

Intel BX80684I78700K

Intel Core i7-8700K Desktop Processor Instruction Manual

Model: BX80684I78700K

1. INTRODUCTION

The Intel Core i7-8700K is a high-performance desktop processor designed for demanding applications, including gaming and content creation. This processor features 6 cores and 12 threads, with a base clock speed of 3.70 GHz and a maximum turbo frequency of 4.70 GHz. It includes 12 MB of Smart Cache and supports Intel UHD Graphics 630.

This manual provides essential information for the proper installation, operation, and maintenance of your Intel Core i7-8700K processor.

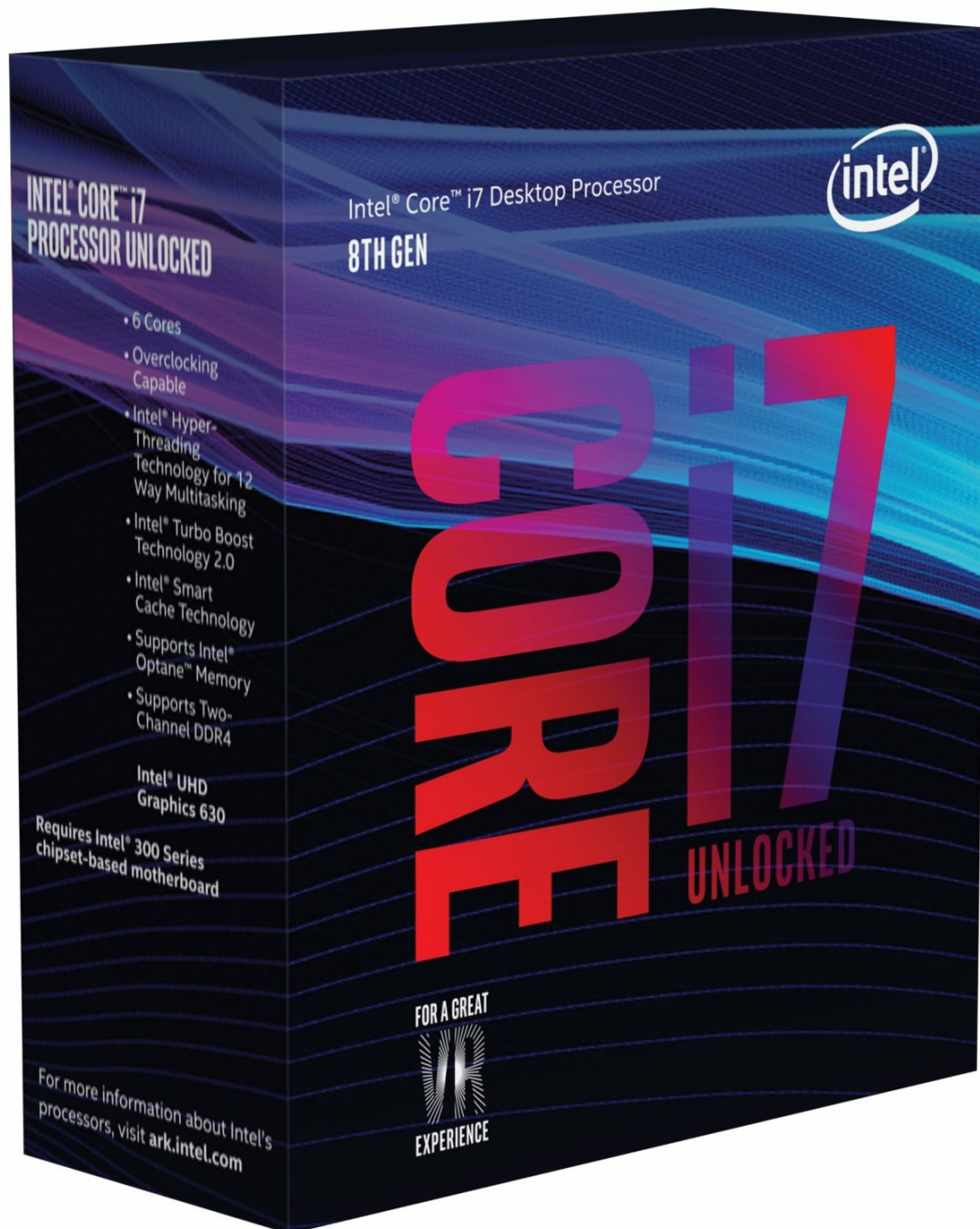


Figure 1: Intel Core i7-8700K Desktop Processor

2. PACKAGE CONTENTS

Upon opening your Intel Core i7-8700K processor retail box, you should find the following items:

- Intel Core i7-8700K Processor
- Instruction Manual / Warranty Information
- Intel Inside Logo Sticker

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Video 1: Unboxing the Intel Core i7-8700K Processor. This video demonstrates the contents of the retail package, including the processor, documentation, and sticker.



Figure 2: The Intel Core i7-8700K processor and included documentation within its retail packaging.

3. SETUP AND INSTALLATION

The Intel Core i7-8700K processor is designed for the LGA1151 socket and is compatible only with motherboards based on Intel 300 Series Chipsets. This processor does not include a stock cooler, and a compatible CPU cooling solution (e.g., air cooler or liquid cooler) must be purchased separately and installed for proper operation.

3.1 Pre-Installation Checklist

- Ensure your motherboard supports the LGA1151 socket and is an Intel 300 Series Chipset.
- Acquire a compatible CPU cooler and thermal paste.
- Refer to your motherboard's manual for specific CPU installation instructions.

3.2 Installation Steps (General)

1. Carefully open the CPU socket retention arm on your motherboard.
2. Align the processor with the socket, ensuring the gold triangle on the CPU matches the triangle on the socket. Do not force the processor into the socket.
3. Gently lower the processor into the socket.
4. Close the retention arm to secure the processor.
5. Apply a thin, even layer of thermal paste to the top of the processor's integrated heat spreader (IHS).
6. Install your chosen CPU cooler according to its manufacturer's instructions.

UNLOCKED & READY TO OVERCLOCK¹



Figure 3: The Intel Core i7-8700K processor removed from its protective plastic casing, ready for installation.

4. OPERATING INSTRUCTIONS

The Intel Core i7-8700K processor is designed for optimal performance with compatible hardware and software. Key operating features include:

- **Clock Speed:** Operates at a base frequency of 3.70 GHz, with Intel Turbo Boost Technology allowing it to reach up to 4.70 GHz for increased performance during demanding tasks.
- **Cores and Threads:** Features 6 physical cores and 12 threads, enabling efficient multitasking and parallel processing.
- **Integrated Graphics:** Includes Intel UHD Graphics 630, providing basic display capabilities without the need for a dedicated graphics card. For optimal gaming or graphics-intensive tasks, a discrete graphics card is recommended.
- **Memory Support:** Supports DDR4 SDRAM, with a maximum capacity of 64GB, allowing for high-speed data access.
- **Overclocking:** As an 'unlocked' (K-series) processor, it allows for overclocking to achieve higher clock speeds, provided adequate cooling and a compatible motherboard (Z-series chipset) are used. Overclocking should be performed with caution and understanding of potential risks.

5. MAINTENANCE

Proper maintenance ensures the longevity and stable performance of your Intel Core i7-8700K processor.

- **Cooling System:** Regularly inspect and clean your CPU cooler (fan and heatsink) to prevent dust buildup, which can impede airflow and lead to overheating. Ensure fans are operating correctly.
- **Thermal Paste:** If you notice higher-than-usual operating temperatures, consider reapplying thermal paste between the CPU and the cooler. This typically needs to be done every few years or if the cooler is removed.
- **Environment:** Operate your computer in a clean, well-ventilated area to minimize dust accumulation and ensure adequate airflow.
- **Software Updates:** Keep your motherboard's BIOS/UEFI firmware and operating system drivers updated to ensure optimal compatibility and performance with your processor.

6. TROUBLESHOOTING

If you encounter issues with your Intel Core i7-8700K processor, consider the following troubleshooting steps:

- **No Display/Boot Failure:**
 - Verify that the CPU is correctly seated in its socket and the retention arm is fully closed.
 - Ensure all power cables (24-pin ATX, 8-pin CPU) are securely connected to the motherboard.
 - Check that your CPU cooler is properly installed and its fan is spinning.
 - Confirm that your motherboard's BIOS/UEFI is compatible with the i7-8700K processor. An older BIOS might require an update.
- **Overheating:**
 - Ensure your CPU cooler is adequately sized for the processor's 95W TDP.
 - Check for proper application of thermal paste.
 - Clean any dust from the CPU cooler and case fans.
 - Verify adequate airflow within your computer case.
- **System Instability/Crashes:**
 - If overclocked, revert to default settings to rule out instability caused by excessive clock speeds or voltage.
 - Ensure RAM modules are properly seated and compatible with your motherboard and CPU.

- Run diagnostic tools for CPU and memory to identify potential hardware failures.

7. SPECIFICATIONS

Feature	Detail
Processor Model	Intel Core i7-8700K
Item Model Number	BX80684I78700K
CPU Cores / Threads	6 Cores / 12 Threads
Base Clock Speed	3.7 GHz
Max Turbo Frequency	4.7 GHz
Cache	12 MB Intel Smart Cache
Lithography	14 nm
TDP (Thermal Design Power)	95W
CPU Socket	LGA 1151
Compatible Chipsets	Intel 300 Series
Integrated Graphics	Intel UHD Graphics 630
Max Memory Size	64 GB
Memory Types	DDR4 SDRAM
Intel Optane Memory Support	Yes
Item Weight	2.4 ounces
Product Dimensions	4 x 2 x 4.6 inches

8. WARRANTY AND SUPPORT

The Intel Core i7-8700K processor typically comes with a manufacturer's warranty. Please refer to the included documentation in your product box for specific warranty terms and conditions. For technical support, driver downloads, and additional product information, visit the official Intel support website. Extended protection plans may also be available from retailers or third-party providers. Consult your purchase documentation for details on any additional protection plans you may have acquired. For further assistance, you can visit the official Intel Store on Amazon:[Intel Store](#)

