Product Brief

Intel® Core™2 Extreme Processor

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Product Description

The Intel® Core™2 Extreme processor delivers revolutionary dual-core performance for those who want the most intense, high-performance computing experience available. Designed for gamers and power users, the Intel Core 2 Extreme processor provides exceptional performance for ultra realistic games and advanced digital media creation applications.

Today's extreme gamers operate in a fast-moving, high-resolution environment that requires the PC to perform multiple, complex tasks simultaneously without impacting game performance. The latest games combine realistic Artificial Intelligence (AI) and physics to produce rich virtual worlds and the immersive experience gamers expect. The Intel Core 2 Extreme processor delivers on this expectation to render dynamic gaming with liquid animation and highly detailed characters, allowing the elite to play at the top of their game.

For experienced enthusiasts who desire more capability, the Intel Core 2 Extreme processor bus ratio locks (overspeed protection) have been removed. This offers added technical flexibility in customizing the system—even beyond the specification limits.†

Better Acoustics

Intel Core 2 Extreme processors are equipped with a new Digital Thermal Sensor (DTS) that enables efficient processor and platform thermal control. Thermal sensors located within the processor measure the maximum temperature on the die at any given time. Intel® Quiet System Technology, included in the Intel® 965 Express Chipset family, uses the DTS to regulate the system and processor fan speeds. The acoustic benefit of temperature monitoring is that system fans spin only as fast as needed to cool the system, and slower spinning fans generate less noise.

Platform Support

The Intel Core 2 Extreme processor utilizes the Intel® 975X Express Chipset based platform supporting dual graphics as well as the Intel® P965 Express Chipset based platform with an optimized memory engine for improved system performance. These combinations of processor and chipset offer an array of exciting capabilities and deliver an unparalleled level of performance leadership.

Features and Benefits of the Intel® Core™2 Extreme Processor

Features	Benefits
Dual-Core Processing	Two independent processor cores in one physical package run at the same frequency, and share 4 MB of L2 cache as well as a 1066 MHz Front Side Bus, for truly parallel computing.
Intel® Wide Dynamic Execution	Improves execution speed and efficiency, delivering more instructions per clock cycle. Each core can complete up to four full instructions simultaneously.
Intel® Smart Memory Access	Optimizes the use of the data bandwidth from the memory subsystem to accelerate out-of-order execution. A newly designed prediction mechanism reduces the time in-flight instructions have to wait for data. New pre-fetch algorithms move data from system memory into fast L2 cache in advance of execution. These functions keep the pipeline full, improving instruction throughput and performance.
Intel® Advanced Smart Cache	The shared L2 cache is dynamically allocated to each processor core based on workload. This efficient, dual-core optimized implementation increases the probability that each core can access data from fast L2 cache, significantly reducing latency to frequently used data and improving performance.
Intel® Advanced Digital Media Boost	Accelerates the execution of Streaming SIMD Extension (SSE) instructions to significantly improve the performance on a broad range of applications, including video, audio, image and photo processing, multi-media, encryption, financial, engineering and scientific applications. The 128-bit SSE instructions are now issued at a throughput rate of one per clock cycle effectively doubling their speed of execution on a per clock basis over previous generation processors.
Intel® Virtualization Technology (Intel® VT)[1]	Intel® VT allows one hardware platform to function as multiple "virtual" platforms. For businesses, Intel VT offers improved manageability, limiting downtime and maintaining worker productivity by isolating computing activities into separate partitions.
Intel® Extended Memory 64 Technology (Intel® EM64T)[1]	An enhancement to Intel's 32-bit architecture to enable the processor to access larger amounts of memory. With appropriate 64-bit supporting hardware and software, platforms based on an Intel processor supporting Intel EM64T can allow the use of extended virtual and physical memory.
Execute Disable Bit[2]	Provides enhanced virus production when deployed with a supported operating system. The Execute Disable Bit allows memory to be marked as executable or non-executable, allowing the processor to raise an error to the operating system if malicious code attempts to run in non-executable memory, thereby preventing the code from infecting the system.
Intel Designed Thermal Solution for Boxed Processors	Includes a 4-pin connector for fan speed control to help minimize the acoustic noise levels generated from running the fan at higher speeds for thermal performance.[3] Fan speed control technology is based on actual CPU temperature and power usage.

† Altering clock frequency and/or voltage may (i) reduce system stability and useful life of the system and processor; (ii) cause the processor and other system components to fail; (iii) cause reductions in system performance; (iv) cause additional damage; and (v) affect system data integrity. Intel has not tested, and does not warranty, the operation of the processor beyond its specifications.

[1] Intel® Virtualization Technology (Intel® VT), and Intel® Extended Memory 64 Technology (Intel® EM64T) require a computer system with a processor, chipset, BIOS, enabling software and/or operating system, device drivers and applications designed for these features. Performance will vary depending on your configuration. Contact your vendor for more information.

[2] Enabling Execute Disable Bit functionality requires a PC with a processor with Execute Disable Bit capability and a supporting operating system. Check with your PC manufacturer on whether your system delivers Execute Disable Bit functionality.

[3] The acoustic benefits of the 4-pin header are reliant on a properly designed motherboard. Consult your board manufacturer for compatibility.