NSTL

Final Report for Cyrix Corporation

Performance Testing of the Cyrix MII,

Intel Celeron, and the AMD CPUs

March, 1999

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Executive Summary

Cyrix contracted NSTL to test the performance of three CPUs, the Cyrix MII, the Intel Celeron, and the AMD. The three CPUs (Cyrix, Celeron, and AMD) were tested at 300. All testing was to be performed using Ziff Davis' (ZD) Winstone® 99 Build 14 Benchmark Utility. These tests were performed without independent verification by ZD and ZD makes no representations or warranties as to the results of the test. Three CPUs (Cyrix, Celeron, and AMD) were tested at 300.

About NSTL

NSTL is the leading independent information technology testing organization for the computer industry, dedicated to providing high quality services and test tools to hardware developers, software publishers, government agencies and corporations. NSTL has extensive experience developing and conducting objective tests to assess new and existing products for compatibility, performance, comparative performance, usability, and functionality. Our testing services are also used for capacity planning, acquisition support, and impact analysis. NSTL's proficiency and thoroughness provide clients with a high quality, cost-effective means to assess, differentiate and evaluate IT products. Additional information about NSTL is available through the World Wide Web at http://www.nstl.com.

[1] Winstone is a registered trademark or trademark of ZD Inc. in the U.S. and other countries.

Testing Environment and Methodology

Testing Environment

The three CPUs (Celeron, AMD, and Cyrix) were tested at 300. Each test was performed in the Windows 98 environment using ZD's Winstone® 99 Build 14. All systems were similar with the exception of the CPU manufacturer.

Test Methodology

NSTL did performance testing for Cyrix on multiply CPUs. In order to provide assurance of accurate benchmark scores, and by request of Cyrix, NSTL used a third party utility, ZD's Winstone® 99 Build 14. In order to expedite the testing process and obtain accurate test results, NSTL used the following utility:

Utility Used
PowerQuest Drive Image Professional 1.01 was used to make backups of the factory image and clean image on the systems.

Backing Up of the Factory Image
When the test systems arrived, a backup was made of the factory image to ensure that the system would be tested with a "clean" environment.

Installing the Environment
NSTL then installed Windows 98. Once the install was complete, all OEM drivers were re-installed to ensure top performance of all components. The systems resolution was then set to 1024x768x16-bit color.

Backing up of a Clean Image
NSTL then used Drive Image 1.01 to make a clean backup image of the systems. If at any point an unrecoverable error occurred, NSTL could restore the clean image and continue testing.

Running Winstone 99
NSTL installed ZD's Winstone® 99 Build 14, Business Tests only, on all test systems. Once installed Winstone® 99's Startup Manger was used to deactivate unnecessary items at boot time. The taskbar properties were then changed so that it no longer stayed on top. The Business Tests were then selected and Winstone® 99 was executed. This was repeated two times to ensure the scores that were reported were within a 5% difference.

Test Results and Analysis

NSTL determined the Cyrix CPUs performed the Winstone® 99 test quicker then the AMD CPUs; however the Cyrix CPU was a bit slower then the Intel Celeron with the same Winstone® 99 tests.

Test Results

Manufacture and Speed	RUN 1	RUN 2	Average
AMD 300 (66/300)	14.5	14.6	14.6
MII 300 (75/225)	15.1	15.2	15.2
Intel Celeron 300 (66/300)	15.5	15.5	15.5

Note: All scores are in Winstone Units and all tests were performed at 1024x768x16 bit.

Conclusion

NSTL performed a sequence of 2 tests involving Winstone® 99. NSTL determined the Cyrix CPUs performed the Winstone® 99 test quicker then the AMD CPUs. However the Cyrix CPU did perform the Winstone® 99 tests slower then the Intel Celeron.

Appendix A: System Configurations

AMD System:

System Name:	AMD
Processor Name:	AMD
Processor Speed (s):	300 MHz
Motherboard:	Microstar MS 5169-Ali Chipset
RAM:	64MB
Secondary Cache:	512KB
Graphics Adapter:	Rage IIc AGP (English)
Video RAM:	4MB
Type of Video RAM:	SDRAM
Graphics Driver:	Macxw4.drv, Macxw4.vxd
Driver Version:	4.10.2440
Resolution	1024x768
Color Depth:	16-bit
Refresh Rate:	60 Hz
Hard Disk Manufacturer:	Quantum
Hard Disk Model:	Fireball SE
File System:	FAT32
Transfer Mode Used:	N/A
Hard Disk Controller Model:	Ali M5529 PCI Bus Master IDE Controller
Hardware Cache (if any):	N/A
Operating System:	Windows 98
Service Pack (if any):	N/A
Any other conditions used to obtain the results:	N/A

Cyrix System:

System Name:	Cyrix
Processor Name:	Cyrix MII
Processor Speed (s):	75/255 MII-300
Motherboard:	Microstar MS 5169-Ali Chipset
RAM:	64MB
Secondary Cache:	64KB
Graphics Adapter:	Rage IIc AGP (English)
Video RAM:	4MB
Type of Video RAM:	SDRAM
Graphics Driver:	Macxw4.drv, Macxw4.vxd
Driver Version:	4.10.2440
Resolution	1024x768
Color Depth:	16-bit
Refresh Rate:	60 Hz
Hard Disk Manufacturer:	Quantum
Hard Disk Model:	Fireball SE
File System:	FAT32
Transfer Mode Used:	N/A
Hard Disk Controller Model:	Ali M5529 PCI Bus Master IDE Controller
Hardware Cache (if any):	N/A
Operating System:	Windows 98
Service Pack (if any):	N/A
Any other conditions used to obtain the results:	N/A

Celeron System:

System Name:	Celeron
Processor Name:	Intel Celeron
Processor Speed (s):	300 MHz
Motherboard:	Abit LX6 - 440LX Chipset
RAM:	64MB
Secondary Cache:	128KB
Graphics Adapter:	Rage IIc AGP (English)
Video RAM:	4MB
Type of Video RAM:	SDRAM
Graphics Driver:	Macxw4.drv, Macxw4.vxd
Driver Version:	4.10.2440
Resolution	1024x768
Color Depth:	16-bit
Refresh Rate:	60 Hz
Hard Disk Manufacturer:	Quantum
Hard Disk Model:	Fireball SE
File System:	FAT32
Transfer Mode Used:	N/A
Hard Disk Controller Model:	Intel 82371AB/EB PCI Bus Master IDE Controller
Hardware Cache (if any):	N/A
Operating System:	Windows 98
Service Pack (if any):	N/A
Any other conditions used to obtain the results:	N/A