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ASUS M5A99X EVO R2.0

ASUS M5A99X EVO R2.0 AM3+ Motherboard User Manual

Model: M5A99X EVO R2.0

1. Overview

The ASUS M5A99X EVO R2.0 is an ATX form factor motherboard designed for AMD AM3+ processors. It features the AMD 990X/SB950 chipset, providing robust performance and connectivity options for a personal computer system. This motherboard supports DDR3 memory, SATA 6Gb/s, and USB 3.0, making it suitable for various computing needs.
Key features include:

- **Dual Intelligent Processors 3 with New DIGI+ Power Control:** Offers precise digital power delivery for both CPU and DRAM, enhancing system stability and performance.
- **Remote GO!:** Provides a suite of remote control and home entertainment functionalities.
- **USB 3.0 Boost:** Accelerates USB 3.0 data transfer speeds with UASP support.



Figure 1.1: The ASUS M5A99X EVO R2.0 motherboard shown with its retail packaging. This image provides a general view of the product and its branding.

2. Setup and Installation

This section provides instructions for installing the ASUS M5A99X EVO R2.0 motherboard and its components into a computer chassis.

2.1 Unpacking the Motherboard

Carefully remove the motherboard from its anti-static packaging. Ensure the following items are present:

- ASUS M5A99X EVO R2.0 Motherboard
- I/O Shield
- SATA Data Cables
- User Manual (this document)
- Support DVD (containing drivers and utilities)

2.2 Motherboard Layout



Figure 2.1: Top-down view of the ASUS M5A99X EVO R2.0 motherboard, highlighting the CPU socket, DIMM slots, PCIe slots, and various headers.

Familiarize yourself with the motherboard's layout. Key areas include the AM3+ CPU socket, four DDR3 DIMM slots, multiple PCI Express x16 and x1 slots, SATA 6Gb/s ports, and various headers for front panel connectivity.

2.3 CPU Installation

1. Locate the AM3+ CPU socket on the motherboard.
2. Lift the CPU socket lever.
3. Align the CPU's golden triangle with the triangle mark on the socket. Carefully place the CPU into the socket without forcing it.
4. Lower the CPU socket lever to secure the CPU.

2.4 CPU Cooler Installation

After installing the CPU, attach the compatible CPU cooler. Follow the cooler manufacturer's instructions for proper installation, ensuring thermal paste is applied correctly and the cooler is securely mounted.

2.5 Memory (RAM) Installation

The motherboard supports DDR3 memory modules. For optimal performance, install memory modules in matched pairs into the designated DIMM slots (e.g., A2 and B2 for dual-channel operation).

1. Open the clips at both ends of the DIMM slot.
2. Align the memory module with the slot, ensuring the notch on the module matches the key in the slot.
3. Press down firmly on both ends of the memory module until the clips snap into place.

2.6 Mounting the Motherboard

Install the I/O shield into the rear opening of your computer case. Then, carefully place the motherboard into the case, aligning the screw holes with the standoffs. Secure the motherboard with screws.

2.7 Power Connections

Connect the 24-pin ATX power connector and the 8-pin EPS 12V CPU power connector from your power supply unit (PSU) to the corresponding ports on the motherboard. Ensure all connections are firm.

2.8 Storage Device Connections

Connect your SATA 6Gb/s hard drives or solid-state drives to the SATA ports on the motherboard using SATA data cables. Connect power cables from the PSU to your storage devices.

2.9 Expansion Card Installation

Install any necessary expansion cards, such as a graphics card, into the appropriate PCI Express slots. Secure the cards with screws to the chassis.

2.10 Front Panel and Rear I/O Connections

Connect the front panel headers (power switch, reset switch, HDD LED, power LED, front USB, front audio) to their respective pins on the motherboard. Refer to the motherboard manual for exact pin configurations.



Figure 2.2: The rear I/O panel of the ASUS M5A99X EVO R2.0 motherboard, showing ports for USB, Ethernet, audio, and PS/2 devices.

Connect your peripherals (keyboard, mouse, monitor, Ethernet cable, audio devices) to the corresponding ports on the rear I/O panel.

3. Operating Instructions

This section covers initial power-on, BIOS/UEFI setup, and driver installation.

3.1 First Boot and BIOS/UEFI Access

1. After all components are installed and connected, power on your system.
2. To enter the BIOS/UEFI setup utility, press the **Delete** key or **F2** key repeatedly during the Power-On Self-Test (POST) until the UEFI interface appears.
3. Navigate the UEFI interface using a keyboard or mouse.

3.2 BIOS/UEFI Configuration

Within the UEFI, you can configure various system settings, including boot order, CPU and memory parameters, fan speeds, and enable/disable integrated peripherals. Save changes before exiting.

3.3 Driver Installation

After installing your operating system, install the necessary drivers from the provided support DVD or download the latest versions from the official ASUS website. Essential drivers include:

- Chipset Drivers
- LAN (Ethernet) Drivers
- Audio Drivers
- USB 3.0 Drivers

3.4 ASUS Software Utilities

The support DVD also contains ASUS-specific utilities that enhance system functionality:

- **AI Suite II:** A comprehensive software package for system monitoring, overclocking, and power management.
- **Remote GO!:** Allows for remote control of your PC and seamless media streaming to other devices.
- **USB 3.0 Boost:** Optimizes USB 3.0 performance for compatible devices.

4. Maintenance

Regular maintenance helps ensure the longevity and stable operation of your motherboard and system.

4.1 Cleaning

Periodically clean dust from inside your computer case, especially from fans, heatsinks, and motherboard components. Use compressed air and a soft brush. Ensure the system is powered off and unplugged before cleaning.

4.2 BIOS/UEFI Updates

ASUS may release BIOS/UEFI updates to improve compatibility, stability, or add new features. Check the ASUS support website for the latest firmware versions and follow the provided instructions carefully for updating. Incorrect BIOS updates can render the motherboard inoperable.

4.3 Driver Updates

Keep your system drivers updated to ensure optimal performance and compatibility with new hardware or software. Regularly check the ASUS website for the latest chipset, LAN, audio, and other relevant drivers.

4.4 Physical Inspection

Occasionally inspect the motherboard for any signs of physical damage, loose cables, or bulging capacitors. Address any issues promptly.

5. Troubleshooting

This section provides solutions to common issues you might encounter.

5.1 No Power / System Does Not Turn On

- Ensure the power supply unit (PSU) is switched on and connected to a working power outlet.
- Verify that the 24-pin ATX and 8-pin EPS 12V power connectors are securely plugged into the motherboard.
- Check the front panel power switch connection to the motherboard.

5.2 No Display on Monitor

- Ensure the monitor is powered on and correctly connected to the graphics card.
- Reseat the graphics card in its PCIe slot.
- Reseat the RAM modules in their DIMM slots. Try booting with only one RAM module.
- If available, check for diagnostic LEDs on the motherboard. These LEDs can indicate issues with CPU, DRAM, VGA, or Boot devices. Consult the motherboard manual for specific LED meanings.

5.3 System Instability / Random Crashes

- Check CPU and GPU temperatures using monitoring software. Overheating can cause instability.
- Ensure all power connections are secure.
- Run a memory diagnostic tool to check for faulty RAM.
- Update chipset and other relevant drivers.

5.4 Component Not Detected

- Verify that the component (e.g., hard drive, expansion card) is correctly installed and powered.
- Check BIOS/UEFI settings to ensure the component is enabled.
- Install or update the necessary drivers for the component.

5.5 Clearing CMOS

If you encounter persistent boot issues or incorrect BIOS settings, clearing the CMOS (Complementary Metal-Oxide-Semiconductor) can reset the BIOS settings to their default values.

1. Power off the computer and unplug the power cord.
2. Locate the CLRTC jumper on the motherboard (refer to the motherboard layout diagram).
3. Move the jumper cap from pins 1-2 to pins 2-3 for 5-10 seconds.
4. Return the jumper cap to pins 1-2.
5. Reconnect the power cord and power on the system.

6. Specifications

Below are the technical specifications for the ASUS M5A99X EVO R2.0 motherboard:

Feature	Specification
Brand	ASUS
Model Name	M5A99X EVO R2.0
CPU Socket	Socket AM3+
Compatible Processors	AMD Athlon II, Athlon X2, Athlon X4, Athlon X6, Phenom II, Phenom X4, Phenom X6, Sempron, AMD FX
Chipset Type	AMD 990X/SB950
RAM Memory Technology	DDR3 2133; DDR3 1866; DDR3 1600; DDR3 1333; DDR3 1066
Max RAM Supported	32 GB
Memory Clock Speed	1333 MHz (up to 2133 MHz O.C.)
Number of USB 2.0 Ports	14 (6 rear, 8 mid-board)
Number of USB 3.0 Ports	4 (2 rear, 2 mid-board)
SATA 6Gb/s Ports	6
LAN	Gigabit Ethernet
Audio	8-Channel High Definition Audio CODEC
Form Factor	ATX
Product Dimensions (LxWxH)	2.68 x 12.91 x 10.35 inches
Item Weight	3.65 pounds

7. Warranty and Support

7.1 Product Warranty

The ASUS M5A99X EVO R2.0 motherboard is covered by a limited warranty provided by ASUS. For detailed information

regarding warranty terms, conditions, and duration, please refer to the warranty card included with your product or visit the official ASUS support website.

7.2 Technical Support

For technical assistance, driver downloads, BIOS updates, and frequently asked questions (FAQs), please visit the official ASUS support website:
www.asus.com/support/
You may also contact ASUS customer service directly through the contact information provided on their website for personalized support.

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