Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for GIGABYTE GA-F2A55M-HD2. You'll find the answers to all your questions on the GIGABYTE GA-F2A55M-HD2 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

GA-F2A55M-HD2

User's Manual
Rev. 1001
12ME-F255HD2-1001R

Manual abstract:

@@14, 2012 Sept. 14, 2012 Copyright ©©2012 GIGA-BYTE TECHNOLOGY CO., LTD. All rights reserved. @@@@@@□□ In order to assist in the use of this product, carefully read the User's Manual. □□ For product-related information, check on our website at: http://www.gigabyte.com 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 GA-F2A55M-HD2 Motherboard Layout..

.....

....

....

.....

.....

....

....

.....

.....

.........5 GA-F2A55M-HD2 Motherboard Block Diagram.

....

.....

.....

....

....

.....

.....

....

..6 Chapter 1 Hardware Installation........

.....

.....

....

....

.....

.....

....

....

.....

.....

........7 1-1 1-2 1-3 1-4 1-5 1-6 1-7 1-8 Installation Precautions..

....

.....

.....

....

....

.....

.....

....

....

.....

.....

... @@@@@@@@11 Setup of the AMD Dual Graphics Configuration.......

....

.....

.....

....

.... 12 Back Panel Connectors.

.....

4-2 Configuring SATA Hard Drive(s)..

Regulatory Statements.......

-4-

GA-F2A55M-HD2 Motherboard Layout

DDR3_2 KB_MS_USB DDR3_1 ATX SATA2 Realtek GbE LAN iTE Super I/O

Box Contents

55 GA-F2A55M-HD2 motherboard 55 Motherboard driver disk 55 User's Manual □ box contents above are for reference only and the actual items shall depend on the product package you The obtain. The box contents are subject to change without notice. VGA DVI HDMI AUDIO ATX_12V Socket FM2 CPU_FAN USB_LAN BAT 2 3 GA-F2A55M-HD2 M_BIOS B_BIOS AMD A55 PCIEX16 PCIEX1 PCI CODEC F_AUDIO COM CLR_CMOS SATA2 0 1 SYS_FAN SPDIF_O F_USB1 F_USB2 F_PANEL 55 Two SATA cables 55 I/O Shield

-5-

GA-F2A55M-HD2 Motherboard Block Diagram

1 PCI Express x16 APU CLK+/- (100 MHz) DISP CLK+/- (100 MHz) 1 PCI Express x1 PCIe CLK (100 MHz) x16 PCI Express Bus x1 x1 Realtek GbE LAN RJ45 LAN 8 USB 2.0/1.1 UMI AMD APU DDR3 1866/1600/1333/1066 MHz Dual Channel Memory DVI-D D-Sub HDMI PCI Bus AMD A55 Dual BIOS 4 SATA 3Gb/s LPC Bus iTE Super I/O COM PS/2 KB/Mouse CODEC MIC (Center/Subwoofer Speaker Out) Line Out (Front Speaker Out) Line In (Rear Speaker Out) -6S/PDIF Out 1 PCI PCI CLK (33 MHz) For detailed product information/limitation(s), refer to "1-2 Product Specifications."

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, make sure the chassis is suitable for the motherboard. •• 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, APU 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. -7-

1-2 Product Specifications

APU □□ FM2 Socket: - AMD A series processors - AMD Athlon™ series processors (Go to GIGABYTE's website for the latest APU support list.) □□ AMD A55 □□ 2 x 1.5V DDR3 DIMM sockets supporting up to 32 GB of system memory * □Due to a Windows 32-bit operating system limitation, when more than 4 GB of physical memory is installed, the actual memory size displayed will be less than the size of the physical memory installed. Chipset Memory □□ □□ □□ Onboard Graphics Dual channel memory architecture Support for DDR3 1866/1600/1333/1066 MHz memory modules Support for Extreme Memory Profile (XMP) memory modules (□ Go to GIGABYTE's website for the latest supported memory speeds and memory modules.) □□ APU: - - * □ use the onboard graphics ports, you must install an AMD APU with integrated To graphics. * □ Support for 2560x1600 resolution requires both a monitor and cable that support Dual Link DVI. * The DVI-D port does not support D-Sub connection by adapter. 1 x D-Sub port 1 x DVI-D port,

supporting a maximum resolution of 2560x1600 Audio - 1 x HDMI port, supporting a maximum resolution of 1920x1200 ⬜⬜ Realtek ALC887 codec ⬜⬜ High Definition Audio ⬜⬜ 2/4/5.1/7.

*1-channel ⬜⬜ Support for S/PDIF Out LAN * ⬜ o configure 7.1-channel audio, you have to use an HD front panel audio module T and enable the multi-channel audio feature through the audio driver. ⬜⬜ Realtek GbE LAN chip (10/100/1000 Mbit) Expansion Slots ⬜⬜ 1 x PCI Express x16 slot, running at x16 ⬜⬜ ⬜ x PCI Express x1 slot 1 (All PCI Express slots conform to PCI Express 2.0 standard.) ⬜⬜ 1 x PCI slot Multi-Graphics ⬜⬜ Support for AMD Dual Graphics technology * ⬜ Only A series APUs support AMD Dual Graphics. Technology Storage Interface ⬜⬜ Chipset: - 4 x SATA 3Gb/s connectors supporting up to 4 SATA 3Gb/s devices - Support for RAID 0, RAID 1, RAID 10, and JBOD USB ⬜⬜ Chipset: - ⬜ p to 8 USB 2.0/1.1 ports (4 ports on the back panel, 4 ports available through U the internal USB headers) Internal ⬜⬜ 1 x 24-pin ATX main power connector ⬜⬜ 1 x 8-pin ATX 12V power connector Connectors ⬜⬜ 4 x SATA 3Gb/s connectors -8- Internal Connectors Back Panel Connectors ⬜⬜ ⬜⬜ ⬜⬜ ⬜⬜ ⬜⬜ ⬜⬜ ⬜⬜ ⬜⬜ ⬜⬜ ⬜⬜ ⬜⬜ ⬜⬜ ⬜⬜ ⬜⬜ ⬜⬜ ⬜⬜ ⬜⬜ ⬜⬜ ⬜⬜ 1 x APU fan header 1 x system fan header 1 x front panel header 1 x front panel audio header 1 x S/PDIF Out header 2 x USB 2.*

0/1.1 headers 1 x serial port header 1 x Clear CMOS jumper 1 x PS/2 keyboard/mouse port 1 x D-Sub port 1 x DVI-D port 1 x HDMI port 4 x USB 2.

*0/1.1 ports 1 x RJ-45 port 3 x audio jacks (Line In/Line Out/Microphone) System voltage detection APU/System temperature detection APU/System fan speed detection APU overheating warning APU/System fan fail warning APU/System fan speed control I/O Controller Hardware Monitor □□ iTE I/O Controller Chip * □Whether the APU/system fan speed control function is supported will depend on the APU/system cooler you install. BIOS □□ □□ □□ □□ Unique Features □□ □□ □□ □□ 2 x 32 Mbit flash Use of licensed AMI EFI BIOS Support for DualBIOS™ PnP 1.0a, DMI 2.0, SM BIOS 2.6, ACPI 2.0a Support for @BIOS Support for Q-Flash Support for Xpress Install Support for EasyTune Support for Smart Recovery 2 Support for Auto Green Support for ON/OFF Charge Support for 3TB+ Unlock Support for Q-Share * Available functions in EasyTune may differ by motherboard model. □□ □□ □□ □□ □□ -9- Bundled Software Operating System Form Factor □□ Norton Internet Security (OEM version) □□ Support for Microsoft® Windows 8/7/Vista/XP □□ Micro ATX Form Factor; 22.5cm x 17.4cm * □ IGABYTE reserves the right to make any changes to the product specifications and product-related information without G prior notice.*

* □ lease visit GIGABYTE's website to check the supported operating system(s) for the software listed in the "Unique Features" P and "Bundled Software" columns. 1-3 Installing the APU Read the following guidelines before you begin to install the APU: •• Make sure that the motherboard supports the APU. (Go to GIGABYTE's website for the latest APU support list.) •• Always turn off the computer and unplug the power cord from the power outlet before installing the APU to prevent hardware damage. •• Locate the pin one of the APU.

The APU cannot be inserted if oriented incorrectly. •• Apply an even and thin layer of thermal grease on the surface of the APU. •• Do not turn on the computer if the APU cooler is not installed, otherwise overheating and damage of the APU may occur. •• Set the APU host frequency in accordance with the APU 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 APU, graphics card, memory, hard drive, etc. Installing the APU Locate the pin one (denoted by a smalt supports the USB 2.0/1.1 specification. Use this port for USB devices such as a USB keyboard/mouse, USB printer, USB flash drive and etc. PS/2 Keyboard and PS/2 Mouse Port D-Sub Port Use the upper port (green) to connect a PS/2 mouse and the lower port (purple) to connect a PS/2 keyboard. The D-Sub port supports a 15-pin D-Sub connector. Connect a monitor that supports D-Sub connection to this port. DVI-D Port (Note) The DVI-D port conforms to the DVI-D specification and supports a maximum resolution of 2560x1600. Connect a monitode the required power, the result can lead to an unstable or unbootable system.

ATX_12V: 1 5 4 8 ATX_12V Pin No. 1 2 3 4 5 6 7 8 Definition GND (Only for 2x4-pin 12V) GND (Only for 2x4-pin 12V) GND GND +12V (Only for 2x4-pin 12V) +12V (Only for 2x4-pin 12V) +12V +12V ATX: 12 24 Pin No. 1 2 3 4 5 6 7 8 9 10 11 12 1 ATX 13 Definition 3.3V 3.3V GND +5V GND +5V GND Power Good 5VSB (stand by +5V) +12V +12V (Only for 2x12-pin ATX) 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) - 16 - 3/4) CPU_FAN/SYS_FAN (Fan Headers) All fan headers on this motherboard are 4-pin. 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 APU fan speed control, which requires the use of a APU fan with fan speed control design. For optimum heat dissipation, it is recommended that a system fan be installed inside the chassis. 1 CPU_FAN 1 SYS_FAN Pin No. 1 2 3 4 DEBUG PORT Definition GND +12V Sense Speed Control DEBUG PORT •• Be sure to connect fan cables to the fan headers to prevent your APU and system from overheating. Overheating may result in damage to the APU or the system may hang.

•• These fan headers are not configuration jumper blocks. Do not place a jumper cap on the headers. 5) SATA2 0/1/2/3 (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 AMD A55 Chipset DEBUG RAID 0, RAID 1, supports DEBUG PORT RAID 10, and JBOD. Refer to Chapter 4, "Configuring SATA Hard Drive(s)," forPORT instructions on configuring a RAID array. 1 SATA2 2 3 7 Pin No. 1 2 3 4 5 6 7 Definition GND TXP TXN GND RXP RXP GND SATA2 0 1 1 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 10 configuration requires four hard drives. - 17 - 6) F_PANEL (Front Panel Header) Connect the power switch, reset switch, speaker, and system status indicator on the chassis 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+ F_AUDIO(H) F_PANEL(NH) 2 1 HD+ HDRESRES+ CICI+ PWR+ PWR- SPEAK20 19 F_PANEL (H61M-D2) Hard Drive Reset Activity LED Switch Power LED Chassis Intrusion Header DB_PORT •• MSG/PWR (Message/Power/Sleep LED): Connects System Status LED Switcher (X58A-OC)to the power status indicator on the chassis front panel. The LED BIOS is on when the system is operating.

The LED is off when the system is in S3/ S0 On S4 sleep state or powered off (S5). S3/S4/S5 Off 1 1 •• PW (Power Switch): Connects to the power switch on the chassis front panel. You may configure the way to turn off your ACPI_CPT system using the power switch (refer to Chapter 2, "BIOS Setup," "Power Management," for more (GA-IVB) Voltage measurement module(X58A-OC) information). PWM Switch (X58A-OC) •• Speaker (Speaker): Connects to the speaker on the chassis front panel. The system reports system startup status by issuing DIP a beep code. One single short beep will be heard if no problem is detected at system startup. SMB_CPT •• HD (Hard Drive Activity LED): (GA-IVB) Connects to the PCIe power connector (SATA)(X58A-OC) 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): Connects to the reset switch on the chassis front panel. Press the reset switch to restart the computer CLR_CMOS if the computer freezes and fails to perform a normal restart.

CI •• CI (Chassis Intrusion Header): DIS_ME GP15_CPT Connects to the chassis intrusion switch/sensor on the chassis that can detect if the chassis cover has (GA-IVB) been removed. This function requires a chassis with a chassis intrusion switch/sensor. DIP 1 2 3 1 2 3 1 2 3 M_SATA 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.

- 18 - DIP 1 1 1 2 3 DIP XDP_CPU XDP_PCH (GA-IVB) 7) 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 MIC2_L 2 GND 3 MIC2_R 4 -ACZ_DET 5 LINE2_R 6 GND 7 FAUDIO_JD 8 No Pin 9 LINE2_L 10 GND For AC'97 Front Panel Audio: Pin No. Definition 1 MIC 2 GND 3 MIC Power 4 NC 5 Line Out (R) 6 NC 7 NC 8 No Pin 9 Line Out (L) 10 NC 9 10 1 2 •• The front panel audio header supports HD audio by default. •• Audio signals will be present on both of the front and back panel audio connections simultaneously. •• 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. 8) 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. Definition 1 SPDIFO 2 GND 1 - 19 - 9) F_USB1/F_USB2 (USB 2.

0/1.1 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 2 3 4 5 6 7 8 9 10 Definition Power (5V) Power (5V) USB DXUSB DYUSB DX+ USB DY+ GND GND No Pin NC 9 10 1 2 •• 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. 10) 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 2 3 4 5 6 7 8 9 10 Definition NDCDNSIN NSOUT NDTRGND NDSRNRTSNCTSNRINo Pin 9 10 1 2 - 20 - 11) CLR_CMOS (Clear 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, 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 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). 12) BAT (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. - 21 - 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 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. •• 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 or the clear CMOS jumper in Chapter 1 for how to clear the CMOS values.) - 22 - 2-1 Startup Screen The following startup Logo screen will appear when the computer boots. Function Keys Function Keys: <DEL>: BIOS SETUP\Q-FLASH Press the <Delete> key to enter BIOS Setup or to access the Q-Flash utility in BIOS Setup. <F9>: SYSTEM INFORMATION Press the <F9> key to display your system information. <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 <h> or the down arrow key <i> to select the first boot device, then press <Enter> to accept. The system will boot from the device immediately. 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. <END>: Q-FLASH Press the <End> key to access the Q-Flash utility directly without having to enter BIOS Setup first.

- 23 - 2-2 The Main Menu A. The 3D BIOS Screen (Default) On GIGABYTE's uniquely designed 3D BIOS screen, you can use your mouse to move through the motherboard image and click to enter the function menu in each area for quick configuration. For example, pass your mouse arrow over the CPU and memory sockets and enter the System Tuning menu to configure CPU/memory frequency, memory timings, and voltage settings. For more detailed configuration items, you can click the function menu icons at the bottom of the screen or press <F1> to switch to the main menu of the BIOS Setup program. (If a mouse is not connected, the 3D BIOS screen will automatically switch to the main menu of the BIOS Setup Program.) B. The Main Menu of the BIOS Setup Program (Sample BIOS Version: F1a) On the main menu of the BIOS Setup program, press arrow keys to move among the items and press <Enter> to accept or enter a sub-menu. Or you can use your mouse to select the item you want. Setup Menus Switch to 3D BIOS screen Enter Q-Flash Help Function Keys Configuration Items Current Settings - 24 - BIOS Setup Program Function Keys <f><g> <h><i> <Enter> <+>/<Page Up> <->/<Page Down> <F1> <F5> <F7> <F8> <F9> <F10> <F12> <Esc> Move the selection bar to select a setup menu Move the selection bar to select an configuration item on a menu Execute command or enter a menu Increase the numeric value or make changes Decrease the numeric value or make changes Switch to 3D BIOS screen Restore the previous BIOS 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 Capture the current screen as an image and save it to your USB drive Main Menu: Exit the BIOS Setup program Submenus: Exit current submenu BIOS Setup Menus □□ M.I.
T. Use this menu to configure the clock, frequency, and voltages of your CPU and memory, etc. Or check the system/CPU temperatures, voltages, and fan speeds. Use this menu to configure the default language used by the BIOS and system time and date. This menu also displays information on the devices connected to the SATA ports.
Use this menu to configure the device boot order, advanced features available on the CPU, and the primary display adapter.
@@@@@@@@@@@@@@@@@@@@Allows you to set the onboard graphics clock. The adjustable range is from 300 MHz to 2000 MHz. Enables or disables the control of CPU North Bridge frequency. (Default: Auto) && Processor Graphics Clock && NB Clock Control && NB Clock (Mhz) Allows you to manually set the CPU North Bridge frequency.
The adjustable range is from 800 MHz to 6000 MHz. @@The adjustable range is dependent on the CPU being installed. @@@@@(Default: Disabled) Allows you alter the ratio for the CPB. The adjustable range is dependent on the CPU being installed. @@(Default) □Disabled □ Disables this function. @@@@@@@The C6 state is a more enhanced power-saving state than C1. @@@@ □Disabled □ Disables this function. (Default) □Profile1 □ Uses Profile 1 settings. □Profile2 (Note) Uses Profile 2 settings. □ Allows you to set the system memory multiplier.

Auto sets memory multiplier according to memory SPD data. @@@@Options are: Auto (default), Quick, Expert. @@@@@@@(Default: Enabled) Enables or disables memory channel interleaving. @@@@@@@@@(Default) □ □Enabled □ □ Clears the record of previous chassis intrusion status and the Case Open field will show "No" at next boot. - 31 - && Case Open 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 the CMOS, and then restart your system. Displays the current system voltages. && CPU Vcore/Dram Voltage/+3.3V/+5V/+12V && CPU/System Temperature && CPU/System Fan Speed Displays current CPU/system temperature. Displays current CPU/system fan speeds. && CPU Warning Temperature Sets the warning threshold for CPU temperature. When CPU temperature exceeds the threshold, BIOS will emit warning sound. Options are: Disabled (default), 60oC/140oF, 70oC/158oF, 80oC/176oF, 90oC/194oF. && CPU/System Fan Fail Warning Allows the system to emit warning sound if the CPU fan or system fan are not connected or fail.
Check the fan condition or fan connection when this occurs. (Default: Disabled) Allows you to determine whether to enable the CPU fan speed control function and adjust the fan speed. □Normal □ □ Allows the CPU fan to run at different speeds according to the CPU temperature. You can adjust the fan speed with EasyTune based on your system requirements. (Default) □Silent □ Allows the CPU fan to run at slow speeds.
□Manual Allows you to control the CPU fan speed under the Slope PWM item. □ □Disabled Allows the CPU fan to run at full speeds. □ Allows you to control the CPU fan speed. This item is configurable only when CPU Fan Speed Control is set to Manual. Options are: 0.75 PWM value /oC ~ 2.50 PWM value /oC. Allows you to determine whether to enable the system fan speed control function and adjust the fan speed. □Normal □ □ Allows the system fan to run at different speeds according to the system temperature.

You can adjust the fan speed with EasyTune based on your system requirements.

(Default) □Silent □ Allows the system fan to run at slow speeds. □Manual Allows you to control the system fan speed under the Slope PWM item. □ □Disabled Allows the system fan to run at full speeds. □ && CPU Fan Speed Control && Slope PWM && System Fan Speed Control && Slope PWM Allows you to control the system fan speed. This item is configurable only when System Fan Speed Control is set to Manual. Options are: 0.75 PWM value /oC ~ 2.50 PWM value /oC. - 32 - 2-4 System This section provides information on your CPU, memory, motherboard model, and BIOS version. You can also select the default language used by the BIOS and manually set the system time.

&& System Language Selects the default language used by the BIOS. && System Date Sets the system date. The date format is week (read-only), month, date, and year. Use <Enter> to switch between the Month, Date, and Year fields and use the <Page Up> or <Page Down> key to set the desired value. Sets the system time.

The time format is hour, minute, and second. For example, 1 p.m. is 13:0:0. @@@@@@@@@@@@@@@@@@@@@@@This item is present only if at least one device for this type is installed.

&& Bootup NumLock State Enables or disables Numlock feature on the numeric keypad of the keyboard after the POST. (Default: Enabled) 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 Administrator Password/User Password item. □Setup □ password is only required for entering the BIOS Setup program. □ A □System □ password is required for booting the system and for entering the BIOS Setup □ A program. (Default) Allows you to determine whether to display the GIGABYTE Logo at system startup. Disabled skips the GIGABYTE Logo when the system starts up. (Default: Enabled) Enables or disables UEFI CSM (Compatibility Support Module) to support a legacy PC boot process. □Always □ Enables UEFI CSM. (Default) □Never □ Disables UEFI CSM and supports UEFI BIOS boot process only.

Allows you to select which type of operating system to boot. □□UEFI and Legacy □ Allows booting from operating systems that support legacy option ROM or UEFI option ROM. (Default) □Legacy Only □ Allows booting from operating systems that only support legacy option ROM. □UEFI Only □ Allows booting from operating systems that only support UEFI option ROM. This item is configurable only when CSM Support is set to Always. Allows you to select whether to enable the UEFI or legacy option ROM for the LAN controller. □Disabled □ Disables option ROM. (Default) □Legacy Only □ Enables legacy option ROM only. □UEFI Only □ Enables UEFI option ROM only. □Legacy First □ Enables legacy option ROM first.

□UEFI First □ Enables UEFI option ROM first. This item is configurable only when CSM Support is set to Always. Allows you to select whether to enable the UEFI or legacy option ROM for the storage device controller. □Disabled □ Disables option ROM. □Legacy Only □ Enables legacy option ROM only. (Default) □UEFI Only □ Enables UEFI option ROM only. □Legacy First □ Enables legacy option ROM first. □UEFI First □ Enables UEFI option ROM first. This item is configurable only when CSM Support is set to Always. && Security Option && Full Screen LOGO Show && CSM Support && Boot Mode Selection && PXE Boot Option Control && Storage Boot Option Control - 35 - && Display Boot Option Control Allows you to select whether to enable the UEFI or legacy option ROM for the graphics controller.

□Disabled □ Disables option ROM. □Legacy Only □ Enables legacy option ROM only. (Default) □UEFI Only □ Enables UEFI option ROM only. □Legacy First □ Enables legacy option ROM first. □UEFI First □ Enables UEFI option ROM first. This item is configurable only when CSM Support is set to Always. Allows you to select whether to enable the UEFI or Legacy option ROM for the PCI device controller other than the LAN, storage device, and graphics controllers. □Legacy OpROM □ Enables legacy Option ROM only. □UEFI OpROM □ Enables UEFI Option ROM only. (Default) Disables or enables booting from the network to install a GPT format OS, such as installing the OS from the Windows Deployment Services server.

(Default: Disable Link) Enables or disables IPv4 PXE Support. This item is configurable only when Network stack is enabled. Enables or disables IPv6 PXE Support. This item is configurable only when Network stack is enabled. && Other PCI Device ROM Priority && Network stack && Ipv4 PXE Boot Support && Ipv6 PXE Boot Support && Administrator Password Allows you to configure an administrator password. Press <Enter> on this item, type the password, and then press <Enter>. You will be requested to confirm the password. Type the password again and press <Enter>. You must enter the administrator password (or user password) at system startup and when entering BIOS Setup. Differing from the user password, the administrator password allows you to make changes to all BIOS settings.

Allows you to configure a user password. Press <Enter> on this item, type the password, and then press <Enter>. You will be requested to confirm the password. Type the password again and press <Enter>. You must enter the administrator password (or user password) at system startup and when entering BIOS Setup.

However, the user password only allows you to make changes to certain BIOS settings but not all. && User Password To cancel the password, press <Enter> on the password item and when requested for the password, enter the correct one first. When prompted for a new password, press <Enter> without entering any password. Press <Enter> again when prompted to confirm. - 36 - 2-6 Peripherals && OnChip SATA Channel Enables or disables the integrated SATA controllers.

(Default: Enabled) && OnChip SATA Type Enables or disables RAID for the SATA controllers integrated in the AMD Chipset or configures the SATA controllers to AHCI mode. □Native IDE □ C □ onfigures the SATA controller to IDE mode. (Default) □RAID □ Enables RAID for the SATA controller. □AHCI □ C □ onfigures the SATA controllers 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. Enables or disables the integrated USB controller. (Default: Enabled) && Enable all USB device && HD Audio Azalia Device Enables or disables the onboard audio function. (Default: Enabled) If you wish to install a 3rd party add-in audio card instead of using the onboard audio, set this item to Disabled.

Enables or disables AMD IOMMU support. (Default: Enabled) && IOMMU && Onboard LAN Controller 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. Allows USB keyboard/mouse to be used in MS-DOS. (Default: Enabled) && Legacy USB Support - 37 - && EHCI Hand-off Determines whether to enable EHCI Hand-off feature for an operating system without EHCI Hand-off support. (Default: Disabled) Enables or disables emulation of I/O ports 64h and 60h. This should be enabled for full legacy support for USB keyboards/mice in MS-DOS or in operating system that does not natively support USB devices. (Default: Disabled) Displays a list of connected USB mass storage devices. This item appears only when a USB storage device is installed. && Port 60/64 Emulation && USB Storage Devices ``SATA Configuration && PORT0 Hot Plug~PORT3 Hot Plug Enables or disable the hot plug capability for each SATA port. (Default: Disabled) Enables or disables each SATA port. (Default: Enabled) && SATA Power on PORT0~SATA Power on PORT3 - 38 -  ``GFX Configuration && Primary Video Device Specifies the first initiation of the monitor display from the installed PCI Express graphics card or the onboard graphics. □IGD Video □ Sets the onboard graphics as the first display. □NB PCIe Slot Video □ □ Sets the PCI Express graphics card on the PCI Express slot controlled by the North Bridge as the first display. (Default) □SB PCIe Slot Video □ □ Sets the PCI Express graphics card on the PCI Express slot controlled by the South Bridge as the first display. Enables or disables the onboard graphics function. □Auto □The BIOS will automatically enable or disable the onboard graphics depending on □ the graphics card being installed.

(Default) □Disabled □ Disables the onboard graphics. □Force □ □ Always activates the onboard graphics, whether or not a PCI Express card is installed. This item is configurable only when Integrated Graphics is set to Force. Frame buffer size is the total amount of system memory allocated solely for the onboard graphics controller. MS-DOS, for example, will use only this memory for display.

Options are: Auto (default), 256M, 512M, 1G, 2G. && Integrated Graphics && UMA Frame Buffer Size ``Super IO Configuration This section provides information on the super I/O chip and allows you to configure the serial port. Enables or disables the onboard serial port. (Default: Enabled) && Serial Port A - 39 - 2-7 Power Management && Resume by Alarm Determines whether to power on the system at a desired time. (Default: Disabled) If enabled, set the date and time as following: □Wake up day: Turn on the system at a specific time on each day or on a specific day in a month. □ □Wake up hour/minute/second: 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. Enables or disables High Precision Event Timer (HPET) for Windows 7/Vista operating system. (Default: Enabled) Determines whether to let the system consume least power in S5 (shutdown) state. (Default: Disabled) Note: When this item is set to Enabled, the following functions will become unavailable: PME event wake up, power on by mouse, power on by keyboard, and wake on LAN.

Configures the way to turn off the computer in MS-DOS mode using the power button. □Instant-Off □ Press the power button and then the system will be turned off instantly. (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. Determines the state of the system after the return of power from an AC power loss. □Memory □ The system returns to its last known awake state upon the return of the AC power. □Always On □ The system is turned on upon the return of the AC power. □Always Off □ The system stays off upon the return of the AC power. (Default) && HPET Timer (Note) && ErP && Soft-Off by PWR-BTTN && AC BACK (Note) Supported on Windows 7/Vista operating system only. - 40 - && Power On By Keyboard Allows the system to be turned on by a PS/2 keyboard 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) □Password □ Set a password with 1~5 characters to turn on the system. □Keyboard 98 Press POWER button on the Windows 98 keyboard to turn on the system. □ □Any Key □ Press any key to turn on the system.

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.

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) □Move □ Move the mouse to turn on the system. □Double Click Double click on left button on the mouse to turn on the system. □ && Power On Password && Power On By Mouse - 41 - 2-8 Save & Exit && Save & Exit Setup Press <Enter> on this item and select Yes. This saves the changes to the CMOS and exits the BIOS Setup program. Select No or press <Esc> to return to the BIOS Setup Main Menu. Press <Enter> on this item and select Yes. This exits the BIOS Setup without saving the changes made in BIOS Setup to the CMOS.

Select No or press <Esc> to return to the BIOS Setup Main Menu. Press <Enter> on this item and select Yes to load the optimal BIOS default settings. The BIOS defaults settings help the system to operate in optimum state. Always load the Optimized defaults after updating the BIOS or after clearing the CMOS values. Allows you to select a device to boot immediately. Press <Enter> on the device you select and select Yes to confirm. Your system will restart automatically and boot from that device. This function allows you to save the current BIOS settings to a profile. You can create up to 8 profiles and save as Setup Profile 1~ Setup Profile 8. Press <Enter> to complete.

Or you can select Select File in HDD/USB/FDD to save the profile to your storage device. 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 and then press <Enter> to complete. You can select Select File in HDD/USB/FDD to input the profile previously created from your storage device or load the profile automatically created by the BIOS, such as reverting the BIOS settings to the last settings that worked properly (last known good record). && Exit Without Saving && Load Optimized Defaults && Boot Override && Save Profiles && Load Profiles - 42 - Chapter 3 Drivers Installation •• Before installing the drivers, first install the operating system.

•• After installing the operating system, insert the motherboard driver disk into your optical drive. The driver Autorun screen is automatically displayed which looks like that shown in the screen shot below. (If the driver Autorun screen does not appear automatically, go to My Computer, double-click the optical drive and execute the Run.exe program.) After inserting the driver disk, "Xpress Install" will automatically scan your system and then list all the drivers that are recommended to install.

You can click the Install All button and "Xpress Install" will install all the recommended drivers. Or click Install Single Items to manually select the drivers you wish to install. Chapter 4 Appendix 4-1 Configuring SATA Hard Drive(s) Before you begin •• At least two SATA hard drives (to ensure optimal performance, it is recommended that you use two hard drives with identical model and capacity). If you do not want to create RAID, you may prepare only one hard drive. •• Windows 7/Vista/XP setup disk. •• Motherboard driver disk. •• A USB floppy disk drive (needed during Windows XP installation) •• An empty formatted floppy disk (needed during Windows XP installation) Configuring the Onboard SATA Controller A. Installing SATA hard drive(s) in your computer Attach one end of the SATA signal cable to the rear of the SATA hard drive and the other end to available SATA port on the motherboard. Then connect the power connector from your power supply to the hard drive. - 43 - B.

Configuring SATA controller mode in BIOS Setup Make sure to configure the SATA controller mode correctly in system BIOS Setup. For the BIOS Setup menus, refer to Chapter 2, "BIOS Setup," "Integrated Peripherals." Steps: 1. Turn on your computer and press <Delete> to enter BIOS Setup during the POST (Power-On Self-Test). Ensure OnChip SATA Channel is enabled under Peripherals. To enable RAID for the SATA2 0/1/2/3 connectors, set OnChip SATA Type to RAID. 2. Save changes and exit BIOS Setup. The BIOS Setup menus described in this section may differ from the exact settings for your motherboard. The actual BIOS Setup menu options you will see shall depend on the motherboard you have and the BIOS version.

Enter the RAID BIOS setup utility to configure a RAID array. After the POST memory test begins and before the operating system boot begins, look for a message which says "Press <Ctrl-F> to enter RAID Option ROM Utility". Press <Ctrl> + <F> to enter the RAID BIOS setup utility. To create a new array, press <2> to enter the LD View/LD Define Menu window. To create an array, press <Ctrl+C> to access the LD Define Menu.

In the LD Define Menu, use the up or down arrow key to move to an item for further configuration. In the following procedure, we'll create RAID 0 as an example. Steps: 1. Under the RAID Mode section, press the <SPACE> key to select RAID 0. 2.

Set the Stripe Block size. 64 KB is the default. 3. Under the Drives Assignments section, press the up or down arrow key to highlight a drive. 4. Press the <SPACE> key or <Y>to change the Assignment option to Y. This action adds the drive to the disk array. The Drv section will show the number of disks assigned. 5. Press <Ctrl>+<Y> keys to save the information.

The message in Figure 1 will appear. Press <Ctrl>+<Y> to input the array name. If you do not input the array name, the default array name will be used. Please press Ctrl-Y key to input the LD Name or press any key to exit. @@@@@@@@9. Press <Esc> to return to Main Menu and press <Esc> again if you want to exit the RAID BIOS utility. Making a SATA RAID/AHCI Driver Diskette Before installing Windows XP, connect a USB floppy disk drive to your computer first because you need to install the SATA RAID/AHCI driver from a floppy disk that contains the driver during the OS installation. To copy the RAID/AHCI driver for Windows XP, copy all files in the \BootDrv\Hxp folder in the motherboard driver disk to your floppy disk. To install Windows 7/Vista, you also need to install the SATA RAID/AHCI driver during the OS installation. To copy the RAID/AHCI driver for Windows 7, copy the whole Hw7 folder under the BootDrv folder in the motherboard driver disk to a USB flash drive.

Installing the SATA RAID/AHCI Driver and Operating System A. @@@@@@@@Then browse to the USB flash drive that contains the driver and select the location of the driver. The locations of the drivers are as follows: RAID driver for Windows 7 32-bit: Hw7\RAID\x86 RAID driver for Windows 7 64-bit: Hw7\RAID\x64 AHCI driver for Windows 7 32-bit: Hw7\AHCI\W7 AHCI driver for Windows 7 64-bit: Hw7\AHCI\W764A After loading the driver, continue the OS installation. B. Installing Windows 7/Vista - 45 - 4-2 Regulatory Statements Regulatory Notices This document must not be copied without our written permission, and the contents there of must not be imparted to a third party nor be used for any unauthorized purpose.

Contravention will be prosecuted. We believe that the information contained herein was accurate in all respects at the time of printing. GIGABYTE cannot, however, assume any responsibility for errors or omissions in this text. Also note that the information in this document is subject to change without notice and should not be construed as a commitment by GIGABYTE. Our Commitment to Preserving the Environment In addition to high-efficiency performance, all GIGABYTE motherboards fulfill European Union regulations for RoHS (Restriction of Certain Hazardous Substances in Electrical and Electronic Equipment) and WEEE (Waste Electrical and Electronic Equipment) environmental directives, as well as most major worldwide safety requirements.

To prevent releases of harmful substances into the environment and to maximize the use of our natural resources, GIGABYTE provides the following information on how you can responsibly recycle or reuse most of the materials in your "end of life" product. Restriction of Hazardous Substances (RoHS) Directive Statement GIGABYTE products have not intended to add and safe from hazardous substances (Cd, Pb, Hg, Cr+6, PBDE and PBB). The parts and components have been carefully selected to meet RoHS requirement. Moreover, we at GIGABYTE are continuing our efforts to develop products that do not use internationally banned toxic chemicals.

Waste Electrical & Electronic Equipment (WEEE) Directive Statement GIGABYTE will fulfill the national laws as interpreted from the 2002/96/EC WEEE (Waste Electrical and Electronic Equipment) directive. The WEEE Directive specifies the treatment, collection, recycling and disposal of electric and electronic devices and their components. Under the Directive, used equipment must be marked, collected separately, and disposed of properly. WEEE Symbol Statement The symbol shown below is on the product or on its packaging, which indicates that this product must not be disposed of with other waste. Instead, the device should be taken to the waste collection centers for activation of the treatment, collection, recycling and disposal procedure. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

For more information about where you can drop off your waste equipment for recycling, please contact your local government office, your household waste disposal service or where you purchased the product for details of environmentally safe recycling. □□ When your electrical or electronic equipment is no longer useful to you, "take it back" to your local or regional waste collection administration for recycling. □□ If you need further assistance in recycling, reusing in your "end of life" product, you may contact us at the Customer Care number listed in your product's user's manual and we will be glad to help you with your effort. Finally, we suggest that you practice other environmentally friendly actions by understanding and using the energy-saving features of this product (where applicable), recycling the inner and outer packaging (including shipping containers) this product was delivered in, and by disposing of or recycling used batteries properly. With your help, we can reduce the amount of natural resources needed to produce electrical and electronic equipment, minimize the use of landfills for the disposal of "end of life" products, and generally improve our quality of life by ensuring that potentially hazardous substances are not released into the environment and are disposed of properly. - 46 - - 47 - Contact Us GIGA-BYTE TECHNOLOGY CO., LTD. Address: No.6, Bao Chiang Road, Hsin-Tien Dist., New Taipei City 231, Taiwan TEL: +886-2-8912-4000, FAX: +886-2-8912-4003 Tech. and Non-Tech. Support (Sales/Marketing) : http://ggts.gigabyte.com.tw WEB address (English): http://www. gigabyte.com WEB address (Chinese): http://www.gigabyte.tw You may go to the GIGABYTE website, select your language in the language list on the top right corner of the website. • GIGABYTE Global Service System To submit a technical or non-technical (Sales/Marketing) question, please link to: http://ggts. gigabyte.com.tw Then select your language to enter the system. - 48 - .