

## Intel® Pentium® 4 Processor

The Center of Your Digital World

### Advancing the Desktop Platform

- Intel Chipsets
- Complete solutions
  - Stable, reliable hardware and software
  - Innovative products and technology

### Exciting New Chipsets for the Intel® Pentium® 4 processor

- Intel® 850E Chipset
- Unleash the full potential of the Pentium® 4 processor with RDRAM memory.
- Intel® 845E Chipset
- Performance and mainstream platform solution with optimized DDR performance, support for the latest AGP graphics cards, and integrated Hi-Speed USB 2.0.
- Intel® 845G Chipset
- Highly flexible, scalable solution for a broad range of corporate and consumer needs, with integrated Intel® Extreme Graphics.

### Key Features

- Intel® Extreme Graphics
- Next generation integrated graphics core that delivers an intense and realistic visual experience for the latest 3D and digital entertainment applications.  
(Available in Intel® 845G and 845GL chipsets)
- Hi-Speed USB 2.0
- Offers up to 40x the bandwidth of USB 1.1 with the same ease-of-use and backward compatibility. Burn CDs up to 6x faster and backup data up to 11x faster.  
(Available in Intel® 845E, 845G and 845GL chipsets)
- Intel® Stable Image Technology
- The highly tested, comprehensive software stack minimizes changes to the software image.
- Enhanced Audio
- 20-bit integrated audio with dual independent DMA engines enable simultaneous audio streams.  
(Available in Intel 845E, 845G and 845GL chipsets)

## Intel® Pentium® 4 Processor

Designed to Deliver Performance Where Users Need It Most

### Features

- Clock speeds of 1.7GHz and above
- Intel's fastest desktop processor brings users cutting-edge performance today and tomorrow
- New 0.13 Process Technology
- Enables faster processors with reduced power requirements
- Level 2 Advanced Transfer Cache\*\*
- 256 KB
  - 512 KB
- Enables efficient processing of instructions for a responsive computing experience
- More efficient processing of instructions for quick, agile computing
- Hyper-pipelined Technology
- Enables significantly higher frequency and performance to handle today's demanding applications
- System Bus\*\*
- 400 MHz
  - 533 MHz
- Sends information to the processor quickly to enable responsive computing
- More responsive computing with an advanced design that sends information to the processor faster
- Rapid Execution Engine
- Can execute some instructions at 2x the rated chip megahertz for improved performance
- Streaming SIMD Extensions 2 (SSE2)
- Increases performance in extreme applications like 3D gaming, and Internet streaming audio and video
- Execution Trace Cache
- A more efficient use of cache storage space that enables more responsive computing

### Intel® Pentium® 4 Processor Business Messages

- High performance Pentium 4 processor based PCs enable**
- A significant advance in user productivity
  - Businesses to collaborate more effectively
  - The processing power to ensure the smooth rollout of emerging web services based on XML technology over the lifecycle of the client
  - The flexibility and headroom to handle the new applications and technology that tomorrow brings

### Intel® Pentium® 4 processor Consumer Messages

- Performance for an awesome digital media experience**
- Power to quickly encode MP3 files
  - Performance to create, edit, and share movies and photos quickly and easily
  - Allows you to take full advantage of your broadband internet connection
  - Faster frame rates for smoother, more realistic 3D games
- Headroom for the next-generation of software applications, technology, and internet innovations**

The Intel® Pentium® 4 processor, Intel® Pentium® III processor, Intel® Celeron® processor, Intel® 845E chipset, Intel® 845G chipset, Intel® 845GL chipset, Intel® 815 chipset, and Intel® 810 chipset may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

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\*\* See salesperson for availability of specific configurations.

For more information, visit the Intel Web site at: [developer.intel.com](http://developer.intel.com)

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## Intel® Chipset Comparison Chart



| Feature                     | PERFORMANCE/MAINSTREAM PRODUCTS |                     |  |                           |   | VALUE PRODUCTS            |                                     |                                     |
|-----------------------------|---------------------------------|---------------------|--|---------------------------|---|---------------------------|-------------------------------------|-------------------------------------|
|                             | Intel® 850E Chipset             | Intel® 850 Chipset  | Intel® 845E Chipset  | Intel® 845G Chipset       | Intel® 845 Chipset                                | Intel® 845GL Chipset      | Intel® 815 Chipset Family           | Intel® 810 Chipset Family           |
| Target Segment              | Perf/Mainstream PC              | Perf/Mainstream PC  | Mainstream PC  | Mainstream PC             | Mainstream/Value PC                               | Value PC                  | Value PC                            | Value PC                            |
| Processor Positioned        | Intel® Pentium® 4 processor     | Pentium 4 processor | Pentium 4 processor  | Pentium 4 processor       | Pentium 4 processor                               | Intel® Celeron® processor | Celeron processor                   | Celeron processor                   |
| System Bus                  | 533/400 MHz (Data)              | 400 MHz (Data)      | 533/400 MHz (Data)   | 533/400 MHz (Data)        | 400 MHz (Data)                                    | 400 MHz (Data)            | 133/100 MHz                         | 133/100 MHz                         |
| #DIMMS/Max Memory           | 4 RIMMS/2 GB                    | 4 RIMMS/2 GB        | 2 DIMMS/2 GB   | 2 DIMMS/2 GB              | 3/3 GB SDR 2/2 GB DDR                             | 2 DIMMS/2 GB              | 3/512 MB                            | 2/512 MB                            |
| Memory Type—Desktop         | PC600/800 RDRAM                 | PC600/800 RDRAM     | DDR200/266 SDRAM   | PC133 or DDR200/266 SDRAM | PC133 or DDR200/266 SDRAM                         | PC133 or DDR200/266 SDRAM | PC133 SDRAM                         | PC100 SDRAM                         |
| ECC/Parity                  | Yes                             | Yes                 | Yes  | No                        | Yes   | No                        | No                                  | No                                  |
| Integrated Graphics         | N/A                             | N/A                 | N/A  | Intel® Extreme Graphics   | N/A   | Intel Extreme Graphics    | Integrated Intel 3D with Direct AGP | Integrated Intel 3D with Direct AGP |
| External Graphics Interface | AGP4X (1.5V)                    | AGP4X (1.5V)        | AGP4X (1.5V)   | AGP4X (1.5V)              | AGP4X (1.5V)                                      | N/A                       | AGP4X/2X                            | N/A                                 |
| PCI Masters                 | 6                               | 6                   | 6  | 6                         | 6   | 6                         | 6                                   | 6                                   |
| IDE                         | ATA/100 IAA**                   | ATA/100 IAA**       | ATA/100 IAA**  | ATA/100 IAA**             | ATA/100 IAA**                                     | ATA/100 IAA**             | ATA/100/66                          | ATA/100/66                          |
| USB/Ports                   | USB 1.1/4                       | USB 1.1/4           | USB 2.0/6  | USB 2.0/6                 | USB 1.1/4   | USB 2.0/6                 | USB 1.1/up to 4                     | USB 1.1/up to 4                     |
| Integrated LAN MAC          | Yes                             | Yes                 | Yes  | Yes                       | Yes   | Yes                       | Yes with ICH2                       | Yes with ICH2                       |
| AC'97                       | Yes                             | Yes                 | Enhanced 20-bit Audio  | Enhanced 20-bit Audio     | Yes   | Enhanced 20-bit Audio     | Yes                                 | Yes                                 |
| GMCH/MCH                    | 82850E                          | 82850               | 82845E   | 82845G                    | 82845   | 82845GL                   | 82815, 82815EP, 82815G              | 82810, 82810E                       |
| GMCH/MCH Package            | 615 OLGA                        | 615 OLGA            | FC-BGA 593   | 760 FC-BGA                | FC-BGA 593  | 760 FC-BGA                | 544 BGA                             | 421 BGA                             |
| Supported ICH               | ICH2 (82801BA)                  | ICH2 (82801BA)      | ICH4 (82801DB)   | ICH4 (82801DB)            | ICH2 (82801BA)                                    | ICH4 (82801DB)            | ICH (82801AA)<br>ICH2 (82801BA)     | ICH (82801AA)<br>ICH2 (82801BA)     |
| ICH Package                 | 360 EBGA                        | 360 EBGA            | 421 μBGA   | 421 μBGA                  | 360 EBGA  | 421 μBGA                  | 241 BGA (ICH)<br>360 EBGA (ICH2)    | 241 BGA (ICH)<br>360 EBGA (ICH2)    |
|                             | Pentium 4 processor compatible  |                     | Celeron processor, Intel® Pentium® III processor compatible (133/100 MHz System bus) |                           | Celeron processor compatible (400 MHz System bus) |                           | ICH2                                | ICH4                                |

\*\*Intel® Application Accelerator: Accelerate boot time and disk I/O. Performs best on Pentium 4 processor platforms