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User manual ASROCK P4VM890 R2.0
User guide ASROCK P4VM890 R2.0
Operating instructions ASROCK P4VM890 R2.0
Instructions for use ASROCK P4VM890 R2.0
Instruction manual ASROCK P4VM890 R2.0



ASRock

P4VM890

User Manual

Version 2.1
Published August 2007
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Manual abstract:

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setting in the BIOS, applying Untied Overclocking Technology, or using the thirdparty overclocking tools. Overclocking may affect your system stability, or even cause damage to the components and devices of your system. It should be done at your own risk and expense. We are not responsible for possible damage caused by overclocking. 7 CAUTION! 1. 2. 3.

About the setting of "Hyper Threading Technology", please check page 28. This motherboard supports Untied Overclocking Technology. Please read "Untied Overclocking Technology" on page 24 for details. Although this motherboard offers stepless control, it is not recommended to perform over-clocking. Frequencies other than the recommended CPU bus frequencies may cause the instability of the system or damage the 4. CPU.



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While CPU overheat is detected, the system will automatically shutdown. Before you resume the system, please check if the CPU fan on the motherboard functions properly and unplug the power cord, then plug it back again. To improve heat dissipation, remember to spray thermal grease between the CPU and the heatsink when you install the PC system. 5.

Power Management for USB 2.0 works fine under Microsoft® Windows® XP SP1 or SP2 / 2000 SP4. 8 1.3 Motherboard Layout 1 2 3 20.3cm (8.0 in) PS2 Keyboard PS2 Mouse 1 4 5 6 PS2_USB_PWR1 ATX12V1 1 IR1 Super I/O DDR1 (64/72 bit, 184-pin module) DDR2 (64/72 bit, 184-pin module) CPU_FAN1 29 28 27 USB 2.0 T: USB2 B: USB3 ATXPWR1 USB 2.0 T: USB0 Top: RJ-45 B: USB1 USB4_5 1 RAID FLOPPY1 FSB800 DDR400 PCI EXPRESS USB 2.0 T: USB4 B: USB5 Center: Line Out Bottom: Mic In Top: Line In RoHS PCIE1 ATA133 IDE1 IDE2 26 25 24.4cm (9.6 in) 10 11 12 LAN PHY CMOS Battery PCI 1 CHA_FAN1 COM1 VGA1 PARALLEL PORT 4Mb BIOS 7 VIA P4M890 Chipset PGA478 8 9 24 23 22 Audio CODEC P4VM890 PCI 2 VIA VT8237R Plus 1 CD1 AUX1 JRI JL1 1 USB67 PCI 3 USB2.0 AMR1 CLRCMOS1 AUDIO1 5.1CH 1 1 PLED PWRBTN PANEL 1 SATA2 SATA1 SPEAKER1 HDLED RESET 21 20 19 18 17 16 15 14 13 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 PS2_USB_PWR1 Jumper ATX 12V Connector (ATX12V1) CPU Heatsink Retention Module CPU Socket 2 x 184-pin DDR DIMM Slots (DDR1, DDR2; Blue) Infrared Module Header (IR1) Flash Memory Floppy Connector (FLOPPY1) Secondary IDE Connector (IDE2, Black) Primary IDE Connector (IDE1, Blue) North Bridge Controller South Bridge Controller Primary Serial ATA Connector (SATA1) Secondary Serial ATA Connector (SATA2) System Panel Header (PANEL1) 16 17 18 19 20 21 22 23 24 25 26 27 28 29 USB 2.0 Header (USB67, Blue) Chassis Speaker Header (SPEAKER 1) Clear CMOS Jumper (CLRCMOS1) AMR Slot (AMR1) Front Panel Audio Header (AUDIO1) JRI / JL1 Jumpers Internal Audio Connector: AUX1 (White) Internal Audio Connector: CD1 (Black) 3 x PCI Slots (PC11- 3) PCI Express x16 Slot (PCIE1) Chassis Fan Connector (CHA_FAN1) ATX Power Connector (ATXPWR1) Shared USB 2.0 Header (USB4_5, Blue) CPU Fan Connector (CPU_FAN1) 9 1.4 ASRock 6CH I/O Plus TM 1 2 3 4 5 6 7 12 11 10 9 8 1 2 3 4 5 6 PS/2 Mouse Port (Green) Parallel Port USB 2.0 Ports (USB23) RJ-45 Port Line In (Light Blue) PS/2 Mouse Port (Green) 7 8 9 Icord is unplugged. Please read the documentation of the expansion card and make necessary hardware settings for the card before you start the installation. Remove the system unit cover (if your motherboard is already installed in a chassis). Remove the bracket facing the slot that you intend to use.

Keep the screws for later use. Align the card connector with the slot and press firmly until the card is completely seated on the slot. Fasten the card to the chassis with screws. Replace the system cover. Step 2. Step 3. Step 4. Step 5. Step 6. 14 2.

5 Jumpers Setup The illustration shows how jumpers are setup. When the jumper cap is placed on pins, the jumper is "Short". If no jumper cap is placed on pins, the jumper is "Open". The illustration shows a 3-pin jumper whose pin1 and pin2 are "Short" when jumper cap is placed on these 2 pins. Jumper PS2_USB_PWR1 (see p.

9, No. 1) Short Open Setting 1_2_2_3 Short pin2, pin3 to enable +5VSB (standby) for PS/2 +5VSB +5V or USB wake up events. Note: To select +5VSB, it requires 2 Amp and higher standby current provided by power supply. JRI(see p.9, No.

21) JL1(see p.9, No. 21) JRI JL1 Note: If the jumpers JL1 and JRI are short, both the front panel and the rear panel audio connectors can work. Clear CMOS (CLRCMOS1, 2-pin jumper) (see p.9, No. 18) 2-pin jumper Note: CLRCMOS1 allows you to clear the data in CMOS. The data in CMOS includes system setup information such as system password, date, time, and system setup parameters. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord from the power supply. After waiting for 15 seconds, use a jumper cap to short 2 pins on CLRCMOS1 for 5 seconds. 15 2.

6 Onboard Headers and Connectors Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage of the motherboard! FDD Connector (33-pin FLOPPY1) (see p.9, No. 8)

Pin1 FLOPPY1 the red-striped side to Pin1 Note: Make sure the red-striped side of the cable is plugged into Pin1 side of the connector. Primary IDE Connector (Blue) (39-pin IDE1, see p.9, No. 10) Secondary IDE Connector (Black) (39-pin IDE2, see p.9, No. 9) PIN1 IDE1 PIN1 IDE2 connect the blue end to the motherboard connect the black end to the IDE devices 80-conductor ATA 66/100/133 cable Note: If you use only one IDE device on this motherboard, please set the IDE device as "Master".

Please refer to the instruction of your IDE device vendor for the details. Besides, to optimize compatibility and performance, please connect your hard disk drive to the primary IDE connector (IDE1, blue) and CD-ROM to the secondary IDE connector (IDE2, black). Serial ATA Connectors (SATA1: see p.9, No. 13) (SATA2: see p.

9, No. 14) SATA2 SATA1 These two Serial ATA (SATA) connectors support SATA data cables for internal storage devices. The current SATA interface allows up to 1.5 Gb/s data transfer rate. Either end of the SATA data cable can be connected to the SATA hard disk or the SATA connector on the motherboard.

Serial ATA (SATA) Data Cable (Optional) 16 Serial ATA (SATA) Power Cable (Optional) connect to the SATA HDD power connector connect to the power supply Please connect the black end of SATA power cable to the power connector on the drive. Then connect the white end of SATA power cable to the power connector of the power supply. Besides six default USB 2.0 ports on the I/O panel, there are two USB 2.0 headers on this motherboard. Each USB 2.0 header can support two USB 2.0 ports. The shared USB 2.0 header (USB4_5) is shared with USB ports 45 on the I/O panel.

When using the front panel USB ports by attaching the front panel USB cable to USB4_5 header, the USB ports 45 on the I/O panel will not be able to function. This header supports an optional wireless transmitting and receiving infrared module. USB 2.0 Header (9-pin USB67) (see p.9, No. 16) 1 USB_PWR P-7 P+7 GND DUMMY GND P+6 P-6 USB_PWR Shared USB 2.0 Header (9-pin USB4_5) (see p.9, No. 28) 1 USB_PWR P-5 P+5 GND USB_PWR P-4 P+4 GND DUMMY Infrared Module Header (5-pin IR1) (see p.9, No.

6) 1 IRTX +5V DUMMY GND IRRX Internal Audio Connectors (4-pin CD1, 4-pin AUX1) CD-L GND GND CD-R CD1 (CD1: see p.9, No. 23) (AUX1: see p.9, No. 22) AUX1 AUX-L GND GND AUX-R These connectors allow you to receive stereo audio input from sound sources such as a CD-ROM, DVD-ROM, TV tuner card, or MPEG card.



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Front Panel Audio Header (8-pin AUDIO1) (see p.9, No. 20) 1 GND BACKOUT-R BACKOUT-L This is an interface for the front panel audio cable that allows convenient connection and control of audio devices. AUD-OUT-L GND AUD-OUT-R MIC-POWER MIC 17 System Panel Header (9-pin PANEL1) (see p.9, No.

15) 1 PLED+ PLEDPWRBTN# GND This header accommodates several system front panel functions. DUMMY RESET# GND HDLEDHDLED+ Chassis Speaker Header (4-pin SPEAKER 1) (see p.9, No. 17) 1 SPEAKER DUMMY DUMMY +5V Please connect the chassis speaker to this header. Chassis Fan Connector (3-pin CHA_FAN1) (see p.9, No. 26) CHA_FAN_SPEED +12V GND Please connect the chassis fan cable to this connector and match the black wire to the ground pin. Please connect the CPU fan cable to this connector and match the black wire to the ground pin. Please connect an ATX power supply to this connector. CPU Fan Connector (3-pin CPU_FAN1) (see p.

9, No. 29) GND +12V CPU_FAN_SPEED ATX Power Connector (20-pin ATXPWR1) (see p.9, No. 27) ATX 12V Connector (4-pin ATX12V1) (see p.9, No. 2) Please note that it is necessary to connect a power supply with ATX 12V plug to this connector so that it can provide sufficient power. Failing to do so will cause the failure to power up. Please install the heatsink and the CPU fan before installing ATX 12V connector; otherwise, it may cause permanent damage!

18 AT (SAT 2.7 Serial ATA (SATA) Hard Disks Installation This motherboard adopts VIA® VT8237R Plus southbridge chipset that supports Serial ATA (SATA) hard disks and RAID (RAID 0, RAID 1 and JBOD) functions. You may install SATA hard disks on this motherboard for internal storage devices. This section will guide you to install the SATA hard disks. STEP 1: Install the SATA hard disks into the drive bays of your chassis. STEP 2: Connect the SATA power cable to the SATA hard disk. STEP 3: Connect one end of the SATA data cable to the motherboard's SATA connector. STEP 4: Connect the other end of the SATA data cable to the SATA hard disk.

Functions SAT 2.8 Hot Plug and Hot Swap Functions for SATA HDDs P4VM890 motherboard supports Hot Plug and Hot Swap functions for SATA Devices.

NOTE What is Hot Plug Function? If the SATA HDDs are NOT set for RAID configuration, it is called "Hot Plug" for the action to insert and remove the SATA HDDs while the system is still power-on and in working condition. However, please note that it cannot perform Hot Plug if the OS has been installed into the SATA HDD. What is Hot Swap Function? If SATA HDDs are built as RAID1 then it is called "Hot Swap" for the action to insert and remove the SATA HDDs while the system is still power-on and in working condition.

19 SAT Feature 2.9 SATA HDD Hot Plug Feature and Operation Guide This motherboard supports Hot Plug feature for SATA HDD. Please read below operation guide of SATA HDD Hot Plug feature carefully. @@A. 7-pin SATA data cable B. SATA power cable with SATA 15-pin power connector interface A. SATA data cable (Red) B. @@@@2. @@@@3. Please make sure the SATA driver is installed into system properly.

@@@@5. @@@@@@1. Insert AMR card to AMR slot on this motherboard. Please make sure that the AMR card is completely seated on the slot. 2. Install AMR card driver from our support CD to your system. 3. @STEP 1: Set up BIOS. A. Enter BIOS SETUP UTILITY Advanced screen IDE Configuration.

B. Set the "SATA Operation Mode" option to [RAID]. STEP 2: Make a SATA driver diskette. A. @@B.

@@Please select CDROM as the boot device. C. @@D. @@E. @@@@Please refer to the document in the following path in the Support CD: .

. \RAID Installation Guide STEP 4: Install Windows® 2000 / XP OS on your system. After step1, 2, 3, you can start to install Windows® 2000 / Windows® XP OS on your system. At the beginning of Windows® setup, press F6 to install a third-party RAID driver. When prompted, insert the SATA driver diskette containing the VIA ® RAID driver. After reading the floppy disk, the driver will be presented. Select the driver to install according to the mode you choose and the OS you install. NOTE. If you install Windows® 2000 / Windows® XP on IDE HDDs and want to manage (create, convert, delete, or rebuild) RAID functions on SATA HDDs, you still need to set up "SATA Operation Mode" to [RAID] in BIOS first. Then, please set the RAID configuration by using the document in the following path in the Support CD: .

. \RAID Installation Guide If you want to use "VIA RAID Tool" in Windows® environment, please install SATA drivers from the Support CD again so that "VIA RAID Tool" will be installed to your system as well. 2.13 Installing Windows ® 2000 / XP Without RAID Functions If you want to install Windows® 2000 / Windows® XP OS on your SATA HDDs without RAID functions, please follow below steps. STEP 1: Set up BIOS. A. Enter BIOS SETUP UTILITY Advanced screen IDE Configuration. B. Set the "SATA Operation Mode" option to [non-RAID]. STEP 2: Install Windows® 2000 / XP OS on your system. After setting up BIOS, you can start to install Windows® 2000 / XP on your system. 2.3 Technology 2.14 Untied Overclocking Technology This motherboard supports Untied Overclocking Technology, which means during overclocking, FSB enjoys better margin due to fixed PCI / PCIE bus. You may set "CPU Host Frequency" option of BIOS setup to [Auto], which will show you the actual CPU host frequency in the following item. Therefore, CPU FSB is untied during overclocking, but PCI / PCIE bus is in the fixed mode so that FSB can operate under a more stable overclocking environment.

Please refer to the warning on page 7 for the possible overclocking risk before you apply Untied Overclocking Technology. 24 3. BIOS SETUP UTILITY 3.1 Introduction This section explains how to use the BIOS SETUP UTILITY to configure your system. The Flash Memory on the motherboard stores the BIOS SETUP UTILITY.

You may run the BIOS SETUP UTILITY when you start up the computer. Please press <F2> during the Power-On-Self-Test (POST) to enter the BIOS SETUP UTILITY, otherwise, POST will continue with its test routines. If you wish to enter the BIOS SETUP UTILITY after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You may also restart by turning the system off and then back on. Because the BIOS software is constantly being updated, the following BIOS setup screens and descriptions are for reference purpose only, and they may not exactly match what you see on your screen. 3.1.1 BIOS Menu Bar The top of the Main Advanced H/W Monitor Boot screen has a menu bar with the following selections: To set up the system time/date information To set up the advanced BIOS features To display current hardware status To set up the default system device to locate and load the Operating System Security To set up the security features Exit To exit the current screen or the BIOS SETUP UTILITY Use < > key or < > key to choose among the selections on the menu bar, and then press <Enter> to get into the sub screen.



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2 Navigation Keys Please check the following table for the function description of each navigation key. Navigation Key(s) // +/<Enter> <F1> <F9> <F10> <ESC> Function Description Moves cursor left or right to select Screens Moves cursor up or down to select items To change option for the selected items To bring up the selected screen To display the General Help Screen To load optimal default values for all the settings To save changes and exit the BIOS SETUP UTILITY To jump to the Exit Screen or exit the current screen

3.2 Main Screen When you enter the BIOS SETUP UTILITY, the Main screen will appear and display the system overview BIOS SETUP UTILITY H/W Monitor Boot Main Advanced Security Exit System Overview System Time System Date BIOS Version Processor Type Processor Speed Microcode Update Cache Size Total Memory DDR1 DDR2 : : : : [16:15:31] [Thu 05/10/2007] P4VM890 BIOS P1.20 Intel (R) Pentium (R) 4 CPU 2.40GHz 2400MHz F33/C 1024KB Use [Enter], [TAB] or [SHIFT-TAB] to select a field. Use [+] or [-] to configure system Time. : 256MB with 64MB shared memory : 256MB/166MHz (DDR333) : None +Tab F1 F9 F10 ESC Select Screen Select Item Change Field Select Field General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. System Time [Hour:Minute:Second] Use this item to specify the system time. System Date [Day Month/Date/Year] Use this item to specify the system date.

26 3.3 Advanced Screen In this section, you may set the configurations for the following items: CPU Configuration, Chipset Configuration, ACPI Configuration, IDE Configuration, PCIPnP Configuration, Floppy Configuration, SuperIO Configuration, and USB Configuration. BIOS SETUP UTILITY H/W Monitor Boot Main Advanced Security Configure CPU Exit Advanced Settings WARNING : Setting wrong values in below sections may cause system to malfunction. CPU Configuration Chipset Configuration ACPI Configuration IDE Configuration PCIPnP Configuration Floppy Configuration SuperIO Configuration USB Configuration Enter F1 F9 F10 ESC Select Screen Select Item Go to Sub Screen General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc.

Setting wrong values in this section may cause the system to malfunction. 3.3.1 CPU Configuration BIOS SETUP UTILITY Advanced CPU Configuration CPU Host Frequency Actual Frequency (MHz) Spread Spectrum PCIE/PCI operation mode Boot Failure Guard Ratio Status Ratio Actual Value Max CPUID Value Limit CPU Thermal Throttling Hyper Threading Technology [Auto] [133] [Auto] [Async. Mode] [Enabled] Locked 18 [Disabled] [Enabled] [Enabled] Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit Select how to set the CPU host frequency.

+F1 F9 F10 ESC v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. CPU Host Frequency While entering setup, BIOS auto detects the present CPU host frequency of this motherboard. The actual CPU host frequency will show in the following item. 27 Spread Spectrum The default value of this option is [Auto]. PCIE/PCI operatin mode Use this to select PCIE/PCI operation mode. The default value is [Async. mode]. Configuration options: [Async. mode] and [Sync.

mode]. Boot Failure Guard Enable or disable the feature of Boot Failure Guard. Ratio Status This is a read-only item, which displays whether the ratio status of this motherboard is "Locked" or "Unlocked". If it shows "Unlocked", you will find an item Ratio CMOS Setting appears to allow you changing the ratio value of this motherboard. If it shows "Locked", then the item Ratio CMOS Setting will be hidden. If you use the ratio value to time the CPU frequency, it will be equal to the core speed of the installed processor. Ratio Actual Value This is a read-only item, which displays the ratio actual value of this motherboard.

Max CPUID Value Limit For Prescott CPU only, some OSeS (ex. NT4.0) cannot handle the function with disable.

This should be enabled in order to boot legacy OSeS that cannot support CPUs with extended CPUID functions. CPU Thermal Throttling You may select [Enabled] to enable P4 CPU internal thermal control mechanism to keep the CPU from overheated. Hyper Threading Technology To enable this feature, it requires a computer system with an Intel Pentium® 4 processor that supports Hyper-Threading technology and an operating system that includes optimization for this technology, such as Microsoft® Windows® XP. Set to [Enabled] if using Microsoft® Windows® XP, or Linux kernel version 2.4.

18 or higher. This option will be hidden if the installed CPU does not support Hyper-Threading technology. 28 3.3.2 Chipset Configuration BIOS SETUP UTILITY Advanced Chipset Settings DRAM Frequency Flexibility Option DRAM CAS# Latency DRAM Bank Interleave Precharge to Active (Trp) Active to Precharge (Tras) Active to CMD (Trcd) REF to ACT/REF to REF (Trfc) ACT (0) to ACT (1) (Trrd) Read to Precharge (Trtp) Write to Read CMD (Twtr) Write Recovery Time (Twr) DRAM Command Rate [Auto] [Disabled] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [2T Command] Memory Clock can be set by the code using AUTO, or you can set one of the standard values.

+F1 F9 F10 ESC Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. DRAM Frequency If [Auto] is selected, the motherboard will detect the memory module(s) inserted and assigns appropriate frequency automatically. You may also select other value as operating frequency: [166MHz (DDR 333)] and [200MHz (DDR 400)]. Flexibility Option The default value of this option is [Disabled]. It will allow better tolerance for memory compatibility when it is set to [Enabled]. DRAM CAS# Latency Use this item to adjust the means of memory accessing. Configuration options: [Auto], [2], [2.5], and [3]. DRAM Bank Interleave Use this option to select DRAM Bank Interleave.

Configuration options: [Auto], [Disabled], [2-Way], [4-Way], and [8-Way]. The default value is set to [Auto] to set the timing by dram SPD. Precharge to Active (Trp) Use this option to select Precharge to Active (Trp). Configuration options: [Auto], [2T], [3T], [4T], and [5T]. The default value is set to [Auto] to set the timing by dram SPD. Active to Precharge (Tras) Use this option to select Active to Precharge (Tras). Configuration options: [Auto], [5T] to [20]. The default value is set to [Auto] to set the timing by dram SPD. Active to CMD (Trcd) Use this option to select Active to CMD (Trcd). Configuration options: [Auto], [2T], [3T], [4T], and [5T].

The default value is set to [Auto] to set the timing by dram SPD. 29 REF to ACT / REF to REF (Trfc) Use this option to select REF to ACT / REF to REF (Trfc). Configuration options: [Auto], [8T] to [71T]. The default value is set to [Auto] to set the timing by dram SPD.



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ACT(0) to ACT (1) (Trrd) Use this option to select ACT(0) to ACT (1) (Trrd).

Configuration options: [Auto], [2T], [3T], [4T], and [5T]. The default value is set to [Auto] to set the timing by dram SPD. Read to Precharge (Trtp) Use this option to select Read to Precharge (Trtp). Configuration options: [Auto], [2T], [3T]. The default value is set to [Auto] to set the timing by dram SPD. Write to Read CMD (Twtr) Use this option to select Write to Read CMD (Twtr). Configuration options: [Auto], [1T], [2T]. The default value is set to [Auto] to set the timing by dram SPD. Write Recovery Time (Twr) Use this option to select Write Recovery Time (Twr). Configuration options: [Auto], [2T], [3T], [4T], and [5T]. The default value is set to [Auto] to set the timing by dram SPD. DRAM Command Rate Use this to select among [2T Command] and [1T Command] for DRAM Command Rate. The default value is [2T Command]. DRAM Voltage Use this to select DRAM voltage. Configuration options: [Auto], [Normal] and [High].

The default value is [Auto]. VDDQ Voltage Use this to select VDDQ voltage. Configuration options: [Auto], [Normal] and [High]. The default value is [Auto]. Primary Graphics Adapter This item will switch the PCI Bus scanning order while searching for video card. It allows you to select the type of Primary VGA in case of multiple video controllers. The default value of this feature is [PCI]. Configuration options: [Onboard], [PCI] and [PCI Express]. Share

Memory This allows you to set share memory feature. The default value is [Auto].

Configuration options: [Auto], [32MB] and [64MB]. V-Link Speed This allows you to set the North Bridge and South Bridge V-Link Speed of VIA chipset. configuration options: [Normal], [Fast]. The default value is [Normal]. 30 PCI Delay Transaction Enable PCI Delay Transaction to allow other PCI masters to use the PCI BUS while the transaction is being carried out on the target device.

Disable this feature when using PCI cards that are not PCI 2.1 compliant. IDE Drive Strength This allows you to set the drive strength of the onboard IDE controller. Configuration options: [Normal], [Low], [Lowest] and [Highest]. The default value is [Normal].

OnBoard LAN This allows you to enable or disable the onboard LAN feature. OnBoard AC'97 Audio Select [Auto] or [Disabled] for the onboard AC'97 Audio feature. OnBoard MC'97 Modem Select [Auto] or [Disabled] for the onboard MC'97 Modem feature. 31 3.3.3 ACPI Configuration BIOS SETUP UTILITY Advanced ACPI Configuration Suspend To RAM Restore on AC / Power Loss Ring-In Power On PCI Devices Power On PS / 2 Keyboard Power On RTC Alarm Power On [Disabled] [Power Off] [Disabled] [Disabled] [Disabled] [Disabled] Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit Select auto-detect or disable the STR feature. +F1 F9 F10 ESC v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. Suspend to RAM This field allows you to select whether to auto-detect or disable the Suspend-to-RAM feature. Select [Auto] will enable this feature if the system supports it.

Restore on AC/Power Loss This allows you to set the power state after an unexpected AC/Power loss. If [Power Off] is selected, the AC/Power remains off when the power recovers. If [Power On] is selected, the AC/Power resumes and the system starts to boot up when the power recovers. Ring-In Power On Use this item to enable or disable Ring-In signals to turn on the system from the power-soft-off mode. PCI Devices Power On Use this item to enable or disable PCI devices to turn on the system from the power-soft-off mode. PS/2 Keyboard Power On Use this item to enable or disable PS/2 keyboard to turn on the system from the power-soft-off mode. RTC Alarm Power On Use this item to enable or disable RTC (Real Time Clock) to power on the system. 32 3.3.4 IDE Configuration BIOS SETUP UTILITY Advanced IDE Configuration OnBoard IDE Controller SATA Operation Mode Primary IDE Master Primary IDE Slave Secondary IDE Master Secondary IDE Slave SATA 1 SATA 2 [Enabled] [RAID] [Hard Disk] [Not Detected] [Not Detected] [Not Detected] [Not Detected] [Not Detected] +F1 F9 F10 ESC To enable or disable the onboard IDE controller.

Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. OnBoard IDE Controller Use this item to enable or disable onboard IDE controller. Configuration options: [Enabled] and [Disabled]. SATA Operation Mode Use this item to adjust SATA Operation Mode.

Please set this item to [RAID] if you want to operate RAID functions with Windows® 2000 / XP. Otherwise, please set this item to [non-RAID]. IDE Device Configuration You may set the IDE configuration for the device that you specify. We will use the "Primary IDE Master" as the example in the following instruction, which can be applied to the configurations of "Primary IDE Slave", "Secondary IDE Master", and "Secondary IDE Slave" as well. BIOS SETUP UTILITY Advanced Primary IDE Master Device Vendor Size LBA Mode Block Mode PIO Mode Async DMA Ultra DMA S.

M.A.R.T. Type LBA/Large Mode Block (Multi-Sector Transfer) PIO Mode DMA Mode S.M.A.R.T. 32Bit Data Transfer :Hard Disk :ST340014A :40.

0 GB :Supported :16Sectors :4 :MultiWord DMA-2 :Ultra DMA-5 :Supported [Auto] [Auto] [Auto] [Auto] [Auto] [Disabled] [Disabled] Select the type of device connected to the system. +F1 F9 F10 ESC Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. 33 TYPE Use this item to configure the type of the IDE device that you specify. Configuration options: [Not Installed], [Auto], [CD/DVD], and [ARMD]. [Not Installed]: Select [Not Installed] to disable the use of IDE device. [Auto]: Select [Auto] to automatically detect the hard disk drive. After selecting the hard disk information into BIOS, use a disk utility, such as FDISK, to partition and format the new IDE hard disk drives. This is necessary so that you can write or read data from the hard disk. Make sure to set the partition of the Primary IDE hard disk drives to active.

[CD/DVD]: This is used for IDE CD/DVD drives. [ARMD]: This is used for IDE ARMD (ATAPI Removable Media Device), such as MO. LBA/Large Mode Use this item to select the LBA/Large mode for a hard disk > 512 MB under DOS and Windows; for Netware and UNIX user, select [Disabled] to disable the LBA/Large mode. Block (Multi-Sector Transfer) The default value of this item is [Auto]. If this feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.

PIO Mode Use this item to set the PIO mode to enhance hard disk performance by optimizing the hard disk timing. DMA Mode DMA capability allows the improved transfer-speed and data-integrity for compatible IDE devices. S.M.A.

R.T. Use this item to enable or disable the S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) feature.



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Configuration options: [Disabled], [Auto], [Enabled]. 32-Bit Data Transfer Use this item to enable 32-bit access to maximize the IDE hard disk data transfer rate.

34 3.3.5 PCIPnP Configuration BIOS SETUP UTILITY Advanced Advanced PCI / PnP Settings PCI Latency Timer PCI IDE BusMaster [32] [Enabled] Value in units of PCI clocks for PCI device latency timer register. +F1 F9 F10 ESC Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. PCI Latency Timer The default value is 32. It is recommended to keep the default value unless the installed PCI expansion cards' specifications require other settings. @@ @@@@ Configuration options: [Disabled], [2F8 / IRQ3], and [2E8 / IRQ3]. Parallel Port Address Use this item to set the address for the onboard parallel port or disable it. Configuration options: [Disabled], [378], and [278].

Parallel Port Mode Use this item to set the operation mode of the parallel port. The default value is [ECP+EPP]. If this option is set to [ECP+EPP], it will show the EPP version in the following item, "EPP Version". Configuration options: [Normal], [Bi-Directional], and [ECP+EPP]. EPP Version Use this item to set the EPP version.

Configuration options: [1.9] and [1.7]. ECP Mode DMA Channel Use this item to set the ECP mode DMA channel. Configuration options: [DMA0], [DMA1], and [DMA3].

Parallel Port IRQ Use this item to set the IRQ for the parallel port. Configuration options: [IRQ5] and [IRQ7]. 36 3.3.8 USB Configuration BIOS SETUP UTILITY Advanced USB Configuration USB Controller USB 2.0 Support Legacy USB Support [Enabled] [Enabled] [Disabled] To enable or disable the onboard USB controllers. +F1 F9 F10 ESC Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. USB Controller Use this item to enable or disable the use of USB controller. USB 2.

0 Support Use this item to enable or disable the USB 2.0 support. Legacy USB Support Use this item to enable or disable the support to emulate legacy I/O devices such as mouse, keyboard,... etc. Or you may select [Auto] so that the system will start to auto-detect; if there is no USB device connected, "Auto" option will disable the legacy USB support. 37 3.4 Hardware Health Event Monitoring Screen In this section, it allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, CPU fan speed, chassis fan speed, and the critical voltage. BIOS SETUP UTILITY Boot H/W Monitor Main Advanced Security Exit Hardware Health Event Monitoring CPU Temperature M / B Temperature CPU Fan Speed Chassis Fan Speed Vcore + 3.

30V + 5.00V + 12.00V : 37 C / 98 F : 31 C / 87 F : 2463 RPM : N/A : : : 1.629V 3.306V 5.

067V 11.890V F1 F9 F10 ESC Select Screen Select Item General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. 3.5 Boot Screen In this section, it will display the available devices on your system for you to configure the boot settings and the boot priority.

BIOS SETUP UTILITY H/W Monitor Boot Main Advanced Security Exit Boot Settings Boot Settings Configuration 1st Boot Device 2nd Boot Device 3rd Boot Device 4th Boot Device Hard Disk Drives Removable Drives [1st Floppy Device] [HDD: PM - MAXTOR 6L08] [CD / DVD] [USB] Configure Settings during System Boot. Enter F1 F9 F10 ESC Select Screen Select Item Go to Sub Screen General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. 38 3.5.1 Boot Settings Configuration BIOS SETUP UTILITY Boot Boot Settings Configuration Boot From Network VIA SATA Raid Utility Bootup Num-Lock [Disabled] [Enabled] [On] To enable or disable the boot from network feature. +F1 F9 F10 ESC Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. Boot From Network Use this item to enable or disable the Boot From Network feature. VIA SATA Raid Utility Use this to enable or disable VIA® VT8237R Plus SATA Raid BIOS Utility during POST.

Boot Up Num-Lock If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up. 3.6 Security Screen In this section, you may set or change the supervisor/user password for the system. For the user password, you may also clear it. BIOS SETUP UTILITY H/W Monitor Boot Main Advanced Security Exit Security Settings Supervisor Password : Not Installed User Password : Not Installed Change Supervisor Password Change User Password Install or Change the password. Enter F1 F9 F10 ESC Select Screen Select Item Change General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. 39 3.7 Exit Screen Main Exit Options Save Changes and Exit Discard Changes and Exit Discard Changes Load Optimal Defaults Advanced BIOS SETUP UTILITY H/W Monitor Boot Security Exit system setup after saving the changes. Exit F10 key can be used for this operation.

Enter F1 F9 F10 ESC Select Screen Select Item Go to Sub Screen General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. Save Changes and Exit When you select this option, it will pop-out the following message, "Save configuration changes and exit setup?" Select [OK] to save the changes and exit the BIOS SETUP UTILITY. Discard Changes and Exit When you select this option, it will pop-out the following message, "Discard changes and exit setup?" Select [OK] to exit the BIOS SETUP UTILITY without saving any changes. Discard Changes When you select this option, it will pop-out the following message, "Discard changes?" Select [OK] to discard all changes.

Load Optimal Defaults When you select this option, it will pop-out the following message, "Load optimal defaults?" Select [OK] to load the default values for all the setup configurations. 40 Support 4. Software Support 4.1 Install Operating System This motherboard supports various Microsoft® Windows® operating systems: 2000 / XP. Because motherboard settings and hardware options vary, use the setup procedures in this chapter for general reference only.

Refer to your OS documentation for more information. 4.2 Support CD Information The Support CD that came with the motherboard contains necessary drivers and useful utilities that enhance the motherboard features. 4.2.1 Running The Support CD To begin using the support CD, insert the CD into your CD-ROM drive. The CD automatically displays the Main Menu if "AUTORUN" is enabled in your computer. If the Main Menu did not appear automatically, locate and double click on the file "ASSETUP.EXE" from the BIN folder in the Support CD to display the menus.



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2.2 Drivers Menu The Drivers Menu shows the available devices drivers. Please install the necessary drivers to activate the devices. 4.2.3 Utilities Menu The Utilities Menu shows the applications software that the motherboard supports. Click on a specific item then follow the installation wizard to install it. 4.2.4 Contact Information If you need to contact ASRock or want to know more about ASRock, welcome to visit ASRock's website at <http://www.asrock.com>; or you may contact your dealer for further information. 41 .



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