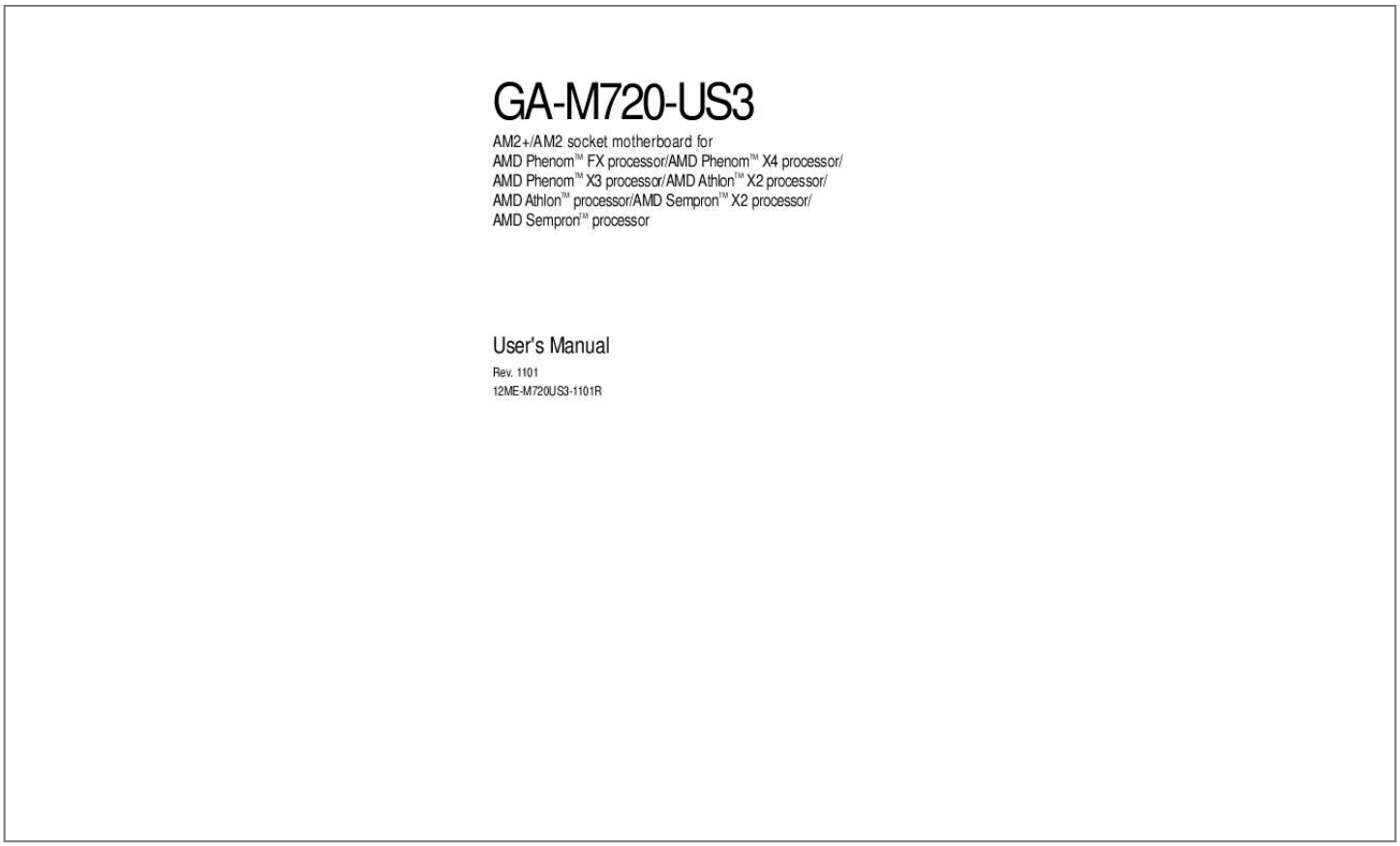

GA-M720-US3

AM2+/AM2 socket motherboard for
AMD Phenom™ FX processor/AMD Phenom™ X4 processor/
AMD Phenom™ X3 processor/AMD Athlon™ X2 processor/
AMD Athlon™ processor/AMD Sempron™ X2 processor/
AMD Sempron™ processor

User's Manual

Rev. 1101
12ME-M720US3-1101R

Manual abstract:

8, 2008 Copyright © 2009 GIGA-BYTE TECHNOLOGY CO., LTD. All rights reserved. @@@@No part of this manual may be reproduced, copied, translated, transmitted, or published in any form or by any means without GIGABYTE's prior written permission. Documentation Classifications In order to assist in the use of this product, GIGABYTE provides the following types of documentations: For quick set-up of the product, read the Quick Installation Guide included with the product. For detailed product information, carefully read the User's Manual. For instructions on how to use GIGABYTE's unique features, read or download the information on/from the Support\Motherboard\Technology Guide page on our website. For product-related information, check on our website at: http://www.gigabyte.com.

tw Identifying Your Motherboard Revision The revision number on your motherboard looks like this: "REV: X.X." For example, "REV: 1.0" means the revision of the motherboard is 1.0.

Check your motherboard revision before updating motherboard BIOS, drivers, or when looking for technical information. Example: Table of Contents Box Contents ....

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88 -5- Box Contents GA-M720-US3 motherboard Motherboard driver disk User's Manual Quick Installation Guide One IDE cable Two SATA 3Gb/s cables I/O Shield · The box contents above are for reference only and the actual items shall depend on product package you obtain. The box contents are subject to change without notice. · The motherboard image is for reference only. Optional Items Floppy disk drive cable (Part No. 12CF1-1FD001-7*R) 2-port USB 2. 0 bracket (Part No. 12CR1-1UB030-5*R) 2-port IEEE 1394a bracket (Part No. 12CF1-1IE008-0*R) 2-port SATA power cable (Part No. 12CF1-2SERPW-0*R) COM port cable (Part No. 12CF1-1CM001-3*R) -6- GA-M720-US3 Motherboard Layout KB_MS RCA_SPDIF R_USB Socket AM2 PWR_FAN USB_1394_1 USB_1394_2 ATX_12V USB_LAN AUDIO F_AUDIO PCIEX1_1 DDR2_2 DDR2_1 DDR2_3 DDR2_4 NVIDIA ® PCIEX1_2 RTL8111C PCIEX16 nForce 8200 SATA2_5 SATA2_4 GA-M720-US3 SATA2_2 SATA2_1 SATA2_0 SATA2_3 CODEC SPDIF_O CD_IN PCI1 PCI2 SYS_FAN1 F_USB1 IT8720 PCI4 F1_1394 SYS_FAN2 M_BIOS B_BIOS COM FDD CI PWR_LED -7- F_USB2 TSB43AB23 F_PANEL CLR_CMOS PCI3

IDE BATTERY ATX CPU_FAN Block Diagram PCIe CLK (100 MHz) CPU CLK+/-(200 MHz) DDR2 1200(Note)/1066/800 MHz Dual Channel Memory 1 PCI Express x16 PCI Express x16 Hyper Transport 3.0 AMD Socket AM2+/AM2 CPU PCI Express x1 Bus x1 PCIe CLK (100 MHz) 2 PCI Express x1 LAN RJ45 Realtek 8111C Dual BIOS IT8720 Floppy COM Port CODEC 3 IEEE 1394a 4 PCI Surround Speaker Out Center/Subwoofer Speaker Out Side Speaker Out MIC Line-Out Line-In SPDIF Out x1 NVIDIA® nForce 8200 12 USB Ports 6 SATA 3Gb/s ATA-133/100/66/33 IDE Channel PCI Bus TSB43AB23 LPC BUS PS/2 KB PCI CLK (33 MHz) (Note) Whether 1200 MHz memory speed is supported depends on the CPU being used. -8- Chapter 1 Hardware Installation 1-1 Installation Precautions The motherboard contains numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Prior to installation, carefully read the user's manual and follow these procedures: · Prior to installation, do not remove or break motherboard S/N (Serial Number) sticker or warranty sticker provided by your dealer. These stickers are required for warranty validation. · Always remove the AC power by unplugging the power cord from the power outlet before · · · installing or removing the motherboard or other hardware components.

When connecting hardware components to the internal connectors on the motherboard, make sure they are connected tightly and securely. When handling the motherboard, avoid touching any metal leads or connectors. It is best to wear an electrostatic discharge (ESD) wrist strap when handling electronic components such as a motherboard, CPU or memory. If you do not have an ESD wrist strap, keep your hands dry and first touch a metal object to eliminate static electricity. Prior to installing the motherboard, please have it on top of an antistatic pad or within an electrostatic shielding container. Before unplugging the power supply cable from the motherboard, make sure the power supply has been turned off. Before turning on the power, make sure the power supply voltage has been set according to the local voltage standard. Before using the product, please verify that all cables and power connectors of your hardware components are connected. To prevent damage to the motherboard, do not allow screws to come in contact with the motherboard circuit or its components. Make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
Do not place the computer system on an uneven surface. Do not place the computer system in a high-temperature environment. Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.

If you are uncertain about any installation steps or have a problem related to the use of the product, please consult a certified computer technician. · · · · · · · · · · -9- Hardware Installation 1-2 CPU Product Specifications Support for Socket AM2+/AM2 processors: AMD PhenomTM FX processor/AMD Phenom TM X4 processor/ AMD PhenomTM X3 processor/AMD Athlon TM X2 processor/ AMD Ath the power outlet before installing the CPU to prevent hardware damage.

· Locate the pin one of the CPU. The CPU cannot be inserted if oriented incorrectly. · Apply an even and thin layer of thermal grease on the surface of the CPU. · Do not turn on the computer if the CPU cooler is not installed, otherwise overheating and damage of the CPU may occur. · Set the CPU host frequency in accordance with the CPU specifications.

It is not recommended that the system bus frequency be set beyond hardware specifications since it does not meet the standard requirements for the peripherals. If you wish to set the frequency beyond the standard specifications, please do so according to your hardware specifications including the CPU, graphics card, memory, hard drive, etc. 1-3-1 Installing the CPU A. Locate the pin one (denoted by a small triangle) of the CPU socket and the CPU. A Small Triangle Mark Denotes Pin One of the Socket AM2 Socket A Small Triangle Marking Denotes CPU Pin One AM2+/AM2 CPU GA-M720-US3 Motherboard - 12 - B. Follow the steps below to correctly install the CPU into the motherboard CPU socket. Before installing the CPU, make sure to turn off the computer and unplug the power cord from the power outlet to prevent damage to the CPU. CPU Socket Locking Lever Step 1: Completely lift up the CPU socket locking lever. Step 2: Align the CPU pin one (small triangle marking) with the triangle mark on the CPU socket and gently insert the CPU into the socket. Make sure that the CPU pins fit perfectly into their holes.

Once the CPU is positioned into its socket, place one finger down on the middle of the CPU, lowering the locking lever and latching it into the fully locked position. Do not force the CPU into the CPU socket. The CPU cannot fit in if oriented incorrectly. Adjust the CPU orientation if this occurs. - 13 - Hardware Installation 1-3-2 Installing the CPU Cooler Follow the steps below to correctly install the CPU cooler on the CPU. (The following procedure uses the GIGABYTE cooler as the example.) Step 1: Apply an even and thin layer of thermal grease on the surface of the installed CPU. Step 2: Place the CPU cooler on the CPU. Step 3: Hook the CPU cooler clip to the mounting lug on one side of the retention frame. On the other side, push straight down on the the CPU cooler clip to hook it to the mounting lug on the retention frame.

Step 4: Turn the cam handle from the left side to the right side (as the picture above shows) to lock into place. (Refer to your CPU cooler installation manual for instructions on installing the cooler.) Step 5: Finally, attach the power connector of the CPU cooler to the CPU fan header (CPU_FAN) on the motherboard. Use extreme care when removing the CPU cooler because the thermal grease/tape between the CPU cooler and CPU may adhere to the CPU. Inadequately removing the CPU cooler may damage the CPU.

GA-M720-US3 Motherboard - 14 - 1-4 Installing the Memory Read the following guidelines before you begin to install the memory: · Make sure that the motherboard supports the memory. It is recommended that memory of the same capacity, brand, speed, and chips be used. (Go to GIGABYTE's website for the latest memory support list.) · Always turn off the computer and unplug the power cord from the power outlet before installing the memory to prevent hardware damage. · Memory modules have a foolproof design.

A memory module can be installed in only one direction. If you are unable to insert the memory, switch the direction. 1-4-1 Dual Channel Memory Configuration This motherboard provides four DDR2 memory sockets and supports Dual Channel Technology. After the memory is installed, the BIOS will automatically detect the specifications and capacity of the memory. Enabling Dual Channel memory mode will double the original memory bandwidth. The four DDR2 memory sockets are divided into two channels and each channel has two memory sockets as following: Channel 0: DDR2_1, DDR2_3 Channel 1: DDR2_2, DDR2_4 Dual Channel Memory Configurations Table DDR2_1 Two Modules Four Modules DS/SS -DS/SS DDR2_2 DDR2_3 DDR2_4 DS/SS -DS/SS -DS/SS DS/SS -DS/SS DS/SS (SS=Single-Sided, DS=Double-Sided, "- -"=No Memory) If two memory modules are to be installed, it is recommended that you install them in the DDR2_1 and DDR2_2 sockets. DDR2_1 DDR2_2 DDR2_3 DDR2_4 Due to CPU limitation, read the following guidelines before installing the memory in Dual Channel mode. 1. Dual Channel mode cannot be enabled if only one DDR2 memory module is installed. 2.

When enabling Dual Channel mode with two or four memory modules, it is recommended that memory of the same capacity, brand, speed, and chips be used and installed in the same colored DDR2 sockets for optimum performance. - 15 - Hardware Installation 1-4-2 Installing a Memory Before installing a memory module , make sure to turn off the computer and unplug the power cord from the power outlet to prevent damage to the memory module. DDR2 DIMMs are not compatible to DDR DIMMs. Be sure to install DDR2 DIMMs on this motherboard. Notch DDR2 DIMM A DDR2 memory module has a notch, so it can only fit in one direction. Follow the steps below to correctly install your memory modules in the memory sockets. Step 1: Note the orientation of the memory module. Spread the retaining clips at both ends of the memory socket. Place the memory module on the socket. As indicated in the picture on the left, place your fingers on the top edge of the memory, push down on the memory and insert it vertically into the memory socket.

Step 2: The clips at both ends of the socket will snap into place when the memory module is securely inserted. GA-M720-US3 Motherboard - 16 - 1-5 Installing an Expansion Card Read the following guidelines before you begin to install an expansion card: · Make sure the motherboard supports the expansion card. Carefully read the manual that came with your expansion card. · Always turn off the computer and unplug the power cord from the power outlet before installing an expansion card to prevent hardware damage. PCI Express x1 Slot PCI Express x16 Slot PCI Slot Follow the steps below to correctly install your expansion card in the expansion slot.

1. Locate an expansion slot that supports your card. Remove the metal slot cover from the chassis back panel. 2. Align the card with the slot, and press down on the card until it is fully seated in the slot.

3. Make sure the metal contacts on the card are completely inserted into the slot. 4. Secure the card's metal bracket to the chassis back panel with a screw. 5. After installing all expansion cards, replace the chassis cover(s). 6. Turn on your computer. If necessary, go to BIOS Setup to make any required BIOS changes for your expansion card(s). 7.

Install the driver provided with the expansion card in your operating system. Example: Installing and Removing a PCI Express x16 Graphics Card: · Installing a Graphics Card: Gently push down on the top edge of the card until it is fully inserted into the PCIEX16 slot. Make sure the card is securely seated in the slot and does not rock. · Removing the Card: Gently push back on the lever on the slot and then lift the card straight out from the slot. - 17 - Hardware Installation 1-6 Back Panel Connectors PS/2 Keyboard and PS/2 Mouse Port Use the upper port (green) to connect a PS/2 mouse and the lower port (purple) to connect a PS/2 keyboard. Optical S/PDIF Out Connector This connector provides digital audio out to an external audio system that supports digital optical audio. Before using this feature, ensure that your audio system provides an optical digital audio in connector. Coaxial S/PDIF Out Connector This connector provides digital audio out to an external audio system that supports digital coaxial audio. Before using this feature, ensure that your audio system provides a coaxial digital audio in connector. USB 2.
0/1.1 Port The USB port supports the USB 2.0/1.1 specification. Use this port for USB devices such as an USB keyboard/mouse, USB printer, USB flash drive and etc.
IEEE 1394a Port The IEEE 1394 port supports the IEEE 1394a specification, featuring high speed, high bandwidth and hotplug capabilities. Use this port for an IEEE 1394a device. RJ-45 LAN Port The Gigabit Ethernet LAN port provides Internet connection at up to 1 Gbps data rate. The following describes the states of the LAN port LEDs. Connection/ Speed LED Activity LED Connection/Speed LED: State Description Orange 1 Gbps data rate Green Off 100 Mbps data rate 10 Mbps data rate Activity LED: State Blinking Off Description Data transmission or receiving is occurring No data transmission or receiving is occurring LAN Port · When removing the cable connected to a back panel connector, first remove the cable from your device and then remove it from the motherboard.
· When removing the cable, pull it straight out from the connector. Do not rock it side to side to prevent an electrical short inside the cable connector. GA-M720-US3 Motherboard - 18 - Center/Subwoofer Speaker Out Jack (Orange) Use this audio jack to connect center/subwoofer speakers in a 5.1/7.1-channel audio configuration. Rear Speaker Out Jack (Black) Use this audio jack to connect rear speakers in a 4/5.1/7.1-channel audio configuration. Side Speaker Out Jack (Gray) Use this audio jack to connect side speakers in a 7.1-channel audio configuration.

Line In Jack (Blue) The default line in jack. Use this audio jack for line in devices such as an optical drive, walkman, etc. Line Out Jack (Green) The default line out jack. Use this audio jack for a headphone or 2-channel speaker. This jack can be used to connect front speakers in a 4/5.1/7.1-channel audio configuration. Mic In Jack (Pink) The default Mic in jack. Microphones must be connected to this jack. In addition to the default speakers settings, the ~ audio jacks can be reconfigured to perform different functions via the audio software.
Only microphones still MUST be connected to the default Mic in jack ( ). Refer to the instructions on setting up a 2/4/5.1/ 7.1-channel audio configuration in Chapter 5, "Configuring 2/4/5.1/7.
1-Channel Audio." - 19 - Hardware Installation 1-7 Internal Connectors 13 5 2 12 8 7 14 13 10 15 4 19 17 6 18 16 9 11 1) 2) 3) 4) 5) 6) 7) 8) 9) 10) ATX_12V ATX CPU_FAN SYS_FAN1/SYS_FAN2 PWR_FAN FDD IDE SATA2_0 / 1 / 2 / 3 / 4 / 5 PWR_LED BATTERY 11) 12) 13) 14) 15) 16) 17) 18) 19) F_PANEL F_AUDIO CD_IN SPDIF_O F_USB1 / F_USB2 F1_1394 COM CI CLR_CMOS Read the following guidelines before connecting external devices: · First make sure your devices are compliant with the connectors you wish to connect. · Before installing the devices, be sure to turn off the devices and your computer. Unplug the power cord from the power outlet to prevent damage to the devices. · After installing the device and before turning on the computer, make sure the device cable has been securely attached to the connector on the motherboard.
GA-M720-US3 Motherboard - 20 - 1/2) ATX_12V/ATX (2x2 12V Power Connector and 2x12 Main Power Connector) With the use of the power connector, the power supply can supply enough stable power to all the components on the motherboard. Before connecting the power connector, first make sure the power supply is turned off and all devices are properly installed. The power connector possesses a foolproof design. Connect the power supply cable to the power connector in the correct orientation. The 12V power connector mainly supplies power to the CPU. If the 12V power connector is not connected, the computer will not start. · To meet expansion requirements, it is recommended that a power supply that can withstand high power consumption be used (500W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable or unbootable system. · The main power connector is compatible with power supplies with 2x10 power connectors. When using a 2x12 power supply, remove the protective cover from the main power connector on the motherboard.

Do not insert the power supply cable into pins under the protective cover when using a 2x10 power supply. ATX_12V: Pin No. 3 1 ATX_12V 4 2 Definition GND GND +12V +12V 1 2 3 4 ATX: 13 1 Pin No. 1 2 3 4 5 6 7 8 9 10 11 Definition 3.3V 3.3V GND +5V GND +5V GND Power Good 5V SB(stand by +5V) +12V +12V (Only for 2x12-pinATX) 3.3V (Only for 2x12-pinATX) Pin No. 13 14 15 16 17 18 19 20 21 22 23 24 Definition 3.3V -12V GND PS_ON(soft On/Off) GND GND GND -5V +5V +5V +5V (Only for 2x12-pin ATX) GND (Only for 2x12-pin ATX) 24 12 12 ATX - 21 - Hardware Installation 3/4/5) CPU_FAN/SYS_FAN1/SYS_FAN2/PWR_FAN (Fan Headers) The motherboard has a 4-pin CPU fan header (CPU_FAN), a 3-pin (SYS_FAN2) and a 4-pin (SYS_FAN1) system fan headers, and a 3-pin power fan header (PWR_FAN). Most fan headers possess a foolproof insertion design.
When connecting a fan cable, be sure to connect it in the correct orientation (the black connector wire is the ground wire). The motherboard supports CPU fan speed control, which requires the use of a CPU fan with fan speed control design. For optimum heat dissipation, it is recommended that a system fan be installed inside the chassis. CPU_FAN: 1 Pin No.

1 2 3 4 SYS_FAN1: Definition GND +12V / Speed Control Sense Speed Control Definition GND +12V / Speed Control Sense Reserve Definition GND +12V Sense CPU_FAN 1 SYS_FAN1 Pin No.

1 2 3 4 1 1 PWR_FAN SYS_FAN2 SYS_FAN2/PWR_FAN: Pin No. 1 2 3 · Be sure to connect fan cables to the fan headers to prevent your CPU and system from overheating. Overheating may result in damage to the CPU or the system may hang. · These fan headers are not configuration jumper blocks. Do not place a jumper cap on the headers.

6) FDD (Floppy Disk Drive Connector) This connector is used to connect a floppy disk drive. The types of floppy disk drives supported are: 360 KB, 720 KB, 1.2 MB, 1.44 MB, and 2.88 MB. Before connecting a floppy disk drive, be sure to locate pin 1 of the connector and the floppy disk drive cable. The pin 1 of the cable is typically designated by a stripe of different color. 33 1 34 2 GA-M720-US3 Motherboard - 22 - 7) IDE (IDE Connector) The IDE connector supports up to two IDE devices such as hard drives and optical drives. Before attaching the IDE cable, locate the foolproof groove on the connector. If you wish to connect two IDE devices, remember to set the jumpers and the cabling according to the role of the IDE devices (for example, master or slave).

(For information about configuring master/slave settings for the IDE devices, read the instructions from the device manufacturers.) 40 39 2 1 8) SATA2_0/1/2/3/4/5 (SATA 3Gb/s Connectors) The SATA connectors conform to SATA 3Gb/s standard and are compatible with SATA 1.5Gb/s standard. Each SATA connector supports a single SATA device. The NVIDIA ® nForce 8200 controller supports RAID 0, RAID 1, RAID 5, RAID 10 and JBOD. Refer to Chapter 5, "Configuring SATA Hard Drive(s)," for instructions on configuring a RAID array. Pin No. 1 SATA2_2 1 SATA2_1 1 SATA2_0 1 71 71 SATA2_3 7 71 SATA2_4 7 SATA2_5 7 Definition GND TXP TXN GND RXN RXP GND 2 3 4 5 6 7 · · · · Please connect the L-shaped end of the SATA 3Gb/s cable to your SATA hard drive. Due to a chipset limitation, the SATA2_4/SATA2_5 connectors only support AHCI/RAID mode. A RAID 0 or RAID 1 configuration requires at least two hard drives.

If more than two hard drives are to be used, the total number of hard drives must be an even number. A RAID 5 configuration requires at least three hard drives. (The total number of hard drives does not have to be an even number.) A RAID 10 configuration requires at least four hard drives and the total number of hard drives must be an even number. - 23 Hardware Installation 9) PWR_LED (System Power LED Header) This header can be used to connect a system power LED on the chassis to indicate system power status.

The LED is on when the system is operating. The LED keeps blinking when the system is in S1 sleep state. The LED is off when the system is in S3/S4 sleep state or powered off (S5). Pin No. 1 2 1 Definition MPD+ MPDMPD- 3 System Status LED S0 S1 S3/S4/S5 On Blinking Off 10) BATTERY The battery provides power to keep the values (such as BIOS configurations, date, and time information) in the CMOS when the computer is turned off.

Replace the battery when the battery voltage drops to a low level, or the CMOS values may not be accurate or may be lost. You may clear the CMOS values by removing the battery: 1. Turn off your computer and unplug the power cord. 2. Gently remove the battery from the battery holder and wait for one minute. (Or use a metal object like a screwdriver to touch the positive and negative terminals of the battery holder, making them short for 5 seconds.) 3. Replace the battery. 4. Plug in the power cord and restart your computer.

· Always turn off your computer and unplug the power cord before replacing the battery. · Replace the battery with an equivalent one. Danger of explosion if the battery is replaced with an incorrect model. · Contact the place of purchase or local dealer if you are not able to replace the battery by yourself or uncertain about the battery model. · When installing the battery, note the orientation of the positive side (+) and the negative side (-) of the battery (the positive side should face up). · Used batteries must be handled in accordance with local environmental regulations. GA-M720-US3 Motherboard - 24 - 11) F_PANEL (Front Panel Header) Connect the power switch, reset switch, speaker and system status indicator on the chassis front panel to this header according to the pin assignments below. Note the positive and negative pins before connecting the cables. Message/Power/ Sleep LED Power Switch Speaker MSG+ MSGPW+ PW- SPEAK+ 2 1 RES+ NC HD- SPEAK- 20 19 HD+ Hard Drive Activity LED · MSG (Message/Power/Sleep LED, Yellow): Connects to the power status indicator on the chassis front panel. The System Status LED LED is on when the system is operating.

The LED keeps blinking when S0 On S1 Blinking the system is in S1 sleep state. The LED is off when the system is in S3/S4/S5 Off S3/S4 sleep state or powered off (S5). · PW (Power Switch, Red): Connects to the power switch on the chassis front panel. You may configure the way to turn off your system using the power switch (refer to Chapter 2, "BIOS Setup," "Power Management Setup," for more information). · SPEAK (Speaker, Orange): Connects to the speaker on the chassis front panel.

The system reports system startup status by issuing a beep code. One single short beep will be heard if no problem is detected at system startup. If a problem is detected, the BIOS may issue beeps in different patterns to indicate the problem. Refer to Chapter 5, "Troubleshooting," for information about beep codes. · HD (Hard Drive Activity LED, Blue) Connects to the hard drive activity LED on the chassis front panel.

The LED is on when the hard drive is reading or writing data. · RES (Reset Switch, Green): Connects to the reset switch on the chassis front panel. Press the reset switch to restart the computer if the computer freezes and fails to perform a normal restart. · NC (Purple): No connection The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED, speaker and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly. - 25 Hardware Installation RES- Reset Switch 12) F_AUDIO (Front Panel Audio Header) The front panel audio header supports Intel High Definition audio (HD) and AC'97 audio. You may connect your chassis front panel audio module to this header. Make sure the wire assignments of the module connector match the pin assignments of the motherboard header. Incorrect connection between the module connector and the motherboard header will make the device unable to work or even damage it.

For HD Front Panel Audio: Pin No. Definition 1 2 1 10 9 For AC'97 Front Panel Audio: Pin No. Definition 1 2 3 4 5 6 7 8 9 10 MIC GND MIC Power NC Line Out (R) NC NC No Pin Line Out (L) NC MIC2_L GND MIC2_R -ACZ_DET LINE2_R GND FAUDIO_JD No Pin LINE2_L GND 2 3 4 5 6 7 8 9 10 · The front panel audio header supports HD audio by default. If your chassis provides an AC'97 front panel audio module, refer to the instructions on how to activate AC'97 functioninality via the audio software in Chapter 5, "Configuring 2/4/5.1/7.1-Channel Audio." · Audio signals will be present on both of the front and back panel audio connections simultaneously. If you want to mute the back panel audio (only supported when using an HD front panel audio module), refer to Chapter 5, "Configuring 2/4/5.1/7.1-Channel Audio.

" · Some chassis provide a front panel audio module that has separated connectors on each wire instead of a single plug. For information about connecting the front panel audio module that has different wire assignments, please contact the chassis manufacturer. 13) CD_IN (CD In Connector) You may connect the audio cable that came with your optical drive to the header. Pin No. 1 1 Definition CD-L GND GND CD-R 2 3 4 GA-M720-US3 Motherboard - 26 - 14) SPDIF_O (S/PDIF Out Header) This header supports digital S/PDIF out and connects a S/PDIF digital audio cable (provided by expansion cards) for digital audio output from your motherboard to certain expansion cards like graphics cards and sound cards.

For example, some graphics cards may require you to use a S/PDIF digital audio cable for digital audio output from your motherboard to your graphics card if you wish to connect an HDMI display to the graphics card and have digital audio output from the HDMI display at the same time. For information about connecting the S/PDIF digital audio cable, carefully read the manual for your expansion card. Pin No. 1 Definition SPDIFO GND 1 2 15) F_USB1/F_USB2 (USB Headers) The headers conform to USB 2.0/1.

1 specification. Each USB header can provide two USB ports via an optional USB bracket. For purchasing the optional USB bracket, please contact the local dealer. Pin No. 1 10 2 9 1 Definition Power (5V) Power (5V) USB DXUSB DYUSB DX+ USB DY+ GND GND No Pin NC 2 3 4 5 6 7 8 9 10 · Do not plug the IEEE 1394 bracket (2x5-pin) cable into the USB header. · Prior to installing the USB bracket, be sure to turn off your computer and unplug the power cord from the power outlet to prevent damage to the USB bracket. - 27 - Hardware Installation 16) F1_1394 (IEEE 1394a Header) The header conforms to IEEE 1394a specification. The IEEE 1394a header can provide one IEEE 1394a port via an optional IEEE 1394a bracket. For purchasing the optional IEEE 1394a bracket, please contact the local dealer. Pin No.

1 2 3 4 10 2 Definition TPA+ TPAGND GND TPB+ TPBPower (12V) Power (12V) No Pin GND 9 1 5 6 7 8 9 10 · Do not plug the USB bracket cable into the IEEE 1394a header. · Prior to installing the IEEE 1394a bracket, be sure to turn off your computer and unplug the power cord from the power outlet to prevent damage to the IEEE 1394a bracket. · To connect an IEEE 1394a device, attach one end of the device cable to your computer and then attach the other end of the cable to the IEEE 1394a device. Ensure that the cable is securely connected. 17) COM (Serial Port Header) The COM header can provide one serial port via an optional COM port cable. For purchasing the optional COM port cable, please contact the local dealer. Pin No. 1 9 1 Definition NDCD NSIN NSOUT NDTR GND NDSR NRTS NCTS NRI No Pin 2 3 4 5 6 7 8 9 10 10 2 GA-M720-US3 Motherboard - 28 - 18) CI (Chassis Intrusion Header) This motherboard provides a chassis detection feature that detects if the chassis cover has been removed. This function requires a chassis with chassis intrusion detection design. Pin No.

1 Definition Signal GND 1 2 19) CLR_CMOS (Clearing CMOS Jumper) Use this jumper to clear the CMOS values (e.g. date information and BIOS configurations) and reset the CMOS values to factory defaults. To clear the CMOS values, place a jumper cap on the two pins to temporarily short the two pins or use a metal object like a screwdriver to touch the two pins for a few seconds. Open: Normal Short: Clear CMOS Values · Always turn off your computer and unplug the power cord from the power outlet before clearing the CMOS values.

· After clearing the CMOS values and before turning on your computer, be sure to remove the jumper cap from the jumper. Failure to do so may cause damage to the motherboard. · After system restart, go to BIOS Setup to load factory defaults (select Load Optimized Defaults) or manually configure the BIOS settings (refer to Chapter 2, "BIOS Setup," for BIOS configurations). - 29 Hardware Installation GA-M720-US3 Motherboard - 30 - Chapter 2 BIOS Setup BIOS (Basic Input and Output System) records hardware parameters of the system in the CMOS on the motherboard. Its major functions include conducting the Power-On Self-Test (POST) during system startup, saving system parameters and loading operating system, etc.

BIOS includes a BIOS Setup program that allows the user to modify basic system configuration settings or to activate certain system features. When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS to keep the configuration values in the CMOS. To access the BIOS Setup program, press the <Delete> key during the POST when the power is turned on. To see more advanced BIOS Setup menu options, you can press <Ctrl> + <F1> in the main menu of the BIOS Setup program. To upgrade the BIOS, use either the GIGABYTE Q-Flash or @BIOS utility. · Q-Flash allows the user to quickly and easily upgrade or back up BIOS without entering the operating system. · @BIOS is a Windows-based utility that searches and downloads the latest version of BIOS from the Internet and updates the BIOS. For instructions on using the Q-Flash and @BIOS utilities, refer to Chapter 4, "BIOS Update Utilities." · Because BIOS flashing is potentially risky, if you do not encounter problems using the current version of BIOS, it is recommended that you not flash the BIOS. To flash the BIOS, do it with caution.

Inadequate BIOS flashing may result in system malfunction. · BIOS will emit a beep code during the POST. Refer to Chapter 5, "Troubleshooting," for the beep codes description. · It is recommended that you not alter the default settings (unless you need to) to prevent system instability or other unexpected results. Inadequately altering the settings may result in system's failure to boot. If this occurs, try to clear the CMOS values and reset the board to default values.

(Refer to the "Load Optimized Defaults" section in this chapter or introductions of the battery/clearing CMOS jumper in Chapter 1 for how to clear the CMOS values.) - 31 - BIOS Setup 2-1 Startup Screen The following screens may appear when the computer boots. A. The LOGO Screen (Default) Function Keys B.

The POST Screen Award Modular BIOS v6.00PG, An Energy Star Ally Copyright (C) 1984-2008, Award Software, Inc. M720-US3 F1ec . . . . <DEL>: BIOS Setup <F9>: XpressRecovery2 <F12>: Boot Menu <End>: Qflash 12/26/2008-NF-MCP78-6A610G06C-00 Motherboard Model BIOS Version Function Keys Function Keys: <TAB>: POST SCREEN Press the <Tab> key to show the BIOS POST screen. To show the BIOS POST screen at system startup, refer to the instructions on the Full Screen LOGO Show item on page 42. <DEL>: BIOS SETUP\Q-FLASH Press the <Delete> key to enter BIOS Setup. <F9>: XPRESS RECOVERY2 If you have ever entered Xpress Recovery2 to back up hard drive data using the motherboard driver disk, the <F9> key can be used for subsequent access to XpressRecovery2 during the POST.

For more information, refer to Chapter 4, "Xpress Recovery2." <F12>: BOOT MENU Boot Menu allows you to set the first boot device without entering BIOS Setup. In Boot Menu, use the up arrow key < > or the down arrow key< > to select the first boot device, then press <Enter> to accept. To exit Boot Menu, press <Esc>. The system will directly boot from the device configured in Boot Menu. Note: The setting in Boot Menu is effective for one time only. After system restart, the device boot order will still be based on BIOS Setup settings. You can access Boot Menu again to change the first boot device setting as needed. <End>: Q-FLASH Press the <End> key to access the Q-Flash utility directly without having to enter BIOS Setup first. GA-M720-US3 Motherboard - 32 - 2-2 The Main Menu Once you enter the BIOS Setup program, the Main Menu (as shown below) appears on the screen.

Use arrow keys to move among the items and press <Enter> to accept or enter a sub-menu. (Sample BIOS Version: F1ec) CMOS Setup Utility-Copyright (C) 1984-2008 Award Software MB Intelligent Tweaker(M.I.T.) Standard CMOS Features Advanced BIOS Features Integrated Peripherals Power Management Setup PnP/PCI Configurations PC Health Status : Select Item F10: Save & Exit Setup Change CPU's Clock & Voltage F11: Save CMOS to BIOS F12: Load CMOS from BIOS Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password Set User Password Save & Exit Setup Exit Without Saving ESC: Quit F8: Q-Flash BIOS Setup Program Function Keys < >< >< <Enter> <Esc> >< > Move the selection bar to select an item Execute command or enter the submenu Main Menu: Exit the BIOS Setup program Submenus: Exit current submenu Increase the numeric value or make changes Decrease the numeric value or make changes Show descriptions of the function keys Move cursor to the Item Help block on the right (submenus only) Restore the previous BIOS settings for the current submenus Load the Fail-Safe BIOS default settings for the current submenus Load the Optimized BIOS default settings for the current submenus Access the Q-Flash utility Display system information Save all the changes and exit the BIOS Setup program Save CMOS to BIOS Load CMOS from BIOS <Page Up> <Page Down> <F1> <F2> <F5> <F6> <F7> <F8> <F9> <F10> <F11> <F12> Main Menu Help The onscreen description of a highlighted setup option is displayed on the bottom line of the Main Menu. Submenu Help While in a submenu, press <F1> to display a help screen (General Help) of function keys available for the menu. Press <Esc> to exit the help screen. Help for each item is in the Item Help block on the right side of the submenu. · If you do not find the settings you want in the Main Menu or a submenu, press <Ctrl>+<F1> to access more advanced options. · When the system is not stable as usual, select the Load Optimized Defaults item to set your system to its defaults.

· The BIOS Setup menus described in this chapter are for reference only and may differ by BIOS version. - 33 BIOS Setup The Functions of the <F11> and <F12> keys (For the Main Menu Only) F11 : Save CMOS to BIOS This function allows you to save the current BIOS settings to a profile. You can create up to 8 profiles (Profile 1-8) and name each profile. First enter the profile name (to erase the default profile name, use the SPACE key) and then press <Enter> to complete. F12 : Load CMOS from BIOS If your system becomes unstable and you have loaded the BIOS default settings, you can use this function to load the BIOS settings from a profile created before, without the hassles of reconfiguring the BIOS settings.

First select the profile you wish to load, then press <Enter> to complete. MB Intelligent Tweaker(M.I.T.) Use this menu to configure the clock, frequency and voltages of your CPU, memory, etc.

Standard CMOS Features Use this menu to configure the system time and date, hard drive types, floppy disk drive types, and the type of errors that stop the system boot, etc. Advanced BIOS Features Use this menu to configure the device boot order, advanced features available on the CPU, and the primary display adapter. Integrated Peripherals Use this menu to configure all peripheral devices, such as IDE, SATA, USB, integrated audio, and integrated LAN, etc. Power Management Setup Use this menu to configure all the power-saving functions. PnP/PCI Configurations Use this menu to configure the system's PCI & PnP resources. PC Health Status Use this menu to see information about autodetected system/CPU temperature, system voltage and fan speed, etc. Load Fail-Safe Defaults Fail-Safe defaults are factory settings for the most stable, minimal-performance system operations. Load Optimized Defaults Optimized defaults are factory settings for optimal-performance system operations. Set Supervisor Password Change, set, or disable password. It allows you to restrict access to the system and BIOS Setup.

A supervisor password allows you to make changes in BIOS Setup. Set User Password Change, set, or disable password. It allows you to restrict access to the system and BIOS Setup. An user password only allows you to view the BIOS settings but not to make changes. Save & Exit Setup Save all the changes made in the BIOS Setup program to the CMOS and exit BIOS Setup. (Pressing <F10> can also carry out this task.) Exit Without Saving Abandon all changes and the previous settings remain in effect. Pressing <Y> to the confirmation message will exit BIOS Setup. (Pressing <Esc> can also carry out this task.

) GA-M720-US3 Motherboard - 34 - 2-3 MB Intelligent Tweaker(M.
I.T.) CMOS Setup Utility-Copyright (C) 1984-2008 Award Software MB Intelligent Tweaker(M.I.T.
*) [200] [Auto] [100] [Auto] [Auto] [Disabled] +1% [Press Enter] ******** [Auto] Normal Normal Normal Norm=l Normal 1.3500V Item Help Menu Level CPU Frequency HT Link Frequency PCIE Clock CPU Clock Ratio CPU NorthBridge Freq. (Note) Robust Graphics Booster x VGA Core Clock DRAM Configuration ******** System Voltage Optimized System Voltage Control x DDR2 Voltage Control x Chipset/PCIE Voltage x HT-Link Voltage x CPU NB VID Control (Note) x CPU Voltage Control Normal CPU Vcore : Move Enter: Select F5: Previous Values +/-/PU/PD: Value F6: Fail-Safe Defaults F10: Save ESC: Exit F1: General Help F7: Optimized Defaults · Whether the system will work stably with the overclock/overvoltage settings you made is dependent on your overall system configurations. Incorrectly doing overclock/overvoltage may result in damage to CPU, chipset, or memory and reduce the useful life of these components. This page is for advanced users only and we recommend you not to alter the default settings to prevent system instability or other unexpected results.*
(Inadequately alter ing the settings may result in system's failure to boot. If this occurs, clear the CMOS values and reset the board to default values.) · When the System Voltage Optimized item blinks in red, it is recommended that you set the System Voltage Control item to Auto to optimize the system voltage settings. CPU Frequency Allows you to manually set the CPU host frequency. Important It is highly recommended that the CPU frequency be set in accordance with the CPU specifications. HT Link Frequency Allows you to manually set the frequency for the HT Link between the CPU and chipset. Auto BIOS will automatically adjust the HT Link Frequency. (Default) 200 MHz~1 GHz Sets HT Link Frequency to 200 MHz~1 GHz. PCIE Clock Allows you to manually set the PCIe clock frequency. The adjustable range is from 100 MHz to 200 MHz.

(Default: 100) CPU Clock Ratio Allows you to alter the clock ratio for the installed CPU. The adjustable range is dependent on the CPU being used. CPU NorthBridge Freq. (Note) Allows you to alter the North Bridge controller frequency for the installed CPU. The adjustable range is dependent on the CPU being used. (Note) This item is present only if you install a CPU that supports this feature. - 35 BIOS Setup Robust Graphics Booster Enables or disables the control of VGA Core clock. VGA Core Clock Allows you to alter the core clock for the graphics chip and is configurable only if the Robust Graphics Booster option is set to Enabled. The core clock can be increased by 1% ~ 50%. DRAM Configuration CMOS Setup Utility-Copyright (C) 1984-2008 Award Software DRAM Configuration SLI-Ready Memory Set Memory Clock Memory Clock DDRII Timing Items CAS# latency RAS to CAS R/W Delay Row Precharge Time Minimum RAS Active Time 1T/2T Command Timing TwTr Command Delay Trfc0 for DIMM1 Trfc2 for DIMM2 Trfc1 for DIMM3 Trfc3 for DIMM4 Write Recovery Time Precharge Time Row Cycle Time RAS to RAS Delay [Disabled] [Auto] DDR 800 [Auto] SPD Auto 5T Auto 5T Auto 5T Auto 15T Auto -Auto 3T Auto 105ns Auto -Auto -Auto -Auto 6T Auto 3T Auto 21T Auto 3T +/-/PU/PD: Value F6: Fail-Safe Defaults F10: Save Item Help Menu Level Auto 5T 5T 5T 15T -3T 105ns ---6T 3T 21T 3T ESC: Exit F1: General Help F7: Optimized Defaults x x x x x x x x x x x x x x : Move Enter: Select F5: Previous Values SLI-Ready Memory Allows you to enable or disable the SLI-Ready (EPP) memory function.
(Default: Disabled) Set Memory Clock Determines whether to manually set the memory clock. Auto lets BIOS automatically set the memory clock as required. Manual allows all clock control items below to be configurable. (Default: Auto) Memory Clock This option is configurable only when Set Memory Clock is set to Manual. When you use a AM2 CPU: DDR 400 Sets Memory Clock to DDR 400.
DDR 533 Sets Memory Clock to DDR 533. DDR 667 Sets Memory Clock to DDR 667. DDR 800 Sets Memory Clock to DDR 800. When you use a AM2+ CPU: X2.00 Sets Memory Clock to X2.
00. X2.66 Sets Memory Clock to X2.66. X3.33 Sets Memory Clock to X3.33. X4.00 Sets Memory Clock to X4.00.

X5.33 Sets Memory Clock to X5.33. GA-M720-US3 Motherboard - 36 - DDRII Timing Items Manual allows all DDRII Timing items below to be configurable. Options are: Auto (default), Manual. CAS# latency Options are: Auto (default), 3T~6T. RAS to CAS R/W Delay Options are: Auto (default), 3T~6T. Row Precharge Time Options are: Auto (default), 3T~6T. Minimum RAS Active Time Options are: Auto (default), 5T~18T. 1T/2T Command Timing Options are: 1T (default), 2T.
TwTr Command Delay Options are: Auto (default), 1T~3T. Trfc0 for DIMM1 Options are: 75ns, 105ns (default), 127.5ns, 195ns, 327.5ns. Trfc2 for DIMM2 Options are: 75ns, 105ns, 127.
5ns, 195ns, 327.5ns. Trfc1 for DIMM3 Options are: 75ns, 105ns, 127.5ns, 195ns, 327.5ns.
*Trfc3 for DIMM4 Options are: 75ns, 105ns, 127.5ns, 195ns, 327.5ns. Write Recovery Time Options are: Auto (default), 3T~6T. Precharge Time Options are: Auto (default), 2T, 3T. Row Cycle Time Options are: Auto (default), 11T~26T. RAS to RAS Delay Options are: Auto (default), 2T~5T. - 37 - BIOS Setup ******** System Voltage Optimized ******** System Voltage Control Determines whether to manually set the system voltages. Auto lets BIOS automatically set the system voltages as required. Manual allows all voltage control items below to be configurable.*

(Default: Auto) DDR2 Voltage Control Allows you to set memory voltage. Normal Supplies the memory voltage as required. (Default) +0.10V ~ +0.30V Increases memory voltage by 0.10V to 0.30V at 0.1V increment. Chipset/PCIE Voltage Allows you to set the voltage of the PCI Express bus. Normal Supplies the Northbridge voltage as required.
(Default) +0.1V ~ +0.2V Increases memory voltage by 0.1V to 0.2V at 0.
1V increment. HT-Link Voltage Allows you to set the voltage of the HT-Link. Normal Supplies the Northbridge voltage as required. (Default) +0.1V ~ +0.
2V Increases memory voltage by 0.1V to 0.2V at 0.1V increment. CPU NB VID Control (Note) Allows you to set the CPU North Bridge voltage. Normal sets the CPU North Bridge voltage as required. The adjustable range is dependent on the CPU being installed. (Default: Normal) Note: Increasing CPU North Bridge voltage may result in damage to your CPU or reduce the useful life of the CPU. CPU Voltage Control Allows you to set the CPU voltage. Normal sets the CPU voltage as required.

The adjustable range is dependent on the CPU being installed. (Default: Normal) Note: Increasing CPU voltage may result in damage to your CPU or reduce the useful life of the CPU. Normal CPU Vcore Displays the normal operating voltage of your CPU. (Note) This item is present only if you install a CPU that supports this feature. - 38 - GA-M720-US3 Motherboard 2-4 Standard CMOS Features CMOS Setup Utility-Copyright (C) 1984-2008 Award Software Standard CMOS Features Date (mm:dd:yy) Time (hh:mm:ss) Thu, Dec 4 2008 18:25:04 [None] [None] [None] [None] [None] [None] [1.

44M, 3.5"] [Disabled] [All, But Keyboard] 640K 1022M Item Help Menu Level IDE Channel 0 Master IDE Channel 0 Slave IDE Channel 2 Master IDE Channel 2 Slave IDE Channel 3 Master IDE Channel 3 Slave Drive A Floppy 3 Mode Support Halt On Base Memory Extended Memory : Move Enter: Select F5: Previous Values +/-/PU/PD: Value F6: Fail-Safe Default F10: Save ESC: Exit F1: General Help F7: Optimized Defaults Date Sets the system date. The date format is week (read-only), month, date and year. Select the desired field and use the up arrow or down arrow key to set the date. Time Sets the system time.

For example, 1 p.m. is 13:0:0. Select the desired field and use the up arrow or down arrow key to set the time. IDE Channel 0 Master/Slave IDE HDD Auto-Detection Press <Enter> to autodetect the parameters of the IDE/SATA device on this channel.

IDE Channel 0 Master/Slave Configure your IDE/SATA devices by using one of the three methods below: · Auto Lets BIOS automatically detect IDE/SATA devices during the POST. (Default) · None If no IDE/SATA devices are used, set this item to None so the system will skip the detection of the device during the POST for faster system startup. · Manual Allows you to manually enter the specifications of the hard drive when the hard drive access mode is set to CHS. Access Mode Sets the hard drive access mode. Options are: Auto (default), CHS, LBA, Large.

IDE Channel 2, 3 Master/Slave IDE Auto-Detection Press <Enter> to autodetect the parameters of the IDE/SATA device on this channel. Extended IDE Drive Configure your IDE/SATA devices by using one of the two methods below: · Auto Lets BIOS automatically detect IDE/SATA devices during the POST. (Default) · None If no IDE/SATA devices are used, set this item to None so the system will skip the detection of the device during the POST for faster system startup. Access Mode Sets the hard drive access mode. Options are: Auto (default), Large. - 39 BIOS Setup The following fields display your hard drive specifications. If you wish to enter the parameters manually, refer to the information on the hard drive. Capacity Approximate capacity of the currently installed hard drive. Cylinder Head Precomp Landing Zone Sector Number of cylinders. Number of heads.

Write precompensation cylinder. Landing zone. Number of sectors. Drive A Allows you to selects the type of floppy disk drive installed in your system. If you do not install a floppy disk drive, set this item to None. Options are: None, 360K/5.25", 1.2M/5.25", 720K/3.5", 1.

44M/3.5", 2.88M/3.5". Floppy 3 Mode Support Allows you to specify whether the installed floppy disk drive is 3-mode floppy disk drive, a Japanese standard floppy disk drive.

Options are: Disabled (default), Drive A. Halt On Allows you to determine whether the system will stop for an error during the POST. No Errors The system boot will not stop for any error. All Errors Whenever the BIOS detects a non-fatal error the system boot will stop. All, But Keyboard The system boot will not stop for a keyboard error but stop for all other errors.

(Default) All, But Diskette The system boot will not stop for a floppy disk drive error but stop for all other errors. All, But Disk/Key The system boot will not stop for a keyboard or a floppy disk drive error but it will stop for all other errors. Memory These fields are read-only and are determined by the BIOS POST. Base Memory Also called conventional memory. Typically, 640 KB will be reserved for the MS-DOS operating system. Extended Memory The amount of extended memory. GA-M720-US3 Motherboard - 40 - 2-5 Advanced BIOS Features CMOS Setup Utility-Copyright (C) 1984-2008 Award Software Advanced BIOS Features [Disabled] [Enabled] [Auto] [Press Enter] [Floppy] [Hard Disk] [CDROM] [Setup] [Disabled] [Disabled] [Enabled] [PEG] Item Help Menu Level Virtualization Patch AMD TLB Erratum (Note) AMD K8 Cool&Quiet control Hard Disk Boot Priority First Boot Device Second Boot Device Third Boot Device Password Check HDD S.M.A.R.

T. Capability Away Mode Full Screen LOGO Show Init Display First : Move Enter: Select F5: Previous Values +/-/PU/PD: Value F6: Fail-Safe Defaults F10: Save ESC: Exit F1: General Help F7: Optimized Defaults Virtualization Virtualization allows a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple virtual systems. (Default: Disabled) Patch AMD TLB Erratum (Note) Enables or disables the Patch AMD TLB Erratum function. (Default: Enabled) AMD K8 Cool&Quiet control Auto Disabled Lets the AMD Cool'n'Quiet driver dynamically adjust the CPU clock and VIA to reduce heat output from your computer and its power consumption. (Default) Disables this function. Hard Disk Boot Priority Specifies the sequence of loading the operating system from the installed hard drives. Use the up or down arrow key to select a hard drive, then press the plus key <+> (or <PageUp>) or the minus key <-> (or <PageDown>) to move it up or down on the list. Press <Esc> to exit this menu when finished. First/Second/Third Boot Device Specifies the boot order from the available devices.

Use the up or down arrow key to select a device and press <Enter> to accept. Options are: Floppy, LS120, Hard Disk, CDROM, ZIP, USB-FDD, USB-ZIP, USB-CDROM, USB-HDD, Legacy LAN, Disabled. (Note) This item is present only if you install a CPU that supports this feature. - 41 BIOS Setup Password Check Specifies whether a password is required every time the system boots, or only when you enter BIOS Setup. After configuring this item, set the password(s) under the Set Supervisor/User Password item in the BIOS Main Menu.

Setup A password is only required for entering the BIOS Setup program. (Default) System A password is required for booting the system and for entering the BIOS Setup program. HDD S.M.A.

R.T. Capability Enables or disables the S.M.A.R.T. (Self Monitoring and Reporting Technology) capability of your hard drive. This feature allows your system to report read/write errors of the hard drive and to issue warnings when a third party hardware monitor utility is installed. (Default: Disabled) Away Mode Enables or disables Away Mode in Windows XP Media Center operating system.

Away Mode allows the system to silently perform unattended tasks while in a low-power mode that appears off (Default: Disabled) Full Screen LOGO Show Allows you to determine whether to display the GIGABYTE Logo at system startup. Disabled displays normal POST message. (Default: Enabled) Init Display First Specifies the first initiation of the monitor display from the installed PCI graphics card or PCI Express graphics card. PCI Slot Sets the PCI graphics card as the first display. PEG Sets the PCI Express graphics card as the first display. (Default) GA-M720-US3 Motherboard - 42 - 2-6 Integrated Peripherals CMOS Setup Utility-Copyright (C) 1984-2008 Award Software Integrated Peripherals [Enabled] [Enabled] [IDE] [Auto] [Enabled] [Enabled] [Press Enter] [Disabled] [3F8/IRQ4] [V1.

1+V2.0] [SHADOW] [Disabled] [Disabled] [Enabled] Item Help Menu Level On-Chip IDE Channel NV SATA Controller Onchip SATA Mode Onboard Audio Function Onboard 1394 Onboard LAN Control SMART LAN Onboard LAN Boot ROM Onboard Serial Port OnChip USB USB Memory Type USB Keyboard Support USB Mouse Support Legacy USB storage detect : Move Enter: Select F5: Previous Values +/-/PU/PD: Value F6: Fail-Safe Defaults F10: Save ESC: Exit F1: General Help F7: Optimized Defaults On-Chip IDE Channel Enables or disables the integrated IDE controller. (Default: Enabled) NV SATA Controller Enables or disables the integrated SATA controller. (Default: Enabled) Onchip SATA Mode Enables or disables RAID for the SATA controller integrated in the NVIDIA® GeForce 720a chipset or configures the SATA controller to AHCI mode.

IDE Disables RAID for the SATA controller and configures the SATA controller to PATA mode. (Default) AHCI Configures the SATA controller to AHCI mode. Advanced Host Controller Interface (AHCI) is an interface specification that allows the storage driver to enable advanced Serial ATA features such as Native Command Queuing and hot plug. RAID Enables RAID for the SATA controller. Onboard Audio Function Enables or disables the onboard audio function.

(Default: Auto) If you wish to install a 3rd party add-in audio card instead of using the onboard audio, set this item to Disabled. Onboard 1394 Enables or disables the onboard IEEE 1394 function. (Default: Enabled) Onboard LAN Control Enables or disables the onboard LAN function. (Default: Enabled) If you wish to install a 3rd party add-in network card instead of using the onboard LAN, set this item to Disabled. - 43 - BIOS Setup SMART LAN (LAN Cable Diagnostic Function) CMOS Setup Utility-Copyright (C) 1984-2008 Award Software SMART LAN Start detecting at Port.

.... @@@@@@@@When LAN Cable Is Functioning Normally... @@@@When a Cable Problem Occurs...

@@@@@@@@@@V1.1+V2.0 Enables the integrated USB 1.1 and USB 2.0 controllers. (Default) V1.1 Enables only the integrated USB 1.1 controller. Disabled Disables the integrated USB 1.1 and USB 2.

0 controllers. @@@@@@@@@@@@@@The system can be resumed at any time. @@@@@@@@(Default) Delay 4 Sec. Press and hold the power button for 4 seconds to turn off the system. If the power button is pressed for less than 4 seconds, the system will enter suspend mode.

PME Event Wake Up Allows the system to be awakened from an ACPI sleep state by a wake-up signal from a PCI or PCIe device. Note: To use this function, you need an ATX power supply providing at least 1A on the +5VSB lead. (Default: Enabled) Modem Ring On Allows the system to be awakened from an ACPI sleep state by a wake-up signal from a modem that supports wake-up function. (Default: Enabled) (Note) Supported on Windows® Vista® operating system only. - 46 - GA-M720-US3 Motherboard USB Resume from Suspend Allows the system to be awakened from ACPI S3 sleep state by a wake-up signal from the installed USB device.

(Default: Enabled) Power-On by Alarm Determines whether to power on the system at a desired time. (Default: Disabled) If enabled, set the date and time as following: Date (of Month): Turn on the system at a specific time on each day or on a specific day in a month. Resume Time (hh: mm: ss): Set the time at which the system will be powered on automatically. Note: When using this function, avoid inadequate shutdown from the operating system or removal of the AC power, or the settings may not be effective. HPET Support (Note) Enables or disables High Precision Event Timer (HPET) for Windows ® Vista ® operating system. (Default: Disabled) HPET Mode (Note) Allows you to select the HPET mode for your Windows ® Vista ® operating system. Select 32-bit mode when you install 32-bit Windows ® Vista ®; select 64-bit mode when you install 64-bit Windows® Vista ®. (Default: 32-bit mode) Power On By Mouse Allows the system to be turned on by a PS/2 mouse wake-up event. Note: To use this function, you need an ATX power supply providing at least 1A on the +5VSB lead. Disabled Disables this function.

(Default) Double Click Double click on left button on the PS/2 mouse to turn on the system. Power On By Keyboard Allows the system to be turned on by a PS/2 keyboard wake-up event. Note: you need an ATX power supply providing at least 1A on the +5VSB lead. Disabled Disables this function. (Default) Password Set a password with 1~5 characters to turn on the system. Any KEY Press any key on the keyboard to turn on the system. Keyboard 98 Press POWER button on the Windows 98 keyboard to turn on the system. KB Power ON Password Set the password when Power On by Keyboard is set to Password. Press <Enter> on this item and set a password with up to 5 characters and then press <Enter> to accept. To turn on the system, enter the password and press <Enter>.

Note: To cancel the password, press <Enter> on this item. When prompted for the password, press <Enter> again without entering the password to clear the password settings. AC Back Function Determines the state of the system after the return of power from an AC power loss. Soft-Off The system stays off upon the return of the AC power. (Default) Full-On The system is turned on upon the return of the AC power.

Memory The system returns to its last known awake state upon the return of the AC power. (Note) Supported on Windows® Vista® operating system only. - 47 BIOS Setup 2-8 PnP/PCI Configurations CMOS Setup Utility-Copyright (C) 1984-2008 Award Software PnP/PCI Configurations PCI1 PCI2 PCI3 PCI4 IRQ IRQ IRQ IRQ Assignment Assignment Assignment Assignment [Auto] [Auto] [Auto] [Auto] Item Help Menu Level : Move Enter: Select F5: Previous Values +/-/PU/PD: Value F6: Fail-Safe Defaults F10: Save ESC: Exit F1: General Help F7: Optimized Defaults PCI1 IRQ Assignment Auto 3,4,5,7,9,10,11,12,14,15 BIOS auto-assigns IRQ to the first PCI slot. (Default) Assigns IRQ 3,4,5,7,9,10,11,12,14,15 to the first PCI slot. BIOS auto-assigns IRQ to the second PCI slot.

(Default) Assigns IRQ 3,4,5,7,9,10,11,12,14,15 to the second PCI slot. BIOS auto-assigns IRQ to the third PCI slot. (Default) Assigns IRQ 3,4,5,7,9,10,11,12,14,15 to the third PCI slot. BIOS auto-assigns IRQ to the fourth PCI slot. (Default) Assigns IRQ 3,4,5,7,9,10,11,12,14,15 to the fourth PCI slot. PCI2 IRQ Assignment Auto 3,4,5,7,9,10,11,12,14,15 PCI3 IRQ Assignment Auto 3,4,5,7,9,10,11,12,14,15 PCI4 IRQ Assignment Auto 3,4,5,7,9,10,11,12,14,15 GA-M720-US3 Motherboard - 48 - 2-9 PC Health Status CMOS Setup Utility-Copyright (C) 1984-2008 Award Software PC Health Status Reset Case Open Status Case Opened Vcore DDR2 1.8V +3.3V +12V Current System Temperature Current CPU Temperature Current CPU FAN Speed Current SYSTEM FAN1 Speed Current SYSTEM FAN2 Speed Current POWER FAN Speed System Warning Temperature CPU Warning Temperature CPU FAN Fail Warning SYSTEM FAN1 Fail Warning SYSTEM FAN2 Fail Warning POWER FAN Fail Warning CPU Smart FAN Control [Disabled] No 1.