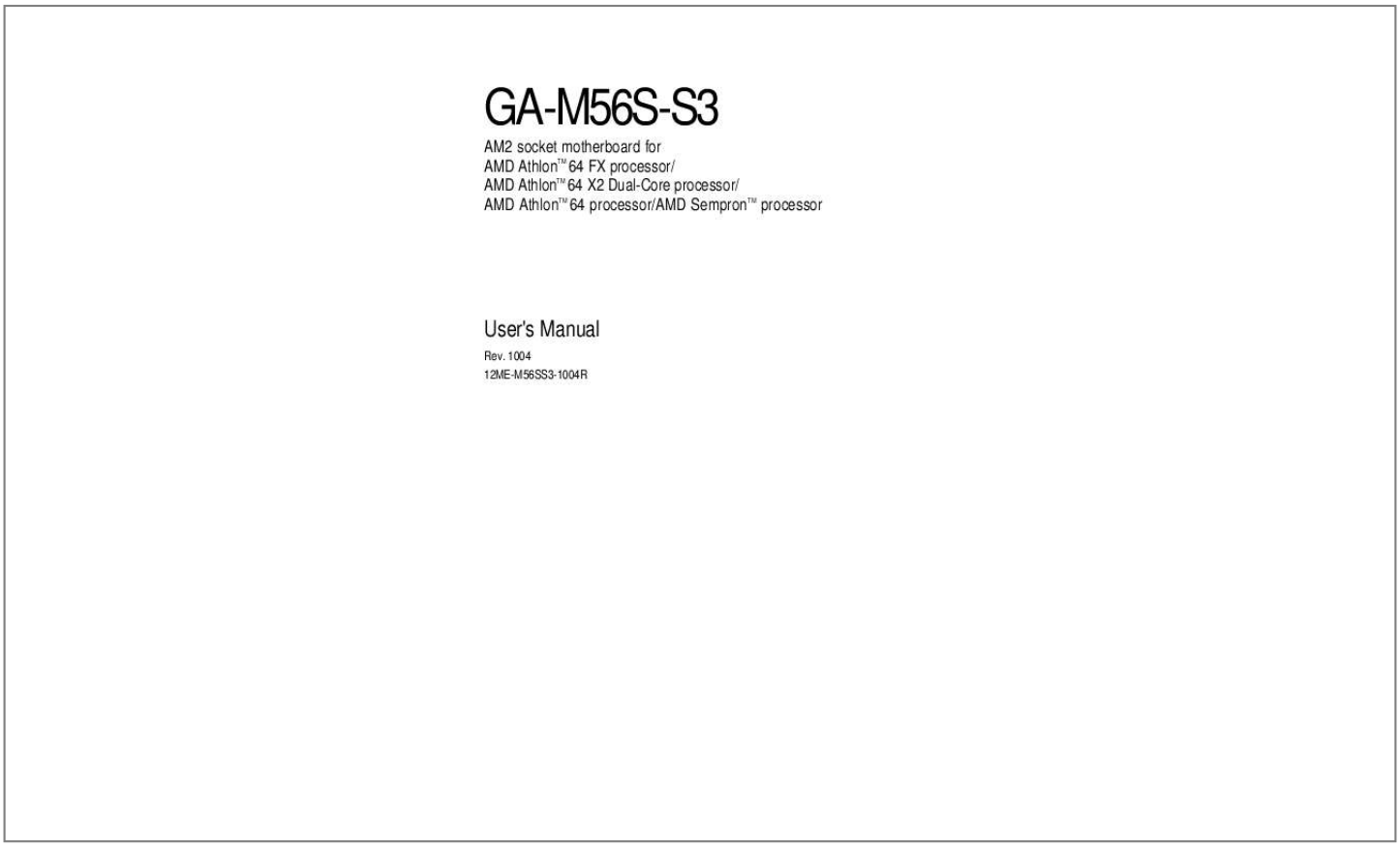

GA-M56S-S3

AM2 socket motherboard for
AMD Athlon™ 64 FX processor/
AMD Athlon™ 64 X2 Dual-Core processor/
AMD Athlon™ 64 processor/AMD Sempron™ processor

User's Manual

Rev. 1004
12ME-M56SS3-1004R

Manual abstract:

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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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. 92 -5- Box Contents GA-M56S-S3 motherboard Motherboard Driver Disk User's Manual Quick Installation Guide One IDE cable and one floppy disk drive 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. Optional Items 2-port USB 2.0 bracket (Part No. 12CR1-1UB030-51R) 2-port IEEE 1394a bracket (Part No. 12CF1-1IE008-01R) S/PDIF in cable (Part No. 12CR1-1SPDIN-01R) SATA power cable (Part No. 12CF1-1SERPW-01R) -6- GA-M56S-S3 Motherboard Layout KB_MS COAXIAL OPTICAL LPT Socket AM2 COMA 1394 USB ATX_12V USB LAN CPU_FAN AUDIO F_AUDIO PCIE_16 DDRII_2 IDE SATAII0 SATAII1 GA-M56S-S3 DDRII_4 DDRII_1 DDRII_3 RTL8211BL SPDIF_O PCIE_1 BIOS PCIE_2 CLR_CMOS BATTERY nVIDIA® nForce 560 SATAII2SATAII3 CODEC SPDIF_I PCI1 PCI2 CD_IN PCI3 TSB43AB23 PCI4 CI F1_1394 F2_1394

IT8716 F_USB2 F_USB1 F_USB3 SYS_FAN F_PANEL FDD PWR_LED -7- ATX Block Diagram PCIe CLK (100 MHz) AMD Socket AM2 CPU CPU CLK+/-(200 MHz) DDR2 800/667/533 MHz DIMM Dual Channel Memory Hyper Transport Bus PCI Express x16 RTL 8211BL PCI Express Bus x1 PCIe CLK (100 MHz) 2 PCI Express x1 PCI Bus LPC BUS TSB43AB23 CODEC IT8716 x1 nVIDIA nForce 560 ® LAN RJ45 4 SATA 3Gb/s ATA-133/100/66/33 IDE Channel BIOS Floppy LPT Port COM Port PS/2 KB/Mouse Surround Speaker Out Center/Subwoofer Speaker Out Side Speaker Out MIC Line-Out Line-In SPDIF In SPDIF Out 3 IEEE 1394a 10 USB Ports 4 PCI PCI CLK (33 MHz) -8- Chapter 1 1-1 Hardware Installation English 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 English 1-2 CPU Product Specifications Support for Socket AM2 processors: AMD AthlonTM 64 FX processor/AMD Athlon TM 64 X2 Dual-Core processor/ AMD Athlon TM 64 processor/AMD SempronTM processor (Go to GIGABYTE's website forons 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 CPU Socket A Small Triangle Marking Denotes CPU Pin One AM2 CPU GA-M56S-S3 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. English 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 English 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-M56S-S3 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. English 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: DDRII_1, DDRII_3 Channel 1: DDRII_2, DDRII_4 Dual Channel Memory Configurations Table DDRII_1 DDRII_2 DDRII_3 DDRII_4 Two Modules Four Modules DS/SS -DS/SS 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 DDRII_1 and DDRII_2 sockets. 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. DDRII_1 DDRII_2 DDRII_3 DDRII_4 - 15 - Hardware Installation English 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-M56S-S3 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 x16 Slot English PCI Express x1 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 insert the graphics card into the PCI Express x16 slot. Make sure the white latch securely locks the graphics card. · Removing the Card: Press the white latch at the end of the PCI Express x16 slot to release the card and then pull the card straight up from the slot. - 17 - Hardware Installation English 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. Parallel Port Use the parallel port to connect devices such as a printer, scanner and etc. The parallel port is also called a printer port. 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.

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. Serial Port Use the serial port to connect devices such as a mouse, modem or other peripherals. 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. USB 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. 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 Gpbs data rate Green Off 100 Mpbs data rate 10 Mpbs 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-M56S-S3 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. English 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 English 1-7 Internal Connectors 31 2 11 14 9 18 12 13 17 6 7 15 5 16 84 10 1) 2) 3) 4) 5) 6) 7) 8) 9) ATX_12V ATX CPU_FAN SYS_FAN FDD IDE SATAII0 / 1 / 2 / 3 PWR_LED BATTERY 10) 11) 12) 13) 14) 15) 16) 17) 18) F_PANEL F_AUDIO CD_IN SPDIF_I SPDIF_O F_USB1 / F_USB2 / F_USB3 F1_1394 / F2_1394 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-M56S-S3 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 (400W 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. English ATX_12V : 3 1 ATX_12V 4 2 Pin No. 1 2 3 4 Definition GND GND +12V +12V ATX : 12 24 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-pin ATX) 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) 1 13 12 ATX - 21 - Hardware Installation English 3/4) CPU_FAN/SYS_FAN (Fan Headers) The motherboard has a 4-pin CPU fan header (CPU_FAN) and a 3-pin system fan header (SYS_FAN). Each fan header supplies a +12V power voltage and possesses a foolproof insertion design. When connecting a fan cable, be sure to connect it in the correct orientation. Most fans are designed with color-coded power connector wires. A red power connector wire indicates a positive connection and requires a +12V voltage. The black connector wire is the ground wire. The motherboard supports CPU/system fan speed control, which requires the use of a CPU/system fan with fan speed control design. For optimum heat dissipation, it is recommended that a system fan be installed inside the chassis. CPU_FAN : Pin No. 1 1 CPU_FAN Definition GND +12V Sense Speed Control 2 3 4 SYS_FAN : 1 Pin No.

1 2 3 Definition GND +12V Sense SYS_FAN · 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. 5) 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, locate the foolproof groove on the connector.
33 1 34 2 GA-M56S-S3 Motherboard - 22 - 6) 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.) English 40 39 2 1 7) SATAII0/1/2/3 (SATA 3Gb/s Connectors, Controlled by nForce 560) 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 nForce 560 controller supports RAID 0, RAID 1, RAID 0+1 and RAID 5. Refer to Chapter 5, "Configuring SATA Hard Drive(s), " for instructions on configuring a RAID array. Pin No.

1 1 SATAII3 7 SATAII2 1 7 1 7 SATAII0 1 7 SATAII1 Definition GND TXP TXN GND RXN RXP GND 2 3 4 5 6 7 · 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 0+1 configuration requires at least four hard drives and 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.) - 23 Hardware Installation English 8) 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 Definition MPD+ MPDMPD- 1 2 3 System Status LED S0 S1 S3/S4/S5 On Blinking Off 9) 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-M56S-S3 Motherboard - 24 - 10) 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 Connector English MSG+ MSGPW+ PW- SPEAK+ 2 1 RES+ NC HD- SPEAK- 20 19 HD+ IDE Hard Disk Active LED · MSG (Message/Power/Sleep LED, Yellow): Connects to the power status indicator on the chassis front panel.

The System Status LED S0 On LED is on when the system is operating. The LED keeps blinking when 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 (IDE 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 English 11) 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 10 2 9 1 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 FSENSE1 FAUDIO_JD No Pin LINE2_L FSENSE2 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. 12) CD_IN (CD In Connector) You may connect the audio cable that came with your optical drive to the header. 1 Pin No. 1 2 3 4 Definition CD-L GND GND CD-R GA-M56S-S3 Motherboard - 26 - 13) SPDIF_I (S/PDIF In Header) This header supports digital S/PDIF in and can connect to an audio device that supports digital audio out via an optional S/PDIF in cable. For purchasing the optional S/PDIF in cable, please contact the local dealer. Pin No. 1 2 1 English Definition Power SPDIFI GND 3 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 1 Definition SPDIFO GND 2 - 27 - Hardware Installation English 15) F_USB1/F_USB2/F_USB3 (USB Headers, Yellow) 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. 2 10 Definition Power (5V) Power (5V) USB DXUSB DYUSB DX+ USB DY+ GND GND No Pin NC 1 2 3 4 5 6 7 8 9 10 1 9 · 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.
16) F1_1394/F2_1394 (IEEE 1394a Headers, Gray) The headers conform to IEEE 1394a specification. Each 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. 2 1 10 9 Definition TPA+ TPAGND GND TPB+ TPBPower (12V) Power (12V) No Pin GND 1 2 3 4 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. GA-M56S-S3 Motherboard - 28 - 17) 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.

English 1 Pin No. 1 2 Definition Signal GND 18) 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 English GA-M56S-S3 Motherboard - 30 - Chapter 2 BIOS Setup English 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 English 2-1 Startup Screen The following screens may appear when the computer boots. A.

The LOGO Screen (Default) <TAB>: POST Screen <DEL>: BIOS Setup/Q-Flash <F9>: XpressRecovery2 <F12>: Boot Menu Function Keys B. The POST Screen Award Modular BIOS v6.

00PG, An Energy Star Ally Copyright (C) 1984-2007, Award Software, Inc. Motherboard Model BIOS Version GA-M56S-S3 D1 . . . . <DEL>: BIOS Setup/Q-Flash <F9>: XpressRecovery2 <F12>: Boot Menu <End>: Qflash 06/22/2007-NF-MCP65-6A61LG01C-00 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 38. <DEL> : BIOS Setup/Q-Flash Press the <Delete> key to enter BIOS Setup or to access the Q-Flash utility in 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-M56S-S3 Motherboard - 32 - 2-2 The Main Menu English 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: D1) CMOS Setup Utility-Copyright (C) 1984-2007 Award Software Standard CMOS Features Advanced BIOS Features Integrated Peripherals Power Management Setup PnP/PCI Configurations PC Health Status MB Intelligent Tweaker(M.I.T.) Esc: Quit F8: Q-Flash Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password Set User Password Save & Exit Setup Exit Without Saving : Select Item F10: Save & Exit Setup Time, Date, Hard Disk Type... 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 <Page Up> <Page Down> <F1> <F2> <F5> <F6> <F7> <F8> <F9> <F10> 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 English 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. MB Intelligent Tweaker(M.I.T.) Use this menu to configure the clock, frequency and voltages of your CPU, memory, 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-M56S-S3 Motherboard - 34 - 2-3 Standard CMOS Features CMOS Setup Utility-Copyright (C) 1984-2007 Award Software Standard CMOS Features Date (mm:dd:yy) Time (hh:mm:ss) 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 Fri, Jun 22 2007 22:31:24 [None] [None] [None] [None] [None] [None] [1.44M, 3.

5"] [Disabled] [All, But Keyboard] 640K 510M Item Help Menu Level English : 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. - 35 BIOS Setup English 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-M56S-S3 Motherboard - 36 - 2-4 Advanced BIOS Features CMOS Setup Utility-Copyright (C) 1984-2007 Award Software Advanced BIOS Features 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 [Auto] [Press Enter] [Floppy] [Hard Disk] [CDROM] [Setup] [Disabled] [Disabled] [Enabled] [PEG] Item Help Menu Level English : Move Enter: Select F5: Previous Values +/-/PU/PD: Value F6: Fail-Safe Defaults F10: Save ESC: Exit F1: General Help F7: Optimized Defaults 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) Disable 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, LAN, Disabled. 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) - 37 - BIOS Setup English 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) Init Display First Specifies the first initiation of the monitor display from the installed PCI graphics card or the PCI Express graphics card. PCI Slot Sets the PCI graphics card as the first display. (Default) PEG Sets PCI Express graphics card as the first display. Full Screen LOGO Show Allows you to determine whether to display the GIGABYTE Logo at system startup. Disabled displays normal POST message. (Default: Enabled) GA-M56S-S3 Motherboard - 38 - 2-5 Integrated Peripherals CMOS Setup Utility-Copyright (C) 1984-2007 Award Software Integrated Peripherals [Press Enter] [Enabled] [Enabled] [Auto] [Enabled] [Enabled] [SHADOW] [IDE] [Auto] [Enabled] [Press Enter] [Disabled] [3F8/IRQ4] [378/IRQ7] [SPP] 3 [V1.1+V2.0] [Disabled] [Disabled] +/-/PU/PD: Value F6: Fail-Safe Defaults F10: Save Item Help Menu Level English Serial-ATA RAID Config On-Chip IDE Channel0 IDE DMA transfer access On-Chip MAC Lan NV Serial-ATA 1 IDE Prefetch Mode USB Memory Type Onchip SATA Mode Onboard Audio Function Onboard 1394 SMART LAN Onboard LAN Boot ROM Onboard Serial Port 1 Onboard Parallel Port Parallel Port Mode x ECP Mode Use DMA On-Chip USB USB Keyboard Support USB Mouse Support : Move Enter: Select F5: Previous Values ESC: Exit F1: General Help F7: Optimized Defaults CMOS Setup Utility-Copyright (C) 1984-2007 Award Software Integrated Peripherals Legacy USB storage detect [Enabled] 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 - 39 - BIOS Setup English Serial-ATA RAID Config CMOS Setup Utility-Copyright (C) 1984-2007 Award Software Serial-ATA RAID Config x x x x NV SATA Pri-Master RAID NV SATA Pri-Slave RAID NV SATA Sec-Master RAID NV SATA Sec-Slave RAID Enabled Enabled Enabled Enabled 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 NV SATA Pri-Master RAID Enables or disables RAID for the first SATA 3Gb/s connector (SATAII0).

This item is configurable only if the Onchip SATA Mode item is set to RAID. (Default: Enabled) NV SATA Pri-Slave RAID Enables or disables RAID for the second SATA 3Gb/s connector (SATAII1).

This item is configurable only if the Onchip SATA Mode item is set to RAID. (Default: Enabled) NV SATA Sec-Master RAID Enables or disables RAID for the third SATA 3Gb/s connector (SATAII2). This item is configurable only if the Onchip SATA Mode item is set to RAID. (Default: Enabled) NV SATA Sec-Slave RAID Enables or disables RAID for the fourth SATA 3Gb/s connector (SATAII3). This item is configurable only if the Onchip SATA Mode item is set to RAID. (Default: Enabled) On-Chip IDE Channel0 Enables or disables the first integrated IDE controller. (Default: Enabled) IDE DMA transfer access Enables or disables DMA (Direct Memory Access) mode for the IDE device(s). Disabled turns off DMA mode for the IDE device(s) and lets it operate in PIO (Programmed Input/Output) mode. (Default: Enabled) On-Chip MAC LAN Enables or disables the onboard LAN function. (Default: Auto) If you wish to install a 3rd party add-in network card instead of using the onboard LAN, set this item to Disabled.
NV Serial-ATA 1 Enables or disables the integrated SATA controllers. (Default: Enabled) IDE Prefetch Mode Enables or disbales prefetch mode for the integrated IDE controller. Enabled activates the IDE prefetch buffer to enhance hard drive performance. (Default: Enabled) GA-M56S-S3 Motherboard - 40 - USB Memory Type Specifies the type of memory allocated for USB devices. Options are: SHADOW (default), Base Memory (640K).
English Onchip SATA Mode Enables or disables RAID for the SATA controller integrated in the nVIDIA® nForce 560 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) SMART LAN (LAN Cable Diagnostic Function) CMOS Setup Utility-Copyright (C) 1984-2007 Award Software SMART LAN Start detecting at Port..... Pair1-2 Status = Open Pair3-6 Status = Open Pair4-5 Status = Open Pair7-8 Status = Open / / / / Length Length Length Length = = = = 0.0m 0.

0m 0.0m 0.0m 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 This motherboard incorporates cable diagnostic feature designed to detect the status of the attached LAN cable. This feature will detect cabling issue and report the approximate distance to the fault or short. Refer to the following information for diagnosing your LAN cable: When No LAN Cable Is Attached... If no LAN cable is attached to the motherboard, the Status fields of all four pairs of wires will show Open and the Length fields show 0.0m, as shown in the figure above. - 41 - BIOS Setup English When LAN Cable Is Functioning Normally.
.. If no cable problem is detected on the LAN cable connected to a Gigabit hub or a 10/100 Mbps hub, the following message will appear: Start detecting at Port...
.. Link Detected --> 100Mbps Cable Length= 30m Link Detected Cable Length Displays transmission speed Displays the approximate length of the attached LAN cable. Note: The Gigabit hub will only operate at a speed of 10/100Mbps in MS-DOS mode; it will operate at a normal speed of 10/100/1000Mbps in Windows mode or when the LAN Boot ROM is activated. When a Cable Problem Occurs.
.. If a cable problem occurs on a specified pair of wires, the Status field will show Short and thenlength shown will be the approximate distance to the fault or short. Example: Pair1-2 Status = Short / Length = 1.6m Explanation: A fault or short might occur at about 1.6m on Pair 1-2. Note: Pair 4-5 and Pair 7-8 are not used in a 10/100 Mbps environment, so their Status fields will show Open, and the length shown is the approximate length of the attached LAN cable.
Onboard LAN Boot ROM Allows you to decide whether to activate the boot ROM integrated with the onboard LAN chip. (Default: Disabled) Onboard Serial Port 1 Enables or disables the first serial port and specifies its base I/O address and corresponding interrupt. Options are: Auto, 3F8/IRQ4 (default), 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Disabled.

Onboard Parallel Port Enables or disables the onboard parallel port (LPT) and specifies its base I/O address and corresponding interrupt. Options are: 378/IRQ7 (default), 278/IRQ5, 3BC/IRQ7, Disabled. Parallel Port Mode Selects an operating mode for the onboard parallel (LPT) port. Options are: SPP (Standard Parallel Port)(default), EPP (Enhanced Parallel Port), ECP (Extended Capabilities Port), ECP+EPP. ECP Mode Use DMA Selects DMA channel for the LPT port in ECP mode. This item is configurable only if Parallel Port Mode is set to ECP or ECP+EPP mode. Options are: 3 (default), 1. GA-M56S-S3 Motherboard - 42 - On-Chip USB Controller Configures the integrated USB controller. 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. Disabled will turn off all of the USB functionalities below.
English USB Keyboard Support Allows USB keyboard to be used in MS-DOS. (Default: Disabled) USB Mouse Support Allows USB mouse to be used in MS-DOS. (Default: Disabled) Legacy USB storage detect Determines whether to detect USB storage devices, including USB flash drives and USB hard drives during the POST. @@@@@@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. @@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@Disabled Disables this function. @@@@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. - 45 BIOS Setup English 2-7 PnP/PCI Configurations CMOS Setup Utility-Copyright (C) 1984-2007 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-M56S-S3 Motherboard - 46 - 2-8 PC Health Status CMOS Setup Utility-Copyright (C) 1984-2007 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 FAN Speed System Warning Temperature CPU Warning Temperature CPU FAN Fail Warning SYSTEM FAN Fail Warning CPU Smart FAN Control CPU Smart FAN Mode System Smart FAN Control [Disabled] Yes OK OK OK OK 32 oC 45 oC 3245 RPM 0 RPM [Disabled] [Disabled] [Disabled] [Disabled] [Enabled] [Auto] [Enabled] Item Help Menu Level English : Move Enter: Select F5: Previous Values +/-/PU/PD: Value F6: Fail-Safe Defaults F10: Save ESC: Exit F1: General Help F7: Optimized Defaults Reset Case Open Status Keeps or clears the record of previous chassis intrusion status. Enabled clears the record of previous chassis intrusion status and the Case Opened field will show "No" at next boot. (Default: Disabled) Case Opened Displays the detection status of the chassis intrusion detection device attached to the motherboard CI header. If the system chassis cover is removed, this field will show "Yes", otherwise it will show "No". To clear the chassis intrusion status record, set Reset Case Open Status to Enabled, save the settings to CMOS, and then restart your system. Current Voltage(V) Vcore/DDR2 1.8V/+3.3V/+12V Displays the current system voltages. Current System/CPU Temperature Displays current system/CPU temperature.

Current CPU/SYSTEM FAN Speed (RPM) Displays current CPU/system fan speed. System/CPU Warning Temperature Sets the warning threshold for system/CPU temperature. When system/CPU temperature exceeds the threshold, BIOS will emit warning sound. Options are: Disabled (default), 60 o C/140o F, 70 oC/158 o F, 80 o C/176 o F, 90 o C/194 o F. CPU/SYSTEM FAN Fail Warning Allows the system to emit warning sound if the CPU/system fan is not connected or fails. Check the fan condition or fan connection when this occurs. (Default: Disabled) - 47 - BIOS Setup English CPU Smart FAN Control Enables or disables the CPU fan speed control function. Enabled allows the CPU fan to run at different speed according to the CPU temperature. You can adjust the fan speed with EasyTune based on system requirements. If disabled, CPU fan runs at full speed.

(Default: Enabled) CPU Smart FAN Mode Specifies how to control CPU fan speed. This item is configurable only if CPU Smart FAN Control is set to Enabled. Auto Lets BIOS autodetect the type of CPU fan installed and sets the optimal CPU fan control mode. (Default) Voltage Sets Voltage mode for a 3-pin CPU fan. PWM Sets PWM mode for a 4-pin CPU fan.

System Smart FAN Control Enables or disables the system fan speed control function. Enabled allows the system fan to run at different speed according to the system temperature. You can adjust the fan speed with EasyTune based on system requirements. If disabled, system fan runs at full speed. (Default: Enabled) GA-M56S-S3 Motherboard - 48 - 2-9 MB Intelligent Tweaker(M.

I.T.) CMOS Setup Utility-Copyright (C) 1984-2007 Award Software MB Intelligent Tweaker(M.I.T.) CPU Frequency PCIE Clock CPU Clock Ratio Robust Graphics Booster Chipset Voltage Control DDR2 Voltage Control CPU Voltage Control Normal CPU Vcore [200] [100Mhz] [Auto] [Auto] [Normal] [Auto] [Normal] 1.3500V Item Help Menu Level English : Move Enter: Select F5: Previous Values +/-/PU/PD: Value F6: Fail-Safe Defaults F10: Save ESC: Exit F1: General Help F7: Optimized Defaults 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 altering the settings may result in system's failure to boot. If this occurs, clear the CMOS values and reset the board to default values.

) 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. PCIE Clock Allows you to manually set the PCI Express clock frequency. The adjustable range is from 100 MHz to 150 MHz. (Default: 100Mhz) CPU Clock Ratio Allows you to alter the clock ratio for the installed CPU. The adjustable range is dependent on the CPU being used. Robust Graphics Booster Robust Graphics Booster (R.G.B.) helps to enhance the performance of the graphics chip and memory.

Auto allows the BIOS to automatically set the R.G.B. mode based on system configurations. Options are: Auto (default), Fast, Turbo.

Chipset Voltage Control Allows you to set the Chipset voltage. Normal Supplies the Chipset voltage as required. (Default) +0.025V~+0.200V Increases the Chipset voltage by 0.

025V~0.200V. - 49 - BIOS Setup English DDR2 Voltage Control Allows you to to set memory voltage. Normal Supplies the memory voltage as required. (Default) +0.05V~ +0.60V Increases the memory voltage by 0.05V~0.60V. 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. GA-M56S-S3 Motherboard - 50 - 2-10 Load Fail-Safe Defaults CMOS Setup Utility-Copyright (C) 1984-2007 Award Software Standard CMOS Features Advanced BIOS Features Integrated Peripherals Power Management Setup PnP/PCI Configurations PC Health Status MB Intelligent Tweaker(M.