Intel BX80684I59500

Intel Core i5-9500 Desktop Processor Instruction Manual

Model: BX80684I59500

INTRODUCTION

This manual provides essential information for the installation, operation, and maintenance of your Intel Core i5-9500 Desktop Processor. Designed for powerful productivity and gaming, this 9th Gen Intel Core i5 processor features 6 Cores/6 Threads and operates at up to 4.4 GHz. Please read this manual thoroughly before proceeding with installation or use.
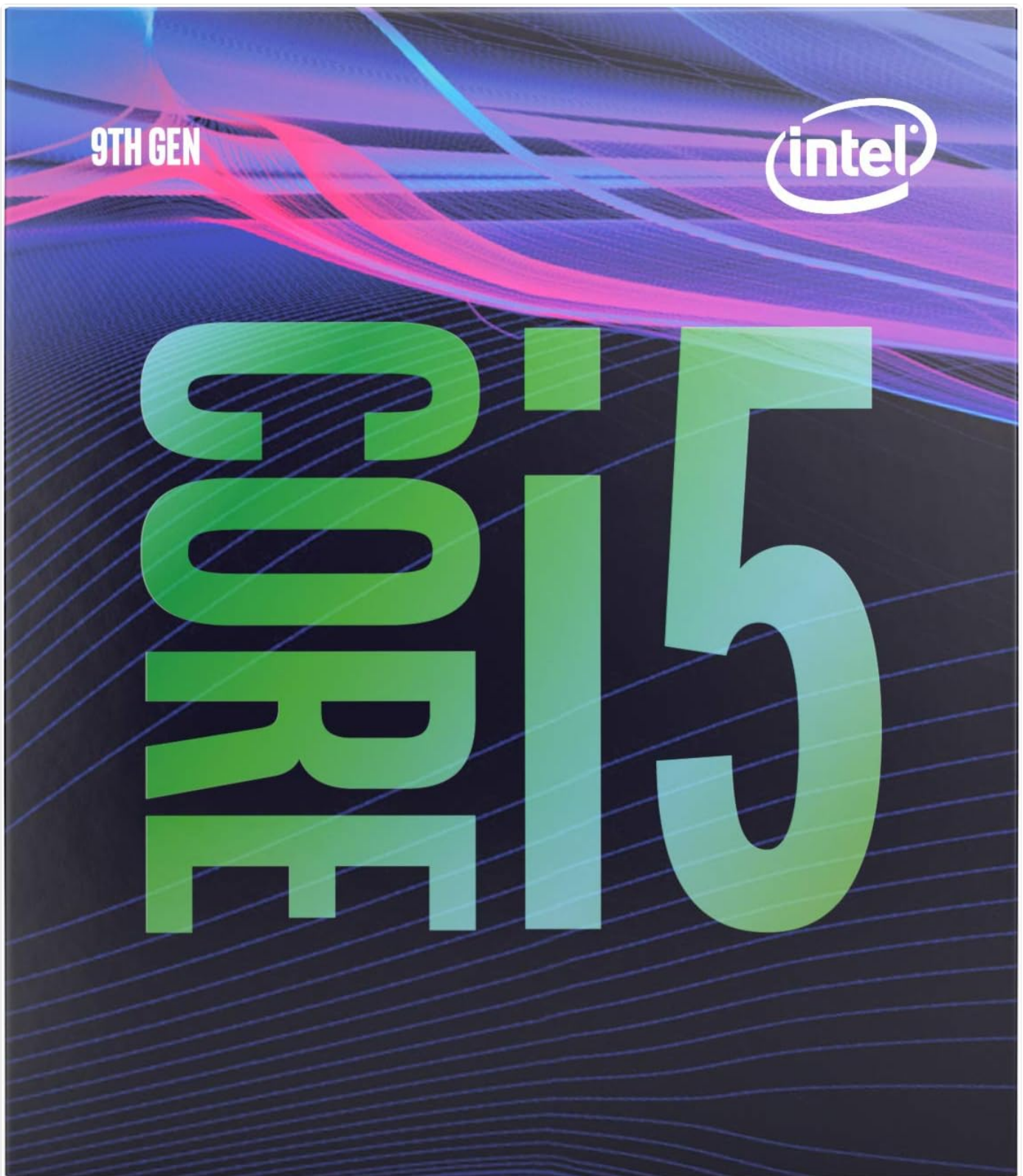
Figure 1: Retail packaging for the Intel Core i5-9500 Desktop Processor.

SAFETY INFORMATION AND LEGAL DISCLAIMER

Important: Altering clock frequency or voltage may damage or reduce the useful life of the processor and other system components, and may reduce system stability and performance. Product warranties may not apply if the processor is operated beyond its specifications. Always check with the manufacturers of your system and components for additional details and compatibility.

Ensure your system is powered off and disconnected from the power source before handling any internal components. Static electricity can damage electronic components; use proper anti-static precautions.

Setup and Installation

The Intel Core i5-9500 processor is compatible with Intel 300 Series chipset based motherboards. A BIOS update may be required for full motherboard compatibility. Refer to your motherboard manufacturer's website for the latest BIOS versions and installation instructions.

Installation Steps:

1. **Prepare Motherboard:** Ensure your motherboard is compatible and has the latest BIOS update installed.

2. **Open CPU Socket:** Carefully open the CPU retention lever on the motherboard's LGA1151 socket.

3. **Insert Processor:** Align the triangular arrow on the processor with the corresponding mark on the socket. Gently place the processor into the socket without forcing it.

4. **Secure Processor:** Close the retention lever to secure the processor in place.

5. **Apply Thermal Paste:** Apply a small amount of high-quality thermal paste to the center of the CPU's integrated heat spreader (IHS).

6. **Install Cooler:** Mount the included Intel thermal solution or an aftermarket cooler according to its instructions, ensuring even pressure for optimal heat transfer.

7. **Connect Fan:** Connect the CPU cooler's fan cable to the designated CPU_FAN header on your motherboard.

Figure 2: The Intel Core i5-9500 processor packaging, which includes the processor and a thermal solution.

Installation Video:

Video 1: An official Intel video demonstrating the Intel Core i5-9500 Boxed CPU, providing a visual overview of the product and its components.

OPERATING YOUR PROCESSOR

The Intel Core i5-9500 processor is designed to deliver robust performance for a wide range of computing tasks, from everyday productivity to demanding gaming and content creation. With 6 cores and 6 threads, it efficiently handles

multitasking and complex applications.

Key Features:

- **6 Cores** / **6 Threads:** Provides excellent performance for multi-threaded applications and smooth multitasking.
- **Up to 4.4 GHz:** Achieves high clock speeds for responsive performance in single-threaded and burst workloads.
- **Intel Turbo Boost Technology 2.0:** Dynamically increases the processor's frequency as needed by taking advantage of thermal and power headroom.
- **Intel vPro Technology:** Offers enhanced security and manageability features for business environments.
- **Intel Optane Memory Support:** Accelerates system responsiveness by acting as a fast cache for frequently accessed data.
- **Intel UHD Graphics 630:** Integrated graphics solution for basic display output and light multimedia tasks.

Figure 3: The official Intel Core i5 9th Gen logo, signifying the processor's generation and family.

Performance Overview Video:

MAINTENANCE

Modern Intel processors like the Core i5-9500 require minimal direct maintenance. The primary focus should be on maintaining an efficient cooling solution and a clean operating environment for your computer system.

Recommendations:

- **Dust Removal:** Regularly clean dust from your computer case, especially around the CPU cooler's heatsink and fan, using compressed air. Accumulated dust can impede airflow and lead to higher temperatures.
- **Thermal Paste:** If you ever remove your CPU cooler, it is crucial to clean off the old thermal paste from both the CPU and the cooler's base and apply a fresh layer before reinstallation.
- **System Airflow:** Ensure proper airflow within your PC case by managing cables and ensuring intake and exhaust fans are functioning correctly.
- **Temperature Monitoring:** Utilize system monitoring software to periodically check your CPU temperatures, especially under load, to ensure they remain within safe operating limits.

TROUBLESHOOTING

If you encounter issues with your Intel Core i5-9500 processor, consider the following common troubleshooting steps:

- **No Display/Boot Issues:**

  - Verify that the CPU is correctly seated in its socket and the retention lever is fully closed.
  - Ensure all power cables (24-pin ATX, 8-pin CPU) are securely connected to the motherboard.
  - Check RAM modules are properly seated. Try booting with only one RAM stick.
  - **BIOS Update:** As mentioned, a BIOS update may be required for 300 Series motherboards to support 9th Gen processors. If you are upgrading from an older CPU, ensure the BIOS was updated with the older CPU installed.

- **Overheating:**

  - Confirm the CPU cooler is properly installed and making good contact with the CPU's IHS.
  - Check if thermal paste was applied correctly and evenly.
  - Ensure the CPU cooler fan is spinning and connected to the correct header.
  - Improve case airflow by cleaning dust filters and ensuring proper fan configuration.

- **System Instability/Crashes:**

  - Run system stability tests (e.g., Prime95, AIDA64) to stress the CPU and monitor for errors.
  - Check for driver updates for your motherboard chipset and integrated graphics (if used).
  - Ensure your power supply unit (PSU) provides sufficient and stable power to all components.

For persistent issues, consult your motherboard's manual or the Intel Support website for more detailed troubleshooting guides and diagnostic tools.

SPECIFICATIONS

Detailed technical specifications for the Intel Core i5-9500 Desktop Processor:

Feature	Specification
Processor Base Frequency	3 GHz
Max Turbo Frequency	4.4 GHz
Cores / Threads	6 Cores / 6 Threads
Cache	9 MB Intel Smart Cache
TDP	65W
Processor Graphics	Intel UHD Graphics 630
Memory Speed Support	Up to 2666 MHz
Socket Supported	LGA 1151
Product Dimensions (LxWxH)	4.57 x 2.76 x 3.98 inches
Item Weight	3.53 ounces
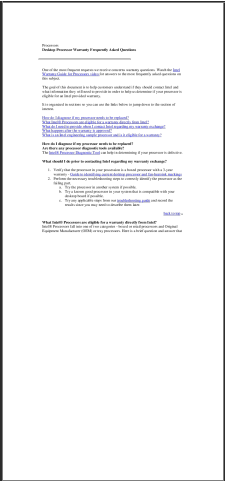
WARRANTY AND SUPPORT

Your Intel Core i5-9500 Desktop Processor comes with a standard manufacturer's warranty. For specific warranty terms and conditions, please refer to the documentation included with your product or visit the official Intel website. Keep your proof of purchase for warranty claims.

For technical assistance, driver downloads, and further support resources, please visit the official Intel Support website:

[Intel Support Website]

Related Documents - BX80684I59500

[Intel Desktop Processor Warranty FAQ: Eligibility, Exchange, and Troubleshooting](#)
Comprehensive FAQ guide on Intel desktop processor warranties. Covers eligibility for boxed vs. OEM processors, warranty exchange procedures, troubleshooting steps, and identification of engineering samples. Get answers to common warranty questions for Intel CPUs.

Intel® Desktop Board DX58SO2/DX58OG Performance Tuning Guide Revision 1.0	**[Intel DX58SO2/DX58OG Desktop Board Performance Tuning Guide](#)** A comprehensive guide from Intel detailing how to optimize the performance of Intel Desktop Boards DX58SO2 and DX58OG. It covers tuning using BIOS settings and the Intel Extreme Tuning Utility, focusing on processor, memory, and QPI configurations, along with recovery methods for unstable systems.
6th Generation Intel® Processor Families for S-Platforms Datasheet, Volume 1 of 2 Supporting the 6th Generation Intel® Core™ Processor, Intel® Pentium® Processor, and Intel® Celeron® Processor Families based on the Desktop S-Platforms January 2017	**[6th Generation Intel® Processor Families for S-Platforms Datasheet](#)** Detailed technical datasheet for Intel® Core™, Pentium®, and Celeron® 6th Generation processors designed for Desktop S-Platforms. Covers specifications, interfaces, technologies, power management, and thermal management.
Intel Core i7-4790K Processor – User Manual	**[Intel Core i7-4790K Processor User Manual and Technical Specifications](#)** Comprehensive user manual and technical specifications for the Intel Core i7-4790K desktop processor, codenamed Haswell. Includes product overview, installation guide, overclocking guidelines, and troubleshooting tips for PC enthusiasts and builders.
Product Change Notification	**[Intel Product Change Notification 853587-00: Boxed Processor Updates](#)** Notification regarding updates to Intel Boxed Processor manuals, Single Point of Contact (SPoC) details, and China RoHS compliance tables, affecting various Intel Core and Xeon processors.
Guide to Intel Rapid Storage	**[Guide to Intel Rapid Storage Technology](#)** Comprehensive guide to Intel Rapid Storage Technology (RST), covering its features, benefits, installation, creating and deleting RAID arrays using the Intel Optane Memory and Storage Management application and system BIOS, installing operating systems on RAID volumes, and using RAID with an existing OS. Includes instructions for ASRock motherboards.