Take digital media content creation and gaming to the next level with the new Intel® Pentium® 4 Processor with HT Technology[1] Extreme Edition based on 90nm manufacturing technology

Advanced Performance for the Power User and Passionate Gamer

Designed specifically for power users and gamers who demand the processing strength to handle today's most advanced applications, the Intel® Pentium® 4 Processor with HT Technology[1] Extreme Edition enables great responsiveness and offers outstanding content creation capabilities.

The Intel Pentium 4 Processor with HT Technology Extreme Edition now boasts:

- 1066-MHz FSB
- 2-MB L2 Advanced Transfer Cache
- 13 additional Streaming SIMD Extensions (SSE3)
- Intel NetBurst® microarchitecture and Hyper-Threading Technology enhancements
- Support for Intel® Extended Memory 64 Technology[2]
- LGA775 processor package

Graphic Design and Content Creation

Combining the Intel Pentium 4 Processor with HT Technology Extreme Edition processor, the Intel® 925XE Express Chipset and dual-channel DDR2 533 memory creates a platform capable of professional quality production of content. Be it digital music manipulation, CAD design, web publishing or video editing, this platform achieves the level of balanced performance required to meet the demands of sophisticated software applications. With support for Intel® EM64T[2], you also have the headroom for future content creation software that support 64 bit computing.

Intel's Intense Gaming Experience

Today's extreme gamers operate in a fast-moving, high-resolution environment that requires the PC to perform multiple complex tasks simultaneously. Today's games combine realistic Artificial Intelligence and physics to produce rich virtual worlds where those who play expect an immersive experience. The dynamics of this platform combination provides the speed and system responsiveness required to deliver dynamic gaming worlds with liquid animation, and highly detailed characters that enables the elite to play at the top of their game.

Innovative Features

Hyper-Threading Technology[3]

Hyper-Threading Technology[3] helps increase processor efficiency by executing more than one instruction thread at a time, which takes full advantage of multitasking environments and multi-threaded applications.

Intel NetBurst® Microarchitecture

Hyper-Pipelined Technology. A deeper pipeline allows instructions inside the processor to be queued and executed at the fastest possible rate. Eleven pipeline states have been added to accommodate the bigger L1 and L2 cache sizes. The deep pipelines will provide headroom for additional frequency and performance scaling improvements.

Streaming SIMD Extensions 3 (SSE3). Thirteen additional instructions have been added to the existing 144 instructions, including SIMD double precision floating-point, SIMD 128-bit integer, and cache and memory management instructions. SSE3 enhances performance to help accelerate the most demanding aspects of Internet computing, as well as video, speech, encryption, imaging, and non-threaded workstation applications.

Advanced Dynamic Execution

This characteristic extends the dynamic execution features found in previous-generation P6 microarchitecture. Improved branch prediction accelerates the flow of work to the processor and helps overcome the deeper pipeline. Very deep, out-of-order speculative execution carries out over 100 instructions speculatively, ensuring that the processor's superscalar execution units remain busy and deliver better performance overall.

Feature	Benefit
1066-MHz FSB	FSB transfer rates that help speed the transfer of information from the processor to the rest of the system, enabling improved throughput and performance. Also provides the user with the flexibility to take advantage of high system memory bandwidth.
2-MB L2 Advanced Transfer Cache	Larger data and code memory for fast application response.
128-bit floating-point port	Floating-point performance boost provides enhanced 3D visualization and scientific calculation.
SIMD 128-bit integer	Accelerates video, speech, encryption, and imaging/photo processing.
Enhanced floating-point/ multimedia unit	A 128-bit floating-point port and a second port for data movement enable smooth, lifelike 3D and graphics.
Rapid Execution Engine	Arithmetic logic units run at twice the core frequency, provide four ALUs of computing bandwidth, and allow lower latency execution, increasing performance for specific integer operations.
Execution Trace Cache	Advanced L1 instruction cache reduces decoder pipeline latency and caches "decoded" instructions, improving efficiency and hit rate to cached instructions. Greatly improves instruction cache efficiency and helps maximize performance on frequently used sections of software code.
Advanced Dynamic Execution	Improved branch prediction can enhance performance for all 32-bit applications by optimizing instruction sequences.
Execute Disable Bit[4]	Can prevent certain types of viruses or worms that exploit "buffer overflow" vulnerabilities.
Intel® Extended Memory 64 Technology (Intel® EM64T)[2]	Flexibility for operating systems and future software that support 64-bit computing.
Intel Designed Thermal Solution[5]	Designed to match the processor. New fan speed control technology based on actual CPU temperature and power usage to help minimize acoustic noise.

For more information, visit www.intel.com/info/hyperthreading

[1] Look for systems with the Intel® Pentium® 4 Processor with HT Technology logo which your system vendor has verified utilize Hyper-Threading Technology. Performance will vary depending on the specific hardware and software you use. See www.intel.com/info/hyperthreading for information.

[2] Intel® EM64T requires a computer system with a processor, chipset, BIOS, OS, device drivers and applications enabled for Intel EM64T. Processor will not operate (including 32-bit operation) without an Intel EM64T-enabled BIOS. Performance will vary depending on your hardware and software configurations. Intel EM64T-penabled OS, BIOS, device drivers and applications may not be available. Check with your vendor for more information.

[3] Hyper-Threading Technology requires a computer system with an Intel® Pentium® 4 processor supporting HT Technology and an HT Technology enabled chipset, BIOS and operating system. Performance will vary depending on the specific hardware and software you use. See www.intel.com/homepage/land/hyperthreading_more.htm for information, including details on which processors support HT Technology.

[4] Execute Disable Bit requires operating system support. See http://www.intel.com/business/bss/infrastructure/security/xdbit.htm for more information on how to implement this feature.

[5] The acoustic benefits of the 4-pin header are reliant on a properly designed motherboard. Boxed Intel® Desktop Boards based on Intel® 925XE Express Chipset were designed with support for acoustic benefits of the 4-pin header with fan speed control.

 USA/0105/MS/AT Order number: 301609-004US