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ASRock 990FX EXTREME3 Motherboard Instruction Manual

Model: 990FX EXTREME3

1. PRODUCT OVERVIEW

The ASRock 990FX EXTREME3 is an ATX motherboard designed for AMD AM3+ and AM3 processors. It features the AMD 990FX and SB950 chipsets, supporting advanced technologies such as AMD Quad CrossFireX and NVIDIA Quad SLI for multi-GPU configurations. This motherboard provides robust connectivity with SATA3 and USB 3.0 ports, making it suitable for high-performance computing and gaming systems.

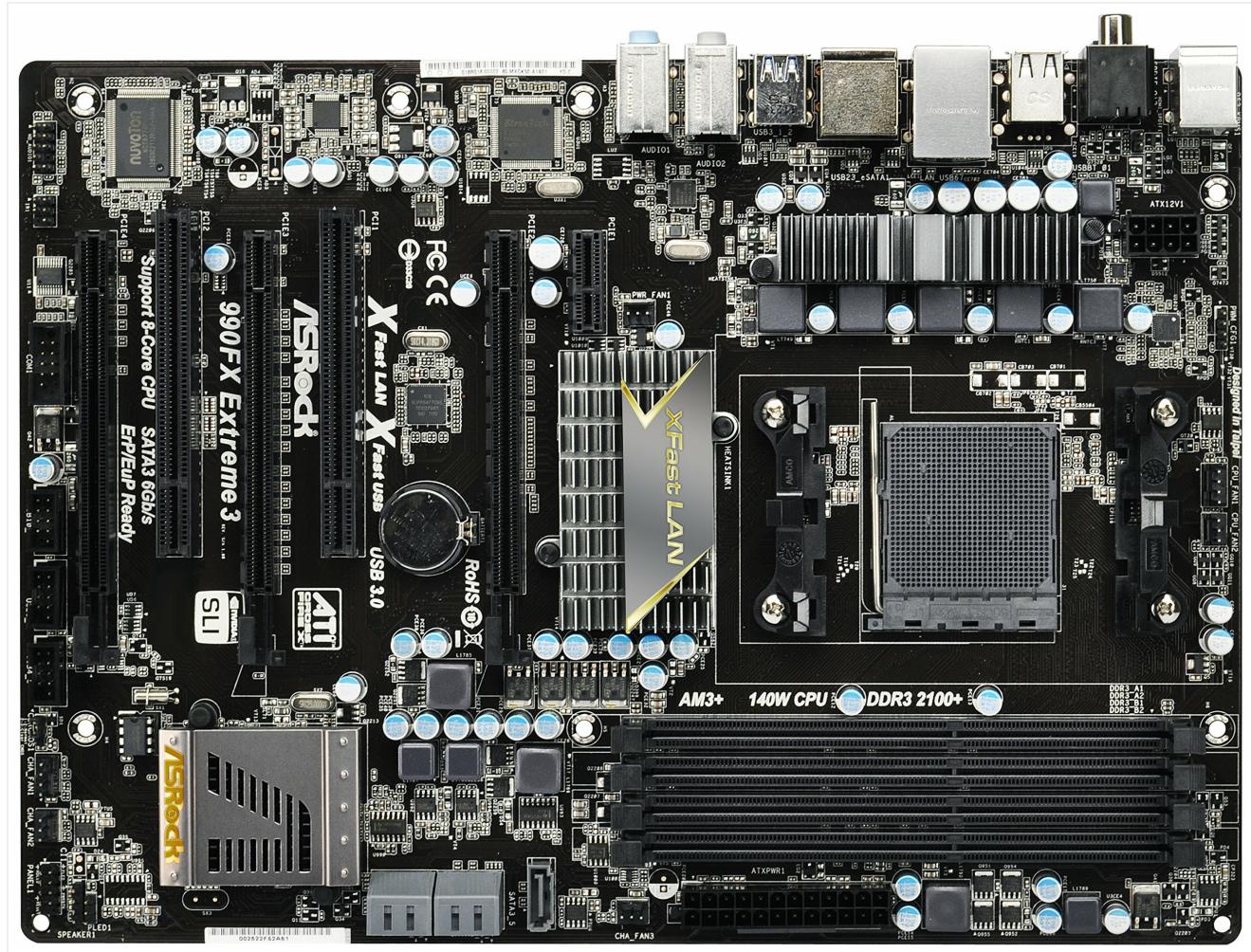


Image 1.1: ASRock 990FX EXTREME3 Motherboard. This image displays the full layout of the motherboard, highlighting the CPU

socket, DIMM slots, PCIe slots, and various connectors.

Key Features:

- **CPU Support:** Socket AM3+/AM3 for AMD Phenom II, Athlon II, and Sempron processors, supporting 8-Core CPUs up to 140W. Features AMD's Cool 'n' Quiet Technology and Hyper-Transport 3.0.
- **Chipset:** AMD 990FX & SB950.
- **Memory:** 4x DDR3 DIMM slots, Dual Channel, Non-ECC/Un-buffered, supporting up to 32GB at speeds including 2100(OC)/1866/1600/1333/1066/800 MHz.
- **Expansion Slots:** 3x PCI-Express 2.0 x16 slots (one operates at x4), 1x PCI-Express 2.0 x1 slot, 2x PCI slots. Supports AMD Quad/3-Way CrossFireX and NVIDIA Quad SLI/SLI.
- **Storage:** 5x SATA3 ports with RAID 0/1/5/10 support, 1x eSATA3 port.
- **Audio:** Realtek ALC892 7.1-Channel HD Audio CODEC with Premium Blu-ray audio support and THX TruStudio Pro.
- **LAN:** Broadcom BCM57781 PCI-Express x1 Gigabit Ethernet Controller with Wake-On-LAN support.
- **USB Ports:** 12x USB 2.0 ports (6 rear, 6 via headers), 2x USB 3.0 ports.

2. SETUP AND INSTALLATION

This section provides general guidelines for installing your ASRock 990FX EXTREME3 motherboard. For detailed, step-by-step instructions, please refer to the included Quick Installation Guide.

2.1 Pre-Installation Checklist

- Ensure you have a compatible CPU (Socket AM3+/AM3).
- Gather necessary components: RAM (DDR3), graphics card, power supply, storage devices.
- Prepare your computer case and ensure proper ventilation.
- Ground yourself to prevent electrostatic discharge (ESD) damage to components.

2.2 Motherboard Installation

1. **Install CPU:** Carefully place your AM3+/AM3 processor into the CPU socket. Ensure correct orientation and secure the retention lever.
2. **Install CPU Cooler:** Attach the CPU cooler according to its manufacturer's instructions.
3. **Install RAM:** Insert DDR3 memory modules into the DIMM slots. For dual-channel operation, refer to the Quick Installation Guide for recommended slot configurations.
4. **Mount Motherboard:** Secure the motherboard into your PC case using standoffs and screws.
5. **Install Graphics Card:** Insert your PCI-Express graphics card(s) into the appropriate PCIe x16 slot(s).
6. **Connect Storage Devices:** Connect SATA data cables from your storage drives (HDDs, SSDs) to the SATA3 ports on the motherboard.
7. **Connect Power Supply:** Connect the 24-pin ATX power connector and the 8-pin (or 4-pin) CPU power connector from your power supply to the motherboard. Connect power to graphics cards and storage devices as needed.
8. **Connect Front Panel Cables:** Connect the power button, reset button, USB ports, audio jacks, and indicator LEDs from your case to the corresponding headers on the motherboard.
9. **Install I/O Shield:** Place the I/O shield into the rear opening of your PC case before mounting the motherboard.

2.3 Driver Installation

After initial hardware setup and operating system installation, install the necessary drivers from the included Support CD. This includes chipset drivers, audio drivers, LAN drivers, and any other utility drivers for optimal performance.

3. OPERATING INSTRUCTIONS

This section covers basic operation and configuration aspects of the ASRock 990FX EXTREME3 motherboard.

3.1 BIOS/UEFI Setup

To access the BIOS/UEFI setup utility, power on your computer and repeatedly press the **DEL** or **F2** key during the boot process. The UEFI interface allows you to configure system settings, boot order, overclocking parameters, and monitor hardware status.

3.2 Multi-GPU Configuration

The motherboard supports AMD Quad/3-Way CrossFireX and NVIDIA Quad SLI/SLI. To enable these features, install multiple compatible graphics cards into the PCI-Express 2.0 x16 slots and connect them with the appropriate bridge connectors (an ASRock SLI_Bridge_2S Card is included). Ensure you install the latest graphics drivers from AMD or NVIDIA.

3.3 Storage Configuration (RAID)

The AMD SB950 chipset supports RAID 0, RAID 1, RAID 5, and RAID 10 configurations across the SATA3 ports. To set up a RAID array, access the RAID configuration utility during system boot (usually by pressing a specific key combination, as indicated on screen or in the Quick Installation Guide) and follow the on-screen instructions.

3.4 Audio and Network

- Audio:** The integrated Realtek ALC892 7.1-Channel HD Audio CODEC provides high-quality sound. Connect your speakers or headphones to the appropriate audio jacks on the rear I/O panel. The motherboard supports THX TruStudio Pro for enhanced audio experiences.
- Network:** The Broadcom BCM57781 Gigabit Ethernet controller provides a stable and fast network connection. Connect an Ethernet cable to the RJ45 LAN port. The Wake-On-LAN feature allows you to power on your computer remotely via the network.

4. MAINTENANCE

Proper maintenance ensures the longevity and stable operation of your motherboard.

- Keep Clean:** Regularly clean dust from inside your computer case, especially around the motherboard, CPU cooler, and graphics card fans. Use compressed air for best results.
- BIOS/UEFI Updates:** Periodically check the ASRock website for updated BIOS/UEFI versions. Updating the BIOS can improve compatibility, stability, and performance. Exercise caution during BIOS updates, as interruptions can render the motherboard inoperable.
- Driver Updates:** Keep all system drivers (chipset, audio, LAN, graphics) updated to their latest versions for optimal performance and security.
- Cable Management:** Ensure internal cables are neatly routed to promote good airflow and prevent interference.

5. TROUBLESHOOTING

This section addresses common issues you might encounter with your motherboard.

5.1 No Power / No Boot

- **Check Power Connections:** Ensure the 24-pin ATX and 8-pin CPU power connectors are securely seated on the motherboard. Verify the power supply is switched on and connected to a working outlet.
- **Verify Front Panel Connections:** Confirm that the power button cable from the case is correctly connected to the motherboard's front panel header.
- **Test Components:** If possible, test components (CPU, RAM, GPU, PSU) individually on a known working system or with minimal configuration (e.g., one RAM stick, no GPU if integrated graphics are available).
- **Clear CMOS:** Refer to the Quick Installation Guide for instructions on how to clear the CMOS, which can reset BIOS settings to default and resolve boot issues.

5.2 No Display Output

- **Check Graphics Card:** Ensure the graphics card is fully seated in its PCIe slot and any required auxiliary power connectors are attached.
- **Monitor Connection:** Verify the display cable is securely connected to both the graphics card and the monitor.
- **Test with Different GPU/Monitor:** If available, test with a different graphics card or monitor to isolate the problem.

5.3 Network Connectivity Issues

- **Check LAN Cable:** Ensure the Ethernet cable is properly connected to the RJ45 port on the motherboard and to your network router/switch.
- **Install/Update LAN Drivers:** Verify that the Broadcom LAN drivers are correctly installed and up to date.
- **Check BIOS Settings:** Ensure the integrated LAN controller is enabled in the BIOS/UEFI settings.

6. SPECIFICATIONS

Feature	Specification
Model Name	ASRock 990FX EXTREME3
CPU Socket	AM3+ / AM3
Chipset	AMD 990FX / SB950
Memory Type	4x DDR3 DIMM, Dual Channel, Max 32GB (2100(OC)/1866/1600/1333/1066/800 MHz)
Expansion Slots	3x PCIe 2.0 x16, 1x PCIe 2.0 x1, 2x PCI
Storage Ports	5x SATA3 (RAID 0/1/5/10), 1x eSATA3
Audio	Realtek ALC892 7.1-Channel HD Audio, THX TruStudio Pro
LAN	Broadcom BCM57781 Gigabit Ethernet
USB Ports	12x USB 2.0 (6 rear, 6 via headers), 2x USB 3.0
Form Factor	ATX
Dimensions	12 x 3.5 x 8.6 inches
Item Weight	2.64 pounds

7. WARRANTY AND SUPPORT

7.1 Return Policy

This motherboard is sold as-is with a 15-day return policy. Please consult your retailer for specific terms and conditions regarding returns and exchanges.

7.2 Technical Support

For technical assistance, driver downloads, and BIOS updates, please visit the official ASRock support website. The included Support CD also contains drivers and utilities. ASRock customer service is available to assist with product-related inquiries.