



Asus Pro WS C246-ACE Manual

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Summary of Contents for Asus Pro WS C246-ACE

[Page 1](#) Pro WS C246-ACE...

[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: Table Of Contents](#)

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Processing Unit (CPU) 1-11 System memory

[Page 4: Safety Information](#)

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 website The ASUS website (www.asus.com) provides updated information on ASUS hardware and software products. Optional documentation Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer.

[Page 6: Package Contents](#)

* DDR4 2666MHz and higher memory modules will run at max. 2666MHz on Intel ® Gen. 6-core or higher processors. * Refer to www.asus.com for the Memory QVL (Qualified Vendors List). 2 x PCIe 3.0/2.0 x16 slots (supports x16 or x8/x8) Expansion 1 x PCIe 3.0/2.0 x16 slot (max).

[Page 7](#) ASUS Pro WS C246-ACE specifications summary Intel C246 Chipset with RAID 0, 1, 5, 10 and Intel Rapid Storage Technology ® support - 1 x M.2_1 Socket 3 with M Key, type 2242/2260/2280/22110 storage devices support (PCIe x4 mode) - 1 x M.2_2 Socket 3 with M Key, type 2242/2260/2280/22110 storage devices Storage support (both SATA &...

[Page 8](#) - ASUS SafeSlot Core: Fortified PCIe with solid soldering - ASUS ESD Guard: Enhanced ESD protection - ASUS Overvoltage Protection: World-class circuit-protecting power design - ASUS Stainless-Steel Back I/O: 3X corrosion-resistance for greater durability! - ASUS DIGI+ VRM power design ASUS EPU...

[Page 9](#) * Chassis intrusion header is built in the system panel connector. 128 Mb Flash ROM, UEFI AMI BIOS, PnP, SM BIOS 3.1, ACPI 6.1, Multi- language BIOS, ASUS EZ Flash 3, CrashFree BIOS 3, F11 EZ Tuning Wizard, BIOS F6 Qfan Control, F3 My Favorites, Last Modified log, F9 Search, F12 PrintScreen, and ASUS DRAM SPD (Serial Presence Detect) memory information WfM 2.0, DMI 3.0, WOL by PME, PXE...

[Page 11: Chapter 1: Product Introduction](#)

Failure to do so may cause severe damage to the motherboard, peripherals, or components. Motherboard overview Place this side towards the rear of the chassis Unplug the power cord before installing or removing the motherboard. Failure to do so can cause you physical injury and damage motherboard components. ASUS Pro WS C246-ACE...

[Page 12](#) 1.2.1 Layout contents Connectors/Jumpers/Slots Page ATX power connectors (24-pin EATXPWR, 8-pin EATX12V) Intel LGA1151 CPU socket ® CPU, CPU optional, chassis, and AIO pump fan connectors (4-pin CPU_FAN, 4-pin CPU_OPT, 4-pin CHA_FAN1~3, 4-pin AIO_PUMP FAN) DDR4 DIMM slots USB 3.2 Gen 1 connector (20-1 pin U32G1_56) SATA 6Gb/s connector (7-pin SATA6G_1-4) Mini-SAS HD connector (U.2) System panel connector (20-3 pin PANEL) Clear RTC RAM (2-pin CLRTC) 10. Thermal Sensor connector (2-pin T_SENSOR) 11. USB 2.0 connector (10-1 pin USB1112; USB1314) 12. Node connector (12-1 pin NODE) 13. Serial port connector (10-1 pin COM) 14. Front panel audio connector (10-1 pin AAFP) 15. PCI Express 3.0/2.0 x16 slots 16. PCI Express 3.0/2.0 x1 slots 17. M.2 sockets (M.2_1(SOCKET3); M.2_2 (SOCKET3)) EATX12V PIN 1 ATX power connectors (24-pin EATXPWR, EATXPWR 8-pin EATX12V) +3 Volts...

[Page 13](#) Install 2 GB, 4 GB, 8 GB, 16 GB, and 32 GB DDR4 DIMMs into these DIMM sockets. For more details, refer to 1.4 System memory. USB 3.2 Gen 1 connector (20-1 pin U32G1_56) U32G1 Connect a USB 3.2 Gen 1 module to any of these PIN 1 USB3+5V connectors for additional USB 3.2 Gen 1 front or rear USB3+5V IntA_P1_SSRX- IntA_P2_SSRX- IntA_P1_SSRX+ panel ports. These connectors comply with USB 3.2 IntA_P2_SSRX+ IntA_P1_SSTX- Gen 1 specifications and provides faster data transfer IntA_P2_SSTX- IntA_P1_SSTX+ IntA_P2_SSTX+ IntA_P1_D- speeds of up to 5 Gbps, faster charging time for USB- IntA_P2_D- IntA_P1_D+ IntA_P2_D+ chargeable devices, optimized power efficiency, and backward compatibility with USB 2.0 ASUS Pro WS C246-ACE...

[Page 14](#) SATA 6Gb/s connector (7-pin SATA6G_1-4) SATA6G These connectors connect to

Serial ATA 6.0 Gb/s hard disk drives via Serial ATA 6.0 Gb/s signal cables. RSATA_TXP RSATA_TXN RSATA_RXN RSATA_RXP Mini-SAS HD connector (U.2) The Mini-SAS HD connector allows you to connect a Mini-SAS HD cable to support configurations such as U.2 devices or four SATA devices. System panel connector (20-3 pin PANEL) This connector supports several chassis-mounted functions. • System power LED (4-pin PWR_LED) This 4-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.

[Page 15](#) USB 2.0 connector (10-1 pin USB1112; USB1314) USB1314 USB1112 Connect a USB module cable to this connector, then install the module to a slot opening at the back of the system chassis. This USB connectors comply with USB 2.0 specifications and supports up to 480Mbps connection speed. PIN 1 PIN 1 Node connector (12-1 pin NODE) The Node connector allows you to connect Node compatible devices. Visit www.asus.com for more information about the devices and the latest compatibility list. ASUS Pro WS C246-ACE...

[Page 16](#) 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 Front panel audio connector (10-1 pin AAFP) This connector is for a chassis-mounted front panel audio I/O module that supports HD Audio standard. Connect one end of the front panel audio I/O module AAFP cable to this connector.

[Page 17](#) M.2 sockets (M.2_1(SOCKET3); M.2_2 (SOCKET3)) M.2(SOCKET3) These sockets allow you to install M.2 (NGFF) SSD modules. • The M.2_1 socket supports M Key and 2242/2260/2280/22110 storage devices (PCIe x4 mode). • The M.2_2 socket supports M Key and 2242/2260/2280/22110 storage devices (both SATA & PCIe x2 mode)s. The M.2 SSD module is purchased separately. ASUS Pro WS C246-ACE...

[Page 18](#) 1.2.2 Rear panel connectors USB 3.2 Gen 2 Type-A ports. These 9-pin Universal Serial Bus 3.2 (USB 3.2) ports are for USB 3.2 Gen 2 devices. • USB 3.2 Gen 1/Gen 2 devices can only be used as data storage only. • We strongly recommend that you connect your devices to ports with matching data transfer rate. Please connect your USB 3.2 Gen 1 devices to USB 3.2 Gen 1 ports and your USB 3.2 Gen 2 devices to USB 3.2 Gen 2 ports for faster and better performance for your devices. USB 3.2 Gen 2 Type-A ports. These 9-pin Universal Serial Bus 3.2 (USB 3.2) ports are for USB 3.2 Gen 2 devices. • USB 3.2 Gen 1/Gen 2 devices can only be used as data storage only. • We strongly recommend that you connect your devices to ports with matching data transfer rate. Please connect your USB 3.2 Gen 1 devices to USB 3.2 Gen 1 ports and your USB 3.2 Gen 2 devices to USB 3.2 Gen 2 ports for faster and better performance for your devices. DisplayPort. This port allows you to connect your motherboard to an external display. Chapter 1: Product Introduction...

[Page 19](#) USB 3.2 Gen 2 Type-C™ port. This 24-pin Universal Serial Bus (USB) port is for USB (Type C) 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 3.2 Gen 1 Type-A port. These 9-pin Universal Serial Bus (USB) ports are for USB 3.2 Gen 1 devices. • USB 3.2 Gen 1 devices can only be used for data storage. • We strongly recommend that you connect USB 3.2 Gen 1 devices to USB 3.2 Gen 1 ports for faster and better performance from your USB 3.2 Gen 1 devices. USB 3.2 Gen 1 Type-A port. These 9-pin Universal Serial Bus (USB) ports are for USB 3.2 Gen 1 devices. • USB 3.2 Gen 1 devices can only be used for data storage. • We strongly recommend that you connect USB 3.2 Gen 1 devices to USB 3.2 Gen 1 ports for faster and better performance from your USB 3.2 Gen 1 devices. ASUS Pro WS C246-ACE...

[Page 20](#) Optical S/PDIF OUT port. This port allows you to connect amplified speakers, headphones, or Sony/Phillips Digital Interconnect Format (S/PDIF) compliant devices. Audio I/O ports. Refer to the audio configuration table below for the function of the audio ports in 2, 4, 5.1, or 7.1-channel configuration. Audio 2, 4, 5.1, or 7.1-channel configuration Headset Port 4-channel 5.1-channel 7.1-channel 2-channel Light Blue Line In Line In Side Speaker Out Lime Line Out Front Speaker Out Front Speaker Out Front Speaker Out Pink Mic In Mic In Mic In Mic In Orange -- Center/Sub woofer Center/Sub woofer Black...

[Page 21: Central Processing Unit \(Cpu\)](#)

® Pentium™ processors, Intel Celeron™ processors, and Intel Core™ ® i9/i7/i5/i3 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 LGA1150, 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. ASUS Pro WS C246-ACE 1-11...

[Page 22: System Memory](#)

Channel A DIMM_A1 & DIMM_A2 Channel B DIMM_B1 & DIMM_B2 • You may install varying memory sizes in Channel A and Channel B. 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. • Always install DIMMs with the same CAS latency. 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. • According to Intel CPU spec, DIMM voltage below 1.35V is recommended to protect the CPU. • Due to Intel chipset limitation, DDR4 2666MHz and higher memory modules will run at max. 2666MHz on Intel 8th Gen. 6-core or higher processors. • 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) 1-12 Chapter 1: Product Introduction...

[Page 23](#) Installing a DIMM To remove a DIMM ASUS Pro WS C246-ACE 1-13...

[Page 24](#) 1-14 Chapter 1: Product Introduction...

[Page 25: Chapter 2: Bios Information](#)

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 26](#) 2.1.2 ASUS EZ Flash 3 The ASUS EZ Flash 3 allows you to download and update to the latest BIOS through the Internet without having to use a bootable floppy disk or an OS-based utility. • Ensure to load the BIOS default settings to ensure system compatibility and stability.

[Page 27](#) 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 28: Bios Setup Program](#)

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 29](#) Click to go to Advanced mode Loads optimized Search on the FAQ default settings Click to display boot devices Selects the boot device priority The boot device options vary depending on the devices you installed to the system. ASUS Pro WS C246-ACE 2-5...

[Page 30](#) 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>. Configuration fields Scroll bar Menu bar...

[Page 31](#) This button above the menu bar displays the current settings of your fans. Use this button to manually tweak the fans to your desired settings. Search (F9) This button allows you to search for BIOS items by entering its name, enter the item name to find the related item listing. ASUS Pro WS C246-ACE 2-7...

[Page 32](#) Move your mouse over this button to show a QR code, scan this QR code on your

mobile device to connect to the BIOS FAQ web page of the ASUS support website. You can also scan the following QR code:...

[Page 33: Exit Menu](#)

<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. ASUS Pro WS C246-ACE...

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[Page 35: Appendix](#)

Appendix Notices FCC Compliance Information Responsible Party: Asus Computer International Address: 48720 Kato Rd., Fremont, CA 94538, USA Phone / Fax No: (510)739-3777 / (510)608-4555 This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

[Page 36](#) Compliance Statement of Innovation, Science and Economic Development Canada (ISED) This device complies with Innovation, Science and Economic Development Canada licence exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

[Page 37](#) 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 40](#) Appendices...

This manual is also suitable for:

[90mb1220-m0eay0](#)