Intel Core Ultra 7 265K

Intel Core Ultra 7 265K Desktop Processor User Manual

1. Introduction

This manual provides essential information for the installation, operation, and maintenance of your Intel Core Ultra 7 265K Desktop Processor. Designed for high-performance computing, this processor features a hybrid architecture optimized for demanding tasks and gaming. Please read this manual thoroughly before proceeding with installation to ensure proper setup and optimal performance.

Image 1.1: The retail packaging for the Intel Core Ultra 7 265K Desktop Processor.

2. Key Features

The Intel Core Ultra 7 265K processor incorporates advanced technologies to deliver exceptional performance and efficiency:

- **Core Configuration:** 20 cores (8 Performance-cores + 12 Efficient-cores) and 20 threads for robust multitasking.
- **Max Clock Speed:** Up to 5.5 GHz for demanding applications and gaming.
- **Cache:** 36MB Intel Smart Cache for faster data access.
- **Architecture:** Performance Hybrid Architecture intelligently distributes workloads.

- **Connectivity:** Supports PCIe 5.0 & 4.0 for high-speed peripherals.
- **Memory Support:** Compatible with DDR5 memory for increased bandwidth.
- **Unlocked Multiplier:** Allows for overclocking to achieve higher performance (requires compatible motherboard and cooling).
- **Processor Base Power:** 125W.

Image 2.1: Diagram illustrating the 5.5 GHz max clock speed and 20-core configuration of the Intel Core Ultra 7 265K processor.

3. System Compatibility

To ensure proper functionality, the Intel Core Ultra 7 265K processor requires specific hardware components:

- **Motherboard:** Compatible with Intel 800 Series Chipset based motherboards featuring the LGA 1851 socket. Always verify motherboard QVL (Qualified Vendor List) for CPU support.
- **Memory:** Supports DDR5 RAM. Consult your motherboard manual for supported memory speeds and configurations.
- **Cooling Solution:** This processor does **not** include a thermal solution. A high-performance CPU cooler (air or

liquid) is required for operation.

- **Power Supply:** A power supply unit (PSU) with sufficient wattage and appropriate CPU power connectors is necessary. Refer to your motherboard and GPU specifications for recommended PSU wattage.

4. Installation Guide

Follow these steps carefully to install your Intel Core Ultra 7 265K processor. It is recommended to wear an anti-static wrist strap during installation to prevent damage from electrostatic discharge.

1. **Preparation:** Ensure your motherboard is securely mounted in the PC case. Refer to your motherboard manual for specific instructions on CPU socket handling.
2. **Open 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 frame.
3. **Position the Processor:** Carefully remove the processor from its packaging. Hold the processor by its edges, avoiding contact with the gold contacts or the top surface. Align the two notches on the processor with the corresponding keys on the LGA 1851 socket. The triangular marker on the processor should align with the marker on the socket.
4. **Insert the Processor:** Gently lower the processor straight down into the socket. Do not force it. If it does not seat easily, re-check the alignment.
5. **Secure the Processor:** Close the load plate over the processor. Push the load lever back into its original position until it clicks, securing the processor in place. The plastic protective cover on the socket will pop off automatically when the lever is closed.
6. **Apply Thermal Paste:** Apply a small amount of high-quality thermal paste (pea-sized dot) to the center of the processor's integrated heat spreader (IHS).
7. **Install CPU Cooler:** Mount your chosen CPU cooler according to its manufacturer's instructions. Ensure even pressure is applied when securing the cooler to the motherboard.
8. **Connect Cooler Fan:** Connect the CPU cooler's fan cable to the designated CPU_FAN header on your motherboard.

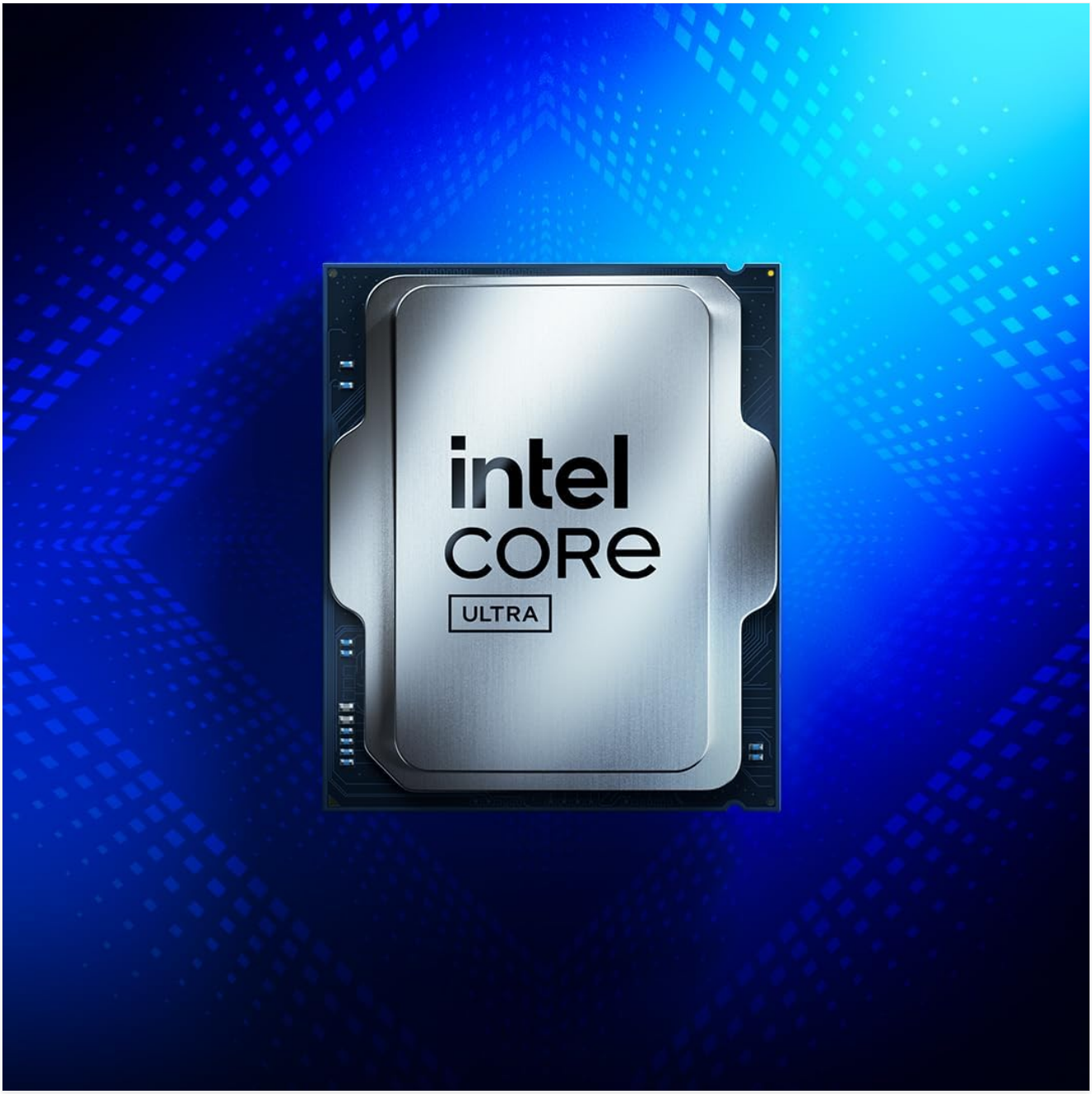


Image 4.1: A close-up view of the Intel Core Ultra processor chip, showing the integrated heat spreader.

5. Operating Guidelines

To maximize the performance and lifespan of your processor, consider the following operational guidelines:

- **Cooling:** Adequate cooling is crucial. Monitor CPU temperatures using system monitoring software. Ensure proper airflow within your PC case.
- **BIOS/UEFI Settings:** After installation, enter your motherboard's BIOS/UEFI settings. Enable XMP/EXPO for your DDR5 memory to run at its rated speed. Verify that Intel Turbo Boost Max Technology 3.0 is enabled for optimal single-core performance.
- **Driver Updates:** Keep your motherboard chipset drivers and operating system updated to ensure compatibility and performance optimizations.
- **Overclocking (Optional):** As an unlocked processor, the Core Ultra 7 265K can be overclocked. This should only be attempted by experienced users with robust cooling solutions. Refer to Intel's official overclocking guides and your motherboard's specific overclocking features.

6. Maintenance

Regular maintenance helps maintain system stability and prolong the life of your components:

- **Dust Removal:** Periodically clean dust from your CPU cooler fins and case fans using compressed air. Dust accumulation can impede cooling efficiency.
- **Thermal Paste:** The thermal paste between the CPU and cooler may degrade over time. Consider reapplying thermal paste every 2-3 years, or if you notice increased temperatures.
- **Software Updates:** Regularly update your operating system, drivers, and BIOS/UEFI firmware to benefit from performance improvements and security patches.

7. Troubleshooting

If you encounter issues, consider the following common troubleshooting steps:

- **System Not Booting:**
  - Ensure all power cables (24-pin ATX, 8-pin CPU) are securely connected.
  - Verify the CPU is correctly seated in the socket and the load lever is locked.
  - Check RAM modules are properly seated in their slots.
  - Clear CMOS (refer to motherboard manual).
- **Overheating:**
  - Confirm CPU cooler is properly installed and making good contact with the CPU.
  - Check if thermal paste was applied correctly.
  - Ensure CPU cooler fan(s) are spinning and connected to the correct header.
  - Improve case airflow by adding or repositioning case fans.
- **Performance Issues:**
  - Verify BIOS/UEFI settings for correct CPU and memory speeds.
  - Ensure operating system power plans are set to 'High Performance'.
  - Check for background applications consuming resources.
  - Update chipset drivers and graphics drivers.
- **System Instability/Crashes:**
  - Run memory diagnostic tools to check RAM integrity.
  - If overclocked, revert to default settings to test stability.
  - Check PSU stability and wattage.

8. Technical Specifications

Feature	Specification
Processor Model	Intel Core Ultra 7 265K
Total Cores	20 (8 P-cores + 12 E-cores)
Total Threads	20
Max Turbo Frequency	Up to 5.5 GHz

Feature	Specification
Intel Smart Cache	36 MB
Processor Base Power (PBP)	125 W
CPU Socket	LGA 1851
Memory Support	DDR5
PCI Express Revision	5.0 and 4.0
Integrated Graphics	Not specified (typically requires discrete GPU for K-series)
Product Dimensions	9.17 x 4.65 x 0.04 inches
Item Weight	2.8 ounces

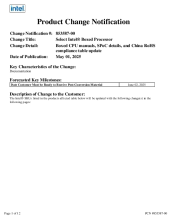
9. Warranty and Support

For detailed warranty information regarding your Intel Core Ultra 7 265K processor, please refer to the official Intel warranty statement provided with your product or visit the official Intel website. Intel provides various support resources to assist users with their products.

- **Intel Support Website:** For drivers, software, troubleshooting guides, and contact information, visit www.intel.com/support.
- **Community Forums:** Engage with other Intel users and experts on the official Intel Community Forums for peer-to-peer support.

Related Documents - Core Ultra 7 265K

	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.
	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 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.
	[OpenCL Developer Guide for Intel Core and Xeon Processors] Comprehensive guide for developers on optimizing OpenCL applications for Intel Core and Xeon processors, covering kernel development, vectorization, performance tuning, and debugging techniques.
	[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.
	[Intel® 64 and IA-32 Architectures Software Developer's Manual, Volume 3A: System Programming Guide] A comprehensive guide for developers on Intel® 64 and IA-32 architectures, detailing system programming, memory management, protection, interrupts, and multi-processor operations. Essential for optimizing software on Intel processors.