

# AMD Turion™ 64 Mobile Technology

ML-44

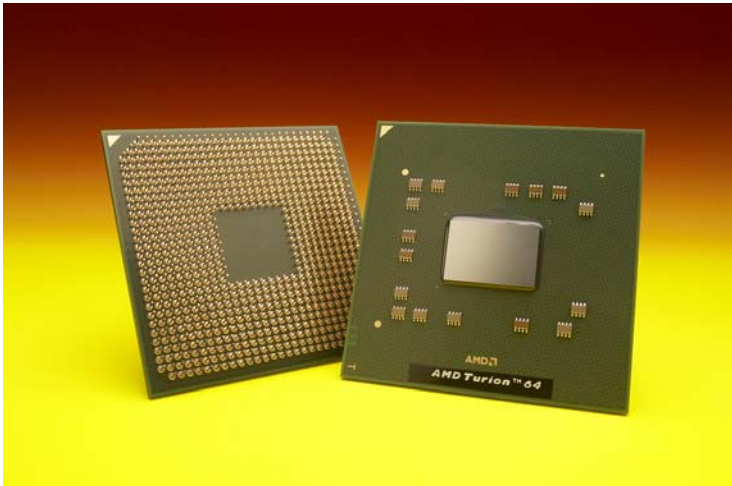
January 4, 2006



# AMD Turion™ 64 Mobile Technology ML-44



**AMD64 Performance,  
Made for Mobility**



**AMD Turion™ 64 Mobile Technology  
Now available in models:  
ML-44, ML-42, ML-40, ML-37, ML-34,  
ML-32, ML-30, ML-28, MT-40, MT-37,  
MT-34, MT-32, MT-30 and MT-28.**

## Key Features

- Uniquely optimized to deliver AMD64 performance in thinner and lighter notebook designs
- AMD offers the only mobile-specific processors available today to run both 32-bit and 64-bit software
- AMD PowerNow!™ technology for extended battery life
- Compatible with all available wireless solutions including 802.11a, b and g
- Enhanced Virus Protection\* for advanced security

\* Enhanced Virus Protection (EVP) is only enabled by certain operating systems including the current versions of Microsoft® Windows®, Linux, and BSD Unix. After properly installing the appropriate operating system release, users must enable the protection of their applications and associated files from buffer overrun attacks. Consult your OS documentation for information on enabling EVP. Contact your application software vendor for information regarding use of the application in conjunction with EVP. AMD and its partners strongly recommend that users continue to use third party anti-virus software as part of their security strategy.

# AMD Turion™ 64 Mobile Technology



***AMD64 Performance,  
Made for Mobility***

AMD Turion™ 64 mobile technology is uniquely optimized to deliver AMD64 performance in thinner and lighter notebook designs with long battery life, Enhanced Virus Protection\* for advanced security, and compatibility with the latest wireless and graphics technologies, today and tomorrow.

\* Enhanced Virus Protection (EVP) is only enabled by certain operating systems including the current versions of Microsoft® Windows®, Linux, and BSD Unix. After properly installing the appropriate operating system release, users must enable the protection of their applications and associated files from buffer overrun attacks. Consult your OS documentation for information on enabling EVP. Contact your application software vendor for information regarding use of the application in conjunction with EVP. AMD and its partners strongly recommend that users continue to use third party anti-virus software as part of their security strategy.

# Open Platform Approach

Offers a broad solution to consumers

**AMD technology enables a best-in-class ecosystem to deliver outstanding solutions**



## GRAPHIC/CHIPSET



## LAN



## WIRELESS



### Winning Mobile Solution

- Long battery life
- Compatibility with the latest wireless and graphics technologies
- AMD64 performance
- Enhanced Security

# AMD Turion™ 64 Mobile Technology

**AMD Turion™ 64 mobile technology sets you free to work or play, anytime or anywhere, to get the most from your mobile lifestyle.**



**AMD Turion™ 64 mobile technology ML-44 is the fastest processor in the Turion family and is designed to meet the needs of these more demanding users. It delivers exceptional performance on today's digital media applications for enjoyment or content creation and more life-like gaming so they can enjoy their favorite digital entertainment anywhere or anytime.**

# AMD Turion™ 64 Mobile Technology

## HP Pavilion dv8000 Media Center Notebook PC

- HP has added AMD Turion™ 64 mobile technology ML-44 to its HP Pavilion dv8000 series Notebook PC. This multimedia powerhouse enables consumers to take desktop digital media performance on the road.
- The HP Media Center dv8000 Notebook PC is now available in North America and Europe.
- AMD Turion™ 64 mobile technology is now available in models: ML-44, ML-42, ML-40, ML-37, ML-34, ML-32, ML-30, ML-28, MT-40, MT-37, MT-34, MT-32, MT-30 and MT-28.



# HP Media Center dv8000 Notebook PC



**Easy management and  
use of digital media**

- AMD Turion™ 64 mobile technology model numbers up to ML-44
- HP QuickPlay for one-touch access to digital media without booting up computer
- 17-inch high-definition widescreen display featuring BrightView technology
- Dual Hard Drive Storage System (select models) provides additional storage up to 240GB
- 6-in-1 digital media card reader
- Integrated WLAN; Bluetooth integrated on select models

# AMD Turion™ 64 Mobile Technology Momentum is Building

"Turion 64 has ramped ~3x faster than any of AMD's previous generation mobile products and we expect a number of design wins to begin shipping over the next several quarters. We continue to hear that Turion is gaining traction in the market and believe that AMD is taking share due to its lower priced offerings relative to Intel."

-- Mark Lipacis, Sell-side Analyst, Prudential Equity Group, LLC,  
Research note issued on August 31st, 2005

**Thank You**  
**Backup Slides to Follow**



# AMD Turion™ 64 Mobile Technology

## Available Processor Models

Greater Performance ↑	Frequency/ L2 Cache	35W TDP	25W TDP
	2GHz/1M	ML-37	--
	1.8GHz/1M	ML-34	MT-34
	1.8GHz/512K	ML-32	MT-32
1.6GHz/1M	ML-30	MT-30	

Greater Mobility →

Model numbers provide a simple designation of both relative performance and degree of mobility

\*Model numbers reflect relative performance within AMD Turion™ 64 mobile technology family

### AMD Turion™ 64 Mobile Technology MT-34

**Letters**

- Two letters together designate processor class
- Second letter designates increasing degree of mobility as measured by power consumption, enabling thin & light notebook PCs and long battery life

A → Z

"Higher" letter indicates lower power consumption, enabling longer system battery life

**Numbers**

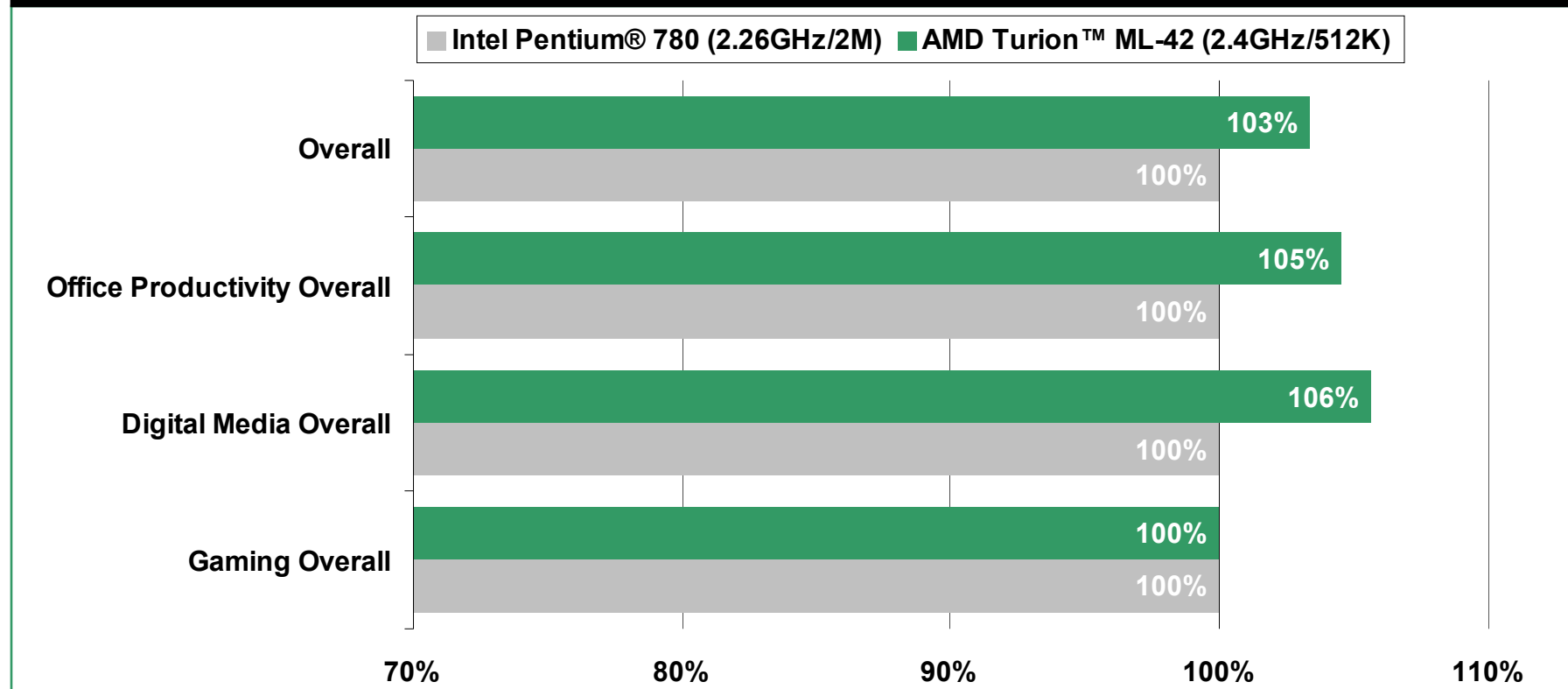
- Designate relative processor performance
- Higher model numbers indicate higher relative performance\*



# AMD Turion™ 64 Mobile Technology Performance benchmarks

## AMD Turion™ 64 Mobile Technology Performance Benchmark

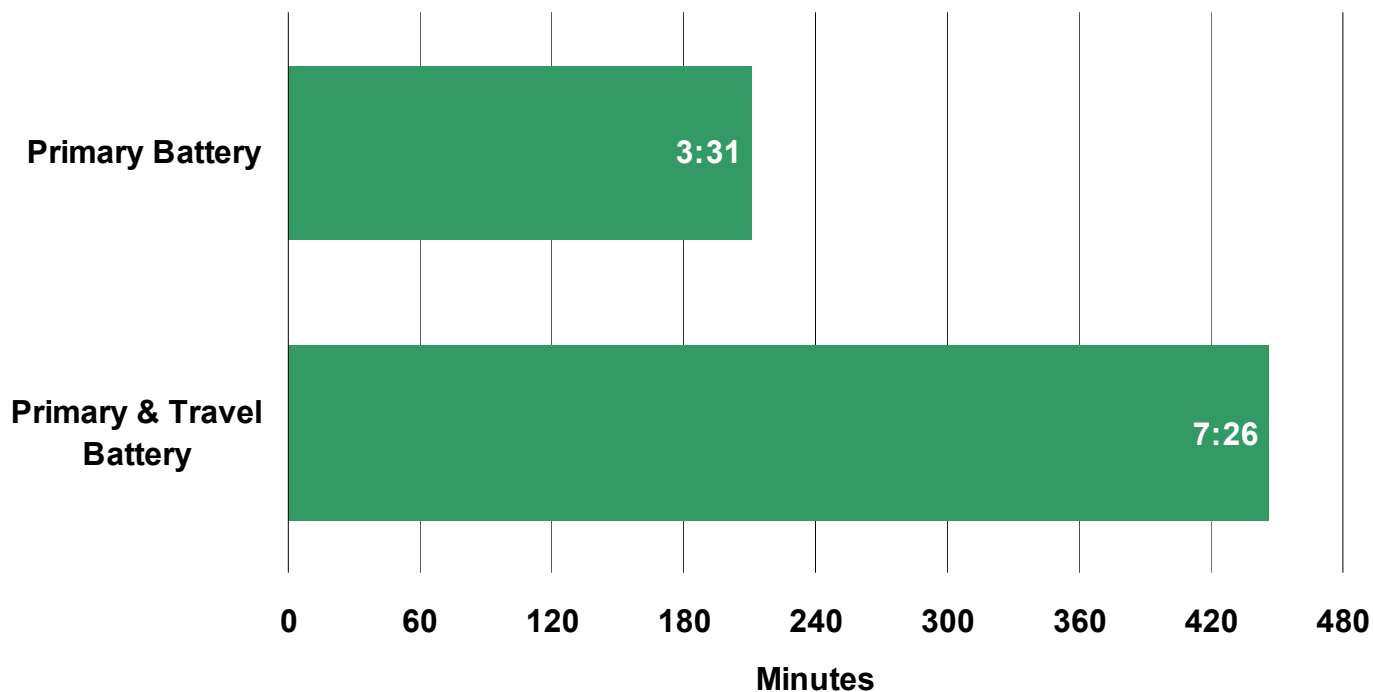
### Notebook PC Overall Performance



# AMD Turion™ 64 Mobile Technology Battery Life Benchmarks

## AMD Turion™ 64 Mobile Technology Battery Life Benchmark

Ziff Davis Media Inc. Business Winstone® 2004 BatteryMark™ Version 1.0



Please see backup section for system configuration information



# System Configuration

## AMD Turion™ Mobile Technology

<b>Operating System</b>		Microsoft® Windows® XP Professional, RTM, Service Pack 2 installed, Build 2600, DirectX 9.0c
<b>Hardware</b>	Processor	AMD Turion™ 64 ML-42 (2.4GHz, 512KB L2)
	Notebook	Acer Aspire 5024WLMi (modified), BIOS version 1.11, 6/24/2005
	Chipset	ATI Mobility Radeon Xpress 200M Series
	Memory	1024MB DDR SDRAM (PC3200/DDR400, CAS Latency 3.0)
	Hard Drive	Hitachi HTS548040M9AT00, 40GB, 5400RPM, 8MB buffer, UDMA100 (NTFS used to format the hard disk)
	Video	ATI Mobility Radeon x700 with 128MB
	Audio	ATI Integrated Digital Audio
	LAN	Realtek RTL8169/810 Gigabit Ethernet (disabled during test)
	Wireless LAN	Broadcom 802.11g WLAN (disabled during test)
<b>Power Scheme</b>		Always On
<b>Drivers</b>	IDE	Microsoft version 5.1.2600.2180, 7/1/2001, DMA enabled
	Video	ATI version 6.14.10.6534, 3/22/2005, 1024x768x32
	Audio	ATI version 5.0.30001.20, 7/27/2004
	LAN	Realtek version 5.621.304.2005, 5/16/2005
	Wireless LAN	Broadcom version 3.100.64.1, 2/18/2005

# System Configuration

## Intel Centrino Mobile Technology

<b>Operating System</b>		Microsoft® Windows® XP Professional, RTM, Service Pack 2 installed, Build 2600, DirectX 9.0c
<b>Hardware</b>	Processor	Intel Pentium® M 780 (2.26GHz, 2M L2)
	Notebook	Acer TravelMate 8104WLMi (modified), BIOS Version S3C17, 1/27/2005
	Chipset	Intel i915PM/GM/GMS Express Chipset
	Memory	1024MB DDR2 SDRAM (PC2-4200/DDR2 533, CAS Latency 4)
	Hard Drive	Hitachi HTS548040M9AT00, 40GB, 5400RPM, 8MB buffer, UDMA100 (NTFS used to format the hard disk)
	Video	ATI Mobility Radeon x700 with 128MB
	Audio	Realtek High Definition Audio
	LAN	Broadcom NexXtreme Gigabit Ethernet (disabled during test)
	Wireless LAN	Intel PRO/Wireless 2915ABG (disabled during test)
<b>Power Scheme</b>		Always On
<b>Drivers</b>	IDE	Intel version 6.1.0.1004, 3/24/2004, DMA enabled
	Video	ATI version 6.14.10.6497, 12/7/2004, 1024x768x32
	Audio	Realtek version 5.10.0.5038, 12/13/2004
	LAN	Broadcom version 6.64.0.0, 5/21/2003
	Wireless LAN	Intel version 9.0.1.9, 10/29/2004

# Performance Benchmark Suite

This benchmark is an average of compiled data from the list of overall benchmark scores from the tests listed below. Average of scores normalized to Intel Pentium® M Processor 770/2.13GHz for the following tests:

## Office Productivity Suite

BAPCo® SYSMark® 2004 Office Productivity, Version 1.0 (w/ patch2)  
VeriTest Business Winstone® 2004, Version 1.0.1 (w/SP2 reg fix)  
VeriTest Business Winstone Multitasking Test Scores, Version 1.0.1  
RARLAB WinRAR 3.30  
PC World WorldBench 5.0 Overall, 5/10/04 (w/SP2 Reg Edit)

## Digital Media Suite

BAPCo® SYSMark® 2004 Internet Content Creation  
VeriTest Multimedia Content Creation Winstone® 2004, version 1.0.1  
DivXNetworks, Inc., DrDivX, Version 1.0.6  
RazorLame, Version 1.1.5 1342  
Smokey City Design, LLC, The Panorama Factory, Version 3.3

## 3D Gaming Suite (all at 1024x768x32)

Futuremark Corp. 3DMark™ 2001SE (D3D Software T&L)  
Futuremark Corp. 3DMark03 Patch 340 (Hardware Vertex Shaders)  
Futuremark Corp. 3DMark03 Patch 340 (Software Vertex Shaders)  
Massive Development AquaMark3 FPS  
Lucas Arts Star Wars Jedi Knights II Demo, Version 1.04  
Id Software, Inc. Quake III Arena Demo2  
Id Software, Inc. Return to Castle Wolfenstein: Enemy Territory, Version 1.02  
Epic Games Unreal Tournament 2003 Flyby  
Epic Games Unreal Tournament 2003 Botmatch  
Ubisoft Entertainment Splinter Cell (1.1.1)  
Ubisoft Entertainment Splinter Cell (1.1.2)  
Ubisoft Entertainment Far Cry™ Version 1.1 cooler01  
Ubisoft Entertainment Far Cry™ Version 1.1 Pier  
Id Software, Inc. Doom3™ Version 1.0.12.62  
Crafty 32bit Version 19.12

# Battery Life System Configuration

## AMD Turion™ 64 Mobile Technology

<b>Operating System</b>		Microsoft® Windows® XP Professional, RTM, Service Pack 2 installed, Build 2600, DirectX 9.0c
<b>Hardware</b>	Processor	AMD Turion™ 64 MT-34 (1.8GHz/1MB)
	Notebook	HP nx6125, BIOS version B.09, 3/3/2005, modified
	Chipset	ATI Mobility Radeon Xpress 200 Series
	Memory	512MB DDR SDRAM (PC2700/DDR333, CAS Latency 2.5)
	Hard Drive	Hitachi HTS548040M9AT00, 40GB, 5400RPM, 8MB buffer, UDMA100 (NTFS used to format the hard disk)
	Video	Integrated in chipset, 128MB total video memory
	Audio	Conexant AC-Link Audio
	LAN	Broadcom 440x 10/100 Integrated Controller (disabled during test)
	Wireless LAN	Broadcom 802.11b/g WLAN (wireless transmitter enabled and associated with an access point)
	LCD	15" screen, brightness ~30nits
	Battery	Primary battery: 6-cell Li-Ion, 51.84Whr (4.8 Ah, 10.8V) Travel battery: 8-cell Li-Ion, 51.84Whr (3.6 Ah, 14.4V)
<b>Power Scheme</b>		Portable/Laptop
<b>Drivers</b>	AGP	N/A
	IDE	Microsoft version 5.1.2600.2180, 7/01/2001, DMA enabled
	Video	ATI version 6.14.10.6525, 2/16/2005, 1024x768x32
	Audio	Conexant version 6.14.10.530, 2/11/2005
	LAN	Broadcom version 4.25.0.0, 11/1/2004
	Wireless LAN	Broadcom version 3.100.64.0, 2/11/2005

# Benchmark Suite

This benchmark is an average of compiled data from the list of overall benchmark scores from the tests listed below. Average of scores normalized to Intel Pentium® M Processor 780/2.26GHz for the following tests:

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VeriTest Business Winstone® 2004, Version 1.0.1 (w/SP2 reg fix)  
VeriTest Business Winstone Multitasking Test Scores, Version 1.0.1  
RARLAB WinRAR 3.30  
PC World WorldBench 5.0 Overall, 5/10/04 (w/SP2 Reg Edit)

## Digital Media Suite

BAPCo® SYSmark® 2004 Internet Content Creation  
VeriTest Multimedia Content Creation Winstone® 2004, version 1.0.1  
DivXNetworks, Inc., DrDivX, Version 1.0.6  
RazorLame, Version 1.1.5 1342  
Smokey City Design, LLC, The Panorama Factory, Version 3.3

## 3D Gaming Suite (all at 1024x768x32)

Futuremark Corp. 3DMark™ 2001SE (D3D Hardware T&L)  
Futuremark Corp. 3DMark 2001SE (D3D Software T&L)  
Futuremark Corp. 3DMark03 Patch 340 (Hardware Vertex Shaders)  
Futuremark Corp. 3DMark03 Patch 340 (Software Vertex Shaders)  
Massive Development AquaMark3 FPS  
Lucas Arts Star Wars Jedi Knights II Demo, Version 1.04  
Id Software, Inc. Quake III Arena Demo2  
Id Software, Inc. Return to Castle Wolfenstein: Enemy Territory, Version 1.02  
Epic Games Unreal Tournament 2003 Flyby  
Epic Games Unreal Tournament 2003 Botmatch  
Ubisoft Entertainment Splinter Cell (1.1.1)  
Ubisoft Entertainment Splinter Cell (1.1.2)  
Ubisoft Entertainment Far Cry™ Version 1.1 cooler01  
Ubisoft Entertainment Far Cry™ Version 1.1 Pier  
Dreamcatcher Interactive Painkiller™ Version 1.64  
Id Software, Inc. Doom3™ Version 1.0.12.62  
Crafty 32bit Version 19.12

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