
AAEON
USB3.0
DVO
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Asus AAEON EPIC-ADS7-PUC User Manual

Epic system

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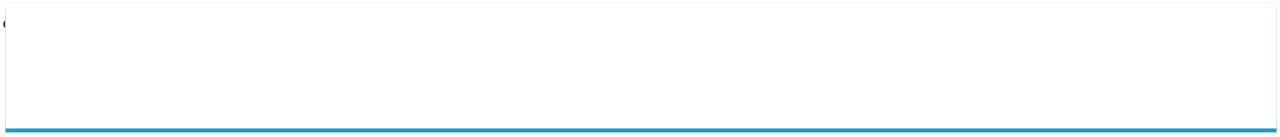

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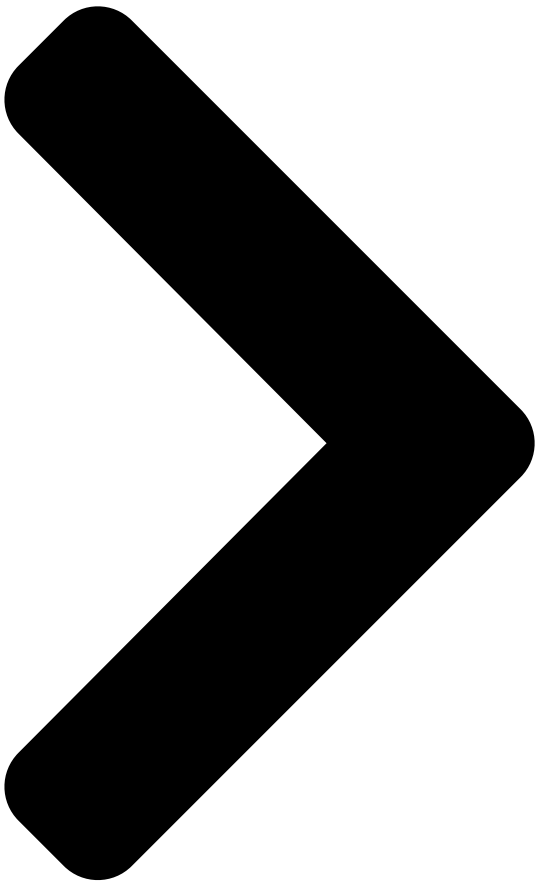

EPIC-ADS7-PUC

EPIC System

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User's Manual 1

Ed

Last Updated: March 29, 2023

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Related Manuals for Asus AAEON EPIC-ADS7-PUC

Computer Hardware Asus AAEON EPIC-ADS7-PUC Quick Start Manual

Foundation kit (2 pages)

Network Hardware Asus EI-102 User Manual

Power over ethernet injector (41 pages)

Network Hardware Asus Aaeon FWS-2273E7-A10-A10-00 User Manual

Desktop network appliance (101 pages)

Network Hardware Asus WL-HDD2.5 Quick Manual

(98 pages)

Network Hardware Asus AAM6020VI-T4 User Manual

Customer premises equipment (40 pages)

Network Hardware Asus Lyra Trio Manual

(170 pages)

Network Hardware Asus AAEON BOXER-8621AI User Manual

Ai@edge compact fanless embedded ai system with nvidia jetson orin nano (51 pages)

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Network Hardware Asus AAEON BOXER-8256AI User Manual

(55 pages)

Summary of Contents for Asus AAEON EPIC-ADS7-PUC

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Page 3 Acknowledgement All other products' name or trademarks are properties of their respective owners. Microsoft Windows is a registered trademark of Microsoft Corp. • Intel® is a registered trademark of Intel Corporation • Intel® Core™ is a trademark of Intel Corporation •...

Page 4 Packing List Before setting up your product, please make sure the following items have been shipped: Item Quantity EPIC-ADS7-PUC • SATA Cable • SATA Power Cable • Screw Pack, Thermal Pads and Accessories Kit • CPU Cooler Backplate • Please note that the packing list may be different based on SKU. contact your distributor or sales representative if you have any queries.

Page 5 About this Document This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product. Users may refer to the product page on AAEON.com for the latest version of this document.

Page 6 Safety Precautions Please read the following safety instructions carefully. It is advised that you keep this manual for future references All cautions and warnings on the device should be noted. Make sure the power source matches the power rating of the device. Position the power cord so that people cannot step on it.

Page 7 If any of the following situations arises, please the contact our service personnel: Damaged power cord or plug Liquid intrusion to the device iii. Exposure to moisture Device is not working as expected or in a manner as described in this manual The device is dropped or damaged Any obvious signs of damage displayed on the device...

Page 8 FCC Statement This device complies with Part 15 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 9 China RoHS Requirements (CN) □□□□□□□□□□□□□□□□□□ AAEON System QO4-381 Rev.A0 □□□□□□□□□ □□□□ □ □ □ □□□ □□□□ □□□□ □(PBDE) (Pb) (Hg) (Cd) (Cr(VI)) (PBB) □□□□□ × ○ ○ ○ ○ ○ □ □□□□□ □□□□ × ○ ○ ○ ○ ○ □□□□□□ □□ ○...

Page 10 China RoHS Requirement (EN) Hazardous and Toxic Materials List AAEON System QO4-381 Rev.A0 Hazardous or Toxic Materials or Elements Component Name PCB and Components Wires & Connectors for Ext.Connections Chassis CPU & RAM HDD Drive LCD Module Optical Drive Touch Control Module Battery This form is prepared in compliance with the provisions of SJ/T 11364.

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Page 15: Chapter 1 - Product Specifications

Chapter 1 Chapter 1 - Product Specifications...

Page 16: Specifications

Specifications System Form Factor EPIC System Generation Intel® Core™ Series Processor, up to 65W CPU Frequency Up to 4.8GHz (Intel® Core™ i7-12700E) Chipset Intel® 600 Series Desktop Chipset (R680E/Q670E/H610E) Memory Type DDR5 4800MHz SODIMM x 2 Max. Memory Capacity Up to 32GB (16GB SODIMM x 2) BIOS UEFI Wake on LAN...

Page 17 Display VGA/LCD Controller Intel® UHD Graphics 770/Intel® UHD Graphics 730 (by CPU SKU) Video Output 3 Simultaneous Displays DP 1.4a x 2 HDMI 2.1 x 1 (up to 3840 x 2160) Backlight Inverter Supply — Ethernet Intel® I211AT, 10/100/1000Base, RJ-45 x 2 (No PXE &...

Page 18: Hsio Function Table

Attention: Please follow the environmental condition as below if using EPIC-ADS7-PUC with power adapter together. (Model: 1255X00063 // Delta DPS-150AB) EUT Rating 12VDC,12.5A Operating Temperature 32°F ~ 104°F (0°C ~ 40°C) with 0.5 m/s airflow Storage Temperature -40°F ~ 176°F (-40°C ~ 80°C) Operating Humidity 20% ~ 80% relative humidity, non-condensing Shipping Humidity...

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Block Diagram Chapter 1 – Product Specifications...

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Jumpers and Connectors EPIC-ADS7 Main Board Dual LAN Card: Chapter 2 – Hardware Information...

Page 23 EPIC-ADS7 Main Board Dual LAN Card: Chapter 2 – Hardware Information...

Page 24: A) Epic-Ads7 Main Board List Of Jumpers

(A) EPIC-ADS7 Main Board List of Jumpers The board features a number of jumpers which can be configured for your application. Please refer to the table below and following sections for all jumpers which can be configured. Label Function Clear CMOS Jumper Auto Power Button AT/ATX Selection COM 2 Pin 8 Function Selection Front Panel Connector...

Page 25: Com 2 Pin 8 Function Selection (Jp4)

2.3.3 COM 2 Pin 8 Function Selection (JP4) Ring (Default) +12V 2.3.4 Front Panel Connector (JP6) Signal Signal EXT_PWRBTN# FP_HDLED- FP_HDLED+ FP_SPKR- +V5S PWRLED+ HWRST# Chapter 2 – Hardware Information...

Page 26: B) Dual Lan Card

(B) Dual LAN Card Label Function OUT2 Select AGND2 Select AGND1 Select OUT1 Select 2.4.1 OUT2 Select (JP1) 1 2 3 OUT2_1236 (Default) OUT2_4578 2.4.2 AGND2 Select (JP2) AGND2_1236 (Default) AGND2_4578 2.4.3 AGND1 Select (JP3) 1 2 3 AGND1_1236 (Default) AGND1_4578 2.4.4 OUT1 Select (JP1)

Page 27: A) Epic-Ads7 Main Board List Of Connectors

(A) EPIC-ADS7 Main Board List of Connectors The EPIC-ADS7 main board has a number of connectors that allow you to configure your system to suit your application. The table below shows the function of each of the board's connectors Label Function RTC Connector SATA Connector...

Page 28 Label Function CN29 Nano SIM Card Socket CN30 M.2 3052 B-Key CN31 PCIe [x2] FPC Connector CN32 M.2 2280 M-Key CN33 CN34 SATA Power Connector CPU1 CPU Socket DIMM1 DDR5 SODIMM Slot DIMM2 DDR5 SODIMM Slot Chapter 2 – Hardware Information...

Page 29: Rtc Connector (Cn1)

2.5.1 RTC Connector (CN1) Pin Name Signal Type Signal Level +3.3V +3.3V 2.5.2 SATA Connector (CN2/CN3) Pin Name Signal Type SATA_TX+ DIFF SATA_TX- DIFF SATA_RX- DIFF SATA_RX+ DIFF Chapter 2 – Hardware Information...

Page 30: 4-Pin Dc-In Atx Connector (Cn4)

2.5.3 4-Pin DC-In ATX Connector (CN4) Pin Name Signal Type Signal Level +VIN +12V +VIN +12V Note: 12V only. 2.5.4 SATA Power Connector (CN6) Pin Name Signal Type Signal Level +5V (2A) Note: CN6 offers a 2A current for SATA connector. Chapter 2 –...

Page 31: External +5Vsb Input Connector (Cn7)

2.5.5 External +5VSB Input Connector (CN7) Pin Name Signal Type Signal Level PS_ON# +5VSB +5V (2A) 2.5.6 CPU Fan Connector (CN8) Pin Name Signal Type Signal Level FAN_POWER +12V (1A) FAN_TAC FAN_CTL Chapter 2 – Hardware Information...

Page 32: Usb 2.0 Connector (Port 5/6) (Cn13)

2.5.7 USB 2.0 Connector (Port 5/6) (CN13) Pin Name Signal Level +5VSB (0.5A) +5VSB (0.5A) USB5_D- USB6_D- USB5_D+ USB6_D+ Chapter 2 – Hardware Information...

Page 33: Com Port 1/2 (Cn14)

2.5.8 COM Port 1/2 (CN14) RS-232 Pin Name Signal Type Signal Level Port 1 Port 2 ±5V ±5V ±5V RS-485 Pin Name Signal Type Signal Level Port 1 Port 2 RS485_ D- ±5V RS485_D+ ±5V Chapter 2 – Hardware Information...

Page 34 RS-485 Pin Name Signal Type Signal Level Port 1 Port 2 RI/+5V/+12V (0.5A) PWR +5V/+12V RS-422 Pin Name Signal Type Signal Level Port 1 Port 2 RS422_TX- ±5V RS422_TX+ ±5V RS422_RX+ RS422_RX- RI/+5V/+12V (0.5A) PWR +5V/+12V Note: COM 2 RS-232/422/485 can be set by BIOS setting. Default is RS-232. Note: Pin 17 RI only, Pin 18 function can be select by JP4.

Page 35: Com Port 3/4 (Cn15)

2.5.9 COM Port 3/4 (CN15) RS-232 Pin Name Signal Type Signal Level Port 1 Port 2 ±5V ±5V ±5V RS-485 Pin Name Signal Type Signal Level Port 1 Port 2 RS485_ D- ±5V RS485_D+ ±5V Chapter 2 – Hardware Information...

Page 36 RS-485 Pin Name Signal Type Signal Level Port 1 Port 2 RS-422 Pin Name Signal Type Signal Level Port 1 Port 2 RS422_TX- ±5V RS422_TX+ ±5V RS422_RX+ RS422_RX- Chapter 2 – Hardware Information...

Page 37: Lan Port I219Lm + Usb 3.2 Gen 2 Connector (Cn17)

2.5.10 LAN Port I219LM + USB 3.2 Gen 2 Connector (CN17) Pin Name Signal Type Signal Level +5VSB 5V (0.9A) USB2_1_DN DIFF USB2_1_DP DIFF USB3_1_RXN DIFF USB3_1_RXP DIFF USB3_1_TXN DIFF USB3_1_TXP DIFF LAN1_MDI0_P DIFF LAN1_MDI0_N DIFF LAN1_MDI1_P DIFF LAN1_MDI1_N DIFF LAN1_MDI2_P DIFF LAN1_MDI2_N...

Page 38: Lan Port I225Lm + Usb 3.2 Gen 2 Connector (Cn18)

2.5.11 LAN Port I225LM + USB 3.2 Gen 2 Connector (CN18) Pin Name Signal Type Signal Level +5VSB 5V (0.9A) USB2_2_DN DIFF USB2_2_DP DIFF USB3_2_RXN DIFF USB3_2_RXP DIFF USB3_2_TXN DIFF USB3_2_TXP DIFF LAN2_MDI0_P DIFF LAN2_MDI0_N DIFF LAN2_MDI1_P DIFF LAN2_MDI1_N DIFF LAN2_MDI2_P DIFF LAN2_MDI2_N...

Page 39: Hdmi Connector (Cn19)

2.5.12 HDMI Connector (CN19) Pin Name Signal Type Signal Level HDMI_TX2+ DIFF HDMI_TX2- DIFF HDMI_TX1+ DIFF HDMI_TX1- DIFF HDMI_TX0+ DIFF HDMI_TX0- DIFF HDMI_CLK+ DIFF HDMI_CLK- DIFF DDC_CLK DDC_DATA HDMI_HPD Chapter 2 – Hardware Information...

Page 40: Digital I/O Port (Cn20)

2.5.13 Digital I/O Port (CN20) Signal Signal +V5S (0.5A) 2.5.14 USB 3.2 Gen 2 Connector (CN21) Pin Name Signal Type Signal Level +5VSB +5V (0.9A) USB2_3D- DIFF USB2_3D+ DIFF USB3_3_SSRX− DIFF Chapter 2 – Hardware Information...

Page 41: Dp++1/Dp++2 Connector (Cn22)

Pin Name Signal Type Signal Level USB3_3_SSRX+ DIFF USB3_3_SSTX− DIFF USB3_3_SSTX+ DIFF +5VSB +5V (0.9A) USB2_4_D- DIFF USB2_4_D+ DIFF USB3_4_SSRX− DIFF USB3_4_SSRX+ DIFF USB3_4_SSTX− DIFF USB3_4_SSTX+ DIFF 2.5.15 DP++1/DP++2 Connector (CN22) Pin Name Signal Type Signal Level DP1_TX0_DP DIFF DP1_TX0_DN DIFF Chapter 2 –...

Page 42 Pin Name Signal Type Signal Level DP1_TX1_DP DIFF DP1_TX1_DN DIFF DP1_TX2_DP DIFF DP1_TX2_DN DIFF DP1_TX3_DP DIFF DP1_TX3_DN DIFF DDC_AUX_EN H(HDMI/L(DP) DP1_AUX_DP DP1_AUX_DN HDMI_HPD +V3P3S +3.3V DP1_TX0_DP DIFF DP1_TX0_DN DIFF DP1_TX1_DP DIFF DP1_TX1_DN DIFF DP1_TX2_DP DIFF DP1_TX2_DN DIFF Chapter 2 – Hardware Information...

Page 43: Vcore Programing Connector (Cn24)

Pin Name Signal Type Signal Level DP1_TX3_DP DIFF DP1_TX3_DN DIFF DDC_AUX_EN H(HDMI/L(DP) DP1_AUX_DP DP1_AUX_DN HDMI_HPD +V3P3S +3.3V 2.5.16 Vcore Programing Connector (CN24) Pin Name Signal Type Signal Level PM_SCL IN/OUT 3.3V PM_SDA IN/OUT 3.3V Chapter 2 – Hardware Information...

Page 44: Usb 3.2 Gen 2 Connector (Type-C) (Cn25)

2.5.17 USB 3.2 Gen 2 Connector (Type-C) (CN25) Pin Name Signal Type Signal Level SSTXP1 DIFF SSTXN1 DIFF +5VSB CON_CC1 USB_P0_DP_C DIFF USB_P0_DN_C DIFF DP2_AUXP_CON DIFF +5VSB SSRXN2 DIFF SSRXP2 DIFF SSTXP2 DIFF SSTXN2 DIFF +5VSB CON_CC2 USB_P0_DP_C DIFF Chapter 2 – Hardware Information...

Page 45 Pin Name Signal Type Signal Level USB_P0_DN_C DIFF DP2_AUXN_CON DIFF +5VSB SSRXN1 DIFF SSRXP1 DIFF Note: Type-C supports USB 3.2 Gen 2 x 2, +5V current support 3A. Chapter 2 – Hardware Information...

Page 46: Espi Connector For Debug (Cn26)

2.5.18 eSPI Connector for Debug (CN26) Pin Name Signal Type Signal Level ESPI_IO0 IN/OUT +1.8V ESPI_IO1 IN/OUT +1.8V ESPI_IO2 IN/OUT +1.8V ESPI_IO3 IN/OUT +1.8V +V3P3S +3.3V ESPI_CS +1.8V ESPI_RST# +1.8V ESPI_CLK SMB_DATA/ I2C_SDA IN/OUT +3.3V SMB_CLK/ I2C_CLK +3.3V SMB_ALERT# +3.3V Chapter 2 –...

Page 47: Spi Bios Debug Port (Cn27)

2.5.19 SPI BIOS Debug Port (CN27) Pin Name Signal Type Signal Level SPI_MISO SPI_CLK +3.3VSB +3.3V SPI_MOSI SPI_CS 2.5.20 M.2 2230 E-Key (CN28) Standard specification. Chapter 2 – Hardware Information...

Page 48: Nano Sim Card Socket (Cn29)

2.5.21 Nano SIM Card Socket (CN29) Pin Name Signal Type UIM_PWR UIM_RST UIM_CLK UIM_VPP UIM_DATA 2.5.22 M.2 3052 B-Key (CN30) Standard specification. Chapter 2 – Hardware Information...

Page 49: Pcie [X2] Fpc Connector (Cn31)

2.5.23 PCIe [x2] FPC Connector (CN31) Pin Name Signal Type Signal Level +V3P3S 3.3V +V3P3S 3.3V +V3P3S 3.3V SMB_DATA IN/OUT SMB_CLK BUF_PLT_RST# +V3P3A 3.3V PCIE_6_RXP DIFF PCIE_6_RXN DIFF PCIE_5_RXP DIFF PCIE_5_RXN DIFF PCIE_6_TXN DIFF PCIE_6_TXP DIFF PCIE_5_TXN DIFF Chapter 2 – Hardware Information...

Page 50: 2280 M-Key (Cn32)

Pin Name Signal Type Signal Level PCIE_5_TXP DIFF PCIE_7_CLK_DN DIFF PCIE_7_CLK_DP DIFF +V12V +V12V +V12V +V12V +V12V 2.5.24 M.2 2280 M-Key (CN32) Standard specification. Chapter 2 – Hardware Information...

Page 51: Tcc (Cn33)

2.5.25 TCC (CN33) Pin Name Signal Type Signal Level TIME_SYNC0 IN/OUT 3.3V TIME_SYNC1 IN/OUT 3.3V 2.5.26 SATA Power Connector (CN34) Pin Name Signal Type Signal Level +5V(2A) Note: CN34 offers a 2A current for SATA connector. Chapter 2 – Hardware Information...

Page 52: Cpu Socket (Cpu1)

2.5.27 CPU Socket (CPU1) Standard specification. 2.5.28 DDR5 SODIMM Slot (DIMM1) Standard specification (vertical). 2.5.29 DDR5 SODIMM Slot (DIMM2) Standard specification. Chapter 2 – Hardware Information...

Page 53: B) Dual Lan Card List Of Connectors

(B) Dual LAN Card List of Connectors Label Function 12V DC In LAN 2 RJ-45 Port LAN 1 RJ-45 Port FPC Cable Port (Connect to EPIC-CFS7) 2.6.1 12V DC In (CN1) Pin Name Signal Type Signal Level +V_IN +V_IN Chapter 2 – Hardware Information...

Page 54: Lan Port (Cn2/Cn3)

2.6.2 RJ-45 LAN Port (CN2/CN3) Pin Name Signal Type TRP1+ DIFF TRP1- DIFF TRP2+ DIFF TRP3+ DIFF Pin Name Signal Type TRP3- DIFF TRP2- DIFF TRP4+ DIFF TRP4- DIFF Chapter 2 – Hardware Information...

Page 55: Fpc Cable Port (Cn4)

2.6.3 FPC Cable Port (CN4) Pin Name Signal Type Signal Level +V3P3S 3.3V +V3P3S 3.3V +V3P3S 3.3V SMB_DATA IN/OUT SMB_CLK BUF_PLT_RST# +V3P3A 3.3V PCIE_6_RXP DIFF PCIE_6_RXN DIFF PCIE_5_RXP DIFF PCIE_5_RXN DIFF Chapter 2 – Hardware Information...

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Pin Name Signal Type Signal Level PCIE_6_TXN DIFF PCIE_6_TXP DIFF PCIE_5_TXN DIFF PCIE_5_TXP DIFF PCIE_7_CLK_DN DIFF PCIE_7_CLK_DP DIFF +V12V +V12V +V12V +V12V +V12V Chapter 2 – Hardware Information...

Page 57: Chapter 3 - Ami Bios Setup

Chapter 3 Chapter 3 - AMI BIOS Setup...

Page 58: System Test And Initialization

System Test and Initialization These routines test and initialize board hardware. If the routines encounter an error during the tests, you will either hear a few short beeps or see an error message on the screen. There are two kinds of errors: fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors.

Page 59: Ami Bios Setup

AMI BIOS Setup AMI BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM and BIOS NVRAM so that it retains the Setup information when the power is turned off. Entering Setup Power on the computer and press <Del>or <ESC>...

Page 60: Setup Submenu: Main

Setup Submenu: Main Chapter 3 – AMI BIOS Setup...

Page 61: Setup Submenu: Advanced

Setup Submenu: Advanced Chapter 3 – AMI BIOS Setup...

Page 62: Cpu Configuration

3.4.1 CPU Configuration Options Summary Disabled Intel (VMX) Virtualization Technology Enabled Optimal Default, Failsafe Default When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology. Intel(R) SpeedStep(tm) Disabled Enabled Optimal Default, Failsafe Default Allows more than two frequency ranges to be supported. Turbo Mode Disabled Enabled...

Page 63: Pch-Fw Configuration

3.4.2 PCH-FW Configuration Chapter 3 – AMI BIOS Setup...

Page 64: Firmware Update Configuration

3.4.3 Firmware Update Configuration Options Summary Me FW Image Re-Flash Disabled Optimal Default, Failsafe Default Enabled Enable/Disable Me FW Image Re-Flash function. FW Update Disabled Enabled Optimal Default, Failsafe Default Enable/Disable ME FW Update function. Chapter 3 – AMI BIOS Setup...

Page 65: Ptt Configuration

3.4.4 PTT Configuration Options Summary dTPM Optimal Default, Failsafe Default TPM Device Selection Selects TPM device: PTT or discrete TPM. PTT - enables PTT in SkuMgr dTPM - disables PTT is SkuMgr Warning! PTT TPM will be disabled and all data saved on it will be lost. Chapter 3 –...

Page 66: Trusted Computing

3.4.5 Trusted Computing Options Summary Security Device Support Enable Optimal Default, Failsafe Default Disable Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available. SHA256 PCR Bank Enabled Optimal Default, Failsafe Default Disabled...

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Options Summary Platform Hierarchy Enabled Optimal Default, Failsafe Default Disabled Enable or Disable Platform Hierarchy Storage Hierarchy Enabled Optimal Default, Failsafe Default Disabled Enable or Disable Storage Hierarchy Endorsement Hierarchy Enabled Optimal Default, Failsafe Default Disabled Enable or Disable Endorsement Hierarchy Physical Presence Spec Optimal Default, Failsafe Default Version...

Page 68: Sata Configuration

3.4.6 SATA Configuration Options Summary SATA Controller(s) Enabled Optimal Default, Failsafe Default Disabled Enable/Disable SATA Device. Port 0 Enabled Optimal Default, Failsafe Default Disabled Enable or Disable SATA Port. Hot Plug Disabled Optimal Default, Failsafe Default Enabled Designates this port as Hot Pluggable. Port 1 Enabled Optimal Default, Failsafe Default...

Page 69: Hardware Monitor

Options Summary M.2 KEY-B (CN30) Enabled Optimal Default, Failsafe Default Disabled Enable or Disable SATA Port. 3.4.7 Hardware Monitor Options Summary Smart Fan Disable Enable Optimal Default, Failsafe Default Enables or Disables Smart Fan. Chapter 3 – AMI BIOS Setup...

Page 70: Smart Fan Mode Configuration

3.4.8 Smart Fan Mode Configuration Options Summary Fan 1 Smart Fan Control Manual Duty Mode Auto Duty-Cycle Mode Optimal Default, Failsafe Default Smart Fan Mode Select Temperature Source CPU Temperature System Temperature Optimal Default, Failsafe Default System Temperature 2 Select the monitored temperature source for this fan. Temperature 1 Duty Cycle 1 Auto fan speed control.

Page 71: Sio Configuration

3.4.9 SIO Configuration Chapter 3 – AMI BIOS Setup...

Page 72: Serial Port 1 Configuration

3.4.9.1 Serial Port 1 Configuration Options Summary Use This Device Disable Enable Optimal Default, Failsafe Default Enable or Disable this Logical Device. Possible: Use Automatic Settings Optimal Default, Failsafe Default IO=3F8h; IRQ=4 IO=2F8h; IRQ=3 Allows user to change Device's Resource settings. New settings will be reflected on This Setup Page after System restarts.

Page 73: Serial Port 2 Configuration

3.4.9.2 Serial Port 2 Configuration Options Summary Use This Device Disable Enable Optimal Default, Failsafe Default Enable or Disable this Logical Device. Possible: Use Automatic Settings Optimal Default, Failsafe Default IO=2F8h; IRQ=3 IO=3F8h; IRQ=4 Allows user to change Device's Resource settings. New settings will be reflected on This Setup Page after System

restarts.

Page 74: Serial Port 3 Configuration

3.4.9.3 Serial Port 3 Configuration Options Summary Use This Device Disable Enable Optimal Default, Failsafe Default Enable or Disable this Logical Device. Possible: Use Automatic Settings Optimal Default, Failsafe Default IO=3E8h; IRQ=11 IO=2E8h; IRQ=11 Allows user to change Device's Resource settings. New settings will be reflected on This Setup Page after System restarts.

Page 75: Serial Port 4 Configuration

3.4.9.4 Serial Port 4 Configuration Options Summary Use This Device Disable Enable Optimal Default, Failsafe Default Enable or Disable this Logical Device. Possible: Use Automatic Settings Optimal Default, Failsafe Default IO=2E8h; IRQ=11 IO=3E8h; IRQ=11 Allows user to change Device's Resource settings. New settings will be reflected on This Setup Page after System restarts.

Page 76: Serial Port Console Redirection

3.4.10 Serial Port Console Redirection Options Summary Console Redirection Disabled Optimal Default, Failsafe Default Enabled Console Redirection Enable or Disable. Console Redirection EMS Disabled Optimal Default, Failsafe Default Enabled Console Redirection Enable or Disable. Chapter 3 – AMI BIOS Setup...

Page 77: Legacy Console Redirection Settings

3.4.11 Legacy Console Redirection Settings Options Summary Redirection COM port COM0 Optimal Default, Failsafe Default COM1 (Pci Bus0, Dev0, Func0) (Disabled) Select a COM Port to display redirection of Legacy OS and Legacy OPROM message. Resolution 80x24 Optimal Default, Failsafe Default 80x25 On Legacy OS, the number of Rows and Columns supported redirection Redirect After POST...

Page 78: Aaeon Bios Robot

3.4.12 AAEON BIOS Robot Options Summary Sends watch dog before Disabled Optimal Default, Failsafe Default BIOS POST Enabled Enabled -Robot set Watch Dog Timer (WDT) right after power on, before BIOS start POST process. And then Robot will clear WDT on completion of POST. WDT will reset system automatically if it is not cleared before its timer counts down to zero.

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Options Summary OS Timer (minute) Optimal Default, Failsafe Default Timer count set to Watch Dog Timer for OS loading. Delayed POST (PEI phase) Disabled Optimal Default, Failsafe Default Enabled Enabled - Robot holds BIOS from starting POST, right after power on. This allows BIOS POST to start with stable power or start after system is physically warmed-up.

Page 80: Power Management

3.4.13 Power Management Options Summary Power Mode ATX Type Optimal Default, Failsafe Default AT Type Select power supply mode. Restore AC Power Loss Last State Optimal Default, Failsafe Default Always On Always Off Select power state when power is re-applied after a power failure. RTC wake system from S5 Disable Optimal Default, Failsafe Default Fixed Time...

Page 81: Digital Io Port Configuration

3.4.14 Digital IO Port Configuration Options Summary DIO Port* Output Input Set DIO as Input or Output Output Level High Set output level when DIO pin is output Chapter 3 – AMI BIOS Setup...

Page 82: Setup Submenu: Chipset

Setup Submenu: Chipset Chapter 3 – AMI BIOS Setup...

Page 83: System Agent (Sa) Configuration

3.5.1 System Agent (SA) Configuration Options Summary VT-d Disabled Optimal Default, Failsafe Default Enabled VT-d capability. Chapter 3 – AMI BIOS Setup...

Page 84: Memory Configuration

3.5.2 Memory Configuration Chapter 3 – AMI BIOS Setup...

Page 85: Vmd Setup Menu

3.5.3 VMD Setup Menu Options Summary Enable VMD Controller Disabled Optimal Default, Failsafe Default Enabled Enable/Disable to VMD Controller. Chapter 3 – AMI BIOS Setup...

Page 86: Lvds Panel Configuration

3.5.4 LVDS Panel Configuration Options Summary LVDS Disabled Enabled Optimal Default, Failsafe Default Enable/Disabled this panel. LVDS Panel Type 640x480,18bit,60Hz 800x480,18bit,60Hz 800x600,18bit,60Hz 1024x600,18bit,60Hz 1024x768,18bit,60Hz 1024x768,24bit,60Hz Optimal Default, Failsafe Default 1280x768,24bit,60Hz 1280x1024,48bit,60Hz 1366x768,24bit,60Hz 1440x900,48bit,60Hz 1600x1200,48bit,60Hz 1920x1080,48bit,60Hz 1920x1200,48bit,60Hz Chapter 3 – AMI BIOS Setup...

Page 87 Options Summary Select LCD panel used by Internal Graphics Device by selecting the appropriate setup item. Panel Mode Single Channel Optimal Default, Failsafe Default Dual Channel Panel mode selection for Single channel or Dual channel Color Depth 18-bit Optimal Default, Failsafe Default 24-bit 36-bit 48-bit...

Page 88: Pch-Io Configuration

3.5.5 PCH-IO Configuration Options Summary HD Audio Disabled Enabled Optimal Default, Failsafe Default Control Detection of the HD-Audio Device. Disabled = HDA will unconditionally disabled Enabled = HDA will be unconditionally enabled. PCH LAN Controller Disabled Enabled Optimal Default, Failsafe Default Enable/Disable onboard NIC I225 LAN Controller Disabled...

Page 89: Setup Submenu: Security

Setup Submenu: Security Change User/Supervisor Password You can install a Supervisor password, and if you install a supervisor password, you can then install a user password. A user password does not provide access to many of the features in the Setup utility. If you highlight these items and press Enter, a dialog box appears which lets you enter a password.

Page 90: Secure Boot

3.6.1 Secure Boot Options Summary Secure Boot Disabled Optimal Default, Failsafe Default Enabled Secure Boot feature is Active if Secure Boot is Enabled, Platform Key (PK) is enrolled and the System is in User mode. The mode change requires platform reset. Secure Boot Mode Custom Optimal Default, Failsafe Default...

Page 91: Key Management

3.6.2 Key Management Options Summary Factory Key Provision Disabled Optimal Default, Failsafe Default Enabled Secure Boot feature is Active if Secure Boot is Enabled, Platform Key (PK) is enrolled and the System is in User mode. The mode change requires platform reset. Restore Factory Keys Force System to User Mode.

Page 92 Options Summary Remove 'UEFI CA' from DB Device Guard ready system must not list 'Microsoft UEFI CA' Certificate in Authorized Signature database (db). Restore DB defaults Restore DB variable to factory defaults. Platform Key (PK) Details Export Update Delete Key Exchange Keys Details Export Update...

Page 93: Setup Submenu: Boot

Setup Submenu: Boot Options Summary Quiet Boot Disabled Enabled Optimal Default, Failsafe Default Enable/Disable Quiet Boot option. UEFI PXE Support Disabled Optimal Default, Failsafe Default Enabled Enable/Disable UEFI Network Stack. FIXED BOOT ORDER Priorities Sets the system boot order Chapter 3 – AMI BIOS Setup...

Page 94: Setup Submenu: Save & Exit

Setup Submenu: Save & Exit Options Summary Save Changes and Reset Reset the system after saving the changes. Discard Changes and Exit Exit system setup without saving any changes. Restore Defaults Restore/Load Default values for all the setup options. Chapter 3 – AMI BIOS Setup...

Page 95: Setup Submenu: Mebx

Setup Submenu: MEBx Chapter 3 – AMI BIOS Setup...

Page 96: Intel® Amt Configuration

3.9.1 Intel® AMT Configuration Options Summary Password Policy Default Password Only During Setup and Configuration Anytime Optimal Default, Failsafe Default Network Access State Network Active Network Inactive Optimal Default, Failsafe Default Full Unprovision Changes network state of ME. When disabling, it will also clear some other settings. Chapter 3 –...

Page 97: Redirection Features

3.9.2 Redirection Features Options Summary Disabled Enabled Optimal Default, Failsafe Default Enable FW SOL Interface Storage Redirection Disabled Enabled Optimal Default, Failsafe Default Enable FW Remote – Storage Redirection KVM Features Selection Disabled Enabled Optimal Default, Failsafe Default Enable FW KVM Feature Chapter 3 –...

Page 98: User Consent

3.9.3 User Consent Options Summary User Opt-in None Optimal Default, Failsafe Default Configure When User Consent Should be Required Opt-in Configurable from Disabled Remote IT Enabled Optimal Default, Failsafe Default Enable/Disable Remote Change Capability of User Consent Feature Chapter 3 – AMI BIOS Setup...

Page 99: Power Control

3.9.4 Power Control Options Summary ME ON in Host Sleep Mobile: ON in S0 Optimal Default, Failsafe Default States Mobile: ON in S0, ME Wake in S3, S4-5(AC only) Idle Timeout Timeout Value (1-65536) Chapter 3 – AMI BIOS Setup...

Page 100: Chapter 4 - Drivers Installation

Chapter 4 Chapter 4 – Drivers Installation...

Page 101: Drivers Download And Installation

Drivers Download and Installation Drivers for the EPIC-ADS7-PUC can be downloaded from the product page on the AAEON website by following this link: https://www.aaeon.com/en/p/epic-board-alder-lake-epic-ads7-puc Download the driver(s) you need and follow the steps below to install them. Install Audio Driver (Windows 10, Windows 11) Open the Audio Driver folder Open the Setup.exe file Follow the instructions...

Page 102

Install LAN Driver (Windows 10, Windows 11) Open the LAN Driver folder Open the Autorun.exe file in the folder Follow the instructions Drivers will be installed automatically Install Linux Peripheral Driver (Ubuntu 20.04.3) Open the Linux Driver-Peripheral folder Follow the instructions contained within the user guides to manually install drivers.

Page 103: Appendix A - I/O Information

Appendix A Appendix A - I/O Information...

Page 104: I/O Address Map

I/O Address Map Appendix A - I/O Information...

Page 105

Appendix A - I/O Information...

Page 106: A.2 Irq Mapping Chart

A.2 IRQ Mapping Chart Appendix A - I/O Information...

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Appendix A - I/O Information...

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Appendix A - I/O Information...

Page 109: A.3 Memory Address Map

A.3 Memory Address Map Appendix A - I/O Information...

Page 110: Appendix B - Assembly Guide

Appendix B Appendix B – Assembly Guide...

Page 111: Introduction

Introduction This section details the steps needed to install various hardware components for the EPIC-ADS7-PUC. It is recommended that you read through each step before beginning installation and to make sure you have all necessary tools and components. CPU Installation Step 1: Remove the two (2) screws located on the rear I/O side of the chassis, as shown.

Page 112 Following top cover removal, you will have access to the system’s motherboard. Appendix B – Assembly Guide...

Page 113 Step 3: Remove the CPU cover, then follow the below instructions: Pull the metal hinge to the left of the socket and then upwards towards the rear I/O side. Lift the socket bracket. Insert the CPU module with the triangle image on the top of the module facing the top right corner of the CPU socket.

Page 114: Ddr5 Module Installation (Dimm2)

DDR5 Module Installation (DIMM2) To access SODIMM slot, follow the cover removal instructions given in steps 1 and 2 of section B.2. Step 1: Insert the DDR5 module to the SODIMM slot at a 30° angle until you hear a sharp click.

Page 115 Step 4: Replace the top cover of the chassis by sliding it towards the top I/O side, keeping the chassis cover flat throughout. Step 5: Reaffix the two (2) screws that were removed from the top I/O side of the chassis during step 1.

Page 116: Ddr5 Module Installation (Dimm1)

DDR5 Module Installation (DIMM1) The system’s second SODIMM slot is accessible via the bottom side of the chassis. Note: Prior to DDR5 module installation, please follow the below instructions to apply thermal pads to the cooler backplate. Step 1: Remove the two (2) screws located on the bottom chassis cover, as shown. Remove the cover by lifting upwards at an angle.

Page 117 Step 2: Remove the covers from the cooler backplate rods (see packing list for details), and secure one either end of the CPU socket bottom, as shown. Appendix B – Assembly Guide...

Page 118 Step 3: Remove the plastic from the thermal pads and affix to the backplate, as shown. Appendix B – Assembly Guide...

Page 119 Step 4: Insert your DDR5 module horizontally until you hear a sharp click. Appendix B – Assembly Guide...

Page 120: M.2 Expansion Module Installation

M.2 Expansion Module Installation Note: M.2 E-Key module must be installed before M.2 M-Key module. B.5.1 M.2 2230 E-Key Installation Follow standard procedures for expansion card installation, aligning the notch on the M.2 2230 module with the M.2 E-Key slot. Note the location of the mounting screws. Appendix B –...

Page 121: M.2 2280 M-Key Installation

B.5.2 M.2 2280 M-Key Installation Follow standard procedures for expansion card installation, ensuring that the M.2 2280 module has been installed prior to beginning M.2 2280 module installation. Align the notch on the M.2 2280 module with the M.2 M-Key slot. Note the location of the mounting screws.

Page 122 Once all expansion modules have been installed, reaffix backplate to chassis and

affix with the two (2) screws removed during B.4 Step 1. Appendix B – Assembly Guide...

Page 123: Cpu Fan Installation

CPU Fan Installation Note: To install the CPU fan, return chassis to starting position from section B.2, accessing the relevant connector via the top side of the chassis. Step 1: Remove the two (2) screws located on the top I/O side of the chassis, as shown. Step 2: Remove the top cover of the chassis by sliding it towards the top I/O side, keeping the chassis cover flat throughout.

Page 124 Step 3: Affix the cooler to the board using the four (4) screws provided, ensuring the cooler is aligned facing away from the front I/O side of the chassis. Step 4: Connect the cooler power cable to the CPU fan connector (CN8), as shown. Appendix B –...

Page 125: Ssd Installation

SSD Installation Note: Prior to SSD bracket removal, ensure to cut and remove any cable ties. Step 1: Remove the existing SSD bracket by removing the four (4) screws as shown. Step 2: Secure first SSD to the bracket using four (4) screws, followed by the second SSD on top of that, again secured via four (4) screws.

Page 126 Step 3: Attach the SATA connector and SATA power cables to the SSDs, then reinsert the SSD bracket to the system, securing it with the four (4) screws removed during step Step 4: Attach the other end of the cables to their respective connectors (see section 2.5 for connector configuration).

Page 127 Step 6: Close and secure chassis cover by sliding the top cover and securing with the four (4) screws removed during step 1 of section B.6. When finished, chassis should be fully closed and secure. Appendix B – Assembly Guide...