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You can read the recommendations in the user guide, the technical guide or the installation guide for ASUS P8H61-M LX3 PLUS R2.0. You'll find the answers to all your questions on the ASUS P8H61-M LX3 PLUS R2.0 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual ASUS P8H61-M LX3 PLUS R2.0
User guide ASUS P8H61-M LX3 PLUS R2.0
Operating instructions ASUS P8H61-M LX3 PLUS R2.0
Instructions for use ASUS P8H61-M LX3 PLUS R2.0
Instruction manual ASUS P8H61-M LX3 PLUS R2.0

A vertical cover image for an ASUS motherboard. The top part is white with the ASUS logo. Below the logo, the text 'P8H61-M LX3 R2.0 Series' is centered, followed by a bulleted list: '• P8H61-M LX3 R2.0' and '• P8H61-M LX3 PLUS R2.0'. The bottom half of the cover is a solid green vertical bar with the word 'Motherboard' written vertically in white, bold, sans-serif font.



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Manual abstract:

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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. Ensure 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. If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.
Operation safety ••••• Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.

Before using the product, ensure that all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately. To avoid short circuits, keep paper clips, screws, inued on the next page) Chipset Memory Expansion slots Graphics Storage LAN Audio USB Other features viii P8H61-M LX3 R2.0 Series specifications summary ASUS unique features ASUS Anti-Surge Protection ASUS UEFI BIOS featuring friendly graphics user interface ASUS AI Suite II ASUS Fan Xpert ASUS Q-Fan 2 ASUS Network iControl* featuring instant network bandwidth domination for top network program in use ASUS AI Charger ASUS WebStorage ASUS CrashFree BIOS 3 ASUS EZ Flash 2 ASUS MyLogo 2™ * □ The ASUS Network iControl feature does not support Windows® XP/Vista operating systems. Rear panel ports 1 x PS/2 keyboard port (purple) 1 x PS/2 mouse port (green) 1 x D-Sub port 1 x LAN (RJ-45) port 4 x USB 2.0/1.1 ports 3 x Audio jacks Internal connectors/ 3 x USB 2.0/1.1 connectors support additional 6 USB 2.0/1.1 jumpers ports 4 x SATA 3.0 Gb/s connectors 1 x 4-pin CPU fan connector 1 x 4-pin chassis fan connector 1 x Front panel audio connector 1 x Systemigh definition audio The onboard 8-channel HD audio (High Definition Audio, previously codenamed Azalia) CODEC enables high-quality 192KHz/24-bit audio output and jack-detect feature that automatically detects and identifies what types of peripherals are plugged into the audio I/O jacks and notifies users of inappropriate connection, which means there will be no more confusion of Line-in, Line-out, and Mic jacks.



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Gigabit LAN solution The onboard LAN controller is a highly integrated Gb LAN controller. It is enhanced with an ACPI management function to provide efficient power management for advanced operating systems. 100% All High-quality Conductive Polymer Capacitors (P8H61-M LX3 PLUS R2.0 only) This motherboard uses all high-quality conductive polymer capacitors for durability, improved lifespan, and enhanced thermal capacity. 1-2 ASUS P8H61-M LX3 R2.0 Series 1.3.2 Innovative ASUS features ASUS UEFI BIOS Flexible and Easy BIOS Interface ASUS UEFI BIOS offers the first mouse-controlled graphical BIOS designed with selectable modes, providing a user-friendly interface that goes beyond the traditional keyboard-only controls. It also natively supports fully-utilized hard drives larger than 2.2TB in 64-bit operating systems. ASUS exclusive interface EZ Mode displays frequently-accessed info. Users can choose system performance settings, and drag and drop boot priorities. Advanced Mode for performance enthusiasts includes detailed DRAM settings via a dedicated memory info page for complete insight. New upgrade! Quick and easy information for enhanced system control - F12 BIOS snapshot hotkey for sharing UEFI information and troubleshooting - New F3 Shortcut for most accessed information - ASUS DRAM SPD (Serial Presence Detect) information for accessing memory information, detecting faulty DIMMs, and helping with difficult POST situations. Network iControl With a one-click on/off button, the software currently in use is set as top priority over all other network programs, dominating the network bandwidth with ease. Moreover, you can prioritize your favorite software easily by configuring profiles through the intuitive user interface. Within the profile, programs can be pre-scheduled to run in a specific time period to avoid network clogging and long-waits on downloads. Auto PPPoE network connection gives a one-step setup and an intuitive network bandwidth control center.

The Network iControl feature does not support Windows® XP/Vista operating systems. Ai Charger Ai Charger is ASUS fast-charging software that supports iPod, iPhone, and iPad. • Check your USB mobile device if it fully supports the BC 1.1 function. • The actual charging speed may vary with your USB device's conditions. Chapter 1: Product introduction 1-3 AI Suite II With its fast user-friendly interface, ASUS AI Suite II consolidates all the exclusive ASUS features into one simple to use software package. It allows you to supervise overclocking, energy management, fan speed control, and voltage and sensor readings. This all-in-one software offers diverse and ease to use functions, with no need to switch back and forth between different utilities. ASUS Anti-Surge Protection This special design prevents expensive devices and the motherboard from damage caused by power surges from switching power supply (PSU). ASUS Fan Xpert ASUS Fan Xpert intelligently allows you to adjust the CPU fan and chassis fan speeds according to different ambient temperatures caused by different climate conditions in different geographic regions and your PC's loading.

The built-in variety of useful profiles offer flexible controls of fan speed to achieve a quiet and cool environment. ASUS MyLogo2™ This feature allows you to convert your favorite photo into a 256-color boot logo for a more colorful and vivid image on your screen. ASUS CrashFree BIOS 3 ASUS CrashFree BIOS 3 is an auto-recovery tool that allows you to restore a corrupted BIOS file using the bundled support DVD or USB flash disk that contains the latest BIOS file. ASUS EZ Flash 2 ASUS EZ Flash 2 is a utility that allows you to update the BIOS without using an OS-based utility. ErP ready The motherboard is European Union's Energy-related Products (ErP) ready, and ErP requires products to meet certain energy efficiency requirements in regards to energy consumptions. This is in line with ASUS vision of creating environment-friendly and energy-efficient products through product design and innovation to reduce carbon footprint of the product and thus mitigate environmental impacts. 1-4 ASUS P8H61-M LX3 R2.0 Series 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.

• Before handling components, use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, 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, or components. Standby Power 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. SB_PWR P8H61-M LX3 R2.0 Series ON Standby Power OFF Powered Off P8H61-M LX3 R2.

0 Series Onboard LED Chapter 1: Product introduction 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. Ensure that you 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 When installing the motherboard, ensure 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. Placement direction 1.5.

2 Place six screws into the holes indicated by circles to secure the motherboard to the chassis. Do not overtighten the screws! Doing so can damage the motherboard. Screw holes Place this side towards the rear of the chassis P8H61-M LX3 R2.0 Series 1-6 ASUS P8H61-M LX3 R2.0 Series 1. 5.3 Motherboard layout 1 2 17.3cm(6.8in) 3 1 4 KBMS CPU_FAN VGA ATX12V DDR3 DIMM_A1 (64bit, 240-pin module) USB34 DDR3 DIMM_B1 (64bit, 240-pin module) LAN1_USB12 CHA_FAN Lithium Cell CMOS Power EATXPWR 22.6cm(8.9in) LGA1155 AUDIO PCIEX16 SATA3G_1 2 PCIEX1_1 Super I/O VIA VT1708S SATA3G_2 RTL 8111F P8H61-M LX3 R2.0 Series Intel® H61 SATA3G_3 PCIEX1_2 USB56 USB78 USB910 SB_PWR CLRTC SPEAKER AAFP 64Mb BIOS F_PANEL SATA3G_4 5 6 11 10 9 8 7 1.5.4 1. 2. 3. 4. 5. 6. Layout contents Page 1-25 1-23 1-8 1-13 1-24 1-26 7.

8. 9. 10. 11. Connectors/Jumpers/Slots/LED Speaker connector (4-pin SPEAKER) Clear RTC RAM (3-pin CLRRTC) USB connectors (10-1 pin USB56, USB78, USB910) Standby power LED (SB_PWR) Front panel audio connector (10-1 pin AAFP) Page 1-26 1-20 1-25 1-5 1-22 Connectors/Jumpers/Slots/LED CPU and chassis fan connectors (4-pin CPU_FAN, 4-pin CHA_FAN) ATX power connectors (24-pin EATXPWR, 4-pin ATX12V) Intel® LGA1155 CPU socket DDR3 DIMM slots Intel® H61 Serial ATA 3.



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0Gb/s connectors (7-pin SATA3G_1/2/3/4) System panel connector (10-1 pin F_PANEL) Chapter 1: Product introduction 1-7 1.6 Central Processing Unit (CPU) The motherboard comes with a surface mount LGA1155 socket designed for the Intel® 3rd / 2nd Generation Core™ i7 / i5 / i3 / Pentium® / Celeron® processors. Unplug all power cables before installing the CPU. • Upon purchase of the motherboard, ensure that the PnP cap is on the socket and the socket contacts are not bent. Contact your retailer immediately if the PnP cap is missing, or if you see any damage to the PnP cap/socket contacts/motherboard components.

ASUS will shoulder the cost of repair only if the damage is shipment/transit-related. • 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 LGA1155 socket. • The product warranty does not cover damage to the socket contacts resulting from incorrect CPU installation/removal, or misplacement/loss/incorrect removal of the PnP cap. 1.

6.1 1. To install a CPU: Installing the CPU Locate the CPU socket on the motherboard. P8H61-M LX3 R2.0 Series P8H61-M LX3 R2.

0 Series CPU socket LGA1155 2. Press the load lever with your thumb (A), and then move it to the right (B) until it is released from the retention tab. To prevent damage to the socket pins, do not remove the PnP cap unless you are installing a CPU. Load lever A B Retention tab 1-8 ASUS P8H61-M LX3 R2.0 Series 3. Lift the load lever in the direction of the arrow until the load plate is completely lifted. Load plate 4. Remove the PnP cap from the CPU socket by lifting the tab only. PnP cap 5. Position the CPU over the socket, ensuring that the gold triangle is on the bottom-left corner of the socket, and then fit the socket alignment keys into the CPU notches.

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! CPU notches Gold triangle mark Alignment keys Chapter 1: Product introduction 1-9 6. Apply some Thermal Interface Material to the exposed area of the CPU that the heatsink will be in contact with, ensuring that it is spread in an even thin layer. Some heatsinks come with preapplied thermal paste. If so, skip this step. The Thermal Interface Material is toxic and inedible. DO NOT eat it. If it gets into your eyes or touches your skin, wash it off immediately, and seek professional medical help. 7. Close the load plate (A), and then push down the load lever (B), ensuring that the front edge of the load plate slides under the retention knob (C).

A B C 8. Insert the load lever under the retention tab. 1-10 ASUS P8H61-M LX3 R2.0 Series 1.6.

2 The Intel® LGA1155 processor requires a specially designed heatsink and fan assembly to ensure optimum thermal condition and performance. • When you buy a boxed Intel® processor, the package includes the CPU fan and heatsink assembly. If you buy a CPU separately, ensure that you use only Intel®-certified multi-directional heatsink and fan. • Your Intel® LGA1155 heatsink and fan assembly comes in a push-pin design and requires no tool to install. • Use an LGA1155-compatible CPU heatsink and fan assembly only.

The LGA1155 socket is incompatible with the LGA775 and LGA1366 sockets in size and dimension. If you purchased a separate CPU heatsink and fan assembly, ensure that you have properly applied Thermal Interface Material to the CPU heatsink or CPU before you install the heatsink and fan assembly. Ensure that you have installed the motherboard to the chassis before you install the CPU fan and heatsink assembly. Installing the CPU heatsink and fan To install the CPU heatsink and fan: 1. Place the heatsink on top of the installed CPU, ensuring that the four fasteners match the holes on the motherboard.

Orient the heatsink and fan assembly such that the CPU fan cable is closest to the CPU fan connector. B A B A 2. Push down two fasteners at a time in a diagonal sequence to secure the heatsink and fan assembly in place. A B 1 1 B A The type of CPU heatsink and fan assembly may differ, but the installation steps and functions should remain the same. The illustration above is for reference only.

Chapter 1: Product introduction 1-11 3. Connect the CPU fan cable to the connector on the motherboard labeled CPU_FAN. CPU_FAN P8H61-M LX3 R2.0 Series P8H61-M LX3 R2.0 Series CPU fan connector Do not forget to connect the CPU fan connector! Hardware monitoring errors can occur if you fail to plug this connector. 1.6.3 1. 2. 3.

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. Pull up two fasteners at a time in a diagonal sequence to disengage the heatsink and fan assembly from the motherboard. A B CPU FAN PWM CPU FAN IN CPU FAN PWR GND B A B A 1-12 ASUS P8H61-M LX3 R2.0 Series 4.

5. Carefully remove the heatsink and fan assembly from the motherboard. Rotate each fastener clockwise to ensure correct orientation when reinstalling. 1.7 1.

7.1 System memory Overview The motherboard comes with two Double Data Rate 3 (DDR3) Dual Inline Memory Modules (DIMM) sockets. A DDR3 module has the same physical dimensions as a DDR2 DIMM but is notched differently to prevent installation on a DDR2 DIMM socket. DDR3 modules are developed for better performance with less power consumption. The figure illustrates the location of the DDR3 DIMM sockets: DIMM_A1 DIMM_B1 Channel Channel A Channel B P8H61-M LX3 R2.0 Series Sockets DIMM_A1 DIMM_B1 P8H61-M LX3 R2.0 Series 240-pin DDR3 DIMM sockets Chapter 1: Product introduction 1-13 1.7.2 You may install 1GB, 2GB, 4GB and 8GB unbuffered non-ECC DDR3 DIMMs into the DIMM sockets. • You may install varying memory sizes in Channel A and Channel B.

The system maps the total size of the lower-sized channel for the dual-channel configuration. Any excess memory from the higher-sized channel is then mapped for single-channel operation. • Always install DIMMs with the same CAS latency. For optimum compatibility, we recommend that you obtain memory modules from the same vendor. • Due to the memory address limitation on 32-bit Windows® OS, when you install 4GB or more memory on the motherboard, the actual usable memory for the OS can be about 3GB or less. For effective use of memory, we recommend that you do any of the following: - Use a maximum of 3GB system memory if you are using a 32-bit Windows® OS. -□ Install a 64-bit Windows® OS when you want to install 4GB or more on the motherboard. • This motherboard does not support DIMMs made up of 512Mb (64MB) chips or less. • The default memory operation frequency is dependent on its Serial Presence Detect (SPD), which is the standard way of accessing information from a memory module.



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5V KINGMAX FLFD45F-B8KL9 NAES 1GB SS KINGMAX KKB8FNWBFGNX-27A KINGMAX FLFF65F-C8KL9 NEES 4GB DS KINGMAX KFC8FNLXF-DXX-15A KINGMAX FLFF65F-C8KM9 NEES 4GB DS KINGMAX KFC8FNMXF-BXX-15A KINGSTON KVR1333D3N9/2G 2GB SS Hynix H5TQ2G83AFRH9C 9 XMP KINGSTON KHX1333C9D3UK2/4GX(XMP) 4GB(2 x 2GB) DS 9 1.25V KINGSTON KVR1333D3N9/4G 4GB DS ELPIDA J2108BCSE-DJ-F 1.5V KINGSTON KVR1333D3N9/4G 4GB DS KTC D2568JENCNGD9U 1.5V Micron MT8JTF25664AZ-1G4M1 2GB SS MICRON IJM22 D9PFJ Micron MT16JTF51264AZ-1G4D1 4GB DS Micron OLD22D9LGK NANYA NT4GC64B8HG0NF-CG 4GB DS NANYA NT5CB256M8GN-CG Super Talent W1333UA1GH 1GB SS Hynix H5TQ1G83TFR 9 Super Talent W1333UB4GS 4GB DS SAMSUNG K4B2G0846C Super Talent W1333UX6GM 6GB(3x 2GB) DS Micron 0BF27D9KPT 9-9-9-24 1.5V Transcend JM1333KLN-2G 2GB SS Micron 0YD77D9LGK Transcend JM1333KLU-2G 2GB DS Transcend TK243PDF3 - 1-16 ASUS P8H61-M LX3 R2.

0 Series DDR3-1066 MHz capability Vendors Crucial ELPIDA ELPIDA KINGSTON KINGSTON Micron Part No. CT12864BA1067.8FF EBJ10UE8EDF0-AE-F EBJ21UE8EDF0-AE-F KVR1066D3N7/2G KVR1066D3N7/4G MT16JTF25664AZ-1G1F1 Size 1GB 1GB 2GB 2GB 4GB 2GB SS/DS Chip Brand SS SS DS DS DS DS Micron ELPIDA ELPIDA ELPIDA Hynix Micron Chip No. 9GF22D9KPT J1108EDSE-DJ-F J1108EDSE-DJ-F J1108BDSE-DJ-F H5TQ2G83AFR 9HF22D9KPT Timing Voltage 7 7 7 7 1.35V(low voltage) 1.35V(low voltage) 1.5V 1.5V DIMM socket support (optional) 1DIMM 2DIMMs ••••••••••SS: Single-sided / DS: Double-sided DIMM support: •1 DIMM: □ Supports one module inserted into either slot as single-channel memory configuration. •2 DIMMs: □ Supports one pair of modules inserted into both the blue slots as one pair of dual-channel memory configuration. Visit the ASUS website at www.asus.com

asus.com for the latest QVL. Chapter 1: Product introduction 1-17 1.7.3 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. 1. 2. Press the retaining clips outward to unlock a DIMM socket. Align a DIMM on the socket such that the notch on the DIMM matches the DIMM slot key on the socket.

1 Unlocked retaining clip DIMM notch 2 1 DIMM slot key A DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket in the wrong direction to avoid damaging the DIMM. 3. Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM is properly seated. 3 Locked Retaining Clip 1.

7.4 1. To remove a DIMM: Removing a DIMM Simultaneously press the retaining clips outward to unlock the DIMM. 2 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 2. Remove the DIMM from the socket. DIMM notch 1-18 ASUS P8H61-M LX3 R2.0 Series 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. 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. To install an expansion card: Installing 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 1. 2. 3. After installing the expansion card, configure it by adjusting the software settings. 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. Install the software drivers for the expansion card. 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. Configuring an expansion card 1.8.3 1.8.4 This motherboard supports PCI Express x1 network cards, SCSI cards, and other cards that comply with the PCI Express specifications.

This motherboard has a PCI Express 3.0/2.0 x16 slot that supports PCI Express 3.0/2.0 x16 graphic cards complying with the PCI Express specifications. PCI Express x1 slot PCI Express 3.0/2.0 x16 slot Chapter 1: Product introduction 1-19 1.9 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. Clear RTC RAM (3-pin CLRTC) Jumpers CLRTC 1 P8H61-M LX3 R2.0 Series 2 2 3 Normal (Default) Clear RTC P8H61-M LX3 R2.0 Series Clear RTC RAM To erase the RTC RAM: 1. Turn OFF the computer and unplug the power cord.

2. Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep the cap on pins 2-3 for about 5-10 seconds, then move the cap back to pins 1-2. 3. Plug the power cord and turn ON the computer.

4. Hold down the 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! • If the steps above do not help, remove the onboard battery and move the jumper again to clear the CMOS RTC RAM data. After clearing the CMOS, reinstall the battery. • You do not need to clear the RTC when the system hangs due to overclocking. For system failure due to overclocking, use the CPU Parameter Recall (C.P.R.) feature.

Shut down and reboot the system, then the BIOS automatically resets parameter settings to default values. 1-20 ASUS P8H61-M LX3 R2.0 Series 1.10 1.10.1 1 Connectors Rear panel connectors 2 3 4 9 1. 2. 8 7 6 5 PS/2 Mouse port. This port connects to a PS/2 mouse. LAN (RJ-45) port.

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 Activity/Link LED Status OFF Description No link Linked Speed LED Status OFF Description Activity Link Speed LED LED 10Mbps connection 1Gbps connection ORANGE BLINKING Data activity ORANGE GREEN 100Mbps connection LAN port 3. 4. 5.

Line In port (light blue). This port connects to the tape, CD, DVD player, or other audio sources. Line Out port (lime). This port connects to a headphone or a speaker. In the 4, 6, and 8-channel configurations, the function of this port becomes Front Speaker Out. Microphone port (pink).



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This port connects to a microphone. Refer to the audio configuration table below for the function of the audio ports in 2, 4, 6, or 8-channel configuration. Audio 2, 4, 6, or 8-channel configuration Port Light Blue (Rear panel) Lime (Rear panel) Pink (Rear panel) Lime (Front panel) 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-channel Rear Speaker Out Front Speaker Out Bass/Center Side Speaker Out To configure an 8-channel audio output: Use a chassis with HD audio module in the front panel to support an 8-channel audio output. Chapter 1: Product introduction 1-21 6. 7. 8. 9. USB 2.0 ports 1 and 2.

@@USB 2.0 ports 3 and 4. @@D-Sub port. @@PS/2 Keyboard port. @@@@@@By default, this connector is set to [HD]. @@@@@@• DO NOT forget to connect the 4-pin ATX +12V power plug. @@@@@@com/PowerSupplyCalculator/PSCalculator.aspx?SLanguage=en-us for details. Chapter 1: Product introduction GND GND 1-23 3. These connectors connect to Serial ATA 3.

0 Gb/s hard disk drives and optical drives via Serial ATA 3.0 Gb/s signal cables. SATA3G_1 GND RSATA_RXP1 RSATA_RXN1 GND RSATA_TXN1 RSATA_TXP1 GND Intel® H61 Serial ATA 3.0Gb/s connectors (7-pin SATA3G_1~4) SATA3G_2 GND RSATA_TXP2 RSATA_TXN2 GND RSATA_RXN2 RSATA_RXP2 GND SATA3G_3 GND RSATA_RXP3 RSATA_RXN3 GND RSATA_TXN3 RSATA_TXP3 GND SATA3G_4 GND RSATA_TXP4 RSATA_TXN4 GND RSATA_RXN4 RSATA_RXP4 GND P8H61-M LX3 R2.0 Series P8H61-M LX3 R2.

0 Series Intel® SATA 3.0Gb/s connectors • You must install Windows® XP Service Pack 3 or later version before using Serial ATA hard disk drives. • Due to H61 Chipset limitation, AHCI Mode only works on Windows® Vista / Windows® 7. Please use IDE Mode on Windows® XP. • [IDE] is the default SATA type.

Under Windows® XP, there is no need to change the SATA type. • To configure the SATA type in BIOS, click Advanced Mode > Advanced tab > SATA Configuration > SATA Mode Selection. • When using hot-plug and NCQ on Windows® Vista / Windows® 7, set the SATA Mode Selection item in the BIOS to [AHCI]. See section 2.5.3 SATA Configuration for details. 1-24 ASUS P8H61-M LX3 R2.0 Series 4. Connect the fan cables to the fan connectors on the motherboard, ensuring that the black wire of each cable matches the ground pin of the connector. CPU_FAN CPU and chassis fan connectors (4-pin CPU_FAN, 4-pin CHA_FAN) CHA_FAN P8H61-M LX3 R2.

0 Series CHA FAN PWM CHA FAN IN CHA FAN PWR GND P8H61-M LX3 R2.0 Series Fan connectors 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! @@@@@@Doing so will damage the motherboard! @@Connect the chassis power LED cable to this connector. @@@@Connect the HDD Activity LED cable to this connector. @@@@@@Refer to your OS documentation for detailed information.

@@@@@@@@@@@@The Specials menu appears. Click the Utilities tab, then click AI Suite II. @@@@The ASUS Update main screen appears.

From the list, select either of the following methods: Updating from the Internet a.

c. b. Select Update BIOS from the Internet, then click Next. Select the ASUS FTP site nearest you to avoid network traffic, then click Next. From the FTP site, select the BIOS version that you wish to download then click Next.

Chapter 2: BIOS information 2-1 The ASUS Update utility is capable of updating itself through the Internet. Always update the utility to avail all its features. Updating from a BIOS file 3. a. b.

Select Update BIOS from file, then click Next. Follow the onscreen instructions to complete the updating process. Locate the BIOS file from the Open window, then click Open. 2.1.2 The ASUS EZ Flash 2 feature allows you to update the BIOS without using an OS-based utility. Before you start using this utility, download the latest BIOS file from the ASUS website at www.asus.com. ASUS EZ Flash 2 To update the BIOS using EZ Flash 2: 1.

2. Enter the Advanced Mode of the BIOS setup program. Go to the Tool menu to select ASUS EZ Flash 2 Utility and press <Enter> to enable it. Exit ASUS EZ Flash 2 Utility v01.04 Flash Info MODEL: P8H61-M LX3 R2.0 File Path: fs0:\ Drive fs0:\ Folder Info 04/25/12 10:23p 8390656 H61MLX3R.CAP VER: 0303 DATE: 04/25/2012 Insert the USB flash disk that contains the latest BIOS file to the USB port. File Info MODEL: Help Info VER: DATE [Enter] Select or Load [Tab] Switch [Up/Down/PageUp/PageDown/Home/End] Move [Esc] Exit 2-2 ASUS P8H61-M LX3 R2.0 Series 3. 4.

5. 6. Press the Up/Down arrow keys to find the USB flash disk that contains the latest BIOS, and then press <Enter>. Press the Up/Down arrow keys to find the BIOS file, and then press <Enter> to perform the BIOS update process. Reboot the system when the update process is done.

• This function supports USB flash disks with FAT 32/16 format and single partition only. Press <Tab> to switch to the Drive field. Press <Tab> to switch to the Folder Info field. • DO NOT shut down or reset the system while updating the BIOS to prevent system boot failure! 2.1.

3 The ASUS CrashFree BIOS 3 is an auto recovery tool that allows you to restore the BIOS file when it fails or gets corrupted during the updating process.

You can restore a corrupted BIOS file using the motherboard support DVD or a USB flash drive that contains the updated BIOS file. • Before using this utility, rename the BIOS file in the removable device into H61MLX3R.CAP (P8H61-M LX3 R2.0) or H61ML3PR.CAP (P8H61-M LX3 PLUS R2.0). • The BIOS file in the support DVD may not be the latest version. Download the latest BIOS file from the ASUS website at www.asus.com.

com. ASUS CrashFree BIOS 3 utility Recovering the BIOS To recover the BIOS: 1. 2. 3. 4. Turn on the system. Insert the support DVD to the optical drive or the USB flash drive that contains the BIOS file to the USB port. The utility automatically checks the devices for the BIOS file. When found, the utility reads the BIOS file and enters ASUS EZ Flash 2 utility automatically. The system requires you to enter BIOS Setup to recover BIOS setting.

To ensure system compatibility and stability, we recommend that you press <F5> to load default BIOS values. DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure! Chapter 2: BIOS information 2-3 2.1.4 The ASUS BIOS Updater allows you to update BIOS in DOS environment. This utility also allows you to copy the current BIOS file that you can use as a backup when the BIOS fails or gets corrupted during the updating process.

The succeeding utility screens are for reference only. The actual utility screen displays may not be same as shown. ASUS BIOS Updater Before updating BIOS 1. 2. Prepare the motherboard support DVD and a USB flash drive in FAT32/16 format and single partition.



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See section 1.9 Jumpers for information on how to erase the RTC RAM. • The Administrator or User Password items on top of the screen show the default Not Installed.

After you set a password, these items show Installed. 2-10 ASUS P8H61-M LX3 R2.0 Series Administrator Password If you have set an administrator password, we recommend that you enter the administrator password for accessing the system. Otherwise, you might be able to see or change only selected fields in the BIOS setup program. To set an administrator password: 1. 2. 3. 1. 2. 3.

4. Select the Administrator Password item and press <Enter>. Confirm the password when prompted. From the Create New Password box, key in a password, then press <Enter>. To change an administrator password: From the Enter Current Password box, key in the current password, then press <Enter>. Confirm the password when prompted. Select the Administrator Password item and press <Enter>. From the Create New Password box, key in a new password, then press <Enter>. To clear the administrator password, follow the same steps as in changing an administrator password, but press <Enter> when prompted to create/confirm the password. After you clear the password, the Administrator Password item on top of the screen shows Not Installed.

User Password If you have set a user password, you must enter the user password for accessing the system. The User Password item on top of the screen shows the default Not Installed. After you set a password, this item shows Installed. To set a user password: 1. 2.

3. 1. 2. 3. 4.

Select the User Password item and press <Enter>. Confirm the password when prompted. From the Create New Password box, key in a password, then press <Enter>. To change a user password: From the Enter Current Password box, key in the current password, then press <Enter>. Confirm the password when prompted. Select the User Password item and press <Enter>. From the Create New Password box, key in a new password, then press <Enter>. To clear the user password, follow the same steps as in changing a user password, but press <Enter> when prompted to create/confirm the password. After you clear the password, the User Password item on top of the screen shows Not Installed. Chapter 2: BIOS information 2-11 2.

4 Ai Tweaker menu Be cautious when changing the settings of the Ai Tweaker menu items. Incorrect field values can cause the system to malfunction. The configuration options for this section vary depending on the CPU and DIMM model you installed on the motherboard. UEFI BIOS Utility - Advanced Mode Exit The Ai Tweaker menu items allow you to configure overclocking-related items. Main Ai Tweaker Advanced Monitor Boot Tool Target CPU Turbo Mode Speed : 3700MHz Target DRAM Speed : 1333MHz Ai Overclock Tuner ASUS MultiCore Enhancement Memory Frequency > GPU Boost > DRAM Timing Control > CPU Power Management Auto Enabled Auto [X.M.P.] When XMP is enabled BLCK frequency, CPU ratio and memory parameters will be auto optimized. 2.4.

1 Allows you to select the CPU overclocking options to achieve the desired CPU internal frequency. Select any of these preset overclocking configuration options: [Auto] Loads the optimal settings for the system. [X.M.P.]

] If you install memory modules supporting the eXtreme Memory Profile (X.M.P.) Technology, choose this item to set the profiles supported by your memory modules for optimizing the system performance. The Ai Overclock Tuner appears only when you install a DIMM with X.

M.P. support. Ai Overclock Tuner [Auto] 2.4.2 [Enabled] Select this option for maximum performance under XMP/Manual/User define memory frequency mode. [Disabled] Select this option for default core ratio settings. ASUS MultiCore Enhancement [Enabled] 2.4.3 Allows you to set the memory operating frequency.

Configuration options: [DDR3-800MHz] [DDR3-1066MHz] [DDR3-1333MHz] [DDR3-1600MHz] [DDR3-1866MHz] [DDR3-2133MHz] [DDR3-2400MHz] Selecting a very high memory frequency may cause the system to become unstable! If this happens, revert to the default setting. Memory Frequency [Auto] 2-12 ASUS P8H61-M LX3 R2.0 Series 2.4.4 2.4.5 GPU Boost accelerates the integrated GPU for extreme graphics performance. Configuration options: [OK] [Cancel] The sub-items in this menu allow you to set the DRAM timing control features. Use the <+> and <-> keys to adjust the value. To restore the default setting, type [auto] using the keyboard and press <Enter>.

Changing the values in this menu may cause the system to become unstable! If this happens, revert to the default settings. GPU Boost DRAM Timing Control 2.4.6 The sub-items in this menu allow you to set the CPU ratio and features. CPU Ratio [Auto] CPU Power Management Allows you to manually adjust the maximum non-turbo CPU ratio.

Use <+> and <-> keys or the numeric keypad to adjust the ratio. The valid value ranges vary according to your CPU model. Enhanced Intel SpeedStep Technology [Enabled] Allows you to enable or disable the Enhanced Intel® SpeedStep Technology (EIST). [Disabled] [Enabled] The operating system dynamically adjusts the processor voltage and core frequency which may result in increased average consumption and decrease average heat production. Turbo Mode [Enabled] Disables this function.

[Enabled] Allows processor cores to run faster than marked frequency in specific conditions. [Disabled] Disables this function. The following three items appear only when you set the Turbo Mode item to [Enabled]. Long Duration Power Limit [Auto] Allows you to limit the turbo ratio's long duration power.

Use the <+> and <-> keys to adjust the value. Long Duration Maintained [Auto] Allows you to maintain the turbo ratio's long duration power. Use the <+> and <-> keys to adjust the value. Short Duration Power Limit [Auto] Allows you to limit the turbo ratio's long duration power. Use the <+> and <-> keys to adjust the value. Primary Plane Current Limit [Auto] Maximum instantaneous current allowed at any given time for CPU cores.

Use <+> and <-> key to adjust the value at 0.125A increment. Secondary Plane Current Limit [Auto] Maximum instantaneous current allowed at any given time for Internal Graphics cores. Use <+> and <-> key to adjust the value at 0.125A increment. Chapter 2: BIOS information 2-13 2.5 Advanced menu The Advanced menu items allow you to change the settings for the CPU and other system devices. Be cautious when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction. 2.

5.1 The items in this menu show the CPU-related information that the BIOS automatically detects. The items shown in submenu may be different due to the CPU you installed.



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CPU Configuration Intel Adaptive Thermal Monitor [Enabled] [Enabled] [Disabled] Enables the overheated CPU to throttle its clock speed to cool down. Disables the CPU thermal monitor function.

Active Processor Cores [All] Allows you to choose the number of CPU cores to activate in each processor package. Configuration options: [All] [1] [2] [3] Limit CPUID Maximum [Disabled] [Enabled] Allows legacy operating systems to boot even without support for CPUs with extended CPUID functions. [Disabled] Disables this function. 2-14 ASUS P8H61-M LX3 R2.0 Series Execute Disable Bit [Enabled] [Enabled] [Disabled] Enables the No-Execution Page Protection Technology.

Forces the XD feature flag to always return to zero (0). Intel Virtualization Technology [Disabled] [Enabled] Allows a hardware platform to run multiple operating systems separately and simultaneously, enabling one system to virtually function as several systems. [Disabled] Disables this function. Hardware Prefetcher [Enabled] [Enabled] [Disabled] [Enabled] [Disabled] Allows a hardware platform to run multiple operating systems separately and simultaneously, enabling one system to virtually function as several systems. Disables this function. Allows a hardware platform to perform adjacent cache line prefetching. Disables this function. Adjacent Cache Line Prefetch [Enabled] CPU Power Management Configuration CPU Ratio [Auto] Allows you to set the ratio between the CPU Core Clock and the BCLK Frequency. Use <+> and <-> keys to adjust the ratio. The valid value ranges vary according to your CPU model.

Enhanced Intel SpeedStep Technology [Enabled] Allows you to enable or disable the Enhanced Intel® SpeedStep Technology (EIST). [Disabled] The CPU runs at its default speed. [Enabled] The operating system controls the CPU speed. Turbo Mode [Enabled] Allows you to enable or disable the Intel® Turbo Mode Technology. [Enabled] Allows processor cores to run faster than marked frequency in specific condition. [Disabled] Disables this function. CPU CIE [Auto] Enables or disables the CIE support function. This item should be enabled in order to enable the Enhanced Halt State. Configuration options: [Auto] [Enabled] [Disabled] CPU C3 Report [Auto] Allows you to disable or enable the CPU C3 report to OS. Configuration options: [Auto] [Enabled] [Disabled] CPU C6 Report [Auto] Allows you to disable or enable the CPU C6 report to OS.

Configuration options: [Auto] [Enabled] [Disabled] Chapter 2: BIOS information 2-15 2.5.2 PCH Configuration High Precision Timer [Enabled] Allows you to enable or disable the High Precision Event Timer. Configuration options: [Enabled] [Disabled] Intel(R) Rapid Start Technology Intel(R) Rapid Start Technology [Disabled] Allows you to enable or disable the Intel(R) Rapid Start Technology. Configuration options: [Enabled] [Disabled] The following three items appear only when you set the Intel(R) Rapid Start Technology to [Enabled].

Entry on S3 RTC Wake [Enabled] Allows you to enable or disable the iFFS invocation upon S3 RTC wake. Configuration options: [Enabled] [Disabled] Entry After [10 Minutes] This item appears only when you set the Entry on S3 RTC Wake to [Enabled] and allows you to set the RTC wake timer at S3 entry. Configuration options: [Immediately] [1 minute] [2 minutes] [5 minutes] [10 minutes] [15 minutes] [30 minutes] [1 hour] [2 hours] Active Page Threshold Support [Disabled] Allows you to enable or disable the Active Page Threshold Support. Configuration options: [Enabled] [Disabled] Active Memory Threshold [x] This item appears only when you set the Active Page Threshold Support to [Enabled] and allows you to set the Active Memory Threshold. When the partition size is larger than the Active Page Threshold size, the system will try to support the Intel(R) Rapid Start Technology.

When the item is set to zero, the system automatically checks whether the partition size is enough at S3 entry. Key in the desired value using the numeric keypad. Intel(R) Smart Connect Technology ISCT Configuration [Disabled] Allows you to enable or disable the ISCT configuration. Configuration options: [Enabled] [Disabled] 2.5.3 While entering Setup, the BIOS automatically detects the presence of SATA devices. The SATA Port items show Empty if no SATA device is installed to the corresponding SATA port. SATA Configuration 2-16 ASUS P8H61-M LX3 R2.0 Series SATA Mode Selection [IDE] Allows you to set the SATA configuration. [Disabled] Disables the SATA function.

[IDE] Set to [IDE] when you want to use the Serial ATA hard disk drives as Parallel ATA physical storage devices. [AHCI] Set to [AHCI] when you want the SATA hard disk drives to use the AHCI (Advanced Host Controller Interface). The AHCI allows the onboard storage driver to enable advanced Serial ATA features that increases storage performance on random workloads by allowing the drive to internally optimize the order of commands. • Due to H61 Chipset limitation, AHCI Mode only works on Windows® Vista / Windows® 7. Please use IDE Mode on Windows® XP. • [IDE] is the default SATA type. Under Windows® XP, there is no need to change the SATA type. S.M.A.

R.T. Status Check [Enabled] S.M.A.

R.T. (Self-Monitoring, Analysis and Reporting Technology) is a monitor system. When read/write of your hard disk errors occur, this feature allows the hard disk to report warning messages during the POST. Configuration options: [Enabled] [Disabled] Hot Plug [Disabled] This item only appears when you set the SATA Mode Selection item to [AHCI] and allows you to enable or disable the hot-plug support for each SATA port.

Configuration options: [Enabled] [Disabled] 2.5.4 [Enabled] [Disabled] System Agent Configuration Allow you to enable remapping the memory above 4GB. Disables this function. Memory Remap Feature [Enabled] Graphics Configuration Primary Display [Auto] Allows you to decide which graphics controller to use as the primary boot device. Configuration options: [Auto] [iGPU] [PCIE] iGPU Memory [Auto] Allows you to set the iGPU memory size. Configuration options: [Auto] [32M] [64M] [96M] [128M] ~ [448M] [480M] [512M] [1024M] Render Standby [Enabled] Allows you to enable or disable Render Standby by internal graphics devices. Configuration options: [Disabled] [Enabled] iGPU Multi-Monitor [Disabled] Allows you to enable or disable the Lucid Virtu support for both the integrated and discrete graphics. The iGPU shared memory size will be fixed at 64MB. Configuration options: [Disabled] [Enabled] Chapter 2: BIOS information 2-17 2.

5.5 The items in this menu allow you to change the USB-related features. The USB Devices item shows the auto-detected values. If no USB device is detected, the item shows None. USB Configuration Legacy USB Support [Enabled] [Enabled] [Disabled] [Auto] Enables the support for USB devices on legacy operating systems (OS). The USB devices can be used only for the BIOS setup program. Allows the system to detect the presence of USB devices at startup.



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