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Intel BX80648I75960X

Intel Core i7-5960X Extreme Edition Processor Instruction Manual

Model: BX80648I75960X

1. INTRODUCTION

This manual provides essential information for the installation, operation, and maintenance of your Intel Core i7-5960X Extreme Edition Processor. This processor is designed for high-performance computing, featuring multiple cores and advanced technologies to handle demanding tasks.

Key Features:

- Go to the next level of multi-core performance
- Intel Smart Cache
- Intel Quick Path Interconnect
- Integrated Memory Controller
- Intel HD Boost
- Core i7-5960X Processor FC-LGA12A
- Supported memory: DDR4-2133
- Turbo Boost Technology 2.0
- Unlocked Processor

2. SETUP AND INSTALLATION

Proper installation is crucial for the optimal performance and longevity of your processor. Always handle the processor by its edges to avoid touching the gold contacts or the top surface.

2.1 Before You Begin:

- Ensure your motherboard supports the LGA 2011-v3 socket and the Intel Core i7-5960X processor. Refer to your motherboard's manual for compatibility.
- Gather necessary tools: anti-static wrist strap, thermal paste, and a compatible CPU cooler (*liquid cooling is highly recommended for this high-performance processor*).

- Unplug your computer from the power source and discharge any static electricity before handling components.

2.2 Processor Installation Steps:

1. **Open the CPU Socket:** Locate the CPU socket on your motherboard. Gently push down the load lever and pull it away from the socket to open the retention plate.
2. **Align the Processor:** Carefully remove the processor from its packaging. Identify the alignment notches on the processor and match them with the keys on the CPU socket. The processor should drop into place without force. *Do not force the processor into the socket.*
3. **Secure the Processor:** Close the retention plate over the processor and push the load lever back into its locked position.
4. **Apply Thermal Paste:** Apply a small amount of high-quality thermal paste to the center of the processor's Integrated Heat Spreader (IHS). Refer to the thermal paste manufacturer's instructions for the correct application method.
5. **Install CPU Cooler:** Mount your compatible CPU cooler according to its manufacturer's instructions. Ensure proper contact between the cooler's base and the processor's IHS. Connect the CPU cooler's fan or pump cable to the appropriate header on the motherboard.



Figure 2.2.1: Top view of the Intel Core i7-5960X Processor. The metallic square is the Integrated Heat Spreader (IHS), which makes contact with the CPU cooler.

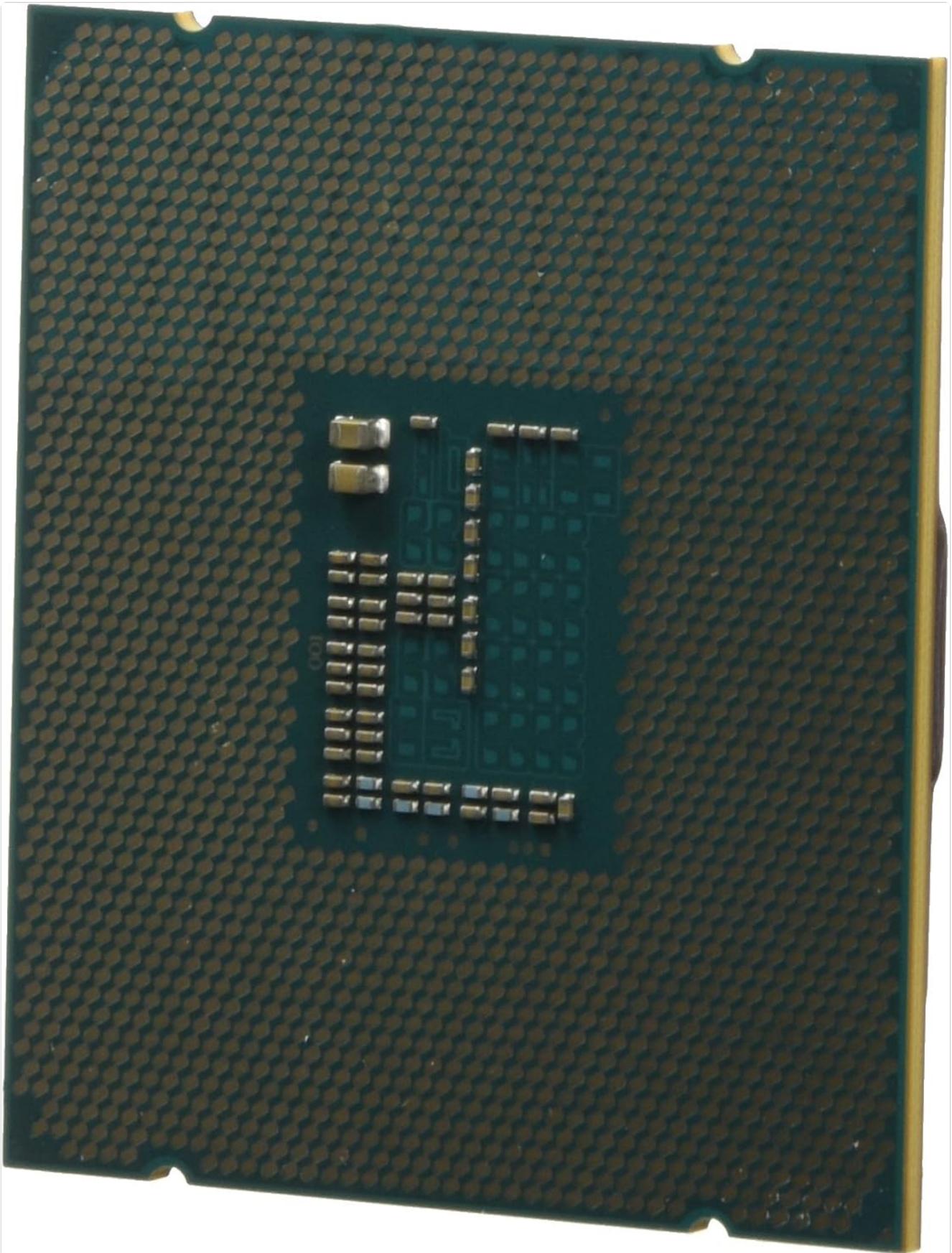


Figure 2.2.2: Underside of the Intel Core i7-5960X Processor, displaying the contact pads that interface with the LGA 2011-v3 socket pins.

3. OPERATING THE PROCESSOR

Once installed, the Intel Core i7-5960X processor operates automatically within your system. Its performance is managed by the operating system and motherboard BIOS/UEFI settings.

3.1 System Power On:

- After completing hardware installation, connect all peripherals and power cables.
- Power on your system. The BIOS/UEFI will detect the new processor.
- It is recommended to update your motherboard's BIOS/UEFI to the latest version for optimal compatibility and performance.

3.2 Performance and Overclocking:

The Intel Core i7-5960X is an unlocked processor, allowing for overclocking to achieve higher clock speeds. Overclocking can increase performance but also generates more heat and may void your warranty if not done correctly or if it causes damage. Always ensure adequate cooling when overclocking.

- **Intel Turbo Boost Technology 2.0:** This technology dynamically increases the processor's frequency as needed, taking advantage of thermal and power headroom to give you a burst of speed when you need it.
- **Intel Hyper-Threading Technology:** Allows each processor core to work on two tasks at once, improving multitasking performance.

4. MAINTENANCE

The Intel Core i7-5960X processor itself requires minimal maintenance. The primary focus should be on maintaining an efficient cooling system and a clean operating environment for your computer.

4.1 Cooling System Maintenance:

- **Dust Removal:** Regularly clean dust from your CPU cooler's heatsink and fans using compressed air. Dust accumulation can significantly reduce cooling efficiency.
- **Thermal Paste:** If you remove your CPU cooler for any reason, it is essential to clean off the old thermal paste from both the processor and the cooler base and apply new thermal paste before reinstallation.
- **Liquid Cooling Systems:** For liquid cooling, periodically check coolant levels (if applicable) and inspect tubing for any signs of leaks or blockages.

4.2 Environmental Considerations:

- Ensure your computer case has adequate airflow to prevent heat buildup.
- Operate your computer in a well-ventilated area, away from direct sunlight or heat sources.

5. TROUBLESHOOTING

If you encounter issues after installing your Intel Core i7-5960X processor, consider the following common troubleshooting steps:

- **No Display/System Not Booting:**
 - Verify that the processor is correctly seated in the socket and the retention lever is locked.
 - Ensure all power cables (24-pin ATX, 8-pin CPU) are securely connected to the motherboard.
 - Check that RAM modules are properly seated in their slots.
 - Confirm your CPU cooler is correctly installed and its fan/pump is connected and spinning.
 - Reset your motherboard's BIOS/UEFI settings to default.
- **System Instability/Crashes:**
 - Monitor CPU temperatures using system monitoring software. High temperatures can cause instability. Ensure adequate cooling.

- If overclocked, revert to stock settings to check for stability. Gradually increase clock speeds and voltages while testing.
 - Run memory diagnostic tools to check for RAM issues.
- **Poor Performance:**
 - Ensure your operating system and drivers (chipset, graphics) are up to date.
 - Check background processes that might be consuming CPU resources.
 - Verify that your CPU cooler is making good contact and thermal paste is properly applied.

6. SPECIFICATIONS

Feature	Detail
Processor Model	Intel Core i7-5960X Extreme Edition
Item Model Number	BX80648I75960X
CPU Manufacturer	Intel
CPU Socket	LGA 2011-v3
Number of Processors (Cores)	8
Threads	16
Base Clock Speed	3.0 GHz
Max Turbo Frequency	3.5 GHz
Intel Smart Cache	20 MB
Supported Memory Type	DDR4-2133
Max Thermal Design Power (TDP)	140 W
Lithography	22 nm
Item Weight	4.8 ounces (approx. 136 grams)
Product Dimensions (LxWxH)	4.5 x 4 x 3.2 inches (approx. 11.4 x 10.2 x 8.1 cm)

7. VIDEO RESOURCES

For visual guidance on various aspects of your Intel Core i7-5960X processor, please refer to the official video below.

Your browser does not support the video tag.

Official Intel video demonstrating features or installation of the Intel Core i7 processor. This video provides a visual overview of the product's capabilities or setup process.

8. WARRANTY AND SUPPORT

For detailed 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.

- **Intel Support Website:** www.intel.com/support/processors
- **Product Registration:** Registering your product may help facilitate support and warranty services.