Asus Motherboard P5MT-M Product Manual

Asus motherboard product manual

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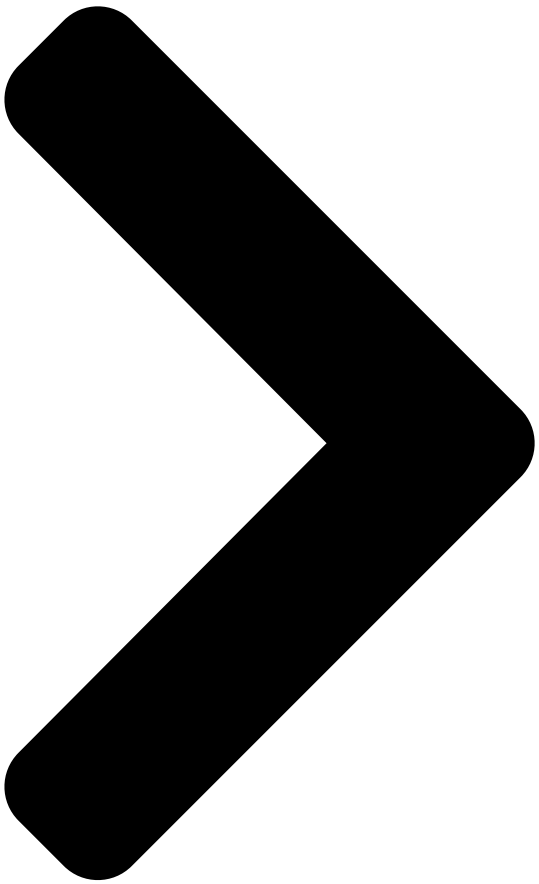

P5MT-M

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Motherboard Asus P5M2 User Manual

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Motherboard Asus P5Q PRO Turbo - Motherboard - ATX User Manual

User manual (124 pages)

Summary of Contents for Asus Motherboard P5MT-M

Page 1 P5MT-M...

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

Page 3: Table Of Contents

Product introduction Welcome! ... 1-1 Package contents ... 1-1 Special features ... 1-2 1.3.1

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Page 6: Notices

Notices Federal Communications Commission Statement Federal Communications Commission Statement Federal Communications Commission Statement Federal Communications Commission Statement 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 •...

Page 7: Safety Information

Safety information Electrical safety Electrical safety Electrical safety Electrical safety Electrical safety • To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system. • When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected.

Page 8: About This Guide

A S U S w e b s i t e s A S U S w e b s i t e s The ASUS website provides updated information on ASUS hardware and software products. Refer to the ASUS contact information.

Page 9 Conventions used in this guide Conventions used in this guide Conventions used in this guide Conventions used in this guide To make sure that you perform certain tasks properly, take note of the following symbols used throughout this manual. D A N G E R / W A R N I N G : D A N G E R / W A R N I N G : D A N G E R / W A R N I N G :...

Page 10: P5Mt-M Specifications Summary

- 4 x Serial ATA II hard disks with RAID 0, RAID 1, RAID 5, and RAID 10 configuration - Intel ® Matrix Storage Technology 1 x mini-PCI socket for ASUS ® RAGE-XL PCI-based VGA controller Dual Broadcom BCM5721 Gigabit LAN controller (PCI Express 1.0a specifications compliant) Intel ®...

Page 11 ASUS Update ASWM 2.0 *Specifications are subject to change without notice. x i x i x i x i x i...

Page 12 x i i x i i x i i x i i x i i...

Page 13 This chapter describes the motherboard features and the new technologies it supports. Product introduction...

Page 14: Chapter Summary

Chapter summary Welcome! ... 1-1 Package contents ... 1-1 Special features ... 1-2 A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M...

Page 15: Welcome

T h a n k y o u f o r b u y i n g a n A S U S The motherboard delivers a host of new features and latest technologies, making it another standout in the long line of ASUS quality motherboards! Before you start installing the motherboard, and hardware devices on it, check the items in your package with the list below.

Page 16: Special Features

Special features 1.3.1 1.3.1 1.3.1 Product highlights Product highlights Product highlights 1.3.1 1.3.1 Product highlights Product highlights Latest processor technology Latest processor

technology Latest processor technology Latest processor technology Latest processor technology The motherboard comes with a 775-pin surface mount Land Grid Array (LGA) socket designed for the Intel and the Intel ®...

Page 17 PCI Express™ interface PCI Express™ interface PCI Express™ interface PCI Express™ interface PCI Express™ interface The motherboard fully supports PCI Express, the latest I/O interconnect technology that speeds up the PCI bus. PCI Express features point-to-point serial interconnections between devices and allows higher clockspeeds by carrying data in packets.

Page 18: Innovative Asus Features

ASUS EZ Flash BIOS ASUS EZ Flash BIOS With the ASUS EZ Flash, you can easily update the system BIOS even before loading the operating system. No need to use a DOS-based utility or boot from a floppy disk. See page 4-2 for details.

Page 19 This chapter lists the hardware setup procedures that you have to perform when installing system components. It includes description of the jumpers and connectors on the motherboard. Hardware information...

Page 20 Chapter summary Before you proceed ... 2-1 Motherboard overview ... 2-2 Central Processing Unit (CPU) ... 2-6 System memory ... 2-13 Expansion slots ... 2-16 Jumpers ... 2-19 Connectors ... 2-24 A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M...

Page 21: Before You Proceed

Before you proceed Take note of the following precautions before you install motherboard components or change any motherboard settings. • Unplug the power cord from the wall socket before touching any component. • Use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity.

Page 22: Motherboard Overview

Motherboard overview Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it. Refer to the chassis documentation before installing the motherboard. Make sure to unplug the chassis power cord before installing or removing the motherboard.

Page 23: Motherboard Layout

2.2.3 2.2.3 Motherboard layout Motherboard layout 2.2.3 2.2.3 2.2.3 Motherboard layout Motherboard layout Motherboard layout KBPWR1 ATXPWR1 PS/2KBMS T: Mouse FM_CPU1 B: Keyboard REAR_FAN2 CPU_FAN1 USB12 USBPW12 PSUSMB1 COM1 LPT2 ® CMOS Power VGA1 DDR2 DIMM_A1 (64 bit,240-pin module) LAN1 DDR2 DIMM_A2 (64 bit,240-pin module) DDR2 DIMM_B1 (64 bit,240-pin module) LAN2...

Page 24: Layout Contents

2.2.4 2.2.4 Layout contents Layout contents 2.2.4 2.2.4 2.2.4 Layout contents Layout contents Layout contents S l o t s S l o t s S l o t s S l o t s S l o t s 1.

Page 25 I n t e r n a l c o n n e c t o r s I n t e r n a l c o n n e c t o r s I n t e r n a l c o n n e c t o r s I n t e r n a l c o n n e c t o r s I n t e r n a l c o n n e c t o r s I n t e r n a l c o n n e c t o r s 1.

Page 26: Central Processing Unit (Cpu)

Contact your retailer immediately if the PnP cap is missing, or if you see any damage to the PnP cap/socket contacts/motherboard components. ASUS will shoulder the cost of repair only if the damage is shipment/ transit-related. •...

Page 27 Press the load lever with your thumb (A), then move it to the left (B) until it is released from the retention tab. R e t e n t i o n t a b R e t e n t i o n t a b R e t e n t i o n t a b R e t e n t i o n t a b R e t e n t i o n t a b...

Page 28 Close the load plate (A), then push the load lever (B) until it snaps into the retention tab. The CPU fits in only one correct orientation. DO NOT force the CPU into the socket to prevent bending the connectors on the socket and damaging the CPU! Notes on Intel Notes on

Intel...

Page 29: Installing The Cpu Heatsink And Fan

2.3.2 2.3.2 Installing the CPU heatsink and fan Installing the CPU heatsink and fan 2.3.2 2.3.2 2.3.2 Installing the CPU heatsink and fan Installing the CPU heatsink and fan Installing the CPU heatsink and fan The Intel ® Pentium ® 4 LGA775 processor requires a specially designed heatsink and fan assembly to ensure optimum thermal condition and performance.

Page 30

Push down two fasteners at a time in a diagonal sequence to secure the heatsink and fan assembly in place. Connect the CPU fan cable to the connector on the motherboard labeled CPU_FAN1/CPU_FAN2. ® LAN2 P5MT-M CPU fan connectors • Do not forget to connect the CPU fan connector! Hardware monitoring errors can occur if you fail to plug this connector.

Page 31: Uninstalling The Cpu Heatsink And Fan

2.3.3 2.3.3 Uninstalling the CPU heatsink and fan Uninstalling the CPU heatsink and fan 2.3.3 2.3.3 2.3.3 Uninstalling the CPU heatsink and fan Uninstalling the CPU heatsink and fan Uninstalling the CPU heatsink and fan To uninstall the CPU heatsink and fan: Disconnect the CPU fan cable from the connector on the motherboard.

Page 32

Carefully remove the heatsink and fan assembly from the motherboard. Rotate each fastener clockwise to ensure correct orientation when reinstalling. The narrow end of the groove should point outward after resetting. (The photo shows the groove shaded for emphasis.) 2 - 1 2 2 - 1 2 2 - 1 2 2 - 1 2...

Page 33: System Memory

System memory 2.4.1 2.4.1 2.4.1 Overview Overview Overview 2.4.1 2.4.1 Overview Overview The motherboard comes with four Double Data Rate 2 (DDR2) Dual Inline Memory Modules (DIMM) sockets. A DDR2 module has the same physical dimensions as a DDR DIMM but has a 240-pin footprint compared to the 184-pin DDR DIMM.

Page 34

Recommended memory configurations Recommended memory configurations Recommended memory configurations Recommended memory configurations Recommended memory configurations M o d e M o d e M o d e M o d e M o d e Single-channel Dual-channel* * U s e o n l y i d e n t i c a l D D R 2 D I M M p a i r s . * U s e o n l y i d e n t i c a l D D R 2 D I M M p a i r s .

Page 35: Installing A Dimm

2.4.3 2.4.3 Installing a DIMM Installing a DIMM 2.4.3 2.4.3 2.4.3 Installing a DIMM Installing a DIMM Installing a DIMM Unplug the power supply before adding or removing DIMMs or other system components. Failure to do so can cause severe damage to both the motherboard and the components.

Page 36: Expansion Slots

Expansion slots In the future, you may need to install expansion cards. The following sub-sections describe the slots and the expansion cards that they support. Make sure to unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage motherboard components.

Page 37: Interrupt Assignments

2.5.3 2.5.3 Interrupt assignments Interrupt assignments 2.5.3 2.5.3 2.5.3 Interrupt assignments Interrupt assignments Interrupt assignments Standard interrupt assignments Standard interrupt assignments Standard interrupt assignments Standard interrupt assignments Standard interrupt assignments I R Q I R Q P r i o r i t y P r i o r i t y I R Q I R Q...

Page 38: Pci Express X8 Slots

2.5.4 2.5.4 PCI Express x8 slots PCI Express x8 slots 2.5.4 2.5.4 2.5.4 PCI Express x8 slots PCI Express x8 slots PCI Express x8 slots This motherboard supports PCI Express x8 network cards, SCSI cards, and other cards that comply with PCI Express 1.0 specifications.

Page 39: Jumpers

Jumpers 1 . 1 . C l e a r R T C R A M (C L R T C 1) C l e a r R T C R A M (C L R T C 1) C l e a r R T

CRAM(CLRTC1)ClearRTCRAM(CLRTC1)ClearRTCRAM(CLRTC1)

Page 40 2.2.CPUfanpinselection(3-pinFM_CPU1,FM_CPU2)CPUfanpinselection(3-pinFM_CPU1,FM_CPU2)CPUfanpinselection(3-pinFM_CPU1,FM_CPU2)CPUfanpinselection(3-pinFM_CPU1,FM_CPU2)

Page 41 4.4.Keyboardpower(3-pinKBPWR1)Keyboardpower(3-pinKBPWR1)Keyboardpower(3-pinKBPWR1)Keyboardpower(3-pinKBPWR1)Keyboardpower(3-pinKBPWR1)

Page 42 6.6.GigabitLANcontrollersetting(3-pinLAN_EN2)GigabitLANcontrollersetting(3-pinLAN_EN2)GigabitLANcontrollersetting(3-pinLAN_EN2)GigabitLANcontrollersetting(3-pinLAN_EN2)

Page 43 8.8.BIOSrecovery(3-pinRECOVERY1)BIOSrecovery(3-pinRECOVERY1)BIOSrecovery(3-pinRECOVERY1)BIOSrecovery(3-pinRECOVERY1)BIOSrecovery(3-pinRECOVERY1)

Page 44: Connectors

Connectors 2.7.1 2.7.1 2.7.1 Rear panel connectors Rear panel connectors Rear panel connectors 2.7.1 2.7.1 Rear panel connectors Rear panel connectors 1.1.PS/2mouseport(green).PS/2mouseport(green).

Page 45: Internal Connectors

2.7.2 2.7.2 Internal connectors Internal connectors 2.7.2 2.7.2 2.7.2 Internal connectors Internal connectors Internal connectors 1.1.Floppydiskdriveconnector(34-1pinFLOPPY1)Floppydiskdriveconnector(34-1pinFLOPPY1)Floppydiskdriveconnector(34-1pinFLOPPY1)Floppydiskdriveconnector(34-1pinFLOPPY1)

Page 46 3.3.IDEconnector(40-1pinPRI_IDE1)IDEconnector(40-1pinPRI_IDE1)IDEconnector(40-1pinPRI_IDE1)IDEconnector(40-1pinPRI_IDE1)IDEconnector(40-1pinPRI_IDE1)

Page 47 4.4.SerialATAconnectors(7-pinSATA1,SATA2,SATA3,SerialATAconnectors(7-pinSATA1,SATA2,SATA3,SerialATAconnectors(7-pinSATA1,SATA2,SATA3,SerialATAconnectors(7-pinSATA1,SATA2,SATA3,...

Page 48 5.5.CPUandsystemfanconnectors(4-pinCPU_FAN1/2,CPUandsystemfanconnectors(4-pinCPU_FAN1/2,CPUandsystemfanconnectors(4-pinCPU_FAN1/2,CPUandsystemfanconnectors(4-pinCPU_FAN1/2,...

Page 49 7.7.USBconnector(10-1pinUSB34,USB56,USB78)USBconnector(10-1pinUSB34,USB56,USB78)USBconnector(10-1pinUSB34,USB56,USB78)USBconnector(10-1pinUSB34,USB56,USB78)

Page 50: Power Connectors

9.9.SSISSI power connectors power connectors SSISSISSI power connectors power connectors power connectors (24-pin ATXPWR1, (24-pin ATXPWR1, (24-pin ATXPWR1, (24-pin ATXPWR1, (24-pin ATXPWR1, 4 4 4 4 4- pin These connectors are for SSI power supply plugs.

Page 51 10.10.BackplaneSMBusconnector(6-1pinBPSMB1)BackplaneSMBusconnector(6-1pinBPSMB1)10.

Page 52 BMCconnector(16-pinBMCCONN1)BMCconnector(16-pinBMCCONN1) This connector is for an ASUS server management card. ®...

Page 53 14.14.Auxiliarypanelconnector(20-pinAUX_PANEL1)Auxiliarypanelconnector(20-pinAUX_PANEL1)14.

Page 54 15.15.Systempanelconnector(20-pinPANEL1)Systempanelconnector(20-pinPANEL1)15.

Page 55 This chapter describes the power up sequence, the vocal POST messages, and ways of shutting down the system. Powering up...

Page 56 Chapter summary Starting up for the first time ... 3-1 TUrning off the computer ... 3-2 A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M...

Page 57: Starting Up For The First Time

Starting up for the first time After making all the connections, replace the system case cover. Be sure that all switches are off. Connect the power cord to the power connector at the back of the system chassis. Connect the power cord to a power outlet that is equipped with a surge protector.

Page 58: Turning Off The Computer

Turning off the computer 3.2.1 3.2.1 3.2.1 Using the OS shut down function Using the OS shut down function Using the OS shut down function 3.2.1 3.2.1 Using the OS shut down function Using the OS shut down function If you are using Windows Click the S t a r t S t a r t S t a r t...

Page 59: Chapter 4: 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. BIOS setup...

Page 60 Chapter summary Managing and updating your BIOS ... 4-1 BIOS setup program ... 4-11 Main menu ... 4-14 Advanced menu ... 4-19 Power menu ... 4-27 Boot menu ... 4-31 Exit menu ... 4-35 A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M...

Page 61: Managing And Updating Your Bios

Refer to the corresponding sections for details on these utilities. Save a copy of the original motherboard BIOS file to a bootable floppy disk in case you need to restore the BIOS in the future. Copy the original motherboard BIOS using the ASUS Update or AFUDOS utilities. 4.1.1 4.1.1 4.1.1...

Page 62: Asus Ez Flash Utility

ASUS EZ Flash utility ASUS EZ Flash utility The ASUS EZ Flash feature allows you to update the BIOS without having to go through the long process of booting from a floppy disk and using a DOS-based utility. The EZ Flash utility is built-in the BIOS chip so it is accessible by pressing <Alt>...

Page 63: Afudos Utility

EZFlash starting BIOS update Checking for floppy... Floppy found! Reading file “P5MT-M.ROM”. Completed. Start erasing...| Start programming...| Flashed successfully. Rebooting. • Do not shut down or reset the system while updating the BIOS to prevent system boot failure! • A “Floppy not found!” error message appears if there is no floppy disk in the drive.

Page 64 Updating the BIOS file To update the BIOS file using the AFUDOS utility: Visit the ASUS website (www.asus.com) and download the latest BIOS file for the motherboard. Save the BIOS file to a bootable floppy disk. Write the BIOS filename on a piece of paper. You need to type the exact BIOS filename at the DOS prompt.

Page 65 The utility verifies the file and starts updating the BIOS. A:\>afudos /iP5MT-M.ROM /pbnc AMI Firmware Update Utility - Version 1.19(ASUS V2.07(03.11.24BB)) Copyright (C) 2002 American Megatrends, Inc. All rights reserved. WARNING!! Do not turn off power during flash BIOS Reading file ... done Reading flash ...

Page 66: Asus Crashfree Bios 2 Utility

ASUS CrashFree BIOS 2 utility ASUS CrashFree BIOS 2 utility The ASUS CrashFree BIOS 2 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 the motherboard support CD or the floppy disk that contains the updated BIOS file.

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Restart the system after the utility completes the updating process. The recovered BIOS may not be the latest BIOS version for this motherboard. Visit the ASUS website (www.asus.com) to download the latest BIOS file. A S U S P 5 M T - M...

Page 68: Asus Update Utility

4.1.5 4.1.5 ASUS Update utility ASUS Update utility ASUS Update utility The ASUS Update is a utility that allows you to manage, save, and update the motherboard BIOS in Windows allows you to: • Save the current BIOS file •...

Page 69

Updating the BIOS through the Internet Updating the BIOS through the Internet To update the BIOS through the Internet: Launch the ASUS Update utility from the Windows S t a r t S t a r t P r o g r a m s P r o g r a m s S t a r t >...

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A S U S U p d a t e A S U S U p d a t e A S U S U p d a t e. The ASUS Update main window appears. A S U S U p d a t e...

Page 71: Bios Setup Program

• Visit the ASUS website (www.asus.com) to download the latest BIOS file for this motherboard. A S U S P 5 M T - M A S U S P 5 M T - M...

Page 72: Bios Menu Screen

C o n f i g u r a t i o n f i e l d s [16:37:21] [Wed,06/01/2005] [1.44M, 3.5 in.] [ST320410A] [ASUS CD-S520/A] [Not Detected] [Not Detected] [Not Detected] [Not Detected] C h a p t e r 4 : B I O S s e t u p...

Page 73: Menu Items

System Date [Wed, 06/01/2005] Legacy Diskette A [1.44M, 3.5 in] Primary IDE Master : [ST320410A] Primary IDE Slave : [ASUS CD-S520/A] Third IDE Master : [Not Detected] Third IDE Slave : [Not Detected] Fourth IDE Master : [Not Detected] Fourth IDE Slave...

Page 74: Main Menu

4 - 1 4 4 - 1 4 4 - 1 4 [16:37:21] [Mon,10/02/2004] [1.44M, 3.5 in.] : [ST320410A] : [ASUS CD-S520/A] : [Not Detected] : [Not Detected] : [Not Detected] : [Not Detected] Use [ENTER], [TAB] or [SHIFT-TAB] to select a field.

Page 75: Primary, Third, And Fourth Ide Master/Slave

4.3.4 4.3.4 4.3.4 4.3.4 4.3.4 Primary, Third, and Fourth IDE Master/Slave Primary, Third, and Fourth IDE Master/Slave Primary, Third, and Fourth IDE Master/Slave Primary, Third, and Fourth IDE Master/Slave Primary, Third, and Fourth IDE Master/Slave While entering Setup, the BIOS automatically detects the presence of IDE devices.

Page 76: Ide Configuration

PIO Mode [Auto] PIO Mode [Auto] PIO Mode [Auto] PIO Mode [Auto] PIO Mode [Auto] Selects the PIO mode. Configuration options: [Auto] [0] [1] [2] [3] [4] DMA Mode [Auto] DMA Mode [Auto] DMA Mode [Auto] DMA Mode [Auto] DMA Mode [Auto] Allows the BIOS to automatically select the DMA mode.

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O n b o a r d I D E O p e r a t e M o d e O n b o a r d I D E O p e r a t e M o d e If the O n b o a r d I D E O p e r a t e M o d e O n b o a r d I D E O p e r a t e M o d e is set to [Compatible], you can O n b o a r d I D E O p e r a t e M o d e...

Page 78: System Information

4.3.6 4.3.6 4.3.6 4.3.6 4.3.6 System Information System Information System Information System Information System Information This menu gives you an overview of the general system

specifications. The BIOS automatically detects the items in this menu. AMIBIOS Version : 08.00.11 Build Date : 03/21/05 Processor Type : Genuine Intel(R) CPU 3.20 GHz...

Page 79: 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. USB Configuration MPS Configuration Remote Access Configuration CPU Configuration...

Page 80: Mps Configuration

USB Function [8 USB Ports] USB Function [8 USB Ports] USB Function [8 USB Ports] USB Function [8 USB Ports] USB Function [8 USB Ports] Allows you to disable or set the USB host controllers. Configuration options: [Disabled] [2 USB Ports] [4 USB Ports] [6 USB Ports] [8 USB Ports] Legacy USB Support [Enabled] Legacy USB Support [Enabled]...

Page 81: Remote Access Configuration

4.4.3 4.4.3 4.4.3 4.4.3 4.4.3 Remote Access Configuration Remote Access Configuration Remote Access Configuration Remote Access Configuration Remote Access Configuration The items in this menu allow you to configure the Remote Access features. Select an item then press <Enter> to display the configuration options. Configure Remote Access type and parameters Remote Access Remote Access [Disabled]...

Page 82: Cpu Configuration

VT-UTF8 Combo Key Support [Enabled] VT-UTF8 Combo Key Support [Enabled] VT-UTF8 Combo Key Support [Enabled] VT-UTF8 Combo Key Support [Enabled] VT-UTF8 Combo Key Support [Enabled] Enables or disables the VT-UTF8 combo key support for ANSI or VT100 terminals. Configuration options: [Disabled] [Enabled] 4.4.4 4.4.4 CPU Configuration...

Page 83: Chipset

Adjacent Cache Line Prefetch [Enabled] Adjacent Cache Line Prefetch [Enabled] Adjacent Cache Line Prefetch [Enabled] Adjacent Cache Line Prefetch [Enabled] Adjacent Cache Line Prefetch [Enabled] Allows you to enable or disable the adjacent cache line prefetch feature. Configuration options: [Disabled] [Enabled] CPU Internal Thermal Control [Auto] CPU Internal Thermal Control [Auto] CPU Internal Thermal Control [Auto]...

Page 84

Configure DRAM Timing by SPD [Enabled] Configure DRAM Timing by SPD [Enabled] Configure DRAM Timing by SPD [Enabled] Configure DRAM Timing by SPD [Enabled] Configure DRAM Timing by SPD [Enabled] When this item is enabled, the DRAM timing parameters are set according to the DRAM SPD (Serial Presence Detect).

Page 85: Onboard Devices Configuration

4.4.6 4.4.6 Onboard Devices Configuration Onboard Devices Configuration 4.4.6 4.4.6 4.4.6 Onboard Devices Configuration Onboard Devices Configuration Onboard Devices Configuration Configure Win627EHF Super IO Chipset Serial Port1 Address Serial Port2 Address Serial Port2 Mode Parallel Port Address Parallel Port Mode ECP Mode DMA Channel Parallel Port IRQ Serial Port1 Address [3F8/IRQ4]...

Page 86: Pci Pnp

4.4.7 4.4.7 4.4.7 PCI PnP PCI PnP PCI PnP 4.4.7 4.4.7 PCI PnP PCI PnP The PCI PnP menu items allow you to change the advanced settings for PCI/PnP devices. The menu includes setting IRQ and DMA channel resources for either PCI/PnP or legacy ISA devices, and setting the memory size block for legacy ISA devices.

Page 87: Power Menu

IRQ-xx assigned to [PCI Device] IRQ-xx assigned to [PCI Device] IRQ-xx assigned to [PCI Device] IRQ-xx assigned to [PCI Device] IRQ-xx assigned to [PCI Device] When set to [PCI Device], the specific IRQ is free for use of PCI/PnP devices. When set to [Reserved], the IRQ is reserved for legacy ISA devices.

Page 88: Apm Configuration

4.5.2 4.5.2 4.5.2 4.5.2 4.5.2 APM Configuration APM Configuration APM Configuration APM

Configuration APM Configuration APM Configuration Restore on AC Power Loss Resume On RTC Alarm Power On By PS/2 Keyboard Power On By PS/2 Mouse Power On Ring Power On By PCI Devices Keyboard Wakeup Password : Not Installed Restore on AC Power Loss [Last State] Restore on AC Power Loss [Last State]...

Page 89: Hardware Monitor

Power On By PCI Devices [Disabled] Power On By PCI Devices [Disabled] Power On By PCI Devices [Disabled] Power On By PCI Devices [Disabled] Power On By PCI Devices [Disabled] When set to [Enabled], this parameter allows you to turn on the system through a PCI LAN or modem card.

Page 90

Smart Fan Control [Disabled] Smart Fan Control [Disabled] Smart Fan Control [Disabled] Allows you to enable or disable the ASUS Smart Fan feature that smartly adjusts the fan speeds for more efficient system operation. Configuration options: [Disabled] [Enabled] When S m a r t F a n C o n t r o l...

Page 91: Boot Menu

A S U S P 5 M T - M A S U S P 5 M T - M [1st FLOPPY DRIVE] [PM-ST320410A] [PS-ASUS CD-S520/A] [MBA v7.6.6 Slot 03] [MBA v7.6.6 Slot 02] Specifies the Boot Device Boot Priority sequence.

Page 92: Boot Settings Configuration

Full Screen Logo [Enabled] This allows you to enable or disable the full screen logo display feature. Configuration options: [Disabled] [Enabled] Set this item to [Enabled] to use the ASUS MyLogo2™ feature. AddOn ROM Display Mode [ForceBIOS] AddOn ROM Display Mode [ForceBIOS]...

Page 93: Security

Hit ‘DEL’ Message Display [Enabled] Hit ‘DEL’ Message Display [Enabled] Hit ‘DEL’ Message Display [Enabled] Hit ‘DEL’ Message Display [Enabled] Hit ‘DEL’ Message Display [Enabled] When set to Enabled, the system displays the message “Press DEL to run Setup” during POST. Configuration options: [Disabled] [Enabled] Interrupt 19 Capture [Enabled] Interrupt 19 Capture [Enabled] Interrupt 19 Capture [Enabled]...

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If you forget your BIOS password, you can clear it by erasing the CMOS Real Time Clock (RTC) RAM. See section “2.6 Jumpers” for information on how to erase the RTC RAM. After you have set a supervisor password, the other items appear to allow you to change other security settings.

Page 95: Exit Menu

The message “Password Installed” appears after you set your password successfully. To change the user password, follow the same steps as in setting a user password. Clear User Password Clear User Password Clear User Password Clear User Password Clear User Password Select this item to clear the user password.

Page 96

Exit & Save Changes Exit & Save Changes Exit & Save Changes Exit & Save Changes Exit & Save Changes Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. An onboard backup battery sustains the CMOS RAM so it stays on even when the PC is turned off.

Page 97: Chapter 5: Raid Support

This chapter provides information on RAID configurations for this motherboard. RAID support...

Page 98

Chapter summary RAID configurations ... 5-1 A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M...

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RAID configurations The server system/motherboard comes with the I n t e l L S I L o g i c E m b e d d e d S A T A R A I D L S I L o g i c E m b e d d e d S A T A R A I D technology built-in the Intel L S I L o g i c E m b e d d e d S A T A R A I D L S I L o g i c E m b e d d e d S A T A R A I D L S I L o g i c E m b e d d e d S A T A R A I D...

Page 100: Raid Configuration

5.1.2 5.1.2 Installing Serial ATA hard disks Installing Serial ATA hard disks 5.1.2 5.1.2 Installing Serial ATA hard disks 5.1.2 Installing Serial ATA hard disks Installing Serial ATA hard disks The motherboard supports Serial ATA hard disk drives. For optimal performance, install identical drives of the same model and capacity when creating a disk array.

Page 101 Intel Intel ® ® ® ® ® Matrix Storage Manager Option ROM Utility Matrix Storage Manager Option ROM Utility Intel Intel Intel Matrix Storage Manager Option ROM Utility Matrix Storage Manager Option ROM Utility Matrix Storage Manager Option ROM Utility The Intel ®...

Page 102 Creating a RAID 0 set (striped) Creating a RAID 0 set (striped) Creating a RAID 0 set (striped) Creating a RAID 0 set (striped) Creating a RAID 0 set (striped) To create a RAID 0 set: From the utility main menu, select 1 . C r e a t e R A I D V o l u m e press <Enter>.

Page 103 Use the up/down arrow key to select the stripe size for the RAID 0 array, then press <Enter>. The available stripe size values range from 4 KB to 128 KB. The default stripe size is 128 KB. T I P : T I P : T I P : T I P : We recommend a lower stripe size for server systems, and a higher...

Page 104 Creating a RAID 1 set (mirrored) Creating a RAID 1 set (mirrored) Creating a RAID 1 set (mirrored) Creating a RAID 1 set (mirrored) Creating a RAID 1 set (mirrored) To create a RAID 1 set: From the utility main menu, select 1 . C r e a t e R A I D V o l u m e press <Enter>.

Page 105 Creating a RAID 10 set (RAID 0+1) Creating a RAID 10 set (RAID 0+1) Creating a RAID 10 set (RAID 0+1) Creating a RAID 10 set (RAID 0+1) Creating a RAID 10 set (RAID 0+1) To create a RAID 10 set: From the utility main menu, select 1 .

Page 106 Press <Enter> when the C r e a t e V o l u m e warning message appears. WARNING: ALL DATA ON SELECTED DISKS WILL BE LOST. Are you sure you want to create this volume? (Y/N): Press <Y> to create the RAID volume and return to the main menu or <N>...

Page 107 The Disks item is highlighted, press <Enter> to select the hard disk drives to configure as RAID. The following pop-up screen appears. Port Drive Model 0 XXXXXXXXXXXX 1 XXXXXXXXXXXX 2 XXXXXXXXXXXX 3 XXXXXXXXXXXX Select 2 to 4 disks to use in creating the volume. ↑↓...

Page 108 Deleting a RAID set Deleting a RAID set Deleting a RAID set Deleting a RAID set Deleting a RAID set Take caution when deleting a RAID set. You will lose all data on the hard disk drives when you delete a RAID set. To delete a RAID set: From the utility main menu, select 2 .

Page 109 Resetting Disks to Non-RAID Resetting Disks to Non-RAID Resetting Disks to Non-RAID Resetting Disks to Non-RAID Resetting Disks to Non-RAID Take caution before you reset a RAID volume HDD to non-RAID. Resetting a RAID volume HDD deletes all internal RAID structure on the drive. To reset a RAID set hard disk drive: From the utility main menu, select 3 .

Page 110 Resetting a RAID set hard disks drive Resetting a RAID set hard disks drive Resetting a RAID set hard disks drive Resetting a RAID set hard disks drive Resetting a RAID set hard disks drive Take caution before you reset a RAID volume HDD to non-RAID. Resetting a RAID volume HDD deletes all internal RAID structure on the drive.

Page 111: Lsi Logic Embedded Sata Raid Setup Utility

5.1.4 5.1.4 LSI Logic Embedded SATA RAID Setup Utility LSI Logic Embedded SATA RAID Setup Utility 5.1.4 5.1.4 5.1.4 LSI Logic Embedded SATA RAID Setup Utility LSI Logic Embedded SATA RAID Setup Utility LSI Logic Embedded SATA RAID Setup Utility The LSI Logic Embedded SATA RAID Setup Utility allows you to create RAID 0, RAID 1, and RAID 10 set(s) from SATA hard disk drives connected to the SATA connectors supported by the motherboard Southbridge chip.

Page 112 The utility main window appears. Use the arrow keys to select an option from the M a n a g e m e n t M e n u the Management Menu descriptions below. At the bottom of the screen is the legend box. The keys on the legend box allow you to navigate through the setup menu options or execute commands.

Page 113 Using Easy Configuration To create a RAID set using the E a s y C o n f i g u r a t i o n From the utility main menu, highlight C o n f i g u r e Use the arrow keys to select E a s y C o n f i g u r a t i o n <Enter>.

Page 114 Select all the drives required for the RAID set, then press <Enter>. The configurable array appears on screen. Press <F10>, select the configurable array, then press <SpaceBar>. The logical drive information appears including a Logical Drive menu that allows you to change the logical drive parameters. 5 - 1 6 5 - 1 6 5 - 1 6...

Page 115 R A I D R A I D Select R A I D R A I D R A I D from the L o g i c a l D r i v e Select the RAID level from the menu, then press <Enter>. You need at least two identical hard disk drives when creating a RAID 1 set.

Page 116 10. When finished setting the selected logical drive configuration, select A c c e p t A c c e p t A c c e p t A c c e p t A c c e p t from the menu, then press <Enter>. 11.

Page 117 Using New Configuration When a RAID set is already existing, using the N e w C o n f i g u r a t i o n command erases the existing RAID configuration data. If you do not want to delete the existing RAID set, use the V i e w / A d d C o n f i g u r a t i o n command to view or create another RAID configuration.

Page 118 Adding or viewing a RAID configuration Adding or viewing a RAID configuration Adding or viewing a RAID configuration Adding or viewing a RAID configuration Adding or viewing a RAID configuration You can add a new RAID configuration or view an existing configuration V i e w / A d d C o n f i g u r a t i o n V i e w / A d d C o n f i g u r a t i o n using the V i e w / A d d C o n f i g u r a t i o n...

Page 119 Select all the drives required for the RAID set, then press <Enter>. The configurable array appears on screen. Press <F10>, select the configurable array, then press <SpaceBar>. The logical drive information appears including a Logical Drive menu that allows you to change the logical drive parameters. A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M...

Page 120 Follow steps 6 to 7 of the C r e a t i n g a R A I D s e t : U s i n g E a s y C o n f i g u r a t i o n C o n f i g u r a t i o n section.

Page 121 Initializing the logical drives Initializing the logical drives Initializing the logical drives Initializing the logical drives Initializing the logical drives After creating the RAID set(s), you must initialize the logical drives. You may initialize the logical drives of a RAID set(s) using the I n i t i a l i z e O b j e c t s O b j e c t s O b j e c t s...

Page 122 When prompted, press the <SpaceBar> to select Y e s I n i t i a l i z e ? I n i t i a l i z e ? I n i t i a l i z e ? I n i t i a l i z e ? I n i t i a l i z e ? dialog box, then press <Enter>.

Page 123 When initialization is completed, press <Esc>. Using the Objects command To initialize the logical drives using the O b j e c t s From the Management Menu, highlight O b j e c t s A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M...

Page 124 L o g i c a l D r i v e L o g i c a l D r i v e Select L o g i c a l D r i v e L o g i c a l D r i v e from the O b j e c t s L o g i c a l D r i v e <Enter>.

Page 125 When prompted, press the <SpaceBar> to select Y e s I n i t i a l i z e ? I n i t i a l i z e ? I n i t i a l i z e ? dialog box, then press <Enter>. You may also press I n i t i a l i z e ? I n i t i a l i z e ? <F10>...

Page 126 Rebuilding failed drives Rebuilding failed drives Rebuilding failed drives Rebuilding failed drives Rebuilding failed drives You can manually rebuild failed hard disk drives using the R e b u i l d O b j e c t s O b j e c t s O b j e c t s O b j e c t s command in the Management Menu.

Page 127 After selecting the drive to rebuild, press <F10>. The indicator for the selected drive now shows R B L D When prompted, press <Y> to to rebuild the drive. When rebuild is complete, press any key to continue. Using the Objects command To rebuild a failed hard disk

drive using the O b j e c t s From the Management Menu, select O b j e c t s D r i v e...

Page 128 Checking the drives for data consistency Checking the drives for data consistency Checking the drives for data consistency Checking the drives for data consistency Checking the drives for data consistency You can check and verify the accuracy of data redundancy in the selected logical drive.

Page 129 When prompted, press the <SpaceBar> to select Y e s C o n s i s t e n c y C h e c k C o n s i s t e n c y C h e c k C o n s i s t e n c y C h e c k dialog box, then press <Enter>.

Page 130 Using the Objects command To check data consistency using the O b j e c t s From the Management Menu, select O b j e c t s D r i v e D r i v e D r i v e D r i v e D r i v e from the menu.

Page 131 Deleting a RAID configuration Deleting a RAID configuration Deleting a RAID configuration Deleting a RAID configuration Deleting a RAID configuration To delete a RAID configuration: From the Management Menu, select C o n f i g u r e C o n f i g u r a t i o n C o n f i g u r a t i o n C o n f i g u r a t i o n, then press <Enter>.

Page 132 Selecting the boot drive from a RAID set Selecting the boot drive from a RAID set Selecting the boot drive from a RAID set Selecting the boot drive from a RAID set Selecting the boot drive from a RAID set You must have created a new RAID configuration before you can select the boot drive from a RAID set.

Page 133 This chapter provides information on RAID, LAN and VGA driver installation for this motherboard. Driver installation...

Page 134 Chapter summary RAID driver installation ... 6-1 LAN driver installation ... 6-7 VGA driver installation ... 6-11 A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M...

Page 135: 6.1 Raid Driver Installation

6.1 RAID driver installation 6.1.1 6.1.1 6.1.1 Creating a RAID driver disk Creating a RAID driver disk Creating a RAID driver disk Creating a RAID driver disk 6.1.1 6.1.1 Creating a RAID driver disk A floppy disk with the RAID driver is required when installing Windows 2000/XP operating system on a hard disk drive that is included in a RAID set.

Page 136 Windows Windows ® ® ® ® ® 2000/2003 Server 2000/2003 Server Windows Windows Windows 2000/2003 Server 2000/2003 Server 2000/2003 Server To create a RAID driver disk in Windows Restart the system from the hard disk drive, then place the system/ motherboard support CD in the optical drive.

Page 137: Installing The Intel ® Ich7R Raid Controller Driver

6.1.2 .2 .2 .2 .2 Installing the Intel Installing the Intel Installing the Intel Installing the Intel Installing the Intel Windows Windows 2000/2003 Server OS 2000/2003 Server OS Windows Windows Windows ® ® ® ® ® 2000/2003 Server OS 2000/2003 Server OS 2000/2003 Server OS During Windows ®...

Page 138 Insert the Intel ® floppy disk drive, then press <Enter>. Select the I n t e l (R) 8 2 8 0 1 F R S A T A R A I D C o n t r o l l e r (D e s k t o p I n t e l (R) 8 2 8 0 1 F R S A T A R A I D C o n t r o l l e r (D e s k t o p I n t e l (R) 8 2 8 0 1 F R S A T A R A I D C o n t r o l l e r (D e s k t o p I n t e l (R) 8 2 8 0 1 F R S A T A R A I D C o n t r o l l e r (D e s k t o p...

Page 139 To an existing Windows To install the Intel ® ICH7R RAID controller driver on an existing Windows ® 2000/2003 Server OS: Restart the computer, then log on with A d m i n i s t r a t o r Windows ®...

Page 140 F i n i s h F i n i s h 11. Click F i n i s h F i n i s h F i n i s h after the driver installation is done. To verify the Intel ®...

Page 141: 6.2 Lan Driver Installation

6.2 LAN driver installation This section provides instructions on how to install the Broadcom LAN

controller drivers. 6.2.1 6.2.1 Windows 6.2.1 Windows Windows Windows ® ® ® ® ® 2000/2003 Server 2000/2003 Server 2000/2003 Server 6.2.1 6.2.1 Windows 2000/2003 Server 2000/2003 Server To install the Broadcom ®...

Page 142 N e x t N e x t Click N e x t N e x t when the InstallShield Wizard window appears. Follow N e x t screen instructions to continue installation. 6 - 8 6 - 8 6 - 8 6 - 8 6 - 8 C h a p t e r 6 : D...

Page 143 6.2.2 6.2.2 Red Hat Red Hat ® ® ® ® ® Linux 9.0 Linux 9.0 6.2.2 6.2.2 Red Hat 6.2.2 Red Hat Red Hat Linux 9.0 Linux 9.0 Linux 9.0 Follow these instructions when installing the Broadcom controller base driver for the Red Hat system.

Page 144 Building the driver from the TAR file Building the driver from the TAR file Building the driver from the TAR file Building the driver from the TAR file Building the driver from the TAR file To build the driver from the TAR file: Create a directory and extract the TAR files: tar xvzf bcm5700-<version>.tar.gz Build the driver bcm5700.o as a loadable module for the running...

Page 145: 6.3 Vga Driver Installation

6.3 VGA driver installation This section provides instructions on how to install the ATI Graphics Adapter (VGA) driver. 6.3.1 6.3.1 Windows 6.3.1 Windows Windows Windows ® ® ® ® ® 2000 Server 2000 Server 2000 Server 6.3.1 6.3.1 Windows 2000 Server 2000 Server You need to manually install the ATI 2000 Server operating system.

Page 146: Windows ® 2003 Server

6.3.2 6.3.2 Windows Windows 6.3.2 6.3.2 Windows 6.3.2 Windows Windows The Windows ® 2003 Server operating system automatically recognizes the ® RAGE XL VGA driver during system installation. There is no need to install an additional driver(s) to support the onboard VGA. Verifying the VGA driver installation Verifying the VGA driver installation Verifying the VGA driver installation...

Page 147 The appendix includes additional information that you may refer to when configuring the motherboard. Reference information...

Page 148 Appendix summary P5MT-M block diagram ... A-1 A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M A S U S P 5 M T - M...

Page 149: P5Mt-M Block Diagram

P5MT-M block diagram Intel ® Pentium ® Processor Extreme Smithfield/Cendar Mill Edition/Intel ® Pentium ® D/Celeron ® Processor with 800/1066MHz system bus with 800/1066 MHz system bus 2x DDR2 533/667 DIMM Slots Northbridge ® Intel Mukilteo 2x DDR2 533/667 DIMM Slots PCI-E PCI-E Southbridge...

Page 150 A - 2 A - 2 A - 2 A - 2 A - 2 A p p e n d i x A : R e f e r e n c e i n f o r m a t i o n A p p e n d i x A : R e f e r e n c e i n f o r m a t i o n A p p e n d i x A : R e f e r e n c e i n f o r m a t i o n A p p e n d i x A : R e f e r e n c e i n f o r m a t i o n...

This manual is also suitable for:

P5mt

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