



AMD Dual-Core Processor Benchmarks

AMD Athlon™ 64 FX processors

AMD Athlon 64 X2 processors

May 2006

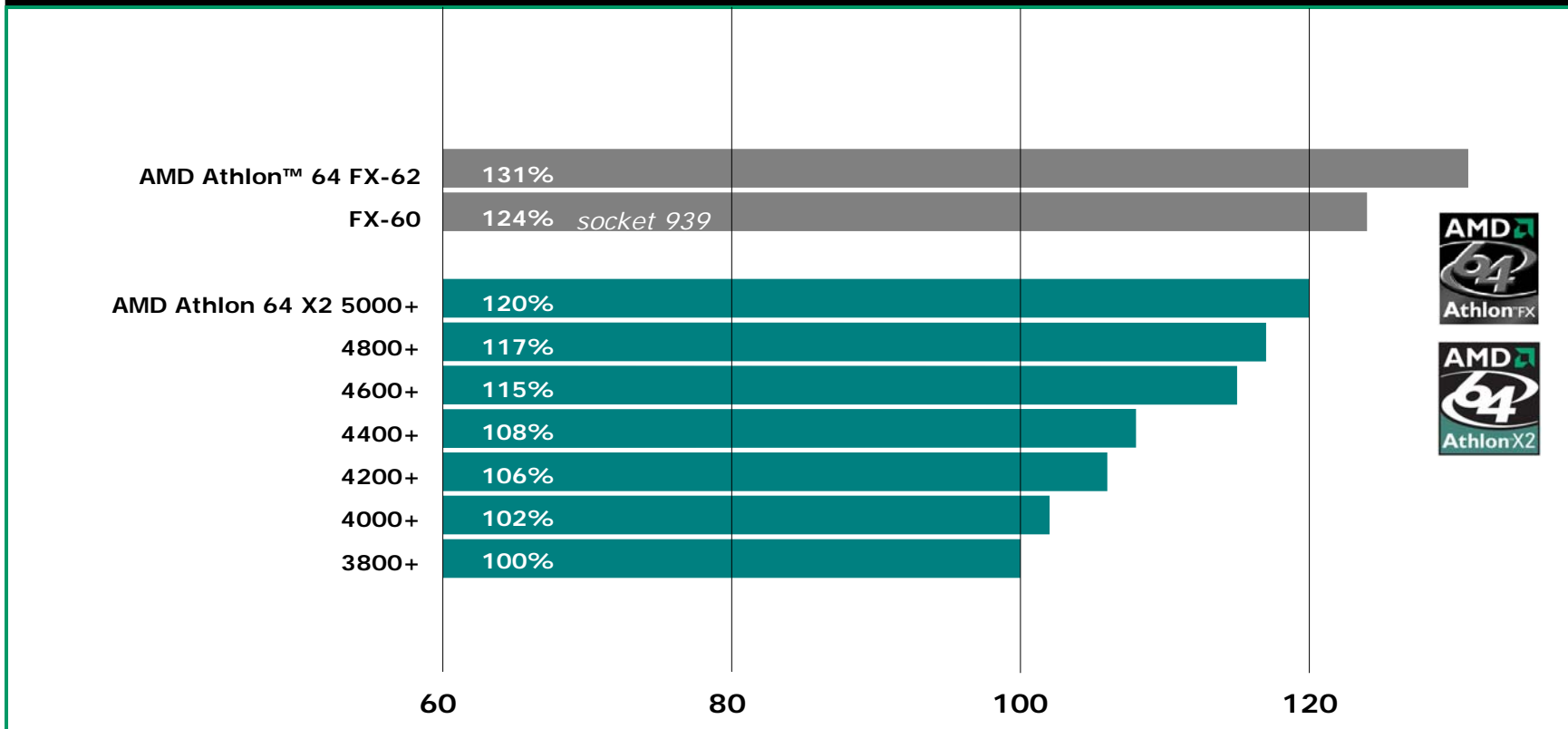
*A summary of dual-core desktop
processor performance benchmarks*

Dual-core processors (socket AM2)

Overall Performance (Geometric Mean of: Office Productivity, Digital Media and Games)

AMD Athlon™ 64 Processor Performance Benchmark

Desktop Performance – Overall Performance



AMD Athlon 64 X2 processor model numbers indicate relative software performance within the AMD Athlon 64 X2 processor family.
AMD Athlon 64 FX processor model numbers indicate relative software performance within the AMD Athlon 64 FX processor family.

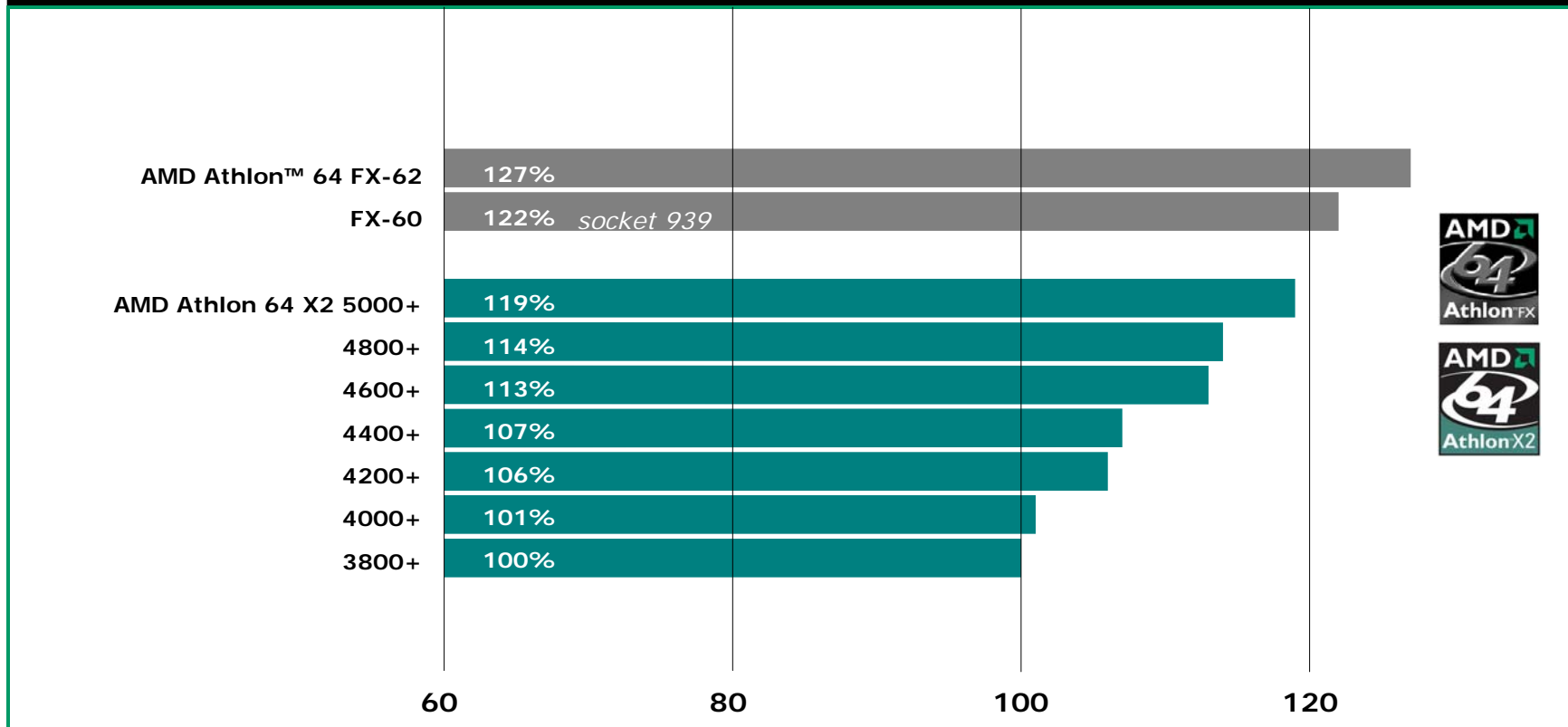


Dual-core processors (socket AM2)

Overall Office Productivity (Geometric Mean of Benchmark Suite)

AMD Athlon™ 64 Processor Performance Benchmark

Desktop Performance – Overall Office Productivity



AMD Athlon 64 X2 processor model numbers indicate relative software performance within the AMD Athlon 64 X2 processor family.
AMD Athlon 64 FX processor model numbers indicate relative software performance within the AMD Athlon 64 FX processor family.

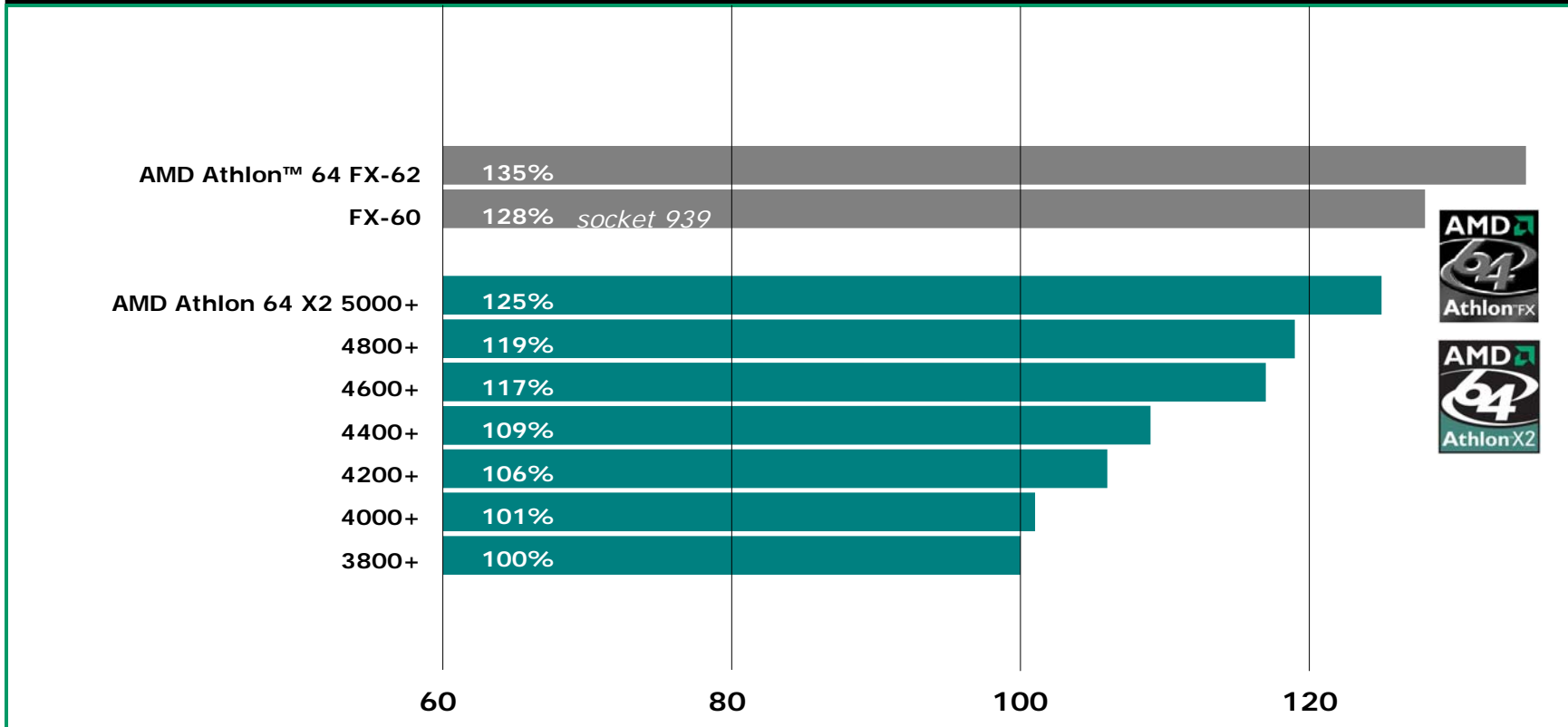


Dual-core processors (socket AM2)

Overall Digital Media (Geometric Mean of Benchmark Suite)

AMD Athlon™ 64 Processor Performance Benchmark

Desktop Performance – Overall Digital Media



AMD Athlon 64 X2 processor model numbers indicate relative software performance within the AMD Athlon 64 X2 processor family.
AMD Athlon 64 FX processor model numbers indicate relative software performance within the AMD Athlon 64 FX processor family.

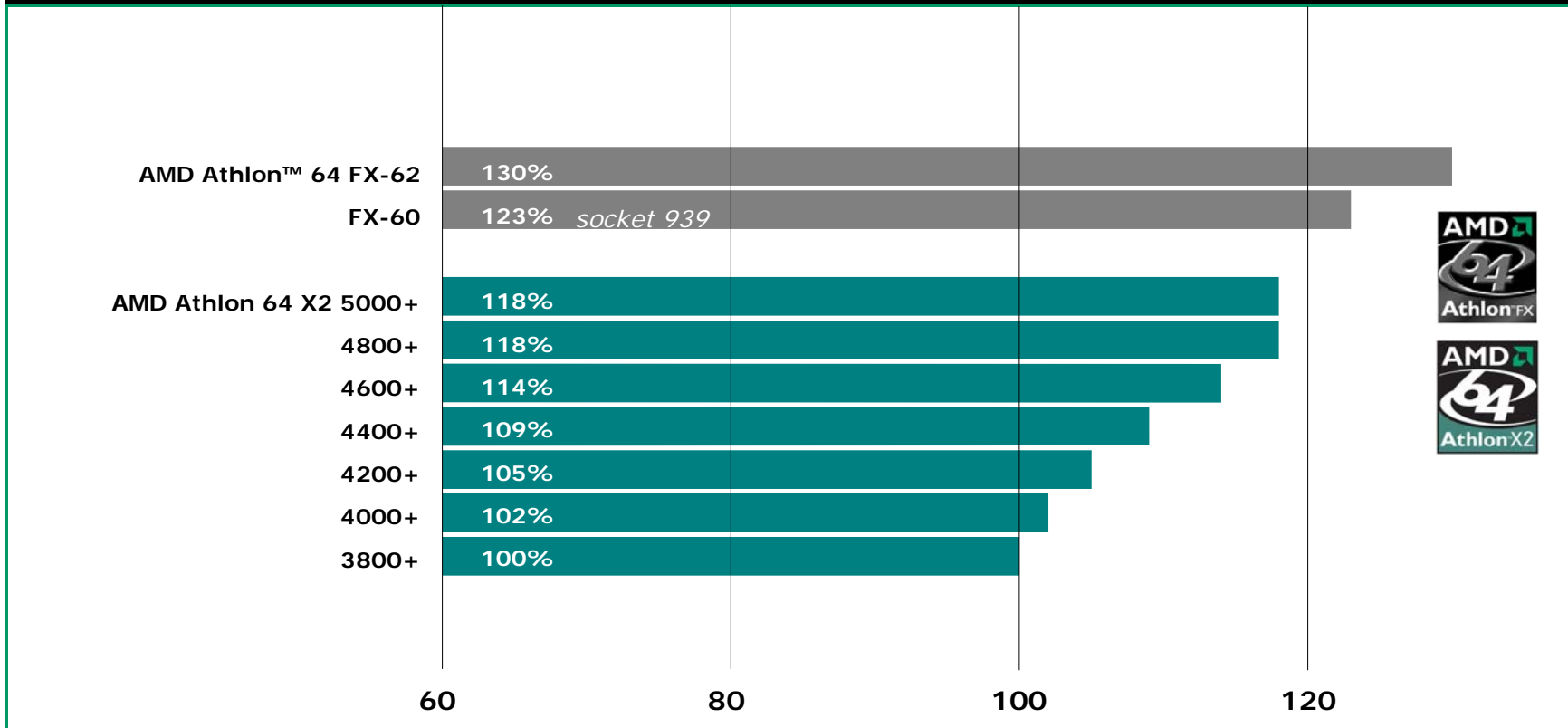


Dual-core processors (socket AM2)

Overall Games (Geometric Mean of Benchmark Suite)

AMD Athlon™ 64 Processor Performance Benchmark

Desktop Performance – Overall Games



AMD Athlon 64 X2 processor model numbers indicate relative software performance within the AMD Athlon 64 X2 processor family.
 AMD Athlon 64 FX processor model numbers indicate relative software performance within the AMD Athlon 64 FX processor family.



Benchmark System Configuration

AMD Athlon™ 64, AMD Athlon 64 X2 and AMD Athlon 64 FX processors

Socket AM2 Configuration

Operating System	
Name:	Microsoft Windows XP Professional
Version:	RTM, Service Pack 2 installed
Build #:	2600
DirectX Version:	DirectX 9.0C
Processor	
	AMD Athlon™ 64 FX-62 processor (socket AM2) AMD Athlon 64 X2 processors (socket AM2)
Hardware	
Motherboard:	Asus M2N32SLID
BIOS Info:	3092
Is BIOS publicly available?	Yes No X Unknown
Chipset:	C51-MCP55 (Nvidia)
Memory	
Manufacturer & Type:	Corsair CM2X512-8500
Quantity & Size: (each)/(MB)	Qty (2) 512 MB DIMM Module
Total Memory Size: (MB)	1 GIG total
Hard Drive	
	x1
Model Name:	Western Digital Raptor
Model Number:	WD1500ADFD
Hard Drive Size:	150 GB
Transfer Mode:	SATA 10K RPM
Other Info:	NTFS was used to format the hard disk
Network Card	
	Included with Operating System: Yes X No (if No, provide info)
Name:	Integrated on motherboard
Model Number:	Nvidia (Marvel)
Sound Card	
Manufacturer's Name:	SoundMAX Integrated Digital HD Audio
Model Number:	N/A
Version Number:	N/A
Video Card	
Graphics Adapter:	X1900XTX
Memory Size (MB) and Type:	512 DDR3
Drivers	
Network Card	Publisher Name: Nvidia Version: 55.2.1.0 Date if applicable: 3/22/2006
IDE Drivers	Publisher Name: Nvidia Corporation Version: 5.10.2600.654 Name: NVIDIA MCP55 Serial ATA Date if applicable: 3/16/2006
Sound Card	Publisher Name: AnalogDevices Version: 5.10.1.4490 Date if applicable: 3/21/2006
Video Card	Publisher Name: ATI Technologies Inc. Version: 8.241.0.0 Date if applicable: 3/21/2006 Graphics Resolution: 1024x768 Color Depth: 32 bit Refresh Rate: 85Hz Texture Format: n/a
Other: (Specify any other special conditions or enhancements that are made to the system.)	
Details: Memory timing used were 4/4/4/12 800 / Used ATI CAT Drivers 6.4 / Microsoft .Net Framework 2.0 Nvidia reference 9.14 were used as Chipset drivers	

Socket 939 Configuration

Operating System	
Name:	Microsoft Windows XP Professional
Version:	RTM, Service Pack 2 installed
Build #:	2600
DirectX Version:	DirectX 9.0C
Processor	
	AMD Athlon™ 64 FX-60 processor
Hardware	
Motherboard:	Asus ABN32SLI-Deluxe
BIOS Info:	1103
Is BIOS publicly available?	Yes X No Unknown
Chipset:	NVIDIA nForce4 SLI X16
Memory	
Manufacturer & Type:	Corsair CMX512-3200XLP
Quantity & Size: (each)/(MB)	Qty (2) 512 MB DIMM Module
Total Memory Size: (MB)	1 GIG total
Hard Drive	
	x1
Model Name:	Western Digital Raptor
Model Number:	WD1500ADFD
Hard Drive Size:	150 GB
Transfer Mode:	SATA 10K RPM
Other Info:	NTFS was used to format the hard disk
Network Card	
	Included with Operating System: Yes X No (if No, provide info)
Name:	Integrated on motherboard
Model Number:	Marvell Yukon 88E8053 PCI-E Gigabit Ethernet Controller
Sound Card	
Manufacturer's Name:	Realtek AC'97 Audio
Model Number:	N/A
Version Number:	N/A
Video Card	
Graphics Adapter:	X1900XTX
Memory Size (MB) and Type:	512 DDR3
Drivers	
SATA	Publisher Name: Nvidia Version: 5.10.2600.552 Name: Nvidia Nforce4 Serial ATA Controller Date if applicable: 8/18/2005
Network Card	Publisher Name: Marvell Version: 8.24.3.3 Date if applicable: 3/30/2005
IDE Drivers	Publisher Name: Microsoft Version: 5.1.2600.2180 Name: IDE ATA/ATAPI Controller Date if applicable: 7/1/2001
Sound Card	Publisher Name: Realtek Semiconductor Corp. Version: 5.10.0.5900 Date if applicable: 8/19/2005
Video Card	Publisher Name: ATI Technologies Inc. Version: 8.241.0.0 Date if applicable: 3/21/2006 Graphics Resolution: 1024x768 Color Depth: 32 bit Refresh Rate: 85Hz Texture Format: n/a
Other: (Specify any other special conditions or enhancements that are made to the system.)	
Used ATI CAT Drivers 6.4 / Microsoft .Net Framework 2.0 / Nvidia Chipset 6.85	

Performance & Mainstream Processors

Benchmark Suite

OFFICE PRODUCTIVITY

- BAPCo® SYSmark® 2004SE Office Productivity, Version 1.0 (w/patch 2)
- VeriTest Business Winstone 2004, Version 1.0.1 (w/SP2 reg fix)
- VeriTest Business Winstone Multitasking Test Scores, Version 1.0.1
- PC World WorldBench 5.0 Overall, 5/10/04 (w/SP2 Reg Edit)
- Remote Collaboration Scenario:
 - Windows® NetMeeting 3.01; and
 - Windows Media Encoder Series 9 (9.00.00.3250)
- Travel Ready Scenario
 - Microsoft® Office Publisher 2003 (11.5525.5606); and
 - Nero Vision Express (3.1.0.0)

DIGITAL MEDIA

- BAPCo SYSmark 2004SE Internet Content Creation
- VeriTest Multimedia Content Creation Winstone 2004, Version 1.0.1
- DivXNetworks, Inc., DrDivX, Version 1.0.6
- Smokey City Design, LLC, The Panorama Factory, Version 3.3
- Itunes, Version 6.0.4.2
- Cakewalk SONAR 5 Producer Edition (5.0.1)
- Virus Scan w/HD Media Playback
 - Symantec AntiVirus (Version 10.0.1.1000)
 - Windows Media Player 10 (Version 10.00.00.3646)
- Sony Vegas Studio (6.0)

GAMING (all at 1024x768x32)

- Futuremark Corp. 3DMark05™ Patch 1.20 (Hardware Vertex Shaders)
- Futuremark Corp. 3DMark05 Patch 1.20 (Software Vertex Shaders)
- Futuremark Corp. 3DMark06™ Patch 1.02 (Hardware Vertex Shaders)
- Futuremark Corp. 3DMark06 Patch 1.02 (Software Vertex Shaders)
- Half-Life 2 at_coast_05_rev7.dem (1.0.1.0 Protocol Version 7)
- Half-Life 2 at_prison_05_rev7.dem (1.0.1.0 Protocol Version 7)
- Lucas Arts Star Wars Jedi Knight II Demo, Version 1.04
- Id Software, Inc. Quake4 v1.04
- Epic Games Unreal Tournament 2004 Flyby (3369)
- Epic Games Unreal Tournament 2004 Botmatch (3369)
- Ubisoft Entertainment Splinter Cell Chaos Theory (1.0.2)
- Ubisoft Entertainment Far Cry Version 1.3.3 Pier
- Id Software, Inc. Doom3™ Version 1.1
- Crafty 32bit Version 19.19 by Bob Hyatt
- NCSOFT City Of Villians
- Croteam Serious Sam 2 (2.068)

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