOTE: Orient the red markings on the floppy ribbon cable to PIN 1. P5GC-MX Floppy Disk Drive Connector 1-24 R Chapter 1: Product introduction 2. IDE connectors (40-1 pin PRI_IDE) The onboard IDE connectors are for Ultra DMA 100/66/33 signal cables. There are three connectors on each Ultra DMA 100/66/33 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(s). P5GC-MX R P5GC-MX IDE Connector Drive jumper setting Single device Two devices Cable-Select or Master Cable-Select Master Slave PRI_IDE 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 100/66/33 IDE devices. · If any device jumper is set as "Cable-Select," make sure all other device jumpers have the same setting. ASUS P5GC-MX 1-25 3. Serial ATA connectors (7-pin SATA1, SATA2, SATA3, SATA4) These connectors are for the Serial ATA signal cables for Serial ATA hard disk drives. P5GC-MX GND RSATA_TXP4 RSATA_TXN4 GND RSATA_RXN4 RSATA_RXP4 GND GND RSATA_RXP1 RSATA_RXN1 GND RSATA_TXN1 RSATA_TXP1 GND GND RSATA_RXP2 RSATA_RXN2 GND RSATA_TXN2 RSATA_TXP2 GND SATA1 SATA2 R P5GC-MX SATA Connectors When using the connectors in Standard IDE mode, connect the primary (boot) hard disk drive to the SATA1/2 connector. Refer to the table below for the recommended SATA hard disk drive connections. Serial ATA hard disk drive connection Connector Color Setting Use SATA1/2 SATA3/4 Red Black Master Slave Boot disk Data Disk 1-26 Chapter 1: Product introduction SATA3 SATA4 GND RSATA_TXP3 RSATA_TXN3 GND RSATA_RXN3 RSATA_RXP3 GND 4. CPU and Chassis fan connectors (4-pin CPU_FAN, 3-pin CHA_FAN) The fan connectors support cooling fans of a total of 1A~2.2A (26.4W 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. CPU_FAN GND CPU FAN PWR CPU FAN IN CPU FAN PWM CHA_FAN GND +12V Rotation P5GC-MX P5GC-MX Fan Connectors 5. 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. R P5GC-MX Digital Audio Connector SPDIF_OUT The S/PDIF out module is purchased separately. ASUS P5GC-MX +5V SPDIFOUT GND P5GC-MX R 1-27 6. ATX power connectors (24-pin EATXPWR and 4-pin ATX12V) 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. · · Do not forget to connect the 4-pin ATX +12 V power plug; otherwise, the system will not boot. Use of a PSU with a higher power output is recommended when configuring a system with more power-consuming devices. The system may become unstable or may not boot up if the power is inadequate. Make sure that your power supply unit (PSU) can provide at least the minimum power required by your system. 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. 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 : SCSI devices : · 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 (x2) SCSI card and SCSI hard disk drive · · · You must install a PSU with a higher power rating if you intend to install additional devices. ATX12V +12V DC GND EATXPWR Ground +5 Volts +5 Volts +5 Volts -5 Volts Ground Ground Ground PSON# Ground -12 Volts +3 Volts P5GC-MX ATX Power Connector +12V DC +3 Volts GND +12 Volts +12 Volts +5V Standby Power OK Ground +5 Volts Ground +5 Volts Ground +3 Volts +3 Volts P5GC-MX 1-28 R Chapter 1: Product introduction 7. Optical drive audio connector (4-pin CD) This connector allows you to receive stereo audio input from sound sources such as a CD-ROM, TV tuner, or MPEG card. CD (black) Right Audio Channel Ground Ground Left Audio Channel GND USB_P5+ USB_P5USB+5V P5GC-MX P5GC-MX Internal Audio Connector Enable the CD-IN function in the audio utility when using this connector. 8. USB connectors (10-1 pin USB56, USB78) 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. R P5GC-MX USB56 R USB78 1 NC GND USB_P6+ USB_P6USB+5V 1 USB+5V USB_P7USB_P7+ GND P5GC-MX USB 2.

0 Connectors Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard! The USB module is purchased separately. ASUS P5GC-MX USB+5V USB_P8USB_P8+ GND NC 1-29 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. Azalia-compliant pindefinition AGND PRESENSE# MIC2_JD HP_HD Legacy AC'97-compliant pindefinition P5GC-MX AGND NC NC AAFP MIC2_L MIC2_R HP_R Jack_Sense HP_L MIC2_L MIC2_R Line out_R NC Line out_L P5GC-MX 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 highdefinition audio capability. By default, this connector is set to AC97 Audio. If you want to connect a High Definition front panel audio module to this connector, set the Front Panel Support Type item in the BIOS to [HD Audio]. See section "2.4.4 Onboard Device Configuration" for details.

· 10. 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. P5GC-MX R CHASSIS GND Chassis Signal (Default) R P5GC-MX Intrusion Connector 1-30 +5VSB_MB Chapter 1: Product introduction NC 11. System panel connector (20-8 pin F_PANEL) This connector supports several chassis-mounted functions. F_PANEL PWR LED PWR BTN HD LED RESET P5GC-MX GND PWR PLEDPLED+ Reset Ground IDELEDIDELED+ P5GC-MX System Panel Connector · System power LED (2-pin PWRLED) 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 HDLED) This 2-pin connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. @@@@@@@@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.

d. @@e. @@@@To update the BIOS using EZ Flash: 1. 2. 3.
Visit the ASUS website (www.asus.com) to download the latest BIOS file for the motherboard and rename the same to P5GCMX.ROM. Save the BIOS file to a floppy disk, then restart the system.
Press <Alt> + <F2> during POST to display the following. EZFlash starting BIOS update Checking for floppy... 4. Insert the floppy disk that contains the BIOS file to the floppy disk drive. When the correct BIOS file is found, EZ Flash performs the BIOS update process and automatically reboots the system when done. EZFlash starting BIOS update Checking for floppy...

Floppy found! Reading file "P5GCMX.rom". Completed. Start erasing.......
| Start programming...| Flashed successfully. Rebooting.
· · Do not shut down or reset the system while updating the BIOS to prevent system boot failure! @@@@@@@@The succeeding BIOS screens are for reference only. The actual BIOS screen displays may not be same as shown. 1. @@@@@@All rights reserved. Reading flash .
.... done Write to file......

@@@@@@You need to type the exact BIOS filename at the DOS prompt. 2. @@@@All rights reserved. WARNING!! Do not turn off power during flash BIOS Reading file ....
done Reading flash .....
. done Advance Check ....
.. Erasing flash ...... done Writing flash ..

.... @@@@All rights reserved. WARNING!! Do not turn off power during flash BIOS Reading file .....
.. done Reading flash ...
... done Advance Check ..
.... Erasing flash ......

done Writing flash ...... done Verifying flash ....
@@@@@@2. 3. Turn on the system. @@@@Starting BIOS recovery..
. @@@@Starting BIOS recovery... Checking for floppy.
.. Floppy found! Reading file "P5GCMX.ROM". Completed. @@Doing so can cause system boot failure! 4. Restart the system after the utility completes the updating process. 2-6 Chapter 2: BIOS setup Recovering the BIOS from the support CD To recover the BIOS from the support CD: 1. 2. 3.

Remove any floppy disk from the floppy disk drive, then turn on the system. 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 "P5GCMX.ROM". Completed. Start flashing... -- DO NOT shut down or reset the system while updating the BIOS! 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 P5GC-MX 2-7 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. The ASUS Update utility is copied to your system.

Quit all Windows® applications before you update the BIOS using this utility. 2-8 Chapter 2: BIOS setup Updating the BIOS through the Internet To update the BIOS through the Internet: 1.

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http://yourpdfguides.com/dref/2846136

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 P5GC-MX 2-9 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.

2-10 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. @@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 iteam 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 2.2.9 General help Pop-up window Scroll bar At the top right corner of the menu screen is a brief description of the selected item.

ASUS P5GC-MX 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] :[Not :[Not :[Not :[Not :[Not :[Not Detected] Detected] Detected] Detected] Detected] 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:xx] 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) M 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) M [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 P5GC-MX 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] 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] Onboard IDE Operate Mode [Enhanced Mode] Disables or allows selection of the IDE operation mode depending on the operating system (OS) that you installed. Set to Enhanced Mode if you are using native OS, such as Windows® 2000/XP. Configuration options: [Disabled] [Compatible Mode] [Enhanced Mode] 2-16 Chapter 2: BIOS setup Enhanced Mode Support On [S-ATA] The default setting S-ATA allows you to use native OS on Serial ATA and Parallel ATA ports. We 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 did 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 encounter problems, revert to the default setting S-ATA. Configuration options: [S-ATA+P-ATA] [S-ATA] [P-ATA] 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] 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 : 0205 Build Date : 12/29/06 Processor Type Speed Count : Genuine Intel(R) CPU 3.80GHz : 3800MHz :1 System Memory Total : 256MB Appropriated : 8MB Available : 248MB AMI BIOS Displays the auto-detected BIOS information Processor Displays the auto-detected CPU specification System Memory Displays the auto-detected system memory ASUS P5GC-MX 2-17 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. USB Configuration CPU Configuration Chipset Onboard Devices Configuration PCIPnP Configure CPU. Enter F1 F10 ESC Select Screen Select Item Go to Sub-screen General Help Save and Exit Exit 2.4.

1 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-F.

4 USB Devices Enabled: None USB Function Legacy USB Support USB 2.0 Controller USB 2.0 Controller Mode BIOS EHCI Hand-Off [Enabled] [Auto] [Enabled] [HiSpeed] [Disabled] USB Mass Storage Device Configuration The Module Version and USB Devices Enabled items show the auto-detected values. If no USB device is detected, the item shows None. 2-18 Chapter 2: BIOS setup 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: [Enabled] [Disabled] 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: [FullSpeed] [HiSpeed] BIOS EHCI Hand-Off [Disabled] Allows you to enable support for operating systems without an EHCI hand-off feature. Configuration options: [Disabled] [Enabled] USB Mass Storage Device Configuration USB Mass storage Device Configuration USB Mass Storage Reset Delay Device #1 Emulation Type Netac [20 Sec] [Auto] USB Mass Storage Reset Delay [20 Sec] Allows you to set the USB mass storage reset delay time. Configuration options: [10 Sec] [20 Sec] [30 Sec] [40 Sec] Emulation Type [Auto] Allows you to set the emulation type. When this item is set to [Auto], USB devices less than 530MB will be emulated as Floppy remaining as hard drive, and forced FDD option can be used to force a HDD formatted drive to boot as FDD. Configuration options: [Auto] [Floppy] [Forced FDD] [Hard Disk] [CDROM] ASUS P5GC-MX 2-19 2.4.2 CPU Configuration The items in this menu show the CPU-related information that the BIOS automatically detects. Configure advanced CPU settings Manufacturer: Brand String: Frequency : FSB Speed : Cache L1 Cache L2 Cache L3 Intel Genuine Intel(R) CPU 3.80GHz 3800MHz 1085MHz : 16 KB : 2048 KB : 0 KB Min:14) [6] [62] [Enabled] [Disabled] [Disabled] [Auto] [Auto] [Enabled] [Disabled] 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.

Ratio Status: Unlocked (Max:19, Ratio Actual Value : 14 Ratio CMOS Setting: VID CMOS Setting: Microcode Updation Max CPUID Value Limit Execute Disable Function Enhanced C1 Control CPU Internal Thermal Control Hyper Threading Technology Intel(R) SpeedStep(tm) Tech. +F1 F10 ESC +F1 F10 ESC Select Screen Select Item Change Option General Help Save and Exit Select Screen Exit Select Item Change Option General Help Save and Exit Exit Ratio CMOS Setting [6] 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. Microcode Updation [Enabled] Allows you to enable or disable the microcode updation. Configuration options: [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. Configuration options: [Disabled] [Enabled] 2-20 Chapter 2: BIOS setup Enhanced C1 Control [Auto] When set to [Auto], the BIOS will automatically check the CPU's capability to enable the C1E support.

In C1E mode, the CPU power consumption is lower when idle. Configuration options: [Auto] [Disabled] CPU Internal Thermal Control [Auto] Disables or sets the CPU internal thermal control. Configuration options: [Auto] [Disabled] Hyper Threading Technology [Enabled] Allows you to enable or disable the processor Hyper-Threading Technology. Configuration options: [Disabled] [Enabled] The following item appears only when you installed an Intel® Pentium® 4 and later processors that supports the Enhanced Intel SpeedStep® Technology (EIST). Intel(R) SpeedStep Technology [Disabled] Allows you to use the Enhanced Intel SpeedStep® Technology. When set to [Automatic], you can adjust the system power settings in the operating system to use the EIST feature. Set this item to [Maximum] or [Disabled] if you do not want to use the EIST. The CPU constantly operates at a lower internal frequency when you set this item to [Minimum].

Configuration options: [Enabled] [Disabled] 2.4.3 Chipset The Chipset menu allows you to change the advanced chipset settings. Select an item then press <Enter> to display the sub-menu. Advanced Chipset Settings DRAM Frequency Configure DRAM Timing by SPD Hyper Path 3 DRAM Throttling Threshold Boot Graphic Adapter Priority Internal Graphics Mode Select Graphics memory type Boot Display Device TV Connector HDTV Output TV Standard PEG Buffer Length Link Latency PEG Root Control Slot Power High Priority Port Select [Auto] [Enabled] [Auto] [Auto] [PCI Express/Int-VG] [Enabled, 8MB] [Auto] [Auto] [Auto] [Auto] [VBIOS-Default] [Auto] [Auto] [Auto] [Auto] [Disabled] Select Screen Select Item Change Option General Help Save and Exit Exit Select Screen Select Item Change Option General Help Save and Exit Exit +F1 F10 ESC +F1 F10 ESC ASUS P5GC-MX 2-21 DRAM Frequency [Auto] Allows you to set the DDR2 operating frequency. Configuration options: [Auto] [400 Mhz] [533 Mhz] Selecting a very high DRAM frequency may cause the system to become unstable! If this happens, revert to the default setting. Configure DRAM Timing by SPD [Enabled] When this item is enabled, the DRAM timing parameters are set according to the DRAM SPD (Serial Presence Detect). When disabled, you can manually set the DRAM timing parameters through the DRAM sub-items. The following sub-items appear when this item is Disabled. Configuration options: [Disabled] [Enabled] DRAM CAS# Latency [5 Clocks] Controls the latency between the SDRAM read command and the time the data actually becomes available.

Configuration options: [6 Clocks] [5 Clocks] [4 Clocks] [3 Clocks] DRAM RAS# Precharge [4 Clocks] Controls the idle clocks after issuing a precharge command to the DDR SDRAM. Configuration options: [2 Clocks] [3 Clocks] [4 Clocks] [5 Clocks] [6 Clocks] DRAM RAS# to CAS# Delay [4 Clocks] Controls the latency between the DDR SDRAM active command and the read/write command. Configuration options: [2 Clocks] [3 Clocks] [4 Clocks] [5 Clocks] [6 Clocks] DRAM RAS# Activate to Precharge [15 Clocks] Sets the RAS Activate timing to Precharge timing. Configuration options: [4 Clock] [5 Clocks] ~ [18 Clocks] DRAM Write Recovery Time [4 Clocks] Sets the DRAM Write Recover Time. Configuration options: [2 Clocks] [3 Clocks] [4 Clocks] [5 Clocks] [6 Clocks] Hyper Path 3 [Auto] Sets this item to enabled to reduce bottlenecks of memory bandwidth.

Sets it to disabled for safe mode. Configuration options: [Disabled] [Enabled] [Auto] DRAM Throttling Threshold [Auto] Allows you to enable DRAM Thermal Throttling to make your system more stable. Configuration options: [Disabled] [Auto] 2-22 Chapter 2: BIOS setup Boot Graphic Adapter Priority [PCI Express/Int-VGA] Allows selection of the graphics controller to use as primary boot device. Configuration options: [Internal VGA] [PCI Express/Int-VGA] [PCI Express/PCI] [PCI/PCI Express] [PCI/Int-VGA] Internal Graphics Mode Select [Enabled, 8MB] Sets the internal graphics mode. Configuration options: [Disabled] [Enabled, 1MB] [Enabled, 8MB] Graphics memory type [Auto] Sets the graphics memory type.

Configuration options: [Auto] [DVMT] [FIX] [DVMT+FIX] Boot Display Device [Auto] Configuration options: [Auto] [CRT on Port 0] [LFP on Port 2] [LFP on Port 3] [DFP on Port 2] [DFP on Port 3] [TV on Port 2] [TV on Port 3] [CRT-Port 0 & CRT-Port 2] [CRT-Port 0 & CRT-Port 3] [CRT-Port 0 & LFP-Port 2] [CRT-Port 0 & LFP-Port 3] [CRT-Port 0 & DFP-Port 2] [CRT-Port 0 & DFP-Port 3] [DFP-Port 2 & DFP-Port 3] TV Connector [Auto] Configuration options: [Auto] [Composite] [Component] [Composite & Component] [SCART Composite] [SCART Component] [SCART Compos & Compon] [SCART Compos & Compon RGB] [HDTV Serial] [HDTV Component] [HDTV Component RGB] [HDTV PnP HDMI] HDTV Output [Auto] Configuration options: [Auto] [480i60] [480p60] [576i50] [576p50] [720p60] [1080i50] [1080i60] [1080p24] [1080p25] [1080p30] [1080p50] [1080p60] TV Standard [VBIOS-Default] Configuration options: [VBIOS-Default] [NTSC] [PAL] [SECAM] [SMPTE240M] [SMPTE260M] [SMPTE274M] [SMPTE295M] [SMPTE296M] [SMPTE293M] [SMPTE170M] [ITURBT601] PEG Buffer Length [Auto] Sets PCIEX graphics card buffer length. Configuration options: [Auto] [Long] [Short] Link Latency [Auto] Sets link latency. Configuration options: [Auto] [Slow] [Normal] PEG Root Control [Auto] Enables, disables or set to Auto of the link latency. Configuration options: [Auto] [Disabled] [Enabled] ASUS P5GC-MX 2-23 Slot Power [Auto] Sets the slot power. Configuration options: [Auto] [Light] [Normal] [Heavy] [Heavier] High Priority Port Select [Disabled] Selects the high priority port. Configuration options: [Disabled] [PCI Express Port 2] 2.4.4 Onboard Devices Configuration Configure Win627DHG Super IO Chipset HD Audio Controller Front Panel Support Type Onboard PCIEX 10/100Mb LAN LAN Option ROM Serial Port1 Address Parallel Port Address Parallel Port Mode ECP Mode DMA Channel Parallel Port IRQ [Enabled] [AC97] [Enabled] [Disabled] [3F8/IRQ4] [378] [ECP] [DMA3] [IRQ7] HD Audio Controller [Enabled] Enables or disables the Azalia/AC'97 CODEC. Configuration options: [Enabled] [Disabled] Front Panel Support Type [AC97] Allows you to set the front panel audio connector (AAFP) mode to legacy AC'97 or high-definition audio depending on the audio standard that the front panel audio module supports. Configuration options: [AC97][HD Audio] Onboard PCIEX 10/100Mb LAN [Enabled] Allows you to enable or disable the onboard PCIEX 10/100Mb LAN controller.

Configuration options: [Enabled] [Disabled] LAN Option ROM [Disabled] Allows you to enable or disable the option ROM in the onboard LAN controller. This item appears only when the Onboard LAN item is set to Enabled. Configuration options: [Disabled] [Enabled] 2-24 Chapter 2: BIOS setup Serial Port1 Address [3F8/IRQ4] Allows you to select the Serial Port1 base address. Configuration options: [Disabled] [3F8/IRQ4] [2F8/IRQ3] [3E8/IRQ4] [2E8/IRQ3] Parallel Port Address [378] Allows you to select the Parallel Port base addresses.