Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for GIGABYTE GA-H61M-S2P-R3. You'll find the answers to all your questions on the GIGABYTE GA-H61M-S2P-R3 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual GIGABYTE GA-H61M-S2P-R3
User guide GIGABYTE GA-H61M-S2P-R3
Operating instructions GIGABYTE GA-H61M-S2P-R3
Instructions for use GIGABYTE GA-H61M-S2P-R3
Instruction manual GIGABYTE GA-H61M-S2P-R3

GA-H61M-S2P-R3
GA-H61M-S2P

User's Manual
Rev. 3004
12ME-H61MS2P-3004R

Manual abstract:

@@27, 2013 Feb. 27, 2013 Copyright © 2013 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-H61M-S2P-R3/GA-H61M-S2P Motherboard Layout..

... 32 -3- GA-H61M-S2P-R3/GA-H61M-S2P Motherboard Layout KB_MS ATX_12V COM LGA1155 LPT VGA CPU_FAN ATX R_USB30 Realtek® GbE LAN USB_LAN AUDIO PCIe to PCI Bridge PCIEX16 BAT GA-H61M-S2P-R3/ GA-H61M-S2P DDR3_1 DDR3_2 0 1 2 3 B_BIOS M_BIOS PCI1 iTE® Super I/O PCI2 Intel® H61 SATA2 CODEC PCIEX1 F_USB2 VIA® VL805 F_USB30 CLR_CMOS F_AUDIO SYS_FAN F_USB1 F_PANEL Box Contents 55 GA-H61M-S2P-R3/GA-H61M-S2P motherboard 55 Motherboard driver disk 55 Two SATA cables 55 User's Manual 55 I/O Shield The box contents above are for reference only and the actual items shall depend on the product package you obtain. The box contents are subject to change without notice. -4- GA-H61M-S2P-R3/GA-H61M-S2P Motherboard Block Diagram 1 PCI Express x16 CPU CLK+/- (100 MHz) LGA1155 CPU DDR3 1333/1066/800 MHz Dual Channel Memory PCIe CLK (100 MHz) DMI 2.0 PCI Express Bus 4 USB 3.0/2.0 FDI x16 Dual BIOS D-Sub VIA® VL805 x1 x1 PCI Express Bus x1 Realtek® GbE LAN RJ45 LAN PCI Bus CODEC x1 PCIe to PCI Bridge LPC Bus Intel® H61 4 SATA 3Gb/s 6 USB 2.0/1.

1 PCIe CLK (100 MHz) LPT iTE® Super I/O 1 PCI Express x1 COM PS/2 KB/Mouse PCI CLK (33 MHz) 2 PCI For detailed product information/limitation(s), refer to "1-2 Product Specifications." -5- MIC (Center/Subwoofer Speaker Out) Line Out (Front Speaker Out) Line In (Rear Speaker Out) 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, 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.

-6- 1-2 Product Specifications CPU Support for Intel® Core™ i7 processors/Intel® Core™ i5 processors/ Intel® Core™ i3 processors/Intel® Pentium® processors/Intel® Celeron® processors in the LGA1155 package (Go to GIGABYTE's website for the latest CPU support list.) L3 cache varies with CPU Intel® H61 Express Chipset 2 x 1.5V DDR3 DIMM sockets supporting up to 16 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   Dual channel memory architecture Support for DDR3 1333/1066/800 MHz memory modules Support for non-ECC memory modules Support for Extreme Memory Profile (XMP) memory modules Onboard Graphics Audio (Go to GIGABYTE's website for the latest supported memory speeds and memory modules.) Integrated Graphics Processor: - 1 x D-Sub port Realtek® ALC887 codec High Definition Audio 2/4/5.1/7.1-channel * support XMP memory, you must install an Intel® 22nm (Ivy Bridge) CPU. To * configure 7.1-channel audio, you have to use an HD front panel audio module To and enable the multi-channel audio feature through the audio driver. LAN Realtek® GbE LAN chip (10/100/1000 Mbit) Expansion Slots 1 x PCI Express x16 slot, running at x16 (The PCI Express x16 slot conforms to PCI Express 3.

0 standard.) 1 x PCI Express x1 slot (The PCI Express x1 slot conforms to PCI Express 2.0 standard.) 2 x PCI slots Storage Interface Chipset: - 4 x SATA 3Gb/s connectors supporting up to 4 SATA 3Gb/s devices USB Chipset: - Up to 6 USB 2.0/1.1 ports (2 ports on the back panel, 4 ports available through the internal USB headers) VIA ® VL805 chip: - Up to 4 USB 3.

0/2.0 ports (2 ports on the back panel, 2 ports available through the internal USB header) Internal □□ 1 x 24-pin ATX main power connector □□ 1 x 4-pin ATX 12V power connector Connectors □□ 4 x SATA 3Gb/s connectors □□ 1 x CPU fan header □□ 1 x system fan header * □Whether PCI Express 3.0 is supported depends on CPU and graphics card compatibility. -7- Internal Connectors Back Panel Connectors □□ 1 x front panel header 1 x front panel audio header 1 x USB 3.

0/2.0 header 2 x USB 2.0/1.1 headers 1 x Clear CMOS jumper 1 x PS/2 keyboard port 1 x PS/2 mouse port 1 x D-Sub port 1 x parallel port 1 x serial port 2 x USB 3.0/2.

0 ports 2 x USB 2.0/1.1 ports 1 x RJ-45 port 3 x audio jacks (Line In/Line Out/Microphone) System voltage detection CPU/System temperature detection CPU/System fan speed detection CPU overheating warning CPU/System fan fail warning CPU/System fan speed control I/O Controller Hardware Monitor □□ iTE® I/O Controller Chip * □Whether the CPU/system fan speed control function is supported will depend on the CPU/system cooler you install. BIOS Unique Features □□ □□ □□ □□ Bundled Software Operating System Form Factor 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 Recovery2 Support for EasyTune □□ Support for ON/OFF Charge * Available functions in EasyTune may differ by motherboard model. □□ Norton Internet Security (OEM version) □□ Support for Windows 8/7/XP □□ Micro ATX Form Factor; 24.4cm x 20cm * □ GIGABYTE reserves the right to make any changes to the product specifications and product-related information without prior notice. * Please visit the Support & Downloads\Utility page on GIGABYTE's website to check the supported operating system(s) for the software listed in the "Unique Features" and "Bundled Software" columns. -8- 1-3 Installing the CPU Read the following guidelines before you begin to install the CPU: •• Make sure that the motherboard supports the CPU. (Go to GIGABYTE's website for the latest CPU support list.) •• Always turn off the computer and unplug the power cord from the power outlet before installing the CPU to prevent hardware damage. •• Locate the pin one of the CPU.

The CPU cannot be inserted if oriented incorrectly. (Or you may locate the notches on both sides of the CPU and alignment keys on the CPU socket.) •• Apply an even and thin layer of thermal grease on the surface of the CPU. •• Do not turn on the computer if the CPU cooler is not installed, otherwise overheating and damage of the CPU may occur. •• Set the CPU host frequency in accordance with the CPU specifications. It is not recommended that the system bus frequency be set beyond hardware specifications since it does not meet the standard requirements for the peripherals. If you wish to set the frequency beyond the standard specifications, please do so according to your hardware specifications including the CPU, graphics card, memory, hard drive, etc. Installing the CPUraight out from the connector. Do not rock it side to side to prevent an electrical short inside the cable connector. - 10 - Line Out Jack (Green) Mic In Jack (Pink) 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. The default Mic in jack.

Microphones must be connected to this jack. To configure 7.1-channel audio, you have to use an HD front panel audio module and enable the multi-channel audio feature through the audio driver. 1-7 Internal Connectors 1 3 11 2 5 7 4 9 8 10 6 1) 2) 3) 4) 5) 6) ATX_12V ATX CPU_FAN SYS_FAN SATA2 0/1/2/3 F_PANEL 7) 8) 9) 10) 11) F_AUDIO F_USB30 F_USB1/2 CLR_CMOS BAT 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. - 11 - 1/2) ATX_12V/ATX (2x2 12V Power Connector and 2x12 Main Power Connector) With the use of the power connector, the power supply can supply enough stable power to all the components on the motherboard. Before connecting the power connector, first make sure the power supply is turned off and all devices are properly installed. The power connector possesses a foolproof design. Connect the power supply cable to the power connector in the correct orientation. The 12V power connector mainly supplies power to the CPU. If the 12V power connector is not connected, the computer will not start. To meet expansion requirements, it is recommended that a power supply that can withstand high power consumption be used (500W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable or unbootable system.

ATX_12V: 2 4 ATX_12V 1 3 Pin No. 1 2 3 4 ATX: Definition GND GND +12V +12V Definition Pin No. 3.3V 13 3.3V 14 GND 15 +5V 16 GND 17 +5V 18 GND 19 Power Good 20 5VSB (stand by +5V) 21 +12V 22 +12V (Only for 2x12-pin 23 ATX) 3.3V (Only for 2x12-pin 24 ATX) 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) 12 24 Pin No. 1 2 3 4 5 6 7 8 9 10 11 12 1 ATX 13 3/4) CPU_FAN/SYS_FAN (Fan Headers) The motherboard has a 4-pin CPU fan header (CPU_FAN) and a 4-pin system fan header (SYS_FAN). Most fan headers possess a foolproof insertion design. When connecting a fan cable, be sure to connect it in the correct orientation (the black connector wire is the ground wire).

The speed control function requires the use of a 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/SYS_FAN: CPU_FAN 1 SYS_FAN Pin No. 1 2 3 4 Definition GND +12V Sense Speed Control •• 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. - 12 - DEBUG PORT DEBUG PORT DEBUG PORT 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.

SATA2 1 1 1 1 7 7 7 7 0 1 2 3 Pin No. 1 2 3 4 5 6 7 Definition GND TXP TXN GND RXN RXP GND 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. Power Switch Speaker Message/Power/ Sleep LED F_PANEL(NH) HD+ HDRESRES+ CICI+ Hard Drive Reset Activity LED Switch Chassis Intrusion Header BIOS Switcher (X58A-OC) 1 1 M_SATA PWM Switch (X58A-OC) DIP 1 2 3 1 2 3 DIP 1 2 3 PWR+ Power LED PWR- 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. CLR_CMOS CI DIS_ME GP15_CPT (GA-IVB) SMB_CPT (GA-IVB) - 13 - XDP_CPU 1 2 3 4 DIP 5 2 1 20 19 •• PLED/PWR (Message/Power/Sleep LED): Connects to the power status indicator System Status LED on the chassis front panel. The LED is on S0 On when the system is operating. The LED is S3/S4/S5 Off off when the system is in S3/S4 sleep state or powered off (S5). PWM Switch (SW1)(X79-UD7) •• PW (Power Switch): F_PANEL Connects to the power switch on the chassis front panel.

You may (H61M-D2) configure the way to turn off your system using the power switch (refer to Chapter 2, "BIOS Setup," "Power Management," for more information). •• Speaker (Speaker): 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. •• HD (Hard Drive Activity LED): 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): 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. •• CI (Chassis Intrusion Header): BIOS_PH ACPI_CPT (GA-IVB) (GA-IVB) Connects to the chassis intrusion switch/sensor on the chassis that can detect if the chassis cover has been removed. This function requires a chassis with a chassis intrusion switch/sensor.

PLED+ PLEDPW+ PW- SPEAK+ SPEAK- DIP 1 1 1 2 3 DIP 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 2 1 10 9 •• 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) F_USB30 (USB 3.0/2.0 Header) The header conforms to USB 3.0/2.0 specification and can provide two USB ports. For purchasing the optional 3.5" front panel that provides two USB 3.0/2.0 ports, please contact the local dealer. 1 10 F_USB30 20 11 Pin No.

Definition 1 VBUS 2 F_AUDIO(H) SSRX13 SSRX1+ 4 GND 5 SSTX16 SSTX1+ 7 GND Pin No. 8 9 10 11 12 13 14 Definition D1D1+ NC D2+ D2GND SSTX2+ Pin No. 15 16 17 18 19 20 Definition SSTX2GNDF_PANEL(NH) SSRX2+ SSRX2VBUS No Pin 9) F_USB1/2 (USB 2.0/1.1 Headers) DIP 1 2 3 •• Do not plug the IEEE 1394 bracket (2x5-pin) cable into the USB header. DIP •• Prior to installing the USB bracket, be sure to turn off your computer and unplug the power cord from the power 1 2 3 outlet to prevent damage to the USB bracket. 1 2 3 PCIe power connector (SATA)(X58A-OC) - 14 - 1 2 3 TPM w/housing DIP 1 9 10 1 2 Pin No. Definition Pin No. Definition 1 Power (5V) 6 USB DY+ 2 Power (5V) 7 GND 3 USB DX8 GND Voltage measurement module(X58A-OC) 4 USB DY9 No Pin PWM Switch (X58A-OC) 5 USB DX+ 10 NC 1 1 1 The headers conform to USB 2.0/1.

1 specification. Each USB header can provide two USB ports via an BIOS Switcher (X58A-OC) DB_PORT optional USB bracket. For purchasing the optional USB bracket, please contact the local dealer. M_SATA DIP 10) 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). 11) 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. 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. •• 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/clear CMOS jumper in Chapter 1 for how to clear the CMOS values.) - 15 - 2-1 Startup Screen The following startup Logo screen will appear when the computer boots. (Sample BIOS Version: E11) Function Keys 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. •• 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. 2-2 M.I.T. This section provides information on the BIOS version, CPU base clock, CPU frequency, memory frequency, total memory size, CPU temperature, Vcore, and memory voltage.

Whether the system will work stably with the overclock/overvoltage settings you made is dependent on your overall system configurations. Incorrectly doing overclock/overvoltage may result in damage to CPU, chipset, or memory and reduce the useful life of these components. This page is for advanced users only and we recommend you not to alter the default settings to prevent system instability or other unexpected results. (Inadequately 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.) - 16 - ``M.I.T. Current Status This screen provides information on CPU/memory frequencies/parameters. ``Advanced Frequency Settings && Processor Graphics Clock && CPU Clock Ratio Allows you to set the onboard graphics clock.

The adjustable range is from 400 MHz to 3200 MHz. && CPU Frequency Allows you to alter the clock ratio for the installed CPU. The adjustable range is dependent on the CPU being installed. Displays the current operating CPU frequency. ``Advanced CPU Core Features && CPU Clock Ratio, CPU Frequency && Intel(R) Turbo Boost Technology (Note) The settings above are synchronous to those under the same items on the Advanced Frequency Settings menu.

Allows you to determine whether to enable the Intel® CPU Turbo Boost technology. Auto lets the BIOS automatically configure this setting. (Default: Auto) Allows you to set the CPU Turbo ratios for different number of active cores. Auto sets the CPU Turbo ratios according to the CPU specifications. (Default: Auto) Allows you to set a power limit for CPU Turbo mode.

When the CPU power consumption exceeds the specified power limit, the CPU will automatically reduce the core frequency in order to reduce the power. Auto sets the power limit according to the CPU specifications. (Default: Auto) Allows you to set a current limit for CPU Turbo mode. When the CPU current exceeds the specified current limit, the CPU will automatically reduce the core frequency in order to reduce the current. Auto sets the power limit according to the CPU specifications. (Default: Auto) Allows you to determine whether to enable all CPU cores. Auto lets the BIOS automatically configure this setting. (Default: Auto) Allows you to determine whether to enable multi-threading technology when using an Intel® CPU that supports this function. This feature only works for operating systems that support multi-processor mode. Auto lets the BIOS automatically configure this setting.

(Default: Auto) && Turbo Ratio (1-Core Active~4-Core Active) (Note) && Turbo Power Limit (Watts) && Core Current Limit (Amps) && CPU Core Enabled (Note) && Hyper-Threading Technology (Note) && CPU Enhanced Halt (C1E) (Note) && C3/C6 State Support (Note) Enables or disables Intel® CPU Enhanced Halt (C1E) function, a CPU power-saving function in system halt state. When enabled, the CPU core frequency and voltage will be reduced during system halt state to decrease power consumption. Auto lets the BIOS automatically configure this setting. (Default: Auto) Allows you to determine whether to let the CPU enter C3/C6 mode in system halt state. When enabled, the CPU core frequency and voltage will be reduced during system halt state to decrease power consumption. The C3/C6 state is a more enhanced power-saving state than C1. Auto lets the BIOS automatically configure this setting. (Default: Auto) This item is present only when you install a CPU that supports this feature. @@- 17 - (Note) && CPU Thermal Monitor (Note 1) && CPU EIST Function (Note 1) Enables or disables Intel® CPU Thermal Monitor function, a CPU overheating protection function. When enabled, the CPU core frequency and voltage will be reduced when the CPU is overheated.

Auto lets the BIOS automatically configure this setting. @@@@Auto lets the BIOS automatically configure this setting. @@▯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. @@Allows the system to operate at three different performance levels. ▯Normal ▯ Lets the system operate at its basic performance level. ▯Turbo ▯ Lets the system operate at its good performance level.

@@@@Options are: Auto (default), Quick, Expert. Displays the memory voltage as 1.50V. @@@@Auto lets the BIOS automatically configure this setting. @@@@@@@@@@Auto lets the BIOS automatically configure this setting. @@@@@@@@@@@@@@@@Displays the current system voltages. && CPU Vcore/Dram Voltage/+5V/+12V/CPU VTT && CPU/System Temperature && CPU/System Fan Speed Displays current CPU/system temperature. Displays current CPU/system fan speeds.

&& CPU Warning Temperature && CPU/System Fan Fail Warning && CPU Fan Speed Control 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. Allows the system to emit warning sound if the fan is not connected or fails. 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. - 19 - && Slope PWM && System Fan Speed Control 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.

□ 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. && Slope PWM 2-3 System This section provides information on your motherboard model and BIOS version. You can also select the default language used by the BIOS and manually set the system time. && System Language && System Date Selects the default language used by the BIOS. && System Time 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. Use <Enter> to switch between the Hour, Minute, and Second fields and use the <Page Up> or <Page Down> key to set the desired value. - 20 - && Access Level Displays the current access level depending on the type of password protection used. (If no password is set, the default will display as Administrator.) The Administrator level allows you to make changes to all BIOS settings; the User level only allows you to make changes to certain BIOS settings but not all.

This section provides information on the device connected to each SATA port controlled by Intel® H61 Chipset. ``ATA Port Information 2-4 BIOS Features && Boot Option Priorities && □ ard Drive/CD/DVD ROM Drive/Floppy Drive/Network Device BBS Priorities H Specifies the overall boot order from the available devices. For example, you can set hard drive as the first priority (Boot Option #1) and DVD ROM drive as the second priority (Boot Option #2). The list only displays the device with the highest priority for a specific type. For example, only hard drive defined as the first priority on the Hard Drive BBS Priorities submenu will be presented here.

Removable storage devices that support GPT format will be prefixed with "UEFI:" string on the boot device list. To boot from an operating system that supports GPT partitioning, select the device prefixed with "UEFI:" string. Or if you want to install an operating system that supports GPT partitioning such as Windows 7 64-bit, select the optical drive that contains the Windows 7 64-bit installation disk and is prefixed with "UEFI:" string. Specifies the boot order for a specific device type, such as hard drives, optical drives, floppy disk drives, and devices that support Boot from LAN function, etc. Press <Enter> on this item to enter the submenu that presents the devices of the same type that are connected.

This item is present only if at least one device for this type is installed. Enables or disables Numlock feature on the numeric keypad of the keyboard after the POST. (Default: Enabled) && Bootup NumLock State - 21 - && Security Option && Full Screen LOGO Show 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 □ 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) Allows you to determine whether to limit CPUID maximum value. Set this item to Disabled for Windows XP operating system; set this item to Enabled for legacy operating system such as Windows NT4.

0. (Default: Disabled) Enables or disables Intel® Execute Disable Bit function. This function may enhance protection for the computer, reducing exposure to viruses and malicious buffer overflow attacks when working with its supporting software and system. (Default: Enabled) Enables or disables Intel® Virtualization Technology. Virtualization enhanced by Intel® Virtualization Technology will allow a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple virtual systems. (Default: Disabled) Enables or disables Intel® Virtualization Technology for Directed I/O. (Default: Enabled) && Limit CPUID Maximum (Note) && Execute Disable Bit (Note) && Intel Virtualization Technology (Note) && VT-d (Note) && OS Type && CSM Support Allows you to select the operating system to be installed. Set this item to Windows 8 for Windows 8 operating system. (Default: Other OS) 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. This item is configurable only when OS Type is set to Windows 8 or Windows 8 WHQL. 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 legacy option ROM for the LAN controller. (Default: Disabled) This item is configurable only when CSM Support is set to Always.

&& Boot Mode Selection && LAN PXE Boot Option ROM (Note) This item is present only when you install a CPU that supports this feature. @@- 22 - && Storage Boot Option Control && Other PCI Device ROM Priority 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. 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. && Network stack && Ipv4 PXE Boot Support && Ipv6 PXE Boot Support && Administrator Password && User 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. 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. - 23 - 2-5 Peripherals && SATA Controller(s) && SATA Mode Selection Enables or disables the integrated SATA controllers. (Default: Enabled) && USB2.0 Controller Allows you to decide whether to configure the SATA controller integrated in the Chipset to AHCI mode. IDE Configures the SATA controller to IDE mode. (Default) AHCI   Configures 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 2.0/1.1 controller.

(Default: Enabled) && Audio Controller && Init Display First 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. Specifies the first initiation of the monitor display from the installed PCI graphics card, PCI Express graphics card or the onboard graphics. Auto Lets BIOS automatically configure this setting. (Default) IGFX Sets the onboard graphics as the first display. PEG Sets the PCI Express graphics card on the PCIEX16 slot as the first display. PCI Sets the PCI graphics card as the first display. Enables or disables the onboard graphics function. (Default: Auto) Allows you to set the onboard graphics memory size. Options are: 32M~1024M.

(Default: 64M) && Internal Graphics && Internal Graphics Memory Size && DVMT Total Memory Size Allows you to allocate the DVMT memory size of the onboard graphics. Options are: 128M, 256M, MAX. (Default: MAX) - 24 - && Intel(R) Rapid Start Technology Enables or disables Intel® Rapid Start Technology. This item is configurable only when an SSD is installed. (Default: Disabled) Allows USB keyboard/mouse to be used in MS-DOS. (Default: Enabled) && Legacy USB Support && XHCI Hand-off Determines whether to enable XHCI Hand-off feature for an operating system without XHCI Hand-off support. (Default: Enabled) 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. Enables or disables the VIA VL800 USB controller. (Default: Enabled) && EHCI Hand-off && Port 60/64 Emulation && USB Storage Devices && OnBoard USB3.0 Controller#1 (VIA VL805 USB Controller) && Onboard LAN Controller#1 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. ``Super IO Configuration This section provides information on the super I/O chip and allows you to configure the serial port and && Serial Port A parallel port. Enables or disables the onboard serial port. (Default: Enabled) Enables or disables the onboard parallel port. (Default: Enabled) && Parallel Port && Device Mode This item is configurable only when Parallel Port is set to Enabled. It allows you to select an operating mode for the onboard parallel (LPT) port.

Options are: Standard Parallel Port Mode (Default), EPP Mode (Enhanced Parallel Port), ECP Mode (Extended Capabilities Port), EPP Mode & ECP Mode. ``Intel(R) Smart Connect Technology && ISCT Configuration Enables or disables Intel® Smart Connect Technology. (Default: Disabled) - 25 - 2-6 Power Management && Resume by Alarm && ErP 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. 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. Enables or disables High Precision Event Timer (HPET) for Windows 8/7 operating system. (Default: Enabled) 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. Allows you to determine whether to let the onboard graphics enter standby mode to decrease power consumption. (Default: Enabled) Allows you to determine whether to let the onboard graphics enter deeper standby mode.*

(Default: Enabled) && High Precision Event Timer (Note) && Soft-Off by PWR-BTTN && Internal Graphics Standby Mode && Internal Graphics Deep Standby Mode (Note) Supported on Windows 8/7 operating system only. - 26 - && AC BACK 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) 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 By Keyboard && Power On Password && Power On By Mouse 2-7 Save & Exit - 27 - && Save & Exit Setup && Exit Without Saving 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. @@@@@@@@(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. - 28 - 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.

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