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3700X Dec

AMD Ryzen 7 3700X 8-Core testing with a Gigabyte A320M-S2H-CF (F52a BIOS) and HIS AMD Radeon HD 7750/8740 / R7 250E 1GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

AMD Ryzen 7 3700X 8-Core had the most wins, coming in first place for 48% of the tests.

Based on the geometric mean of all complete results, the fastest (AMD Ryzen 7 3700X 8-Core) was 1.008x the speed of the slowest (A). AMD was 0.996x the speed of AMD Ryzen 7 3700X 8-Core and A was 0.996x the speed of AMD.

The results with the greatest spread from best to worst included:

Apache CouchDB (Bulk Size: 100 - Inserts: 1000 - Rounds: 24) at 1.098x
Blender (Blend File: BMW27 - Compute: CPU-Only) at 1.081x
Stargate Digital Audio Workstation (Sample Rate: 192000 - Buffer Size: 512) at 1.057x
rav1e (Speed: 1) at 1.051x
rav1e (Speed: 5) at 1.042x
Blender (Blend File: Classroom - Compute: CPU-Only) at 1.039x
Stargate Digital Audio Workstation (Sample Rate: 96000 - Buffer Size: 512) at 1.039x
Stargate Digital Audio Workstation (Sample Rate: 44100 - Buffer Size: 512) at 1.039x
Stargate Digital Audio Workstation (Sample Rate: 480000 - Buffer Size: 512) at 1.035x

7-Zip Compression (Test: Decompression Rating) at 1.03x.

Test Systems:

A

AMD Ryzen 7 3700X 8-Core

AMD

Processor: AMD Ryzen 7 3700X 8-Core @ 3.60GHz (8 Cores / 16 Threads), Motherboard: Gigabyte A320M-S2H-CF (F52a BIOS), Chipset: AMD Starship/Matisse, Memory: 8GB, Disk: 240GB TOSHIBA RC100, Graphics: HIS AMD Radeon HD 7750/8740 / R7 250E 1GB, Audio: AMD Oland/Hainan/Cape, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

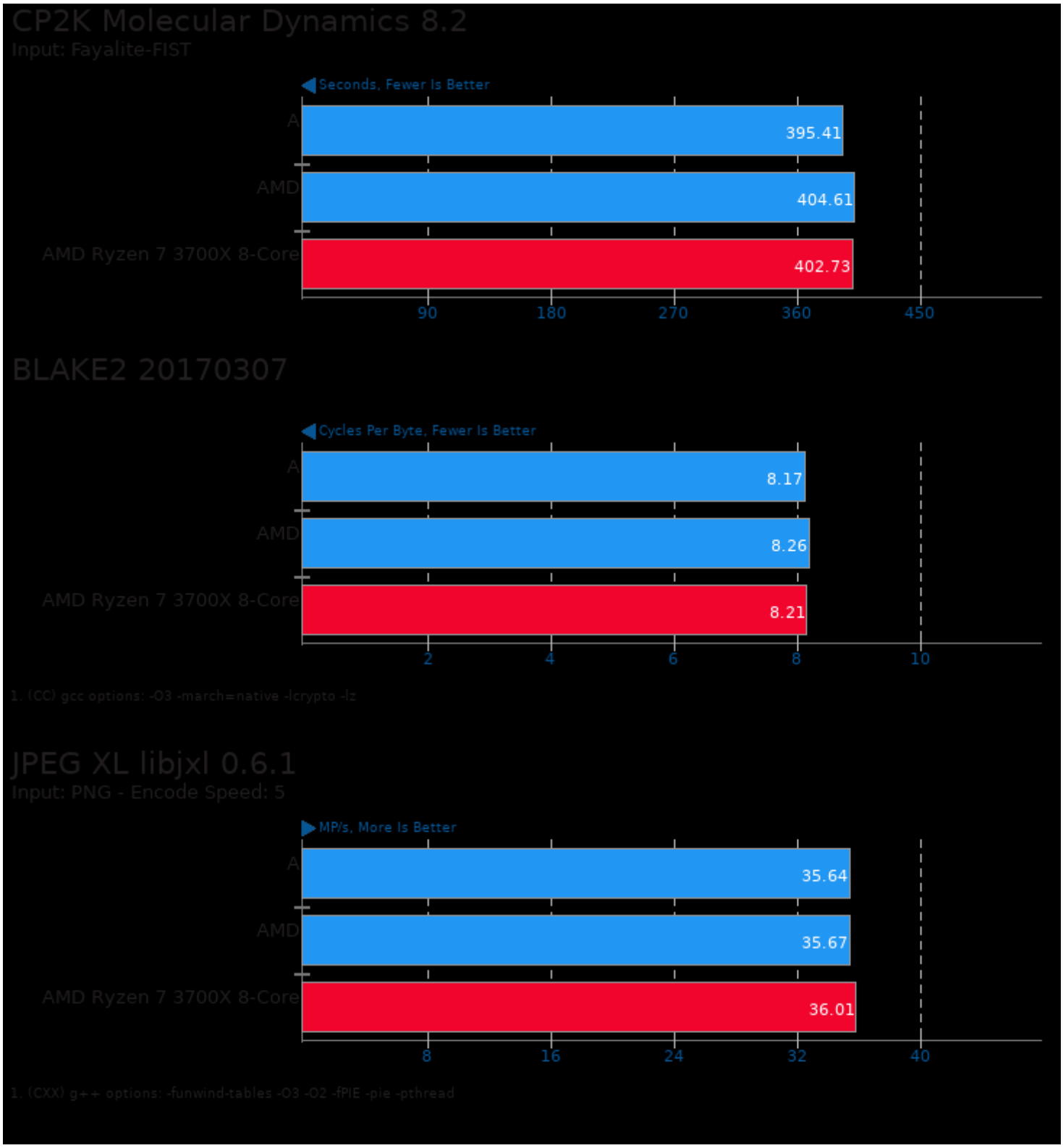
OS: Ubuntu 20.04, Kernel: 5.11.0-37-generic (x86_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.9, OpenGL: 4.5 Mesa 20.0.8 (LLVM 10.0.0), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

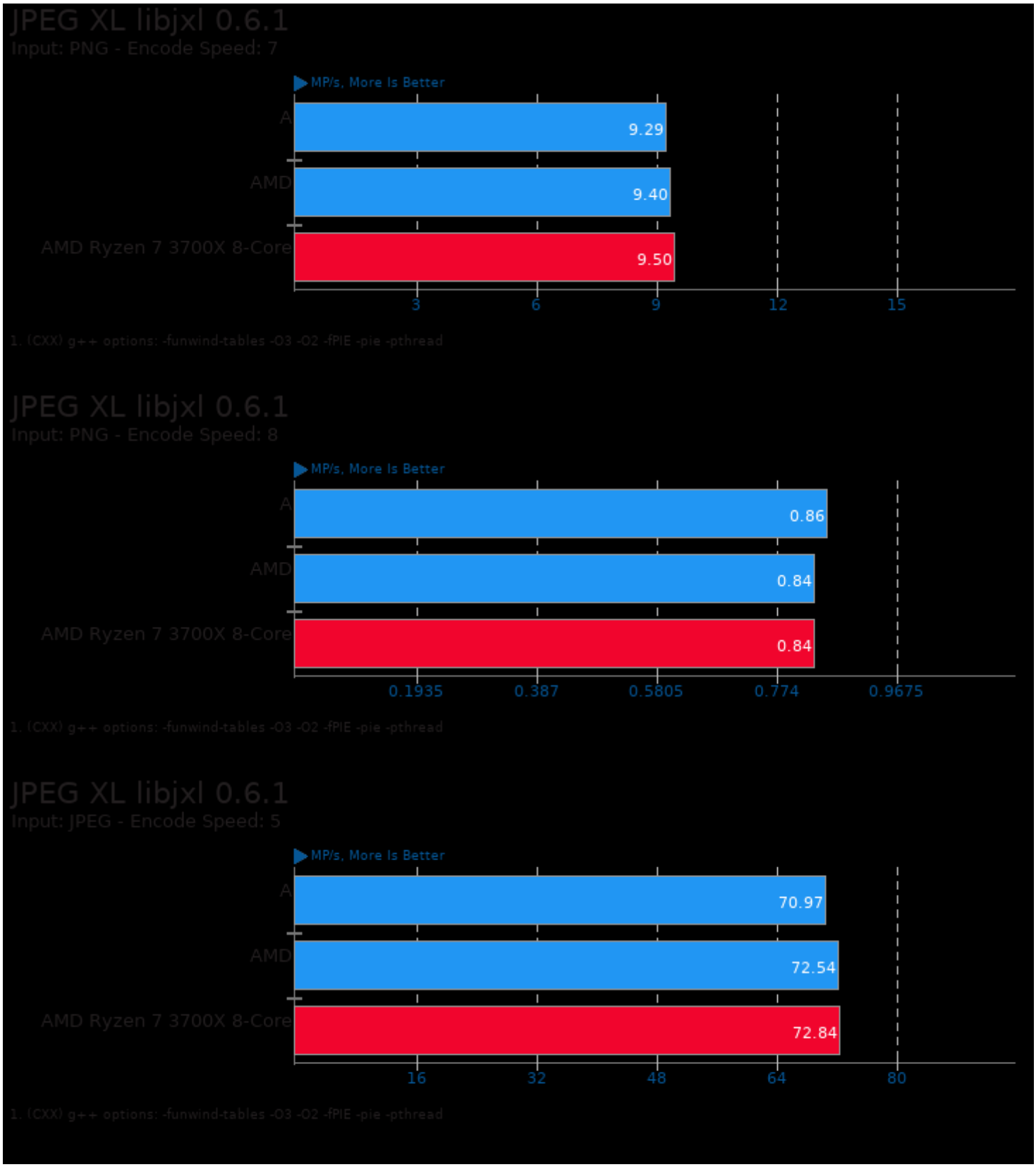
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEa/gcc-9-9.3.0/debian/tmp-nvptx/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: acpi-cpufreq ondemand (Boost: Enabled) - CPU Microcode: 0x8701021
Python Notes: Python 3.8.10
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

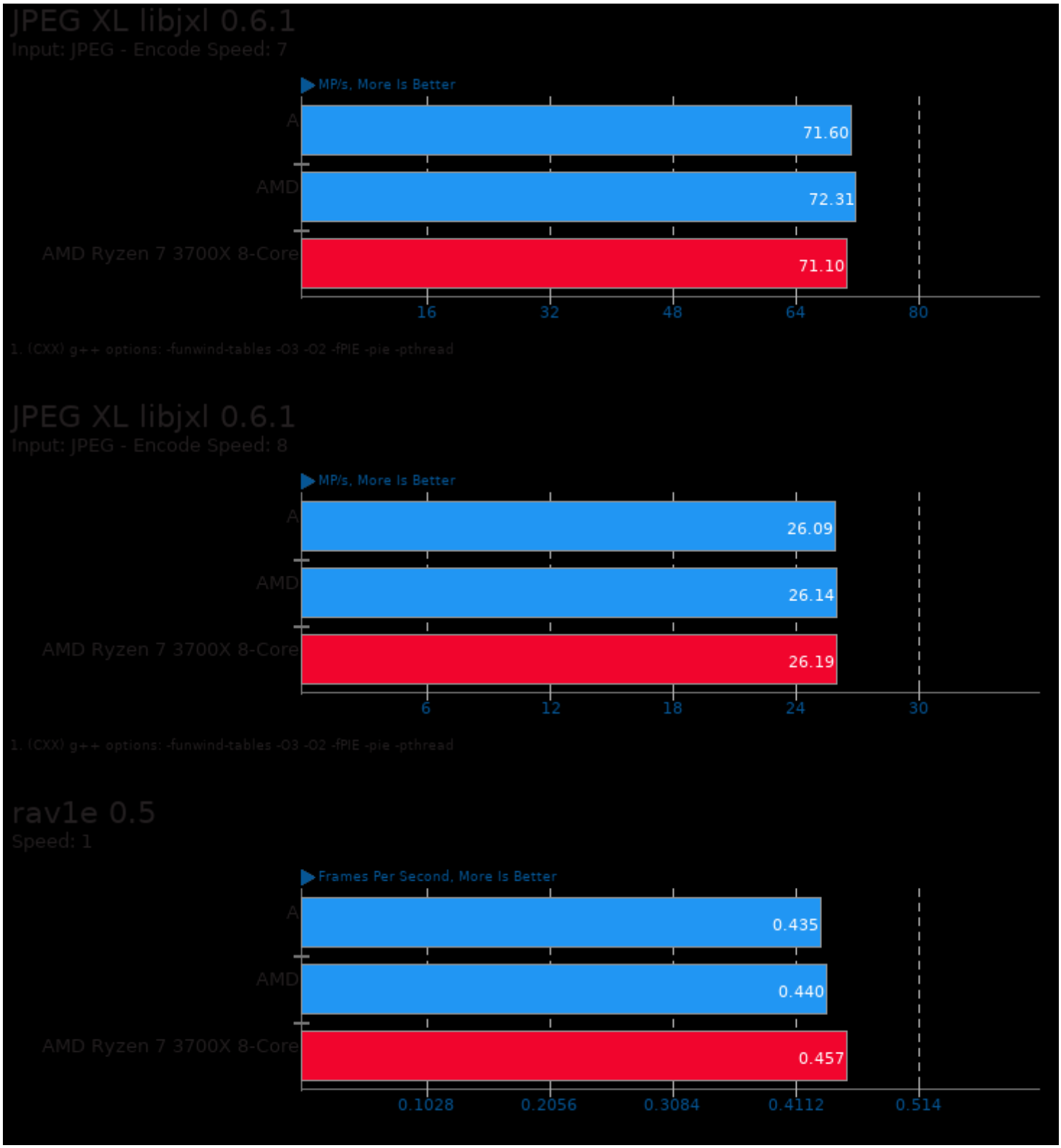
	A	AMD Ryzen 7 3700X 8-Core	AMD
CP2K Molecular Dynamics - Fayalite-FIST	**395.413**	402.727	**404.609**
Normalized	100%	98.18%	97.73%
BLAKE2 (Cycles/Byte)	**8.17**	8.21	**8.26**
Normalized	100%	99.51%	98.91%
JPEG XL libjxl - PNG - 5 (MP/s)	**35.64**	**36.01**	35.67
Normalized	98.97%	100%	99.06%
JPEG XL libjxl - PNG - 7 (MP/s)	**9.29**	**9.5**	9.4
Normalized	97.79%	100%	98.95%
JPEG XL libjxl - PNG - 8 (MP/s)	**0.86**	**0.84**	**0.84**
Normalized	100%	97.67%	97.67%
JPEG XL libjxl - JPEG - 5 (MP/s)	**70.97**	**72.84**	72.54
Normalized	97.43%	100%	99.59%
JPEG XL libjxl - JPEG - 7 (MP/s)	71.6	**71.1**	**72.31**
Normalized	99.02%	98.33%	100%

3700X Dec

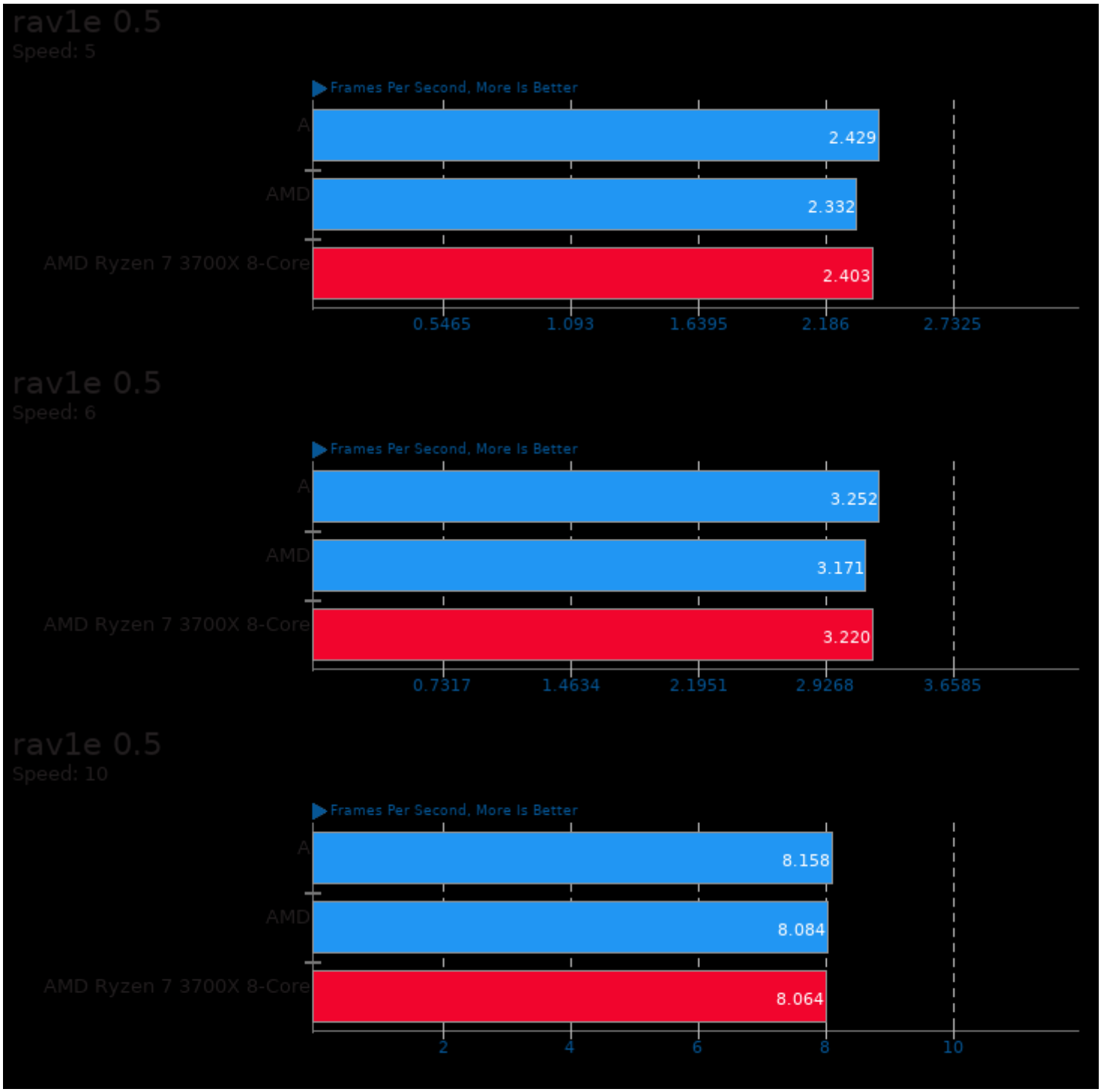
JPEG XL libjxl - JPEG - 8 (MP/s)	**26.09**	**26.19**	26.14
Normalized	99.62%	100%	99.81%
rav1e - 1 (FPS)	**0.435**	**0.457**	0.44
Normalized	95.19%	100%	96.28%
rav1e - 5 (FPS)	**2.429**	2.403	**2.332**
Normalized	100%	98.93%	96.01%
rav1e - 6 (FPS)	**3.252**	3.22	**3.171**
Normalized	100%	99.02%	97.51%
rav1e - 10 (FPS)	**8.158**	**8.064**	8.084
Normalized	100%	98.85%	99.09%
7-Zip Compression - Compression Rating (MIPS)	**68153**	**67611**	67915
Normalized	100%	99.2%	99.65%
7-Zip Compression - D.R (MIPS)	**60606**	60176	**58813**
Normalized	100%	99.29%	97.04%
Stargate Digital Audio Workstation - 44100 - 512 (Render Ratio)	2.817008	**2.920715**	**2.81242**
Normalized	96.45%	100%	96.29%
Stargate Digital Audio Workstation - 96000 - 512 (Render Ratio)	**2.090866**	2.104829	**2.17142**
Normalized	96.29%	96.93%	100%
Stargate Digital Audio Workstation - 192000 - 512 (Render Ratio)	**1.421237**	**1.34442**	1.36848
Normalized	100%	94.6%	96.29%
Stargate Digital Audio Workstation - 44100 - 1024 (Render Ratio)	2.92906	**2.862858**	**2.946398**
Normalized	99.41%	97.16%	100%
Stargate Digital Audio Workstation - 480000 - 512 (Render Ratio)	**2.67597**	2.728097	**2.769403**
Normalized	96.63%	98.51%	100%
Stargate Digital Audio Workstation - 96000 - 1024 (Render Ratio)	2.189155	**2.230968**	**2.185707**
Normalized	98.13%	100%	97.97%
Stargate Digital Audio Workstation - 192000 - 1024 (Render Ratio)	**1.562017**	**1.566223**	1.564051
Normalized	99.73%	100%	99.86%
Stargate Digital Audio Workstation - 480000 - 1024 (Render Ratio)	2.816013	**2.819157**	**2.776751**
Normalized	99.89%	100%	98.5%
Primesieve - 1.P.N.G (sec)	**23.072**	**22.898**	23.045
Normalized	99.25%	100%	99.36%
Apache CouchDB - 100 - 1000 - 24 (sec)	**89.576**	82.711	**81.566**
Normalized	91.06%	98.62%	100%
Blender - BMW27 - CPU-Only (sec)	**165.81**	**153.38**	153.44
Normalized	92.5%	100%	99.96%
Blender - Classroom - CPU-Only (sec)	**420.79**	**404.88**	407.74
Normalized	96.22%	100%	99.3%
Blender - Fishy Cat - CPU-Only (sec)	205.54	**204.3**	**206.08**
Normalized	99.4%	100%	99.14%


CP2K Molecular Dynamics 8.2
Input: Fayalite-FIST
Seconds, Fewer Is Better
A
AMD
AMD Ryzen 7 3700X 8-Core
395.41
404.61
402.73
90
180
270
360
450
BLAKE2 20170307
Cycles Per Byte, Fewer Is Better
A
AMD
AMD Ryzen 7 3700X 8-Core
8.17
8.26
8.21
2
4
6
8
10
1. (CC) gcc options: -O3 -march=native -lcrypto -lz
JPEG XL libjxl 0.6.1
Input: PNG - Encode Speed: 5
MP/s, More Is Better
A
AMD
AMD Ryzen 7 3700X 8-Core
35.64
35.67
36.01
8
16
24
32
40
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread


JPEG XL libjxl 0.6.1
Input: PNG - Encode Speed: 7
MP/s, More Is Better
A
AMD
AMD Ryzen 7 3700X 8-Core
9.29
9.40
9.50
3
6
9
12
15
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread
JPEG XL libjxl 0.6.1
Input: PNG - Encode Speed: 8
MP/s, More Is Better
A
AMD
AMD Ryzen 7 3700X 8-Core
0.86
0.84
0.84
0.1935
0.387
0.5805
0.774
0.9675
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread
JPEG XL libjxl 0.6.1
Input: JPEG - Encode Speed: 5
MP/s, More Is Better
A
AMD
AMD Ryzen 7 3700X 8-Core
70.97
72.54
72.84
16
32
48
64
80
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread

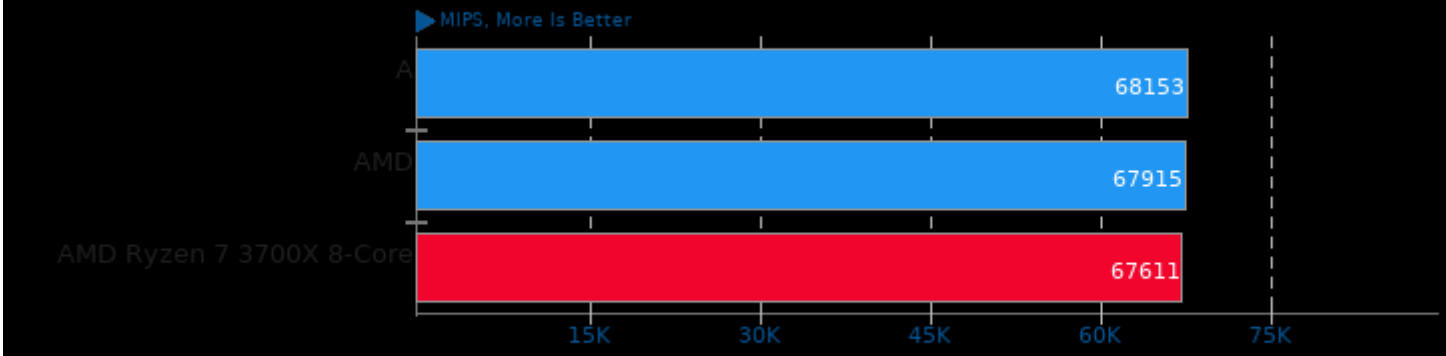

JPEG XL libjxl 0.6.1
Input: JPEG - Encode Speed: 7
MP/s, More Is Better
A
AMD
AMD Ryzen 7 3700X 8-Core
71.60
72.31
71.10
16
32
48
64
80
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread
JPEG XL libjxl 0.6.1
Input: JPEG - Encode Speed: 8
MP/s, More Is Better
A
AMD
AMD Ryzen 7 3700X 8-Core
26.09
26.14
26.19
6
12
18
24
30
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread
rav1e 0.5
Speed: 1
Frames Per Second, More Is Better
A
AMD
AMD Ryzen 7 3700X 8-Core
0.435
0.440
0.457
0.1028
0.2056
0.3084
0.4112
0.514

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rav1e 0.5
Speed: 5
Frames Per Second, More Is Better
A
2.429
AMD
2.332
AMD Ryzen 7 3700X 8-Core
2.403
0.5465
1.093
1.6395
2.186
2.7325
rav1e 0.5
Speed: 6
Frames Per Second, More Is Better
A
3.252
AMD
3.171
AMD Ryzen 7 3700X 8-Core
3.220
0.7317
1.4634
2.1951
2.9268
3.6585
rav1e 0.5
Speed: 10
Frames Per Second, More Is Better
A
8.158
AMD
8.084
AMD Ryzen 7 3700X 8-Core
8.064
2
4
6
8
10

7-Zip Compression 21.06

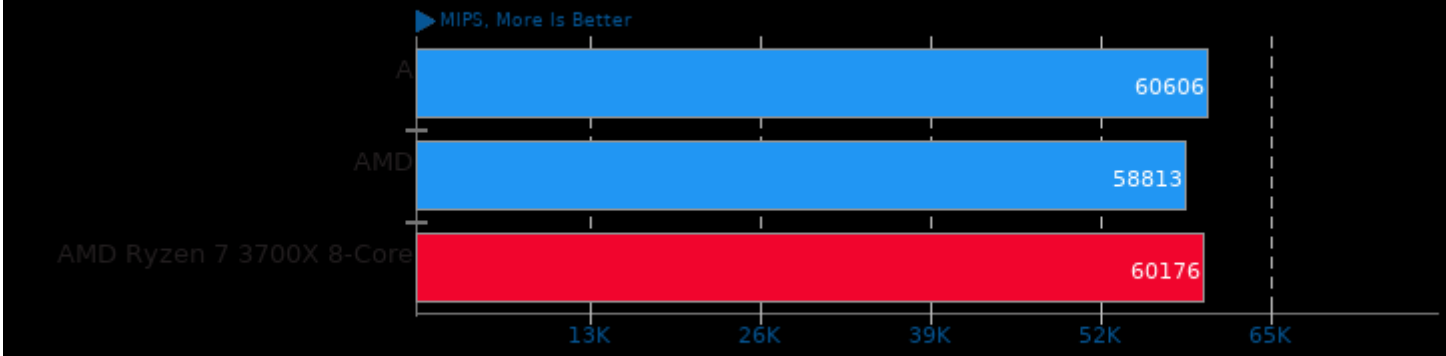
Test: Compression Rating



1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC

7-Zip Compression 21.06

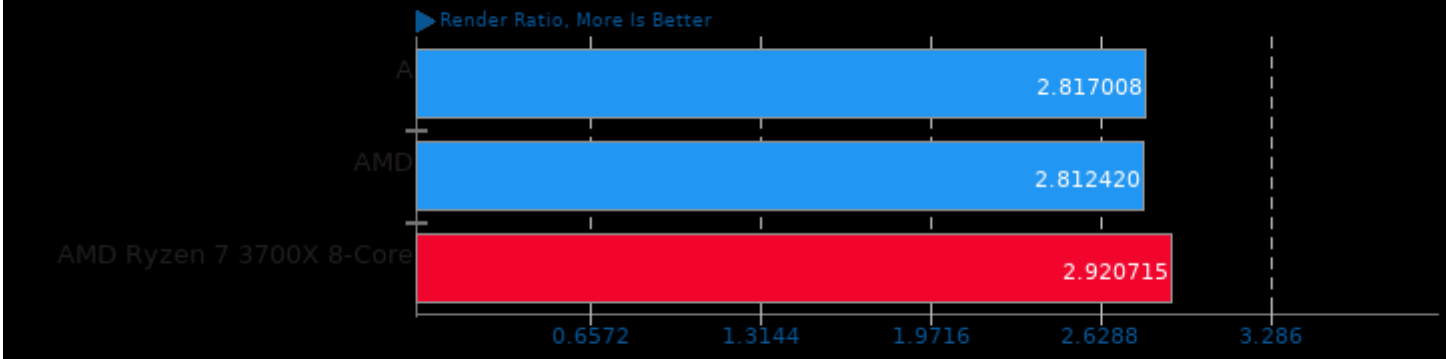
Test: Decompression Rating



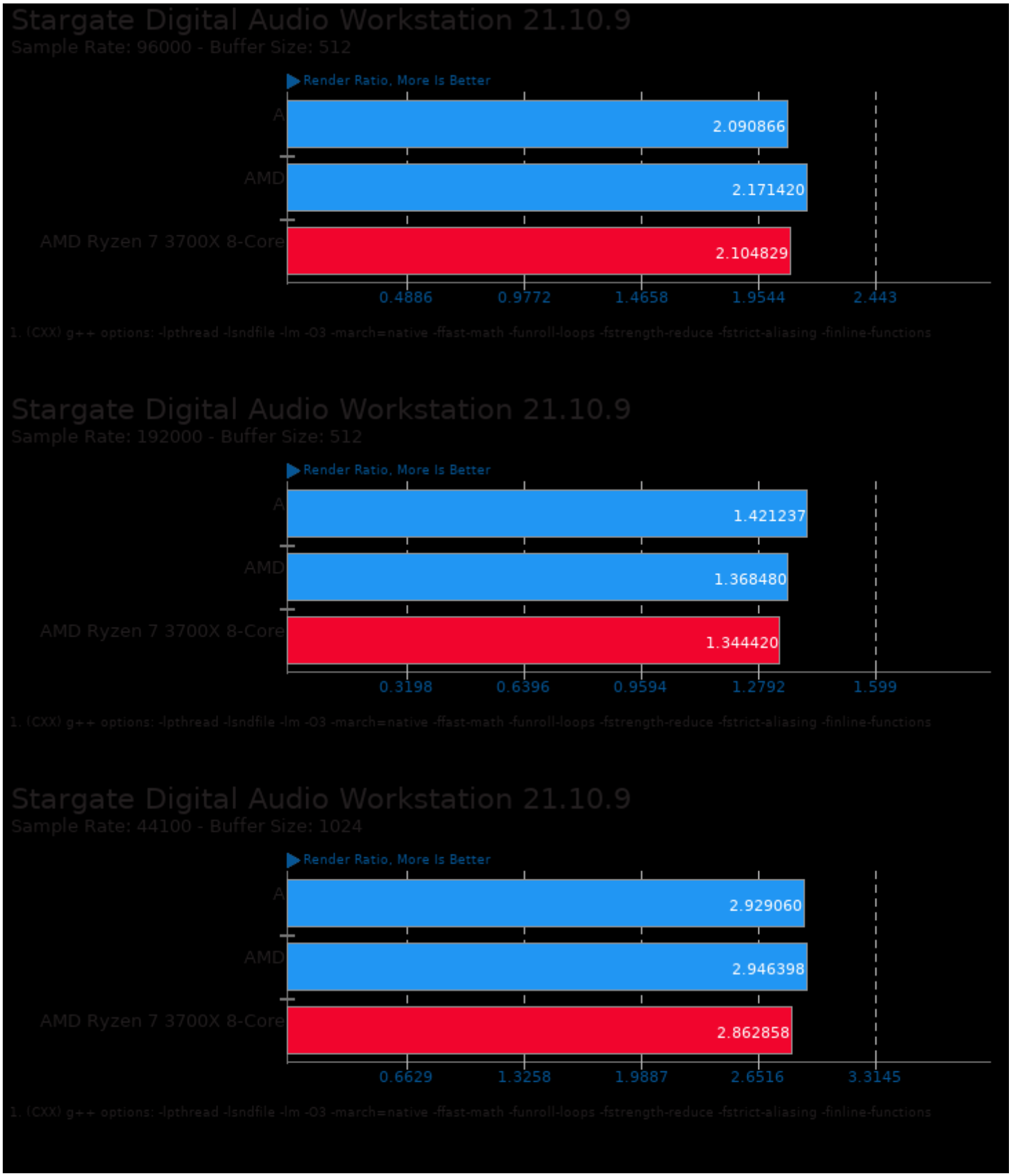
1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC

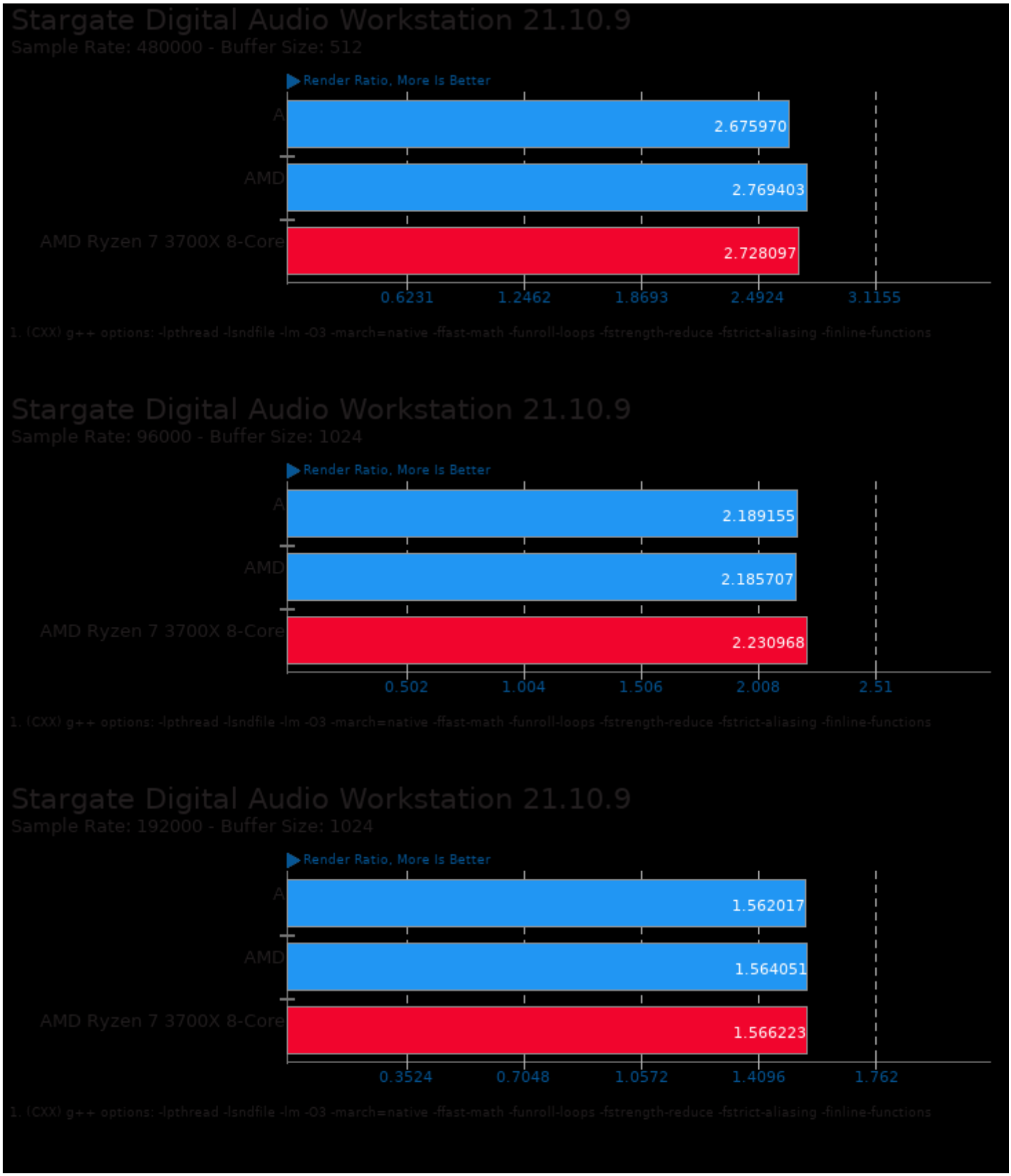
Stargate Digital Audio Workstation 21.10.9

Sample Rate: 44100 - Buffer Size: 512



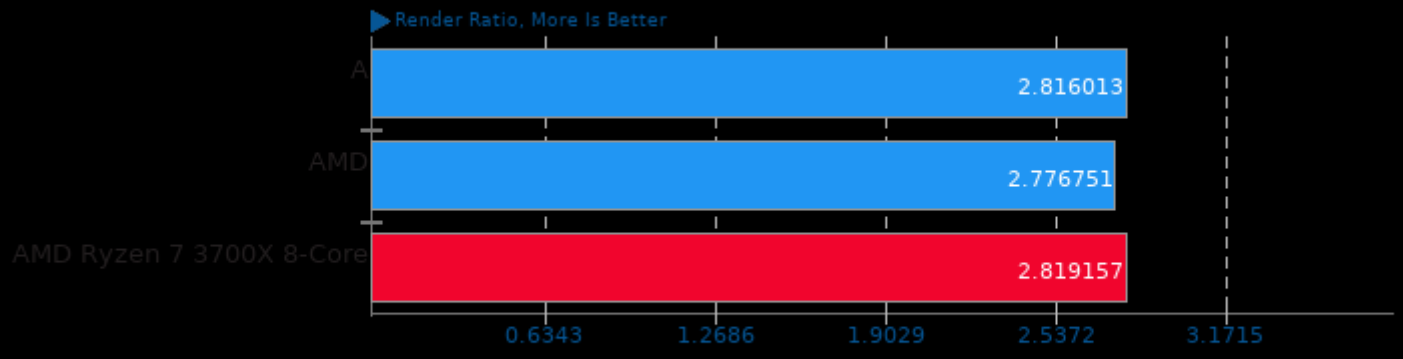
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions


Stargate Digital Audio Workstation 21.10.9
Sample Rate: 96000 - Buffer Size: 512
Render Ratio, More Is Better
A
AMD
AMD Ryzen 7 3700X 8-Core
2.090866
2.171420
2.104829
0.4886
0.9772
1.4658
1.9544
2.443
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
Stargate Digital Audio Workstation 21.10.9
Sample Rate: 192000 - Buffer Size: 512
Render Ratio, More Is Better
A
AMD
AMD Ryzen 7 3700X 8-Core
1.421237
1.368480
1.344420
0.3198
0.6396
0.9594
1.2792
1.599
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
Stargate Digital Audio Workstation 21.10.9
Sample Rate: 44100 - Buffer Size: 1024
Render Ratio, More Is Better
A
AMD
AMD Ryzen 7 3700X 8-Core
2.929060
2.946398
2.862858
0.6629
1.3258
1.9887
2.6516
3.3145
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions


Stargate Digital Audio Workstation 21.10.9
Sample Rate: 480000 - Buffer Size: 512
Render Ratio, More Is Better
A
AMD
AMD Ryzen 7 3700X 8-Core
2.675970
2.769403
2.728097
0.6231
1.2462
1.8693
2.4924
3.1155
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
Stargate Digital Audio Workstation 21.10.9
Sample Rate: 96000 - Buffer Size: 1024
Render Ratio, More Is Better
A
AMD
AMD Ryzen 7 3700X 8-Core
2.189155
2.185707
2.230968
0.502
1.004
1.506
2.008
2.51
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
Stargate Digital Audio Workstation 21.10.9
Sample Rate: 192000 - Buffer Size: 1024
Render Ratio, More Is Better
A
AMD
AMD Ryzen 7 3700X 8-Core
1.562017
1.564051
1.566223
0.3524
0.7048
1.0572
1.4096
1.762
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions

Stargate Digital Audio Workstation 21.10.9

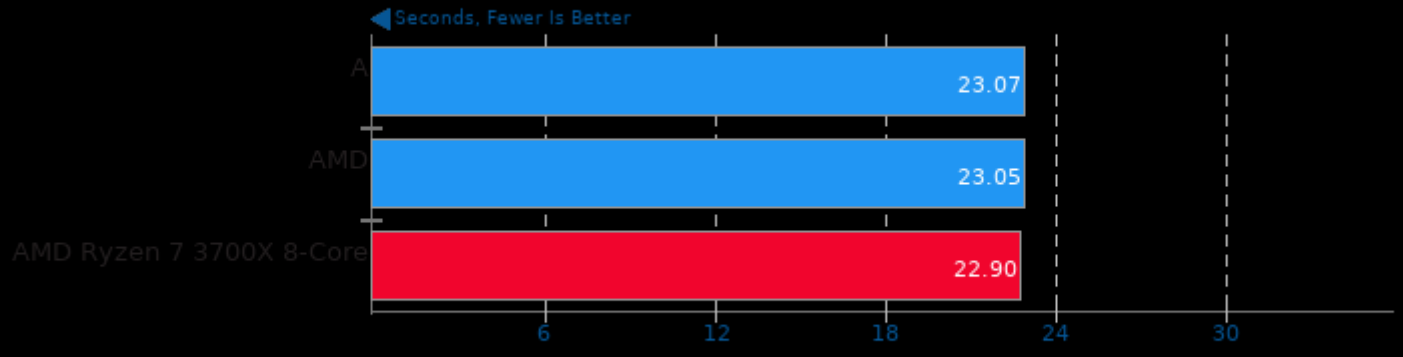
Sample Rate: 480000 - Buffer Size: 1024



1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions

Primesieve 7.7

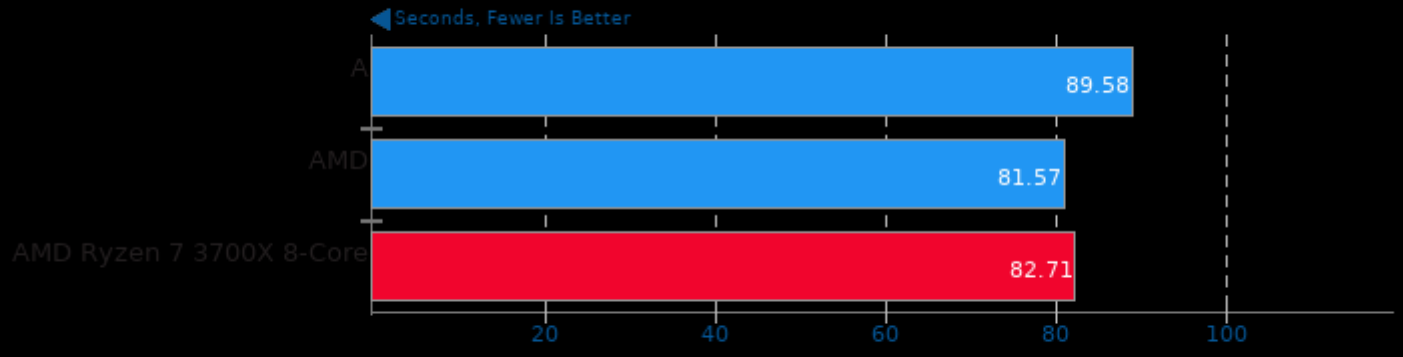
1e12 Prime Number Generation



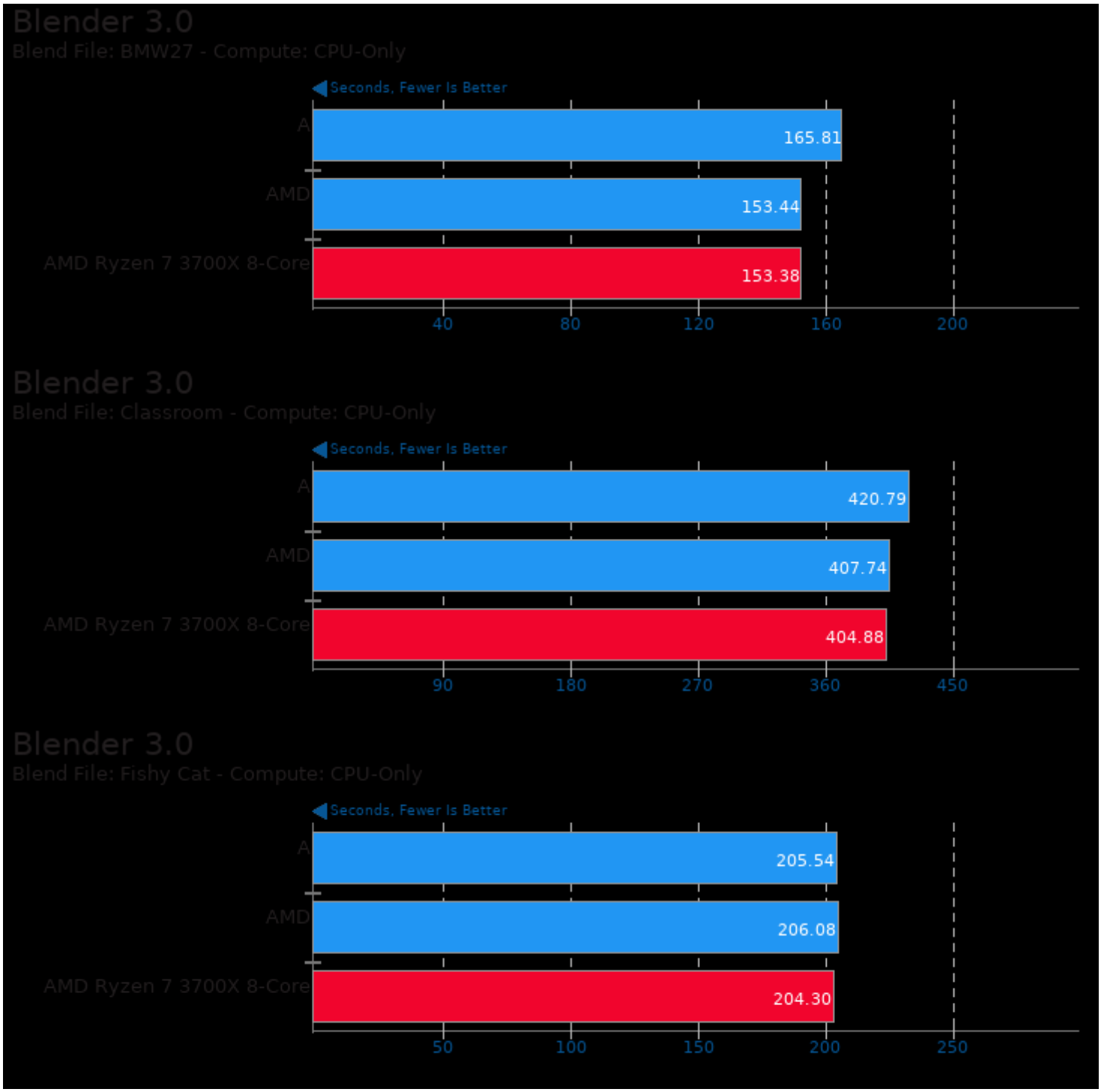
1. (CXX) g++ options: -O3 -lpthread

Apache CouchDB 3.2.1

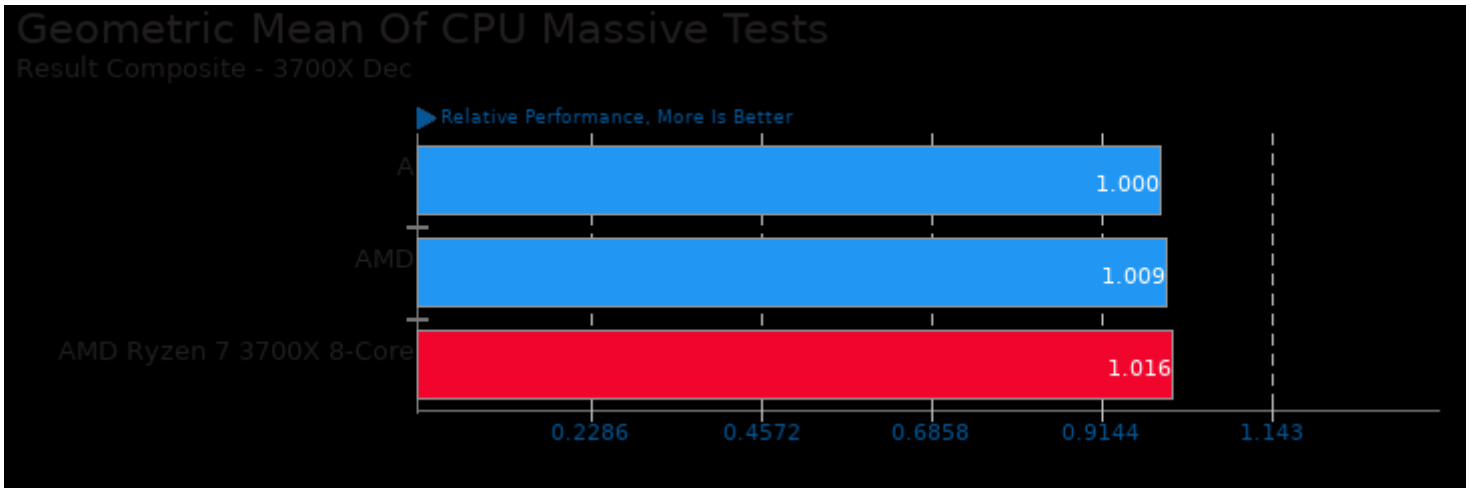
Bulk Size: 100 - Inserts: 1000 - Rounds: 24



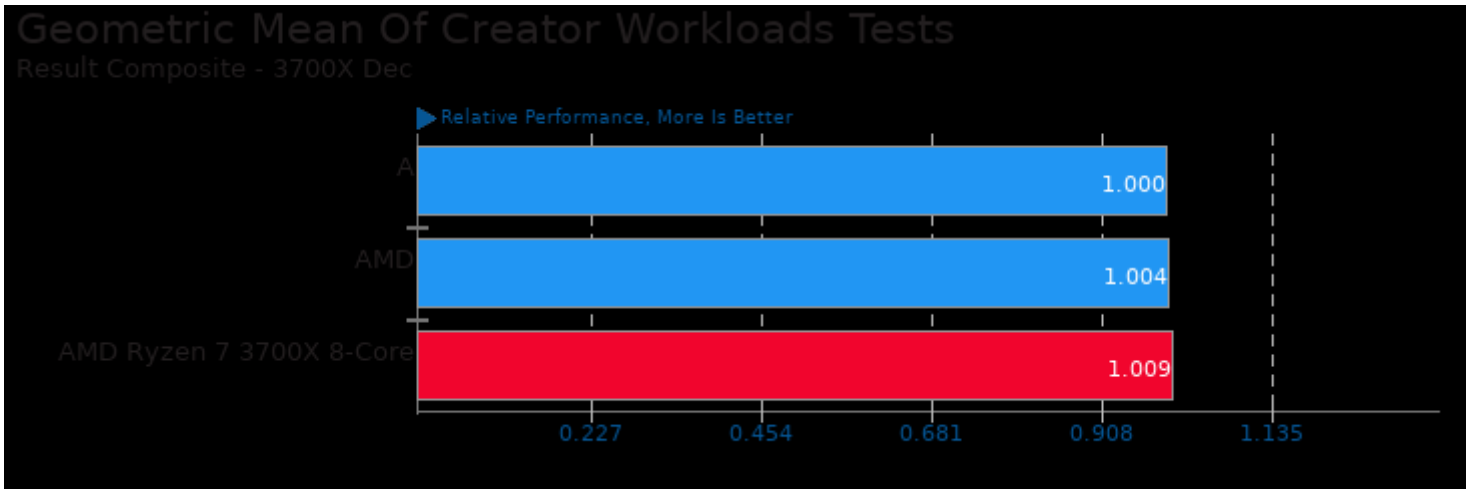
1. (CXX) g++ options: -std=c++14 -lmozjs-68 -lm -lei -fPIC -MMD


Blender 3.0
Blend File: BMW27 - Compute: CPU-Only
Seconds, Fewer Is Better
A
165.81
AMD
153.44
AMD Ryzen 7 3700X 8-Core
153.38
40
80
120
160
200
Blender 3.0
Blend File: Classroom - Compute: CPU-Only
Seconds, Fewer Is Better
A
420.79
AMD
407.74
AMD Ryzen 7 3700X 8-Core
404.88
90
180
270
360
450
Blender 3.0
Blend File: Fishy Cat - Compute: CPU-Only
Seconds, Fewer Is Better
A
205.54
AMD
206.08
AMD Ryzen 7 3700X 8-Core
204.30
50
100
150
200
250

These geometric means are based upon test groupings / test suites for this result file.



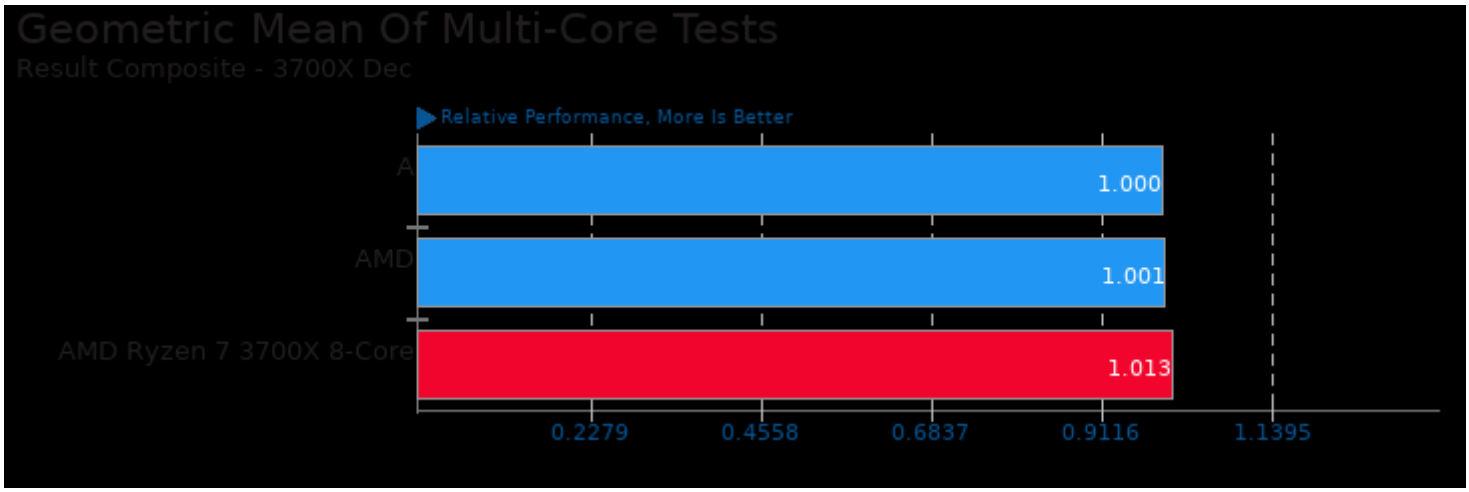
Geometric mean based upon tests: pts/blake2, pts/compress-7zip, pts/primesieve and pts/blender



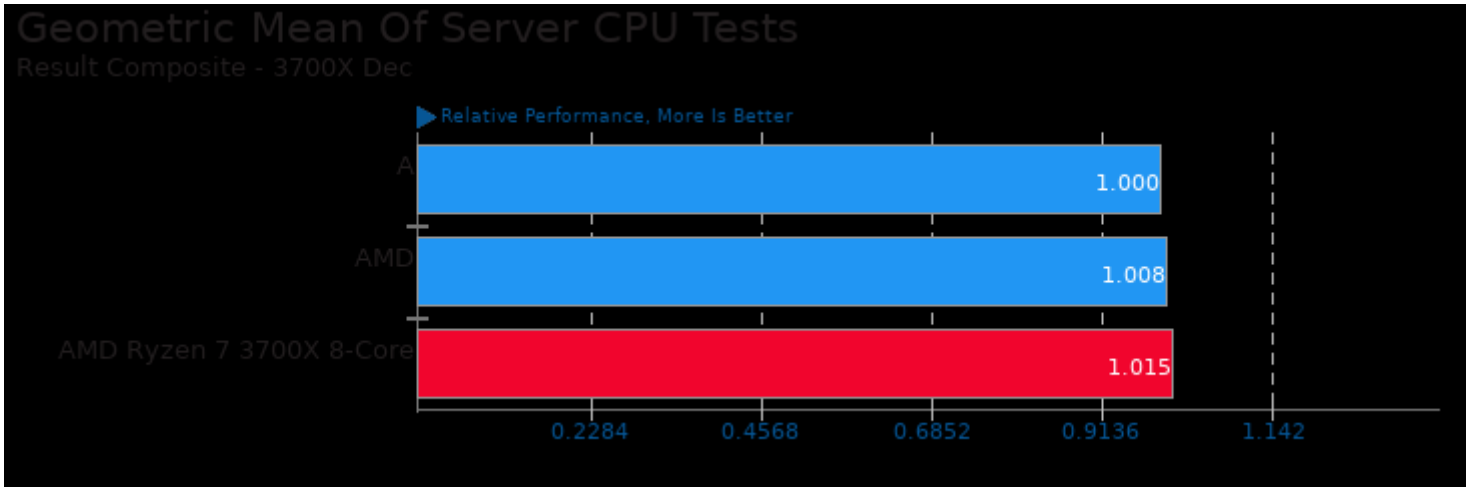
Geometric mean based upon tests: pts/blender, pts/rav1e, pts/stargate and pts/jpegxl



Geometric mean based upon tests: pts/stargate and pts/rav1e



Geometric mean based upon tests: pts/blender, pts/rav1e, pts/primesieve and pts/compress-7zip



Geometric mean based upon tests: pts/cp2k, pts/compress-7zip and pts/blender

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 12:21.