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You can read the recommendations in the user guide, the technical guide or the installation guide for GIGABYTE GA-H81M-S2H. You'll find the answers to all your questions on the GIGABYTE GA-H81M-S2H 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-H81M-S2H**  
**User guide GIGABYTE GA-H81M-S2H**  
**Operating instructions GIGABYTE GA-H81M-S2H**  
**Instructions for use GIGABYTE GA-H81M-S2H**  
**Instruction manual GIGABYTE GA-H81M-S2H**

## GA-H81M-S2H

User's Manual  
Rev. 1001  
12ME-H81M2H-1001R



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**Manual abstract:**

© 2014 Aug. 29, 2014 Copyright © 2014 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-H81M-S2H Motherboard Layout..

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0 ports on the back panel Internal 1 x 24-pin ATX main power connector Connectors 1 x 4-pin ATX 12V power connector 2 x SATA 6Gb/s connectors 2 x SATA 3Gb/s connectors 1 x CPU fan header 1 x system fan header 1 x front panel header -7- Internal Connectors Back Panel Connectors 1 x front panel audio header 1 x USB 3.0/2.0 header 2 x USB 2.0/1.1 headers 1 x Trusted Platform Module (TPM) header 1 x serial port header 1 x Clear CMOS jumper 1 x PS/2 mouse port 1 x PS/2 Keyboard port 1 x D-Sub port 1 x DVI-D port 1 x HDMI port 4 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, Mic In) System voltage detection CPU/System temperature detection CPU/System fan speed detection CPU/System overheating warning CPU/System fan fail warning CPU/System fan speed control I/O Controller Hardware Monitor iTE® I/O Controller Chip \* Whether the fan speed control function is supported will depend on the cooler you install. BIOS Unique Features Support for Q-Flash Support for Xpress Install Support for APP Center 1 x 32 Mbit flash Use of licensed AMI UEFI BIOS PnP 1.0a, DMI 2.7, WfM 2.0, SM BIOS 2.7, ACPI 5.0 - @BIOS - EasyTune - EZ Setup - USB Blocker Support for ON/OFF Charge Bundled Software Operating System Form Factor \* Available applications in APP Center may differ by motherboard model. Supported functions of each application may also differ depending on motherboard specifications. Norton® Internet Security (OEM version) Support for Windows 8.1/8/7 Micro ATX Form Factor; 22.6cm x 17.4cm \* 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 remove the cable from your device and then remove it from the motherboard. • When removing the cable, pull it straight out from the connector. Do not rock it side to side to prevent an electrical short inside the cable connector. (Note) The DVI-D port does not support D-Sub connection by adapter.

- 10 - RJ-45 LAN Port The Gigabit Ethernet LAN port provides Internet connection at up to 1 Gbps data rate. The following describes the states of the LAN port LEDs. Connection/ Speed LED Activity LED Connection/Speed LEDce 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, DEBUGDEBUG making them short for 5 seconds.) PORT PORT 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. 6) SATA3 0/1 (SATA 6Gb/s Connectors) The SATA connectors conform to SATA 6Gb/s standard and are compatible with SATA 3Gb/s and SATA 1.5Gb/s standard. Each SATA connector supports a single SATA device. 7 7 1 SATA3 1 1 0 Pin No. 1 2 3 4 5 6 7 Definition GND TXP TXN GND RXN RXP GND DEBUGDEBUG PORT PORT 7) SATA2 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.

Pin No. 1 2 3 4 5 6 7 Definition GND TXP TXN GND RXN RXP GND 7 7 1 SATA2 1 3 2 - 14 - 8) 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 LED Power Switch Speaker F\_Hard Drive Reset Activity LED Switch Power LED Chassis Intrusion Header SS 1 1 \_S • 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): 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. The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, B B 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.

\_B\_S\_S 1 2 3 1 2 3 9) F\_AUDIO (Front Panel Audio Header) 1 2 3 The front panel audio header supports Intel High Definition audio (HD) and AC'97 audio. You may connect S B\_B 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.



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For HD Front Panel Audio: Pin No. Definition \_ S 1 MIC2\_L 2 GND S\_ 3 MIC2\_R B 4 -ACZ\_DET 5 LINE2\_R 6 GND \_ U \_ 7 FAUDIO\_JD B 8 No Pin 9 LINE2\_L 10 GND F F\_USB3 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 U PWR\_LED+ PWR\_LED PWR\_LED- HD+ HDRESRES+ CICI+ \_ \_ 3 •• 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. \_ 0 •• 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.

- 15 \_ F 1 2 3 2 1 20 19 •• PLED/PWR\_LED (Power 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). S S U •• PW (Power Switch): F\_ PLED+ PLED PW+ PW- SPEAK+ SPEAK- Connects to the power switch on the chassis front panel. You may configure the way to turn off your system using the power switch (refer to Chapter 2, "BIOS Setup," "Power Management," for more information). •• SPEAK (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.

1 1 1 2 3 F 10) F\_USB30 (USB 3.0/2.0 Header) F\_USB30 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. 20 1 11 10 Pin No.

1 2 3 4 5 6 7 Definition VBUS SSRX1SSRX1+ GND SSTX1SSTX1+ GND Pin No. 8 9 10 11 12 13 14 Definition DID1+ NC D2+ D2GND SSTX2+ Pin No. 15 16 17 18 19 20 Definition SSTX2GND SSRX2+ SSRX2VBUS No Pin F\_ U B\_ 11) 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. 9 10 1 2 1 Pin No.

1 2 3 4 5 Definition Power (5V) Power (5V) USB DXUSB DYUSB DX+ Pin No. 6 7 8 9 10 Definition USB DY+ GND GND No Pin NC B SS F\_ 1 •• 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. 12) 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 Definition NDCDNSIN NSOUT NDTRGND Pin No. 6 7 8 9 10 Definition NDSRNRTSNCTS NRINo Pin 9 10 1 2 F\_ - 16 - S B\_ B SS 1 1 13) TPM (Trusted Platform Module Header) Pin No. 19 1 Definition LCLK GND LFRAME No Pin LRESET NC LAD3 S LAD2 VCC3 LAD1 Pin No. 11 12 13 14 15 16 17 18 19 20 Definition LAD0 GND NC ID SB3V SERIRQ GND NC NC SUSCLK S 1 2 3 1 2 3 2 0 2 1 2 3 4 5 6 7 8 9 10 14) CLR\_CMOS (Clear CMOS Jumper) Use this jumper to clear the BIOS configuration 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 S 3 B SS S U \_ \_ 3 Short: Clear CMOS Values S\_ •• 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). S F B\_ S \_ S \_ - 17 - 1 You may connect a TPM (Trusted Platform Module) to this header. \_ S 1 2 3 1 1 2 3 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.) 2-1 Startup Screen The following startup Logo screen will appear when the computer boots.

(Sample BIOS Version: E4) 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. - 18 - 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.



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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.)

**M.I. T. Current Status** `Advanced Frequency Settings && Processor Graphics Clock This screen provides information on CPU/memory frequencies/parameters. && CPU Clock Ratio Allows you to set the onboard graphics clock. The adjustable range is from 400 MHz to 4000 MHz. (Default: Auto) 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. && CPU Frequency `Advanced CPU Core Settings && CPU Clock Ratio, CPU Frequency && K OC (Note) The settings above are synchronous to those under the same items on the Advanced Frequency Settings menu. Allows for increased performance by using certain CPUs. (Default: Auto) Allows you to set the CPU PLL. Auto lets the BIOS automatically configure this setting. (Default: Auto) This item is present only when you install a CPU that supports this feature. @@- 19 - && CPU PLL Selection (Note) && Filter PLL Level && Uncore Ratio Allows you to set the Filter PLL. Auto lets the BIOS automatically configure this setting. (Default: Auto) Allows you to set the CPU Uncore ratio.

The adjustable range is dependent on the CPU being used. Displays the current CPU Uncore frequency. && Uncore Frequency && Intel(R) Turbo Boost Technology (Note) && Turbo Ratio (1-Core Active~4-Core Active) (Note) && Turbo Power Limit (Watts) 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 select the number of CPU cores to enable in an Intel® multi-core CPU (the number of CPU cores may vary by CPU). 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) 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 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 state is a more enhanced power-saving state than C1. Auto lets the BIOS automatically configure this setting. (Default: Auto) Allows you to determine whether to let the CPU enter C6/C7 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 C6/C7 state is a more enhanced power-saving state than C3. Auto lets the BIOS automatically configure this setting. (Default: Auto) Enables or disables Intel® 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. (Default: Auto) Enables or disables Enhanced Intel® Speed Step Technology (EIST). Depending on CPU loading, Intel EIST technology can dynamically and effectively lower the CPU voltage and core frequency to decrease average power consumption and heat production. Auto lets the BIOS automatically configure this setting. (Default: Auto) This item is present only when you install a CPU that supports this feature. @@- 20 - && Core Current Limit (Amps) && No. @@  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. @@ Provides memory detection and training methods.  Auto  Lets BIOS automatically configure this setting. (Default)  Normal  Standard detection and training. @@  Coldboot  Detect and train memory at every single boot.

@@ Options are: Auto (default), Normal Speed, High Speed, Extreme Speed. @@@@ Options are: Auto (default), Manual, Advanced Manual.

@@@@ Enables or disables memory channel interleaving. @@ Auto lets the BIOS automatically configure this setting. (Default: Auto) Enables or disables memory rank interleaving.

@@ Auto lets the BIOS automatically configure this setting. (Default: Auto) && Memory Initialization Mode && Memory Enhancement Settings && Memory Timing Mode && Profile DDR Voltage && Channel Interleaving && Rank Interleaving (Note) This item is present only when you install a CPU and a memory module that support this feature. @@@@  Silent  Allows the fan to run at slow speeds. @@  Full Speed  Allows the fan to run at full speeds. Allows you to control the CPU fan speed. @@ Options are: 0.75 PWM value /oC ~ 2.50 PWM value /oC. @@@@ (Default)  Silent  Allows the fan to run at slow speeds.

@@- 22 - && CPU Fan Speed Control && Fan Speed Percentage && System Fan Speed Control && Fan Speed Percentage  Full Speed  Allows the 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. `Miscellaneous Settings && PCIe Slot Configuration && 3DMark01 Boost Allows you to set the operation mode of the PCI Express slots to Gen 1 or Gen 2. Actual operation mode is subject to the hardware specification of each slot. Auto lets the BIOS automatically configure this setting.



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(Default: Auto) Allows you to determine whether to enhance some legacy benchmark performance.

(Default: Disabled) 2-3 System Information 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.

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. - 23 - && Access Level 2-4 BIOS Features && Boot Option Priorities && Hard 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. @@@@ Disabled skips the GIGABYTE Logo when the system starts up. @@ Ultra Fast provides the fastest bootup speed. @@ Auto Enables legacy option ROM only. EFI Driver Enables EFI option ROM. @@@@ Partial Initial Part of the USB devices are disabled before the OS boot process completes.

(Default) This item is configurable only when Fast Boot is set to Enabled. This function is disabled when Fast Boot is set to Ultra Fast. Disabled PS/2 devices are disabled before the OS boot process completes. All Enabled All PS/2 devices are functional in the operating system and during the POST. (Default) This item is configurable only when Fast Boot is set to Enabled.

This function is disabled when Fast Boot is set to Ultra Fast. Disabled Disables booting from the network. (Default) Enabled Enables booting from the network. This item is configurable only when Fast Boot is set to Enabled or Ultra Fast. Normal Boot Enables normal bootup upon the return of the AC power.

(Default) Fast Boot Keeps the Fast Boot settings upon the return of the AC power. This item is configurable only when Fast Boot is set to Enabled or Ultra Fast. 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® Trusted Execution Technology (Intel® TXT). Intel® Trusted Execution Technology provides a hardware-based security foundation. (Default: Disabled) Enables or disables Intel® Virtualization Technology for Directed I/O. (Default: Enabled) Allows you to select the operating system to be installed. (Default: Other OS) && PS2 Devices Support && NetWork Stack Driver Support && Next Boot After AC Power Loss && Limit CPUID Maximum (Note) && Execute Disable Bit (Note) && Intel Virtualization Technology (Note) && Intel TXT(LT) Support (Note) && VT-d (Note) && Windows 8 Features (Note) This item is present only when you install a CPU that supports this feature. @- 25 - && CSM Support && Boot Mode Selection 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 Windows 8 Features 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. && LAN PXE Boot Option ROM && 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.



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Legacy OpROM  Enables legacy option ROM only.  UEFI OpROM  Enables UEFI option ROM only. (Default) This item is configurable only when CSM Support is set to Always. 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: Disabled) 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 Support && Ipv6 PXE 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. - 26 - 2-5 Peripherals && Initial Display Output Specifies the first initiation of the monitor display from the installed PCI Express graphics card or the onboard graphics.  IGFX  Sets the onboard graphics as the first display.  PCIe 1 Slot  Sets the graphics card on the PCIEX16 slot as the first display.

(Default) Allows you to determine the operating mode for the xHCI controller in OS.  Smart Auto  This mode is available only when the BIOS supports the xHCI controller in the pre-boot  environment. This mode is similar to Auto, but it adds the capability to route the ports to xHCI or EHCI according to setting used in previous boots (for non-G3 boot) in the pre-boot environment. This allows the use of USB 3.0 devices prior to OS boot. xHCI controller enabling and rerouting should follow the steps in Auto, when previous boot routes ports to EHCI. Note: This is the recommended mode when BIOS has xHCI preboot support. (Default)  Auto  BIOS routes the sharable ports to EHCI controller. Then it uses ACPI protocols to provide an option to enable the xHCI controller and reroute the sharable ports. Note: This is the recommended mode when BIOS does NOT have xHCI pre-boot support.

Enabled  All shared ports are eventually routed to the xHCI controller during the BIOS boot process.  If BIOS does not have pre-boot support for the xHCI controller, it should initially route the sharable ports to the EHCI controller and then prior to OS boot it should route the ports to xHCI controller. Note: OS has to provide support for the xHCI controller in this mode. If the OS does not provide support, all sharable ports won't work.  Disabled  USB 3.0 ports are routed to the EHCI controller and the xHCI controller is turned  The off. All USB 3.0 devices function as High Speed devices regardless of xHCI software support/availability.  Manual  Allows you to determine whether to route the USB 3.0 ports to the xHCI or EHCI controller  before booting to OS, and also provides you with options to manually route each USB 3.

0/2.0 port to xHCI or EHCI. && XHCI Mode - 27 - && Audio Controller && Intel Processor Graphics Enables or disables the onboard audio function. (Default: Auto) If you wish to install a 3rd party add-in audio card instead of using the onboard audio, set this item to Disabled. Enables or disables the onboard graphics function.

(Default: Enabled) Allows you to set the onboard graphics memory size. Options are: 32M~1024M. (Default: 64M) && Intel Processor Graphics Memory Allocation && DVMT Total Memory Size && Legacy USB Support && XHCI Hand-off Allows you to allocate the DVMT memory size of the onboard graphics. Options are: 128M, 256M, MAX. (Default: MAX) Allows USB keyboard/mouse to be used in MS-DOS.

(Default: Enabled) && EHCI 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)

Displays a list of connected USB mass storage devices. This item appears only when a USB storage device is installed. 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. Enables or disables the VIA® VL805 USB controller. (Default: Enabled) && USB Storage Devices && OnBoard LAN Controller && Onboard USB3.0 Controller (VIA® VL805 USB Controller) ``SATA Configuration && Integrated SATA Controller && SATA Mode Selection Enables or disables the integrated SATA controllers. (Default: Enabled) ``Serial ATA Port 0/1/2/3 && Port 0/1/2/3 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.  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. (Default) && Hot plug Enables or disables each SATA port. (Default: Enabled) Enables or disable the hot plug capability for each SATA port. (Default: Disabled) Enables or disables support for external SATA devices. (Default: Disabled) && External SATA ``Super IO Configuration This section provides information on the super I/O chip and allows you to configure the serial port and parallel port. - 28 - && Serial Port A ``Realtek PCIe GBE Family Controller Enables or disables the onboard serial port. (Default: Enabled) This sub-menu provides information on LAN configuration. 2-6 Power Management && Power Loading && Resume by Alarm Enables or disables dummy load.

When the power supply is at low load, a self-protection will activate causing it to shutdown or fail. If this occurs, please set to Enabled. Auto lets the BIOS automatically configure this setting. (Default: Auto) Determines whether to power on the system at a desired time.



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(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. 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) 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) - 29 -  && Soft-Off by PWR-BTTN && RC6(Render Standby) && AC BACK && Power On By Keyboard && Power On Password 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. 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: Resume by Alarm, PME event wake up, power on by mouse, power on by keyboard, and wake on LAN.

&& Power On By Mouse && ErP 2-7 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. - 30 -  && Exit Without Saving && Load Optimized Defaults 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).  && Boot Override && Save Profiles && Load Profiles Chapter 3 Appendix Drivers Installation •• Before installing the drivers, first install the operating system. @@@@- 31 - 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. @@@@- 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.



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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.

- 32 - FCC Notice (U.S.A. Only) This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: □□ Reorient or relocate the receiving antenna. □□ Increase the separation between the equipment and receiver. □□ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

□□ Consult a dealer or experienced TV/radio technician for help. Canada, Industry Canada (IC) Notices / Canada, avis d'Industry Canada (IC) □□ This Class B digital apparatus complies with Canadian ICES-003 and RSS-210. □□ Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. □□ Cet appareil numérique de classe B est conforme aux normes canadiennes ICES-003 et RSS-210. □□ Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement. - 33 - - 34 - - 35 - 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: +886-2-8912-4005 Tech.

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