

Intel BX80646I74790K

Intel Core i7-4790K Processor User Manual

Model: BX80646I74790K

INTRODUCTION

This manual provides essential information for the installation, operation, and maintenance of your Intel Core i7-4790K Processor. The Intel Core i7-4790K is a high-performance processor designed for desktop systems, featuring an unlocked clock multiplier for advanced configuration.

Key features include:

- Intel Rapid Storage Technology support.
- Processor with Unlocked Clock Multiplier for overclocking capabilities.
- Quick Sync Video for faster video conversion.
- Compatible with Socket Type FCLGA1150 motherboards.

SETUP AND INSTALLATION

The Intel Core i7-4790K processor is designed for motherboards with an LGA 1150 socket. For optimal performance and compatibility, it is recommended to use a Z97 chipset motherboard.

Installation Steps:

1. Ensure your motherboard is compatible with the LGA 1150 socket and has the latest BIOS/UEFI firmware.
2. Carefully align the processor with the socket on the motherboard, ensuring the gold triangle on the CPU matches the indicator on the socket.
3. Gently lower the processor into the socket without forcing it.
4. Secure the retention arm of the CPU socket.
5. Apply a thin, even layer of thermal paste to the top of the processor.
6. Install the included Intel stock cooler or an aftermarket cooling solution. The processor typically comes with a standard Intel fan.
7. Connect the cooler's fan cable to the appropriate header on the motherboard.



Figure 1: Intel Core i7-4790K Processor (BX80646I74790K) in its retail packaging.

OPERATING THE PROCESSOR

The Intel Core i7-4790K operates at a base clock speed of up to 4.40 GHz out of the box, providing excellent performance for a wide range of applications, including demanding tasks like video editing and gaming.

Overclocking: This processor features an unlocked clock multiplier, allowing for overclocking to achieve higher clock speeds. However, overclocking increases heat generation and may require advanced cooling solutions. If you intend to overclock, water cooling is highly recommended to maintain stable operating temperatures and ensure processor longevity.

Temperature Management:

- At idle, the processor typically operates around 27°C (72°F).
- Under heavy load, especially when overclocked, temperatures can reach approximately 70-76°C (158-169°F).
- Monitor your CPU temperatures using appropriate software to prevent overheating, which can lead to system instability or damage.

MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your processor.

- **Cooling System:** Regularly inspect and clean your CPU cooler (fan and heatsink) to remove dust buildup. Dust can impede airflow and reduce cooling efficiency.
- **Thermal Paste:** If you remove the CPU cooler, reapply thermal paste before reinstallation to ensure efficient heat transfer.
- **Airflow:** Ensure good airflow within your computer case by keeping cables tidy and case fans clean.

TROUBLESHOOTING

If you encounter issues with your processor, consider the following general troubleshooting steps:

- **System Instability:** If your system experiences crashes or freezes, especially after changes, verify that all components are properly seated. If overclocked, revert to default clock speeds to check for stability.
- **Overheating:** High temperatures can cause performance throttling or shutdowns. Check your cooling solution for proper installation and dust buildup. Ensure adequate thermal paste application.
- **No Display:** Confirm that the processor is correctly seated in its socket and that all power connections to the motherboard are secure.
- **BIOS/UEFI Settings:** Incorrect BIOS/UEFI settings can affect processor operation. Resetting to default settings may resolve some issues.

SPECIFICATIONS

Feature	Detail
Brand	Intel
Model Number	BX80646I74790K
CPU Model	Core i7-4790K
CPU Speed	Up to 4.40 GHz (Turbo Boost)
CPU Socket	LGA 1150
Cache	8M Smart Cache
Product Dimensions	4.6 x 4.4 x 3.1 inches
Item Weight	11.2 ounces
Date First Available	June 2, 2014

WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the official Intel website or contact Intel customer service. Keep your proof of purchase for warranty claims.

LEGAL NOTICES

Proposition 65 Warning: This product may contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Age Restriction: Must be at least 18 years of age or older to purchase this product.