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Supermicro X10SRA-O

Supermicro X10SRA-O ATX Server Motherboard User Manual

Model: X10SRA-O

1. INTRODUCTION

This manual provides detailed instructions for the installation, configuration, and maintenance of the Supermicro X10SRA-O ATX Server Motherboard. Designed for high-performance server and workstation applications, this motherboard supports Intel Xeon E5-2600/1600 v3 family processors or 4th Generation Intel Core i7 series processors, offering robust features for demanding computing environments.

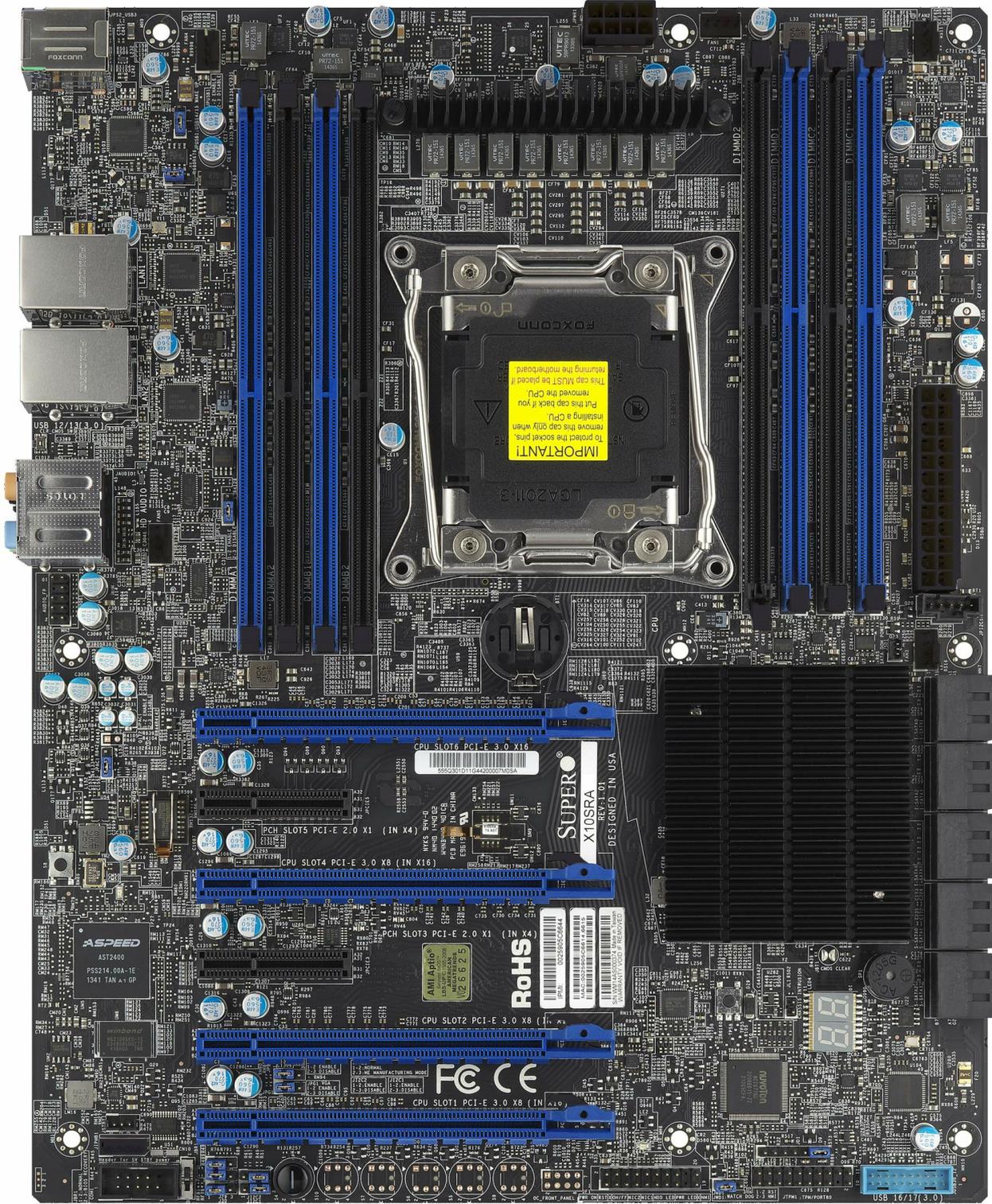


Image: Supermicro X10SRA-O ATX Server Motherboard. This image displays the overall layout of the motherboard, highlighting key components such as the CPU socket, DIMM slots, and various connectors.

2. SAFETY INFORMATION

Always observe the following safety precautions to prevent damage to the motherboard and injury to yourself:

- Disconnect the power cord from the power supply before installing or removing any components.
- Wear an anti-static wrist strap when handling the motherboard or any internal components to prevent electrostatic discharge (ESD) damage.
- Handle the motherboard by its edges to avoid touching sensitive components.

- Ensure proper ventilation within the chassis to prevent overheating.
- Do not expose the motherboard to moisture or extreme temperatures.

3. PACKAGE CONTENTS

Verify that all items are present in your motherboard package:

- Supermicro MBD-X10SRA-O Motherboard
- I/O Shield
- SATA Cables (quantity may vary)
- User Manual (this document, or a printed version)
- Driver CD/DVD (or link to driver download)

4. SETUP AND INSTALLATION

4.1. Processor Installation

1. Locate the LGA2011 CPU socket on the motherboard.
2. Open the CPU socket retention mechanism by releasing the levers.
3. Carefully align the Intel Xeon E5-2600/1600 v3 or 4th Gen Intel Core i7 processor with the socket, ensuring the gold triangle on the CPU matches the triangle on the socket.
4. Gently place the CPU into the socket without forcing it.
5. Close the retention mechanism levers to secure the CPU.
6. Apply thermal paste to the CPU surface and install the CPU cooler according to its manufacturer's instructions.

4.2. Memory Installation

The X10SRA-O motherboard features 8x 288-pin DDR4 DIMM slots.

1. Open the retention 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 retention clips snap into place.
4. For optimal performance, install memory modules in matched pairs or according to the motherboard's memory population guidelines (refer to the full manual for specific channel configurations).

4.3. Storage (SATA) Connections

The motherboard provides 10x SATA3 (6Gbps) ports.

1. Connect one end of a SATA data cable to a SATA port on the motherboard.
2. Connect the other end of the SATA data cable to your SATA hard drive or SSD.
3. Connect a SATA power cable from your power supply to the storage device.
4. The Intel C612 controller supports RAID 0, 1, 5, and 10. Refer to the BIOS/UEFI setup guide for RAID configuration.

4.4. Expansion Cards (PCIe)

The X10SRA-O includes 4x PCI-Express 3.0 x16 slots and 2x PCI-Express 2.0 x4 slots.

1. Select an available PCI-Express slot.

2. Remove the corresponding expansion slot cover from your chassis.
3. Align the expansion card with the slot and press down firmly until it is fully seated.
4. Secure the card with a screw or retention clip to the chassis.

4.5. Power Connections

1. Connect the 24-pin ATX main power connector from your power supply to the corresponding header on the motherboard.
2. Connect the 8-pin (or 4+4-pin) ATX 12V CPU power connector to the motherboard's CPU power header.
3. Ensure all other necessary power connectors (e.g., for graphics cards, storage devices) are properly connected.

5. OPERATING INSTRUCTIONS

5.1. Initial Boot

After completing all hardware installations, connect your monitor, keyboard, and mouse. Power on the system. The system will perform a Power-On Self-Test (POST). During POST, you can typically press the 'Delete' or 'F2' key to enter the BIOS/UEFI setup utility.

5.2. BIOS/UEFI Setup

The BIOS/UEFI utility allows you to configure system settings such as boot order, date/time, CPU features, memory timings, and storage controller modes (e.g., AHCI, RAID). Refer to the Supermicro website for the latest BIOS/UEFI manual specific to the X10SRA-O model for detailed configuration options.

6. MAINTENANCE

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

- **Cleaning:** Periodically clean dust from the motherboard and cooling components using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **BIOS Updates:** Check the Supermicro website for updated BIOS versions. BIOS updates can improve system stability, add support for new hardware, or fix bugs. Follow Supermicro's instructions carefully when updating the BIOS.
- **Cable Management:** Ensure internal cables are neatly routed to improve airflow and prevent interference.

7. TROUBLESHOOTING

7.1. No Power / System Does Not Turn On

- Verify that the power supply is connected to a working outlet and switched on.
- Check all power connections to the motherboard (24-pin ATX, 8-pin CPU) and ensure they are fully seated.
- Confirm that the front panel power switch cable is correctly connected to the motherboard header.
- Test the power supply with another system or a power supply tester if available.

7.2. No Display Output

- Ensure the monitor is powered on and connected to the correct video output port (e.g., on a dedicated graphics card).
- Reseat the graphics card in its PCIe slot.

- Check that all necessary power connectors are attached to the graphics card.
- Try a different monitor or video cable.

7.3. WHEA Event 47 (Memory Corrected Error)

Some users have reported encountering WHEA event 47 errors, particularly with certain Xeon E5 v3 processors. If you experience this, consider the following steps:

- **Disable Memory Power Saving Features:** Access the BIOS/UEFI setup and locate options related to memory power management. Disable any power-saving features for memory.
- **Disable CPU C-States:** In the BIOS/UEFI, navigate to CPU power management settings and disable all C-states (power efficient profiles) for the CPU.
- **Disable WHEA Support:** As a last resort, you may consider disabling WHEA (Windows Hardware Error Architecture) support in the BIOS/UEFI, though this may prevent the system from reporting other hardware errors.

8. SPECIFICATIONS

Feature	Specification
Processor Support	Single Intel Xeon E5-2600/1600 v3 Family or 4th Gen Intel Core i7 Series (LGA2011-3 socket)
Chipset	Intel C612 Express
Memory	8x 288-pin DDR4 DIMM slots Up to 512GB ECC LRDIMM Up to 256GB ECC RDIMM Up to 64GB DDR3 ECC/Non-ECC UDIMM (with Core i7) Speeds: 2133/1866/1600/1333MHz
Expansion Slots	4x PCI-Express 3.0 x16 (run at 16/16/8 or 16/8/8/8) 2x PCI-Express 2.0 x4 (run at x1)
Storage	10x SATA3 (6Gbps) ports via Intel C612 Supports RAID 0, 1, 5, 10
LAN	2x Gigabit Ethernet (Intel i210AT)
Audio	RealTek ALC1150 High Definition Audio
USB Ports	8x USB 3.0 Ports (6 rear, 2 via header) 6x USB 2.0 Ports (via headers)
Other Ports	1x PS/2 Keyboard/Mouse port
Form Factor	ATX (12" x 9.6" / 30.5cm x 24.4cm)
Dimensions (LxWxH)	12 x 9.6 x 0.1 inches
Weight	2.79 pounds

9. WARRANTY AND SUPPORT

Supermicro provides a limited warranty for its products. For specific warranty terms and conditions, please refer to the warranty information included with your product or visit the official Supermicro website. For technical support, driver downloads, and further documentation, please visit the Supermicro support portal:

[Supermicro Support Website](#)

When contacting support, please have your motherboard model (X10SRA-O) and serial number ready.