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

**User manual ASUS MAXIMUS VI HERO**  
**User guide ASUS MAXIMUS VI HERO**  
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**MAXIMUS VI  
HERO**

**ASUS**

**Motherboard**



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**Manual abstract:**

Such software in this product is distributed without any warranty to the extent permitted by the applicable law. Copies of these licenses are included in this product. Where the applicable license entitles you to the source code of such software and/or other additional data, you may obtain it for a period of three years after our last shipment of the product, 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. Turning off the computer. 5-3 Creating a RAID driver disk without entering the OS. 5-7 Installing the RAID driver during Windows® OS installation.

**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 devices on it, 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 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. Vi 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: This chapter describes the features of the motherboard and the new technology it supports.

It includes description of the switches, jumpers, and connectors on the motherboard. This chapter lists the hardware setup procedures that you have to perform when installing system components. This chapter tells how to change system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided. This chapter describes the contents of the support DVD that comes with the motherboard package and the software. This chapter describes the RAID configurations. Chapter 5: RAID support Chapter 4: Software support Chapter 3: BIOS setup Chapter 2: Basic Installation Chapter 1: Product introduction Where to find more information Refer to the following sources for additional information and for product and software updates. 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. optional documentation ASUS website 2.

**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. 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 (+). 0 support depends on the CPU types. Com for Intel CPU support list Chipset Intel® Z87 Express Chipset Dual channel memory architecture 4 x DIMM, max. ) / 1600 / 1333 MHz, non-ECC, un-buffered memory Supports Intel® Extreme Memory Profile (XMP) \* Hyper DIMM support is subject to the physical characteristics of individual CPUs. 0 x1 slots (PCIEX1\_1, PCIEX1\_2, and PCIEX1\_3) are disabled when the PCIe 2.

(continued on the next page) ix LAN 1 x Intel® I217-V Gigabit LAN Controller ROG SupremeFX Audio 8-Channel High Definition Audio Audio - SupremeFX Shielding Technology - ELNA® Premium Audio Capacitors - Content Protection for Full Rate lossless DVD Audio, Blu-ray DVD, and HD-DVD audio content playback - Jack-detection, Multi-streaming, Front Panel Jack-retasking - Optical S/PDIF out port at back panel - Sonic Radar - DTS Connect Audio Feature: Intel® Z87 Express Chipset 6 x USB 3. 0 ports (4 ports at back panel [blue], 2 ports at mid-board [red]\*) USB 8 x USB 2. 0 ports (4 ports at back panel, for ROG Connect; 4 ports at mid-board\*\*) \* Supports ASUS USB 3. 0 ports [blue] 1 x LAN (RJ45) port 6 x Audio jacks (continued on the next page) Extreme Engine Digi+ III - Full digital 8+2 phase CPU/DRAM power - NexFET™ Power Block MOSFET - 60A BlackWing Chokes - 10K Black Metallic Capacitors ROG GameFirst II ROG RAMDisk ROG Exclusive Features CPU Level Up UEFI BIOS features - Extreme Tweaker - Tweaker's Paradise - ROG SSD Secure Erase - BIOS Print - GPU. 0 ports, 1 connector shares with ROG\_EXT header) 1 x ROG Extension (ROG\_EXT) header 8 x SATA 6Gb/s connectors 1 x 4-pin CPU fan connector 1 x 4-pin CPU optional fan connector 3 x 4-pin Chassis fan connectors Internal Connectors 1 x 24-pin EATX power connector 1 x Clear CMOS jumper 1 x Power-on button 1 x Reset button 1 x MemOK! 4cm) Specifications are subject to change without notice. Xii Package contents Motherboard Cables Accessories Check your motherboard package for the following items.



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ROG MAXIMUS VI HERO 3 x 2-in-1 SATA 6 Gb/s cables 1 x SLI® bridge I/O Shield 1 x 12-in-1 ROG cable label 1 x 2-in-1 Q-Connector kit 1 x ROG Door Hanger Application DVD Documentation ROG motherboard support DVD User guide If any of the above items is damaged or missing, contact your retailer. Xiii Installation tools and components 1 bag of screws Philips (cross) screwdriver PC chassis Power supply unit Intel LGA 1150 CPU Intel LGA 1150 compatible CPU Fan DDR3 DIMM SATA hard disk drive SATA optical disc drive (optional) Graphics card (optional) The tools and components in the table above are not included in the motherboard package. 1 Special features Product highlights 1 Republic of Gamers The Republic of Gamers offers you the best of the best. We offer the best hardware engineering, the fastest performance, the most innovative ideas, and we welcome the best gamers to join in.

In the Republic of Gamers, mercy rules are only for the weak, and bragging rights means everything. We believe in making statements and we excel in competitions. If your character matches our trait, then join the elite Republic of Gamers and make your presence felt. LGA1150 socket for 4th Generation Intel® Core™ i7 / Intel® Core™ i5 / Intel® Core™ i3, Pentium® and Celeron® Processors This motherboard supports 4th generation Intel® Core™ i7/ Intel® Core™ i5/ Intel® Core™ i3, Pentium® and Celeron® processors in the LGA1150 package. It provides great graphics and system performance with its GPU, dual-channel DDR3 memory slots, and PCI Express 2. Intel® Z87 Express Chipset Intel® Z87 Express Chipset is a single-chipset that supports the LGA1150 socket 4th generation Intel® Core™ i7/ Intel® Core™ i5/ Intel® Core™ i3, Pentium® and Celeron® processors. It utilizes the serial point-to-point links, which increases bandwidth and enhances the system's performance. it natively supports up to six USB

3.0 ports for up to ten times faster transfer rate than USB 2.0, and enables the iGPU function for Intel® integrated graphics performance. 0) is the latest PCI Express bus standard with improved encoding schemes that provide twice the performance of current PCIe 2.0. Total bandwidth for a x16 link reaches a maximum of 32GB/s, double the 16GB/s of PCIe 2.0 provides users unprecedented data speeds, combined with the convenience and seamless transition offered 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.

sLI®/CrossFire™ On-Demand This motherboard features a unique PCIe 3.0 bridge chip to support multi-GPU SLI®/ CrossFire™ graphics cards for an unrivaled gaming performance. With the Intel® Z87 platform to optimize the PCIe allocation of multiple GPUs, it supports up to 4-WAY GPU SLI® or CrossFire™ configuration. 2 ROG Gaming Features SupremeFX The re-engineered ROG-exclusive SupremeFX audio technology features an onboard 8-channel high-definition sound of true audiophile-grade performance that is equal in power, clarity, and range to dedicated sound cards. Its unique Red Line Shielding and special metallic cover provides pristine sound and a highly attractive look for the motherboard that is in keeping with the ROG style. The Japan-made premium ELNA capacitor ensures warm natural sound with exceptional clarity for all your gaming and multimedia activities. SupremeFX revolutionizes the way you hear games, movies, music, and even other people via chat - letting you rule and discover a totally whole new dimension of superior audio. Sonic Radar Sonic Radar, an audio software designed for First Person Shooting (FPS) games, shows the preciOG version utility authorized by Intel's CPU Identification (CPUID) that allows you to gather information of the main devices of your system. It gives you the information and status of your CPU, motherboard, memory, and the whole component. Use the ROG look of reporting your system's current information with ROG CPU-Z. MemTweakIt MemTweakIt is a DRAM efficiency tool that allows you to read DRAM timings and allows you to post and share your DRAM configuration scores to the ROG website. DTS Connect To get the most out of your audio entertainment across all formats and quality levels, DTS Connect combines two enabling technologies, DTS Neo:PC™ upmixes stereo sources (CDs, MP3s, WMA, internet radio) into as many as 7.1 channels of incredible surround sound. Consumers can connect their PC to a home theater system. DTS Interactive is capable of performing multi-channel encoding of DTS bitstreams on personal computers, and sending encoded bitstreams out of a digital audio connection (such as S/PDIF or HDMI) designed to deliver audio to an external decoder.

1 Motherboard overview Befo Failure to do so may cause severe damage to the motherboard, peripherals, or components. 1 Rear I/O connection for more information about rear panel connectors and internal connectors. 3 The motherboard comes with a surface mount LGA1150 socket designed for the 4th Generation Intel® Core™ i7 / Intel® Core™ i5 / Intel® Core™ i3, Pentium®, and Celeron® processors. Central Processing Unit (CPU) 1 Ensure that all power cables are unplugged before installing the CPU.



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Ensure that you install the correct CPU designed for LGA1150 only. DO NOT install a CPU designed for LGA1155 and LGA1156 sockets on the LGA1150 socket. Upon purchase of the motherboard, ensure that the PnP cap is on the socket and the socket contacts are not bent. Contact your retailer immediately if the PnP cap is missing, or if you see any damage to the PnP cap/socket contacts/motherboard components. ASUS will shoulder the cost of repair only if the damage is shipment/ transit-related. Keep the cap after installing the motherboard.

ASUS will process Return Merchandise Authorization (RMA) requests only if the motherboard comes with the cap on the LGA1150 socket. The product warranty does not cover damage to the socket contacts resulting from incorrect CPU installation/removal, or misplacement/loss/incorrect removal of the PnP cap. DO NOT install a DDR or DDR2 memory module to the DDR3 slot. System memory Recommended memory configurations ASUS MAXIMUS VI HERO 1-9 Chapter 1 Memory configurations You may install 1GB, 2GB, 4GB and 8GB unbuffered and non-ECC DDR3 DIMMs into the DIMM sockets. Memory module with memory frequency higher than 2133 MHz and its corresponding timing or the loaded XMP profile is not the JEDEC memory standard. The stability and compatibility of these memory modules depend on the CPU's capabilities and other installed devices. You may install varying memory sizes in Channel A and Channel B.



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The system maps the total size of the lower-sized channel for the dual-channel configuration. Any excess memory from the higher-sized channel is then mapped for single-channel operation. For optimal compatibility, we recommend that you install memory modules of the same version or date code (D/C) from the same vendor.

Check with the retailer to get the correct memory modules. Due to the memory address limitation on 32-bit Windows OS, when you install 4GB or more memory on the motherboard, the actual usable memory for the OS can be about 3GB or less. For effective use of memory, we recommend that you do any of the following: a) Use a maximum of 3GB system memory if you are using a 32-bit Windows OS. b) Install a 64-bit Windows OS when you want to install 4GB or more on the motherboard.



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C) For more details, refer to the Microsoft® support site at <http://support>. This motherboard does not support DIMMs made up of 512Mb (64MB) chips or less (Memory chip capacity counts in Megabit, 8 Megabit/Mb = 1 Megabyte/MB). 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 3.4 Extreme Tweaker menu for manual memory frequency adjustment.

For system stability, use a more efficient memory cooling system to support a full memory load (4 DIMMs) or overclocking condition. 5 Side(s): SS - Single-sided DS - Double-sided DIMM support: (1) Supports one (1) module inserted into any slot as Single-channel memory configuration. We suggest that you install the module into A1 slot. (2) Supports two (2) modules inserted into either the red slots or the black slots as one pair of Dual-channel memory configuration. We suggest that you install the modules into slots A1 and B1 for better compatibility. (4) Supports four (4) modules inserted into both the red and black slots as two pairs of Dual-channel memory configuration. ASUS exclusively provides hyper DIMM support function. Hyper DIMM support is subject to the physical characteristics of individual CPUs.



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Settings in the BIOS for the hyper DIMM support. Visit the ASUS website for the latest QVL.

5 Expansion slots Unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage motherboard components. 0 x1\_1 slot VGA Configuration Single VGA/PCIe card Dual VGA/PCIe card PCIe operating mode PCIe\_x16/x8\_1 (Recommend for single VGA) x16 PCIe\_x8\_2 N/A x8 x8 We recommend that you provide sufficient power when running CrossFireX mode. Connect a chassis fan to the motherboard connector labeled CHA\_FAN1-3 when using multiple graphics cards for better thermal environment. 4th generation Intel PCIe\_x16/x8\_1 slot switches to x8 mode when PCIe\_x8\_2 slots are occupied.

6 Onboard buttons 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. 1. Power-on button Onboard buttons The motherboard comes with a power-on button that allows you to power up or wake up the system. The button also lights up when the system is plugged to a power source indicating that you should shut down the system and unplug the power cable before removing or installing any motherboard component. 2. Press the reset button to reboot the system. reset button ASUS MAXIMUS VI HERO 1-25 Chapter 1 3. Installing DIMMs that are not compatible with the motherboard may cause system boot failure, and the DRAM\_LED near the MemOK! Button until the MEMOK\_LED memory compatibility tuning for successful boot. 8 Onboard LEDs for the exact location of the MEMOK\_LED. The DRAM\_LED also lights up 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 MEMOK\_LED increases, indicating different test processes.

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 5 seconds.



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If your system fails to boot up due to BIOS overclocking, press the MemOK! button to boot and load the BIOS default settings. A message will appear during POST reminding you that the BIOS has been restored to its default settings. We recommend that you download and update to the latest BIOS version from the ASUS website at [www.asus.com](http://www.asus.com). Com after using the MemOK! This feature allows your system to go to the BIOS Setup program with the press of a button.

With DirectKey, you can enter the BIOS anytime without having to press the <Del> key during POST. It also allows you to turn on or turn off your system and conveniently enter the BIOS during boot-up. DirectKey button Ensure to save your data before using the DirectKey button. ¶ When the system is on and you press the DirectKey button, your system will shut down. Press the DirectKey button again or the Power-on button to reboot and enter the BIOS directly.

Turn off your system using the power-on button to allow your system to go through POST (without entering the BIOS) when you reboot your system. refer to section 3. 8 Boot Menu for details about setting the DirectKey default function. 7 Clear RTC RAM (3-pin CLRTC) Jumper 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. 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 <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. 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 the CMOS clearance, 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 C. Shut down and reboot the system so the BIOS can automatically reset parameter settings to default values.

Due to the chipset behavior, AC power off is required to enable C. You must turn off and on the power supply or unplug and plug the power cord before rebooting the system. The hard disk LED is designed to indicate the hard disk activity. It blinks when data is being written into or read from the hard disk drive. The LED does not light up when there is no hard disk drive connected to the motherboard or when the hard disk drive does not function. Q LEDs check key components (CPU, DRAM, VGA card, and booting devices) in sequence during motherboard booting process. If an error is found, the corresponding LED flashes until the problem is solved. This user-friendly design provides an intuitive way to locate the root problem within seconds.

q LED Chapter 1 1-30 Chapter 1: Product introduction 4. BIOS Flashback LED This LED flashes when the BIOS is updating and turns off after the BIOS update. 5. The Q-Code LED design provides you with a 2-digit error code that displays the system status. Refer to the Q-Code table on the next page for details.

AP initialization before microcode loading System Agent initialization before microcode loading PCH initialization before microcode loading Microcode loading AP initialization after microcode loading System Agent initialization after microcode loading PCH initialization after microcode loading Cache initialization Reserved for future AMI SEC error codes Microcode not found Microcode not loaded PEI Core is started Pre-memory CPU initialization is started Pre-memory System Agent initialization is started Pre-memory PCH initialization is started Memory initialization Reserved for ASL (see ASL Status Codes section below) Memory Installed CPU post-memory initialization Post-Memory System Agent initialization is started Post-Memory PCH initialization is started DXE IPL is started (continued on the next page) Chapter 1 1-32 Chapter 1: Product introduction Q-Code table Code 50 51 52 53 54 55 56 57 58 59 00 01 02 03 04 06 07 08 09 0B 0C 0D 0E 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 2B 2C 2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A Description Memory initialization error. Invalid memory type or incompatible memory speed Unspecified memory initialization error Memory not installed Invalid CPU type or Speed CPU mismatch CPU self test failed or possible CPU cache error CPU micro-code is not found or micro-code update is failed Not used Power on. reset type detection (soft/hard). AP initialization before microcode loading System Agent initialization before microcode loading PCH initialization before microcode loading Microcode loading AP initialization after microcode loading System Agent initialization after microcode loading PCH initialization after microcode loading Cache initialization Reserved for future AMI SEC error codes Microcode not found Microcode not loaded PEI Core is started Pre-memory CPU initialization is started Pre-memory System Agent initialization is started Pre-memory PCH initialization is started Memory initialization Memory Installed CPU post-memory initialization Post-Memory System Agent initialization is started (continued on the next page) ASUS MAXIMUS VI HERO 1-33 Chapter 1 Reserved for ASL (see ASL Status Codes section below) Q-Code table Code 3B 3C 3D 3E 4F 50 51 52 53 54 55 56 57 58 59 5A 5B 5C 5D 5E 5F E0 E1 E2 E3 E4 E5 E6 E7 E8 E9 EA EB EC 0D 0E 0F F0 F1 F2 F3 F4 F5 F6 F7 F8 Description Post-Memory PCH initialization is started DXE IPL is started Memory initialization error. Invalid memory type or incompatible memory speed Unspecified memory initialization error Memory not installed Invalid CPU type or Speed CPU mismatch CPU self test failed or possible CPU cache error CPU micro-code is not found or micro-code update is failed Internal CPU error Reset PPI is not available Reserved for future AMI error codes S3 Resume is started (S3 Resume PPI is called by the DXE IPL) S3 Boot Script execution Video repost OS S3 wake vector call Reserved for future AMI progress codes S3 Resume Failed S3 Resume PPI not Found S3 Resume Boot Script Error S3 OS Wake Error Reserved for future AMI error codes Recovery condition triggered by firmware (Auto recovery) Recovery condition triggered by user (Forced recovery) Recovery process started Recovery firmware image is found Recovery firmware image is loaded Reserved for future AMI progress codes Recovery PPI is not available (continued on the next page) Chapter 1 1-34 Chapter 1: Product introduction Q-Code table Code F9 FA FB FC FD FE FF 60 61 62 63 64 65 66 67 68 69 6A 6B 6C 6D 6E 6F 70 71 72 73 74 75 76 77 78 79 7A 7B 7C 7D 7E 7F 90 91 92 93 94 95 96 97 98 99 9A 9B Description Recovery capsule is not found Invalid recovery capsule Reserved for future AMI error codes DXE Core is started NVRAM initialization Installation of the PCH Runtime Services CPU DXE initialization is started PCI host bridge initialization System Agent DXE initialization is started System Agent DXE SMM initialization is started System Agent DXE initialization (System Agent module specific) PCH DXE initialization is started PCH DXE SMM initialization is started PCH devices initialization PCH DXE Initialization (PCH module specific) ACPI module initialization CSM initialization Reserved for future AMI DXE codes Boot Device Selection (BDS) phase is started Driver connecting is started PCI Bus initialization is started PCI Bus Hot Plug Controller Initialization PCI Bus Enumeration PCI Bus Request Resources PCI Bus Assign Resources Console Output devices connect Super IO Initialization USB initialization is started USB Reset (continued on the next page) ASUS MAXIMUS VI HERO 1-35 Chapter 1 Console input devices connect Q-Code table Code 9C 9D 9E 9F A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 AA AB AC AD AE AF B0 B1 B2 B3 B4 B5 B6 B7 B8 B9 BA BB BC BD BE BF DO D1 Description USB Detect USB Enable Reserved for future AMI codes IDE initialization is started IDE Reset IDE Detect IDE Enable SCSI initialization is started SCSI Reset SCSI Detect SCSI Enable Setup Verifying Password Start of Setup Reserved for ASL (see ASL Status Codes section below) Setup Input Wait Reserved for ASL (see ASL Status Codes section below) Ready To Boot event Legacy Boot event Exit Boot Services event Runtime Set Virtual Address MAP Begin Runtime Set Virtual Address MAP End Legacy Option ROM Initialization System Reset USB hot plug PCI bus hot plug Clean-up of NVRAM Configuration Reset (reset of NVRAM settings) Reserved for future AMI codes CPU initialization error System Agent initialization error (continued on the next page) Chapter 1 1-36 Chapter 1: Product introduction Q-Code table Code D2 D3 D4 D5 D6 D7 D8 D9 DA DB DC Description PCH initialization error Some of the Architectural Protocols are not available PCI resource allocation error.



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Out of Resources No Space for Legacy Option ROM No Console Output Devices are found No Console Input Devices are found Invalid password Error loading Boot Option (LoadImage returned error) Boot Option is failed (StartImage returned error) Flash update is failed Reset protocol is not available ACPI/ASL Checkpoints Code 0x01 0x02 0x03 0x04 0x05 0x10 0x20 0x30 0x40 0xAC 0xAA Description System is entering S1 sleep state System is entering S2 sleep state System is entering S3 sleep state System is entering S4 sleep state System is entering S5 sleep state System is waking up from the S1 sleep state System is waking up from the S2 sleep state System is waking up from the S3 sleep state System is waking up from the S4 sleep state System has transitioned into ACPI mode. Intel Z87 Serial ATA 6 Gb/s connectors (7-pin SATA6G\_1-6 [red]) Intel® Internal connectors If you installed Serial ATA hard disk drives, you can create a RAID 0, 1, 5, and 10 configuration with the Intel® Rapid Storage Technology through the onboard Intel® Z87 chipset. These connectors are set to [AHCI Mode] by default. If you intend to create a Serial ATA RAID set using these connectors, set the SATA Mode item in the BIOS to [RAID Mode]. 1 RAID configurations or the manual Before creating a RAID set, refer to section bundled in the motherboard support DVD. These connectors are set to [AHCI Mode] by default. If you intend to create a Serial ATA RAID set using these connectors, set the SATA Mode item in the BIOS to [RAID Mode]. 1 RAID configurations or the manual Before creating a RAID set, refer to section bundled in the motherboard support DVD. When using NCQ, set the SATA Mode in the BIOS to [AHCI Mode]. This connector allows you to connect a USB 3.0 module, you can enjoy all the benefits of USB 3.0 including faster data transfer speeds of up to 5Gbps, faster charging time for USB-chargeable devices, optimized power efficiency, and backward compatibility with USB 2. These connectors are based on xHCI specification.

We recommend you to install the related driver to fully use the USB 3. 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. 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. Front panel audio connector (10-1 pin AAFP) Chapter 1 1-40 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 or an AC97 front panel audio module to this connector, set the Front Panel Type item in the BIOS setup to [HD] or [AC97]. chapter 1: Product introduction 6. 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. Doing so will damage the motherboard! You can connect the front panel USB cable to the ASUS Q-Connector (USB) first, and then install the Q-Connector (USB) to the USB connector onboard if your chassis supports front panel USB ports. CPU, chassis, and optional fan connectors 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. (4-pin CPU\_FAN; 4-pin CPU\_OPT; 4-pin CHA\_FAN1-3) 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! Ensure to fully insert the 4-pin CPU fan cable to the CPU fan connector. 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. ATX power connectors (24-pin EATXPWR; 8-pin EATX12V) For a fully configured system, we recommend that you use a power supply unit (PSU) that complies with ATX 12 V Specification 2.



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0 (or later version) and provides a minimum power of 350 W. Do not forget to connect the 4-pin/8-pin EATX12 V power plug. Otherwise, the system will not boot. We recommend that you use a PSU with a 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. If you want to use two or more high-end PCI Express x16 cards, use a PSU with 1000W power or above to ensure the system stability. 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/power>.



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