

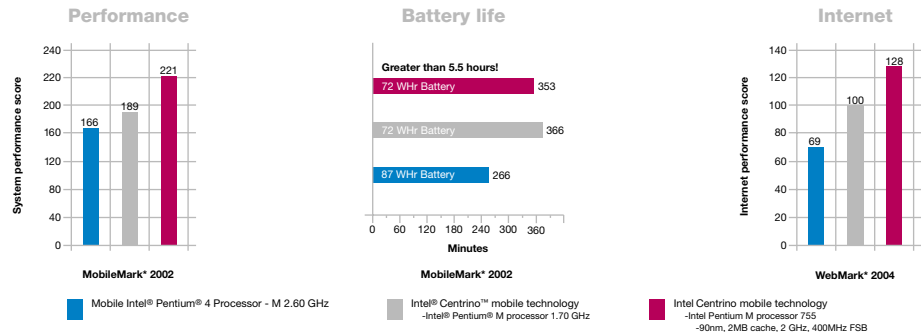


Intel® Centrino™ mobile technology.



More than a mobile processor, Intel® Centrino™ mobile technology combines a new microprocessor designed from the ground up for mobility, with a mobile-optimized chipset and an integrated wireless LAN solution.* This document includes a list of key features and benefits of Intel Centrino mobile technology as well as a comparison to the previous generation Intel microprocessor and technology.

Measuring mobile experience.



Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software configuration, as well as system use patterns including wireless connectivity, may affect actual test results and ratings. For more information on performance tests and on the performance of Intel products, visit www.intel.com/performance/resources/limits.htm

Intel® Centrino™ mobile technology... More than a processor.

Product overview

Intel® microprocessors	Mobile Intel® Pentium® 4 Processor - M	Intel® Pentium® M Processor	Intel Pentium M Processor
Processor number	NA	NA	7xx sequence of numbers ¹
90nm process technology	No	No	Yes
On-die L2 cache	512 KB	1 MB	2 MB
Processor system bus	400 MHz	400 MHz	400 MHz
Processor frequency up to	2.60 GHz	1.70 GHz	2 GHz
Micro-ops Fusion	No	Yes	Yes
Support for Enhanced Intel SpeedStep® technology	No ²	Yes	Yes
Support for Intel® Mobile Voltage Positioning IV (Intel® MVP)	No	Yes	Yes
Intel® chipsets	Intel® 845 chipset family	Intel® 855 chipset family	Intel 855 chipset family
Support for up to 2 GB of memory	No	Yes	Yes
USB 2.0 support	No ³	Yes	Yes
Discrete and integrated graphics solutions	No ³	Yes	Yes
Supports Intel® Display Power Saving Technology and Intel® Dual-Frequency Graphics Technology	No	Yes ⁴	Yes ⁴
Dynamic I/O buffer disabling for processor system bus and memory	No	Yes	Yes
Intel® wireless solution		Intel® PRO/Wireless Network Connection	Intel PRO/Wireless Network Connection
Single band 802.11b, single band/dual mode 802.11b/g and dual band 802.11a/b Wi-Fi CERTIFIED* wireless LAN support**	Intel® wireless components may be included in these systems and certain wireless features may be available, however Intel does not conduct the same validation as with the Intel® Centrino™ mobile technology components.	Yes	Yes
Industry standard wireless LAN security support (802.1X, WEP, WPA, AES†) available [§]		Yes	Yes
Cisco* Compatible Extensions (such as LEAP and CKIP) support available [§]		Yes	Yes
Intel® PROSet available with advanced profile management [‡]		Yes	Yes

Intel® Centrino™ mobile technology features and benefits.

	Feature	Benefit
<p>Breakthrough mobile performance*</p> 	<p>90nm and strained silicon process technologies</p> <p>2 MB power optimized L2 cache, enhanced register access manager, enhanced data pre-fetcher</p> <p>Power-optimized 400 MHz processor system bus, micro-ops fusion, dedicated stack manager</p> <p>Advanced instruction prediction</p> <p>Second-generation Streaming SIMD Extensions (Streaming SIMD Extensions 2)</p> <p>Support for up to 2 GB of DDR 333/266/200⁵ memory</p> <p>Universal Serial Bus (USB) 2.0 support</p> <p>Intel® 855GME integrated graphics solution w/ Intel® Extreme Graphics 2 technology</p> <p>Intel® Stable Image Technology</p> <p>Support for Wireless Multimedia Extensions (WME) for dual mode 802.11b/g^Δ</p>	<p>Enables higher performance and allows more frequency head room</p> <p>Higher performance due to reduced off-chip memory accesses, more efficient register management, increased availability of valid data in L2 cache</p> <p>Allow faster execution of instructions at lower power</p> <p>Enables fewer re-dos for increased performance</p> <p>Improves performance and allows SW compatibility with previous Intel® microprocessor generation</p> <p>Enables higher memory speed</p> <p>Enables data transfer rate up to 40 times faster than USB 1.1 for better performance</p> <p>Delivers realistic 3D graphics with sharp images and enables balanced memory usage between graphics and system for optimal performance</p> <p>Enables stable SW image for IT; additionally Intel® 855 chipset family supports unified graphics driver, reducing TCO by converging to one driver for multiple clients</p> <p>With PC manufacturer's availability, provides Quality of Service support for advanced usage models, such as voice over IP</p>
<p>Enables extended battery life*</p> 	<p>Support for enhanced Intel SpeedStep® technology w/ multiple voltage and frequency operating points</p> <p>Power-optimized logic design, enabling new low voltage capabilities</p> <p>Intelligent power distribution</p> <p>Dynamic input/output buffer disabling for processor system bus and memory</p> <p>Optimized internal clock gating for 3D and display engines with Intel® 855GM</p> <p>Support for Intel® Display Power Saving Technology with Intel® 855GME chipset</p> <p>Support for Intel® Dual-frequency Graphics Technology with Intel 855GME chipset</p> <p>Intel® Intelligent Scanning Technology</p> <p>Power Save Protocol (PSP)</p>	<p>Allows for better match of performance to application demand</p> <p>New power-efficient transistor technology optimizes power consumption/dissipation for lower CPU average power</p> <p>Focuses system power where CPU needs it and shuts down anything not being used</p> <p>Lowers chipset/CPU/memory power</p> <p>Lowers chipset power</p> <p>Can reduce display backlight power by up to 25% with minimal visual impact to end user, depending on Intel® DPST settings and system use</p> <p>Reduces integrated graphics chipset power (end-user configurable)</p> <p>Reduces power by controlling frequency of scanning for access points</p> <p>Five user-selectable power states allow customized power vs. performance choices when in battery mode</p>
<p>Integrated wireless LAN capability*</p> 	<p>Wi-Fi CERTIFIED* wireless LAN support for single band 802.11b, single band/dual mode 802.11b/g, dual band 802.11a/b[∞]</p> <p>Industry standard wireless LAN security support (802.1X, WEP, WPA, AES[‡]) available[§]</p> <p>Cisco* Compatible Extensions (such as LEAP and CKIP) support available[§]</p> <p>Support for antenna diversity</p> <p>Intel® PROSet for wireless software with advanced profile management[◇]</p> <p>Support for Intel® Wireless Coexistence System</p>	<p>Ability to connect to 802.11a, 802.11b, and 802.11g-based infrastructure[∞]</p> <p>With PC manufacturer's availability, enables enhanced wireless LAN security in compliance with evolving industry standards*</p> <p>With PC manufacturer's availability and validation, enables interoperability with Cisco Aironet* WLAN infrastructure</p> <p>For systems designed with two antennas, real-time antenna selection enables optimized WLAN performance</p> <p>Allows multiple profile set-up and automatic switching between profiles for simplified wireless access when moving between access points; five power settings for end-users to extend battery life</p> <p>Enables reduced interference between Intel® PRO/Wireless Network Connection and certain Bluetooth* devices</p>
<p>Thinner, lighter designs</p> 	<p>Support for Intel® Mobile Voltage Positioning (Intel® MVP IV)</p> <p>Micro FCPGA and FCBGA packaging technology</p> <p>Integrated low voltage differential signal (LVDS) interface with Intel® 855GM chipset</p>	<p>Dynamically lowers voltage based on processor activity to lower thermal design power, enabling smaller notebooks</p> <p>Optimized for a range of thinner, lighter designs, including <sup>1</sup> thick, that deliver outstanding performance</p> <p>Consumes less motherboard space which allows smaller notebook designs</p>

Business: intel.com/ebusiness/mobile Consumer: intel.com/home/notebooks

+ Wireless connectivity and some features may require you to purchase additional software, services or external hardware. Availability of public wireless LAN access points limited and some hotspots may not support Linux-based Intel Centrino mobile technology systems. System performance measured by MobileMark* 2002. System performance, battery life, wireless performance and functionality will vary depending on your specific operating system, hardware and software configurations. See http://www.intel.com/products/centrino/more_info for more information.

∞ Dual band WLAN supports low band capabilities (5.15 GHz to 5.35 GHz) only. Low band capabilities are not supported in all countries. Check with your PC manufacturer for details on availability.

‡ AES has specific operating system requirements, and requires both access point support and a PC software upgrade that will be available in 2H'04. Available on 802.11 b/g only. Check with your PC manufacturer for availability.

§ Some security solutions may not be supported by your PC's operating system and/or by your PC manufacturer. Check with your PC manufacturer for details on availability.

◇ Intel® PROSet for Wireless software may not be supported by your PC's operating system and/or by your PC manufacturer. Check with your PC manufacturer for details on availability.

Δ WME support requires a WME enabled access point and requires a PC software upgrade that will be available in 2H'04. Available on 802.11 b/g only and may have varying operating system requirements. Check with your PC manufacturer for details on availability.

1 See http://www.intel.com/products/processor_number for more information.

2 Mobile Intel® Pentium® 4 Processor - M has support for Enhanced Intel SpeedStep® technology without multiple voltage and frequency operating points.

3 Available with Intel® 852GM chipset, an additional chipset option for Mobile Intel® Pentium® 4 Processor - M.

4 Available with Intel® 855GME chipsets only.

5 DDR333 available on Intel® 855PM and 855GME chipsets only.

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