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You can read the recommendations in the user guide, the technical guide or the installation guide for ASUS H81-PLUS. You'll find the answers to all your questions on the ASUS H81-PLUS in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual ASUS H81-PLUS
User guide ASUS H81-PLUS
Operating instructions ASUS H81-PLUS
Instructions for use ASUS H81-PLUS
Instruction manual ASUS H81-PLUS

H81-PLUS

ASUS

Motherboard



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Manual abstract:

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..A-1 ASUS contact information...

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....A-3 iii Safety information Electrical safety ••••• To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system. When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device. Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged. Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.

Ensure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company. If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer. Operation safety ••••• Before installing the motherboard and adding components, carefully read all the manuals that came with the package. Before using the product, ensure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately. To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry. Avoid dust, humidity, and temperature extremes.

Do not place the product in any area where it may be exposed to moisture.

Place the product on a stable surface. If you encounter technical problems with the product, contact a qualified service technician or your retailer. About this guide This user guide contains the information you need when installing and configuring the motherboard. How this guide is organized This guide contains the following parts: • Chapter 1: Product introduction This chapter describes the features of the motherboard and the new technology it supports. It includes descriptions of the switches, jumpers, and connectors on the motherboard.

• Chapter 2: BIOS information This chapter discusses changing system settings through the BIOS Setup menus. Detailed descriptions for the BIOS parameters are also provided. iv Where to find more information Refer to the following sources for additional information and for product and software updates. 1. ASUS websites The ASUS website provides updated information on ASUS hardware and software products.

Refer to the ASUS contact information. 2. Optional documentation Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package. Conventions used in this guide To ensure that you perform certain tasks properly, take note of the following symbols used throughout this manual. DANGER/WARNING: Information to prevent injury to yourself when completing a task. CAUTION: Information to prevent damage to the components when completing a task IMPORTANT: Instructions that you MUST follow to complete a task. NOTE: Tips and additional information to help you complete a task. Typography Bold text Indicates a menu or an item to select. Used to emphasize a word or a phrase.

Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key. Example: <Enter> means that you must press the Enter or Return key. <Key1> + <Key2> + <Key3> If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Italics <Key> □

Package contents Motherboard Cables Accessories Application DVD Documentation Check your motherboard package for the following items. ASUS H81-PLUS motherboard 2 x Serial ATA 6.0 Gb/s cables 1 x I/O Shield Support DVD User Guide If any of the above items is damaged or missing, contact your retailer. H81-PLUS specifications summary CPU LGA1150 socket for 4th Generation Intel® Core™ i7/i5/i3, Pentium®, Celeron® Processors Supports Intel® 22nm CPU Supports Intel® Turbo Boost Technology 2.0* * The Intel® Turbo Boost Technology 2.0 support depends on the CPU types. ** Refer to www.

asus.com for Intel® CPU support list. Chipset Memory Intel® H81 Express Chipset 2 x DIMM, max. 16GB, DDR3 1600 / 1333 / 1066 MHz, non-ECC, unbuffered memory Dual-channel memory architecture Supports Intel® Extreme Memory Profile (XMP) * □ yper DIMM support is subject to the physical characteristics of individual CPUs. H Please refer to the Memory QVL (Qualified Vendors List) for details.



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6 1. Clear RTC RAM (3-pin CLRTC) This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS, which include system setup information such as system passwords.

Jumpers H81-PLUS CLRTC 1 2 2 3 Normal (Default) Clear RTC H81-PLUS Clear RTC RAM 1-10 Chapter 1: Product introduction To erase the RTC RAM: 1. 2. 3. 4. Turn OFF the computer and unplug the power cord. Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep the cap on pins 2-3 for about 5-10 seconds, then move the cap back to pins 1-2. Plug the power cord and turn ON the computer. Hold down the key during the boot process and enter BIOS setup to reenter data. Except when clearing the RTC RAM, never remove the cap on CLRTC jumper default position.

Removing the cap will cause system boot failure! • If the steps above do not help, remove the onboard battery and move the jumper again to clear the CMOS RTC RAM data. After clearing the CMOS, reinstall the battery. You do not need to clear the RTC when the system hangs due to overclocking. For system failure due to overclocking, use the CPU Parameter Recall (C.P.

R.) feature. Shut down and reboot the system, then the BIOS automatically resets parameter settings to default values. • 2. USB device wake-up (USBPWF) Set this jumper to +5V to wake up the computer from S1 sleep mode (CPU stopped, DRAM refreshed, system running in low power mode) using the connected USB devices.

Set to +5VSB to wake up from S3 and S4 sleep modes (no power to CPU, DRAM in slow refresh, power supply in reduced power mode). H81-PLUS USBPWF 1 2 2 3 +5V (Default) +5VSB H81-PLUS USB device wake up •• The USB device wake-up feature requires a power supply that can provide 500mA on the +5VSB lead for each USB port; otherwise, the system would not power up. The total current consumed must NOT exceed the power supply capability (+5VSB) whether under normal condition or in sleep mode. ASUS H81-PLUS 1-11 3. Keyboard and USB device wake-up (KB_USB PWB) This jumper allows you to enable or disable the keyboard and rear USB ports wakeup feature. When you set this jumper to pins 2-3 (+5VSB), you can wake up the computer by pressing a key on the USB keyboard or using a USB device. This feature requires an ATX power supply that can supply at least 1A on the +5VSB lead, and a corresponding setting in the BIOS. KB_USB PWB 2 2 3 1 H81-PLUS +5V +5VSB (Default) H81-PLUS Keyboard and USB device wake up 1.7 1.7.

1 1 Connectors Rear panel connectors 2 3 4 5 1. 2. 3. 11 PS/2 mouse port (green). This port is for a PS/2 mouse. 10 9 8 7 6 Parallel port. This 25-pin port connects a parallel printer, a scanner, or other devices. LAN (RJ-45) port. This port allows Gigabit connection to a Local Area Network (LAN) through a network hub. LAN port LED indications Activity/Link LED Status Description Off No link Orange Linked Orange (Blinking) Data activity Orange (Blinking Ready to wake then steady) up from S5 mode Activity Link LED Speed LED Speed LED Status Description OFF 10Mbps connection ORANGE 100Mbps connection GREEN 1Gbps connection LAN port 1-12 Chapter 1: Product introduction 4.

5. 6. Line In port (light blue). This port connects to the tape, CD, DVD player, or other audio sources. Line Out port (lime).

This port connects to a headphone or a speaker. In the 4, 6 and 8-channel configurations, the function of this port becomes Front Speaker Out. Microphone port (pink). This port connects to a microphone. Refer to the audio configuration table for the function of the audio ports in 2, 4, 6, or 8-channel configuration.

Audio 2, 4, 6, or 8-channel configuration Port Light Blue (Rear panel) Lime (Rear panel) Pink (Rear panel) Lime (Front panel) Headset 2-channel Line In Line Out Mic In 4-channel Rear Speaker Out Front Speaker Out Mic In 6-channel Rear Speaker Out Front Speaker Out Bass/Center 8-channel Rear Speaker

Out Front Speaker Out Bass/Center Side Speaker Out To configure an 8-channel audio output: Use a chassis with HD audio module in the front panel to support an 8-channel audio output. 7. 8. USB 2.0 ports 3 and 4. These two 4-pin Universal Serial Bus (USB) ports are for USB 2.0/1.1 devices. USB 3.0 ports 1 and 2.

These two 9-pin Universal Serial Bus (USB) ports are for USB 3.0 devices. •••• DO NOT connect a keyboard / mouse to any USB 3.0 port when installing Windows® operating system. Due to USB 3.0 controller limitations, USB 3.0 devices can only be used under a Windows® OS environment and after USB 3.0 driver installation. USB 3.0 devices can only be used for data storage.

We strongly recommend that you connect USB 3.0 devices to USB 3.0 ports for faster and better performance from your USB 3.0 devices. 9.

Video Graphics Adapter (VGA) port. This 15-pin port is for a VGA monitor or other VGA-compatible devices.. PS/2 keyboard port (purple). This port is for a PS/2 keyboard.

10. Serial port. This 9-pin COM port is for pointing devices or other serial devices. 11. ASUS H81-PLUS 1-13 1.7.2 1. Internal connectors ATX power connectors (24-pin EATXPWR, 4-pin ATX12V) These connectors are for ATX power supply plugs. The power supply plugs are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.

ATX12V +12V DC +12V DC EATXPWR GND +5 Volts +5 Volts +5 Volts -5 Volts GND GND GND PSON# GND -12 Volts +3 Volts H81-PLUS +3 Volts +12 Volts +12 Volts +5V Standby Power OK PIN 1 GND +5 Volts GND +5 Volts GND +3 Volts +3 Volts PIN 1 H81-PLUS ATX power connectors • For a fully configured system, we recommend that you use a power supply unit (PSU) that complies with ATX 12V Specification 2.0 (or later version) and provides a minimum power of 350W. DO NOT forget to connect the 4-pin ATX +12V power plug. Otherwise, the system will not boot up. We recommend that you use a PSU with higher power output when configuring a system with more power-consuming devices or when you intend to install additional devices. The system may become unstable or may not boot up if the power is inadequate. If you are uncertain about the minimum power supply requirement for your system, refer to the Recommended Power Supply Wattage Calculator at <http://support.asus.com/PowerSupplyCalculator/PSCalculator.aspx?SLanguage=en-us> for details.

•••• 2. Digital audio connector (4-1 pin SPDIF_OUT) This connector is for an additional Sony/Philips Digital Interface (S/PDIF) port. Connect the S/PDIF Out module cable to this connector, then install the module to a slot opening at the back of the system chassis. GND GND H81-PLUS SPDIF_OUT H81-PLUS Digital audio connector The S/PDIF module is purchased separately. 1-14 SPDIFOUT GND +5V Chapter 1: Product introduction 3.

Front panel audio connector (10-1 pin AAFP) This connector is for a chassis-mounted front panel audio I/O module that supports either HD Audio or legacy AC 97 audio standard.



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Connect one end of the front panel audio I/O module cable to this connector. AGND NC SENSE1_RETUR SENSE2_RETUR AGND NC NC PIN 1 AAFP PORT1 L PORT1 R PORT2 R SENSE_SEND PORT2 L H81-PLUS HD-audio-compliant pin definition Legacy AC'97 compliant definition H81-PLUS Front panel audio connector •• We recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high-definition audio capability. If you want to connect a high-definition front panel audio module to this connector, set the Front Panel Type item in the BIOS setup to [HD]. If you want to connect an AC'97 front panel audio module to this connector, set the item to [AC97].

By default, this connector is set to [HD]. See section 2.6.7 Onboard Devices Configuration for details. 4. Intel® H81 Serial ATA 6.0Gb/s connector (7-pin SATA6G_1~2 [yellow]) This connector connects to Serial ATA 6.0 Gb/s hard disk drives via Serial ATA 6.0 Gb/s signal cables. H81-PLUS SATA6G_1 GND RSATA_RXP1 RSATA_RXN1 GND RSATA_TXN1 RSATA_TXP1 GND SATA6G_2 GND RSATA_RXP2 RSATA_RXN2 GND RSATA_TXN2 RSATA_TXP2 GND H81-PLUS SATA 6.

0Gb/s connectors When using hot-plug and NCQ, set the SATA Mode Selection item in the BIOS to [AHCI]. See section 2.6.3 SATA Configuration for details.

ASUS H81-PLUS MIC2 MICPWR Line out_R NC Line out_L NC 1-15 5. Intel® H81 Serial ATA 3.0Gb/s connector (7-pin SATA3G_1~2) This connector connects to Serial ATA 3.0 Gb/s hard disk drives via Serial ATA 3.0 Gb/s signal cables. H81-PLUS SATA3G_1 SATA3G_2 GND RSATA_TXP1 RSATA_TXN1 GND RSATA_RXN1 RSATA_RXP1 GND H81-PLUS SATA 3.

0Gb/s connectors When using hot-plug and NCQ, set the SATA Mode Selection item in the BIOS to [AHCI]. 6. CPU and chassis fan connectors (4-pin CPU_FAN, 4-pin CHA_FAN) Connect the fan cables to the fan connectors on the motherboard, ensuring that the black wire of each cable matches the ground pin of the connector. CPU_FAN GND CPU FAN PWR CPU FAN IN CPU FAN PWM CHA_FAN H81-PLUS H81-PLUS Fan connectors Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components.

These are not jumpers! Do not place jumper caps on the fan connectors! The CPU_FAN connector supports a CPU fan of maximum 1A (12 W) fan power.

Only the 4-pin CPU fan supports the ASUS Fan Xpert feature. GND CHA FAN PWR CHA FAN IN VCC GND RSATA_TXP2 RSATA_TXN2 GND RSATA_RXN2 RSATA_RXP2 GND 1-16 Chapter 1: Product introduction 7. USB 2.0 connectors (10-1 pin USB56, USB910, USB1112) These connectors are for USB 2.

0 ports. Connect the USB module cable to any of these connectors, then install the module to a slot opening at the back of the system chassis. These USB connectors comply with USB 2.0 specifications and supports up to 480Mbps connection speed. USB56 USB+5V USB_P5USB_P5+ GND NC USB910 USB+5V USB_P9USB_P9+ GND NC USB1112 USB+5V USB_P11USB_P11+ GND NC H81-PLUS USB+5V USB_P6USB_P6+ GND USB+5V USB_P10USB_P10+ GND H81-PLUS USB2.0 connectors Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard! The USB 2.0 module is purchased separately. 8. System panel connector (20-8 pin PANEL) This connector supports several chassis-mounted functions.

PANEL PWR_LED SPEAKER PIN 1 PWR Ground H81-PLUS +HDD_LED PWR SW HDD_LED+ HDD_LED- RESET * Requires an ATX power supply H81-PLUS System panel connector ASUS H81-PLUS Reset Ground +5V Ground Ground Speaker PLED+ PLED- USB+5V USB_P12USB_P12+ GND PIN 1 PIN 1 PIN 1 1-17 • System power LED (2-pin PWR_LED) This 2-pin connector is for the system power LED. Connect the chassis power LED cable to this connector. The system power LED lights up when you turn on the system power, and blinks when the system is in sleep mode. • Hard disk drive activity LED (2-pin HDD_LED) This 2-pin connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. The HDD LED lights up or flashes when data is read from or written to the HDD. • System warning speaker (4-pin SPEAKER) This 4-pin connector is for the chassis-mounted system warning speaker. The speaker allows you to hear system beeps and warnings. • ATX power button/soft-off button (2-pin PWR_SW) This connector is for the system power button. Pressing the power button turns the system on or puts the system in sleep or soft-off mode depending on the BIOS settings.

Pressing the power switch for more than four seconds while the system is ON turns the system OFF. • Reset button (2-pin RESET) This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power. 1.8 1. Onboard LEDs Standby Power LED The motherboard comes with a standby power LED that lights up to indicate that the system is ON, in sleep mode, or in soft-off mode.

This is a reminder that you should shut down the system and unplug the power cable before removing or plugging in any motherboard component. The illustration below shows the location of the onboard LED. H81-PLUS SB_PWR ON Standby Power OFF Powered Off H81-PLUS Onboard LED 1-18 Chapter 1: Product introduction 1.9 1.9.

1 Software support Installing an operating system This motherboard supports Windows® 7 (32bit/64bit) and Windows® 8 (32bit/64bit) Operating Systems (OS). Always install the latest OS version and corresponding updates to maximize the features of your hardware. Motherboard settings and hardware options vary. Refer to your OS documentation for detailed information. 1.9.2 Support DVD information The Support DVD that comes with the motherboard package contains the drivers, software applications, and utilities that you can install to avail all motherboard features. The contents of the Support DVD are subject to change at any time without notice. Visit the ASUS website at www.asus.com.

com for updates. To run the Support DVD Place the Support DVD into the optical drive. If Autorun is enabled in your computer, the DVD automatically displays the Specials screen which lists the unique features of your ASUS motherboard. Click Drivers, Utilities, AHCI Driver, Manual, Contact and Specials tabs to display their respective menus. The following screen is for reference only. Click an icon to display Support DVD/motherboard information Click an item to install If Autorun is NOT enabled in your computer, browse the contents of the Support DVD to locate the file ASSETUP.EXE from the BIN folder.

Double-click the ASSETUP.EXE to run the DVD. ASUS H81-PLUS 1-19 BIOS information 2.

1 Managing and updating your BIOS 2 Save a copy of the original motherboard BIOS file to a USB flash disk in case you need to restore the BIOS in the future. Copy the original motherboard BIOS using the ASUS Update utility. 2.1.1 EZ Update EZ Update is a utility that allows you to automatically update your motherboard's softwares, drivers and the BIOS version easily.

With this utility, you can also manually update the saved BIOS and select a boot logo when the system goes into POST.



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To launch EZ Update, click EZ Update on the AI Suite 3 main menu bar. Model Name: H81-PLUS Version:0203 Release Date: 05/28/2013 Click to automatically update your motherboard's driver, software and firmware File: H81-PLUS-ASUS-0205.CAP Model Name: H81-PLUS Version:0205 Release Date: 06/18/2013 C:\Users\test\Downloads\H81-PLUS-ASUS-02..

. Click to find and select the BIOS from file Click to select a boot logo Click to update the BIOS EZ Update requires an Internet connection either through a network or an ISP (Internet Service Provider). ASUS H81-PLUS 2-1 2.1.2 ASUS EZ Flash 2 The ASUS EZ Flash 2 feature allows you to update the BIOS without using an OS-based utility. Before you start using this utility, download the latest BIOS file from the ASUS website at www.asus.com. To update the BIOS using EZ Flash 2: 1. 2.

3. 4. 5. 6. Insert the USB flash disk that contains the latest BIOS file to the USB port. Enter the Advanced Mode of the BIOS setup program. Go to the Tool menu to select ASUS EZ Flash Utility and press <Enter> to enable it. Press <Tab> to switch to the Drive field. Press the Up/Down arrow keys to find the USB flash disk that contains the latest BIOS, and then press <Enter>. Press <Tab> to switch to the Folder Info field.

Press the Up/Down arrow keys to find the BIOS file, and then press <Enter> to perform the BIOS update process. Reboot the system when the update process is done. •••This function supports USB flash disks formatted using FAT32/16 on a single partition only. Ensure to load the BIOS default settings to ensure system compatibility and stability. Select the Load Optimized Defaults item under the Exit menu.

. DO NOT shut down or reset the system while updating the BIOS to prevent system boot failure! 2-2 Chapter 2: Getting started 2.1.3 ASUS CrashFree BIOS 3 The ASUS CrashFree BIOS 3 is an auto recovery tool that allows you to restore the BIOS file when it fails or gets corrupted during the updating process.

You can restore a corrupted BIOS file using the motherboard support DVD or a USB flash drive that contains the updated BIOS file.

•• Before using this utility, rename the BIOS file in the removable device into H81PL.CAP. The BIOS file in the support DVD may not be the latest version. Download the latest BIOS file from the ASUS website at www.asus.com. Recovering the BIOS To recover the BIOS: 1. 2. 3. 4.

Turn on the system. Insert the support DVD to the optical drive or the USB flash drive that contains the BIOS file to the USB port. The utility automatically checks the devices for the BIOS file. When found, the utility reads the BIOS file and enters ASUS EZ Flash 2 utility automatically. The system requires you to enter BIOS Setup to recover BIOS settings. To ensure system compatibility and stability, we recommend that you press <F5> to load default BIOS values. DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure! 2.1.4 ASUS BIOS Updater The ASUS BIOS Updater allows you to update BIOS in a DOS environment. This utility also allows you to copy the current BIOS file that you can use as a backup when the BIOS fails or gets corrupted during the updating process.

The succeeding utility screens are for reference only. The actual utility screen displays may not be same as shown. Before updating BIOS 1. 2. Prepare the motherboard support DVD and a USB flash drive formatted using FAT32/16 on a single partition.

Download the latest BIOS file and BIOS Updater from the ASUS website at <http://support.asus.com> and save them on the USB flash drive. NTFS is not supported under DOS environment. Do not save the BIOS file and BIOS Updater to a hard disk drive or USB flash drive in NTFS format.

3. Turn off the computer and disconnect all SATA hard disk drives (optional). ASUS H81-PLUS 2-3 Booting the system to a DOS environment 1. 2. Insert the DOS-bootable USB flash drive with the latest BIOS file and BIOS Updater to your computer's USB port. Boot your computer. When the ASUS Logo appears, press <F8> to show the BIOS Boot Device Select Menu. 3. Select the USB flash drive as the boot device. The DOS screen appears.

Updating the BIOS file To update the BIOS file using BIOS Updater: 1. At the FreeDOS prompt, type `bupdater /pc /g` and press <Enter>. 2. The BIOS Updater screen appears as below. ASUSTek BIOS Updater for DOS V1.30 H81-PLUS 0305 06/08/2013 H81-PLUS-ASUS-0214.CAP 8194 2013-04-08 5:25:48 2-4 Chapter 2: Getting started 3. Press <Tab> to switch between screen fields and use the <Up/Down/Home/End> keys to select the BIOS file and press <Enter>. BIOS Updater checks the selected BIOS file and prompts you to confirm BIOS update. 4.

Select Yes and press <Enter>. When BIOS update is done, press <ESC> to exit BIOS Updater. Restart your computer. DO NOT shut down or reset the system while updating the BIOS to prevent system boot failure! •• For BIOS Updater version 1.30 or later, the utility automatically exits to the DOS prompt after updating BIOS.

Ensure to load the BIOS default settings to ensure system compatibility and stability. Select the Load Optimized Defaults item under the Exit menu. Refer to section 2.10 Exit menu for details. Ensure to connect all SATA hard disk drives after updating the BIOS file if you have disconnected them.

•ASUS H81-PLUS 2-5 2.2 Use the BIOS Setup program to update the BIOS or configure its parameters. The BIOS screens include navigation keys and brief online help to guide you in using the BIOS Setup program. BIOS setup program Entering BIOS Setup at startup To enter BIOS Setup at startup: • Press <Delete> during the Power-On Self Test (POST). If you do not press <Delete>, POST continues with its routines. Entering BIOS Setup after POST To enter BIOS Setup after POST: ••• Press <Ctrl>+<Alt>+ simultaneously. Press the reset button on the system chassis. Press the power button to turn the system off then back on. Do this option only if you failed to enter BIOS Setup using the first two options. Using the power button, reset button, or the <Ctrl>+<Alt>+ keys to force reset from a running operating system can cause damage to your data or system.

We recommend you always shut down the system properly from the operating system. ••••The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen. Visit the ASUS website at www.asus.com to download the latest BIOS file for this motherboard. Ensure that a USB mouse is connected to your motherboard if you want to use the mouse to control the BIOS setup program. If the system becomes unstable after changing any BIOS setting, load the default settings to ensure system compatibility and stability. Select the Load Optimized Defaults item under the Exit menu or press hotkey F5.



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See section 2.10 Exit Menu for details.

If the system fails to boot after changing any BIOS setting, try to clear the CMOS and reset the motherboard to the default value. See section 1.6 Jumpers for information on how to erase the RTC RAM. • BIOS menu screen The BIOS setup program can be used under two modes: EZ Mode and Advanced Mode. You can change modes from the Exit menu or from the Exit/Advanced Mode button in the EZ Mode/Advanced Mode screen.

2-6 Chapter 2: Getting started EZ Mode By default, the EZ Mode screen appears when you enter the BIOS setup program. The EZ Mode provides you an overview of the basic system information, and allows you to select the display language, system performance mode and boot device priority. To access the Advanced Mode, click Exit/Advanced Mode, then select Advanced Mode or press F7 for the advanced BIOS settings. The default screen for entering the BIOS setup program can be changed. Refer to the Setup Mode item in section 2.

8 Boot menu for details. Displays the CPU/motherboard temperature, CPU voltage output, and CPU/chassis fan speed Selects the display language of the BIOS setup program Exits the BIOS setup program without saving the changes, saves the changes and resets the system, or enters the Advanced Mode Selects the Advanced mode functions Selects the boot device priority Power saving mode Normal mode ASUS Optimal mode Displays the Advanced mode menus Selects the boot device priority Loads optimized default Displays the system properties of the selected mode on the right hand side •• The boot device options vary depending on the devices you installed to the system. The Boot Menu(F8) button is available only when the boot device is installed to the system.

Advanced Mode The Advanced Mode provides advanced options for experienced end-users to configure the BIOS settings. The figure below shows an example of the Advanced Mode. Refer to the following sections for the detailed configurations. To access the EZ Mode, click Exit, then select ASUS EZ Mode or press F7. ASUS H81-PLUS 2-7 Back button Menu items Menu bar Configuration fields General help Submenu item Pop-up window Navigation keys Scroll bar Last modified settings Quick note Menu bar The menu bar on top of the screen has the following main items: My Favorites For saving the frequently-used system settings and configuration Main For changing the basic system configuration Ai Tweaker Advanced Monitor Boot Tool Exit For changing the overclocking settings For changing the advanced system settings For displaying the system temperature, power status, and changing the fan settings For changing the system boot configuration For configuring options for special functions For selecting the exit options and loading default settings Menu items The highlighted item on the menu bar displays the specific items for that menu. For example, selecting Main shows the Main menu items. The other items (Ai Tweaker, Advanced, Monitor, Boot, Tool, and Exit) on the menu bar have their respective menu items.

Back button This button appears when entering a submenu. Press <Esc> or use the USB mouse to click this button to return to the previous menu screen. Submenu items A greater than sign (>) before each item on any menu screen means that the item has a submenu. To display the submenu, select the item and press <Enter>. 2-8 Chapter 2: Getting started Pop-up window Select a menu item and press <Enter> to display a pop-up window with the configuration options for that item. Scroll bar A scroll bar appears on the right side of a menu screen when there are items that do not fit on the screen. Press the Up/Down arrow keys or <Page Up> / <Page Down> keys to display the other items on the screen. Navigation keys At the bottom right corner of the menu screen are the navigation keys for the BIOS setup program. Use the navigation keys to select items in the menu and change the settings. For the navigation key, it's only available in English.

If you delete the default shortcuts, they will appear on your next system bootup. General help At the top right corner of the menu screen is a brief description of the selected item. Configuration fields These fields show the values for the menu items. If an item is user-configurable, you can change the value of the field opposite the item. You cannot select an item that is not user-configurable.

A configurable field is highlighted when selected. To change the value of a field, select it and press <Enter> to display a list of options. Quick Note button This button allows you to enter notes of the activities that you have done in BIOS. •• The Quick Note function does not support the following keyboard functions: delete, cut, copy and paste. You can only use the English letters to type your notes.

Last Modified button This button shows the items that you last modified and saved in BIOS Setup. ASUS H81-PLUS 2-9 2.3 MyFavorites is your personal space where you can easily save and access your favorite BIOS items. My Favorites Adding items to My Favorites To add frequently-used BIOS items to My Favorites: 1. 2. Use the arrow keys to select an item that you want to add. When using a mouse, hover the pointer to the item. Press <F4> on your keyboard or right-click on your mouse to add the item to My Favorites page. You cannot add the following items to My Favorites: ••• Items with submenu options User-configurable items such as language and boot device order Configuration items such as Memory SPD Information, system time and date 2-10 Chapter 2: Getting started 2.4 The Main menu screen appears when you enter the Advanced Mode of the BIOS Setup program.

The Main menu provides you an overview of the basic system information, and allows you to set the system date, time, language, and security settings. Main menu 2.4.1 2.4.2 2.4.3 2.4.4 System Language [English] System Date [Day xx/xx/xxxx] System Time [xx:xx:xx] Security Allows you to choose the BIOS language version from the options.

Configuration options: [English] [Español] [Русский] [□□□□] Allows you to set the system date. Allows you to set the system time. The Security menu items allow you to change the system security settings. • If you have forgotten your BIOS password, erase the CMOS Real Time Clock (RTC) RAM to clear the BIOS password. See section 1.

6 Jumpers for information on how to erase the RTC RAM. The Administrator or User Password items on top of the screen show the default Not Installed. After you set a password, these items show Installed. • Administrator Password If you have set an administrator password, we recommend that you enter the administrator password for accessing the system. Otherwise, you might be able to see or change only selected fields in the BIOS setup program. To set an administrator password: 1. 2. Select the Administrator Password item and press <Enter>. From the Create New Password box, key in a password, then press <Enter>.



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ASUS H81-PLUS 2-11 3. Confirm the password when prompted. To change an administrator password: 1. 2. 3. 4.

Select the Administrator Password item and press <Enter>. @@@@Confirm the password when prompted. To clear the administrator password, follow the same steps as in changing an administrator password, but press <Enter> when prompted to create/confirm the password. After you clear the password, the Administrator Password item on top of the screen shows Not Installed. User Password If you have set a user password, you must enter the user password for accessing the system. The User Password item on top of the screen shows the default Not Installed. After you set a password, this item shows Installed. To set a user password: 1. 2. 3.

1. 2. 3. 4. Select the User Password item and press <Enter>.

From the Create New Password box, key in a password, then press <Enter>. Confirm the password when prompted. Select the User Password item and press <Enter>. @@@@Incorrect field values can cause the system to malfunction. @@@@1-Core Limit must not be set to [Auto]. @@Select [Auto] to apply the CPU default Turbo Ratio setting or manually assign a 3-Core Ratio Limit value that is higher than or equal to the 4-Core Ratio Limit. 1-Core/2-Core Ratio Limit must not be set to [Auto]. 4-Core Ratio Limit [Auto] This item becomes configurable only when you set CPU Core Ratio to [Per Core] and allows you to set the 4 Core Ratio Limit. Select [Auto] to apply the CPU default Turbo Ratio setting or manually assign a 4-Core Ratio Limit value that is higher than or equal to the 3-Core Ratio Limit. @@@@The BCLK frequency to DRAM frequency ratio is set to 100:133. @@@@Configuration options: [As is] [Enabled]. @@@@Use the <+> and <-> keys to adjust the value. @@@@[Enabled] Enables the MRC fast boot. [Disable] Disables the MRC fast boot. @@The CPU working voltage will decrease proportionally to CPU loading.

@@@@Use the <+> or <-> keys to adjust the value. @@@@[T. Probe] [Extreme] Select to maintain the VRM thermal balance. Select to maintain the current VRM balance. CPU Current Capability [Auto] Allows you to configure the total power range, and extends the overclocking frequency range simultaneously. Configuration options: [Auto] [100%] [110%] [120%] [130%] [140%] Choose a higher value when overclocking, or under a high CPU loading for extra power support. 2.5.12 CPU Power Management The subitems in this menu allow you to set the CPU ratio and features. Enhanced Intel® SpeedStep Technology [Enabled] Allows you to enable or disable the Enhanced Intel® SpeedStep Technology (EIST).

[Disabled] [Enabled] Disables this function. The operating system dynamically adjusts the processor voltage and core frequency which may result in decreased average consumption and decreased average heat production. Turbo Mode [Enabled] Allows you to enable your core processor's speed to run faster than the marked frequency in a specific condition. Configuration options: [Disabled] [Enabled] ••Turbo Mode is only available on selected CPU models only. The following first three items appear only when you set the Turbo Mode to [Enabled].

Turbo Mode Parameters Long Duration Package Power Limit [Auto] Allows you to limit the turbo ratio's long duration package power. Use the <+> and <-> keys to adjust the value. Package Power Time Window [Auto] Allows you to set the package power time window. Use the <+> and <-> keys to adjust the value. Short Duration Package Power Limit [Auto] Allows you to limit the turbo ratio's long duration power.

Use the <+> and <-> keys to adjust the value. CPU Integrated VR Current Limit [Auto] Allows you to limit the CPU Integrated VR current Use <+> and <-> key to adjust the value. ASUS H81-PLUS 2-19 CPU Internal Power Switching Frequency Frequency Tuning Mode [Auto] Allows you to set the frequency tuning mode. Configuration options: [Auto] [+] [-] CPU Internal Power Fault Control Thermal Feedback [Auto] When enabled, it allows CPU to take precautionary actions when the thermal of the external regulator exceeds the limit. Configuration options: [Auto] [Disabled] [Enabled] CPU Integrated VR Fault Management [Auto] Allows you to manage the CPU Integrated VR fault. Configuration options: [Auto] [Disabled] [Enabled] CPU Internal Power Configuration CPU Integrated VR Efficiency Management [Auto] Allows you to manage the CPU integrated VR efficiency. Configuration options: [Auto] [High Performance] [Balanced] Power Decay Mode [Auto] Enable to improve power saving on the Fully Integrated Voltage Regulator as the processor enters low current mode. Configuration options: [Auto] [Disabled] [Enabled] Idle Power-in Response [Auto] Allows you to set the idle power-in response. Configuration options: [Auto] [Regular] [Fast] Idle Power-out Response [Auto] Allows you to set the idle power-out response. Configuration options: [Auto] [Regular] [Fast] Power Current Slope [Auto] Allows you to set the power current slope.

Configuration options: [Auto] [Level -4] ~ [Level 4]. Power Current Offset [Auto] Allows you to set the power current offset. Configuration options: [Auto] [100%] [87.5%] [75%] [62.5%] [50%] [37.5%] [25%] [12.5%] [0%] [-12.5%] [-25%] [-37.5%] [-50.0%] [-62.

5%] [-75%] [-87.5%] [-100%] Power Fast Ramp Response [Auto] Allows you to increase to enhance the response of the voltage regulator during the load transient. Configurations: [Auto] [0.00] - [1.50].

CPU Internal Power Saving Control Power Saving Level 1 Threshold [Auto] Allows you to set the power saving level 1 threshold. Use the <+> and <-> keys to adjust the value. Power Saving Level 2 Threshold [Auto] Allows you to set the power saving level 2 threshold. Use the <+> and <-> keys to adjust the value. 2-20 Chapter 2: Getting started Power Saving Level 3 Threshold [Auto] Allows you to set the power saving level 3 threshold.

Use the <+> and <-> keys to adjust the value. 2.5.13 Extreme Over - voltage [Disabled] By default, this item is set to [Disabled] and helps provide over voltage protection for the CPU. When you set this item to [Enabled], you can select voltage settings for overclocking, but this will not guarantee the CPU's lifespan. 2.5.14 CPU Core Voltage [Auto] Allows you to configure the amount of voltage fed to the cores of the processor. Increase the amount of voltage when increasing core frequency. Configuration options: [Auto] [Manual Mode] [Offset Mode] CPU Core Voltage Override [Auto] This item appears only when you set the CPU Core Voltage to [Manual Mode] and allows you to set the CPU core voltage override.

@@@@Increase the cache voltage when increasing the ring frequency. @@@@@Increase the graphics voltage when increasing the iGPU frequency. @@@@@The values range from 0.001V to 1.920V with a 0.001V interval. Total Adaptive Mode CPU Graphics Voltage [Auto] This item appears only when you set the CPU Graphics Voltage to [Adaptive Mode] and allows you to set the total adaptive mode CPU graphics voltage.



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The values range from 0.001V to 1.920V with a 0.

001V interval. 2.5.17 CPU System Agent Voltage Offset Mode Sign [+] This item allows you to set the CPU system agent voltage offset mode sign.

Configuration options: [+] [-].

CPU System Agent Voltage Offset [Auto] This item allows you to set the CPU system agent voltage offset. Increase the value when increasing DRAM frequency. The values range from 0.001V to 0.999V with a 0.

001V interval. 2.5.18 CPU Analog I/O Voltage Offset Mode Sign [+] This item allows you to set the CPU analog I/O voltage offset mode sign. Configuration options: [+] [-]. CPU Analog I/O Voltage Offset [Auto] This item allows you to set the CPU analog I/O voltage offset. Increase the value when increasing DRAM frequency. The values range from 0.001V to 0.999V with a 0.

001V interval. 2-22 Chapter 2: Getting started 2.5.19 CPU Digital I/O Voltage Offset Mode Sign [+] This item allows you to set the CPU digital I/O voltage offset mode sign. Configuration options: [+] [-]. CPU Digital I/O Voltage Offset [Auto] This item allows you to set the CPU digital I/O voltage offset. Increase the value when increasing DRAM frequency. The values range from 0.001V to 0.999V with a 0.

001V interval. 2.5.20 SVID Support [Auto] Disabling SVID Support stops the processor from communicating with the external voltage regulator.

Configuration options: [Auto] [Disabled] [Enabled].

• We recommend that you disable this function when overclocking. The following item appears only when you set SVID Support to [Enabled]. 2.5.21 CPU Input Voltage (VCCIN) [Auto] This item allows you to set the CPU input voltage.

The values range from 0.800V to 2.700V with a 0.010V interval. 2.5.22 DRAM Voltage [Auto] Allows you to set the DRAM Voltage. The values range from 1.500V to 1.650V with a 0.

050V interval. According to Intel CPU specifications, DIMMs with voltage requirement over 1.65V may damage the CPU permanently. We recommend that you install the DIMMs with the voltage requirement below 1.65V. 2.5.23 2.5.24 2.

5.25 2.5.26 PCH Core Voltage [Auto] DRAM CTRL REF Voltage [Auto] DRAM DATA REF Voltage on CHA [Auto] DRAM DATA REF Voltage on CHB [Auto] Allows you to set the core voltage for the PCH. Configuration options: [Auto] [+].

10V]. Allows you to set the DRAM CTRL REF Voltage. The values range from 0.3950x to 0.6300x with a 0.

0050x interval. Allows you to set the DRAM DATA REF Voltage on CHA. The values range from 0.3950x to 0.6300x with a 0.0050x interval Allows you to set the DRAM DATA REF Voltage on CHB. The values range from 0.3950x to 0.6300x with a 0.0050x interval ASUS H81-PLUS 2-23 2.

6 The Advanced menu items allow you to change the settings for the CPU and other system devices. Be cautious when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction. Advanced menu 2.6.1 CPU Configuration The items in this menu show the CPU-related information that the BIOS automatically detects. The items shown in submenu may be different due to the CPU you installed. Intel® Adaptive Thermal Monitor [Enabled] [Enabled] [Disabled] Enables the overheated CPU to throttle its clock speed to cool down. Disables the CPU thermal monitor function. Hyper-threading [Enabled] The Intel Hyper-Threading Technology allows a hyper-threading processor to appear as two logical processors to the operating system, allowing the operating system to schedule two threads or processes simultaneously.

[Enabled] [Disabled] Two threads per activated core are enabled. Only one thread per activated core is enabled. Active Processor Cores [All] Allows you to choose the number of CPU cores to activate in each processor package. Configuration options: [All] [1] [2] [3] 2-24 Chapter 2: Getting started Limit CPUID Maximum [Disabled] [Enabled] [Disabled] [Enabled] [Disabled] [Enabled] [Disabled] [Enabled] [Disabled] [Enabled] [Disabled] Allows legacy operating systems to boot even without support for CPUs with extended CPUID functions. Disables this function.

Enables the No-Execution Page Protection Technology. Forces the XD feature flag to always return to zero (0). Allows a hardware platform to run multiple operating systems separately and simultaneously, enabling one system to virtually function as several systems. Disables this function. Allows a hardware platform to automatically analyze the requirements and prefetch data and codes for the CPU.

Disables this function. Allows a hardware platform to perform adjacent cache line prefetching. Disables this function. Execute Disable Bit [Enabled] Intel Virtualization Technology [Disabled] Hardware Prefetcher [Enabled] Adjacent Cache Line Prefetch [Enabled] Boot performance mode [Max Non-Tu...] This item allows you to select the boot performance mode. Configuration options: [Max NonTurbo Performance] [Max battery] [Turbo Performance] CPU Power Management Configuration This item allows you to manage and configure the CPU's power. EIST [Enabled] Allows you to enable or disable the Enhanced Intel® SpeedStep Technology (EIST). [Disabled] The CPU runs at its default speed.

[Enabled] The operating system controls the CPU speed. Turbo Mode [Enabled] Allows you to set the processor cores to run faster than the marked frequency in a specific condition. Configuration options: [Enabled] [Disabled] Turbo Mode is only available on selected CPU models only. CPU C states [Auto] [Auto] [Enabled] [Disabled] Automatic configuration. Enables the CPU C states. Disables the CPU C states. ASUS H81-PLUS 2-25 The following items appear only when you set the CPU C states to [Enabled]. Enhanced C1 state [Enabled] [Enabled] [Disabled] Enables enhanced C1 state. Disables enhanced C1 state. CPU C3 Report [Enabled] Allows you to disable or enable the CPU C3 report to OS.

Configuration options: [Enabled] [Disabled] CPU C6 report [Enabled] Allows you to disable or enable the CPU C6 report to OS. Configuration options: [Enabled] [Disabled] C6 Latency [Short] Allows you to choose short or long latency for C6. Configuration options: [Short] [Long] CPU C7 report [CPU C7s] Allows you to disable or enable the CPU C7 report to OS. Configuration options: [Disabled] [CPU C7] [CPU C7s] C7 Latency [Long] Allows you to choose short or long latency for C6. Configuration options: [Short] [Long] Package C State Support [Auto] Allows you to disable or enable the whole C-State package support.

Configuration options: [Auto] [Enabled] [C0/C1] [C2] [C3] [C6] [CPU C7] [CPU C7s] 2.6.2 PCH Configuration PCI Express Configuration DMI Link ASPM Control [Auto] Allows you to control the Active State Power Management on both NB and SB side of the DMI Link. Configuration options: [Auto] [Enabled] [Disabled] ASPM Support [Disabled] Allows you to set the ASPM support. Configuration options: [Disabled] [Auto] [L0s] [L1] L0sL1]. PCIe Speed [Auto] Allows you to select the PCI Express port speed. Configuration options: [Auto] [Gen1] [Gen2] Intel® Rapid Start Technology Intel® Rapid Start Technology [Disabled] Allows you to enable or disable Intel® Rapid Start Technology.



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Configuration options: [Enabled] [Disabled] The following items appear only when you set the Intel® Rapid Start Technology to [Enabled]. 2-26 Chapter 2: Getting started Entry on S3 RTC Wake [Enabled] The system automatically wakes up and set to Rapid Start Technology S4 mode. Configuration options: [Enabled] [Disabled] Entry After [x] Allows you to set the wake-up time. The values range from 0 (immediately) to 120. Active Page Threshold Support [Enabled] The system automatically set itself to sleep when the partition size is not enough for Rapid Start Technology to work. Configuration options: [Enabled] [Disabled] Active Memory Threshold [0] Key in the value for the additional partition size for Rapid Start Technology to work. Ensure that the caching partition size is larger than the total memory size. Hybrid Hard Disk Support [Disabled] Allows you to enable or disable hybrid hard disk support.

Configuration options: [Enabled] [Disabled] Intel® Smart Connect Technology [Disabled] ICST Configuration [Disabled] Allows you to enable or disable the ISCT configuration. Configuration options: [Enabled] [Disabled] 2.6.3 SATA Configuration While entering Setup, the BIOS automatically detects the presence of SATA devices. The SATA Port items show Not Present if no SATA device is installed to the corresponding SATA port. SATA Mode Selection [AHCI] Allows you to set the SATA configuration. [Disabled] [IDE] [AHCI] Disables the SATA function. Set to [IDE] when you want to use the Serial ATA hard disk drives as Parallel ATA physical storage devices. Set to [AHCI] when you want the SATA hard disk drives to use the AHCI (Advanced Host Controller Interface). The AHCI allows the onboard storage driver to enable advanced Serial ATA features that increases storage performance on random workloads by allowing the drive to internally optimize the order of commands.

Set to [RAID Mode] when you want to create a RAID configuration from the SATA hard disk drives. [RAID] Aggressive LPM Support [Auto] This item appears only when you set the previous item to [AHCI] and allows you to enable or disable PCH entering link power state aggressively. Configuration options: [Auto] [Disabled] [Enabled] ASUS H81-PLUS 2-27 IDE Legacy / Native Mode Selection [Native] This item appears only when you set the SATA Mode Selection item to [IDE]. Configuration options: [Native] [Legacy] S.M.

A.R.T. Status Check [Enabled] S.M.

A.R.T. (Self-Monitoring, Analysis and Reporting Technology) is a monitor system. When read/write of your hard disk errors occur, this feature allows the hard disk to report warning messages during the POST. Configuration options: [Enabled] [Disabled] Hot Plug [Disabled] These items appear only when you set the SATA Mode Selection item to [AHCI] and allow you to enable/disable SATA Hot Plug Support. Configuration options: [Disabled] [Enabled] 2.6.4 System Agent Configuration Graphics Configuration Allows you to select a primary display from iGPU, and PCIe graphical devices. Primary Display [Auto] Allows you to select which of the iGPU/PCIe Graphics device should be the Primary Display.

Configuration options: [Auto] [iGPU] [PCIe] [PCI] iGPU Memory [Auto] Allows you to select the amount of system memory allocated to DVMT 5.0 used by the iGPU. Configuration options: [Auto] [32M] [64M] [96M] [128M] [160M] [192M] [224M] [256M] [288M] [320M] [352M] [384M] [416M] [448M] [480M] [512M] [1024M] Render Standby [Auto] Allows you to enable or disable Intel® Graphics Render Standby support to reduce iGPU power use when the system is idle. Configuration options: [Auto] [Disabled] [Enabled] iGPU Multi-Monitor [Disabled] Set this item to [Enabled] to empower both integrated and discrete graphics for multiple-monitor output. The iGPU shared system memory size will be fixed at 64MB. Configuration options: [Disabled] [Enabled] DMI Configuration Allows you to control various DMI functions. DMI Gen 2 [Auto] Allows you to enable or disable DMI Gen 2. Configuration options: [Auto] [Enabled] [Disabled] NB PCIe Configuration Allows you to configure the NB PCI Express settings. PCIEX16_1 Link Speed [Auto] Allows you to configure the PCIEX16_1 speed. Configuration options: [Auto] [Gen1] [Gen2] 2-28 Chapter 2: Getting started DMI Link ASPM Control [Auto] Allows you to enable or disable the control of Active State Power Management on SA side of the DMI Link.

Configuration options: [Auto] [Disabled] [L0s] [L1] [L0sL1] PEG - ASPM [Disabled] Allows you to control ASPM support for the PEG Device. The setting takes no effect if PEG is not the active device at present. Configuration options: [Disabled] [Auto] [ASPM L0s] [ASPM L1] [ASPM L0sL1] Memory Configuration Memory Scrambler [Enabled] Allows you to enable or disable Memory Scrambler support. Memory Remap [Enabled] Allows you to enable or disable remapping the memory above 4GB. [Enabled] Enables the function.

[Disabled] Disables this function. 2.6.5 USB Configuration The USB Devices item shows the auto-detected values. If no USB device is detected, the item shows None.

The items in this menu allow you to change the USB-related features. Legacy USB Support [Enabled] [Disabled] [Enabled] [Auto] The USB devices can be used only for the BIOS setup program. Enables the support for USB devices on legacy operating systems (OS). Allows the system to detect the presence of USB devices at startup. If detected, the USB controller legacy mode is enabled. If no USB device is detected, the legacy USB support is disabled. Enables the operation of xHCI controller. Keeps the last operation of xHCI controller in OS during bootup. Enables the function. Disables the function.

Enables the support for operating systems without an EHCI hand-off feature. Disables the function. Intel xHCI Mode [Smart Auto] [Smart Auto] [Auto] [Enabled] [Disabled] [Enabled] [Disabled] EHCI Hand-off [Disabled] USB Single Port Control USB3_1~2 [Enabled] Allows you to enable or disable an individual USB port. Refer to the section 1.2.3 Motherboard layout in this user manual for the locations of the USB ports. Configuration options: [Enabled] [Disabled]. ASUS H81-PLUS 2-29 USB_3~6, 9~12 [Enabled] Allows you to enable or disable an individual USB port. Refer to the section 1.2.

3 Motherboard layout in this user manual for the locations of the USB ports. Configuration options: [Enabled] [Disabled]. 2.6.6 Platform Misc Configuration The items in this menu allow you to configure the Platform Misc.

PCI Express Native Power Management [Disabled] Allows you to enhance the power saving feature of PCI Express and perform ASPM operations in the operating system. Configuration options: [Disabled] [Enabled] Native ASPM [Disabled] The item appears only when you set the previous item to [Enabled] and allows you to enable or disable ASPM. Configuration options: [Enabled] [Disabled] 2.6.7 [Enabled] [Disabled] Onboard Devices Configuration Enables the HD Audio Device.

Disables the HD Audio Device. The following two items appear only when you set the HD Audio Controller item to [Enabled].



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