



Mobile Intel® Pentium® 4 Processor - M Do More. Carry Less.

The new Mobile Intel® Pentium® 4 Processor - M delivers outstanding performance for mobile PCs—the highest performance available in an Intel® mobile CPU—with power saving features to enable long battery life. This advanced mobile processor, together with the Mobile Intel® 845MP chipset, provides a stable platform and OS environment, decreasing deployment time and reducing qualification, support and maintenance costs.



Mobile Intel®
Pentium® 4 Processor - M

Product Overview

Performance

Built with Intel® NetBurst™ microarchitecture, Intel's newest mobile processor easily handles emerging e-Business applications and data-intensive tasks. It provides superior performance for demanding multimedia applications. And it offers high performance across wired and wireless environments, while handling security processing needs without compromising speed.

Power Management

The Mobile Intel® Pentium® 4 Processor - M supports Enhanced Intel SpeedStep® technology, which, combined with other low power features, extends battery life, increasing the efficiency and productivity of mobile PC users—anytime, anywhere.

Mobile Intel® Pentium® 4 Processor - M Features and Benefits

Clock Speeds to 2.50 GHz and Beyond

- Fastest Intel® mobile processor speed available
- Outstanding performance for demanding applications

0.13 Micron Process Technology

- Leading-edge technology—smallest transistors in a small mobile package
- Higher performance, low power

512 KB On-die L2 Cache

- Runs at processor core speed for faster application performance
- Stores more instructions/data in on-chip memory for quick access, fast response

Intel® NetBurst™ Microarchitecture

- 400 MHz Processor System Bus
 - Bus bandwidth three times faster (3.2 GB/s) than previous Intel® architecture
 - Moves data faster between memory, graphics and bus devices to enhance performance
- Execution Trace Cache
 - New, innovative cache stores 12 K of decoded instructions
 - More efficient cache memory for faster response, improved performance
- Hyper-pipelined Technology
 - Twice the pipelined length of previous Intel architecture, 20 stages for storing instructions/data
 - Higher frequency scalability, performance
- Second-generation Streaming SIMD Extensions (SSE2)
 - 144 new instructions can reduce program task execution requirements

- Accelerated processing for video, multimedia, 3D, encryption, other high-demand applications
- Improves performance, download speeds, image quality
- Rapid Execution Engine
 - Arithmetic Logic Units (ALUs) run at twice core frequency for faster processing of certain instructions
 - Higher execution throughput reduces waiting time for calculation-intensive programs

Thin and Small Package Technology (Micro FCPGA chip packaging)

- Intel-developed small mobile package requires less space
- High performance in thinner, lighter systems that run cooler

Enhanced Intel SpeedStep® Technology

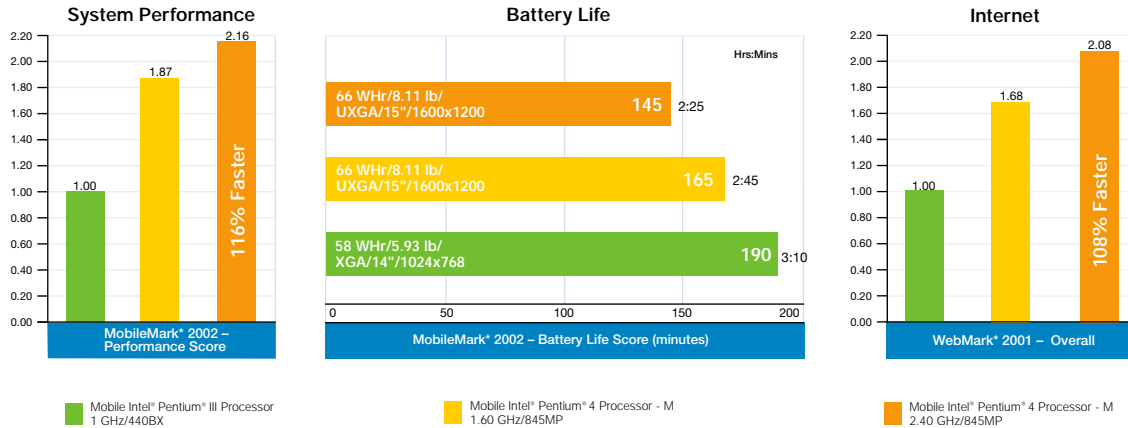
- Real-time dynamic switching of voltage and frequency between maximum performance and battery-optimized operation, based on CPU demand
- Switching of bus ratios, core operating voltage, core processor speeds without resetting system
- Automatic optimization and power usage, invisible to the user, for long battery life

Deeper Sleep Alert State

- New dynamic power management mode minimizes processor voltage and power during idle time, while preserving processor state
- Operates at 66% lower voltage than the operating voltage
- Enabled during less than a millisecond of inactivity, for longer battery life

Rev Up Your Productivity

Mobile Intel® Pentium® 4 Processor - M Delivers an Awesome Mobile Experience



Note: Performance gains calculated relative to Mobile Intel® Pentium® III Processor 1 GHz as baseline.

Product Comparison Chart	Mobile Intel® Pentium® 4 Processor - M	Mobile Intel® Pentium® III Processor - M
Processor Frequency up to:	2.50 GHz	1.33 GHz
Process Technology	0.13 Micron	0.13 Micron
On-die L2 Cache	512 KB	512 KB
Data Prefetch Logic	Yes	Yes
Processor System Bus	400 MHz	133 MHz
Execution Trace Cache	Yes	No
Hyper-pipelined Technology	Yes	No
Streaming SIMD Extensions II	Yes	No
Rapid Execution Engine	Yes	No
Enhanced Intel SpeedStep® Technology	Yes	Yes
Deeper Sleep Alert State	Yes	Yes
Low Volt and Ultra Low Volt Processors options	No	LV 1 GHz ULV 933 MHz
Packaging Technology	Micro FCPGA	Micro FCPGA/ Micro FCBGA

Mobile Intel® 845MP Chipset Features and Benefits

Performance

- **Supports up to 1 GB of DDR 266 MHz Memory**
Twice as fast as PC133 SDRAM for accelerated processing, less page swapping, quicker access
- **I/O Controller Hub Architecture**
Double the I/O bandwidth of previous bridge architectures, supports fast peripherals, smoother multimedia
- **Flexible External AGP4X Graphics Support**
Supports leading edge graphics solutions

Power Management

- **Mobile AGP Graphics Power Management Support**
Supports reliable graphics power management transitions, for longer battery life
- **Supports ACPI 2.0 and APM 1.2 System Power Management**
Supports latest ACPI, as well as legacy APM designs to optimize battery life
- **Mobile Clock Manager**
Dynamically controls chipset clock speed for extended battery life

For more information visit these Web sites:

Business: www.intel.com/ebusiness/mobile
Home: www.intel.com/home/notebooks

Source: Intel Corporation. Configuration/PBCA: Mobile Intel® Pentium® 4 Processor - M at 1.40 GHz, 1.50 GHz, 1.60 GHz, 1.70 GHz, 1.80 GHz, 1.90 GHz, 2 GHz, 2.20 GHz with Intel® 845MP Chipset on Dell Latitude® C840, 256MB PC2100 DDR266, BIOS: Dell A02, NVIDIA GeForce4 440 Go graphics card with 64MB DDR SDRAM, graphics driver: NVIDIA GeForce4 440 Go 4.17.0022, Intel® Chipset Software Installation Utility v3.20.1008, Intel® Application Accelerator Driver v2.0, Mobile Intel® Pentium® 4 Processor - M at 2.40 GHz with Intel® 845MP Chipset on Dell Latitude® C840, 256MB PC2100 DDR266, BIOS: Dell A06, NVIDIA GeForce4 440 Go graphics card with 64MB DDR SDRAM, graphics driver: NVIDIA GeForce4 440 Go 4.17.0022, Intel® Chipset Software Installation Utility v4.00.1013, Intel® Application Accelerator Driver v2.2, Mobile Intel® Pentium® III Processor at 1 GHz with Intel® 440BX Chipset on Compaq Armada M700, 256MB SDRAM PC100, BIOS: Compaq 1.35, ATI Radeon® Mobility graphics card with 8MB SDRAM, graphics driver: ATI 5.1.2001.0, Intel® Chipset Software Installation Utility v3.20.1008, Intel® Application Accelerator Driver v2.0, All Platforms IBM IC25T048ATA05-A Travelstar® 48GB hard drive 5400 rpm, Windows® XP Professional, Graphics resolution 1024x762x32bit color.

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 design or configuration may affect actual performance.

Information in this document is provided in connection with Intel® products. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Intel's Terms and Conditions of Sale for such products, Intel assumes no liability whatsoever, and Intel disclaims any express or implied warranty, relating to sale and/or use of Intel® products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right. Intel® products are not intended for use in medical, life saving, or life sustaining applications. Intel may make changes to specifications and product descriptions at any time, without notice.

Intel, Pentium, NetBurst, SpeedStep and the Intel logo are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

*Other names and brands may be claimed as the property of others.

Copyright © 2003 Intel Corporation.
0103/OC/RC/PDF

Order Number: 250352-004