Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for ASUS P5L-VM 1394. You'll find the answers to all your questions on the ASUS P5L-VM 1394 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual ASUS P5L-VM 1394
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P5L-VM 1394

Motherboard

Manual abstract:

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

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: · Reorient or relocate the receiving antenna. · Increase the separation between the equipment and receiver. · Connect the equipment to an outlet on a circuit different from that to which the receiver is connected. · Consult the dealer or an experienced radio/TV technician for help. The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications. This class B digital apparatus complies with Canadian ICES-003. vi Safety information 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. If possible, disconnect all power cables from the existing system before you add a device.

· Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged. · Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit. · Make sure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.

&mcture 4 x 240-pin DIMM sockets support up to 4GB of unbufferred non-ECC 667/533/400 MHz DDR2 DIMMs Integrated Intel® Graphics Media Accelerator 950 1 x PCI Express x16 slot for discrete graphics cards 1 x PCI Express x1 2 x PCI 2.2 slots Intel® ICH7 SouthBridge supports: - 1 x Ultra DMA 100/66/33 - 4 x Serial ATA 3Gb/s ports Realtek® ALC883 High-Definition audio CODEC, 6-channel audio port Support Jack-Sensing, Enumeration, Multi-streaming and Jack-Retasking Technology Attansic L1 LAN controller Supports up to 8 USB 2.0 ports 1 x Parallel port 1 x LAN (RJ-45) port 4 x USB 2.0 ports 1 x VGA port 1 x IEEE 1394a port 1 x PS/2 keyboard port 1 x PS/2 mouse port 6-channel high-definition audio I/O ports 4 Mb Flash ROM, AMI BIOS, PnP, WfM2.

0, DMI2.0, SM BIOS 2.3 VIA 6308 1394a controller supports 2 x IEEE 1394a ports (one at midboard; one at back panel) Chipset Front Side Bus Memory VGA Expansion slots Storage Audio LAN USBfications. See page 1-21 for details. Serial ATA 3.0 Gb/s technology The motherboard supports the Serial ATA technology through the Serial ATA interfaces and the Intel® ICH7 chipset.

The SATA specification allows for thinner, more flexible cables with lower pin count, reduced voltage requirement, and up to 300 MB/s data transfer rate. IEEE 1394a support The IEEE 1394a interface provides high speed digital interface for audio/ video appliances such as digital television, digital video camcorders, storage peripherals & other PC portable devices. ASUS P5L-VM 1394 1-3 High Definition Audio Enjoy high-end sound quality on your PC! The onboard HD audio (High Definition Audio, previously codenamed Azalia) CODEC enables high-quality 192KHz/24-bit audio output, jack-sensing feature, retasking functions and multi-streaming technology that simultaneously sends different audio streams to different destinations. You can now talk to your partners on the headphone while playing multi-channel network games. 1.3.2 Innovative ASUS features CrashFree BIOS 2 This feature allows you to restore the original BIOS data from the support CD in case when the BIOS codes and data are corrupted. This protection eliminates the need to buy a replacement ROM chip. See page 2-6 for details. ASUS EZ Flash 2 EZ Flash 2 is a user-friendly BIOS update utility.
Simply press the predefined hotkey to launch the utility and update the BIOS without entering the OS. Update your BIOS easily without preparing a bootable diskette or using an OS-based flash utility. See page 2-3 for details. C.P.
R. (CPU Parameter Recall) The C.P.R. feature of the motherboard BIOS allows automatic re-setting to the BIOS default settings in case the system hangs due to overclocking.
When the system hangs due to overclocking, C.P.R. eliminates the need to open the system chassis and clear the RTC data. Simply shut down and reboot the system, and the BIOS automatically restores the CPU default setting for each parameter. 1-4 Chapter 1: Product introduction 1.4 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 to a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity Hold components by the edges to avoid touching the ICs on them. Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.

Before you install or remove any component, ensure that the ATX power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components. · · · Onboard LED The motherboard comes with a standby power LED that lights up to indicate that the system is ON, in sleep mode, or in soft-off mode. This is a reminder that you should shut down the system and unplug the power cable before removing or plugging in any motherboard component. The illustration below shows the location of the onboard LED. P5L-VM 1394 R SB_PWR ON Standby Power OFF Powered Off P5L-VM 1394 Onboard LED ASUS P5L-VM 1394 1-5 1.5 Motherboard overview Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it. Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so can cause you physical injury and damage motherboard components. 1.
5.1 Placement direction When installing the motherboard, make sure that you place it into the chassis in the correct orientation. The edge with external ports goes to the rear part of the chassis as indicated in the image below. 1.5.
2 Screw holes Place eight (8) 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 1-6 Chapter 1: Product introduction P5L-VM 1394 R 1.5.3 Motherboard layout 24. 5cm (9.6in) PS/2KBMS T Mouse : B: Keyboard KBPWR CPU_FAN CHA_FAN1 Super I/O ATX12V DDR2 DIMM_A1 (64 bit,240-pin module) DDR2 DIMM_A2 (64 bit,240-pin module) DDR2 DIMM_B1 (64 bit,240-pin module) DDR2 DIMM_B2 (64 bit,240-pin module) PARALLE PORT LGA775 P5L-VM 1394 VGA F_USB12 USBPW12 AUDIO Intel GMCH945G USB78 PCIEX16 PCI1 SB_PWR Attansic L1 CD PCI2 PCIEX1_1 AAFP SPDIF_OUT IE1394_2 Intel ICH7 VIA VT6308P CR2032 3V Lithium Cell CMOS Power 4MB BIOS SATA3 ALC883 SATA1 CHASSIS USBPW56 USB56 CLRTC SPI_J1 COM1 PANEL ASUS P5L-VM 1394 PRI_EIDE SATA4 SATA2 EATXPWR 24.5cm (9.6in) LAN_USB34 R FLOPPY VGA 1-7 1.6 Central Processing Unit (CPU) The motherboard comes with a surface mount LGA775 socket designed for the Intel® CoreTM2 Extreme/CoreTM2 Duo/Pentium® D/Pentium® 4 and Celeron® D processors. · Your boxed Intel® CoreTM2 Extreme/Intel® CoreTM2 Duo/Pentium® D/Pentium® 4 or Celeron® D LGA775 processor package should come with installation instructions for the CPU, fan and heatsink assembly. If the instructions in this section do not match the CPU documentation, follow the latter. Upon purchase of the motherboard, make sure that the PnP cap is on the socket and the socket pins are not bent. Contact your retailer immediately if the PnP cap is missing, or if you see any damage to the PnP cap/socket pins/motherboard components. ASUS will shoulder the cost of repair only if the damage is shipment/ transit-related.

Keep the cap after installing the motherboard. ASUS will process Return Merchandise Authorization (RMA) requests only if the motherboard comes with the cap on the LGA775 socket. The product warranty does not cover damage to the socket pins resulting from incorrect CPU installation/removal, or misplacement/ loss/incorrect removal of the PnP cap. · · · 1.6.1 1. Installling the CPU To install a CPU: Locate the CPU socket on the motherboard. P5L-VM 1394 CPU Socket 775 Before installing the CPU, make sure that the socket box is facing towards you and the load lever is on your left. 1-8 P5L-VM 1394 R Chapter 1: Product introduction 2. Press the load lever with your thumb (A) and move it to the left (B) until it is released from the retention tab.
A PnP Cap Retention tab Load lever B This side of the cam box should face you. To prevent damage to the socket pins, do not remove the PnP cap unless you are installing a CPU.

3. Lift the load lever in the direction of the arrow to a 135º angle. 4.

Lift the load plate with your thumb and forefinger to a 100º angle (A), then push the PnP cap from the load plate window to remove (B). B A Load plate 5. Position the CPU over the socket, making sure that the gold triangle is on the bottom-left corner of the socket. The socket alignment key should fit into the CPU notch. Alignment key Gold triangle mark ASUS P5L-VM 1394 1-9 6.

Close the load plate (A), then push the load lever (B) until it snaps into the retention tab. B A 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! The motherboard supports Intel® LGA775 processors with the Intel® Enhanced Memory 64 Technology (EM64T), Enhanced Intel SpeedStep® Technology (EIST), and Hyper-Threading Technology. 1-10 Chapter 1: Product introduction 1.6.2 Installling the CPU heatsink and fan The Intel® CoreTM2 Extreme/CoreTM2 Duo/Pentium® D/Pentium® 4 and Celeron® D processors require a specially designed heatsink and fan assembly to ensure optimum thermal condition and performance. · · Install the motherboard to the chassis before you install the CPU fan and heatsink assembly When you buy a boxed Intel® CoreTM2 Extreme/CoreTM2 Duo/ Pentium® D/Pentium® 4 or Celeron® D LGA775 processor, the package includes the CPU fan and heatsink assembly. If you buy a CPU separately, make sure that you use only Intel®-certified multi-directional heatsink and fan. Your I Intel® CoreTM2 Extreme/CoreTM2 Duo/Pentium® D/Pentium® 4 or Celeron® D LGA775 LGA775 heatsink and fan assembly comes in a push-pin design and requires no tool to install. · If you purchased a separate CPU heatsink and fan assembly, make sure that a Thermal Interface Material is properly applied to the CPU heatsink or CPU before you install the heatsink and fan assembly.

To install the CPU heatsink and fan: 1. Place the heatsink on top of the installed CPU, making sure that the four fasteners match the holes on the motherboard. Fastener Motherboard hole Make sure each fastener is oriented as shown, with the narrow groove directed outward. ASUS P5L-VM 1394 1-11 2. Push down two fasteners at a time in a diagonal sequence to secure the heatsink and fan assembly in place. A B B A B A B A 3. When the fan and heatsink assembly is in place, connect the CPU fan cable to the connector on the motherboard labeled CPU_FAN. CPU_FAN P5L-VM 1394 CPU Fan Connector · · Do not forget to connect the CPU fan connector! Hardware monitoring errors can occur if you fail to plug this connector. We recommend you to install the chassis fan for better thermal state. 1-12 P5L-VM 1394 CPU FAN PWM CPU FAN IN CPU FAN PWR GND R Chapter 1: Product introduction 1. 6.3 1. 2. Uninstalling the CPU heatsink and fan To uninstall the CPU heatsink and fan: Disconnect the CPU fan cable from the connector on the motherboard. Rotate each fastener counterclockwise.

3. Pull up two fasteners at a time in a diagonal sequence to disengage the heatsink and fan assembly from the motherboard. A B B A A B B A ASUS P5L-VM 1394 1-13 4. Remove the heatsink and fan assembly from the motherboard. 5.

Rotate each fastener clockwise to reset the orientation. Narrow end of the groove The narrow end of the groove should point outward after resetting. (The photo shows the groove shaded for emphasis.) 1-14 Chapter 1: Product introduction 1.7 1.7.1 System memory 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. DDR2 DIMMs are notched differently to prevent installation on a DDR DIMM socket. The figure illustrates the location of the DDR2 DIMM sockets: DIMM_A1 DIMM_A2 DIMM_B1 DIMM_B2 P5L-VM 1394 P5L-VM 1394 240-pin DDR2 DIMM Sockets Channel Channel A Channel B Sockets DIMM_A1 and DIMM_A2 DIMM_B1 and DIMM_B2 1.

7.2 Memory configurations You may install 256 MB, 512 MB, 1 GB, and 2 GB unbuffered non-ECC DDR2 DIMMs into the DIMM sockets. · For dual-channel configuration, the total size of memory module(s) installed per channel must be the same (DIMM_A1 + DIMM_A2 = DIMM_B1 + DIMM_B2). Always install DIMMs with the same CAS latency. For optimum compatibility, it is recommended that you obtain memory modules from the same vendor. Refer to the DDR2 Qualified Vendors List on page 1-17 for details. Some odd version DDR2-667 DIMMs may not match Intel On-DieTemination (0DT) requirement and may downgrade to run at DDR2-533. If this happen, contact your retailer for the ODT value. This motherboard does not support memory modules made up of 128 Mb chips. 1-15 · · · ASUS P5L-VM 1394 128 Pins 112 Pins R Important notice on installing Windows® XP 32-bit version If you install Windows® XP 32-bit version Operating System (OS), the limitation of this OS version is that it may reserve a certain amount of memory space for system devices.

We recommend that you install less than 3 GB system memory if you would like to work under Windows® XP 32-bit version OS. The excess memory installation will not cause any usage problem, but it will not give users the benefit of manipulating this excess memory space. Visit the ASUS FAQ site for further explanation: http://support.asus.com/faq/faq.

aspx?SLanguage=en-us Under General Search, make the selections as shown, then click Search. Click the article titled "4GB memory installed but less memory size detected." You also may check the URLs below for third party comments on this issue: http://dlsvr01.asus.com/pub/ASUS/mb/4GB_Rev1. pdf http://www.intel.com/support/motherboards/server/sb/cs-016594.htm 1-16 Chapter 1: Product introduction 1.7.3 DDR2 Qualified Vendors List The following table lists the memory modules that have been tested and qualified for use with this motherboard. Visit the ASUS website (www.asus. com) for the latest DDR2 DIMM modules for this motherboard. DDR2 667 Qualified Vendors List Size 512MB 512MB 256MB 1024MB 256MB 512MB 1024MB 1024MB 512MB 512MB 512MB 1024MB 512MB 512MB Vendor KINGSTON KINGSTON KINGSTON Qimonda Qimonda Qimonda Qimonda SAMSUNG Hynix ELPIDA crucial crucial Transcend Transcend Model E5108AE-6E-E E5108AE-6E-E HYB18T256800AF3 HYB18T512800AF3S HYB18T512160BF-3S HYB18T512800BF3S HYB18T512800BF3S ZCE6K4T51083QC HY5PS12821AFP-Y4 E5108AE-6E-E Heat-Sink Package Heat-Sink Package E5108AE-6E-E J12Q3AB-6 Side(s) SS SS SS DS SS SS DS DS SS SS SS DS SS SS Component KVR667D2N5/512 KVR667D2E5/512 KVR667D2N5/256 HYS64T128020HU-3S-A HYS64T32000HU-3S-B HYS64T64000HU-3S-B HYS64T128020HU-3S-B M378T2953CZ0-CE6 HYMP564U64AP8-Y4 EBE51UD8AEFA-6E-E BL6464AA663.

8FD BL12864AA663.16FD TS64MLQ64V6J JM367Q643A-6 DIMM support A BC · Side(s): SS - Single Sided DIMM Support: DS - Double Sided A - supports one module inserted into either slot, in a Single-channel memory configuration. B - supports on pair of modules inserted into either the yellow slots or the black slots as one pair of Dual-channel memory configuration. C - support for 4 modules inserted into the yellow and black slots as two pairs of Dual-channel memory configuration. Visit the ASUS website (www.asus.com) for the latest memory Qualified Vendor List (QVL). ASUS P5L-VM 1394 1-17 1.7.4 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. To install a DIMM: 1. 2. Unlock a DIMM socket by pressing the retaining clips outward. Align a DIMM on the socket such that the notch on the DIMM matches the break on the socket.

Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM is properly seated. 1 3 2 DDR2 DIMM notch 3. Unlocked retaining clip ·A DDR2 DIMM is keyed with a notch so that it fits in only one direction. Do not force a DIMM into a socket to avoid damaging the DIMM. The DDR2 DIMM sockets do not support DDR DIMMs.

DO not install DDR DIMMs to the DDR2 DIMM sockets. · 1.7.5 1. Removing a DIMM 2 Follow these steps to remove a DIMM. Simultaneously press the retaining clips outward to unlock the DIMM. Support the DIMM lightly with your fingers when pressing the retaining clips. The DIMM might get damaged when it flips out with extra force. 1 1 DDR2 DIMM notch 2. Remove the DIMM from the socket.

1-18 Chapter 1: Product introduction 1.8 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. 1.8.1 1. 2. 3.

4. 5. 6. Installing an expansion card To install an expansion card: Before installing the expansion card, read the documentation that came with it and make the necessary hardware settings for the card. Remove the system unit cover (if your motherboard is already installed in a chassis).

Remove the bracket opposite the slot that you intend to use. Keep the screw for later use. Align the card connector with the slot and press firmly until the card is completely seated on the slot. Secure the card to the chassis with the screw you removed earlier. Replace the system cover.

1.8.2 Configuring an expansion card After installing the expansion card, configure it by adjusting the software settings. 1. 2. 3. Turn on the system and change the necessary BIOS settings, if any. See Chapter 2 for information on BIOS setup. Assign an IRQ to the card. Refer to the tables on the next page.

Install the software drivers for the expansion card. ASUS P5L-VM 1394 1-19 1.8.3 IRQ 0 1 2 4 5 6 7 8 9 10 11 12 13 14 Interrupt assignments Standard Function System Timer Keyboard Controller Re-direct to IRQ#9 Communications Port (COM1)* IRQ holder for PCI steering* Floppy Disk Controller Printer Port (LPT1)* System CMOS/Real Time Clock IRQ holder for PCI steering* IRQ holder for PCI steering* IRQ holder for PCI steering* PS/2 Compatible Mouse Port* Numeric Data Processor Primary IDE Channel Standard interrupt assignments * These IRQs are usually available for ISA or PCI devices. IRQ assignments for this motherboard A PCI slot 1 PCI slot 2 PCI Express x16 slot PCI Express x1 slot Onboard USB controller 1 Onboard USB controller 2 Onboard USB controller 3 Onboard USB controller 4 Onboard USB 2.0 controller Onboard IDE port Onboard HD audio Onboard LAN Onboard 1394 B C D E F G H -- shared -- -- -- -- -- -- non-shared shared -- -- -- -- -- -- shared -- -- -- -- -- -- -- -- -- -- shared -- -- -- shared -- -- -- -- -- -- shared -- -- -- -- -- -- shared -- -- -- -- -- -- shared -- -- -- shared -- -- -- -- -- -- shared -- -- -- shared -- -- -- -- -- -- -- -- -- -- -- shared -- When using PCI cards on shared slots, ensure that the drivers support "Share IRQ" or that the cards do not need IRQ assignments. Otherwise, conflicts will arise between the two PCI groups, making the system unstable and the card inoperable. 1-20 Chapter 1: Product introduction 1.8.4 PCI slots The PCI slots support cards such as a LAN card, SCSI card, USB card, and other cards that comply with PCI specifications.

The figure shows a LAN card installed on a PCI slot. If you install a PCI graphics card, we recommend that you remove the onboard graphics card driver. 1.8.5 PCI Express x16 This motherboard supports one PCI Express x16 graphics card.

The figure shows a graphics card installed on the PCI Express x16 slot. 1.8.6 PCI Express x1 This motherboard supports PCI Express x1 network cards, SCSI cards and other cards that comply with the PCI Express specifications. The figure shows a network card installed on the PCI Express x1 slot.

ASUS P5L-VM 1394 1-21 1.9 1. Jumpers Clear RTC RAM (CLRTC) This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS, which include system setup information such as system passwords. To erase the RTC RAM: 1. 2. 3. 4. 5.

6. Turn OFF the computer and unplug the power cord. Remove the onboard battery. 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. Re-install the battery. Plug the power cord and turn ON the computer. Hold down the <Del> key during the boot process and enter BIOS setup to re-enter data. Except when clearing the RTC RAM, never remove the cap on CLRTC jumper default position. Removing the cap will cause system boot failure! P5L-VM 1394 R CLRTC 12 Normal (Default) 23 Clear CMOS P5L-VM 1394 Clear RTC RAM You do not need to clear the RTC when the system hangs due to overclocking.

For system failure due to overclocking, use the C.P.R. (CPU Parameter Recall) feature. Shut down and reboot the system so the BIOS can automatically reset parameter settings to default values.

1-22 Chapter 1: Product introduction 2. Keyboard power (3-pin KBPWR) This jumper allows you to enable or disable the keyboard wake-up feature. Set this jumper to pins 2-3 (+5VSB) to wake up the computer when you press a key on the keyboard (the default is the Space Bar).

This feature requires an ATX power supply that can supply at least 1A on the +5VSB lead, and a corresponding setting in the BIOS. KBPWR P5L-VM 1394 2 1 +5V (Default) 3 2 +5VSB P5L-VM 1394 Keyboard Power Setting 3.

USB device wake-up (3-pin USBPW12, USBPW56) Set these jumpers to +5V to wake up the computer from S1 sleep mode (CPU stopped, DRAM refreshed, system running in low power mode) using the connected USB devices. Set to +5VSB to wake up from S3 and S4 sleep modes (no power to CPU, DRAM in slow refresh, power supply in reduced power mode). The USBPW12 jumper is for the rear USB ports (USB port 1-4). The USBPW56 jumper is for the internal USB connectors (USB port 5-8) that you can connect to additional USB ports. USBPW12 23 R P5L-VM 1394 12 R +5V (Default) +5VSB USBPW56 12 23 P5L-VM 1394 USB Device Wake Up · +5V (Default) +5VSB The USB device wake-up feature requires a power supply that can provide 500 mA on the +5VSB lead for each USB port; otherwise, the system would not power up. The total current consumed must NOT exceed the power supply capability (+5VSB) whether under normal condition or in sleep mode. 1-23 · ASUS P5L-VM 1394 1.10 Connectors 1.10.1 Rear panel connectors 1 2 3 4 5 6 7 11 1.

2. 3. 4. 10 9 8 PS/2 mouse port (green). This port is for a PS/2 mouse. Parallel port. This 25-pin port connects a parallel printer, a scanner, or other devices. IEEE 1394a port. This 6-pin IEEE 1394a port provides high-speed connectivity for audio/video devices, storage peripherals, PCs, or portable devices. LAN (RJ-45) port.

Supported by Attansic L1 Gigabit LAN controller, this port allows Gigabit connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications. LAN port LED indications ACT/LINK LED Status OFF ORANGE BLINKING Description No link Linked Data activity Status OFF ORANGE GREEN SPEED LED Description 10 Mbps connection 100 Mbps connection 1 Gbps connection ACT/LINK SPEED LED LED LAN port 5. 6. 7.

Line In port (light blue). This port connects the tape, CD, DVD player, or other audio sources. Line Out port (lime). This port connects a headphone or a speaker. In 4-channel, and 6-channel configuration, the function of this port becomes Front Speaker Out.

Microphone port (pink). This port connects a microphone. Refer to the audio configuration table on the next page for the function of the audio ports in 2, 4, or 6-channel configuration. 1-24 Chapter 1: Product introduction Audio 2, 4, or 6-channel configuration Port Light Blue Lime Pink Headset 2-channel Line In Line Out Mic In 4-channel Rear Speaker Out Front Speaker Out Mic In 6-channel Rear Speaker Out Front Speaker Out Bass/Center 8. 9. USB 2.0 ports 3 and 4. These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices. USB 2.

0 ports 1 and 2. These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices. 10. VGA port. This port is for a VGA monitor or other VGA-compatible devices. 11. PS/2 keyboard port (purple). This port is for a PS/2 keyboard. 1.

10.2 Internal connectors 1. Floppy disk drive connector (34-1 pin FLOPPY) This connector is for the provided floppy disk drive (FDD) signal cable. Insert one end of the cable to this connector, then connect the other end to the signal connector at the back of the floppy disk drive. Pin 5 on the connector is removed to prevent incorrect cable connection when using an FDD cable with a covered Pin 5.

FLOPPY P5L-VM 1394 R NOTE: Orient the red markings on the floppy ribbon cable to PIN 1. P5L-VM 1394 Floppy Disk Drive Connector ASUS P5L-VM 1394 PIN 1 1-25 2. IDE connectors (40-1 pin PRI_IDE) The onboard IDE connectors are for Ultra DMA 100/66/33 signal cables. There are three connectors on each Ultra DMA 100/66/33 signal cable: blue, black, and gray. Connect the blue connector to the motherboard's IDE connector, then select one of the following modes to configure your device(s).

PRI_IDE P5L-VM 1394 R P5L-VM 1394 IDE Connector NOTE: Orient the red markings (usually zigzag) on the ID ribbon cable to PIN 1. Drive jumper setting Single device Two devices Cable-Select or Master Cable-Select Master Slave Mode of device(s) Master Slave Master Slave PIN1 Cable connector Black Black Gray Black or gray · Pin 20 on the IDE connector is removed to match the covered hole on the Ultra DMA cable connector. This prevents incorrect insertion when you connect the IDE cable. Use the 80-conductor IDE cable for Ultra DMA 100/66/33 IDE devices. · If any device jumper is set as "Cable-Select," make sure all other device jumpers have the same setting. 1-26 Chapter 1: Product introduction 3. Serial ATA connectors (7-pin SATA1, SATA2, SATA3, SATA4) These connectors are for the Serial ATA signal cables for Serial ATA hard disk drives. SATA3 P5L-VM 1394 R SATA4 GND RSATA_RXN4 RSATA_RXP4 GND RSATA_TXN4 RSATA_TXP4 GND GND RSATA_TXP3 RSATA_TXN3 GND RSATA_RXP3 RSATA_RXN3 GND SATA1 GND RSATA_RXN1 RSATA_RXP1 GND RSATA_TXN1 RSATA_TXP1 GND SATA2 GND RSATA_RXN2 RSATA_RXP2 GND RSATA_TXN2 RSATA_TXP2 GND P5L-VM 1394 SATA Connectors When using the connectors in Standard IDE mode, connect the primary (boot) hard disk drive to the SATA1/2 connector. Refer to the table below for the recommended SATA hard disk drive connections. Serial ATA hard disk drive connection Connector Color Setting Use SATA1/2 SATA3/4 Red Black Master Slave Boot disk Data Disk right angle side Connect the right-angle side of SATA signal cable to SATA device.

Or you may connect the right-angle side of SATA cable to the onboard SATA port to avoid mechanical conflict with a long card in PCI2 slot. ASUS P5L-VM 1394 1-27 4. CPU, Power and Chassis fan connectors (4-pin CPU_FAN, 3-pin CHA_FAN) The fan connectors support cooling fans of a total of 1A~2.2A (26.4W max.) at +12V. Connect the fan cables to the fan connectors on the motherboard, making sure that the black wire of each cable matches the ground pin of the connector. Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! DO NOT place jumper caps on the fan connectors.

CPU_FAN CHA_FAN Rotation +12V GND P5L-VM 1394 Fan Connectors 5. Digital Audio connector (4-1 pin SPDIF_OUT) This connector is for the S/PDIF audio module to allow digital sound output. Connect one end of the S/PDIF audio cable to this connector and the other end to the S/PDIF module. P5L-VM 1394 R P5L-VM 1394 CPU FAN PWM CPU FAN IN CPU FAN PWR GND R SPDIF_OUT P5L-VM 1394 Digital Audio Connector The S/PDIF out module is purchased separately. 1-28 Chapter 1: Product introduction +5V SPDIFOUT GND 6.

IEEE 1394a port connector (10-1 pin IE1394_2) This connector is for a IEEE 1394a port.

Connect the IEEE 1394a module cable to this connector, then install the module to a slot opening at the back of the system chassis. P5L-VM 1394 R +12V TPB1+ GND TPA1+ IE1394_2 P5L-VM 1394 IEEE 1394a Connector GND +12V TPB1GND TPA1- 1 Never connect a USB cable to the IEEE1394a connector. Doing so will damage the motherboard! The IEEE 1394 module is purchased separately. 7.

Serial port connector (10-1 pin COM1) This connector is for a serial (COM) port. Connect the serial port module cable to this connector, then install the module to a slot opening at the back of the system chassis. P5L-VM 1394 R COM1 PIN 1 P5L-VM 1394 COM Port Connector The COM module is purchased separately. ASUS P5L-VM 1394 1-29 8. ATX power connectors (24-pin EATXPWR and 4-pin ATX12V) These connectors are for ATX power supply plugs. The power supply plugs are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit. · · Do not forget to connect the 4-pin ATX +12 V power plug; otherwise, the system will not boot. Use of a PSU with a higher power output is recommended when configuring a system with more power-consuming devices. The system may become unstable or may not boot up if the power is inadequate.

Make sure that your power supply unit (PSU) can provide at least the minimum power required by your system. If you intent to use a PSU with 20-pin and 4-pin power plugs, make sure that the 20-pin power plug can provide at least 15A on +12V and that the PSU has a minimum power rating of 350 W. The system may become unstable or may not boot up if the power is inadequate. The ATX 12 V Specification 2.0-compliant PSU passed the motherboard power requirement test with the following configuration: CPU : Memory : Graphics card : Parallel ATA devices : Serial ATA device : Optical drive : SCSI devices : · Intel® Pentium® 4 3.6 GHz 512 MB DDR (x 4) PCI Express x16 Nvidia EN5900 IDE hard disk drive (x 2) SATA hard disk drive CD-ROM (x2) SCSI card and SCSI hard disk drive · · · You must install a PSU with a higher power rating if you intend to install additional devices. EATX12V GND +12V DC P5L-VM 1394 EATXPWR +3 Volts +12 Volts +12 Volts +5V Standby Power OK Ground +5 Volts Ground +5 Volts Ground +3 Volts +3 Volts Ground +5 Volts +5 Volts +5 Volts -5 Volts Ground Ground Ground PSON# Ground -12 Volts +3 Volts R P5L-VM 1394 ATX Power Connector 1-30 Chapter 1: Product introduction GND +12V DC 9. Optical drive audio connector (4-pin CD) This connector is for the 4-pin audio cable that connects to the audio connector at the back of the optical drive. CD (black) P5L-VM 1394 Internal Audio Connector Enable the CD-IN function in the audio utility when using this connector. 10.

USB connectors (10-1 pin USB56, USB78) These connectors are for USB 2.0 ports. Connect the USB module cable to any of these connectors, then install the module to a slot opening at the back of the system chassis. These USB connectors comply with USB 2.0 specification that supports up to 480 Mbps connection speed.

P5L-VM 1394 R USB+5V USB_P8USB_P8+ GND NC Right Audio Channel Ground Ground Left Audio Channel P5L-VM 1394 R USB78 USB56 1 USB+5V USB_P7USB_P7+ GND 1 USB+5V USB_P5USB_P5+ GND P5L-VM 1394 USB 2.0 Connectors Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard! The USB module is purchased separately. ASUS P5L-VM 1394 USB+5V USB_P6USB_P6+ GND NC 1-31 11. Front panel audio connector (10-1 pin AAFP) This connector is for a chassis-mounted front panel audio I/O module that supports either HD Audio or legacy AC'97 audio standard.

AAFP HD-audio-compliant pin definition GND PRESENSE# SENSE1_RETUR SENSE2_RETUR P5L-VM 1394 R Legacy AC'97 compliant definition AGND NC NC PORT1L PORT1R PORT2R SEBSE_SEND PORT2L P5L-VM 1394 Front Panel Audio Connector · We recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard's highdefinition audio capability. By default, this connector is set to AC97 Audio. If you want to connect a High Definition front panel audio module to this connector, set the Front Panel Support Type item in the BIOS to [HD Audio]. See section "2.4.5 Onboard Device Configuration" for details. · 12. Chassis intrusion connector (4-1 pin CHASSIS) This connector is for a chassis-mounted intrusion detection sensor or switch. Connect one end of the chassis intrusion sensor or switch cable to this connector. The chassis intrusion sensor or switch sends a high-level signal to this connector when a chassis component is removed or replaced.

*The signal is then generated as a chassis intrusion event. By default, the pins 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. P5L-VM 1394 CHASSIS Chassis Signal GND +5VSB_MB R P5L-VM 1394 Intrusion Connector 1-32 (Default) Chapter 1: Product introduction MIC2 MICPWR Line out_R NC Line out_L NC 13. System panel connector (20-8 pin F_PANEL) This connector supports several chassis-mounted functions. PLED PLED+ P5L-VM 1394 SPEAKER +5V Ground Ground Speaker R PA NEL IDE_LED+ IDE_LEDReset Ground PWR Ground PLED- IDE_LED RESET PWRSW P5L-VM 1394 System Panel Connector * Requires an ATX power supply · 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. @@Connect the HDD Activity LED cable to this connector. @@@@@@@@@1. 2.*

3. 4. @@@@DOS environment a. Insert a 1.44MB floppy disk into the drive.

b. At the DOS prompt, type formatA:/S then press <Enter>. Windows® XP environment a. Insert a 1.44 MB floppy disk to the floppy disk drive.

b. Click Start from the Windows® desktop, then select My Computer. c. Select the 3 1/2 Floppy Drive icon. d. Click File from the menu, then select Format. A Format 3 1/2 Floppy Disk window appears. e. @@@@Insert a formatted, high density 1.44 MB floppy disk into the drive.

b. Insert the Windows® 2000 CD to the optical drive. c. Click Start, then select Run. d. @@e. Press <Enter>, then follow screen instructions to continue. Chapter 2: BIOS setup 2-2 2. Copy the original or the latest motherboard BIOS file to the bootable floppy disk. 2.

1.2 ASUS EZ Flash 2 utility The ASUS EZ Flash 2 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 2 utility is built-in the BIOS chip so it is accessible by pressing <Alt> + <F2> during the Power-On Self-Test (POST). To update the BIOS using EZ Flash 2: 1. 2.

3. Visit the ASUS website (www.

asus.com) to download the latest BIOS file for the motherboard. Save the BIOS file to a floppy disk or a USB flash disk, then restart the system. You can launch the EZ Flash 2 by two methods. @@@@@@@@Then press <Enter>. 4. @@@@@@@@The succeeding BIOS screens are for reference only. The actual BIOS screen displays may not be same as shown. 1. @@@@@@All rights reserved. Reading flash ...

.. done Write to file...... @@@@@@You need to type the exact BIOS filename at the DOS prompt. 2. @@@@All rights reserved. WARNING!! Do not turn off power during flash BIOS Reading file ....
... done Reading flash ..
.... done Advance Check ......

Erasing flash ...... done Writing flash ....
.. 0x0008CC00 (9%) 5. The utility returns to the DOS prompt after the BIOS update process is completed. @@All rights reserved.
WARNING!! Do not turn off power during flash BIOS Reading file .....
.. done Reading flash ...... done Advance Check ..

.... Erasing flash ......
done Writing flash .....
. done Verifying flash ....
@@@@@@2. 3. Turn on the system. @@The utility displays the following message and automatically checks the floppy disk for the original or updated BIOS file. Bad BIOS checksum. Starting BIOS recovery... Checking for floppy..

. If your display monitor is connected to the onboard VGA connector, the display monitor will turn-off and the system will beep once while the CrashFree BIOS 2 starts updating your system. The system will beep once again while the process is finished, and the display will return after the system restarts. When found, the utility reads the BIOS file and starts flashing the corrupted BIOS file. Bad BIOS checksum. Starting BIOS recovery... Checking for floppy..
. Floppy found! Reading file "P5LVM139.ROM". Completed. Start flashing.
.. DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure! 4. Restart the system after the utility completes the updating process. 2-6 Chapter 2: BIOS setup Recovering the BIOS from the support CD To recover the BIOS from the support CD: 1.
2. 3. Remove any floppy disk from the floppy disk drive, then turn on the system. Insert the support CD to the optical drive. The utility displays the following message and automatically checks the floppy disk for the original or updated BIOS file. Bad BIOS checksum. Starting BIOS recovery... Checking for floppy.

.. When no floppy disk is found, the utility automatically checks the optical drive for the original or updated BIOS file. The utility then updates the corrupted BIOS file. Bad BIOS checksum. Starting BIOS recovery... Checking for floppy..
. Floppy not found! Checking for CD-ROM... CD-ROM found! Reading file "P5LVM139.
ROM". Completed. Start flashing...
DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure! 4. 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. ASUS P5L-VM 1394 2-7 2.1.5 ASUS Update utility The ASUS Update is a utility that allows you to manage, save, and update the motherboard BIOS in Windows® environment. The ASUS Update utility allows you to: · · · · · Save the current BIOS file Download the latest BIOS file from the Internet Update the BIOS from an updated BIOS file Update the BIOS directly from the Internet, and View the BIOS version information.

This utility is available in the support CD that comes with the motherboard package. ASUS Update requires an Internet connection either through a network or an Internet Service Provider (ISP). Installing ASUS Update To install ASUS Update: 1. 2. 3. Place the support CD in the optical drive. The Drivers menu appears. Click the Utilities tab, then click Install ASUS Update. The ASUS Update utility is copied to your system. Quit all Windows® applications before you update the BIOS using this utility.
2-8 Chapter 2: BIOS setup Updating the BIOS through the Internet To update the BIOS through the Internet: 1. @@The ASUS Update main window appears. 2. Select Update BIOS from the Internet option from the drop-down menu, then click Next. 3.
Select the ASUS FTP site nearest you to avoid network traffic, or click Auto Select. Click Next. ASUS P5L-VM 1394 2-9 4. 5. From the FTP site, select the BIOS version that you wish to download.
Click Next. Follow the screen instructions to complete the update process. The ASUS Update utility is capable of updating itself through the Internet. @@2. @@The ASUS Update main window appears. @@4. Locate the BIOS file from the Open window, then click Open. @@@@@@@@@@The firmware hub on the motherboard stores the Setup utility. @@@@@@You can also restart by turning the system off and then back on. Do this last option only if the first two failed.

The Setup program is designed to make it as easy to use as possible. Being a menu-driven program, it lets you scroll through the various sub-menus and make your selections from the available options using the navigation keys. · The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Select the Load Default Settings item under the Exit Menu. See section "2.8 Exit Menu." The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen. Visit the ASUS website (www.asus.
com) to download the latest BIOS file for this motherboard and . · · ASUS P5L-VM 1394 2-11 2.2.1 BIOS menu screen Menu bar Configuration fields General help Menu items System Time System Date Legacy Diskette A Primary IDE Master Primary IDE Slave Third IDE Master Third IDE Slave Fourth IDE Master Fourth IDE Slave IDE Configuration System Information [11:51:19] [Thu 05/07/2004] [1.44M, 3.
5 in] :[ST320413A] :[Not Detected] :[Not Detected] :[Not Detected] :[Not Detected] :[Not Detected] Use [ENTER], [TAB] or [SHIFT-TAB] to select a field.
Use [+] or [-] to configure system time. Sub-menu items Navigation keys 2.2.2 Main Advanced Power Boot Tools Exit Menu bar For changing the basic system configuration For changing the advanced system settings For changing the advanced power management (APM) configuration For changing the system boot configuration For setting EZ Flash 2 and O.
C. Profile. For selecting the exit options and loading default settings The menu bar on top of the screen has the following main items: To select an item on the menu bar, press the right or left arrow key on the keyboard until the desired item is highlighted. 2.2.3 Navigation keys At the bottom right corner of a menu screen are the navigation keys for that particular menu. Use the navigation keys to select items in the menu and change the settings. Some of the navigation

4 Menu items System Time System Date Legacy Diskette A Language Primary IDE Master Primary IDE Slave Secondary IDE Master Secondary IDE Slave Third IDE Master Fourth IDE Master IDE Configuration System Information [11:10:19] [Thu 03/27/2003] [1.44M, 3.5 in] [English] :[ST320413A] :[ASUS CD-S340] :[Not Detected] :[Not Detected] :[Not Detected] :[Not Detected] Use [ENTER], [TAB] or [SHIFT-TAB] to select a field. Use [+] or [-] to configure system time. The highlighted item on the menu bar displays the specific items for that menu. For example, selecting Main shows the Main menu items. The other items (Advanced, Power, Boot, and Exit) on the menu bar have their respective menu items. +Tab F1 F10 ESC Select Screen Select Item Change Field Select Field General Help Save and Exit Exit Main menu items 2.2.5 Sub-menu items A solid triangle before each item on any menu screen means that the iteam has a sub-menu.

To display the sub-menu, select the item and press <Enter>. 2.2.6 Configuration fields These fields show the values for the menu items. If an item is userconfigurable, you can change the value of the field opposite the item.

You cannot select an item that is not user-configurable. A configurable field is enclosed in brackets, and is highlighted when selected. To change the value of a field, select it then press <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> to display a pop-up window with the configuration options for that item. 2.2.8 Scroll bar Advanced Chipset settings WARNING: Setting wrong values in the sections below may cause system to malfunction. Configure DRAM Timing by SPD Memory Acceleration Mode DRAM Idle Timer DRAm Refresh Rate Graphic Adapter Priority Graphics Aperture Size Spread Spectrum ICH Delayed Transaction MPS Revision [Enabled] [Auto] [Auto] [Auto] [AGP/PCI] [64 MB] [Enabled] [Enabled] [1.4] +F1 F10 ESC A scroll bar appears on the right side of a menu screen when there are items that do not fit on the screen. Press the Up/Down arrow keys or <Page Up> /<Page Down> keys to display the other items on the screen.

Select Screen Select Item Change Option General Help Save and Exit Exit 2.2.9 General help Pop-up window Scroll bar At the top right corner of the menu screen is a brief description of the selected item. ASUS P5L-VM 1394 2-13 2.3 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. System Time System Date Legacy Diskette A Primary IDE Master Primary IDE Slave Third IDE Master Third IDE Slave Fourth IDE Master Fourth IDE Slave IDE Configuration System Information [11:51:19] [Thu 05/07/2004] [1.44M, 3.

5 in] :[ST320413A] :[Not Detected] :[Not Detected] :[Not Detected] :[Not Detected] :[Not Detected] Use [ENTER], [TAB] or [SHIFT-TAB] to select a field. Use [+] or [-] to configure system time. 2.3.1 2.

3.2 2.3.3 System Time [xx:xx:xxxx] System Date [Day xx/xx/xxxx] Legacy Diskette A [1.44M, 3.

5 in.] Allows you to set the system time. Allows you to set the system date. Sets the type of floppy drive installed. Configuration options: [Disabled] [360K, 5.25 in.] [1.2M , 5.25 in.] [720K , 3.

5 in.] [1.44M, 3.5 in.] [2.88M, 3.5 in.] 2-14 Chapter 2: BIOS setup 2.3.4 Primary, Third and Fourth IDE Master/Slave While entering Setup, the BIOS automatically detects the presence of IDE devices.

There is a separate sub-menu for each IDE device. Select a device item then press <Enter> to display the IDE device information. Primary IDE Master Device : Hard Disk Vendor : ST320413A Size : 20.0GB LBA Mode : Supported Block Mode : 16 Sectors PIO Mode : Supported Async DMA : MultiWord DMA-2 Ultra DMA : Ultra DMA-5 SMART Monitoring: Supported Type LBA/Large Mode Block(Multi-sector Transfer) PIO Mode DMA Mode Smart Monitoring 32Bit Data Transfer [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Disabled] The BIOS automatically detects the values opposite the dimmed items (Device, Vendor, Size, LBA Mode, Block Mode, PIO Mode, Async DMA, Ultra DMA, and SMART monitoring). These values are not user-configurable. These items show N/A if no IDE device is installed in the system. Type [Auto] Selects the type of IDE drive. Setting to Auto allows automatic selection of the appropriate IDE device type. Select CDROM if you are specifically configuring a CD-ROM drive. Select ARMD (ATAPI Removable Media Device) if your device is either a ZIP, LS-120, or MO drive.

Configuration options: [Not Installed] [Auto] [CDROM] [ARMD] LBA/Large Mode [Auto] Enables or disables the LBA mode. Setting to Auto enables the LBA mode if the device supports this mode, and if the device was not previously formatted with LBA mode disabled. Configuration options: [Disabled] [Auto] Block (Multi-sector Transfer) [Auto] Enables or disables data multi-sectors transfers. When set to Auto, the data transfer from and to the device occurs multiple sectors at a time if the device supports multi-sector transfer feature. When set to [Disabled], the data transfer from and to the device occurs one sector at a time. Configuration options: [Disabled] [Auto] ASUS P5L-VM 1394 2-15 PIO Mode [Auto] Selects the PIO mode. Configuration options: [Auto] [0] [1] [2] [3] [4] DMA Mode [Auto] Selects the DMA mode. Configuration options: [Auto] [SWDMA0] [SWDMA1] [SWDMA2] [MWDMA0] [MWDMA1] [MWDMA2] [UDMA0] [UDMA1] [UDMA2] [UDMA3] [UDMA4] [UDMA5] SMART Monitoring [Auto] Sets the Smart Monitoring, Analysis, and Reporting Technology. Configuration options: [Auto] [Disabled] [Enabled] 32Bit Data Transfer [Disabled] Enables or disables 32-bit data transfer. Configuration options: [Disabled] [Enabled] 2.

3.5 IDE Configuration The items in this menu allow you to set or change the configurations for the IDE devices installed in the system. Select an item then press <Enter> if you wish to configure the item. IDE Configuration Onboard IDE Operate Mode Enhanced Mode Support On IDE Detect Time Out (Sec) [Enhanced Mode] [S-ATA] [35] Onboard IDE Operate Mode [Enhanced Mode] Disables or allows selection of the IDE operation mode depending on the operating system (OS) that you installed. Set to Enhanced Mode if you are using native OS, such as Windows® 2000/XP. Configuration options: [Disabled] [Compatible Mode] [Enhanced Mode] 2-16 Chapter 2: BIOS setup Enhanced Mode Support On [S-ATA] The default setting S-ATA allows you to use native OS on Serial ATA and Parallel ATA ports. We recommend that you do not change the default setting for better OS compatibility. In this setting, you may use legacy OS on the Parallel ATA ports only if you did not install any Serial ATA device. The P-ATA+S-ATA and P-ATA options are for advanced users only.

If you set to any of these options and encounter problems, revert to the default setting S-ATA.
Configuration options: [S-ATA+P-ATA] [S-ATA] [P-ATA] IDE Detect Time Out [35] Selects the time out value for detecting ATA/ATAPI devices.
Configuration options: [0] [5] [10] [15] [20] [25] [30] [35] ASUS P5L-VM 1394 2-17 2.3.6 System Information This menu gives you an overview of the general system specifications. The BIOS automatically detects the items in this menu.
AMIBIOS Version : 0106 Build Date : 07/26/06 Processor Type Speed Count : Genuine Intel(R) CPU 3.20GHz : 3200 MHz :1 System Memory Size : 512MB Appropriated : 0MB Available : 504MB AMI BIOS Displays the auto-detected BIOS information Processor Displays the auto-detected CPU specification System Memory Displays the auto-detected system memory 2-18 Chapter 2: BIOS setup 2.4 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.
JumperFree Configuration USB Configuration CPU Configuration Chipset Onboard Devices Configuration PCI PnP 2.4.1 JumperFree Configuration Select the target CPU frequency, and the relevant parameters will be auto-adjusted. Frequencies higher than CPU manufacturer recommends are not guaranteed to be stable. If the system Configure System Frequency/Voltage AI Overclocking [Auto] AI Overclocking [Auto] Allows selection of CPU overclocking options to achieve desired CPU internal frequency. Select either one of the preset overclocking configuration options: Manual - allows you to individually set overclocking parameters. Auto - loads the optimal settings for the system. Standard - loads the standard settings for the system. ASUS P5L-VM 1394 2-19 The following item appears only when you set the AI Overclocking item to [Manual]. CPU Frequency [200] Displays the frequency sent by the clock generator to the system bus.

The value of this item is auto-detected by the BIOS. The values range from 200 to 450. FSB/CPU External Frequency Synchronization Front Side Bus FSB 1066 FSB 800 FSB 533 CPU External Frequency 266 MHz 200 MHz 133 MHz DRAM Frequency [Auto] Allows you to set the DDR2 operating frequency.
Configuration options: [Auto] [DDR2-400MHz] [DDR2-533MHz] [DDR-667MHz] Selecting a very high DRAM frequency may cause the system to become unstable! If this happens, revert to the default setting. PCI Express Frequency [Auto] Allows you to set the PCI Express frequency. This item is set to [Auto] by default. Configuration options: [Auto] [90]...[150] CPU VCore Voltage [Auto] Sets the operating VCore voltage.
Configuration options: [Auto] [1.6000V] [1.5875V] [1.5750V] [1.5625V] [1.
5500V] [1.5375V] [1.5250V] [1.5125V] [1.5000V] [1.
4875V] [1.4750V] [1.4625V] [1.4500V] [1.4375V] [1.4250V] [1.4125V] [1.4000V] [1.3875V] [1.3750V] [1.

3625V] [1.3500V] [1.3375V] [1.3250V] [1.3125V] [1.3000V] [1.2875V] · Setting to a very high CPU VCore voltage can damage the CPU or may cause the system to become unstable. If this happens, revert to default settings. The configuration options may vary depending on the CPU you installed. · 2-20 Chapter 2: BIOS setup 2.
4.2 USB Configuration The items in this menu allows you to change the USB-related features. Select an item then press <Enter> to display the configuration options. USB Configuration Module Version - 2.23.
0-F.4 USB Devices Enabled: None USB Function Legacy USB Support USB 2.0 Controller USB 2.0 Controller Mode BIOS EHCI Hand-Off [Enabled] [Auto] [Enabled] [HiSpeed] [Enabled] The Module Version and USB Devices Enabled items show the auto-detected values. If no USB device is detected, the item shows None.
USB Function [Enabled] Allows you to enable or disable the USB function. Configuration options: [Disabled] [Enabled] Legacy USB Support [Auto] Allows you to enable or disable support for USB devices on legacy operating systems (OS). Setting to Auto allows the system to detect the presence of USB devices at startup. 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 [Enabled] Allows you to enable or disable the USB 2.0 controller. Configuration options: [Disabled] [Enabled] USB 2.0 Controller Mode [HiSpeed] Allows you to configure the USB 2.

0 controller in HiSpeed (480 Mbps) or Full Speed (12 Mbps). Configuration options: [HiSpeed] [Full Speed] BIOS EHCI Hand-off [Enabled] Allows you to enable support for operating systems without an EHCI hand-off feature. Configuration options: [Enabled] [Disabled] Do not disable the BIOS EHCI Hand-Off option if you are running a Windows® operating system with USB device. ASUS P5L-VM 1394 2-21 2.4.3 CPU Configuration The items in this menu show the CPU-related information that the BIOS automatically detects. Configure Advanced CPU settings Manufacturer: Brand String: Frequency : FSB Speed : Cache L1 Cache L2 Cache L3 Intel Genuine Intel(R) CPU 3.20GHz 3200 MHz 800 MHz Sets the ratio between CPU Core Clock and the FSB Frequency. NOTE: If an invalid ratio is set in CMOS then actual and setpoint values may differ. : 16 KB : 1024 KB : 0 KB Min:14) [Auto] [62] [Enabled] [Disabled] [Disabled] [Auto] [Auto] [Disabled] [Enabled] [Automatic] Ratio Status: Unlocked (Max:19, Ratio Actual Value : 19 CPU Ratio Adjustment: VID CMOS Setting: Microcode Updation Max CPUID Value Limit Execute Disable Function Enhanced C1 Control CPU Internal Thermal Control Hyper Threading Technology Virtualization Technology Intel(R) SpeedStep(tm) Tech.
+F1 F10 ESC +F1 F10 ESC Select Screen Select Item Change Option General Help Save and Exit Select Screen Exit Select Item Change Option General Help Save and Exit Exit CPU Ratio Adjustment [Auto] Allows you to set adjust the CPU ratio. Configuration options: [Auto] [Manual] The Ratio CMOS Setting item appears only when you set the CPU Ratio Adjustment item to [Manual]. Ratio CMOS Setting [14] Sets the ratio between the CPU Core Clock and the Front Side Bus frequency. The default value of this item is auto-detected by BIOS. Use the <+> or <-> keys to adjust the values.
VID CMOS Setting [62] Allows you to set the VID CMOS setting at which the processor is to run. The BIOS auto-detects the default value of this item. Use the <+> or <-> keys to adjust the values. Microcode Updation [Enabled] Allows you to enable or disable the microcode updation. Configuration options: [Disabled] [Enabled] 2-22 Chapter 2: BIOS setup Max CPUID Value Limit [Disabled] Enable this item to boot legacy operating systems that cannot support CPUs with extended CPUID functions.
Configuration options: [Disabled] [Enabled] Execute Disable Function [Disabled] Enables or disables the Execute Disable function.