Product Brief

Intel® Celeron® Dual-Core Processor

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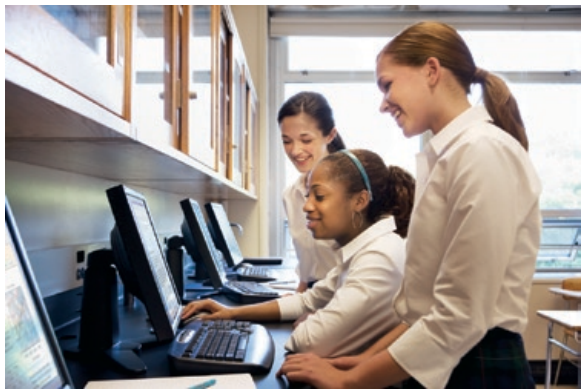
Energy-efficient computing for the desktop PC



Overview

Take basic computing to new levels with the Intel® Celeron® dual-core processor. Because many software applications for everyday tasks are now designed for dual-core processors, users can be more creative and productive in the home, office, or classroom.

In addition, security and virus protection often means running more than one application at a time, and the Celeron dual-core processor has the power to run them simultaneously. Based on energy-efficient microarchitecture, the Celeron dual-core processor delivers superior energy-efficient dual-core performance.

Energy Efficiency

Intel® Intelligent Power Capability, a feature of the Intel Celeron dual-core processor, optimizes energy usage in the processor cores by turning computing functions on only when needed. This improves performance as well as the processor's energy efficiency by operating at lower frequencies that require less power to run. These more energy-efficient processors support smaller and quieter desktop PCs.

Better Acoustics

Celeron dual-core processors are equipped with a 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. 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

Combining the Celeron dual-core processor with an Intel® Express chipset-based board delivers added benefits. Integrated Intel® High Definition Audio and Intel® Graphics Media Acceleration (GMA) provide exceptional audio quality and a smooth visual experience. The flexibility of platform options brings an array of new capabilities.

Features and Benefits of the Intel® Celeron® Dual-Core Desktop Processor

Features	Benefits
Dual-Core Processing	Two independent processor cores in one physical package run at the same frequency; 512 KB of shared L2 cache and 800 MHz Front Side Bus.
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, multimedia, encryption, and 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® 64[1] Architecture	This enhancement to Intel's 32-bit architecture allows the processor to access larger amounts of memory. With appropriate 64-bit supporting hardware and software, platforms based on an Intel® processor supporting Intel 64 architecture can allow the use of extended virtual and physical memory.
Execute Disable Bit[2]	Provides enhanced virus protection 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. This prevents the code from infecting the system.
Intel® Designed Thermal Solution for Boxed Processors	Intel boxed processors ship with a thermal solution specifically for this processor, designed for maximum thermal and acoustic performance.

[1] Intel® 64 Architecture requires a computer system with a processor, chipset, BIOS, enabling software and/or operating system, device drivers, and applications designed for this feature. Performance will vary depending on your configuration. Contact your vendor for more information.

[2] The Execute Disable Bit feature in this processor provides enhanced virus protection when deployed with a supported operating system. Contact your vendor for more information.