AMD 7313
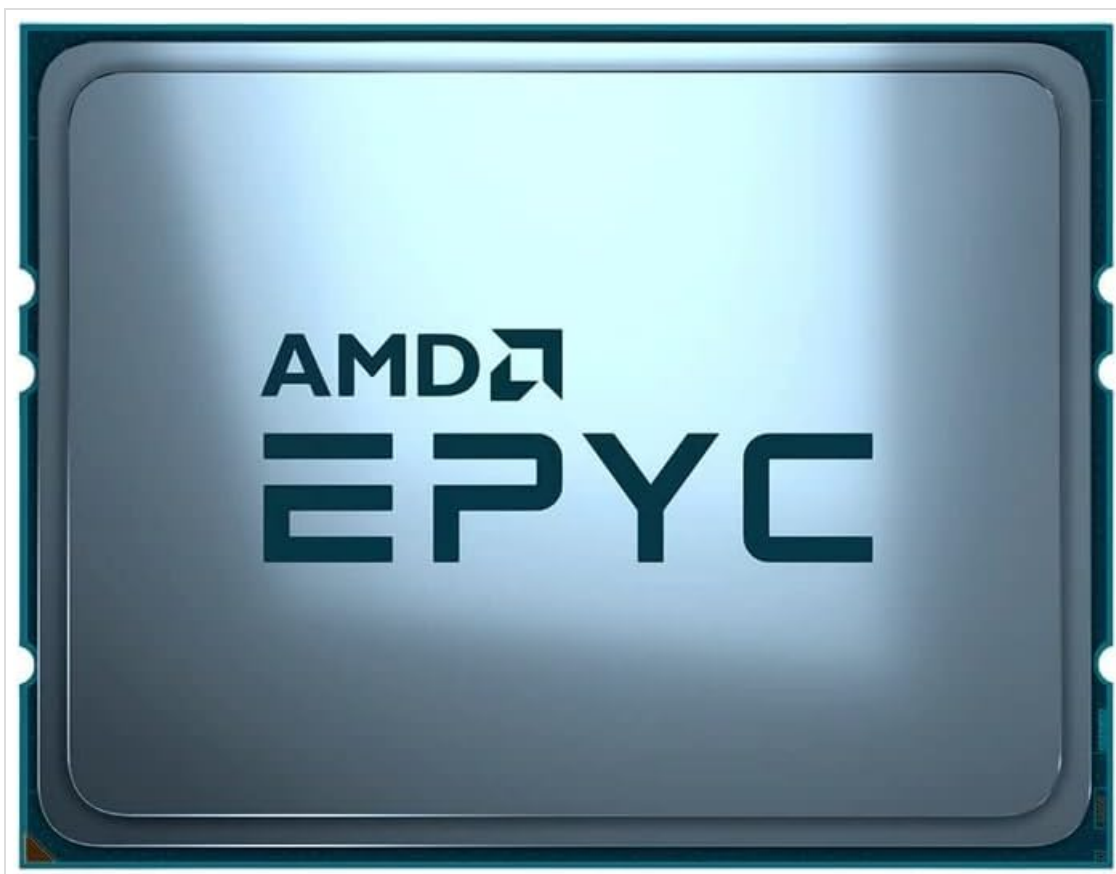
AMD EPYC 7313 16C 155W SP3 Processor User Manual

Model: 7313 | Brand: AMD

INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of your AMD EPYC 7313 processor. The AMD EPYC 7313 is a high-performance server processor designed for demanding data center workloads.

Figure 1: Top view of the AMD EPYC processor, showing the AMD EPYC branding on the integrated heat spreader.

SETUP AND INSTALLATION

Proper installation is crucial for the stability and performance of your system. Always handle the processor with care to avoid damage.

1. Safety Precautions

- Ensure your hands are clean and free of oils.
- Wear an anti-static wrist strap or frequently touch a grounded metal object to discharge static electricity.
- Avoid touching the gold contacts (pins) on the bottom of the processor.
- Work in a well-lit, clean environment.

2. System Requirements

- **Motherboard:** Compatible with Socket SP3. Refer to your motherboard's documentation for specific compatibility.
- **Cooling Solution:** A high-performance CPU cooler designed for Socket SP3 and capable of dissipating 155W TDP.
- **Thermal Interface Material (TIM):** High-quality thermal paste.

3. Installation Steps

1. **Prepare Motherboard:** Ensure the motherboard is securely installed in the chassis and power is disconnected. Open the CPU socket retention mechanism according to your motherboard's instructions.
2. **Insert Processor:** Carefully align the processor with the socket. The processor is keyed to fit in only one orientation. Gently place the processor into the socket without forcing it.
3. **Secure Processor:** Close the CPU socket retention mechanism to secure the processor.
4. **Apply Thermal Paste:** Apply a small amount of thermal paste (pea-sized dot or thin line) to the center of the processor's integrated heat spreader (IHS).
5. **Install CPU Cooler:** Mount the CPU cooler according to its manufacturer's instructions, ensuring even pressure distribution. Connect the CPU cooler fan to the appropriate header on the motherboard.
6. **Connect Power:** Connect all necessary power cables to the motherboard and CPU.

For detailed visual instructions, consult your motherboard's user manual.

OPERATING INSTRUCTIONS

The AMD EPYC 7313 processor is designed for continuous operation in server environments. Once installed, its operation is largely managed by the system's BIOS/UEFI and operating system.

1. Initial Boot-up

- After installation, connect all peripherals and power on the system.
- Access the system's BIOS/UEFI settings (usually by pressing DEL, F2, or F10 during boot) to verify processor recognition and configure memory settings.
- Ensure the latest BIOS/UEFI firmware is installed for optimal compatibility and performance.

2. Performance and Power Management

The EPYC 7313 features advanced power management technologies. The operating system and server management software will dynamically adjust clock speeds and power states based on workload demands. For specific performance tuning, refer to your server's documentation and AMD's official resources.

MAINTENANCE

Regular maintenance helps ensure the longevity and stable performance of your processor and server system.

1. Dust Management

- Periodically clean dust from the CPU cooler heatsink and fans using compressed air.
- Ensure proper airflow within the server chassis to prevent dust buildup and maintain optimal temperatures.

2. Thermal Paste Inspection

Over time, thermal paste can degrade. If you observe consistently high CPU temperatures, consider reapplying fresh thermal paste. This typically involves removing the CPU cooler, cleaning off old paste, and applying new paste.

3. Firmware Updates

Keep your motherboard's BIOS/UEFI firmware updated. Manufacturers often release updates that improve stability, compatibility, and performance for processors.

TROUBLESHOOTING

If you encounter issues, follow these basic troubleshooting steps.

1. System Fails to Boot

- **Check Power Connections:** Ensure all power cables (24-pin ATX, 8-pin EPS/CPU) are securely connected to the motherboard.
- **Verify CPU Installation:** Re-check that the CPU is correctly seated in its socket and the retention mechanism is locked.
- **Memory (RAM):** Ensure RAM modules are properly seated in their slots. Try booting with only one RAM stick.
- **Motherboard POST Codes/LEDs:** Consult your motherboard manual for diagnostic POST codes or LED indicators that can pinpoint the issue.

2. Overheating Issues

- **Cooler Installation:** Confirm the CPU cooler is correctly installed and making good contact with the processor's IHS.
- **Thermal Paste:** Ensure thermal paste was applied correctly and is not dried out.
- **Airflow:** Check for adequate airflow within the server chassis. Ensure fans are spinning and vents are clear.
- **Fan Speed:** Verify CPU fan speed settings in BIOS/UEFI.

3. System Instability/Crashes

- **BIOS/UEFI Settings:** Reset BIOS/UEFI to default settings.
- **Drivers:** Ensure all system drivers, especially chipset drivers, are up to date.
- **Power Supply:** Verify that your power supply unit (PSU) provides sufficient and stable power to all components.

SPECIFICATIONS

Key technical specifications for the AMD EPYC 7313 processor:

Feature	Detail
Product Line	EPYC
Model Number	7313
Cores	16
Clock Speed	3.0 GHz (Base), up to 3.7 GHz (Boost)
L3 Cache	128 MB
Processor Socket	Socket SP3
TDP (Thermal Design Power)	155W
Product Dimensions	7.87 x 5.12 x 1.97 inches
Item Weight	8.8 ounces
ASIN	B091CSNJ91
Manufacturer Part Number	100-000000329

WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the official AMD website or contact your product vendor. Keep your proof of purchase for warranty claims.
AMD Support Website: www.amd.com/support