



Asus M4A87T PLUS User Manual

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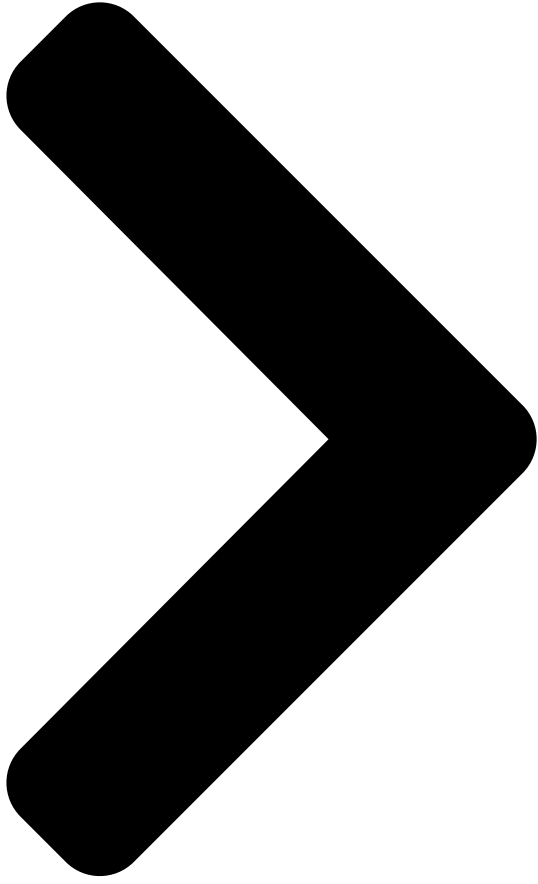
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Summary of Contents for Asus M4A87T PLUS

[Page 1](#) M4A87T PLUS...

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

[Page 3: Table Of Contents](#)

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[Page 6: Notices](#)

Complying with the REACH (Registration, Evaluation, Authorisation, and Restriction of Chemicals) regulatory framework, we published the chemical substances in our products at ASUS REACH website at <http://csr.asus.com/english/REACH.htm>. DO NOT throw the motherboard in municipal waste. This product has been designed to enable proper reuse of parts and recycling.

[Page 7: Safety Information](#)

Safety information Electrical safety • To prevent electric shock hazard, disconnect the power cable from the electric outlet before relocating the system. • When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.

[Page 8: Conventions Used In This Guide](#)

Refer to the following sources for additional information and for product and software updates. ASUS websites The ASUS website provides updated information on ASUS hardware and software products. Refer to the ASUS contact information. Optional documentation Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer.

[Page 9: M4A87T Plus Specifications Summary](#)

DDR3 1066MHz. With ASUS design, this motherboard can support up to DDR3 1333MHz. ** Refer to www.asus.com for the latest Memory QVL (Qualified Vendors List). *** When you install a total memory of 4GB or more, Windows ®...

[Page 10](#) 1 x 24-pin EATX power connector 1 x 4-pin ATX 12V power connector BIOS 8Mb Flash ROM, AMI BIOS, PnP, DMI 2.0, WfM 2.0, ACPI 2.0a, SM BIOS 2.6, ASUS EZ Flash 2, ASUS CrashFree BIOS 3 Manageability WfM 2.0, WOR by PME, PXE Accessories...

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

Chapter 1 Product introduction Thank you for buying an ASUS M4A87T PLUS motherboard! ® Before you start installing the motherboard, and hardware devices on it, check the items in your motherboard package. Refer to page x for the list of accessories.

[Page 12: Motherboard Overview](#)

Place six screws into the holes indicated by circles to secure the motherboard to the chassis. DO NOT overtighten the screws! Doing so can damage the motherboard. Place this side towards the rear of the chassis. M4A87T PLUS Chapter 1: Product introduction...

[Page 13: Motherboard Layout](#)

CHA_FAN AUDIO ® AAFP 9LPRS483 Realtek RTL8111E PCIEX1_1 PCIEX16 M4A87T PLUS PCI1 Super ® SB850 PCI2 Lithium Cell CMOS Power PCI3 SATA6G_4 SATA6G_5 SATA6G_6 ALC887 PCI4 SATA6G_1 SATA6G_2 SATA6G_3 USB78 USB910 F_PANEL USBPW7-10 CLRTC BIOS CHASSIS SPEAKER ASUS M4A87T PLUS...

[Page 14: Layout Contents](#)

Installing the CPU To install a CPU: Locate the CPU socket on the motherboard. M4A87T PLUS M4A87T PLUS CPU socket AM3 Press the lever sideways to unlock the Socket lever socket, then lift it up to a 90°-100° angle. Ensure that the socket lever is lifted up to a 90°-100°...

[Page 15](#) Connect the CPU fan cable to the CPU_FAN connector on the motherboard. CPU_FAN M4A87T PLUS M4A87T PLUS CPU fan connector DO NOT forget to connect the CPU fan connector! Hardware monitoring errors can occur if you fail to plug this connector.

[Page 16: Installing The Heatsink And Fan](#)

1.3.2 Installing the heatsink and fan Ensure that you use only AMD-certified heatsink and fan assembly. To install the CPU heatsink and fan: Place the heatsink on top of the installed CPU, ensuring that the heatsink fits properly on the retention module base. •...

[Page 17: System Memory](#)

DDR2 DIMM socket. DDR3 modules are developed for better performance with less power consumption. The figure illustrates the location of the DDR3 DIMM sockets: Channel Sockets Channel A DIMM_A1 Channel B DIMM_B1 M4A87T PLUS M4A87T PLUS 240-pin DDR3 DIMM sockets ASUS M4A87T PLUS...

[Page 18: Memory Configurations](#)

• Due to CPU specification, AMD 100 and 200 series CPUs support up to DDR3 @ 1066MHz. With ASUS design, this motherboard can support up to DDR3 1333MHz. • Due to the memory address limitation on 32-bit Windows OS, when you install 4GB @...

[Page 19](#) • Micron MT16JTF25664AZ-1G4F1 DS Micron 9KF27D9KPT • • Micron MT18JSF25672AZ-1G4F1 DS Micron 91F22D9KPT(ECC) • • MICRON MT16JTF51264AZ-1G4D1 DS MICRON OLD22D9LGK • • 3GB(3 x OCZ3G1333LV3GK DS - 9-9-9-20 1.65V • • 1GB) (continued on the next page) ASUS M4A87T PLUS...

[Page 20](#) • A*: Supports one module inserted into either slot as single-channel memory configuration. • B*: Supports one pair of modules inserted into both the slots as one pair of dual-channel memory configuration. Visit the ASUS website at www.asus.com for the latest QVL. 1-10 Chapter 1: Product introduction...

[Page 21: Installing A Dimm](#)

DIMM slots, then secure them with screws. iCafe Memory Anti-theft The two plastic locks at both ends of the DIMM slots keep your DIMMs securely in place. This special design prevents easy pilfering of your memory modules. ASUS M4A87T PLUS 1-11...

[Page 22: Removing A Dimm](#)

1.4.4 Removing a DIMM To remove a DIMM: Remove the screws on the iCafe Memory Anti-theft locks. Put them aside for later use. Remove the iCafe Memory Anti-theft locks. Simultaneously press the retaining clips outward to unlock the DIMM. Support the DIMM lightly with your fingers when pressing the retaining clips.

[Page 23: Expansion Slots](#)

This motherboard supports PCI Express x1 network cards, SCSI cards, and other cards that comply with the PCI Express specifications. 1.5.5 PCI Express x16 slot This motherboard supports a PCI Express x16 graphics slot that complies with the PCI Express specifications. ASUS M4A87T PLUS 1-13...

[Page 24: Jumpers](#)

Normal Clear RTC (Default) M4A87T PLUS Clear RTC RAM To erase the RTC RAM: 1. Turn OFF the computer and unplug the power cord. 2. Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep the cap on pins 2-3 for about 5~10 seconds, then move the cap back to pins 1-2.

[Page 25](#) M4A87T PLUS +5VSB (Default) M4A87T PLUS USB device wake-up Keyboard power (3-pin KBPWR) This jumper allows you to enable or disable the keyboard wake-up feature. When you set this jumper to pins 2-3 (+5VSB), you can wake up the computer by pressing a key on the keyboard.

[Page 26: Connectors](#)

Connectors 1.7.1 Rear panel ports PS/2 Mouse port (green). This port is for a PS/2 mouse. LAN (RJ-45) port. This port allows Gigabit connection to a Local Area Network (LAN) through a

network hub. LAN port LED indications ACT/LINK SPEED Activity/Link LED Speed LED Status...

[Page 27: Internal Connectors](#)

These are not jumpers! DO NOT place jumper caps on the fan connectors. Only the 4-pin CPU fan supports the ASUS Q-Fan feature. Front panel audio connector (10-1 pin AAFP) This connector is for a chassis-mounted front panel audio I/O module that supports either High Definition Audio or AC'97 audio standard.

[Page 28](#) The system may become unstable or may not boot up if the power is inadequate. • If you are uncertain about the minimum power supply requirement for your system, refer to the Recommended Power Supply Wattage Calculator at <http://support.asus.com/PowerSupplyCalculator/PSCalculator.aspx?SLanguage=en-us> for details. 1-18...

[Page 29](#) [AHCI]. See section 2.3.4 SATA Configuration for details. Speaker connector (4-pin SPEAKER) This 4-pin connector is for the chassis-mounted system warning speaker. The speaker allows you to hear system beeps and warnings. SPEAKER M4A87T PLUS PIN 1 M4A87T PLUS Speaker out connector ASUS M4A87T PLUS 1-19...

[Page 30](#) PIN 1 M4A87T PLUS +HDLED RESET M4A87T PLUS System panel connector • System power LED (2-pin PLED) This 2-pin connector is for the system power LED. Connect the chassis power LED cable to this connector. The system power LED lights up when you turn on the system power, and blinks when the system is in sleep mode.

[Page 31: Chassis Intrusion Connector](#)

By default, the pin labeled "Chassis Signal" and "Ground" are shorted with a jumper cap. Remove the jumper caps only when you intend to use the chassis intrusion detection feature. M4A87T PLUS CHASSIS M4A87T PLUS Chassis intrusion connector ASUS M4A87T PLUS 1-21...

[Page 32: Software Support](#)

Place the Support DVD into the optical drive. If Autorun is enabled in your computer, the DVD automatically displays the Specials screen which contains the unique features of ASUS motherboard. Click Drivers, Utilities, Make Disk, Manual, and Contact tabs to display their respective menus.

[Page 33: Managing And Updating Your Bios](#)

BIOS in the future. Copy the original motherboard BIOS using the ASUS Update utility. 2.1.1 ASUS Update utility The ASUS Update is a utility that allows you to manage, save, and update the motherboard BIOS in Windows environment. ®...

[Page 34: Asus Ez Flash 2](#)

Follow the onscreen instructions to complete the updating process. 2.1.2 ASUS EZ Flash 2 The ASUS EZ Flash 2 feature allows you to update the BIOS without using an OS-based utility. Before you start using this utility, download the latest BIOS file from the ASUS website at www.asus.com.

[Page 35: Asus Crashfree Bios 3](#)

2.1.3 ASUS CrashFree BIOS 3 The ASUS CrashFree BIOS 3 is an auto recovery tool that allows you to restore the BIOS file when it fails or gets corrupted during the updating process. You can restore a corrupted BIOS file using the motherboard support DVD or a USB flash drive that contains the updated BIOS file.

[Page 36: Asus Bios Updater](#)

2.1.4 ASUS BIOS Updater The ASUS BIOS Updater allows you to update BIOS in DOS environment. This utility also allows you to copy the current BIOS file that you can use as a backup when the BIOS fails or gets corrupted during the updating process.

[Page 37](#) ASUSTek BIOS Updater for DOS V1.18 Current ROM Update ROM BOARD: M4A87T PLUS BOARD: Unknown VER: 0203 (H:00 B:02) VER: Unknown DATE: 01/07/2011 DATE: Unknown PATH: BIOS backup is done! Press any key to continue. Note Saving BIOS: ASUS M4A87T PLUS...

[Page 38: Updating The Bios File](#)

At the FreeDOS prompt, type bupdater /pc /g and press <Enter>. D:\>bupdater /pc /g The BIOS Updater screen appears as below. ASUSTek BIOS Updater for DOS V1.18 Current ROM Update ROM BOARD: Unknown BOARD: M4A87T PLUS VER: Unknown VER: 0203 (H:00 B:02) DATE: Unknown DATE: 01/07/2011 PATH: M4A87TPL.ROM...

[Page 39: Bios Setup Program](#)

- The BIOS setup screens in this chapter are for reference only. They may not exactly match what you see on your screen.
- Visit the ASUS website at www.asus.com to download the latest BIOS file for this motherboard. ASUS M4A87T PLUS...

[Page 40: Bios Menu Screen](#)

2.2.1 BIOS menu screen Menu items Menu bar Configuration fields General help M4A87T PLUS BIOS Setup Version 0203 Main Advanced Power Boot Tools Exit Main Settings Use [ENTER], [TAB] System Time [19:34:30] or [SHIFT-TAB] to System Date [Tue 01/08/2002] select a field.

[Page 41: Menu Items](#)

<Enter> to display a list of options. Refer to 2.2.7 Pop-up window. 2.2.7 Pop-up window Select a menu item then press <Enter> M4A87T PLUS BIOS Setup Advanced to display a pop-up window with the This option should CPU Configuration remain disabled for Module Version: 13.55...

[Page 42: Main Menu](#)

When you enter the BIOS Setup program, the Main menu screen appears, giving you an overview of the basic system information. Refer to section 2.2.1 BIOS menu screen for information on the menu screen items and how to navigate through them. M4A87T PLUS BIOS Setup Version 0203 Main Advanced...

[Page 43: Sata Configuration](#)

The SATA Configuration menu allows you to configure your storage devices. Select an item then press <Enter> to display the submenu. OnChip SATA Channel [Enabled] Enables or disables onboard channel SATA port. Configuration options: [Disabled] [Enabled] ASUS M4A87T PLUS 2-11...

[Page 44: System Information](#)

The following two items only appear when you set OnChip SATA Channel to [Enabled]. SATA Port1 - Port4 [IDE] Allows you to set the SATA configuration. [IDE] Set to [IDE] when you want to use the Serial ATA hard disk drives as Parallel ATA physical storage devices.

[Page 45: 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. M4A87T PLUS BIOS Setup Version 0203 Main Advanced...

[Page 46: Chipset](#)

2.4.2 Chipset NorthBridge Configuration DRAM Controller Configuration Bank Interleaving [Auto] Allows you to enable the bank memory interleaving. Configuration options: [Disabled] [Auto] Channel Interleaving [Auto] Allows you to enable the channel memory interleaving. Configuration options: [Disabled] [Address bits 6] [Address bits 12] [Auto] [XOR of Address bits [20:16, 6]] [XOR of Address bits [20:16, 9]] Enable Clock to All DIMMs [Disabled] Enables unused Clocks to DIMMs even though memory slots are not populated.

[Page 47: Pciinp](#)

If detected, the USB controller legacy mode is enabled. If no USB device is detected, the legacy USB support is disabled. Configuration options: [Disabled] [Enabled] [Auto] USB 2.0 Controller Mode [HiSpeed] Configures the USB 2.0 controller in HiSpeed (480Mbps) mode or FullSpeed (12Mbps) mode. Configuration options: [FullSpeed] [HiSpeed] ASUS M4A87T PLUS 2-15...

[Page 48: Power Menu](#)

The Power menu items allow you to change the settings for the Advanced Configuration and Power Interface (ACPI) and the Advanced Power Management (APM). Select an item then press <Enter> to display the configuration options. M4A87T PLUS BIOS Setup Version 0203 Main...

[Page 49: Acpi Apic Support \[Enabled\]](#)

VCORE Voltage, 3.3V Voltage, 5V Voltage, 12V Voltage [xx.xxxV] or [Ignored] The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators. Select [Ignored] if you do not want the detected voltage to be displayed. ASUS M4A87T PLUS 2-17...

[Page 50: Boot Menu](#)

Allows you to individually set the CPU fan parameters. Boot menu The Boot menu items allow you to change the system boot options. Select an item then press <Enter> to display the sub-menu. M4A87T PLUS BIOS Setup Version 0203 Main Advanced...

[Page 51: Boot Device Priority](#)

Configuration options: [Removable Dev.] [Hard Drive] [ATAPI CD-ROM] [Disabled] • To select the boot device during system startup, press <F8> when ASUS Logo appears. • To access Windows OS in Safe Mode, do any of the following: ®...

[Page 52: Change User Password](#)

To set a Supervisor Password: Select the Change Supervisor Password item and press <Enter>. In the password box, key in a password containing up to six letters or numbers, or both, then press <Enter>. Confirm the password when prompted. The message Password Installed appears after you successfully set your password. To change the supervisor password, follow the same steps as in setting a supervisor password.

[Page 53: Tools Menu](#)

(C)Copyright 1985-2010, American Megatrends, Inc. 2.7.1 ASUS EZ Flash 2 Allows you to run ASUS EZ Flash 2. When you press <Enter>, a confirmation message appears. Use the left/right arrow key to select between [Yes] or [No], then press <Enter> to confirm your choice.

[Page 54: Exit Menu](#)

Exit menu The Exit menu items allow you to load the optimal or failsafe default values for the BIOS items, and save or discard your changes to the BIOS items. M4A87T PLUS BIOS Setup Version 0203 Main Advanced Power Boot...

[Page 55: Asus Contact Information](#)

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