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You can read the recommendations in the user guide, the technical guide or the installation guide for ASUS P8H77-V LE. You'll find the answers to all your questions on the ASUS P8H77-V LE in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

P8H77-V LE

Motherboard

Manual abstract:

@@@@@@The GPL and LGPL licensed code in this product is distributed without any warranty. Copies of these licenses are included in this product. You may obtain the complete corresponding source code (as defined in the GPL) for the GPL Software, and/or the complete corresponding source code of the LGPL Software (with the complete machinereadable "work that uses the Library") for a period of three years after our last shipment of the product including the GPL Software and/or LGPL Software, which will be no earlier than December 1, 2011, either (1) for free by downloading it from http://support. asus. Com/download; or (2) for the cost of reproduction and shipment, which is dependent on the preferred carrier and the location where you want to have it shipped to, by sending a request to: ASUSTeK Computer Inc. , Beitou, Taipei 112 Taiwan In your request please provide the name, model number and version, as stated in the About Box of the product for which you wish to obtain the corresponding source code and your contact details so that we can coordinate the terms and cost of shipment with you. @@This offer is valid to anyone in receipt of this information. @@@@@@To prevent electric shock hazard, disconnect the power cable from the electric 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. Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package. Before using the product, ensure that 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 become wet. 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. â· Chapter 2: BIOS information This chapter tells how to change system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided. Vi 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 trying to complete a task.

CAUTION: Information to prevent damage to the components when trying to complete a task. IMPORTANT: Instructions that you MUST follow to complete a task. nOTE: Tips and additional information to help you complete a task. Where to find more information 1. ASUS websites Refer to the following sources for additional information and for product and software updates. 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. 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. If you must press two or more keys simultaneously, the key names are linked with a plus sign (+).

0 support depends on the CPU types. Com for Intel® CPU support list.)/1600/1333/1066 MHz, non-ECC, un-buffered memory Dual-channel memory architecture Supports Intel® Extreme Memory Profile (XMP) * Due to the CPU behavior, DDR3 1866 MHz memory module will run at DDR3 1800 MHz frequency as default. ** Hyper DIMM support is subject to the physical characteristics of individual CPUs. Some hyper DIMMs only support one DIMM per channel.*

*Com or this User Manual for the Memory QVL(Qualified Vendors List). ****When you install a total memory of 4GB capacity or more, Windows® 32-bit operating system may only recognize less than 3GB. We recommend a maximum of 3GB system memory if you are using a Windows® 32-bit operating system. Integrated graphics processor - Intel® HD Graphics support Multi-VGA output support: HDMI, DVI and RGB port - Supports HDMI with max. (continued on the next page) viii Chipset Memory Expansion slots Graphics Multi-GPU support Storage P8H77-V LE specifications summary LAN Audio Realtek® RTL8111F Gigabit LAN controller Realtek® 887 8-Channel High Definition Audio CODEC - Supports Jack-Detection, Multi-streaming and Front Panel Jack-Retasking - Optical S/PDIF out port at back I/O * Use a chassis with HD audio module in the front panel to support an 8-channel audio output Intel® H77 Express Chipset - supports ASUS USB 3.*

*0 ports at mid-board for front panel support - 2 x USB 3. ASUS DIGI+ VRM: - Digital Power Control: Digital Power Design for the CPU and iGPU - 4+1+1 Phase Power Design ASUS Exclusive Features - Network iControl featuring instant network bandwidth domination for top network program in use - USB 3. 8cm) Form Factor * Specifications are subject to change without notice. The motherboard delivers a host of new features and latest technologies, making it another standout in the long line of ASUS quality motherboards! Before you start installing the motherboard, and hardware devices on it, check the items in your package with the list below. 0Gb/s cables 1 x I/O shield ASUS motherboard support DVD User Manual Check your motherboard package for the following items. Motherboard Cables Accessories Application DVD Documentation If any of the above items is damaged or missing, contact your retailer. 1 Special features Product highlights LGA1155 socket for Intel® Second/Third Generation CoreTM i7 / CoreTM i5 / CoreTM i3 / Pentium® / Celeron® Processors This motherboard supports the Intel® 3rd/2nd generation CoreTM i7/i5/ i3/Pentium®/Celeron® processors in the LGA1155 package, with iGPU, memory, and PCI Express controllers integrated to support onboard graphics out with dedicated chipsets, 2-channel (4 DIMMs) DDR3 memory, and 16 PCI Express 3.*

This provides great graphics performance. Intel® 3rd/2nd generation CoreTM i7/i5/i3/Pentium®/Celeron® processors are among the most powerful and energy efficient CPUs in the world. 0 ports for 10 times faster data retrieval speed.

Moreover, Intel® H77 Express Chipset can also enable iGPU function, letting users enjoy the latest Intel® integrated graphic performance.) / 1600 / 1333 / 1066 MHz to meet the higher bandwidth requirements of the latest 3D graphics, multimedia, and Internet applications. The dual-channel DDR3 architecture enlarges the bandwidth of your system memory to boost system performance. Additionally, get enhanced scalability, faster data retrieval, double the bandwidth of current bus systems. 0 accessibility for both the front and rear panel Â 4 USB 3. 0 ports in total. Experience the latest plug & play connectivity at speeds up to 10 times faster than USB 2. 0. The P8H77-V LE affords greater convenience to high speed connectivity. 0) is the latest PCI Express bus standard with improved encoding schemes that provide twice the performance of the current PCIe 2.

0. The total bandwidth for a x16 link reaches a maximum of 32Gb/s, double the 16 Gb/s of PCIe 2. 0 provides users an unprecendented data speeds, combined with the convenience and seamless transition offerred by complete backward compatibility with PCIe 1. 0 will become a must-have feature for users who wish to improve and optimize graphic performance, as well as have the latest technology available to them. 1-2 ASUS P8H77-V LE S/PDIF out connector at the back I/O This motherboard provides convenient connectivity to external home theater audio systems via the optical S/PDIF (SONY-PHILIPS Digital Interface) out connecor at the back I/O.

The S/PDIF transfers digital audio without converting it to analog format and keeps the best signal quality. Intel® Smart Response Technology SSD Speed with HDD Capacity Intel® Smart Response Technology boosts overall system performance by using an installed fast SSD (min 18. 6GB available capacity required) as a cache for frequently accessed data. Key benefits include reduced load and wait times, and lower power consumption through the elimination of unnecessary hard drive spin. This technology combines SSD performance with hard drive capacity, operating up to 6X faster than a hard drive-only system. * Intel® Smart Response Technology is supported by 3rd/2nd generation Intel® ** Operating systems must be installed on the HDD to launch Intel® Smart Response Technology. The capacity of the SSD is reserved for caching function. coreTM processor family on Windows® 7TM operating systems. Intel® Smart Connect Technology Your computer could receive web updates with fresh content for selected applications, even when setting the system to sleep. This means less time waiting for applications to start, update and sync with the cloud, providing a more efficient way. Intel® Rapid Start Technology Allows your computer to quickly resume from a lowe-power hibernate state in seconds. Saving system memory to the designed SSD, provides your computer a faster wake-up response time, while keeping the energy use low. ATI Quad-GPU CrossFireXTM Support ATI's CrossFireXTM boosts image quality along with rendering speed, eliminating the need to scale down screen resolution to get high quality images. crossFireXTM allows higher antialiasing , anisotropic filtering , shading and texture settings. Adjust your display configurations, experiment with the 3D settings, and check the effects with a real-time 3D-rendered previews within ATI CatalystTM Control Center.

2 Innovative ASUS features ASUS DIGI+ VRM Digital Power Control: Digital Power Design for the CPU and iGPU All-new digital CPU power controls work perfectly together to match digital power signal (SVID) requests from the CPU, with ultra-fast sensing and response efficiently delivering precision power. Accurate delivery reduces waste, and provides more stable CPU Vcore voltages. Users can adjust CPU and itboot the system, and the BIOS automatically restores the CPU parameters to their default settings. ErP ready The motherboard is European Union´s Energy-related Products (ErP) ready, and ErP requires products to meet certain energy efficiency requirements in regards to energy consumptions. This is in line with ASUS vision of creating environment-friendly and energy-efficient products through product design and innovation to reduce carbon footprint of the product and thus mitigate environmental impacts. 1. 4 Before you proceed Take note of the following precautions before you install motherboard components or change any motherboard settings. â· Unplug the power cord from the wall socket before touching any component. â· Before handling components, use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, to avoid damaging them due to static electricity. â· Hold components by the edges to avoid touching the ICs on them.

â· Whenevering a 32-bit Windows® OS. - Install a 64-bit Windows® OS when you want to install 4GB or more on the motherboard. â· This motherboard does not support DIMMs made up of 512Mb (64MB) chips or less. â· The maximum 32GB memory capacity can be supported with 8GB or above DIMMs. ASUS will update the memory QVL once the DIMMs are available in the market.

memory configurations Â· The default memory operation frequency is dependent on its Serial Presence Detect (SPD), which is the standard way of accessing information from a memory module. Under the default state, some memory modules for overclocking may operate at a lower frequency than the vendor-marked value. To operate at the vendor-marked or at a higher frequency, refer to section 2. 4 Ai Tweaker menu for manual memory frequency adjustment. â· For system stability, use a more efficient memory cooling system to support a full memory load (4 DIMMs) or overclocking condition.

65V KINGSTON KHX1866C9D3T1K3/3GX(XMP) 3GB (3 x 1GB) KINGSTON KHX1866C9D3T1K3/6GX(XMP) 6GB (3 x 2GB) Due to the CPU behavior, DDR3 1866 MHz memory module will run at DDR3 1800 MHz frequency as default. 1 DIMM: Supports one (1) module inserted into any slot as Single-channel memory configuration. We suggest that you install the module into A2 slot. 2 DIMMs: Supports two (2) modules inserted into either the blue slots or the black slots as one pair of Dual-channel memory configuration. We suggest that you install the modules into slots A2 and B2 for better compatibility. 4 DIMMs: Supports four (4) modules inserted into both the blue and black slots as two pairs of Dual-channel memory configuration. 3 Installing a DIMM Unplug the power supply before adding or removing DIMMs or other system components.

Failure to do so can cause severe damage to both the motherboard and the components. Align a DIMM on the socket such that the notch on the DIMM matches the DIMM slot key on the socket. DIMM notch 2 1 Unlocked retaining clip DIMM slot key A DIMM is keyed with a notch so that it fits in only one direction.

DO NOT force a DIMM into a socket in the wrong direction to avoid damaging the DIMM. 3. Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM is properly seated. To remove a DIMM: Removing a DIMM 2 Simultaneously press the retaining clips outward to unlock the DIMM. Support the DIMM lightly with your fingers when pressing the retaining clips. The DIMM might get damaged when it flips out with extra force. 1 2. Remove the DIMM from the socket. dIMM notch Chapter 1: Product introduction 1-21 1. 8 Expansion slots In the future, you may need to install expansion cards.

The following sub-sections describe the slots and the expansion cards that they support. Unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage motherboard components. To install an expansion card: Installing an expansion card Before installing the expansion card, read the documentation that came with it and make the necessary hardware settings for the card. Remove the system unit cover (if your motherboard is already installed in a chassis).

Remove the bracket opposite the slot that you intend to use. Keep the screw for later use. Align the card connector with the slot and press firmly until the card is completely seated on the slot. Secure the card to the chassis with the screw you removed earlier. After installing the expansion card, configure it by adjusting the software settings.

Turn on the system and change the necessary BIOS settings, if any. See Chapter 2 for information on BIOS setup. assign an IRQ to the card. Install the software drivers for the expansion card. When using PCI cards on shared slots, ensure that the drivers support "Share IRQ" or that the cards do not need IRQ assignments. Otherwise, conflicts will arise between the two PCI groups, making the system unstable and the card inoperable. 0 x1 network cards, SCSI cards, and other cards that comply with the PCI Express specifications. 0 x16 graphic cards complying with the PCI Express specifications. 5 The PCI slots support cards such as a LAN card, SCSI card, USB card, and other cards that comply with PCI specifications. Jumpers 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. p8H77-V LE CLRTC 1 2 2 3 Normal (Default) Clear RTC P8H77-V LE Clear RTC RAM To erase the RTC RAM: 1. Turn OFF the computer and unplug the power cord. 2. 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. 3. Plug the power cord and turn ON the computer. 4. Hold down the <Del> key during the boot process and enter BIOS setup to re-enter data. Except when clearing the RTC RAM, never remove the cap on CLRTC jumper default position. 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. â· 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. Shut down and reboot the system, then the BIOS automatically resets parameter settings to default values. This port is for a PS/2 keyboard or mouse. video Graphics Adapter (VGA) port. This 15-pin port is for a VGA monitor or other VGA-compatible devices.

lAN (RJ-45) port. This port allows Gigabit connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications. This port connects to the tape, CD, DVD player, or other audio sources. In the 4, 6 and 8-channel configurations, the function of this port becomes Front Speaker Out. Refer to the audio configuration table below for the function of the audio ports in the 2, 4, 6, or 8-channel configuration. These four 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2. These two 9-pin Universal Serial Bus (USB) ports are available for connecting USB 3. 0 devices can only be used under Windows® OS environment and after the USB 3. 0 devices can only be used as data storage only.

0 ports for faster and better performance for your USB 3. This port is for any DVI-D compatible device. DVI-D can't be converted to output RGB Signal to CRT and isn't compatible with DVI-I. This port is for a High-Definition Multimedia Interface (HDMI) connector, and is HDCP compliant allowing playback of HD DVD, Blu-ray, and other protected content. These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2. Internal connectors 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. 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 PIN 1 P8H77-V LE HD-audio-compliant pin definition PORT1 L PORT1 R PORT2 R SENSE_SEND PORT2 L Legacy AC'97 compliant definition P8H77-V LE Front panel audio connector Â· 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. â· 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].

CPU, and chassis fan connectors (4-pin CPU_FAN, 3-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 CPU FAN PWM CPU FAN IN CPU FAN PWR GND P8H77-V LE P8H77-V LE 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! ATX power connectors (24-pin EATXPWR, 8-pin EATX12V) 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. eATX12V +12V DC +12V DC +12V DC +12V DC EATXPWR P8H77-V LE GND GND GND GND PIN 1 +3 Volts +12 Volts +12 Volts +5V Standby Power OK GND +5 Volts GND +5 Volts GND +3 Volts +3 Volts PIN 1 GND +5 Volts +5 Volts +5 Volts -5 Volts GND GND GND PSON# GND -12 Volts +3 Volts P8H77-V LE ATX power connectors Â· For a fully configured system, we recommend that you use a power supply unit (PSU) that complies with ATX 12 V Specification 2.

DO NOT forget to connect the 4-pin / 8-pin ATX +12V power plug. Otherwise, the system will not boot up. â· We recommend that you use a PSU with higher power output when configuring a system with more power-consuming devices.

The system may become unstable or may not boot up if the power is inadequate. â· If you are uncertain about the minimum power supply requirement for your system, refer to the Recommended Power Supply Wattage Calculator at http://support. 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. Connect the serial port module cable to the connector, then install the module to a slot opening at the back of the system chassis. 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. Doing so will damage the motherboard! 0 bracket cable to this connector, then install the USB 3. 0 bracket to the rear side of the chassis. If your chassis support customized front panel installation, with ASUS USB 3. 0 header, you can have a front panel USB 3.

Due to IntelÂ® limitations, the USB3_34 only supports WindowsÂ® 7 operating system. These connectors are set to [AHCI] by default. If you intend to create a Serial ATA RAID set using these connectors, set the SATA Mode Selection item in the BIOS to [RAID]. Before creating a RAID set, refer to the RAID Supplementary Guide included in the folder named Manual in the support DVD. â· You must install WindowsÂ® XP Service Pack 3 or later version before using Serial ATA hard disk drives. The Serial ATA RAID feature (RAID 0, 1, 5, and 10) is available only if you are using WindowsÂ® XP SP3 or later version. â· When using hot-plug and NCQ, set the SATA Mode Selection item in the BIOS to [AHCI]. If you installed Serial ATA hard disk drives, you can create a RAID 0, 1, 5, and 0+1(10) configurations with the IntelÂ® Rapid Storage Technology through the onboard IntelÂ® H77 chipset. These connectors are set to [AHCI] by default. If you intend to create a Serial ATA RAID set using these connectors, set the SATA Mode Selection item in the BIOS to [RAID]. Before creating a RAID set, refer to the RAID Supplementary Guide included in the folder named Manual in the support DVD. â· You must install WindowsÂ® XP Service Pack 3 or later version before using Serial ATA hard disk drives. The Serial ATA RAID feature (RAID 0, 1, 5, and 10) is available only if you are using WindowsÂ® XP SP3 or later version. â· When using hot-plug and NCQ, set the SATA Mode Selection item in the BIOS to [AHCI]. System power LED (2-pin PLED) 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 IDE_LED) This 2-pin connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. The IDE 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 PWRSW) This 2-pin connector is for the system power button. 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. 11 Onboard switches Onboard switches allow you to fine-tune performance when working on a bare or open-case system. This is ideal for overclockers and gamers who continually change settings to enhance system performance. Switch Installing DIMMs that are incompatible with the motherboard may cause system boot failure, and the DRAM_LED near the MemOK! Switch until the DRAM_LED starts blinking to begin automatic memory compatibility tuning for successful boot. 12 Onboard LEDs for the exact location of the DRAM_LED. â· The DRAM_LED also lights when the DIMM is not properly installed. Turn off the system and reinstall the DIMM before using the MemOK! During the tuning process, the system loads and tests failsafe memory settings.

It takes about 30 seconds for the system to test one set of failsafe settings. If the test fails, the system reboots and test the next set of failsafe settings. The blinking speed of the DRAM_LED increases, indicating different test processes. â· Due to memory tuning requirement, the system automatically reboots when each timing set is tested. If the installed DIMMs still fail to boot after the whole tuning process, the DRAM_LED lights continuously. Replace the DIMMs with ones recommended in the Memory QVL (Qualified Vendors Lists) in this user manual or on the ASUS website at www. If you turn off the computer and replace DIMMs during the tuning process, the system continues memory tuning after turning on the computer. To stop memory tuning, turn off the computer and unplug the power cord for about 5Â10 seconds. â· If your system fail to boot due to BIOS overclocking, press the MemOK! switch to boot and load BIOS default settings. A message will appear during POST reminding you that the BIOS has been restored to its default settings.

â· We recommend that you download and update to the latest BIOS version from the ASUS website at www. asus. Com after using the MemOK! 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.

p8H77-V LE SB_PWR ON Standby Power OFF Powered Off P8H77-V LE Onboard LED 2. DRAM LED DRAM LED checks the DRAM in sequence during motherboard booting process. If an error is found , the LED next to the error device will continue lighting until the problem is solved. This user-friendly design provides an intuitional way to locate the root problem within a second. Always install the latest OS version and corresponding updates to maximize the features of your hardware.

Refer to your OS documentation for detailed information. â· Ensure that you install WindowsÂ® XP Service Pack 3 or later versions before installing the drivers for better compatibility and system stability. 2 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. Support DVD information To run the Support DVD Place the Support DVD to the optical drive.

The DVD automatically displays the Drivers menu if Autorun is enabled in your computer. 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. 1 Managing and updating your BIOS 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.

1 The ASUS Update is a utility that allows you to manage, save, and update the motherboard BIOS in Windows® environment. This utility is available in the support DVD that comes with the motherboard package. Place the support DVD in the optical drive. the Drivers menu appears. Click the Utilities tab, then click AI Suite II. Follow the onscreen instructions to complete the installation. Quit all Windows® applications before you update the BIOS using this utility. Updating the BIOS To update the BIOS: 1. Click Update button from the Quick Bar, and then click ASUS Update from the popup menu. the ASUS Update main screen appears.

From the list, select either of the following methods: Updating from the Internet a. b. Select Update BIOS from the Internet, then click Next. Select the ASUS FTP site nearest you to avoid network traffic, then click Next. c.

From the FTP site, select the BIOS version that you wish to download then click Next. Chapter 2: BIOS information 2-1 The ASUS Update utility is capable of updating itself through the Internet. Always update the utility to avail all its features. Select Update BIOS from file, then click Next. Locate the BIOS file from the Open window, then click Open.

Follow the onscreen instructions to complete the updating process. @@@@ASUS EZ Flash 2 To update the BIOS using EZ Flash 2: 1. 2. @@Enter the Advanced Mode of the BIOS setup program. @@ press <Tab> to switch to the Folder Info field. @@Reboot the system when the update process is done. @@ â· @@@@@@@@The BIOS file in the support DVD may not be the latest version. Download the latest BIOS file from the ASUS website at www. @@Turn on the system. @@The utility automatically checks the devices for the BIOS file.

@@The system requires you to enter BIOS Setup to recover BIOS setting. @@DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure! @@The succeeding utility screens are for reference only. The actual utility screen displays may not be same as shown. @@@@ asus. Com and save them on the USB flash drive. nTFS is not supported under DOS environment. @@ 3. @@@@ boot your computer. @@@@@@ 4. @@@@@@At the FreeDOS prompt, type bupdater /pc /g and press <Enter>.

@@@@When BIOS update is done, press <ESC> to exit BIOS Updater. restart your computer. @@@@Select the Load Optimized Defaults item under the Exit menu. @@ chapter 2: BIOS information 2-5 2. @@@@If you do not press <Delete>, POST continues with its routines. @@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>+<Del> keys to force reset from a running operating system can cause damage to your data or system. We recommend to always shut down the system properly from the operating system. â· The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.

Com to download the latest BIOS file for this motherboard. â· Ensure that a USB mouse is connected to your motherboard if you want to use the mouse to control the BIOS setup program. â· 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. 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. 9 Jumpers for information on how to erase the RTC RAM. 2-6 ASUS P8H77-V LE 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 hot key for the advanced BIOS settings.

The default screen for entering the BIOS setup program can be changed. Selects the display language of the BIOS setup program Displays the CPU/motherboard temperature, CPU/5V/3. 248V Fan Speed CPU_FAN 3325RPM CHA_FAN N/A Speed : 3300 MHz Exits the BIOS setup program without saving the changes, saves the changes and resets the system, or enters the Advanced Mode Exit/Advanced Mode English System Performance Quiet Performance Energy Saving Normal Boot Priority Use the mouse to drag or keyboard to navigate to decide the boot priority. Shortcut (F3) Advanced Mode(F7) Boot Menu(F8) Default(F5) Selects the Advanced mode functions Selects the boot device priority Power Saving mode Normal mode Displays the system properties of the selected mode on the right hand side Loads optimized default ASUS Optimal mode Selects the boot device priority Displays the Advanced mode menus Â· The boot device options vary depending on the devices you installed to the system. â· The Boot Menu(F8) button is available only when the boot device is installed to the system. Chapter 2: BIOS information 2-7 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. Back button Menu items Menu bar Configuration fields General help Exit EFI BIOS Utility - Advanced Mode Main Back Ai Tweaker Advanced Monitor Boot Tool Advanced\ System Agent Configuration > Enable or disable memory remap above 4GB.

Submenu items Pop-up window Scroll bar Navigation keys 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 ASUS P8H77-V LE Pop-up window Select a menu item and press <Enter> to display a pop-up window with the configuration options for that item.

@@@@@@@@@Configuration fields These fields show the values for the menu items. @@You cannot select an item that is not user-configurable. A configurable field is highlighted when selected. @@ chapter 2: BIOS information 2-9 2. @@@@@@@1 Allows you to choose the BIOS language version from the options. 4 Allows you to set the system date. Allows you to set the system time. System Date [Day xx/xx/xxxx] System Time [xx:xx:xx] Security The Security menu items allow you to change the system security settings. â· If you have forgotten your BIOS password, erase the CMOS Real Time Clock (RTC) RAM to clear the BIOS password. see section 1. 9 Jumpers for information on how to erase the RTC RAM. â· 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. 2-10 ASUS P8H77-V LE 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. From the Create New Password box, key in a password, then press <Enter>. Confirm the password when prompted. select the Administrator Password item and press <Enter>. From the Enter Current Password box, key in the current password, then press <Enter>. From the Create New Password box, key in a new password, then press <Enter>. Confirm the password when prompted. To change an administrator password: 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. 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>. From the Enter Current Password box, key in the current password, then press <Enter>. From the Create New Password box, key in a new password, then press <Enter>. Confirm the password when prompted. To change a user password: To clear the user password, follow the same steps as in changing a user password, but press <Enter> when prompted to create/confirm the password. After you clear the password, the User Password item on top of the screen shows Not Installed. chapter 2: BIOS information 2-11 2. 4 Ai Tweaker menu Be cautious when changing the settings of the Ai Tweaker menu items. Incorrect field values can cause the system to malfunction. The configuration options for this section vary depending on the CPU and DIMM model you installed on the motherboard. Scroll down to display the following items: iGPU Offset Mode Sign iGPU Offset Voltage DRAM Voltage VCCSA Voltage PCH Voltage CPU PLL Voltage 1. Target DRAM Speed : xxxxMHz Displays the current DRAM speed. 1 Allows you to select the CPU overclocking options to achieve the desired CPU internal frequency. Select any of these preset overclocking configuration options: [Auto] Loads the optimal settings for the system.

] If you install memory modules supporting the eXtreme Memory Profile (X.) Technology, choose this item to set the profiles supported by your memory modules for optimizing the system performance. Appears only when you set the Ai Overclocking Tuner to [Manual]. Ai Overclock Tuner [Manual] BCLK/PCIE Frequency [XXX] Allows you to adjust the CPU and VGA frequency to enhance the system performance. Use the <+> and <-> keys to adjust the value. You can also key in the desired value using the numeric keypad. The values range from 80. EXtreme Memory Profile This item appears only when you set the Ai Overclocking Tuner item to [X.] and allows you to select the X. 2 Allows you to set the memory operating frequency. Configuration options: [Auto] [DDR3800MHz] [DDR-3-1066MHz] [DDR3-1333MHz] [DDR3-1600MHz] [DDR3-1866MHz] [DDR32133MHz] [DDR3-2400MHz] Selecting a very high memory frequency may cause the system to become unstable! If this happens, revert to the default setting. 3 Allows you to set the iGPU maximum frequency. The values range from xxxxMHz (by CPU) to 3000MHz with a 50MHz interval. Use <+>/<-> to adjust the value. 4 Allows you to enable or disable the EPU power saving function. Configuration options: [Disabled] [Enabled] EPU Power Saving Mode [Disabled] EPU Setting [Auto] This item appears only when you set the EPU Power Saving MODE item to [Enabled.] and allows you to select the EPU power saving mode. Select [Cancel] to use a fixed iGPU frequency. 6 The sub-items in this menu allow you to set the DRAM timing control features. Use the <+> and <-> keys to adjust the value. To restore the default setting, type [auto] using the keyboard and press <Enter>. Changing the values in this menu may cause the system to become unstable! If this happens, revert to the default settings. 7 The sub-items in this menu allow you to set the CPU ratio and features. CPU Power Management CPU Ratio [Auto] Allows you to manually adjust the maximum non-turbo CPU ratio. Use <+> and <-> keys or the numeric keypad to adjust the value. The valid value ranges vary according to your CPU model. Enhanced Intel SpeedStep Technology [Enabled] Allows you to enable or disable the Enhanced Intel® SpeedStep Technology (EIST). [Disabled] Disables this function. [Enabled] 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] This item appears only when you set the previous item to [Enabled].

[Enabled] Allows processor cores to run faster than marked frequency in specific conditions. [Disabled] Disables this function. The following three items appear only when you set both the Enhanced Intel SpeedStep Technology and Turbo Mode items to [Enabled]. Long Duration Power Limit [Auto] Allows you to limit the turbo ratio's long duration power. Use the <+> and <-> keys to adjust the value. Long Duration Maintained [Auto] Allows you to maintain the turbo ratio's long duration power. Use the <+> and <-> keys to adjust the value. Short Duration Power Limit [Auto] Allows you to limit the turbo ratio's long duration power. Use the <+> and <-> keys to adjust the value. 2-14 ASUS P8H77-V LE Primary Plane Current Limit [Auto] Maximum instantaneous current allowed at any given time for CPU cores Use <+> and <-> key to adjust the value at 0. Secondary Plane Current Limit [Auto] Maximum instantaneous current allowed at any given time for Internal Graphics cores.

Use <+> and <-> key to adjust the value at 0. 125A increment. Some of the following items are adjusted by typing the desired values using the numeric keypad and press <Enter>. You can also use the <+> and <-> keys to adjust the value.

To restore the default setting, type [auto] using the keyboard and press <Enter>. The CPU working voltage will decrease proportionally to CPU loading. Higher value gets a higher voltage and better overclocking performance, but increases the CPU and VRM thermal. This item allows you to adjust the voltage range from the following percentages to boost the system performance: 0% (Regular), 25% (Medium), 50% (High), 75% (Ultra High) and 100% (Extreme). Configuration options: [Auto] [Regular] [Medium] [High] [Ultra High] [Extreme] The actual performance boost may vary depending on your CPU specification.

cPU Fixed Frequency [xxx] Switching frequency will affect the VRM transient response and component thermal. Setting a higher frequency gets faster transient response. The values range from 200K to 350K with a 50K interval. Use <+>/<-> to adjust the value. CPU Power Phase Control [Standard] Allows you to control the power phase based on the CPU's demands. Configuration options: [Standard] [Optimized] [Extreme] [Manual Adjustment] DO NOT remove the thermal module when switching to Extreme and Manual Mode. The thermal conditions should be monitored. cPU Power Duty Control [T. Probe] DIGI + VRM Duty control adjusts the current and thermal conditions of every component's phase. CPU Current Capability [100%] Allows you to configure the total power range, and extends the overclocking frequency range simultaneously.

Configuration options: [100%] [110%] [120%] Choose a higher value when overclocking, or under a high CPU loading for extra power support. chapter 2: BIOS information 2-15 iGPU Load-line Calibration [Auto] Load-line Calibration is defined by Intel VRM specifications and affects iGPU voltage. The iGPU working voltage will decrease proportionally to the integrated graphics loading. Higher load-line calibration would get higher voltage and better overclocking performance, but increase the CPU and VRM thermal. This item allows you to adjust the voltage range from the following percentages to boost the system performance: 0% (Regular), 50% (High) and 100% (Extreme). Configuration options: [Auto] [Regular] [High] [Extreme] iGPU Current Capability [100%] Allows you to set the iGPU Current Capability. Configuration options: [100%] [110%] [120%] Do not remove the thermal module while changing the DIGI+ VRM related parrameters . The thermal conditions should be monitored. Some of the following items are adjusted by typing the desired values using the numeric keypad and press the <Enter> key. You can also use the <+> and <-> keys to adjust the value.

To restore the default setting, type [auto] using the keyboard and press the <Enter> key. 9 [Manual Mode] [Offset Mode] CPU Voltage [Offset Mode] Allows you to set a fixed CPU voltage. Allows you to set the Offset voltage. CPU Offset Mode Sign [+] This item appears only when you set the CPU Voltage item to [Offset Mode]. CPU Offset Voltage [Auto] This item appears only when you set the CPU Voltage item to [Offset Mode] and allows you to set the Offset voltage.

The values range from 0. CPU Manual Voltage [Auto] This item appears only when you set the CPU Voltage item to [Manual Mode] and allows you to set a fixed CPU voltage. The values range from 0. Refer to the CPU documentation before setting the CPU voltage. Setting a high voltage may damage the CPU permanently, and setting a low voltage may make the system unstable.

Allows you to set a fixed iGPU voltage. IGPU Offset Mode Sign [+] This item appears only when you set the iGPU Voltage item to [Offset Mode]. 2-16 ASUS P8H77-V LE iGPU Offset Voltage [Auto] This item appears only when you set the iGPU Voltage item to [Offset Mode] and allows you to set the iGPU Offset voltage. The values range from 0. IGPU Manual Voltage [Auto] This item appears only when you set the iGPU Voltage item to [Manual Mode] and allows you to set a fixed iGPU voltage. Use the <+> and <-> keys to adjust the value. The values range from 0. 11 Allows you to set the DRAM voltage. The values range from 1. According to Intel CPU spec, DIMMs with voltage requirement over 1.

65V may damage the CPU permanently. We recommend you install the DIMMs with the voltage requirement below 1. 12 Allows you to set the VCCSA voltage. The values range from 0. 13 Allows you to set the PCH voltage. The values range from 0. The values of the CPU Offset Voltage, CPU Manual Voltage, iGPU Offset Voltage, iGPU Manual Voltage, DRAM Voltage, VCCSA Voltage, and PCH Voltage are labeled in different color, indicating the risk levels of high voltage settings. â· The system may need better cooling system to work stably under high voltage settings. 14 Allows you to set the CPU PLL voltage. Use <+> and <-> keys to adjust the value.

5 Advanced menu 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. 1 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.

CPU Configuration 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. 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] Limit CPUID Maximum [Disabled] [Enabled] [Disabled] 2-18 Allows legacy operating systems to boot even without support for CPUs with extended CPUID functions. 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 run multiple operating systems separately and simultaneously, enabling one system to virtually function as several systems. Intel® Virtualization Technology [Disabled] Hardware Prefetcher [Enabled] Adjacent Cache Line Prefetch [Enabled] CPU Power Management Configuration CPU Ratio [Auto] Allows you to set the ratio between the CPU Core Clock and the BCLK Frequency. Use <+> and <-> keys to adjust the ratio. The valid value ranges vary according to your CPU model. Enhanced Intel SpeedStep Technology [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 enable or disable the Intel® Turbo Mode Technology.

[Enabled] Allows processor cores to run faster than marked frequency in specific condition. [Disabled] Disables this function. CPU C1E [Auto] Allows you to enable or disable the CPU C1E. [Auto] Set this item automatically. [Enabled] Enables the C1E support function. This item should be enabled in order to enable the Enhanced Halt State. [Disabled] Disables this function. CPU C3 Report [Auto] Allows you to disable or enable the CPU C3 report to OS. [Auto] Set this item automatically. [Enabled] Enables the C3 report function.

This item should be enabled in order to enable the Enhanced Halt State. [Disabled] Disables this function. Chapter 2: BIOS information 2-19 CPU C6 Report [Auto] Allows you to disable or enable the CPU C6 report to OS. [Auto] Set this item automatically. [Enabled] Enables the C6 report function.

This item should be enabled in order to enable the Enhanced Halt State. 2 PCH Configuration High Precision Timer [Enabled] Allows you to enable or disable the High Precision Event Timer. Configuration options: [Enabled] [Disabled] Intel(R) Rapid Start Technology Intel(R) Rapid Start Technology [Disabled] Allows you to enable or disable the Intel(R) Rapid Start Technology. Configuration options: [Enabled] [Disabled] The following three items appear only when you set the Intel(R) Rapid Start Technology to [Enabled]. Entry on S3 RTC Wake [Enabled] Allows you to enable or disable the iFFS invocation upon S3 RTC wake.

Configuration options: [Enabled] [Disabled] Entry After [10 Minutes] This item appears only when you set the Entry on S3 RTC Wake to [Enabled] and allows you to set the RTC wake timer at S3 entry. Configuration options: [Immediately] [1 minute] [2 minute] [5 minute] [10 minute] [15 minute] [30 minute] [1 hour] [2 hours] Active Page Threshold Support [Disbaled] Allows you to enable or disable the Active Page Threshold Support. Configuration options: [Enabled] [Disabled] Active Memory Threshold [x] This item appears only when you set the Active Page Threshold Support to [Enabled] and allows you to set the Active Memory Threshold. When the partition size is larger than the Active Page Threshold size, the system will try to support the Intel(R) Rapid Start Technology. When the item is set to zero, the system automatically checks whether the partition size is enough at S3 entry. Key in the desired value using the numeric keypad. 3 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 Configuration 2-20 ASUS P8H77-V LE SATA Mode Selection [IDE] Allows you to set the SATA configuration. [IDE] Set to [IDE] when you want to use the Serial ATA hard disk drives as Parallel ATA physical storage devices.

[AHCI] 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. [RAID] Set to [RAID] when you want to create a RAID configuration from the SATA hard disk drives. 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] This item only appears when you set the SATA Mode Selection item to [AHCI] or [RAID] and allows you to enable or disable the hot-plug support for each SATA port. Configuration options: [Enabled] [Disabled] Graphics Configuration Primary Display [Auto] Allows you to decide which graphics controller to use as the primary boot device. Configuration options: [Auto] [iGPU] [PCIE] [PCI] iGPU Memory [64M] Allows you to set the iGPU memory size. configuration options: [32M] [64M] [96M] [128M] ~ [448M] [480M] [512M] [1024M] Render Standby [Enabled] Allows you to enable or disable Render Standby by internal graphics devices. Configuration options: [Disabled] [Enabled] iGPU Multi-Monitor [Disabled] Allows you to enable the iGPU Multi-Monitor. For Lucid Virtu MVP function support, set this item to [Enabled] to empower both integrated and discrete graphics.

IGPU shared system memory size is fixed in 64MB. Configuration options: [Disabled] [Enabled] NB PCIe Configuration Allows you to configure the NB PCI Express settings. PCIE X16_1 [Auto] Allows you to set the PCIE x16_1 slot link speed. 5 The items in this menu allow you to change the USB-related features. The USB Devices item shows the auto-detected values.

If no USB device is detected, the item shows None. USB Configuration Legacy USB Support [Enabled] [Enabled] [Disabled] [Auto] Enables the support for USB devices on legacy operating systems (OS). The USB devices can be used only for the BIOS setup program. 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. legacy USB3. 0 Support [Enabled] This item appears only when you set the previous item to [Enabled] or [Auto]. [Enabled] Enables the support for USB 3. Intel xHCI Mode [Smart Auto] Allows you to select an operation mode for the Intel xHCI controller. Configuration options: [Smart Auto] [Auto] [Enabled] [Disabled] EHCI Hand-off [Disabled] [Enabled] [Disabled] Enables the support for operating systems without an EHCI hand-off feature. The following two items appear only when you set the HD Audio Controller item to [Enabled]. HD Audio Controller [Enabled] Front Panel Type [HD] Allows you to set the front panel audio connector (AAFP) mode to legacy AC'97 or highdefinition audio depending on the audio standard that the front panel audio module supports. [HD] Sets the front panel audio connector (AAFP) mode to high definition audio. [AC97] Sets the front panel audio connector (AAFP) mode to legacy AC'97 Realtek LAN Controller [Enabled] [Enabled] [Disabled] Enables the Realtek LAN controller.

disables the controller. 2-22 ASUS P8H77-V LE Realtek PXE OPROM [Disabled] This item appears only when you set the previous item to [Enabled] and allows you to enable or disable the PXE OptionRom of the Realtek LAN controller. Configuration options: [Enabled] [Disabled] Serial Port Configuration The sub-items in this menu allow you to set the serial port configuration. Serial Port [Enabled] Allows you to enable or disable the serial port (COM). Configuration options: [Enabled] [Disabled] Change Settings [IO=3F8h; IRQ=4] This item appears only when you set the Serial Port to [Enabled] and allows you to select the Serial Port base address. 7 [Power On] [Power Off] [Last State] APM The system goes into on state after an AC power loss. The system goes into off state after an AC power loss. The system goes into either off or on state, whatever the system state was before the AC power loss. restore AC Power Loss [Power Off] Power On By PS/2 Keyboard [Disabled] [Disabled] [Space Bar] [Ctrl-Esc] [Power Key] Disables the Power On by a PS/2 keyboard.

Sets the Space Bar on the PS/2 keyboard to turn on the system.

Sets the Ctrl+Esc key on the PS/2 keyboard to turn on the system. Sets Power key on the PS/2 keyboard to turn on the system. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead. Power On By PCIE/PCI [Disabled] [Disabled] [Enabled] Disables the PCIE/PCI devices to generate a wake event. Enables the PCIE/PCI devices to generate a wake event.

Power On By Ring [Disabled] [Disabled] [Enabled] [Disabled] [Enabled] Disables Ring to generate a wake event. When set to [Enabled], the items RTC Alarm Date (Days) and Hour/ Minute/Second will become user-configurable with set values. 6 Monitor menu The Monitor menu displays the system temperature/power status, and allows you to change the fan settings. Select Ignore if you do not wish to display the detected temperatures. If the fan is not connected to the motherboard, the field shows N/A.

Select Ignore if you do not wish to display the detected speed. CPU Fan Speed Low Limit [200 RPM] This item appears only when you enable the CPU Q-Fan Control feature and allows you to disable or set the CPU fan warning speed. Configuration options: [Ignore] [100 RPM] [200 RPM] [300 RPM] [400 RPM] [500 RPM] 2-24 ASUS P8H77-V LE CPU Fan Profile [Standard] This item appears only when you enable the CPU Q-Fan Control feature and allows you to set the appropriate performance level of the CPU fan. [Standard] Sets to [Standard] to make the CPU fan automatically adjust depending on the CPU temperature. [Silent] Sets to [Silent] to minimize the fan speed for quiet CPU fan operation. The following four items appear only when you set CPU Fan Profile to [Manual]. CPU Upper Temperature [70] Use the <+> and <-> keys to adjust the upper limit of the CPU temperature. The values range from 20ºC to 75ºC. cPU Fan Max. Duty Cycle(%) [100] Use the <+> and <-> keys to adjust the maximum CPU fan duty cycle.

The values range from 20% to 100%. When the CPU temperature reaches the upper limit, the CPU fan will operate at the maximum duty cycle. CPU Lower Temperature [20] Use the <+> and <-> keys to adjust the lower limit of the CPU temperature. The values range from 20ºC to 75ºC. cPU Fan Min. Duty Cycle(%) [20] Use the <+> and <-> keys to adjust the minimum CPU fan duty cycle. The values range from 0% to 100%. When the CPU temperature is under 40ºC, the CPU fan will operate at the minimum duty cycle. 4 This item allows you to disable or set the chassis fan warning speed. 5 The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators.

Select Ignore if you do not want to detect this item. 6 This item allows you to enable or disable the Anti Surge function. configuration options: [Disabled] [Enabled] Anti Surge Support [Enabled] Chapter 2: BIOS information 2-25 2. 7 Boot menu EFI BIOS Utility - Advanced Mode Exit The Boot menu items allow you to change the system boot options. 1 [On] [Off] Bootup NumLock State [On] Sets the power-on state of the NumLock to [On].

Sets the power-on state of the NumLock to [Off]. Set this item to [Enabled] to use the ASUS MyLogo 2TM feature. Post Report [5 sec] This item appears only when the Full Screen Logo item is set to [Disabled] and allows you to set the waiting time for the system to display the post report. 3 When this item is set to [Enabled], the system waits for the F1 key to be pressed when error occurs. The settings of this item have no effect for BBS boot options.

5 [Force BIOS] Option ROM Messages [Force BIOS] [Keep Current] The third-party ROM messages will be forced to display during the boot sequence. The third-party ROM messages will be displayed only if the third-party manufacturer had set the add-on device to do so. The CSM support is enabled or disabled automatically. [Advanced Mode] Sets Advanced Mode as the default screen for entering the BIOS setup program. [EZ Mode] Sets EZ Mode as the default screen for entering the BIOS setup program. Configuration options: [Enable both UEFI and legacy] [Disable UEFI] [Disable Legacy] UEFI/Legacy Boot [Enabled both UEFI and Legacy] 2. 7. 9 This item specifies the PCI Option ROM launch priority when multiple Option ROMs are available. 10 These items specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.

â· To select the boot device during system startup, press <F8> when ASUS Logo appears. The number of device items that appears on the screen depends on the number of devices installed in the system. 8 Tools menu The Tools menu items allow you to configure options for special functions. Select an item then press <Enter> to display the submenu. 1 Allows you to run ASUS EZ Flash 2. press [Enter] to launch the ASUS EZ Flash 2 screen. For more details, see section 2. 2 This item allows you to store or load multiple BIOS settings. Profile Label Allows you to input the label of the setup profile. Save to Profile Allows you to save the current BIOS settings to the BIOS Flash, and create a profile.

Key in a profile number from one to eight, press <Enter>, and then select Yes. Load from Profile Allows you to load the previous BIOS settings saved in the BIOS Flash. Key in the profile number that saved your CMOS settings, press <Enter>, and then select Yes. â· DO NOT shut down or reset the system while updating the BIOS to prevent the system boot failure! â· We recommend that you update the BIOS file only coming from the same memory/CPU configuration and BIOS version. 3 ASUS SPD Information DIMM Slot # [Slot 1] Displays the Serial Presence Detect (SPD) information of the DIMM module installed on the selected slot.

configuration options: [Slot 1] [Slot 2] [Slot 3] [Slot 4] 2-28 ASUS P8H77-V LE 2. 9 Exit menu The Exit menu items allow you to load the optimal default values for the BIOS items, and save or discard your changes to the BIOS items. You can access the EZ Mode from the Exit menu. Exit Load Optimized Defaults Save Changes & Reset Discard Changes & Exit ASUS EZ Mode Launch EFI Shell from filesystem device Load Optimized Defaults This option allows you to load the default values for each of the parameters on the Setup menus. When you select this option or if you press <F5>, a confirmation window appears.

select Yes to load the default values. @@@@ select Yes to save changes and exit. @@@@ select Yes to discard changes and exit. ASUS EZ Mode This option allows you to enter the EZ Mode screen. Launch EFI Shell from filesystem device This option allows you to attempt to launch the EFI Shell application (shellx64. Efi) from one of the available devices that have a filesystem. Chapter 2: BIOS information 2-29 2-30 ASUS P8H77-V LE Appendices Notices Federal Communications Commission Statement This device complies with Part 15 of the FCC Rules.