



Asus AP130-E1 User Manual

Intel pentium 4 5u rackmount server 800/533mhz front side bus

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800/533MHz Front Side Bus User Guide

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Summary of Contents for Asus AP130-E1

[Page 1](#) AP130-E1 ® ® Intel Pentium 4 5U Rackmount Server 800/533MHz Front Side Bus User Guide...

[Page 2](#) ASUS has been advised of the possibility of such damages arising from any defect or error in this manual or product.

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[Page 5: Notices](#)

Notices Federal Communications Commission Statement This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: • This device may not cause harmful interference, and • This device must accept any interference received including interference that may cause undesired operation.

[Page 6: 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 7: 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: 1. Chapter 1: Product Introduction This chapter describes the general features of the AP130-E1 server. It includes sections on front panel and rear panel specifications.

[Page 8](#) 1. ASUS PSCH-L motherboard user guide This manual contains detailed information about the PSCH-L motherboard. 2. ASUS websites The ASUS websites worldwide provide updated information for all ASUS hardware and software products. Refer to the ASUS contact information. viii...

[Page 9](#) Chapter 1 This chapter describes the general features of the barebone server. It includes sections on front panel and rear panel specifications. ASUS AP130-E1 user guide...

[Page 10: System Package Contents](#)

System package contents Check your ASUS AP130-E1 package with the items on the following table. The package contents vary for AA4 (four hot-swap SATA HDDs) and AI4 (four internal SATA/IDE HDD) configurations. Contact your dealer immediately if any of the items is damaged or missing.

[Page 11: System Specifications](#)

System specifications The ASUS AP130-E1 is a barebone server system featuring the ASUS ® PSCH-L motherboard. The server supports Intel Pentium™ 4 processor in the 478-pin package, and includes the latest technologies through the chipsets embedded on the motherboard. Chassis Pedestal or rackmount 5U with removable front door bezel and chassis foot stand or roller-wheels.

[Page 12: Front Panel Features](#)

Front panel features The AP130-E1 chassis displays a stylish front bezel with lock. The bezel covers the system components on the front panel and serves as security. Open the bezel to access the front panel components. The drive bays, power and reset buttons, LED indicators, CD-ROM drive, floppy drive, and two USB ports are located on the front panel.

[Page 13: Rear Panel Features](#)

Power connector Power supply module P/S2 mouse port P/S2 keyboard port USB ports 12cm fan vent Serial ports Chassis lock Parallel port VGA port Gigabit LAN port Expansion slots ASUS AP130-E1 barebone server...

[Page 14: Internal Features](#)

Internal features The barebone server system includes the basic components as shown. AA4 (4 hot-swap SATA configuration) 1. Power supply cage 7. Expansion card lock 2. CD-ROM drive 8. PSCH-L motherboard 3. 2 x 5.25-inch drive bays 9. CPU fan and heatsink assembly 4.

[Page 15](#) 6. Expansion card lock 2. CD-ROM drive 7. PSCH-L motherboard 3. 2 x 5.25-inch drive bays 8. CPU fan and heatsink assembly 4. Drive cage 9. Front I/O board 5. Chassis fan 10. Chassis intrusion switch ASUS AP130-E1 barebone server...

[Page 16: Led Information](#)

LED information The barebone system comes with five LED indicators. Refer to the following table for the LED status description. Power LED (blue) HDD Access LED (green) Message LED (red) Drive status LED (green) Icon Display status Description System Power LED System power ON Blinking System is in suspend mode...

[Page 17](#) Chapter 2 This chapter lists the hardware setup procedures that you have to perform when installing or removing system components. ASUS AP130-E1 barebone server...

[Page 18: Chapter 2: Hardware Setup](#)

Chassis cover The chassis features a “screwless design” that allows convenient assembly and disassembly. Simply push or slide mechanical bolts 2.1.1 Removing the side cover 1. Push up the chassis lock on the rear panel to release the side cover. 2.

[Page 19: Installing The Side Cover](#)

(three each on the top and bottom) of the cover must properly fit the designated holes. 2. Slide the cover toward the front until it snaps in place. 3. Push down the chassis lock to secure the side cover. ASUS AP130-E1 barebone server...

[Page 20: Motherboard Information](#)

Motherboard information The barebone server comes with the ASUS PSCH-L motherboard already installed. The motherboard is secured to the chassis by ten (10) screws as indicated by circles in the illustration below. Refer to the motherboard user guide for detailed information on the motherboard.

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

Before installing the CPU, remove the chassis fan attached to the inner side of the rear panel to allow enough space for the installation. Refer to section “2.10 Removable components” for instructions. ASUS AP130-E1 barebone server...

[Page 22: Installing A Cpu](#)

2.3.1 Installing a CPU Follow these steps to install a CPU. 1. Locate the 478-pin CPU socket on the motherboard. Unlock the socket by pressing the lever sideways, then lift it up to a 90°- 100° angle. Make sure that the socket lever is pushed back all the way, otherwise the CPU does not fit in completely.

[Page 23: Installing The Cpu Heatsink And Fan](#)

3. Attach the locking lever hook into the retention module hole to secure the fan and heatsink assembly in place. Follow steps 1 to 3 to re-install the second retention bracket. ASUS AP130-E1 barebone server...

[Page 24](#) Make sure heatsink with fan assembly is mounted properly on the CPU to avoid burning the CPU and/or CPU socket! 3. When the heatsink and fan assembly is in place, connect the fan cable plug to the fan connector on the motherboard labeled CPUFAN1.

[Page 25: System Memory](#)

* For dual-channel configuration (3), you may: • install identical DIMMs in all four sockets • install identical DIMM pair in DIMM_0A and DIMM_0B (blue sockets) and identical DIMM pair in DIMM_1A and DIMM_1B (black sockets) ASUS AP130-E1 barebone server...

[Page 26: Installing A Dimm](#)

2.4.2 Installing a DIMM Make sure to unplug the power supply before adding or removing DIMMs or other system components. Failure to do so may cause damage to both the motherboard and the components. Follow these steps to install a DIMM. To access the DIMM sockets, remove the upper HDD fan cage.

[Page 27: Front Panel Assembly](#)

1. Pull the lock lever (blue bar) on the front edge of the chassis outward to release the front panel assembly. Lock lever 2. Pull and swing the left edge of the front panel outward. ASUS AP130-E1 barebone server 2-11...

[Page 28](#) 3. Unhook the hinge-like tabs from the holes on the right side of the front panel to completely detach the front panel assembly from the chassis. Do not use too much force when removing the front panel assembly. Hinge-like tab 2-12 Chapter 2: Hardware setup...

[Page 29: Re-Installing The Front Panel Assembly](#)

1. Insert the four hinge-like tabs to the holes on the right edge of the chassis. 2. Swing the front panel to the left and fit the four (4) hooked tabs to the left side of the chassis until the tabs snap back in place. Hinge-like tab Hooked tab ASUS AP130-E1 barebone server 2-13...

[Page 30: Inch Drives](#)

5.25-inch drives If you have previously used and powered up the system, and that it may be connected to an AC power source, make sure to unplug the power cable before installing or removing any system components. Failure to do so may cause damage to the motherboard and other system components! Three 5.25-inch drive bays are located on the upper front part of the...

[Page 31](#) 5. Connect the IDE cable to the IDE connector on the back of the drive. 6. Connect a 4-pin plug from the power supply to the power connector on the back of the drive. IDE cable Power plug ASUS AP130-E1 barebone server 2-15...

[Page 32](#) 7. Make sure that the drive and bay holes align as shown. When in place, the drive protrudes about an inch from the front panel. 8. Pull down the bar lock and insert the lock pegs to the drive/bay holes, then push the drive lock to the right to secure the drive.

[Page 33: Hard Disk Drives](#)

4. An empty drive tray requires a metal bracket for support. Use a Phillips (cross) screwdriver to remove the bracket if you wish to install a hard disk in the drive tray. Metal bracket ASUS AP130-E1 barebone server 2-17...

[Page 34](#) 5. Place a SATA hard disk into the drive tray, and secure it with four screws. 6. Carefully insert drive tray and push it all the way to the depth of the bay until just a small fraction of the tray edge protrudes. 7.

[Page 35: Installing An Internal Ide/Sata Hdd](#)

2. Use a Phillips (cross) screwdriver to attach Rail 1 to the side of the drive as shown. The rail end should be on the side of the drive connectors. Rail handle Drive connectors Hole 1 Hole 3 ASUS AP130-E1 barebone server 2-19...

[Page 36](#) 3. Attach Rail 2 to the other side of the drive as shown. The rail end should be on the side of the drive connectors. Rail handle Hole 1 Hole 3 Drive connectors 4. Check the HDD jumper setting. Refer to the label pasted on the HDD for the description of jumper settings.

[Page 37](#) 7-pin SATA cable to the SATA connector at the back of the drive, then connect the other end to a SATA connector on the motherboard. Refer to the motherboard user guide for the location of the SATA connectors. ASUS AP130-E1 barebone server 2-21...

[Page 38](#) Installing an HDD dummy cover The HDD dummy covers come pre-installed on the front panel bezel. In case you removed the covers, follow these steps to re-install them. To install an HDD dummy cover: 1. From the inside of the front panel assembly, insert the flat end

of a dummy cover into the slot as shown.

[Page 39: Expansion Cards](#)

Release the card lock by pressing the center tabs and pushing outward. Set the card lock aside for later use. Card lock tab 2. Carefully install an expansion card making sure that it is properly seated on the slot. ASUS AP130-E1 barebone server 2-23...

[Page 40: Removing An Expansion Card](#)

3. When the card is in place, secure it with the plastic card lock that you removed earlier. Card lock tab 2.8.2 Removing an expansion card To remove an expansion card: 1. Remove the plastic card lock that secures the expansion card. Card lock tab 2.

[Page 41: Cable Connections](#)

4-pin 12V power Floppy disk drive Front panel USB Front panel cable Chassis intrusion CPU fan cable SMBus cable to backplane 10. Chassis fan cable Refer to the motherboard user guide for detailed information on the connectors. ASUS AP130-E1 barebone server 2-25...

[Page 42: Sata Backplane Connections](#)

2.9.2 SATA backplane connections The SATA backplane has four 15-pin SATA connectors to support Serial ATA hard disks. The backplane design incorporates a hot swap feature to allow easy connection or removal of SATA hard disks. The LED on the backplane connect to the front panel LED to indicate HDD status.

[Page 43: Back Side](#)

PSCH-L motherboard. Refer to the table below for the default SATA cable connections. R-SATA 2 Backplane ID Connected to R-SATA 4 (on motherboard) CON2 R-SATA 1 CON4 R-SATA2 CON6 R-SATA2 CON8 R-SATA2 R-SATA 1 R-SATA 3 ASUS AP130-E1 barebone server 2-27...

[Page 44](#) SATA backplane jumper settings and HDD ID assignments The 6-pin jumper J1 allows you to define your desired SATA configuration. The picture below shows the location of jumper J1 with pins 1-3 and 2-4 shorted. Refer to the table for the jumper J1 setting settings and the appropriate ID# for (1-3 shorted, 2-4 shorted)

[Page 45: Removable Components](#)

3. Lift the chassis fan case lock Lock hooks hooks, then push the fan from the center of the case until it is detached. ASUS AP130-E1 barebone server 2-29...

[Page 46](#) 4. Pull the fan out from the fan case, then set aside. To re-install the chassis fan: 1. Insert the new fan to the chassis fan cage. 2. Firmly hold the chassis fan on the side with the tabs and position it into its slot, making sure that the four hooks underneath the fan match the...

[Page 47: Hdd Fan](#)

Due to space constraints inside the chassis, some cables may interfere with the removal of the fan cage. To easily remove the fan cage, try to slightly push it inward (toward the motherboard) before pulling it out of the chassis. ASUS AP130-E1 barebone server 2-31...

[Page 48](#) 4. Locate four hooks inside the HDD fan case. 5. Pull the fan case hooks outwards until the fan detaches from the case. 6. Slightly press the center of the fan vent to flush the fan out from the case. Set the HDD fan aside. To re-install the HDD fan: 1.

[Page 49](#) 4. Push the outer edge of the fan cage sideways to fit it to the drive cage. You hear a click when the fan cage correctly fits in place. 5. Secure the fan cage with the thumb screw. ASUS AP130-E1 barebone server 2-33...

[Page 50: Sata Backplane](#)

2.10.3 SATA backplane To remove the SATA backplane: 1. Remove the HDD fan cage. Refer to section "2.10.2 HDD fans" for instructions. 2. Disconnect all cables from the backplane. When disconnecting a cable, hold and firmly pull the cable plug. DO NOT pull the cable itself.

[Page 51](#) If correctly installed, the outer edge of the backplane aligns with the corner of the drive cage. 4. Connect the appropriate cables to the backplane. Refer to section “2.9.2 SATA backplane connections” for information on backplane cabling. ASUS AP130-E1 barebone server 2-35...

[Page 52: Power Supply Module](#)

2.10.4 Power supply module You MUST disconnect all power cable plugs from the motherboard and other installed devices before removing the power supply. The picture below shows the motherboard and device connectors where the power plugs are connected. Refer also to Appendix at the end of this document for details on the power supply.

[Page 53](#) Remove the metal plate completely. Metal plate bar 3. Use one hand to push the power supply module from inside the power supply cage, then carefully pull out the module from the chassis. ASUS AP1720-E1 barebone server 2-37...

[Page 54](#) To install a power supply module: 1. Firmly hold the power supply module and insert it into the power supply cage. 2. Push the power supply all the way in until its outer end aligns with the rear panel. Be careful with the power supply cables when inserting the power supply module into the cage.

[Page 55: Floppy Disk Drive](#)

2. Carefully pull out the drive from the chassis until you see the cables connected to the drive. 3. Disconnect the floppy disk cable and power cable from the drive to completely release the drive. ASUS AP1720-E1 barebone server 2-39...

[Page 56](#) To install a floppy disk drive: 1. Position the floppy drive vertically with the eject button on the left side (close to the HDDs). 2. Connect the drive signal cable and power cable. Eject button Floppy drive power cable Floppy drive signal cable Red stripe to match Pin 1 on the connector...

[Page 57: Front I/O Board](#)

2. Carefully pull out the bracket until you see the cables connected to the I/O board. 3. Disconnect all the cables from the I/O board. 4. Remove the screw that secures the I/O board to the bracket. ASUS AP1720-E1 barebone server 2-41...

[Page 58](#) To install the front I/O board: 1. Place the I/O board in the bracket, component side up. Secure the front I/O board to the bracket with a screw. 2. Position the I/O board into the bay with the component side to the left (close to the HDDs).

[Page 59: Chassis Footpads And Roller Wheels](#)

2. Use a flat screwdriver to flip out the top layer of a footpad. 3. Remove the footpad by rotating it counterclockwise. 4. Repeat steps 2 and 3 to remove the other three footpads. ASUS AP1720-E1 barebone server 2-43...

[Page 60](#) For convenient transport, install the roller wheels the came with the system package. Each wheel has a brake lock to stabilize the chassis in place. To install the chassis wheels: 1. Lay the chassis in its side. 2. Locate the designated screw holes for each of the four wheel sets.

[Page 61](#) Chapter 3 This chapter describes how to install optional components into the barebone server and create your desired configuration. ASUS AP130-E1 barebone server...

[Page 62: Chapter 3: Installation Options](#)

The items required for the optional configurations described in this chapter are not included in the standard barebone system package. These items are purchased separately. Mounting the system to a rack Remove the footpads or roller wheels Refer to section “2.10.7 Chassis roller wheels and footpads” for instructions on removing the footpads or roller wheels.

[Page 63](#) Appendix This appendix gives information on the power supply that came with the barebone server. ASUS AP130-E1 barebone server...

[Page 64: General Description](#)

General description The server comes with a 350W ATX power supply with universal AC input that includes PFC and ATX-compliant output cables and connectors. The power supply has nine plugs labeled P1 to P10 (no P3). Take note of the devices to which you should connect the plugs.

[Page 65: Specifications](#)

80A max. @ 115 Vac, max. load cold start at 25°C Inrush Current 63% min. @ 115 Vac and max. load Output voltage regulation Output Voltage Min (A) Max (A) Surge* Ripple/Noise +3.33V 50mV 50mV +12V 120mV -12V 120mV 100mV +5VSB 50mV *15 seconds ASUS AP130-E1 barebone server...

[Page 66](#) Chapter 3: Installation options...