



Asus 90SF0091-M00270 User Manual

1u rackmount server

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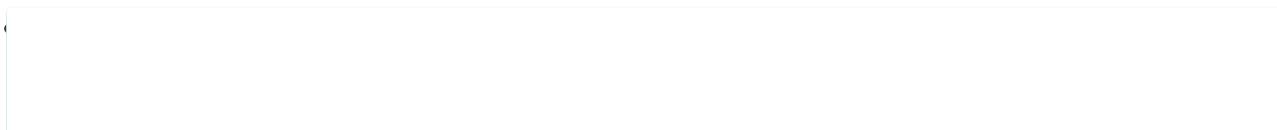
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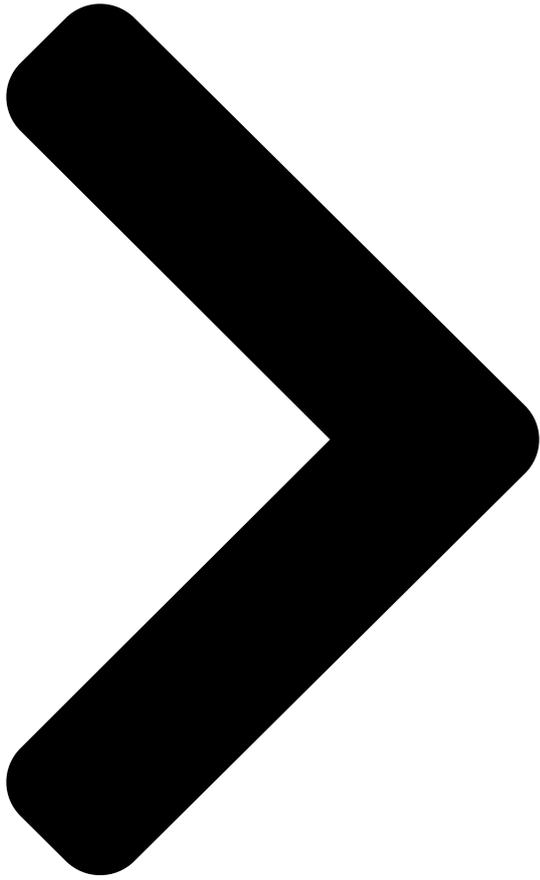
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RS700-E9 Series

RS700-E9-RS4

RS700-E9-RS12



1U Rackmount Server

User Guide

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Summary of Contents for Asus 90SF0091-M00270

[Page 1](#) Questo manuale d'istruzione è fornito da trovaprezzi.it. Scopri tutte le offerte per Asus RS700-E9- RS4 90SF0091-M00270 o cerca il tuo prodotto tra le migliori offerte di Server RS700-E9 Series RS700-E9-RS4 RS700-E9-RS12 1U Rackmount Server User Guide...

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[Page 8: Safety Information](#)

Safety information Electrical Safety • Before installing or removing signal cables, ensure that the power cables for the system unit and all attached devices are unplugged. • To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.

[Page 9: About This Guide](#)

About this guide Audience This user guide is intended for system integrators, and experienced users with at least basic knowledge of configuring a server. Contents This guide contains the following parts: Chapter 1: Product Introduction This chapter describes the general features of the server, including sections on front panel and rear panel specifications.

[Page 10](#) Refer to the following sources for additional information, and for product and software updates. ASUS Control Center (ACC) user guide This manual tells how to set up and use the proprietary ASUS server management utility. Visit asuscontrolcenter.asus.com for more information. ASUS websites The ASUS websites worldwide provide updated information for all ASUS hardware and software products.

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

Chapter 1: Product Introduction Product Introduction This chapter describes the general features of the chassis kit. It includes sections on front panel and rear panel specifications.

[Page 12: System Package Contents](#)

System package contents Check your system package for the following items. Model Name RS700-E9-RS4 RS700-E9-RS12 Chassis ASUS R12F 1U Rackmount Chassis ASUS R12F 1U Rackmount Chassis Motherboard ASUS Z11PP-D24 Server Board ASUS Z11PP-D24 Server Board 1 x 550W/800W 80 PLUS Platinum...

[Page 13: System Specifications](#)

System specifications The ASUS RS700-E9 Series features the ASUS Z11PP-D24 server board. The server supports Intel Xeon Scalable Processors Family Series (Intel Xeon Scalable Processors ® ® ® ® Family Series with OMNI-PATH FABRIC supported on CPU2) plus other latest technologies through the chipsets onboard.

[Page 14](#) 1 x Storage device LED LAN 1-4 LEDs * LAN 3-4 for Mezzanine card use Out of Band Remote On-Board ASMB9-iKVM for KVM-over-IP Management Hardware Solution Software ASUS

Control Center (Classic) (continued on the next page) Chapter 1: Product Introduction...

[Page 15](#) OS Support CentOS Scientific Linux Ubuntu Fedora * Refer to <http://www.asus.com> for the latest OS support. Regulatory Compliance BSMI, CE, C-TICK, FCC (ClassA) 686 mm x 444 mm x 44 mm(1U) Dimension (HH x WW x DD) 27" x 17.48" x 1.73"...

[Page 16: Front Panel Features](#)

Front panel features The barebone server displays a simple yet stylish front panel with easily accessible features. The power and reset buttons, LED indicators, slim type optical drive (optional on RS700-E9- RS4 only), two USB ports (on RS700-E9-RS4 only), and VGA port (on RS700-E9-RS4 only) are located on the front panel.

[Page 17: Rear Panel Features](#)

I/O shield with openings for the rear panel connectors on the motherboard. Expansion slots Expansion slot LAN port 2 USB ports Power button Storage device LED Q-Code LED Message LED Location LED LAN port 1 *This port is for ASUS ASMB9-iKVM only. ASUS RS700-E9 Series...

[Page 18: Internal Features](#)

Internal features The barebone server includes the basic components as shown. RS700-E9-RS4 Redundant Power supply ASUS Z11PP-D24 Server Board System fans 4 x 3.5" storage trays SATA/SAS backplane (hidden) Slim type optical drive (hidden) OCP Mezzanine card (optional) Butterfly riser card...

[Page 19](#) RS700-E9-RS12 Redundant Power supply ASUS Z11PP-D24 Server Board System fans 12 x 2.5" storage trays SATA/SAS/NVMe backplane (hidden) PCIE-NVME4-OCuLink card OCP Mezzanine card (optional) Butterfly riser card (2 x Gen3 x8 link) Riser card (Gen3 x16 link) Asset tag (hidden) The barebone server does not include a floppy disk drive.

[Page 20: Led Information](#)

LED information 1.7.1 Front panel LEDs RS700-E9-RS4 LAN 4 LED Location button with LED LAN 3 LED Power button with LED LAN 2 LED Storage device LED LAN 1 LED Message LED RS700-E9-RS12 Power button Power LED Message LED LAN 1 LED Location LED LAN 2 LED Icon...

[Page 21: Storage Device Status Led](#)

GREEN SATA/SAS storage device power ON Storage device has failed and should be swapped immediately GREEN/ Blinking RAID rebuilding GREEN/ Blinking Locate GREEN/ Storage device not found GREEN Blinking Read/write data from/into the SATA/SAS storage device ASUS RS700-E9 Series 1-11...

[Page 22: Lan \(Rj-45\) Leds](#)

1.7.3 LAN (RJ-45) LEDs ACT/LINK LED SPEED LED ACT/LINK LED SPEED LED Status Description Status Description No link 10 Mbps connection GREEN Linked ORANGE 100 Mbps connection BLINKING Data activity GREEN 1 Gbps connection 1.7.4 Rear panel LEDs Storage device LED Q-Code LED Message LED Location LED...

[Page 23: Q-Code Table](#)

MRC_RMT_TOOL MRC Progress MRC_WRITE_SR MRC Progress MRC_DIMM_RON MRC Progress MRC_RCVEN_TIMING_1D MRC Progress MRC_MR_FILL MRC Progress MRC_PWR_MTR MRC Progress MRC_DDR4_MAPPING MRC Progress MRC_WRITE_VOLTAGE_1D MRC Progress MRC_EARLY_RDMPR_TIMING_2D MRC Progress MRC_FORCE_OLTM MRC Progress MRC_MC_ACTIVATE (continued on the next page) ASUS RS700-E9 Series 1-13...

[Page 24](#) Action PHASE POST CODE TYPE DESCRIPTION MRC Progress MRC_RH_PREVENTION MRC Progress MRC_GET_MRC_DATA MRC Progress MRC_RETRAIN_CHECK MRC Progress MRC_SA_GV_SWITCH MRC Progress MRC_ALIAS_CHECK MRC Progress MRC_ECC_CLEAN_START MRC Progress MRC_DONE MRC Progress MRC_CPGC_MEMORY_TEST MRC Progress MRC_TXT_ALIAS_CHECK MRC Progress MRC_ENG_PERF_GAIN MRC Progress MRC_MEMORY_TEST PEI(Pre-EFI initialization) phase MRC Progress MRC_FILL_RMT_STRUCTURE...

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

Chapter 2: Hardware Information Hardware Information This chapter lists the hardware setup

procedures that you have to perform when installing or removing system components.

[Page 26: Chassis Cover](#)

Chassis cover Removing the rear cover To remove the rear cover: Remove the two (2) screws on both sides of the cover with a Phillips screwdriver. Loosen the thumbscrew on the rear panel to release the rear cover from the chassis. Firmly hold the cover and slide it towards the rear panel for about half an inch until it is disengaged from the chassis.

[Page 27: Central Processing Unit \(Cpu\)](#)

2.2.1 Installing the CPU and heatsink To install a CPU: Remove the rear cover. For more information, see the section Chassis cover. Remove the air ducts, and then remove the PnP caps from the CPU sockets. Keep the PnP cap. ASUS will process Return Merchandise Authorization (RMA) requests only if the motherboard comes with the PnP cap on the LGA 3647 socket. CPU1 (CPU socket 1) CPU2 (CPU socket 2) ASUS RS700-E9 Series...

[Page 28](#) Align the triangle mark on the CPU with the triangle mark on the CPU Carrier (A), then install the CPU into the CPU Carrier until it clicks firmly into place (B), and then install the CPU Carrier into the CPU Carrier heatsink until it clicks firmly in place (C). Ensure that the triangle mark on the CPU matches the triangle mark on the CPU Carrier.

[Page 29: System Memory](#)

Reinstall the air ducts. CPU1 (CPU socket 1) CPU2 (CPU socket 2) System memory 2.3.1 Overview The motherboard comes with 24 Double Data Rate 4 (DDR4) Dual Inline Memory Modules (DIMM) sockets. The figure illustrates the location of the DDR4 DIMM sockets: ASUS RS700-E9 Series...

[Page 30: Memory Configurations](#)

2.3.2 Memory Configurations You may install 4 GB, 8 GB, 16 GB, and 32 GB RDIMMs; 32 GB, and 64 GB LRDIMMs; and 64GB and 128GB LRDIMMs (3DS) into the DIMM sockets using the memory configurations in this section. • Refer to ASUS Server AVL for the updated list of compatible DIMMs. • Always install DIMMs with the same CAS latency. For optimum compatibility, it is recommended that you obtain memory modules from the same vendor. 1 CPU Configuration (must be on CPU1) DIMM_A2 DIMM_A1 DIMM_B2 DIMM_B1 DIMM_C2 DIMM_C1 1 DIMM • 2 DIMMs •...

[Page 31](#) DIMM_K2 DIMM_K1 DIMM_L2 DIMM_L1 DIMM_M2 DIMM_M1 2 DIMMs 4 DIMMs • 8 DIMMs • • • • 12 DIMMs 16 DIMMs • • • • 20 DIMMs • • • • • • • • 24 DIMMs ASUS RS700-E9 Series...

[Page 32: Installing A Dimm On A Single Clip Dimm Socket](#)

2.3.3 Installing a DIMM on a single clip DIMM socket Ensure to unplug the power supply before adding or removing DIMMs or other system components. Failure to do so may cause severe damage to both the motherboard and the components. Unlock a DIMM socket by pressing the DIMM notch retaining clip outward. Align a DIMM on the socket such that the notch on the DIMM matches the DIMM slot key on the socket. 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.

[Page 33: Hard Disk Drives](#)

The drive tray ejects slightly after you pull out the lever. Tray lever Spring lock Firmly hold the tray lever and pull the drive tray out of the bay. Place the drive tray on a flat and stable surface. Prepare the SATA/SAS storage device and the bundled set of screws. ASUS RS700-E9 Series...

[Page 34](#) Place the SATA/SAS storage device into the tray then secure it with four screws. Insert the drive tray and storage device assembly all the way into the depth of the bay until just a small fraction of the tray edge protrudes. When installed, the SATA/SAS connector on the drive connects to the SATA/SAS interface on the backplane. Push the tray lever until it clicks and secures the drive tray in place.

[Page 35](#) The drive tray ejects slightly after you pull out the lever. Tray lever Spring lock Firmly hold the tray lever and pull the drive tray out of the bay. Place the drive tray on a flat and stable surface. Prepare the SATA/SAS storage device and the bundled set of screws. ASUS

[Page 36](#) Place the SATA/SAS storage device into the tray then secure it with four screws. Insert the drive tray and storage device assembly all the way into the depth of the bay until just a small fraction of the tray edge protrudes. When installed, the SATA/SAS connector on the drive connects to the SATA/SAS interface on the backplane. Push the tray lever until it clicks and secures the drive tray in place.

[Page 37](#) The storage tray ejects slightly after you pull out the lever. Spring lock Tray lever Firmly hold the tray lever and pull the storage tray out of the bay. Place the storage tray on a flat and stable surface. Prepare the SATA/SAS/NVMe storage device and the bundled set of screws. ASUS RS700-E9 Series 2-13...

[Page 38](#) Place the SATA/SAS/NVMe storage device into the tray then secure it with four screws. Insert the storage tray and storage device assembly all the way into the depth of the bay until just a small fraction of the tray edge protrudes. When installed, the SATA/SAS/NVMe connector on the storage device connects to the SATA/SAS/NVMe interface on the backplane. Push the tray lever until it clicks and secures the storage tray in place.

[Page 39: Expansion Slot](#)

The pre-installed riser card bracket on the PCIE1 slot supports Full-Height (FH) and Half- Length (HL) PCIE x16 expansion cards. To install a PCIE x16 (Gen3 x16 link) FH or HL card on the riser card bracket: Firmly hold the riser card bracket, then pull it up to detach it from the PCIE x24 slot on the motherboard. PCIE x24 slot Remove the screw from the metal cover (A), then remove the metal cover (B) from the riser card bracket. Install the PCIE expansion card into the riser card bracket (A), then secure the expansion card with the screw (B). ASUS RS700-E9 Series 2-15...

[Page 40: Installing An Expansion Card To The Butterfly Riser Card Bracket](#)

Install the riser card bracket and the PCIE expansion card assembly into the PCIE connector on the motherboard. Ensure that the golden connectors of the riser card bracket is firmly seated in place. 2.5.2 Installing an expansion card to the butterfly riser card bracket The pre-installed butterfly riser card bracket on the PCIE2 slot has one PCIE x8 slot and one PCIE x16 slot. Although the PCIE x16 slot is physically longer than the PCIE x8 slot, both of these slots provides x8 Gen3 links. The PCIE x8 slot supports proprietary cards such as ASUS PIKE II series cards. Install your proprietary cards into this slot to maximize its use. To install PCI-E x8 (Gen3 x8 link), proprietary cards to the butterfly riser card bracket: Remove the screw that secures the butterfly riser card bracket to the chassis. Chapter 2: Hardware Information 2-16...

[Page 41](#) Firmly hold the butterfly riser card bracket, then pull it up to detach it from the PCIE x16 slot on the motherboard. Place the butterfly riser card bracket on a flat and stable surface. Remove the screws from the metal covers (A), then remove the metal covers (B) from the butterfly riser card bracket. ASUS RS700-E9 Series 2-17...

[Page 42](#) Install the PCIE expansion cards into the butterfly riser card bracket (A), then secure the expansion cards with the screws (B). Reinstall the butterfly riser card bracket and the PCIE expansion card assembly into the PCIE connector on the motherboard (A) and secure it with the screw (B). Ensure that the golden connectors of the butterfly riser card bracket is firmly seated in place. Chapter 2: Hardware Information 2-18...

[Page 43: Installing An Asus Pike Ii Card](#)

2.5.3 Installing an ASUS PIKE II card Prepare the ASUS PIKE II card. If your expansion card is pre-installed with a proprietary card bracket, proceed to step 4. Card bracket Remove the two screws on the ASUS PIKE II card (A), then remove the card bracket (B). Secure the ASUS PIKE II card and the metal cover (proprietary card bracket) Metal cover with the two screws. Connect the mini-SAS HD cable to the ASUS PIKE II card.

[Page 44](#) Remove the default cable from the motherboard and the backplane. Connect the mini-SAS HD cable to the backplane. The illustrations shown above are for reference only. Chapter 2: Hardware Information 2-20...

[Page 45: Installing An Asus Hfi-Omni Card](#)

2.5.4 Installing an ASUS HFI-OMNI card ® ® When you install a Intel Xeon Scalable Processors Family Series with OMNI-PATH FABRIC to socket 2, you can install an ASUS HFI-OMNI card to the x8 slot on the butterfly riser card ® bracket and enjoy all the benefits of the 100G Intel Omni-Path Architecture. ® ® Install a Intel Xeon Scalable Processors Family Series with OMNI-PATH FABRIC to CPU socket 2.

[Page 46](#) Firmly hold the butterfly riser card bracket, then pull it up to detach it from the PCIE x16 slot on the motherboard. Place the butterfly riser card bracket on a flat and stable surface. Remove the screw from the metal cover (A), then remove the metal cover (B) from the butterfly riser card bracket. Prepare the ASUS HFI-OMNI card. Remove the internal OMNI-PATH cable connector cap from the internal OMNI-PATH cable. Chapter 2: Hardware Information 2-22...

[Page 47](#) Connect the other end of the internal OMNI-PATH cable into the Intel Xeon Scalable Processors Family Series with OMNI-PATH FABRIC (A), lift the metal clip on the internal OMNI-PATH cable (B) and secure it down to the metal socket hooks on the CPU socket (C). Metal clip Metal clip Socket hooks ASUS RS700-E9 Series 2-23...

[Page 48](#) Connect the other end of the OMNIP cable to the motherboard. 11. Reinstall the butterfly riser card bracket and the ASUS HFI-OMNI card assembly into the PCIE connector on the motherboard (A) and secure it with the screw (B). Ensure that the golden connectors of the butterfly riser card bracket is firmly seated in place. Chapter 2: Hardware Information 2-24...

[Page 49: Replacing The Asus Pcie-Nvme4-Oculink Card On The Riser Card Bracket \(For Rs700-E9-Rs12 Only\)](#)

2.5.5 Replacing the ASUS PCIE-NVME4-OCuLink card on the riser card bracket (for RS700-E9-RS12 only) The ASUS PCIE-NVME4-OCuLink card pre-installed on the riser card bracket on the PCIE1 allows your server system to support NVME storage devices on Bay 9 to Bay 12. To replace an ASUS PCIE-NVME4-OCuLink card on the riser card bracket: Remove the OCuLink cables from its corresponding slots. OCuLink port 4 OCuLink port 3 OCuLink port 2 OCuLink port 1 Firmly hold the riser card bracket and ASUS PCIE-NVME4-OCuLink card assembly, then pull it up to detach it from the PCIE x24 slot on the motherboard. PCIE x24 slot...

[Page 50](#) Prepare the replacement ASUS PCIE-NVME4-OCuLink card. Install the replacement ASUS PCIE- NVME4-OCuLink card into the riser card bracket (A), then secure it with the screw (B). Install the riser card bracket and ASUS PCIE-NVME4-OCuLink card assembly into the PCIE connector on the motherboard. Ensure that the golden connectors of the riser card bracket is firmly seated in place. Reconnect the OCuLink cables to its corresponding slots. OCuLink port 4 OCuLink port 3 OCuLink port 2...

[Page 51: Installing Asus Pcie-Nvme2-Oculink Cards To The Butterfly Riser Card Bracket \(Optional For Rs700-E9-Rs12\)](#)

2.5.6 Installing ASUS PCIE-NVME2-OCuLink cards to the butterfly riser card bracket (optional for RS700-E9-RS12) You can install additional ASUS PCIE-NVME2-OCuLink cards to your RS700-E9-RS12 system via the pre-installed butterfly riser card bracket on the PCIE2 slot to support NVME storages on Bay 5 to Bay 8. To install ASUS PCIE-NVME2-OCuLink cards to the butterfly riser card bracket: Remove the screw that secures the butterfly riser card bracket to the chassis. Firmly hold the butterfly riser card bracket, then pull it up to detach it from the PCIE x16 slot on the motherboard. ASUS RS700-E9 Series 2-27...

[Page 52](#) Place the butterfly riser card bracket on a flat and stable surface. Remove the screws from the metal covers (A), then remove the metal covers (B) from the butterfly riser card bracket. Connect the OCuLink cables into the corresponding slots (A), install the ASUS PCIE- NVME2-OCuLink cards into the butterfly riser card bracket (B), then secure the ASUS PCIE- NVME2-OCuLink cards with the screws (C). OCuLink port 2 OCuLink port 4 OCuLink port 1 OCuLink port 3 Chapter 2: Hardware Information 2-28...

[Page 53](#) Connect the OCuLink cables to the backplane. The illustration shown above is for reference only. Reinstall the butterfly riser card bracket and the ASUS PCIE-NVME2-OCuLink card assembly into the PCIE connector on the motherboard (A) and secure it with the screw (B). Ensure that the golden connectors of the butterfly riser card bracket is firmly seated in place. ASUS RS700-E9 Series 2-29...

[Page 54: Configuring An Expansion Card](#)

2.5.7 Configuring an expansion card 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 5 for information on BIOS setup. Assign an IRQ to the card. Refer to the following tables. Install the software drivers for the expansion card. Standard Interrupt assignments Priority Standard function System Timer Keyboard Controller Programmable Interrupt Communications Port (COM2) Communications Port (COM1) Floppy Disk Controller System CMOS/Real Time Clock ACPI Mode when used...

[Page 55: Installing Mezzanine Cards](#)

Installing Mezzanine cards To install a Mezzanine card: Locate the Mezzanine card connector on your motherboard. Firmly hold the riser card bracket, then pull it up to detach it from the PCIe x16 slot on the motherboard. Remove the screw from the metal cover (A), then remove the metal cover (B) from chassis. ASUS RS700-E9 Series 2-31...

[Page 56](#) Select the slots that are going to be used for your Mezzanine card, then use a screwdriver and pry the corresponding slots until it pops off. Prepare the Mezzanine card. Insert the ports of the Mezzanine card into the mounting hole on the chassis, then insert the golden connector of the Mezzanine card into the OCP connector on the motherboard.

[Page 57](#) Reinstall the metal cover (A) and secure it with the screw (B). Install the riser card bracket into the PCIe connector on the motherboard. Ensure that the golden connectors of the riser card bracket is firmly seated in place. ASUS RS700-E9 Series 2-33...

[Page 58: Installing M.2 \(Ngff\) Cards](#)

2.5.9 Installing M.2 (NGFF) cards To install an M.2 (NGFF) card: Locate the M.2 (NGFF) connectors on your motherboard. Top screw Stand screw Remove the top screw and the stand from the motherboard. Select an appropriate screw hole on the motherboard for your M.2 card, then secure the stand to the motherboard.

[Page 59](#) M.2 card matches the stand screw on the motherboard. Secure the M.2 card with the top screw. Ensure that the M.2 card is positioned between the top screw and the stand screw before securing it. ASUS RS700-E9 Series 2-35...

[Page 60: Cable Connections](#)

Cable connections • The bundled system cables are pre-connected before shipment. You do not need to disconnect these cables unless you are going to remove pre-installed components to install additional devices. • Refer to Chapter 4 for detailed information on the connectors. Pre-connected system cables 8-pin BPPWR1 power connector (from power supply to backplane) Auxiliary panel 1 connector (from motherboard to front I/O board) Auxiliary panel 2 connector (from motherboard to front I/O board) System fan connectors (from motherboard FAN1-8 to system fans) Panel connector (from motherboard to front I/O board) OCU-USB to USB connector (from motherboard to front I/O board) SATA connectors (from motherboard to SATA/SAS backplane board) ISATA connectors (from motherboard to SATA/SAS backplane board) Chapter 2: Hardware Information 2-36...

[Page 61: Sata/Sas Backplane Cabling](#)

SATA/SAS backplane cabling RS700-E9-RS4 Connects a 8-pin plug Connects the data cable from motherboard connected to the motherboard Connect the SATA/SAS storage devices ASUS RS700-E9 Series 2-37...

[Page 62](#) RS700-E9-RS12 Connects the data cable connected Connects the data cable connected to the to the ASUS PCIE-NVME4-OCuLink optional ASUS PCIE-NVME2-OCuLink card card on the riser card bracket for on the butterfly riser card bracket for Bay 5 Connects a 4-pin plug...

[Page 63: Removable/Optional Components](#)

To reinstall the system fans: Insert the fan into the fan cage. The airflow directional arrow on the fan should point towards the system rear panel. Connect the system fan cable to the fan connector on the motherboard. ASUS RS700-E9 Series 2-39...

[Page 64: Redundant Power Supply Module](#)

2.8.2 Redundant power supply module To replace a failed redundant power supply module: Lift up the power supply module lever. Module lever Hold the power supply module lever and press the PSU latch, then pull the power supply module out of the system chassis. Module lever PSU latch Prepare the replacement power supply module.

[Page 65: Replacing Optical Drive \(Optional For Rs700-E9-Rs4\)](#)

Push the tray lever until it clicks, and secure the drive tray in place. The drive tray is correctly placed when its front edge aligns with the bay edge. Secure the optical drive with the screw that you removed in step 1. ASUS RS700-E9 Series 2-41...

[Page 66](#) Chapter 2: Hardware Information 2-42...

[Page 67: Chapter 3: Installation Options](#)

Chapter 3: Installation Options Installation Options This chapter describes how to install the optional components and devices into the barebone server.

[Page 68: Tool-Less Friction Rail Kit](#)

Tool-less Friction Rail Kit The tool less design of the rail kit allows you to easily install the rack rails into the server rack without the need for additional tools. The kit also comes with a metal stopping bracket that can be installed to provide additional support and stability to the server.

[Page 69](#) Press the spring lock on the other end of rail then insert the stud into the mounting hole on the rack post. Extend the rack rail, if necessary. Perform steps 3 to 4 for the other rack rail. Ensure that the installed rack rails (left and right) are aligned, secured, and stable in place. ASUS RS700-E9 Series...

[Page 70: Rail Kit Dimensions](#)

Lift the server chassis and insert it into the rack rail. • Ensure that the rack rail cabinet and the rack posts are stable and standing firmly on a level surface. • We strongly recommend that at least two able-bodied persons perform the steps described in this guide. • We recommend the use of an appropriate lifting tool or device, if necessary. Ensure to include the side knots on the two sides of the server in the rack rail holders. The illustrations shown above are for reference only.

[Page 71: Chapter 4: Motherboard Information](#)

Chapter 4: Motherboard Information Motherboard Information This chapter includes the motherboard layout and brief descriptions of the jumpers and internal connectors.

[Page 72: Motherboard Layout](#)

Motherboard layout Chapter 4: Motherboard Information...

[Page 73](#) Serial ATA connectors (7-pin SSATA1-2) 4-13 Mini-SAS HD connector (ISATA1-2) 4-13 USB 3.0 connectors (OCUUSB1) 4-25 TPM connector (20-1 pin TPM1) 4-16 Hard disk activity LED connector (4-pin HDLED1) 4-14 USB 3.0 connectors (Type A USB3_5) 4-14 ASUS RS700-E9 Series...

[Page 74: Jumpers](#)

Jumpers Clear RTC RAM (3-pin CLRTC1) 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.

[Page 75](#) 1-2 to activate the VGA feature. LAN controller setting (3-pin LAN_SW1, LAN_SW2) ® These jumpers allow you to enable or disable the onboard Intel I350-AM2 Gigabit LAN1/2 controller. Set to pins 1-2 to activate the Gigabit LAN feature. ASUS RS700-E9 Series...

[Page 76](#) ME firmware force recovery setting (3-pin ME_RCVR1) This jumper allows you to quickly recover the Intel Management Engine (ME) firmware when it becomes corrupted. Baseboard Management Controller setting (3-pin BMC_EN1) This jumper allows you to enable

(default) or disable on-board BMC. Ensure to set this BMC jumper to enabled to avoid system fan control and hardware monitor error.

[Page 77](#) DDR4 thermal event setting (3-pin DIMMTRIP1, DIMMTRIP2) This jumper allows you to enable or disable DDR4 DIMM thermal sensing event pin. PCH_MFG1 setting (3-pin PCH_MFG1) This jumper allows you to update the BIOS ME block. ASUS RS700-E9 Series...

[Page 78](#) Smart Ride Through (SmaRT) setting (3-pin SMART_PSU1) This jumper allows you to enable or disable the Smart Ride Through (SmaRT) function. This feature is enabled by default. Set to pins 2-3 to disable it. When enabled, SmaRT allows uninterrupted operation of the system during an AC loss event. DMLAN setting (3-pin DM_IP_SEL1) This jumper allows you to select the DMLAN setting.

[Page 79](#) LANNCSI setting (3-pin LANNCSI_SEL1) This jumper allows you to select which LAN NCSI to function. IPMI SW setting (3-pin IPMI_SW1) This jumper allows you to select which protocol in the GPU sensor to function. ASUS RS700-E9 Series...

[Page 80: Internal Leds](#)

Internal LEDs Standby Power LED (SBPWR1) The motherboard comes with a standby power LED. The green LED 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.

[Page 81](#) The read or write activities of any device connected to the onboard SATA, or SATA/SAS add-on card causes the rear panel LED to light up. Message LED (MESLED1) This onboard LED lights up to red when there is a BMC event log is generated. ASUS RS700-E9 Series 4-11...

[Page 82](#) BMC LED (BMCLED1) The BMC LED lights up to indicate that the on-board BMC is functional. CATT LED (CATTERR1) The CATT LED indicates that the system has experienced a fatal or catastrophic error and cannot continue to operate. 4-12 Chapter 4: Motherboard Information...

[Page 83: Internal Connectors](#)

If the SATA M.2 (NGFF1) slot is occupied, the SSATA2 slot will be disabled. Mini-SAS HD connector (ISATA1-2) This motherboard comes with mini Serial Attached SCSI (SAS) HD connectors, the storage technology that supports Serial ATA. Each connector supports up to four devices. ASUS RS700-E9 Series 4-13...

[Page 84](#) USB 3.0 connectors (Type A USB3_5) The USB3_5 connector is for Type-A USB 3.0 devices. You can enjoy all the benefits of USB 3.0 including faster data transfer speeds of up to 5 Gbps, faster charging time for USB-chargeable devices, optimized power efficiency, and backward compatibility with USB 2.0.

[Page 85](#) These connectors are for the power supply plugs that connects to additional fans. 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. ASUS RS700-E9 Series 4-15...

[Page 86](#) System fan connectors (4-pin FAN1-8) The fan connectors support cooling fans of 0.8A-1.0A (12 W max.) or a total of 6.4 A-8.0 A (96 W max.) at +12V. Connect the fan cables to the fan connectors on the motherboard, making sure that the black wire of each cable matches the ground pin of the connector.

[Page 87](#) Pressing the power switch for more than four seconds while the system is ON turns the system OFF. Reset button (2-pin RESET) This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power. ASUS RS700-E9 Series 4-17...

[Page 88](#) Auxiliary panel connector (20-2 pin AUX_PANEL1, 20-pin AUX_PANEL2) This connector is for additional front panel features including front panel SMB, locator LED and switch, chassis intrusion, and LAN LEDs. Front panel SMB (6-1 pin FPSMB) These leads connect the front panel SMBus cable. LAN activity LED (2-pin LAN1_LED, LAN2_LED) These leads are for

the Gigabit LAN activity LEDs on the front panel.

[Page 89](#) DO NOT connect the back panel to these connectors. Doing so may cause system boot errors and permanent damage to your motherboard or device. ASUS RS700-E9 Series 4-19...

[Page 90](#) VGA connector (16-pin VGA_HDR1) This connector supports the VGA High Dynamic-Range interface. Chassis Intrusion (2-pin INTRUSION1) These leads are for the intrusion detection feature for chassis with intrusion sensor or microswitch. When you remove any chassis component, the sensor triggers and sends a high level signal to these leads to record a chassis intrusion event.

[Page 91](#) This connector supports type 2242 / 2260 / 2280 / 22110 devices on both PCI-E and SATA interface. • If the SATA M.2 (NGFF1) slot is occupied, the SSATA2 slot will be disabled. The M.2 (NGFF) device is purchased separately ASUS RS700-E9 Series 4-21...

[Page 92](#) Serial port connector (10-1 pin COM1) 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. The COM module is purchased separately. Micro SD card slot (MSD1) Your motherboard supports SD Memory Card v2.00 (SDHC) / v3.00 (SDXC).

[Page 93](#) Serial General Purpose Input/Output connector (6-1 pin SSGPIO1) The SSGPIO 1 connector is used for the Intel Rapid Storage Technology Enterprise SGPIO interface that controls the LED pattern generation, device information, and general purpose data. ASUS RS700-E9 Series 4-23...

[Page 94](#) OCP LAN Activity LED connector (4-1 pin OCP_LED1) OCP LAN LED connector supports OCP LAN card Active LED. OMNIP connector (24-pin OMNIP1) This connector allows you to provide sideband signals from the fabric CPU to a HFI-OMNI supported ASUS card. 4-24 Chapter 4: Motherboard Information...

[Page 95](#) USB 3.0 including faster data transfer speeds of up to 5 Gbps, faster charging time for USB-chargeable devices, optimized power efficiency, and backward compatibility with USB 2.0. (OCUUSB1 connector is used for the front USB panel by default). The USB port module is purchased separately. ASUS RS700-E9 Series 4-25...

[Page 96](#) 4-26 Chapter 4: Motherboard Information...

[Page 97: Chapter 5: Bios Setup](#)

Chapter 5: BIOS Setup BIOS Setup This chapter tells how to change the system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

[Page 98: Managing And Updating Your Bios](#)

BIOS in the future. Copy the original motherboard BIOS using the BUPDATER utility. 5.1.1 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 update a corrupted BIOS file using a USB flash drive that contains the updated BIOS file.

[Page 99: Asus Ez Flash Utility](#)

5.1.2 ASUS EZ Flash Utility The ASUS EZ Flash Utility feature allows you to update the BIOS without having to use a DOS-based utility. Before you start using this utility, download the latest BIOS from the ASUS website at www.asus.com. To update the BIOS using EZ Flash Utility: Insert the USB flash disk that contains the latest BIOS file into the USB port. Enter the BIOS setup program. Go to the Tool menu then select ASUS EZ Flash Utility.

[Page 100: Bupdater Utility](#)

The BUPDATER utility allows you to update the BIOS file in the DOS environment using a bootable USB flash disk drive with the updated BIOS file. Updating the BIOS file To update the BIOS file using the BUPDATER utility: Visit the ASUS website at www.asus.com and download the latest BIOS file for the motherboard. Save the BIOS file to a bootable USB flash disk drive. Copy the BUPDATER utility (BUPDATER.exe) from the ASUS support website at www.asus.com/support to the bootable USB flash disk drive you created earlier. Boot the system in DOS mode, then at the prompt, type: BUPDATER /i[filename].CAP where [filename] is the latest or the original BIOS

file on the bootable USB flash disk drive, then press <Enter>. A:\>BUPDATER /i[file name].CAP
Chapter 5: BIOS Setup...

[Page 101](#) The utility verifies the file, then starts updating the BIOS file. ASUS Tek. EzFlash Utility Current Platform New Platform Platform : Z11PP-D24 Platform : Z11PP-D24 Version : 0215 Version : 0217 Build date: 01/13/2017 Build date: 02/20/2017 Start Programming Flash. DO NOT SHUTDOWN THE SYSTEM!!! Write DO NOT shut down or reset the system while updating the BIOS to prevent system boot failure! The utility returns to the DOS prompt after the BIOS update process is completed.

[Page 102: Bios Setup Program](#)

If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Press <F5> and select Yes to load the BIOS default settings. • 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 (www.asus.com) to download the latest BIOS file for this motherboard. Chapter 5: BIOS Setup...

[Page 103: Bios Menu Screen](#)

For changing the event log settings Server Mgmt For changing the Server Mgmt settings For changing the security settings Security Boot For changing the system boot configuration Tool For configuring options for special functions For selecting the exit options Save & Exit To select an item on the menu bar, press the right or left arrow key on the keyboard until the desired item is highlighted. ASUS RS700-E9 Series...

[Page 104: Menu Items](#)

5.2.3 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 (such as Advanced) on the menu bar have their respective menu items. 5.2.4 Submenu items A solid triangle before each item on any menu screen means that the item has a submenu. To display the submenu, select the item then press <Enter>.

[Page 105: Main Menu](#)

Main menu When you enter the BIOS Setup program, the Main menu screen appears. The Main menu provides you an overview of the basic system information, and allows you to set the system date, time, language, and security settings. 5.3.1 System Date [Day xx/xx/xxxx] Allows you to set the system date. 5.3.2 System Time [xx:xx:xx] Allows you to set the system time. ASUS RS700-E9 Series...

[Page 106: Advanced Menu](#)

Advanced menu The Advanced menu items allow you to change the settings for the CPU and other system devices. Take caution when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction. 5-10 Chapter 5: BIOS Setup...

[Page 107: Trusted Computing](#)

ACPI Settings Enable ACPI Auto Configuration [Disabled] Allows you to enable or disable the BIOS ACPI Auto Configuration. Configuration options: [Disabled] [Enabled] Enable Hibernation [Enabled] Allows you to enable or disable the ability of the system to hibernate (OS/Sleep State). Configuration options: [Disabled] [Enabled] This option may be not effective with some OS. ASUS RS700-E9 Series 5-11...

[Page 108: Super Io Configuration](#)

5.4.3 Super IO Configuration Serial Port 1 Configuration Allows you to set the parameters of Serial Port 1. Serial Port [Enabled] Allows you to enable or disable Serial Port. Configuration options: [Disabled] [Enabled] The following item appears only when you set Serial Port to [Enabled]. Change Settings [Auto] Allows you to choose the setting for Super IO device.

[Page 109: Onboard Lan I350 Io Configuration](#)

Allows you to enable or disable the Intel LAN. Configuration options: [Disabled] [Enabled] The following items appear only when Intel LAN2 Enable is set to [Enabled]. Intel LAN 2 ROM Type [Disabled] Allows you to select the Intel LAN ROM type. Configuration options: [PXE] [iSCSI] [Disabled] ASUS RS700-E9 Series 5-13...

[Page 110: Serial Port Console Redirection](#)

5.4.5 Serial Port Console Redirection COM1/COM2 Console Redirection [Disabled] Allows you to enable or disable the console redirection feature. Configuration options: [Disabled] [Enabled] The following item appears only when you set Console Redirection to [Enabled]. Console Redirection Settings These items become configurable only when you enable the Console Redirection item. The settings specify how the host computer and the remote computer (which the user is using) will exchange data.

[Page 111](#) This setting allows you to specify if Bootloader is selected than Legacy console redirection. Configuration options: [Always Enable] [Bootloader] Legacy Console Redirection Settings Legacy Console Redirection Port [COM1] Allows you to select a COM port to display redirection of Legacy OS and Legacy OPRom Messages. Configuration options: [COM1] [COM2] ASUS RS700-E9 Series 5-15...

[Page 112](#) Serial Port for Out-of-Band Management/Windows Emergency Management Services (EMS) Console Redirection [Disabled] Allows you to enable or disable the console redirection feature. Configuration options: [Disabled] [Enabled] The following item appears only when you set Console Redirection to [Enabled]. Console Redirection Settings Out-of-Band Mgmt Port [COM1] Microsoft Windows Emergency Management Services (EMS) allow for remote management of a Windows Server OS through a serial port.

[Page 113: Apm](#)

Allows you to configure the Advance Power Management (APM) settings. Restore AC Power Loss [Last State] When set to [Power Off], the system goes into off state after an AC power loss. When set to [Power On], the system will reboot after an AC power loss. When set to [Last State], the system goes into either off or on state, whatever the system state was before the AC power loss. Configuration options: [Power Off] [Power On] [Last State] Power On By PCIE [Disabled] [Disabled] Disables the PCIE devices to generate a wake event. [Enabled] Enables the PCIE devices to generate a wake event. Power On By RTC [Disabled] [Disabled] Disables RTC to generate a wake event. [Enabled] W hen set to [Enabled], the items RTC Alarm Date (Days) and Hour/Minute/Second will become user-configurable with set values. ASUS RS700-E9 Series 5-17...

[Page 114: Pci Subsystem Settings](#)

5.4.7 PCI Subsystem Settings Allows you to configure PCI, PCI-X, and PCI Express Settings. Above 4G Decoding [Disabled] Allows you to enable or disable 64-bit capable devices to be decoded in above 4G address space. It only works if the system supports 64-bit PCI decoding. Configuration options: [Disabled] [Enabled] SR-IOV Support [Disabled] This option enables or disables Single Root IO Virtualization Support if the system has SR- IOV capable PCIe devices.

[Page 115: Network Stack Configuration](#)

Enables or disables the Ipv4 HTTP Boot Support. If disabled, Ipv4 HTTP boot option will not be created. Configuration options: [Disabled] [Enabled] Ipv6 PXE Support [Disabled] Enables or disables the Ipv6 PXE Boot Support. If disabled, Ipv6 PXE boot option will not be created. Configuration options: [Disabled] [Enabled] Ipv6 HTTP Support [Disabled] Enables or disables the Ipv6 HTTP Boot Support. If disabled, Ipv6 HTTP boot option will not be created. Configuration options: [Disabled] [Enabled] PXE boot wait time [0] Wait time to press ESC key to abort the PXE boot. Media detect time [1] Wait time (in seconds) to detect media. ASUS RS700-E9 Series 5-19...

[Page 116: Csm Configuration](#)

5.4.9 CSM Configuration CSM Support [Enabled] This option allows you to enable or disable CSM Support. Configuration options: [Disabled] [Enabled] The following item appears only when CSM Support is set to [Enabled]. GateA20 Active [Upon Request] This allows you to set the GA20 option. Configuration options: [Upon Request] [Always] Option ROM Messages [Force BIOS] This allows you to set the display mode for option ROM.

[Page 117: Nvme Configuration](#)

Allows you to enable or disable the USB Mass Storage driver support. Configuration options: [Disabled] [Enabled] Mass Storage Devices AMI Virtual CDROM0-2 / Floppy / HDisk0 1.00 [Auto] Allows you to select the mass storage device emulation type. Configuration options: [Auto] [Floppy] [Forced FDD] [Hard Disk] [CD-ROM] ASUS RS700-E9 Series 5-21...

[Page 118: Iscsi Configuration](#)

5.4.12 iSCSI Configuration Allows you to configure the iSCSI parameters. 5.4.13 Intel(R) RSTe RAID Controller Allows you to configure the view the RAID volumes and VMD controllers on the system. Platform Configuration menu The IntelRCSetup menu items allow you to change the platform settings. 5-22 Chapter 5: BIOS Setup...

[Page 119: Pch Configuration](#)

PCH DMI ASPM [Platform-POR] Allows you to configure the PCH DMI ASPM. Configuration options: [Platform-POR] [ASPM L1] [Disabled] PCH SATA Configuration SATA Controller [Enabled] Allows you to enable or disable the SATA Controller. Configuration options: [Disabled] [Enabled] Configure sSATA as [AHCI] Allows you to identify the SATA port connected to Solid State Drive or Hard Disk Drive. Configuration options: [IDE] [AHCI] [RAID] Support Aggressive Link Power Management [Enabled] Allows you to enable or disable the Support Aggressive Link Power (SALP) Management. Configuration options: [Disabled] [Enabled] ASUS RS700-E9 Series 5-23...

[Page 120](#) SATA Port 0-7 Port 0-7 Allows you to enable or disable the SATA port. Configuration options: [Disabled] [Enabled] PCH sSATA Configuration sSATA Controller [Enabled] Allows you to enable or disable the sSATA Controller. Configuration options: [Disabled] [Enabled] Configure sSATA as [AHCI] Allows you to identify the SATA port connected to Solid State Drive or Hard Disk Drive. Configuration options: [IDE] [AHCI] [RAID] Support Aggressive Link Power Management [Enabled] Allows you to enable or disable the Support Aggressive Link Power (SALP) Management.

[Page 121: Miscellaneous Configuration](#)

Allows you to select the video type. Configuration options: [Auto] [Onboard Device] [Offboard Device] PMTT ACPI Table [Disabled] Allows you to enable or disable PMTT ACPI Table for DDR4 only. Configuration options: [Disabled] [Enabled] 5.5.3 Server ME Configuration Displays the Server ME Technology parameters on your system. ASUS RS700-E9 Series 5-25...

[Page 122: Runtime Error Logging Support](#)

5.5.4 Runtime Error Logging Support Runtime Error Logging System Errors [Enabled] This item allows you to enable or disable System Errors. Configuration options: [Disabled] [Enabled] Whea Settings Whea Support [Disabled] This item allows you to enable or disable the WHEA support. Configuration options: [Disabled] [Enabled] Socket Configuration menu The IntelRCSetup menu items allow you to change the socket settings. 5-26 Chapter 5: BIOS Setup...

[Page 123: Processor Configuration](#)

Configuration options: [Disabled] [Enabled] Execute Disable Bit [Enabled] XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS (Windows Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2, Redhat Enterprise 3 Update 3). Configuration options: [Disabled] [Enabled] Enable Intel(R) TXT Support [Disabled] Forces the XD feature log to always return 0 when disabled. Configuration options: [Disabled] [Enabled] VMX [Enabled] Enables the Vanderpool Technology. Takes effect after reboot. Configuration options: [Disabled] [Enabled] Enable SMX [Disabled] Enables the Safer Mode Extensions. Configuration options: [Disabled] [Enabled] ASUS RS700-E9 Series 5-27...

[Page 124: Common Refcode Configuration](#)

Hardware Prefetcher [Enabled] This Item allows you to turn on/off the mid level cache(L2) streamer prefetcher. Configuration options: [Disabled] [Enabled] Adjacent Cache Prefetch [Enabled] This Item allows you to turn on/off prefetching of adjacent cache lines. Configuration options: [Disabled] [Enabled] DCU Streamer Prefetcher [Enabled] This Item allows you to enable or disable prefetcher of next L1 data line. Configuration options: [Disabled] [Enabled] DCU IP Prefetcher [Enabled] This Item allows you to enable or disable prefetch of next L1 line based upon sequential load...

[Page 125: Upi Configuration](#)

This item displays information about the UPI status. Link Speed Mode [Fast] This item allows you to select the UPI link speed as either the fast mode or slow mode. Configuration options: [Slow] [Fast] Link Frequency Select [Auto] This item allows for selecting the UPI link frequency. Configuration options: [Auto] [9.6 GB/s] [10.4 GB/s] [Use Per Link Setting] UPI Link0p Enable [Enabled] Configuration options: [Disabled] [Enabled] [Auto] UPI Link1 Enable [Enabled] Configuration options: [Disabled] [Enabled] [Auto] Stale AtoS [Disabled] Configuration options: [Disabled] [Enabled] [Auto] LLC dead line alloc [Enabled] Configuration options: [Disabled]

[Enabled] [Auto] ASUS RS700-E9 Series 5-29...

[Page 126: Memory Configuration](#)

5.6.4 Memory Configuration Enforce POR [Auto] Allows you to enforce POR restrictions for DDR4 frequency and voltage programming. Configuration options: [Auto] [POR] [Disabled] Memory Frequency [Auto] Allows you to select the memory frequency setting. Configuration options: [Auto] [1800] - [3000-OvrClk] Data Scrambling for DDR4 [Auto] Allows you to enable or disable data scrambling. Configuration options: [Auto] [Disabled] [Enabled] Memory Topology Displays memory topology with DIMM population information.

[Page 127](#) Allows you to select Mirror Modes. Mirror Mode will set entire 1LM/2LM memory in system to be mirrored, consequently reducing the memory capacity by half. Enabling Mirror Mode will disable XPT Prefetch. Configuration options: [Disabled] [Mirror Mode 1LM] [Mirror Mode 2LM] UEFI ARM Mirror [Disabled] Allows you to enable or disable UEFI ARM Mirror. Configuration options: [Disabled] [Enabled] Memory Rank Sparing [Disabled] Allows you to enable or disable Memory Rank Sparing Configuration options: [Disabled] [Enabled] Patrol Scrub [Enabled] Allows you to enable or disable Patrol Scrub. Configuration options: [Disabled] [Enabled] ASUS RS700-E9 Series 5-31...

[Page 128: IIO Configuration](#)

5.6.5 IIO Configuration Socket Configuration PCIE1 / PCIE2 / MEZZPCIE1 Option ROM [Enabled] Allows you to enable or disable the PCIE1 / PCIE2 / MEZZPCIE1 Option ROM. Configuration options: [Disabled] [Enabled] Intel(R) VT for Directed I/O (VT-d) Intel(R) VT for Directed I/O (VT-d) [Disabled] Allows you to enable or disable the Intel Virtualization Technology for Directed I/O.

[Page 129: Advanced Power Management Configuration](#)

Allows you to enable or disable Autonomous Core C-State Report. Configuration options: [Disabled] [Enabled] CPU C6 Report [Auto] Allows you to select CPU C6 Report. Configuration options: [Disabled] [Enabled] [Auto] OS ACPI Cx [ACPI C2] Allows you to select OS ACPI Cx Report. Configuration options: [ACPI C2] [ACPI C3] ASUS RS700-E9 Series 5-33...

[Page 130: Event Logs Menu](#)

Package C State Control Package C State [Auto] Allows you to select Package C State. Configuration options: [C0/C1 state] [C2 state] [C6(non Retention state)] [C6(Retention state)] [No Limit] [Auto] CPI Thermal Control CPI T-State Control Software Controlled T-States [Disabled] Allows you to enable or disable Software Controlled T-States. Configuration options: [Disabled] [Enabled] Event Logs menu The Event Logs menu items allow you to change the event log settings and view the system event logs.

[Page 131: Server Mgmt Menu](#)

When SEL is Full [Do Nothing] Allows you to choose options for reactions to a full SEL. Configuration options: [Do Nothing] [Erase Immediately] BMC network configuration The sub-items in this configuration allow you to configure the BMC network parameters. View System Event Log This item allows you to view the system event log records. ASUS RS700-E9 Series 5-35...

[Page 132: Security Menu](#)

Security menu This menu allows a new password to be created or a current password to be changed. The menu also enables or disables the Secure Boot state and lets the user configure the System Mode state. Administrator Password To set an administrator password: Select the Administrator Password item and press <Enter>. From the Create New Password box, key in a password, then press <Enter>. Confirm the password when prompted. To change an administrator password: Select the Administrator Password item and press <Enter>.

[Page 133](#) Secure Boot can be enabled if the system is running in User mode with enrolled platform Key (EPK) or if the CSM function is disabled. Configuration options: [Disabled] [Enabled] Secure Boot Mode [Custom] Allows you to set the Secure Boot selector. Configuration options: [Custom] [Standard] ASUS RS700-E9 Series 5-37...

[Page 134](#) Key Management This item only appears when the item Secure Boot Mode is set to [Custom]. The Key Management item allows you to modify Secure Boot variables and set Key Management page. Provision Factory Defaults [Disabled] Allows you to provision factory default Secure Boot keys when the system is in Setup Mode. Configuration options: [Disabled]

[Enabled] Install Factory Default keys This item will install all Factory Default keys. Enroll Efi Image This item will allow the image to run in Secure Boot mode. Save All Secure Boot Variables This item will ask you if you want to save all secure boot variables. Select Yes if you want to save all secure boot variables, otherwise select No.

[Page 135: Boot Menu](#)

• To select the boot device during system startup, press <F8> when ASUS Logo appears. • To access Windows OS in Safe Mode, please press <F8> after POST. Floppy Drive BBS Priorities / Hard Drive BBS Priorities / CD/DVD ROM Drive BBS Priorities These items appear only when you connect Floppy / SATA ODD or HDD to the SATA ports and allow you to set the booting order of the SATA devices. ASUS RS700-E9 Series 5-39...

[Page 136: Tool Menu](#)

IPMI HWM Allows you to run the IPMI hardware monitor. ASUS EZ Flash Allows you to run ASUS EZ Flash BIOS ROM Utility when you press <Enter>. Refer to the ASUS EZ Flash Utility section for details. 5-40 Chapter 5: BIOS Setup...

[Page 137: Exit Menu](#)

Exit System setup after saving the changes. Restore Defaults Restore/load default values for all the setup options. Boot Override These items displays the available devices. The device items that appears on the screen depends on the number of devices installed in the system. Click an item to start booting from the selected device. ASUS RS700-E9 Series 5-41...

[Page 138](#) 5-42 Chapter 5: BIOS Setup...

[Page 139: Chapter 6: Raid Configuration](#)

Chapter 6: RAID Configuration RAID Configuration This chapter provides instructions for setting up, creating, and configuring RAID sets using the available utilities.

[Page 140: Setting Up Raid](#)

Setting up RAID ® The motherboard supports the Intel Rapid Storage Technology enterprise Option ROM Utility with RAID 0, RAID 1, RAID 10, and RAID 5 support (for Windows OS and Linux). 6.1.1 RAID definitions RAID 0 (Data striping) optimizes two identical hard disk drives to read and write data in parallel, interleaved stacks.

[Page 141: Installing Hard Disk Drives](#)

Rapid Storage Technology ® if you installed Serial ATA hard disk drives on the Serial ATA connectors supported by the Intel C621 chipset. ® Refer to the succeeding section for details on how to use the RAID configuration utility. ASUS RS700-E9 Series...

[Page 142](#) ® Intel Rapid Storage Technology enterprise SATA/SSATA Option ROM Utility The Intel Rapid Storage Technology enterprise SATA/SSATA Option ROM utility allows you ® to create RAID 0, RAID 1, RAID 10 (RAID 1+0), and RAID 5 set from Serial ATA hard disk drives that are connected to the Serial ATA connectors supported by the Southbridge.

[Page 143: Creating A Raid Set](#)

]Prev/Next [TAB]-(M)aster [SPACE]-(R)ecovery [ENTER]-Done Use the up/down arrow keys to move the selection bar then press <Space> to select a disk. A small triangle before the Port number marks the selected drive. Press <Enter> when you are done. ASUS RS700-E9 Series...

[Page 144](#) Use the up/down arrow keys to select the stripe size for the RAID array (for RAID 0, 10 and 5 only) then press <Enter>. The available stripe size values range from 4 KB to 128 KB. The following are typical values: RAID 0: 128KB RAID 10: 64KB RAID 5: 64KB...

[Page 145: Deleting A Raid Set](#)

<N> to return to the DELETE VOLUME menu. DELETE VOLUME VERIFICATION ALL DATA IN THE VOLUME WILL BE LOST! (This does not apply to Recovery volumes) Are you sure you want to delete volume "Volume0"? (Y/N): ASUS RS700-E9 Series...

[Page 146: Resetting Disks To Non-Raid](#)

6.2.3 Resetting disks to Non-RAID Take caution before you reset a RAID volume hard disk drive to non-RAID. Resetting a RAID volume hard disk drive deletes all internal RAID structure on the drive. To reset a RAID set: From the utility main menu, select 3. Reset Disks to Non-RAID and press <Enter>. Press the up/down arrow keys to select the drive(s) or disks of the RAID set you want to reset, then press <Space>.

[Page 147: Exiting The Intel ® Rapid Storage Technology Enterprise](#)

Rebuild completes in the operating system. Select the port of destination disk for rebuilding (ESC to exit): Port Drive Model Serial # Size XXXXXXXXXXXX XXXXXXXX XXX.GB]-Previous/Next [ENTER]-Select [ESC]-Exit Select a destination disk with the same size as the original hard disk. ASUS RS700-E9 Series...

[Page 148](#) The utility immediately starts rebuilding after the disk is selected. When done, the status of the degraded RAID volume is changed to "Rebuild". Intel(R) Rapid Storage Technology enterprise - SATA Option ROM - 3.6.0.1023 Copyright(C) 2003-12 Intel Corporation. All Rights Reserved. MAIN MENU 1.

[Page 149: Setting The Boot Array In The Bios Setup Utility](#)

Use up/down arrow keys to select the boot priority and press <Enter>. See the Boot menu section of Chapter 5 for more details. From the Exit menu, select Save Changes & Exit, then press <Enter>. When the confirmation window appears, select Yes, then press <Enter>. ASUS RS700-E9 Series 6-11...

[Page 150: Intel ® Rapid Storage Technology Enterprise \(Windows\)](#)

® Intel Rapid Storage Technology enterprise (Windows) The Intel Rapid Storage Technology enterprise allows you to create RAID 0, RAID 1, RAID ® 10 (RAID 1+0), and RAID 5 set(s) from Serial ATA hard disk drives that are connected to the Serial ATA connectors supported by the Southbridge.

[Page 151: Creating A Raid Set](#)

Click Next. • If you do not want to keep the data on one of the selected disks, select NO when prompted. • If you want to Enable volume write-back cache or Initialize volume, click Advanced. ASUS RS700-E9 Series 6-13...

[Page 152](#) Confirm the volume creation, then click Create Volume to continue. This process could take a while depending on the number and size of the disks. You can continue using other applications during this time. Wait until the process is completed, then click OK when prompted. You still need to partition your new volume using Windows Disk Management before adding any data.

[Page 153: Changing A Volume Type](#)

RAID 0: 128KB RAID 10: 64KB RAID 5: 64KB We recommend a lower stripe size for server systems, and a higher stripe size for multimedia computer systems used mainly for audio and video editing. ASUS RS700-E9 Series 6-15...

[Page 154: Deleting A Volume](#)

6.3.3 Deleting a volume Be cautious when deleting a volume. You will lose all data on the hard disk drives. Before you proceed, ensure that you back up all your important data from your hard drives. To delete a volume: From the utility main menu, select the volume (ex.

[Page 155: Preferences](#)

Allow you to set to show the notification area icon and show system information, warning, or errors here. E-Mail Preferences Allow you to set to sent e-mail of the following events: • Storage system information • Storage system warnings • Storage system errors ASUS RS700-E9 Series 6-17...

[Page 156](#) 6-18 Chapter 6: RAID Configuration...

[Page 157: Chapter 7: Driver Installation](#)

Chapter 7: Driver Installation Driver Installation This chapter provides the instructions for installing the necessary drivers for different system components in the ® Windows Operating Systems.

[Page 158: Raid Driver Installation](#)

RAID driver installation After creating the RAID sets for your server system, you are now ready to install an operating system to the independent hard disk drive or bootable array. This part provides the instructions on how to install the RAID controller drivers during OS installation.

7.1.1 Creating a USB flash drive with RAID drive When installing Windows®...

[Page 159](#) Click Browse to continue. Locate the driver in the corresponding folder of the Support DVD or USB flash drive and then click OK to continue. Select the RAID controller driver you need from the list and click Next. ASUS RS700-E9 Series...

[Page 160](#) When the system finishes loading the RAID driver, Replace the motherboard Support DVD with the Windows Server installation disc. • Remove the USB flash drive. • Select the drive to install Windows and click Next. Setup then proceeds with the OS installation. Follow screen instructions to continue. Chapter 7: Driver Installation...

[Page 161: Management Applications And Utilities Installation](#)

The contents of the support DVD are subject to change at any time without notice. Visit the ASUS website (www.asus.com) for the latest updates on software and utilities.

[Page 162](#) 7.3.1 Drivers menu tab The Drivers Menu shows the available device drivers if the system detects installed devices. Install the necessary drivers to activate the devices. 7.3.2 Utilities menu tab The Utilities menu displays the software applications and utilities that the motherboard supports.

[Page 163](#) You need an internet browser installed in your OS to view the User Guide. 7.3.4 Contact information menu The Contact menu displays the ASUS contact information, e-mail addresses, and useful links if you need more information or technical support for your motherboard. ASUS RS700-E9 Series...

[Page 164: Intel ® Chipset Device Software Installation](#)

Intel chipset device software installation ® This section provides the instructions on how to install the Intel chipset device software on ® the system. You need to manually install the Intel chipset device software on a Windows operating ® system. To install the Intel chipset device software: ®...

[Page 165](#) Read the License Agreement and click Accept to continue the process. Read the Readme File Information and click Install to start the installation process. Click Restart Now to complete the setup process. ASUS RS700-E9 Series...

[Page 166: Vga Driver Installation](#)

VGA driver installation This section provides the instructions on how to install the ASPEED Video Graphics Adapter (VGA) driver. You need to manually install the ASPEED VGA driver on a Windows operating system. ® To install the ASPEED VGA driver: Restart the computer, and then log on with Administrator privileges.

[Page 167](#) Click Install to start the installation process. Click Finish to complete the installation. ASUS RS700-E9 Series 7-11...

[Page 168: Intel ® Rapid Storage Technology Enterprise 5.0 Installation](#)

® Intel Rapid Storage Technology enterprise 5.0 installation ® This section provides the instructions on how to install the Intel Rapid Storage Technology enterprise 5.0 on the system. ® You need to manually install the Intel Rapid Storage Technology enterprise 5.0 utility on a ®...

[Page 169](#) Read the Warning message and click Next to continue. Read the License Agreement and click Accept to continue the process. Select the destination folder and click Next

to continue. ASUS RS700-E9 Series 7-13...

[Page 170](#) Tick the features that you would like to install and click Next to continue. Click Install to start the installation process. Click Restart Now to complete the setup process. 7-14 Chapter 7: Driver Installation...

[Page 171: Appendix](#)

Appendix Appendix This appendix includes additional information that you may refer to when configuring the motherboard.

[Page 172: Z11Pp-D24 Block Diagram](#)

Z11PP-D24 block diagram Channel G Channel A DDR4 RDIMM * 2 DDR4 RDIMM * 2 DDR4 2133/2400/2667 DDR4 2133/2400/2667 Channel H Channel B DDR4 RDIMM * 2 DDR4 RDIMM * 2 DDR4 2133/2400/2667 DDR4 2133/2400/2667 Channel I Channel C DDR4 RDIMM * 2 DDR4 RDIMM * 2 DDR4 2133/2400/2667 UPI 10.4GT/s...

[Page 173: Notices](#)

The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. ASUS RS700-E9 Series...

[Page 174: Canadian Department Of Communications Statement](#)

If you require assistance please call ASUS Customer Service 1300 2787 88 or visit us at <https://www.asus.com/support/>.

[Page 175: Asus Contact Information](#)

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[Page 176](#) 800 Corporate Way, Fremont, CA 94539, USA +1-510-608-4555 Web site <http://usa.asus.com> Technical Support Support fax +1-812-284-0883 General support +1-812-282-2787 Online support <http://support.asus.com/techserv/techserv.aspx> ASUS COMPUTER GmbH (Germany and Austria) Address Harkort Str. 21-23, 40880 Ratingen, Germany +49-2102-959911 Web site <http://www.asus.de> Online contact <http://www.asus.de/sales> Technical Support Telephone +49-1805-010923...

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[Page 178](#) Appendix...

This manual is also suitable for:

[Rs700-e9-rs4Rs700-e9-rs12Rs700-e9 series](#)

