



Intel® Pentium® Processor



Product Overview

The Intel® Pentium® processor is ideal for a desktop system that can handle all your basic computing needs. With the attributes of Intel's newest microarchitecture, an Intel Pentium processor-based PC is not only reliable, but offers the solid performance needed to run applications simultaneously and efficiently.

PCs based on the Intel Pentium processor are well suited to the home and office. With improved power efficiency, an Intel Pentium processor system can be built to meet new global energy standards, making it an excellent choice for government and education.

Technology

The Intel Pentium processor's technology includes Intel® Smart Cache with shared L3 cache, which improves performance by reducing latency. The Integrated Memory Controller provides a higher memory bandwidth for faster data access and Intel® HD Graphics is the ideal graphics solution for your everyday visual computing needs. Intel® Quick Sync Video technology now available on Intel Pentium processor delivers breakthrough hardware acceleration that makes video creation and conversion faster and easier.

| Comparison Table | 4th Gen Intel® Pentium® Processor | 3rd Gen Intel® Pentium® Processor | 2nd Gen Intel® Pentium® Processor |
|---|--|---|---|
| | Intel Pentium G3XXX | Intel Pentium G2XXX | Intel Pentium G8XX/G6XX |
| Socket | LGA1150 | LGA1155 | LGA1155 |
| Manufacturing Process | 22 nm | 22 nm | 32 nm |
| Intel® Smart Cache | 3 MB L3 shared | 3 MB L3 shared | 3 MB L3 shared |
| Integrated Memory Controller | Yes | Yes | Yes |
| Memory Speed | DDR3 1333/1600 MHz | DDR3 1333/1600 MHz | DDR3 1333 MHz |
| Processor Graphics | Intel® HD Graphics with DirectX* 11.1, Open CL* 1.2, OpenGL* 4.0 | Intel® HD Graphics DirectX* 11, Open CL* 1.1 (1.2 with latest graphics driver), OpenGL* 4.0 | Intel® HD Graphics DirectX* 10.1, OpenGL* 3.1 |
| Processor Graphics Execution Units | 10 | 6 | 6 |
| Intel® Quick Sync | Yes | No | No |
| Number of Displays Supported ¹ | 3 | 3 | 2 |
| PCI Express* Revision | 3.0 | 2.0 | 2.0 |
| Intel® Virtualization Technology (Intel® VT-x) ² | Yes | Yes | Yes |
| Recommended Intel® Express Chipset | Intel® H97, Intel® H87 and Intel® H81 Express Chipset ¹ | Intel® H77 and Intel® H61 Express Chipset | Intel® H61 Express Chipset |

| Features and Benefits of the Intel® Pentium® Processor | |
|---|--|
| Feature | Benefit |
| Dual-Core Processing | Runs two independent processor cores in one physical package at the same frequency. |
| Intel® Smart Cache | The shared cache is dynamically allocated to each processor core, based on workload. Significantly reduces latency and improves performance. |
| Integrated Memory Controller | Offers stunning memory read/write performance through efficient prefetching algorithms, lower latency, and higher memory bandwidth. |
| Intel® HD Graphics | 4th Gen Intel® processors now with more execution units, provides a better graphics experience compared to previous generations. This new architecture delivers casual and online gaming capabilities through support of Microsoft DirectX* 11.1 and OpenGL* 4.x Provides Blu-ray* and HD playback with full HW decode acceleration, sharper images, richer color, and immersive browsing. |
| Intel® Quick Sync Video | Intel® Quick Sync Video makes fast work of creating, editing, syncing, and sharing your videos—at home and online. Intel Quick Sync Video, built into 4th generation Intel Pentium processors, delivers breakthrough hardware acceleration that lets you complete in minutes what used to take hours. Create DVDs or Blu-ray* discs, edit videos, convert video files for your portable media device, and convert videos for upload to your favorite social networking sites—all in a flash. |
| Intel® Virtualization Technology (Intel® VT-x) ³ | Allows one hardware platform to function as multiple “virtual” platforms. Offers improved manageability by limiting downtime and maintaining productivity by isolating computing activities into separate partitions. |
| Intel® Designed Thermal Solution for Boxed Processors | Includes a four-pin connector for fan speed control to help minimize the acoustic noise levels generated from running the fan at higher speeds for thermal performance ⁴ and power usage. |

For more information on the Intel® Pentium® processor, visit www.intel.com/content/www/us/en/processors/pentium/pentium-processor.html

¹ This feature may not be available on all computing systems. Please check with the system vendor to determine if your system delivers this feature, or reference the system specifications (motherboard, processor, chipset, power supply, HDD, graphics controller, memory, BIOS, drivers, virtual machine monitor-VMM, platform software, and/or operating system) for feature compatibility. Functionality, performance, and other benefits of this feature may vary depending on system configuration.

² Intel® Z97 and Z87 Express Chipset recommended for Intel® Pentium® G3258 Processor.

³ Intel® Virtualization Technology 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.

⁴ The acoustic benefits of the four-pin header are reliant on a properly designed motherboard. Contact your board manufacturer for compatibility.

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