



Asus Prime H270-PRO Manual

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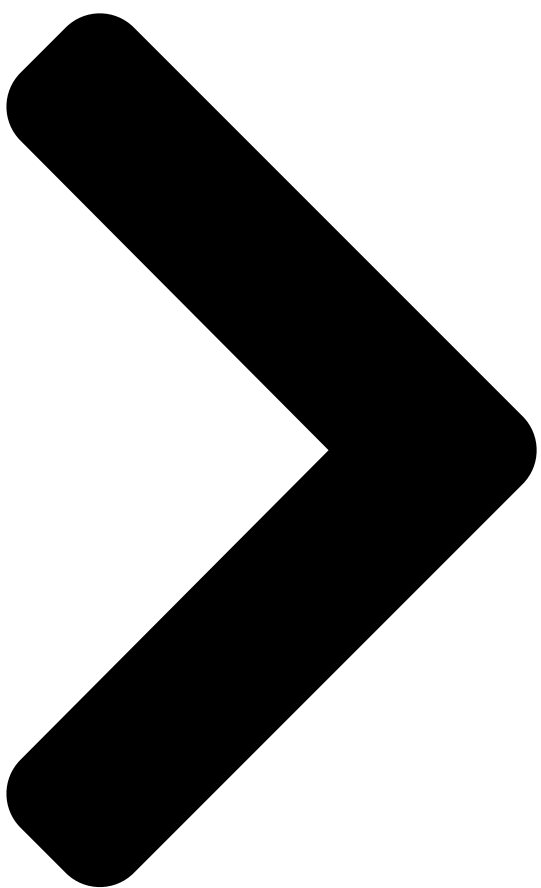
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Summary of Contents for Asus Prime H270-PRO

[Page 1](#) PRIME H270-PRO...

[Page 2](#) Product warranty or service will not be extended if: (1) the product is repaired, modified or altered, unless such repair, modification or alteration is authorized in writing by ASUS; or (2) the serial number of the product is defaced or missing.

[Page 3](#) Contents Safety informationiv About this guideiv Package contentsvi PRIME H270-PRO specifications summaryvi Chapter 1: Product introduction Before you proceed1-1 Motherboard overview1-1 Central

Processing Unit (CPU)1-10 System memory 1-11...

Page 4 Safety information Electrical safety • To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system. • When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.

Page 5 Refer to the following sources for additional information and for product and software updates. ASUS websites The ASUS website provides updated information on ASUS hardware and software products. Refer to the ASUS contact information. Optional documentation Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer.

Page 6 DDR4 2133MHz. ® *** Refer to www.asus.com for the latest Memory QVL (Qualified Vendors List). 1 x PCI Express 3.0/2.0 x16 slot (at x16 mode) 1 x PCI Express 3.0/2.0 x16 slot (max. at x4 mode, compatible with PCIe x1, x2...

Page 7 - 6 x USB 2.0/1.1 ports (4 ports @mid-board; 2 ports @ back panel) ASUS 5X PROTECTION III - ASUS SafeSlot Core: Fortified PCIe Slot prevents damage - ASUS LANGuard: Protects against LAN surges, lightning strikes and static-electricity discharges - ASUS Overvoltage Protection: World-class circuit-protecting power design...

Page 8 - ASUS Q-DIMM - ASUS Q-Slot Quiet Thermal Design ASUS quiet thermal - ASUS Fan Xpert 4 Core solution - Stylish Fanless Design: PCH heatsink and MOS heatsink solution 1 x PS/2 keyboard/mouse combo port 1 x HDMI port 1 x DVI-D port...

Page 9 CPU and chassis fans installed and changes the control mode automatically. 128 Mb Flash ROM, UEFI AMI BIOS, PnP, DMI3.0, WfM2.0, SM BIOS 3.0, ACPI 6.0, Multi-language BIOS, ASUS EZ Flash 3, CrashFree BIOS 3, F11 EZ Tuning BIOS features...

Page 10 Super PCIe16_2 22110 2280 2260 2242 PCIe1_2 128Mb M.2_2 BIOS PCIE SATA IRST PCI2 SATA6G_4 SATA6G_3 USB3_34 PANEL SATA6G_6 SATA6G_5 SPDIF_OUT USB1112 USB1314 AAFP CLRTC 13 12 11 Unplug the power cord before installing or removing the motherboard. Failure to do so can cause you physical injury and damage motherboard components. ASUS PRIME H270-PRO...

Page 11 +3 Volts -12 Volts +3 Volts +3 Volts PIN 1 • For a fully configured system, we recommend that you use a power supply unit (PSU) that complies with ATX 12 V Specification 2.0 (or later version) and provides a minimum power of 350 W. This PSU type has 24-pin and 8-pin power plugs. • We recommend that you use a PSU with higher power output when configuring a system with more power-consuming devices or when you intend to install additional devices. The system may become unstable or may not boot up if the power is inadequate. • If you are uncertain about the minimum power supply requirement for your system, refer to the Recommended Power Supply Wattage Calculator at <http://support.asus.com/PowerSupplyCalculator/PSCalculator.aspx?SLanguage=en-us> for details. Chapter 1: Product introduction...

Page 12 DIMM sockets. For more details, refer to 1.4 System memory. USB 3.0 connectors (20-1 pin USB3_12, USB3_34) USB3_12 Connect a USB 3.0 module to any of these connectors PIN 1 USB3+5V USB3+5V IntA_P1_SSRX- for additional USB 3.0 front or rear panel ports. These IntA_P2_SSRX- IntA_P1_SSRX+ IntA_P2_SSRX+ connectors comply with USB 3.0 specifications and IntA_P1_SSTX- IntA_P2_SSTX- IntA_P1_SSTX+ provides faster data transfer speeds of up to 5 Gbps, faster IntA_P2_SSTX+ IntA_P1_D- IntA_P1_D+ charging time for USB-chargeable devices, optimized power IntA_P2_D- IntA_P2_D+ efficiency, and backward compatibility with USB 2.0 USB3_34 PIN 1 ASUS PRIME H270-PRO...

Page 13 The M.2_1 socket supports data transfer speed up to 32Gb/s. • The M.2_2 socket supports data transfer speed up to 16Gb/s. • Only M.2_1 can support Intel Optane Memory. Intel Optane Technology is only ® ® supported when using 7th Generation Intel processors. Before using Intel Optane ® ® memory modules, ensure that you have updated your motherboard drivers and BIOS to the latest version from ASUS support website. • When a device in SATA mode is installed on the M.2_1 socket, SATA_1 port cannot be used. • When a device in SATA mode is installed on the M.2_2 socket, SATA_6 port cannot be used. Intel H270 Serial ATA 6.0Gb/s connectors (7-pin ® SATA6G SATA6G_1~6) These connectors connect to Serial ATA 6.0

Gb/s hard disk RSATA_TXP drives via Serial ATA 6.0 Gb/s signal cables. RSATA_TXN...

Page 14 480Mbps connection speed. PIN 1 PIN 1 Serial port connector (10-1 pin COM) This connector is for a serial (COM) port. Connect the serial port module cable to this connector, then install the module to a slot opening at the back of the system chassis. PIN 1 Digital audio connector (4-1 pin SPDIF_OUT) This connector is for an additional Sony/Philips Digital Interface (S/PDIF) port. Connect the S/PDIF Out module cable to this connector, then install the module to a slot opening at the back of the system chassis. SPDIF_OUT ASUS PRIME H270-PRO...

Page 15 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 AAFP front panel audio I/O module cable to this connector. PIN 1 HD-audio-compliant Legacy AC'97 pin definition compliant definition • We recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high-definition audio capability. • If you want to connect a high-definition front panel audio module to this connector, set the Front Panel Type item in the BIOS setup to [HD Audio]. If you want to connect an AC'97 front panel audio module to this connector, set the item to [AC97]. By default, this connector is set to [HD Audio]. PCI slots The PCI slots support cards such as LAN card, SCSI card, USB card, and other cards that comply with the PCI specifications PCI Express 3.0/2.0 x1 slots...

Page 16 - shared PCIEx16_1 shared - - - PCIEx16_2 shared - - - M.2_1 shared - - - M.2_2 - - shared - Asmedia PCIe to PCI - - shared - Controller Asmedia USB3.1 shared - - - Controller 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. ASUS PRIME H270-PRO...

Page 17 1.2.2 Rear panel connectors PS/2 Mouse/Keyboard combo port. This port connects to a PS/2 mouse or PS/2 keyboard. DisplayPort. This port connects a display monitor or a home-theater system. LAN (RJ-45) port. This port allows Gigabit connection to a Local Area Network (LAN) through a network hub. LAN port LED indications Speed Activity Link Activity/Link LED Speed LED Status Description Status Description No link 10Mbps connection Orange Linked...

Page 18 ® USB 2.0 and USB 3.0 ports are controlled by the xHCI controller. Some legacy USB devices must update their firmware for better compatibility. USB 3.1 ports (teal blue, Type A). These 9-pin Universal Serial Bus 3.1 (USB 3.1) ports are for USB 3.1 devices. • Due to the limitation of USB 3.1 and USB 3.0 controller, USB 3.1 and USB 3.0 devices can only be used under Windows OS environment and after the USB 3.1 and USB 3.0 driver installation. • We strongly recommend that you connect USB 3.1 and USB 3.0 devices to USB 3.1 and USB 3.0 ports for faster and better performance from your USB 3.1 and USB 3.0 devices. HDMI port. 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. USB 5Gb/s Type C port. This 24-pin Universal Serial Bus (USB) port is for USB (Type C) devices. DVI-D port. This port is for any DVI-D compatible device. DVI-D can not be converted to output from RGB Signal to CRT and is not compatible with DVI-I. USB 2.0 ports. These 4-pin Universal Serial Bus (USB) ports are for USB 2.0/1.1 devices. ASUS PRIME H270-PRO...

Page 19 Core™ i7 / Core™ i5 / Core™ ® i3, Pentium and Celeron processors. ® ® Unplug all power cables before installing the CPU. • Ensure that you install the correct CPU designed for the LGA1151 socket only. DO NOT install a CPU designed for LGA1155, LGA1155 and LGA1156 sockets on the LGA1151 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. • 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 LGA1151 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. Installing the CPU Apply the Thermal Interface Material to the CPU heatsink and CPU before you install the heatsink and fan if necessary. Chapter 1: Product introduction 1-10...

Page 20 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: Use a maximum of 3GB system memory if you are using a 32-bit Windows OS. ® I nstall a 64-bit Windows OS if you want to install 4GB or more on the ® motherboard. F or more details, refer to the Microsoft support site at <http://support.microsoft.com/kb/929605/en-us>. • Memory modules with memory frequency higher than 2133/2400 MHz and its corresponding timing or the loaded X.M.P. 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. • 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. • For system stability, use a more efficient memory cooling system to support a full memory load (4 DIMMs). • Refer to www.asus.com for the latest Memory QVL (Qualified Vendors List) 1-11 ASUS PRIME H270-PRO...

[Page 21](#) Installing a DIMM To remove a DIMM Chapter 1: Product introduction 1-12...

[Page 22](#) 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.

[Page 23](#) 2.1.2 ASUS EZ Flash 3 The ASUS EZ Flash 3 feature allows you to update the BIOS without using an OS-based utility. • Ensure to load the BIOS default settings to ensure system compatibility and stability. Select the Load Optimized Defaults item under the Exit menu. See section 2.3 Exit Menu for details.

[Page 24](#) 2.1.3 ASUS CrashFree BIOS 3 utility The ASUS CrashFree BIOS 3 is an auto recovery tool that allows you to restore the BIOS file when it fails or gets corrupted during the updating process. You can restore a corrupted BIOS file using the motherboard support DVD or a USB flash drive that contains the updated BIOS file.

[Page 25](#) ENTER to select boot device ESC to boot using defaults P2: ST3808110AS (76319MB) aigo miniking (250MB) EFI: (FAT) ASUS DRW-2014L1T(4458MB) P1: ASUS DRW-2014L1T(4458MB) EFI: (FAT) aigo miniking (250MB) Enter Setup When the booting message appears, press <Enter> within five (5) seconds to enter FreeDOS prompt.

[Page 26](#) DO NOT shut down or reset the system while updating the BIOS to prevent system boot failure. Ensure to load the BIOS default settings to ensure system compatibility and stability. Select the Load Optimized Defaults item under the Exit BIOS menu. See section 2.3 Exit Menu for details. 2-5 ASUS PRIME H270-PRO...

[Page 27](#) The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen. Visit the ASUS website at www.asus.com to download the latest BIOS file for this • motherboard.

[Page 28](#) Click the button to manually Searches FAQ Saves the changes tune the fans and resets the Selects the boot Loads optimized system device priority default settings The boot device options vary depending on the devices you installed to the system. 2-7 ASUS PRIME H270-PRO...

[Page 29](#) 2.2.2 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 EzMode(F7) or press <F7>. EZ Tuning MyFavorite Q-Fan control...

[Page 30](#) It also allows you to change the motherboard's SATA mode from AHCI to RAID mode. Hot keys This button above the menu bar contains the navigation keys for the BIOS setup program. Use the navigation keys to select items in the menu and change the settings. ASUS PRIME H270-PRO...

[Page 31](#) Search on FAQ Move your mouse over this button to show a QR code. Scan this QR code with your mobile device to connect to the ASUS BIOS FAQ web page. You can also scan the QR code below. Scroll bar A scroll bar appears on the right side of a menu screen when there are items that do not fit on the screen.

[Page 32](#) <Esc>, a confirmation window appears. Select OK to discard changes and exit. Launch EFI Shell from USB drives This option allows you to attempt to launch the EFI Shell application (shellx64.efi) from one of the available USB devices. 2-11 ASUS PRIME H270-PRO...

[Page 33](#) Cet appareil est conforme aux normes CNR exemptes de licence d'Industrie Canada. Le fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas

provoquer d'interférences et (2) cet appareil doit accepter toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité de l'appareil. ASUS PRIME H270-PRO...

[Page 34](#) ASUS Recycling/Takeback Services ASUS recycling and takeback programs come from our commitment to the highest standards for protecting our environment. We believe in providing solutions for you to be able to responsibly recycle our products, batteries, other components as well as the packaging materials.

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[Page 36](#) +1-510-739-3777 +1-510-608-4555 Web site <http://www.asus.com/us/> Technical Support Support fax +1-812-284-0883 Telephone +1-812-282-2787 Online support <http://qr.asus.com/techserv> ASUS COMPUTER GmbH (Germany and Austria) Address Harkort Str. 21-23, 40880 Ratingen, Germany +49-2102-959931 Web site <http://www.asus.com/de> Online contact <http://eu-rma.asus.com/sales> Technical Support Telephone +49-2102-5789555 Support Fax...

[Page 37](#) 800 Corporate Way, Fremont Phone/Fax No: (510)739-3777/(510)608-4555 hereby declares that the product Product Name : Motherboard Model Number : PRIME H270-PRO Conforms to the following specifications: FCC Part 15, Subpart B, Unintentional Radiators Supplementary Information: This device complies with part 15 of the FCC Rules. Operation is subject to the...