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Raspberry Pi Model 4 Benchmarks

ARMv7 rev 3 testing with a BCM2835 Raspberry Pi 4 Model B Rev 1.1 and V3D 4.2 2GB by Michael Larabel.

Automated Executive Summary

RPi Model 4 B 2GB had the most wins, coming in first place for 42% of the tests.

Based on the geometric mean of all complete results, the fastest (RPi Model 4 B 2GB) was 4.302x the speed of the slowest (RPi Model 3 B+). RPi Model 4 B 4GB was 0.94x the speed of RPi Model 4 B 2GB, ASUS Tinker Board was 0.84x the speed of RPi Model 4 B 4GB, Firefly ROC-RK3328-CC was 0.727x the speed of ASUS Tinker Board, OrangePi One H3 512MB was 0.716x the speed of Firefly ROC-RK3328-CC, Libre Board ALL-H3-CC H5 was 0.733x the speed of OrangePi One H3 512MB, RPi Model 3 B+ was 0.772x the speed of Libre Board ALL-H3-CC H5.

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

x264 (H.264 Video Encoding) at 35.071x
Zstd Compression (Compressing ubuntu-16.04.3-server-i386.img, Compression Level 19) at 28.998x
Rust Prime Benchmark (Performance / Cost - Prime Number Test To 200,000,000) at 22.155x
Rust Prime Benchmark (Prime Number Test To 200,000,000) at 22.155x
PyBench (Total For Average Test Times) at 7.774x
FLAC Audio Encoding (WAV To FLAC) at 7x
Perl Benchmarks (Performance / Cost - Test: Interpreter) at 6.529x

Perl Benchmarks (Test: Interpreter) at 6.458x
PyBench (Performance / Cost - Total For Average Test Times) at 6.047x
FLAC Audio Encoding (Performance / Cost - WAV To FLAC) at 5.426x.

Test Systems:

RPi Model 3 B+

Processor: ARMv7 rev 4 @ 1.40GHz (4 Cores), Motherboard: BCM2835 Raspberry Pi 3 Model B Plus Rev 1.3, Memory: 926MB, Disk: 32GB GB2MW, Graphics: BCM2708

OS: Raspbian 10, Kernel: 4.19.42-v7+ (armv7l), Display Server: X Server 1.20.4, Compiler: GCC 8.3.0, File-System: ext4, Screen Resolution: 656x416

Compiler Notes: --build=arm-linux-gnueabihf --disable-libitm --disable-libquadmath --disable-libquadmath-support --disable-sjlj-exceptions --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc=auto --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --program-prefix=arm-linux-gnueabihf- --target=arm-linux-gnueabihf --with-arch=armv6 --with-default-libstdcxx-abi=new --with-float=hard --with-fpu=vfp --with-gcc-major-version-only --with-target-system-zlib -v
Processor Notes: Scaling Governor: BCM2835 Freq ondemand
Python Notes: Python 2.7.16 + Python 3.7.3

ASUS Tinker Board

Processor: ARMv7 rev 1 @ 1.80GHz (4 Cores), Motherboard: Rockchip (Device Tree), Memory: 2048MB, Disk: 32GB GB1QT

OS: Debian 9.0, Kernel: 4.4.16-00006-g4431f98-dirty (armv7l), Desktop: LXDE, Display Server: X Server 1.18.4, Compiler: GCC 6.3.0 20170516, File-System: ext4, Screen Resolution: 1024x768

Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libquadmath --disable-sjlj-exceptions --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,ada,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc=auto --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --program-prefix=arm-linux-gnueabihf- --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv7-a --with-default-libstdcxx-abi=new --with-float=hard --with-fpu=vfpv3-d16 --with-mode=thumb --with-target-system-zlib -v
Processor Notes: Scaling Governor: cpufreq-dt interactive
Python Notes: Python 2.7.13 + Python 3.5.3

Libre Board ALL-H3-CC H5

Processor: ARMv8 Cortex-A53 (4 Cores), Motherboard: Libre Board ALL-H3-CC H5, Memory: 2048MB, Disk: 32GB GB1QT

OS: Raspbian 9.6, Kernel: 4.18.0-rc3-gfc36def997cf-dirty (aarch64), Display Server: X Server 1.19.2, Compiler: GCC 6.3.0 20170516, File-System: ext4

Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libquadmath --disable-sjlj-exceptions --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,ada,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc=auto --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --program-prefix=arm-linux-gnueabihf- --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv6 --with-default-libstdcxx-abi=new --with-float=hard --with-fpu=vfp --with-target-system-zlib -v
Python Notes: Python 2.7.13 + Python 3.5.3

Firefly ROC-RK3328-CC

Processor: Rockchip ARMv8 Cortex-A53 @ 1.39GHz (4 Cores), Motherboard: Firefly ROC-RK3328-CC, Memory: 2048MB, Disk: 32GB GB1QT

OS: Ubuntu 18.04, Kernel: 4.4.114 (aarch64), Display Server: X Server 1.18.4, Compiler: GCC 7.4.0, File-System: ext4, Screen Resolution: 1024x768

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Processor Notes: Scaling Governor: cpufreq-dt performance
Python Notes: Python 2.7.15rc1 + Python 3.6.7

RPi Model 4 B 4GB

Processor: ARMv7 rev 3 @ 1.50GHz (4 Cores), Motherboard: BCM2835 Raspberry Pi 4 Model B Rev 1.1, Memory: 4096MB, Disk: 16GB SC16G, Graphics: V3D 4.2 4GB, Monitor: DELL P2415Q

OS: Raspbian 10, Kernel: 4.19.50-v7l+ (armv7l), Desktop: LXDE 0.10.0, Display Server: X Server 1.20.4, Display Driver: modesetting 1.20.4, OpenGL: 2.1 Mesa 19.1.0-devel, Compiler: GCC 8.3.0, File-System: ext4, Screen Resolution: 1024x768

Compiler Notes: --build=arm-linux-gnueabihf --disable-libitm --disable-libquadmath --disable-libquadmath-support --disable-sjlj-exceptions --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc=auto --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --program-prefix=arm-linux-gnueabihf- --target=arm-linux-gnueabihf --with-arch=armv6 --with-default-libstdcxx-abi=new --with-float=hard --with-fpu=vfp --with-gcc-major-version-only --with-target-system-zlib -v
Processor Notes: Scaling Governor: BCM2835 Freq ondemand
Python Notes: Python 2.7.16 + Python 3.7.3

RPi Model 4 B 2GB

Processor: ARMv7 rev 3 @ 1.50GHz (4 Cores), Motherboard: BCM2835 Raspberry Pi 4 Model B Rev 1.1, Memory: 2048MB, Disk: 16GB SC16G, Graphics: V3D 4.2 2GB, Monitor: DELL P2415Q

OS: Raspbian 10, Kernel: 4.19.50-v7l+ (armv7l), Desktop: LXDE 0.10.0, Display Server: X Server 1.20.4, Display Driver: modesetting 1.20.4, OpenGL: 2.1 Mesa 19.1.0-devel, Compiler: GCC 8.3.0, File-System: ext4, Screen Resolution: 1024x768

Compiler Notes: --build=arm-linux-gnueabihf --disable-libitm --disable-libquadmath --disable-libquadmath-support --disable-sjlj-exceptions --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc=auto --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --program-prefix=arm-linux-gnueabihf- --target=arm-linux-gnueabihf --with-arch=armv6 --with-default-libstdcxx-abi=new --with-float=hard --with-fpu=vfp --with-gcc-major-version-only --with-target-system-zlib -v
Processor Notes: Scaling Governor: BCM2835 Freq ondemand
Python Notes: Python 2.7.16 + Python 3.7.3

OrangePi One H3 512MB

Processor: ARMv7 Cortex-A7 @ 1.01GHz (4 Cores), Motherboard: Allwinner sun8i Xunlong Orange Pi One, Memory: 491MB, Disk: 16GB SC16G

OS: Ubuntu 20.04, Kernel: 5.10.43-sunxi (armv7l), Display Server: X Server, Compiler: GCC 9.3.0, File-System: ext4

Compiler Notes: --build=arm-linux-gnueabihf --disable-libitm --disable-libquadmath --disable-libquadmath-support --disable-sjlj-exceptions --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-multilib --enable-nls --enable-objc-gc=auto --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --program-prefix=arm-linux-gnueabihf- --target=arm-linux-gnueabihf --with-arch=armv7-a --with-default-libstdcxx-abi=new --with-float=hard --with-fpu=vfpv3-d16 --with-gcc-major-version-only --with-mode=thumb --with-target-system-zlib=auto -v

Raspberry Pi Model 4 Benchmarks

Processor Notes: Scaling Governor: cpufreq-dt performance
Python Notes: Python 3.8.10

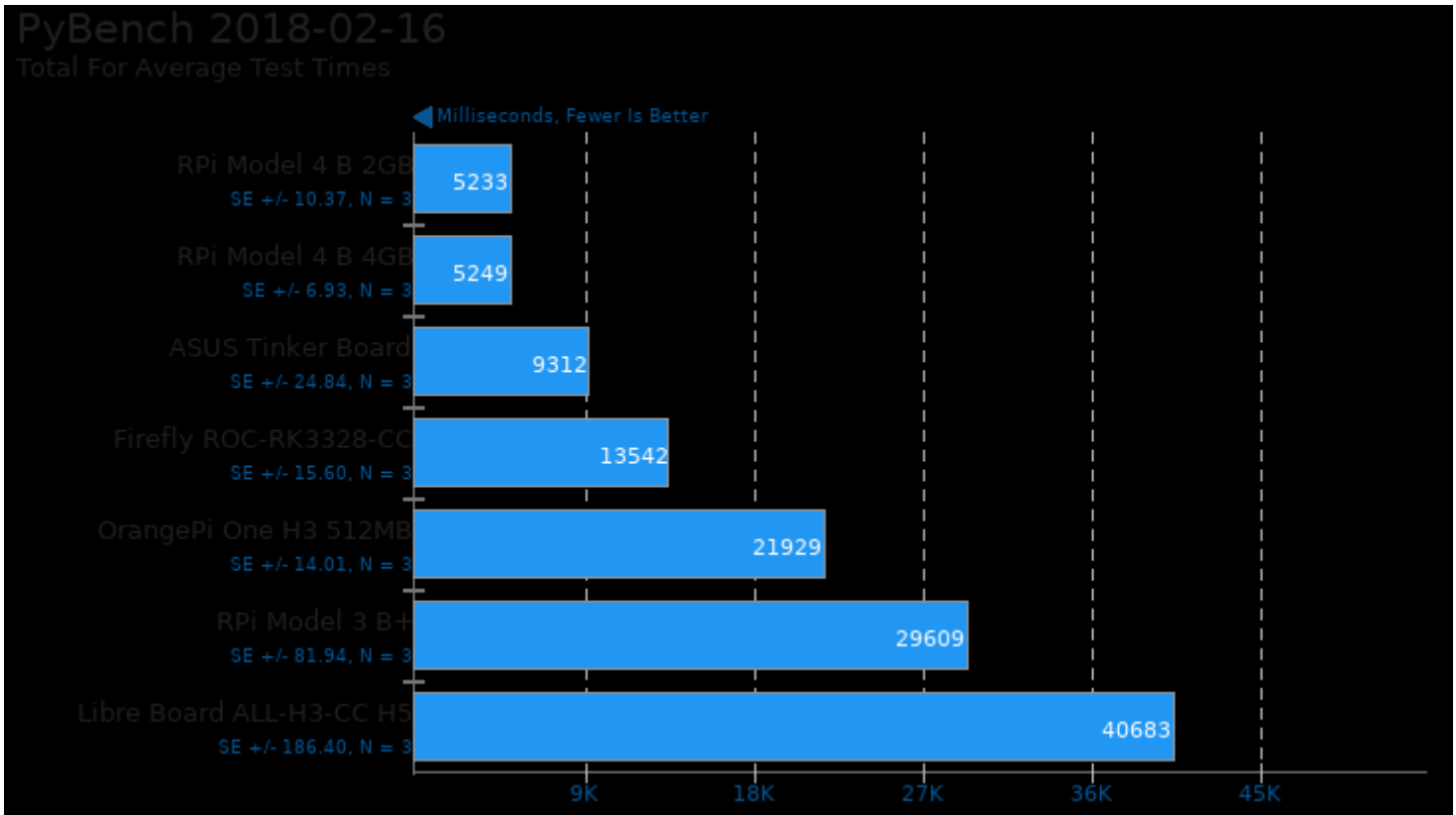
	RPi Model 3 B+	ASUS Tinker Board	Libre Board ALL-H3-CC H5	Firefly ROC-RK3328-CC	RPi Model 4 B 4GB	RPi Model 4 B 2GB	OrangePi One H3 512MB
PyBench - T.F.A.T.T (Milliseconds)	29609	9312	**40683**	13542	5249	**5233**	21929
Normalized	17.67%	56.2%	12.86%	38.64%	99.7%	100%	23.86%
Standard Deviation	0.5%	0.5%	0.8%	0.2%	0.2%	0.3%	0.1%
FLAC Audio Encoding - WAV To FLAC (sec)	**777.65**	135.25	566.40	288.92	**111.09**	111.48	502.591
Normalized	14.29%	82.14%	19.61%	38.45%	100%	99.65%	22.1%
Standard Deviation	0.9%	3.4%	0.3%	0.7%	3.1%	0.7%	0.1%
Perl Benchmarks - Performance / Cost - Interpreter (sec x Dollar)	**1.11**	0.87	0.38	**0.17**	0.43	0.37	
Normalized	15.32%	19.54%	44.74%	100%	39.53%	45.95%	
Perl Benchmarks - Interpreter (sec)	**0.03173653**	0.01229804	0.01091688	**0.00491447**	0.00778405	0.00826085	0.01150105
Normalized	15.49%	39.96%	45.02%	100%	63.14%	59.49%	42.73%
Standard Deviation	3.5%	0.4%	0.3%	0.5%	5.6%	6.9%	0.3%
PyBench - Performance / Cost - T.F.A.T.T (Milliseconds x Dollar)	1036315	661152	**1423905**	473970	288695	**235485**	
Normalized	22.72%	35.62%	16.54%	49.68%	81.57%	100%	
FLAC Audio Encoding - Performance / Cost - WAV To FLAC (sec x Dollar)	**27218**	9603	19824	10112	6110	**5017**	
Normalized	18.43%	52.24%	25.31%	49.61%	82.11%	100%	
LAME MP3 Encoding - WAV To MP3 (sec)	**658.82**	162.41	518.49	295.44	125.34	**125.22**	470.181
Normalized	19.01%	77.1%	24.15%	42.38%	99.9%	100%	26.63%
Standard Deviation	2.4%	0.6%	0%	0.2%	0.1%	0.1%	0%
Smallpt - G.I.R.1.S (sec)	**744.55**	273.30	424.02	251.36	260.72	**145.50**	533.575
Normalized	19.54%	53.24%	34.31%	57.89%	55.81%	100%	27.27%
Standard Deviation	0.1%	0.9%	0.3%	1.1%	2.3%	2.9%	0%
SciMark - Composite (Mflops)	48.80	141.72	28.76	51.13	142.17	**143.02**	**28.44**
Normalized	34.12%	99.09%	20.11%	35.75%	99.41%	100%	19.89%
Standard Deviation	0.4%	0.1%	0.1%	0%	1.6%	1.1%	0.1%
PHPBench - P.B.S (Score)	**20275**	59450	21345	54131	**101564**	100678	30138
Normalized	19.96%	58.53%	21.02%	53.3%	100%	99.13%	29.67%
Standard Deviation	0.5%	3.3%	0.1%	0.2%	0.4%	0.9%	0.3%
Perl Benchmarks - Pod2html (sec)	2.56511278	0.78254268	**2.57273250**	1.31659761	**0.61207402**	0.62136299	2.19861772
Normalized	23.86%	78.22%	23.79%	46.49%	100%	98.51%	27.84%
Standard Deviation	5.2%	2%	0.6%	2%	0.8%	1.3%	0.4%

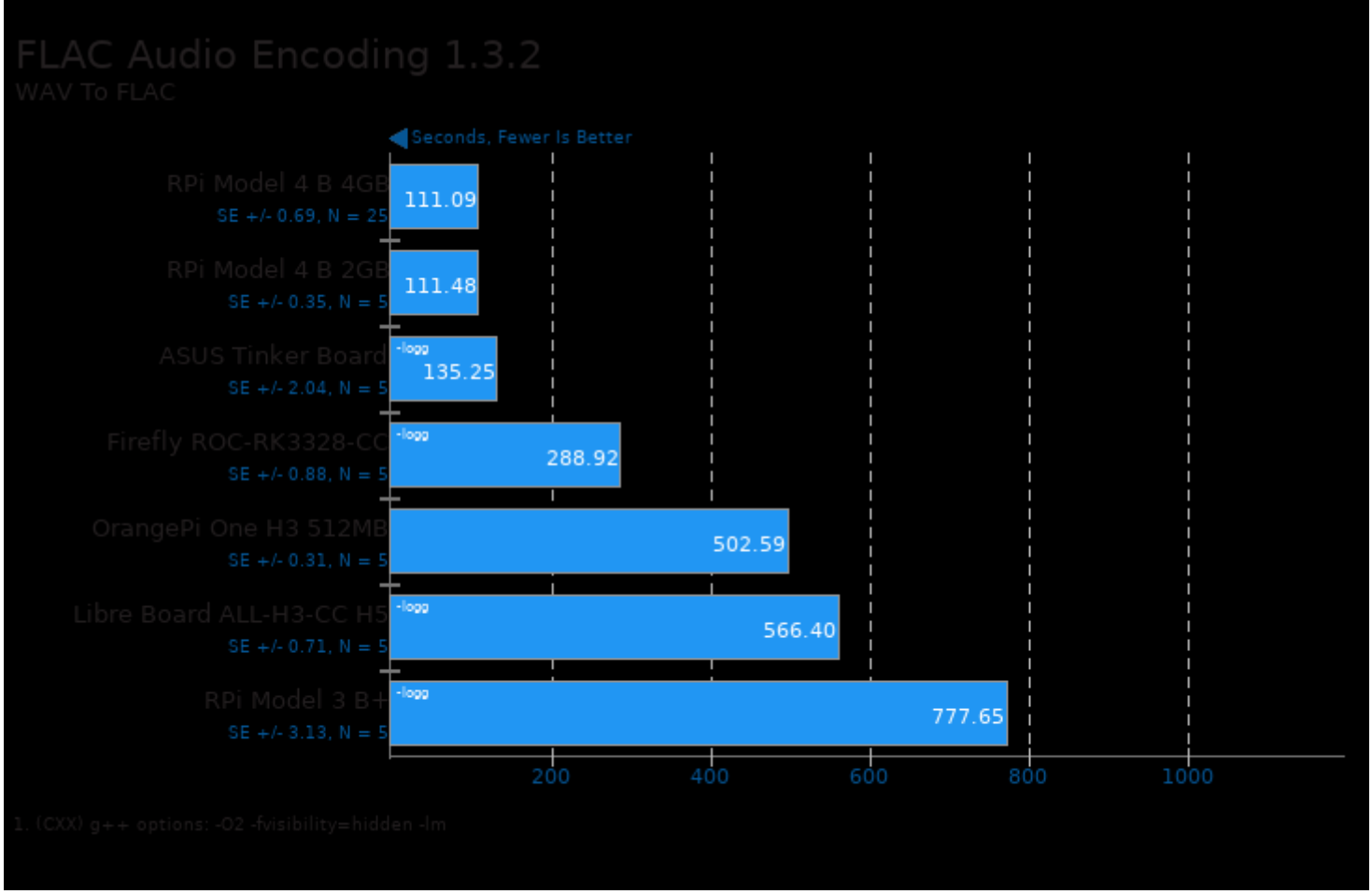
Raspberry Pi Model 4 Benchmarks

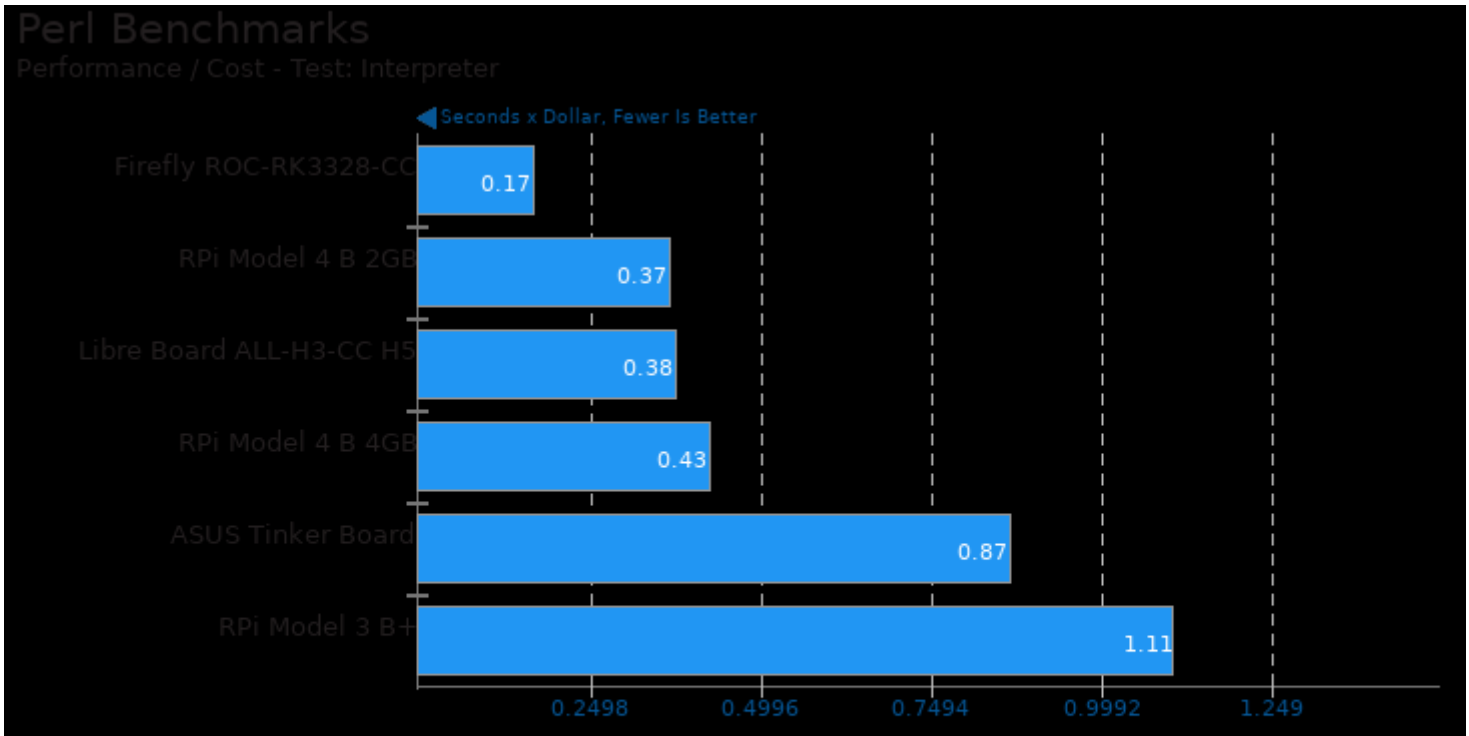
GraphicsMagick - Rotate (Iterations/min)	16	66	24	44	63	64	19
Normalized	24.24%	100%	36.36%	66.67%	95.45%	96.97%	28.79%
Standard Deviation		3.4%			1.8%		
LAME MP3 Encoding - Performance / Cost - WAV To MP3 (sec x Dollar)	23059	11531	18147	10340	6894	5635	
Normalized	24.44%	48.87%	31.05%	54.49%	81.74%	100%	
x264 - H.2.V.E (FPS)	0.14	3.32		2.31	3.10	4.91	1.17
Normalized	2.85%	67.62%		47.05%	63.14%	100%	23.83%
Standard Deviation	0%	6.3%		0.2%	8.5%	2.1%	0%
Smallpt - Performance / Cost - G.I.R.1.S (sec x Dollar)	26059	19404	14841	8798	14340	6548	
Normalized	25.13%	33.74%	44.12%	74.42%	45.66%	100%	
SciMark - Performance / Cost - Composite (Mflops/Dollar)	1.39	2.00	0.82	1.46	2.58	3.18	
Normalized	43.71%	62.89%	25.79%	45.91%	81.13%	100%	
PHPBench - Performance / Cost - P.B.S	579.29	837.32	609.86	1547	1847	2237	
Normalized	25.89%	37.43%	27.26%	69.13%	82.54%	100%	
GraphicsMagick - Resizing (Iterations/min)	15	53	22	36	45	53	20
Normalized	28.3%	100%	41.51%	67.92%	84.91%	100%	37.74%
Standard Deviation		3.4%			2.9%		
Perl Benchmarks - Performance / Cost - Pod2html (sec x Dollar)	89.78	55.56	90.05	46.08	33.66	27.96	
Normalized	31.14%	50.32%	31.05%	60.68%	83.07%	100%	
GraphicsMagick - Performance / Cost - Rotate	0.46	0.93	0.69	1.26	1.15	1.42	
Normalized	32.39%	65.49%	48.59%	88.73%	80.99%	100%	
Zstd Compression - C.u.1.0.3.s.i.i.C.L.1 (sec)	787.01	239.98	402.13	343.31	291.48	291.55	27.140
Normalized	3.45%	11.31%	6.75%	7.91%	9.31%	9.31%	100%
Standard Deviation	0.4%	0.3%	3.4%	0.1%	1.5%	1%	5.3%
Rust Prime Benchmark - Performance / Cost - P.N.T.T.2.0.0 (sec x Dollar)	108715	74726		4907	60738	29599	
Normalized	4.51%	6.57%		100%	8.08%	16.58%	
Rust Prime Benchmark - P.N.T.T.2.0.0 (sec)	3106	1052		140.20	1104	657.76	1658
Normalized	4.51%	13.32%		100%	12.7%	21.31%	8.46%
Standard Deviation	1.1%	1%		0.3%	0.6%	0%	0%

Raspberry Pi Model 4 Benchmarks

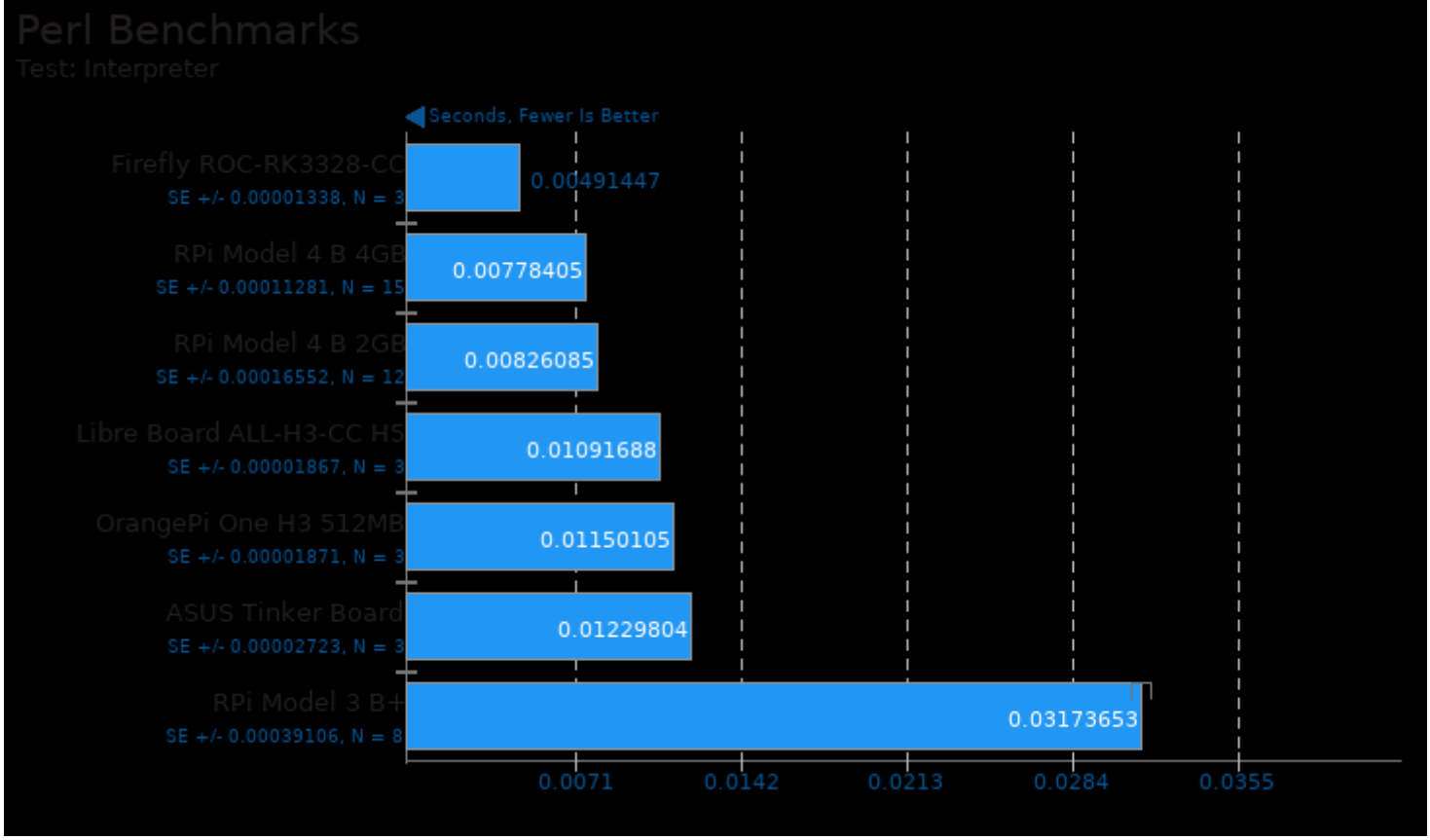
GraphicsMagick - Performance / Cost - Resizing (Iterations/min/Dollar)	**0.43**	0.75	0.63	1.03	0.82	**1.18**	
Normalized	36.44%	63.56%	53.39%	87.29%	69.49%	100%	
NGINX Benchmark - S.W.P.S (Reqs/sec)	**2012**	3880			4746	**5105**	2309
Normalized	39.41%	76.01%			92.97%	100%	45.24%
Standard Deviation	0.7%	1.6%			3.1%	0.1%	0.8%
Zstd Compression - Performance / Cost - C.u.1.0.3.s.i.i.C.L.1 (sec x Dollar)	**27545**	17039	14075	**12016**	16031	13120	
Normalized	43.62%	70.52%	85.37%	100%	74.95%	91.59%	
x264 - Performance / Cost - H.2.V.E (FPS/Dollar)		**0.05**		0.07	0.06	**0.11**	
Normalized		45.45%		63.64%	54.55%	100%	
NGINX Benchmark - Performance / Cost - S.W.P.S (Reqs/sec/Dollar)	57.49	**54.65**			86.29	**113.44**	
Normalized	50.68%	48.18%			76.07%	100%	


PyBench 2018-02-16
Total For Average Test Times
Milliseconds, Fewer Is Better
RPi Model 4 B 2GB
SE +/- 10.37, N = 3
5233
RPi Model 4 B 4GB
SE +/- 6.93, N = 3
5249
ASUS Tinker Board
SE +/- 24.84, N = 3
9312
Firefly ROC-RK3328-CC
SE +/- 15.60, N = 3
13542
OrangePi One H3 512MB
SE +/- 14.01, N = 3
21929
RPi Model 3 B+
SE +/- 81.94, N = 3
29609
Libre Board ALL-H3-CC H5
SE +/- 186.40, N = 3
40683
9K
18K
27K
36K
45K


FLAC Audio Encoding 1.3.2
WAV To FLAC
Seconds, Fewer Is Better
RPi Model 4 B 4GB
SE +/- 0.69, N = 25
111.09
RPi Model 4 B 2GB
SE +/- 0.35, N = 5
111.48
ASUS Tinker Board
SE +/- 2.04, N = 5
-logg
135.25
Firefly ROC-RK3328-CC
SE +/- 0.88, N = 5
-logg
288.92
OrangePi One H3 512MB
SE +/- 0.31, N = 5
502.59
Libre Board ALL-H3-CC H5
SE +/- 0.71, N = 5
-logg
566.40
RPi Model 3 B+
SE +/- 3.13, N = 5
-logg
777.65
200
400
600
800
1000
1. (CXX) g++ options: -O2 -fvisibility=hidden -lm

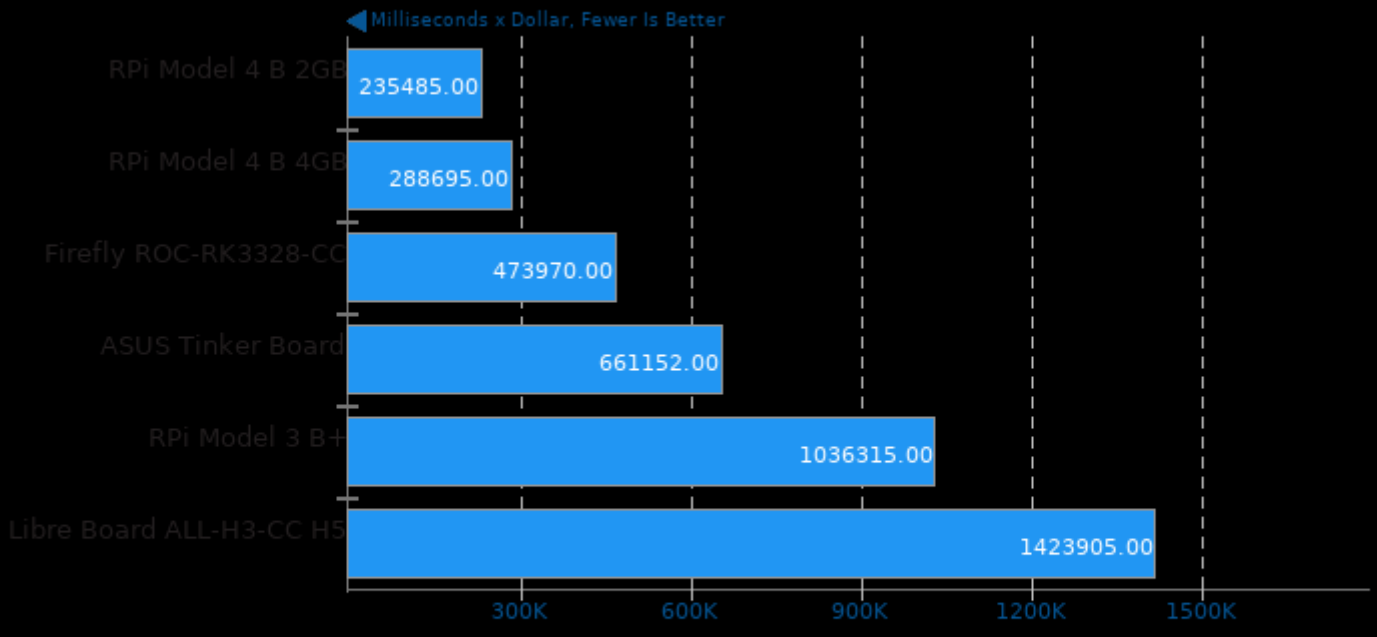


1. Firefly ROC-RK3328-CC: $35 reported cost.
2. RPi Model 4 B 2GB: $45 reported cost.
3. Libre Board ALL-H3-CC H5: $35 reported cost.
4. RPi Model 4 B 4GB: $55 reported cost.
5. ASUS Tinker Board: $71 reported cost.
6. RPi Model 3 B+: $35 reported cost.



PyBench 2018-02-16

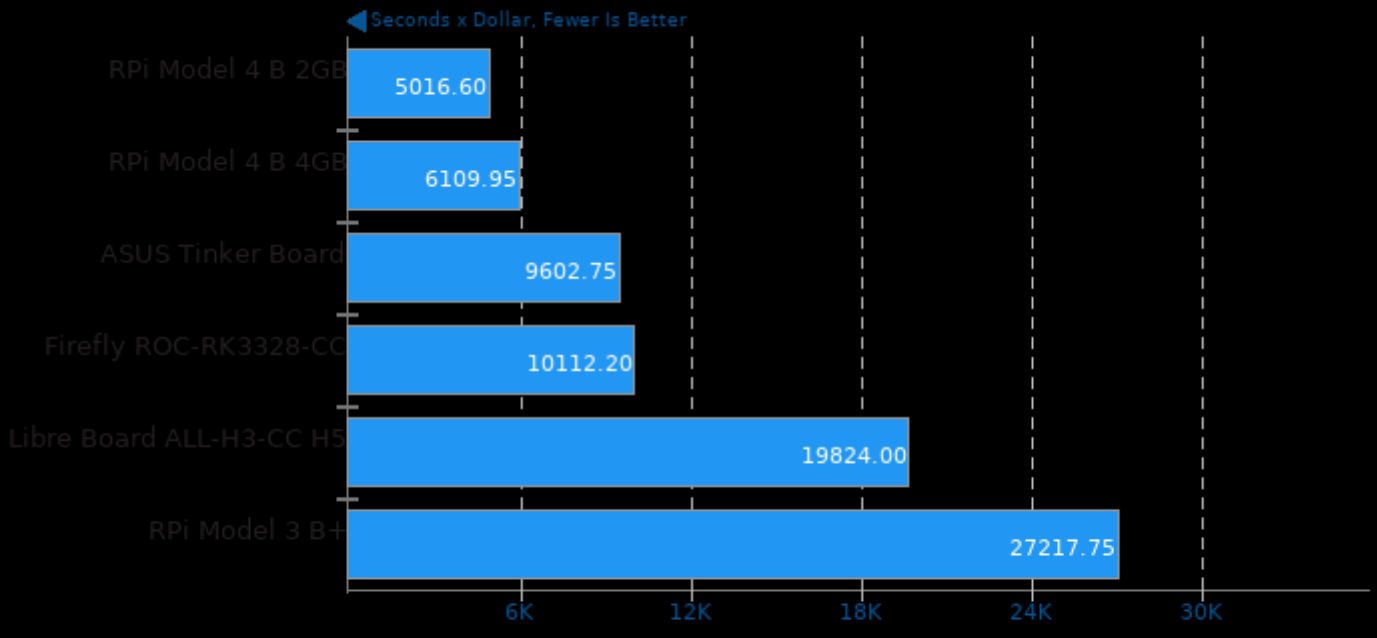
Performance / Cost - Total For Average Test Times



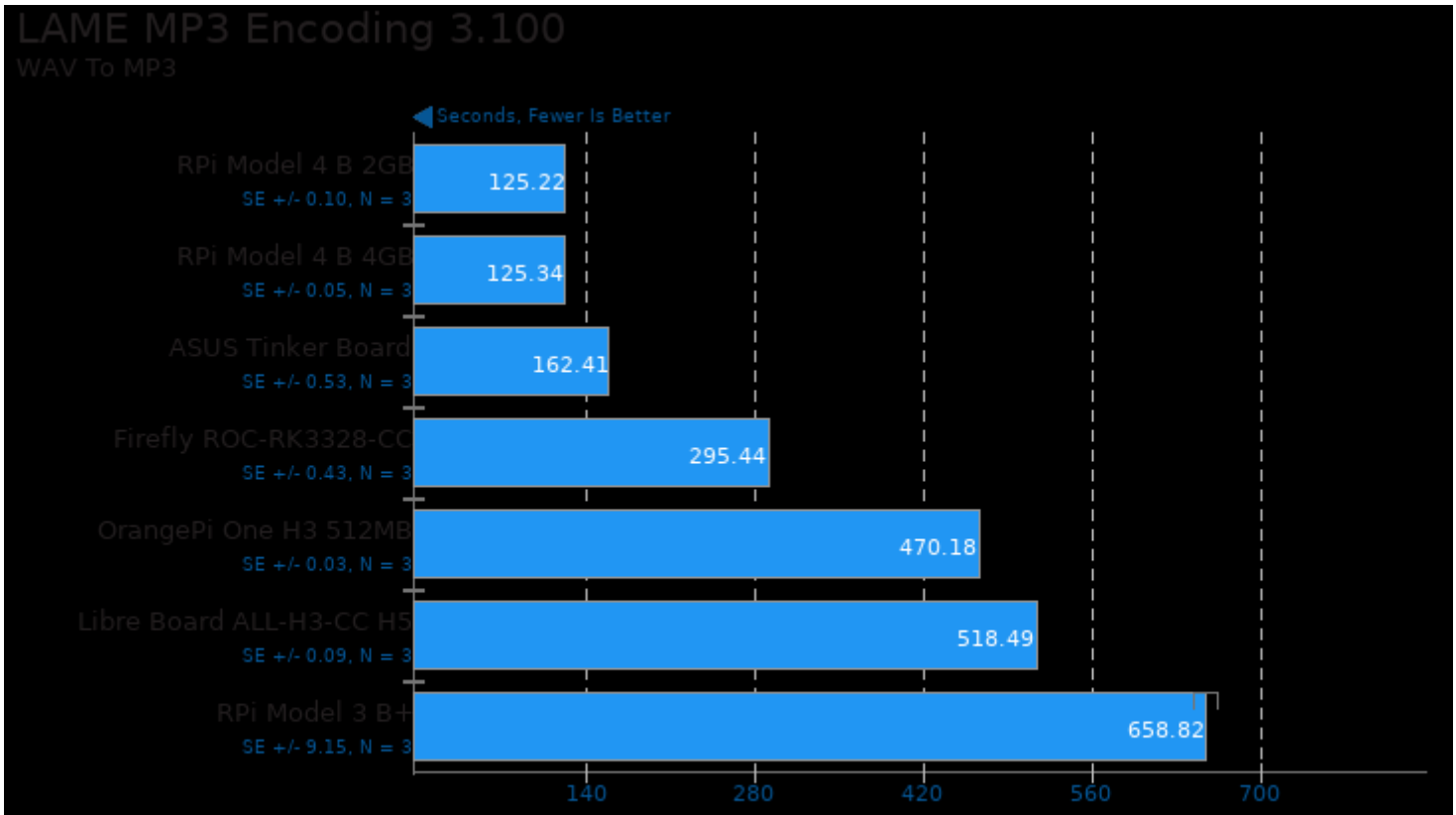
1. RPi Model 4 B 2GB: $45 reported cost.
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3. Firefly ROC-RK3328-CC: $35 reported cost.
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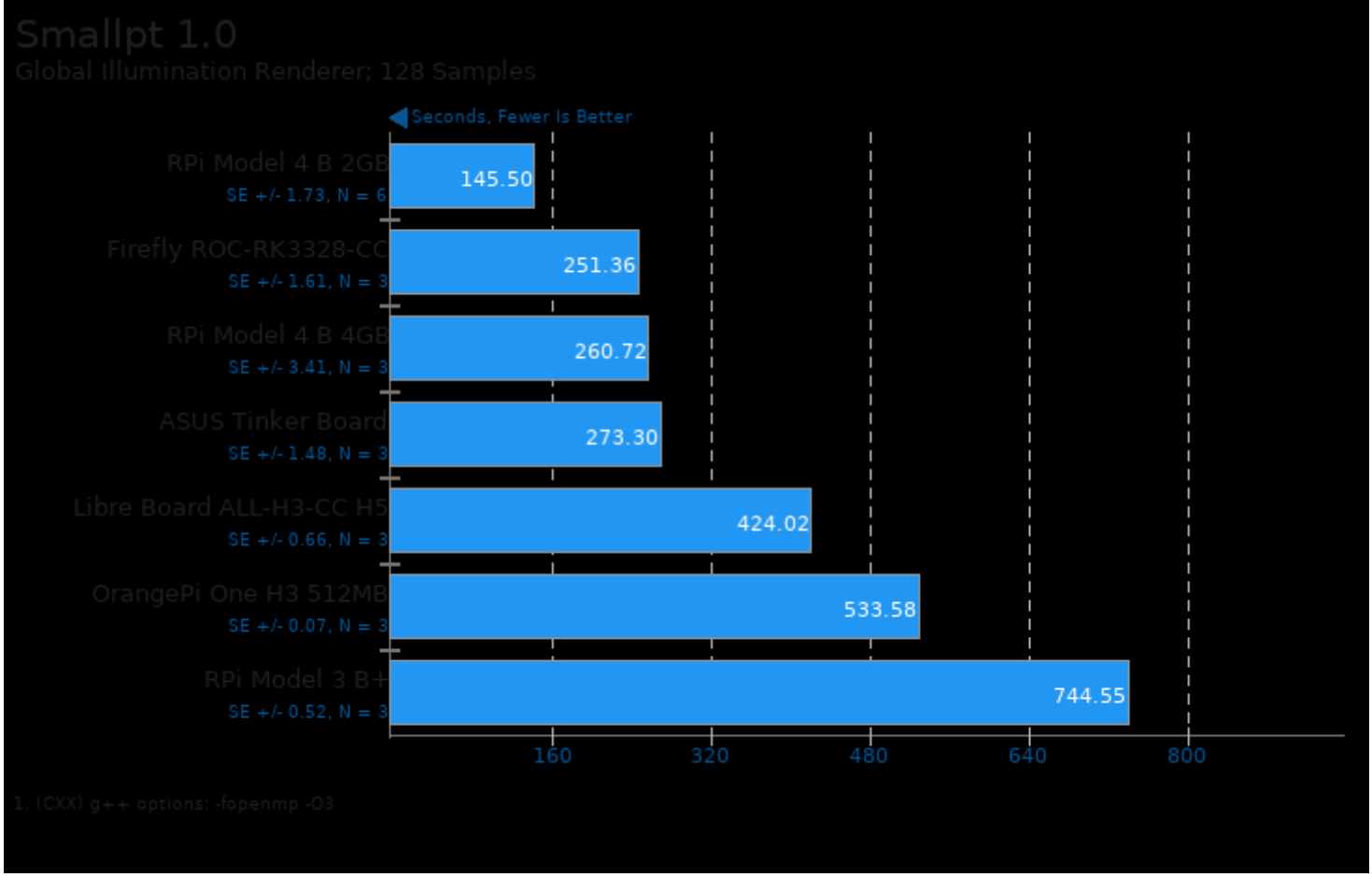
FLAC Audio Encoding 1.3.2

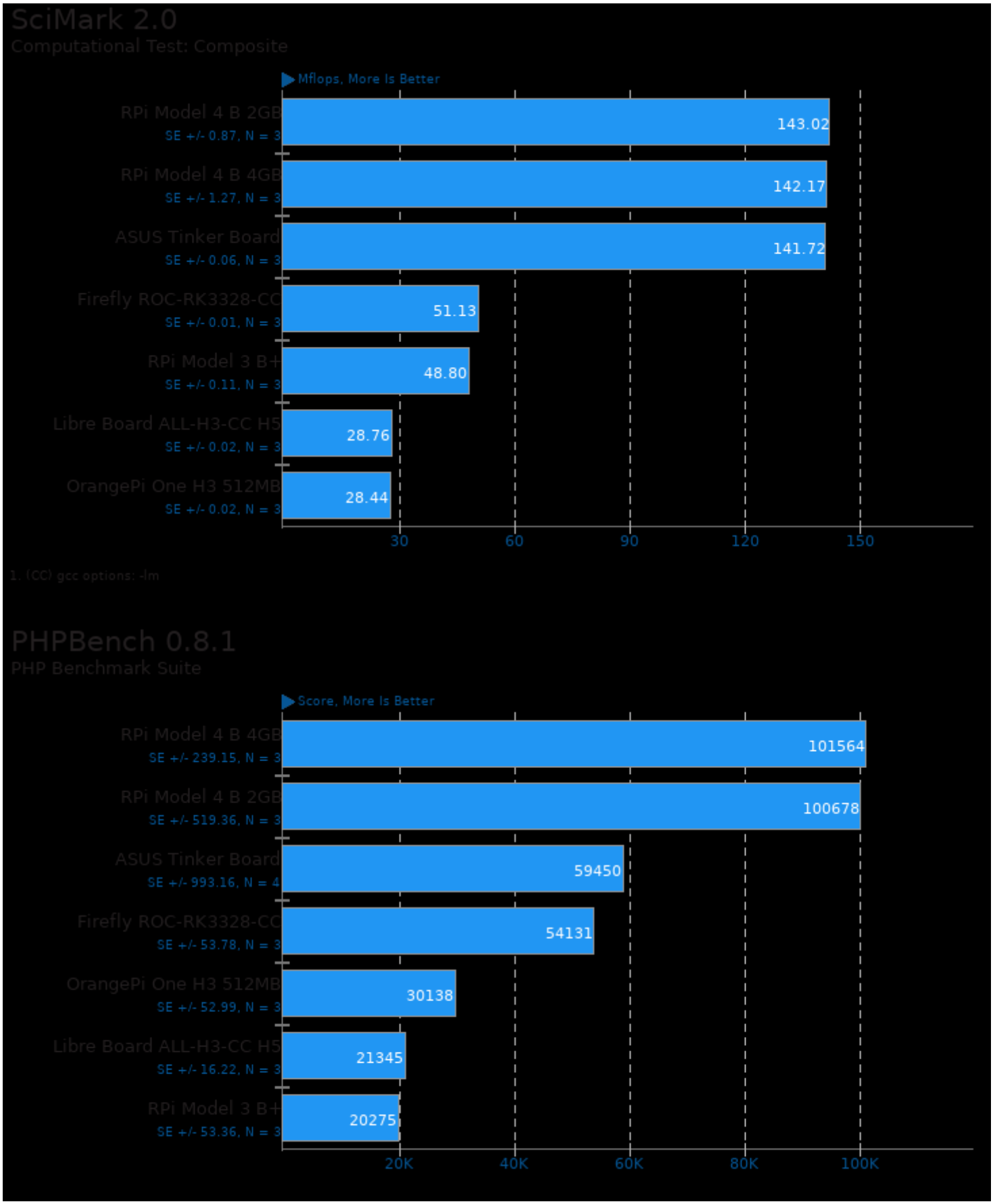
Performance / Cost - WAV To FLAC



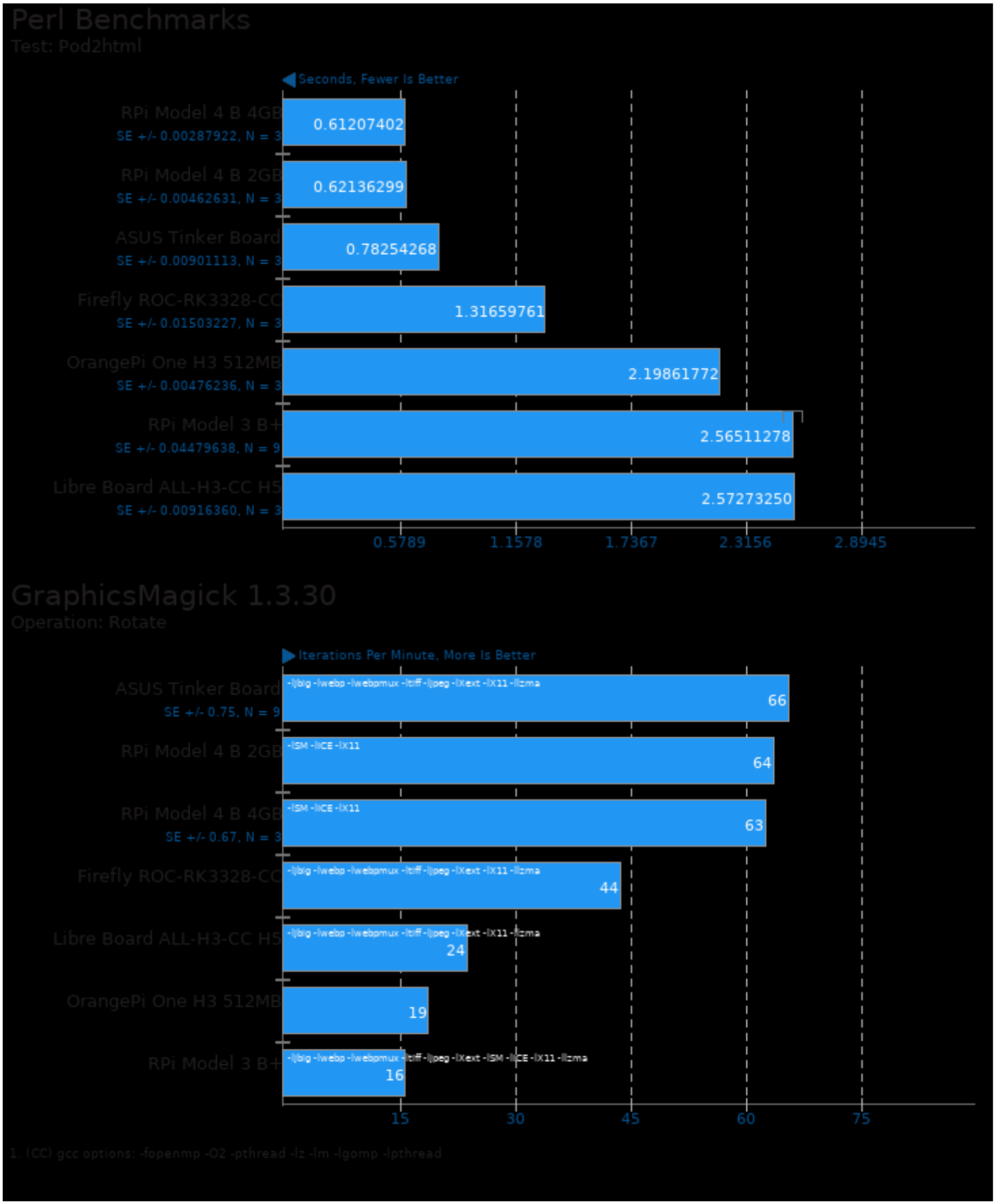
1. RPi Model 4 B 2GB: $45 reported cost.
2. RPi Model 4 B 4GB: $55 reported cost.
3. ASUS Tinker Board: $71 reported cost.
4. Firefly ROC-RK3328-CC: $35 reported cost.
5. Libre Board ALL-H3-CC H5: $35 reported cost.
6. RPi Model 3 B+: $35 reported cost.


LAME MP3 Encoding 3.100
WAV To MP3
Seconds, Fewer Is Better
RPi Model 4 B 2GB
SE +/- 0.10, N = 3
125.22
RPi Model 4 B 4GB
SE +/- 0.05, N = 3
125.34
ASUS Tinker Board
SE +/- 0.53, N = 3
162.41
Firefly ROC-RK3328-CC
SE +/- 0.43, N = 3
295.44
OrangePi One H3 512MB
SE +/- 0.03, N = 3
470.18
Libre Board ALL-H3-CC H5
SE +/- 0.09, N = 3
518.49
RPi Model 3 B+
SE +/- 9.15, N = 3
658.82
140
280
420
560
700
1. (CC) gcc options: -lm


Smallpt 1.0
Global Illumination Renderer; 128 Samples
Seconds, Fewer Is Better
RPi Model 4 B 2GB
SE +/- 1.73, N = 6
145.50
Firefly ROC-RK3328-CC
SE +/- 1.61, N = 3
251.36
RPi Model 4 B 4GB
SE +/- 3.41, N = 3
260.72
ASUS Tinker Board
SE +/- 1.48, N = 3
273.30
Libre Board ALL-H3-CC H5
SE +/- 0.66, N = 3
424.02
OrangePi One H3 512MB
SE +/- 0.07, N = 3
533.58
RPi Model 3 B+
SE +/- 0.52, N = 3
744.55
160
320
480
640
800
1. (CXX) g++ options: -fopenmp -O3


SciMark 2.0
Computational Test: Composite
Mflops, More Is Better
RPi Model 4 B 2GB
SE +/- 0.87, N = 3
143.02
RPi Model 4 B 4GB
SE +/- 1.27, N = 3
142.17
ASUS Tinker Board
SE +/- 0.06, N = 3
141.72
Firefly ROC-RK3328-CC
SE +/- 0.01, N = 3
51.13
RPi Model 3 B+
SE +/- 0.11, N = 3
48.80
Libre Board ALL-H3-CC H5
SE +/- 0.02, N = 3
28.76
OrangePi One H3 512MB
SE +/- 0.02, N = 3
28.44
30
60
90
120
150
1. (CC) gcc options: -lm
PHPBench 0.8.1
PHP Benchmark Suite
Score, More Is Better
RPi Model 4 B 4GB
SE +/- 239.15, N = 3
101564
RPi Model 4 B 2GB
SE +/- 519.36, N = 3
100678
ASUS Tinker Board
SE +/- 993.16, N = 4
59450
Firefly ROC-RK3328-CC
SE +/- 53.78, N = 3
54131
OrangePi One H3 512MB
SE +/- 52.99, N = 3
30138
Libre Board ALL-H3-CC H5
SE +/- 16.22, N = 3
21345
RPi Model 3 B+
SE +/- 53.36, N = 3
20275
20K
40K
60K
80K
100K

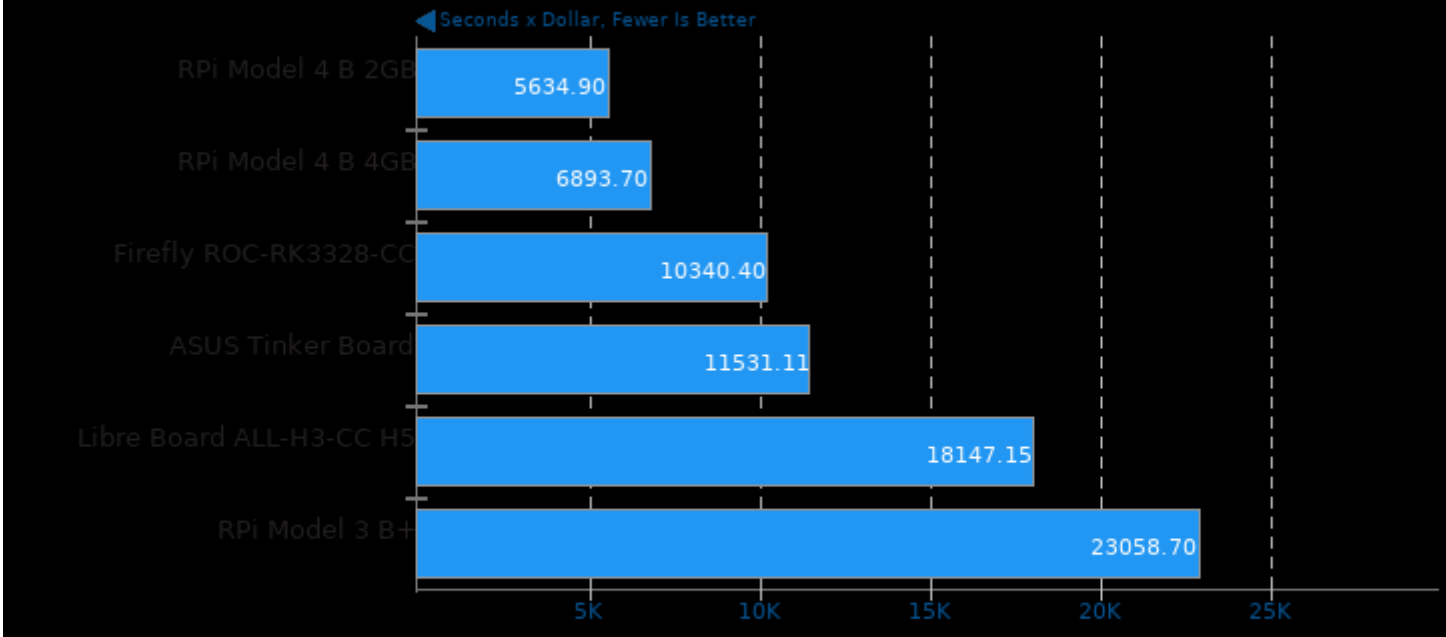
Raspberry Pi Model 4 Benchmarks



Raspberry Pi Model 4 Benchmarks

LAME MP3 Encoding 3.100

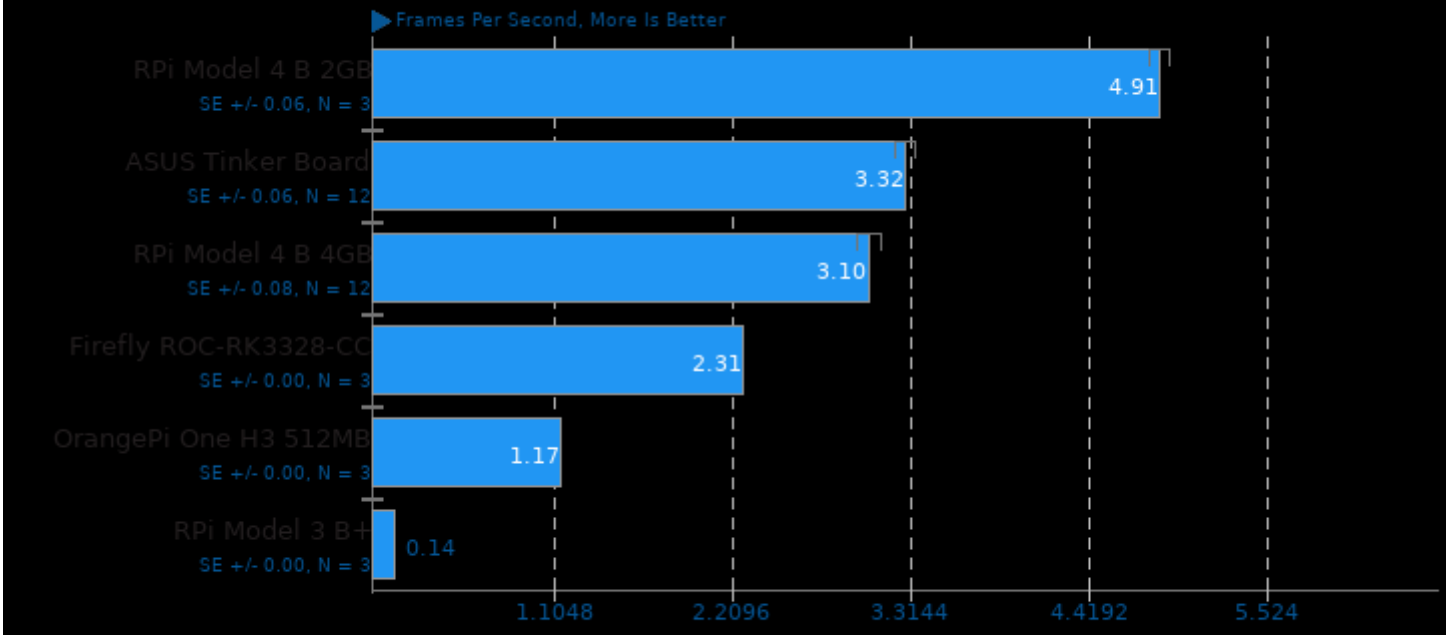
Performance / Cost - WAV To MP3



1. RPi Model 4 B 2GB: $45 reported cost.
2. RPi Model 4 B 4GB: $55 reported cost.
3. Firefly ROC-RK3328-CC: $35 reported cost.
4. ASUS Tinker Board: $71 reported cost.
5. Libre Board ALL-H3-CC H5: $35 reported cost.
6. RPi Model 3 B+: $35 reported cost.

x264 2018-09-25

H.264 Video Encoding

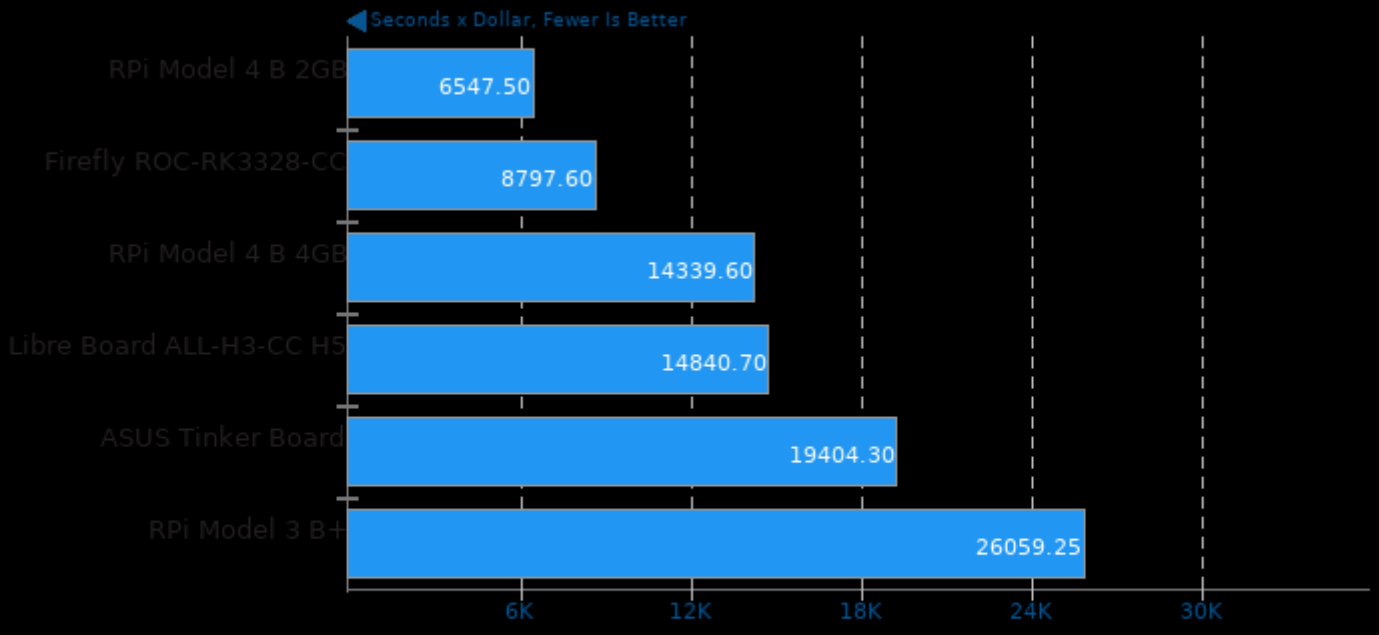


1. (CC) gcc options: -ldl -lm -lpthread

Raspberry Pi Model 4 Benchmarks

Smallpt 1.0

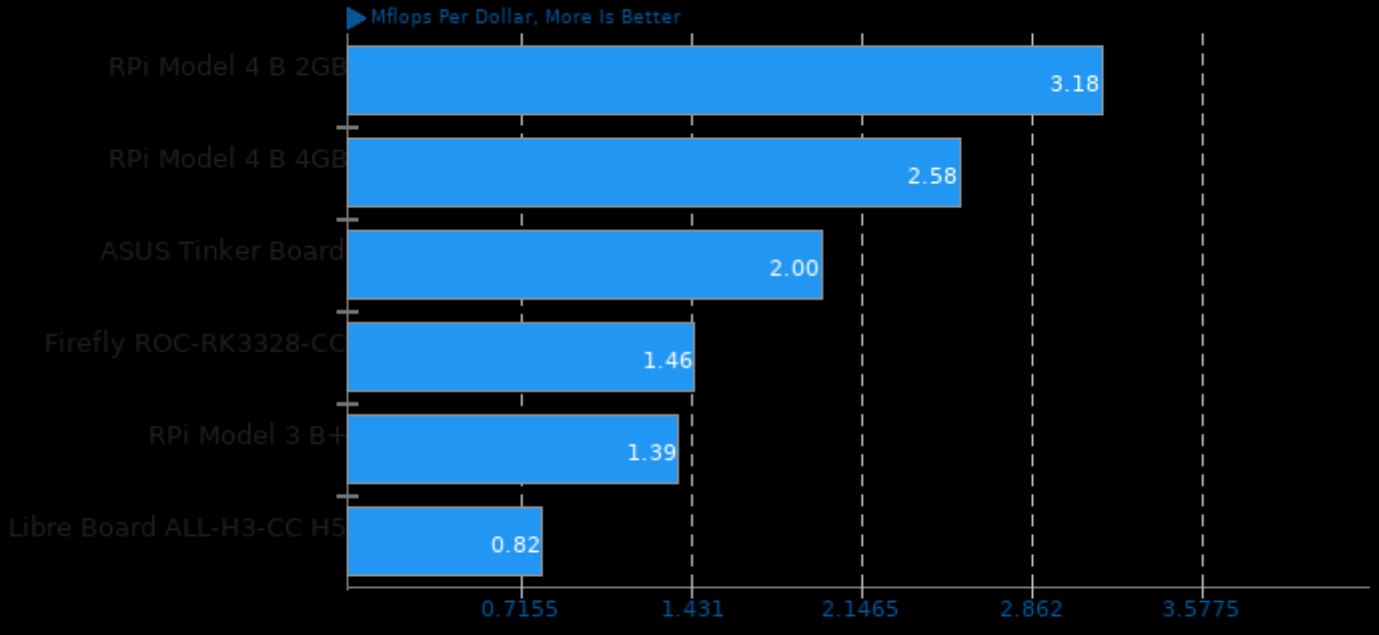
Performance / Cost - Global Illumination Renderer; 128 Samples



1. RPi Model 4 B 2GB: $45 reported cost.
2. Firefly ROC-RK3328-CC: $35 reported cost.
3. RPi Model 4 B 4GB: $55 reported cost.
4. Libre Board ALL-H3-CC H5: $35 reported cost.
5. ASUS Tinker Board: $71 reported cost.
6. RPi Model 3 B+: $35 reported cost.

SciMark 2.0

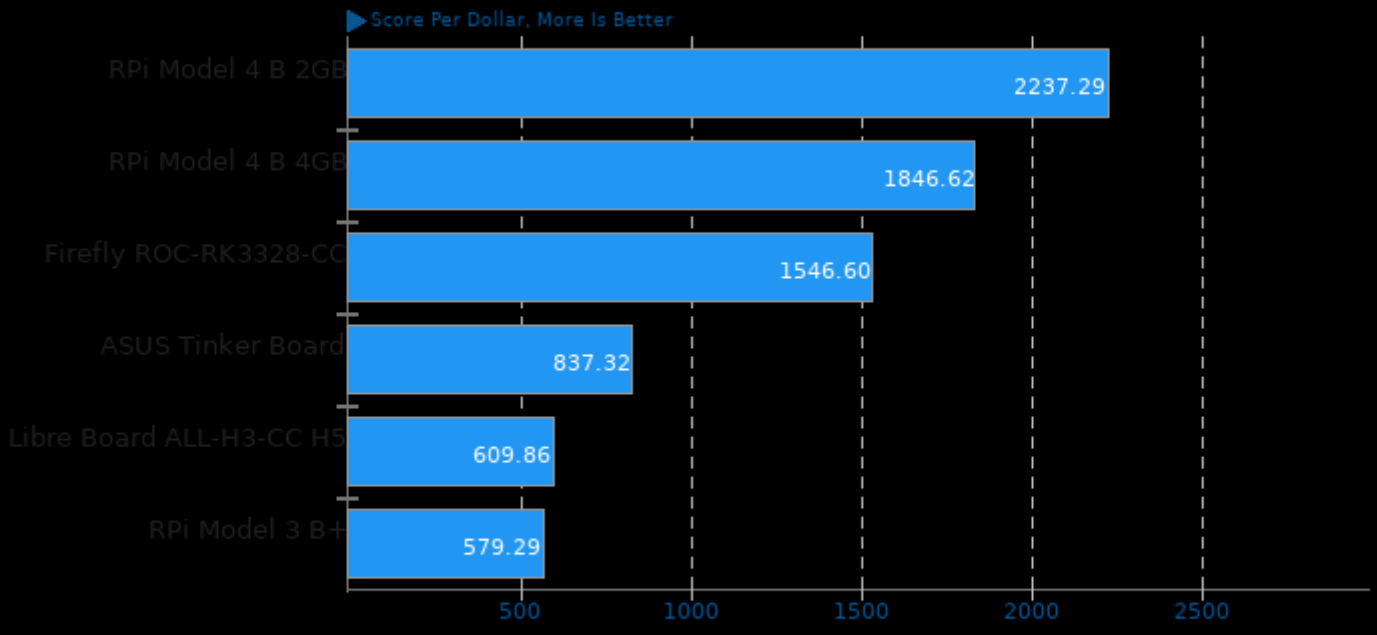
Performance / Cost - Computational Test: Composite



1. RPi Model 4 B 2GB: $45 reported cost.
2. RPi Model 4 B 4GB: $55 reported cost.
3. ASUS Tinker Board: $71 reported cost.
4. Firefly ROC-RK3328-CC: $35 reported cost.
5. RPi Model 3 B+: $35 reported cost.
6. Libre Board ALL-H3-CC H5: $35 reported cost.

PHPBench 0.8.1

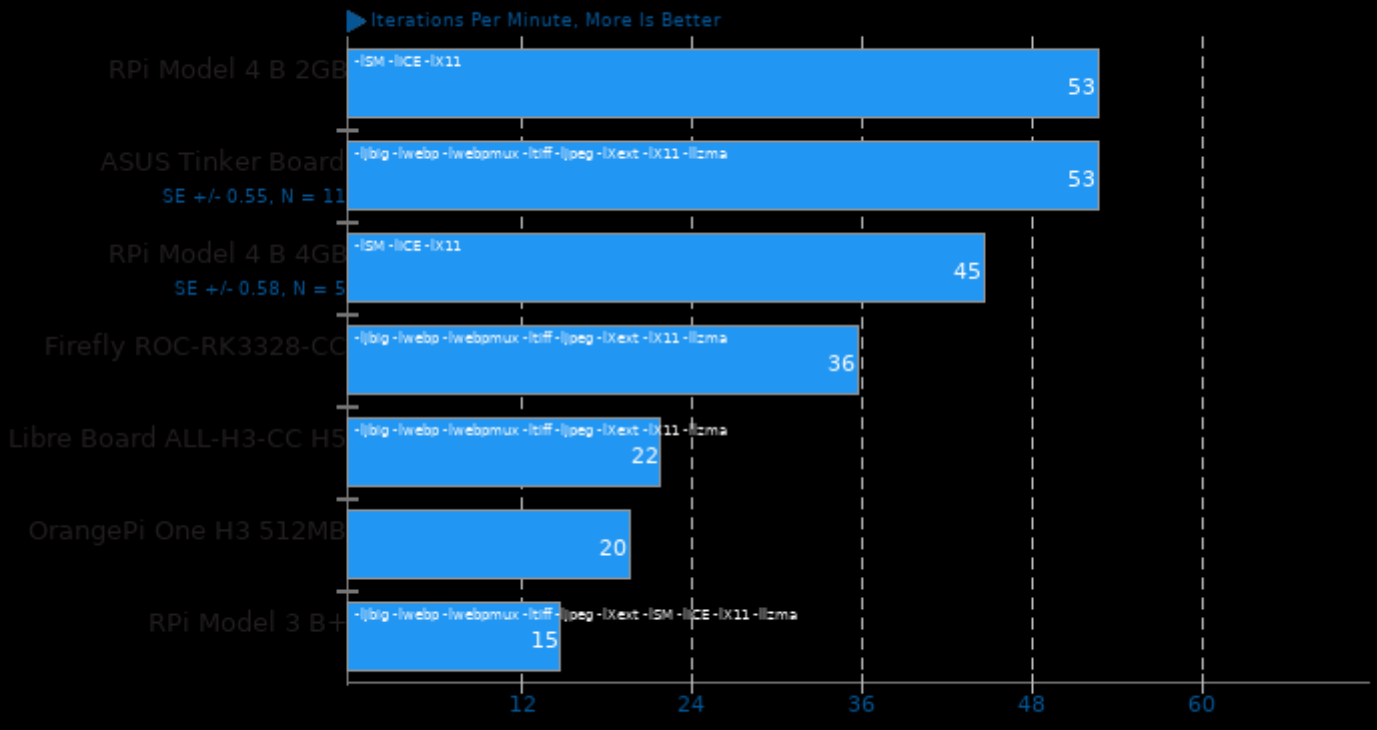
Performance / Cost - PHP Benchmark Suite



1. RPi Model 4 B 2GB: $45 reported cost.
2. RPi Model 4 B 4GB: $55 reported cost.
3. Firefly ROC-RK3328-CC: $35 reported cost.
4. ASUS Tinker Board: $71 reported cost.
5. Libre Board ALL-H3-CC H5: $35 reported cost.
6. RPi Model 3 B+: $35 reported cost.

GraphicsMagick 1.3.30

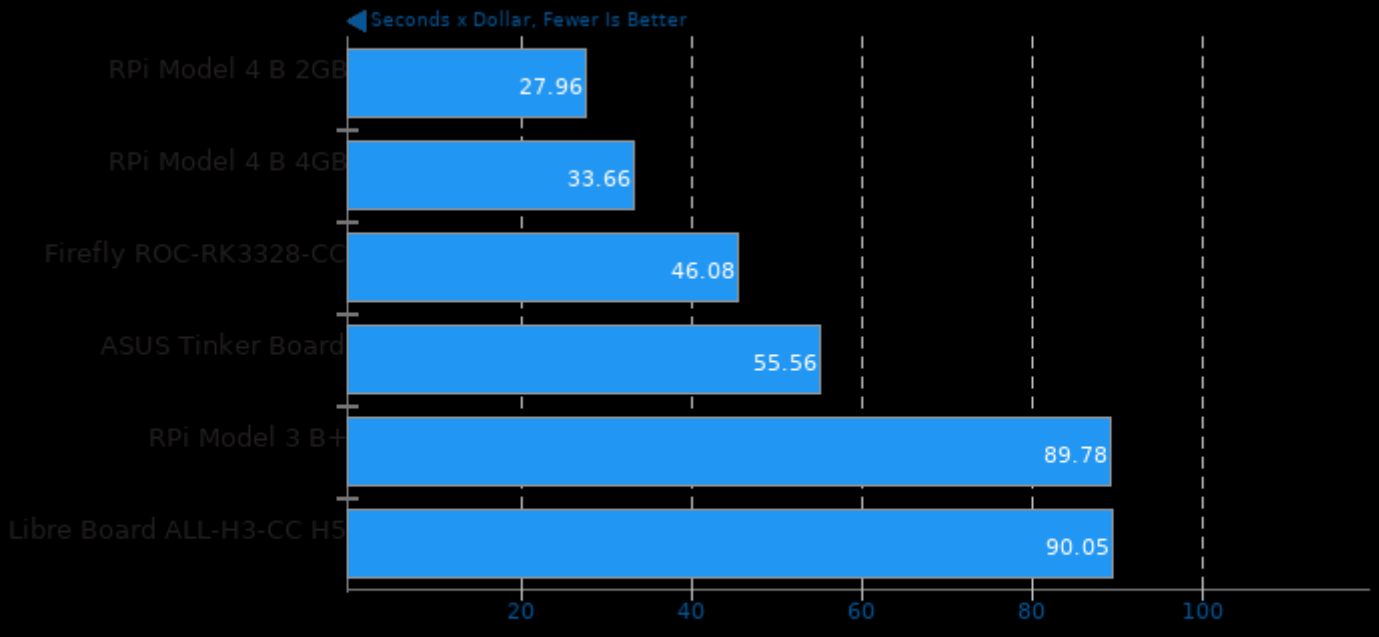
Operation: Resizing



1. (CC) gcc options: -fopenmp -O2 -pthread -lz -lm -lgomp -lpthread

Perl Benchmarks

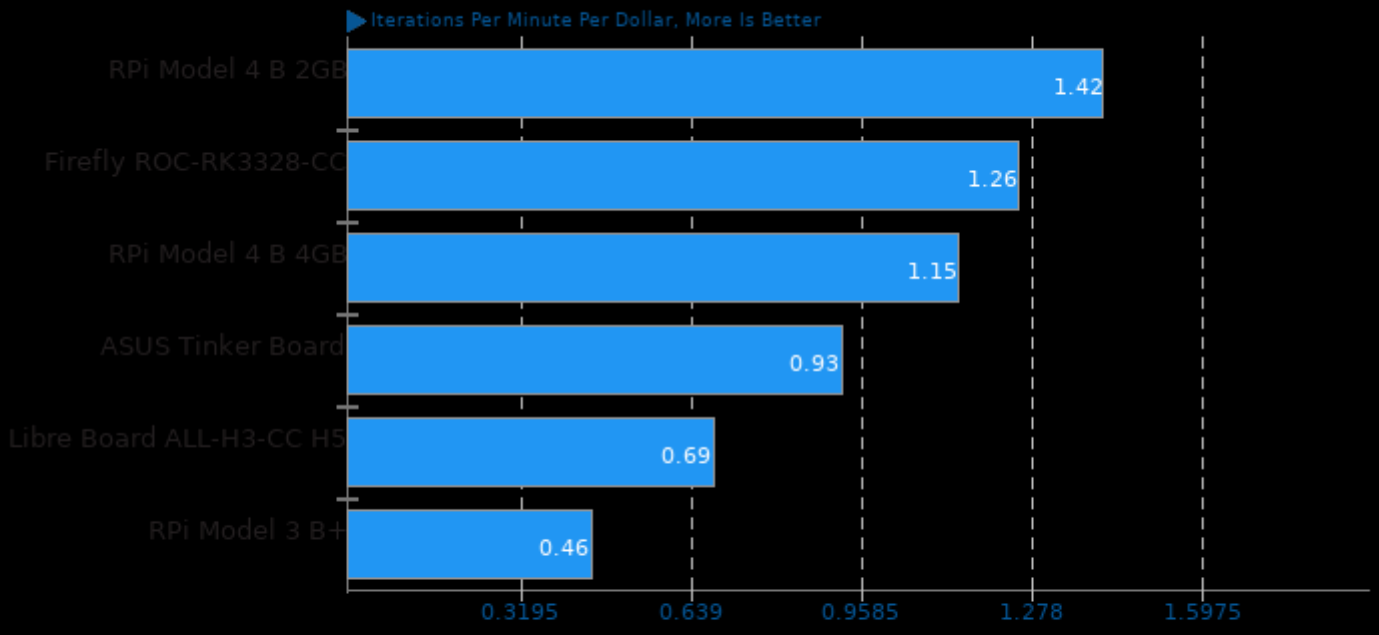
Performance / Cost - Test: Pod2html



1. RPi Model 4 B 2GB: $45 reported cost.
2. RPi Model 4 B 4GB: $55 reported cost.
3. Firefly ROC-RK3328-CC: $35 reported cost.
4. ASUS Tinker Board: $71 reported cost.
5. RPi Model 3 B+: $35 reported cost.
6. Libre Board ALL-H3-CC H5: $35 reported cost.

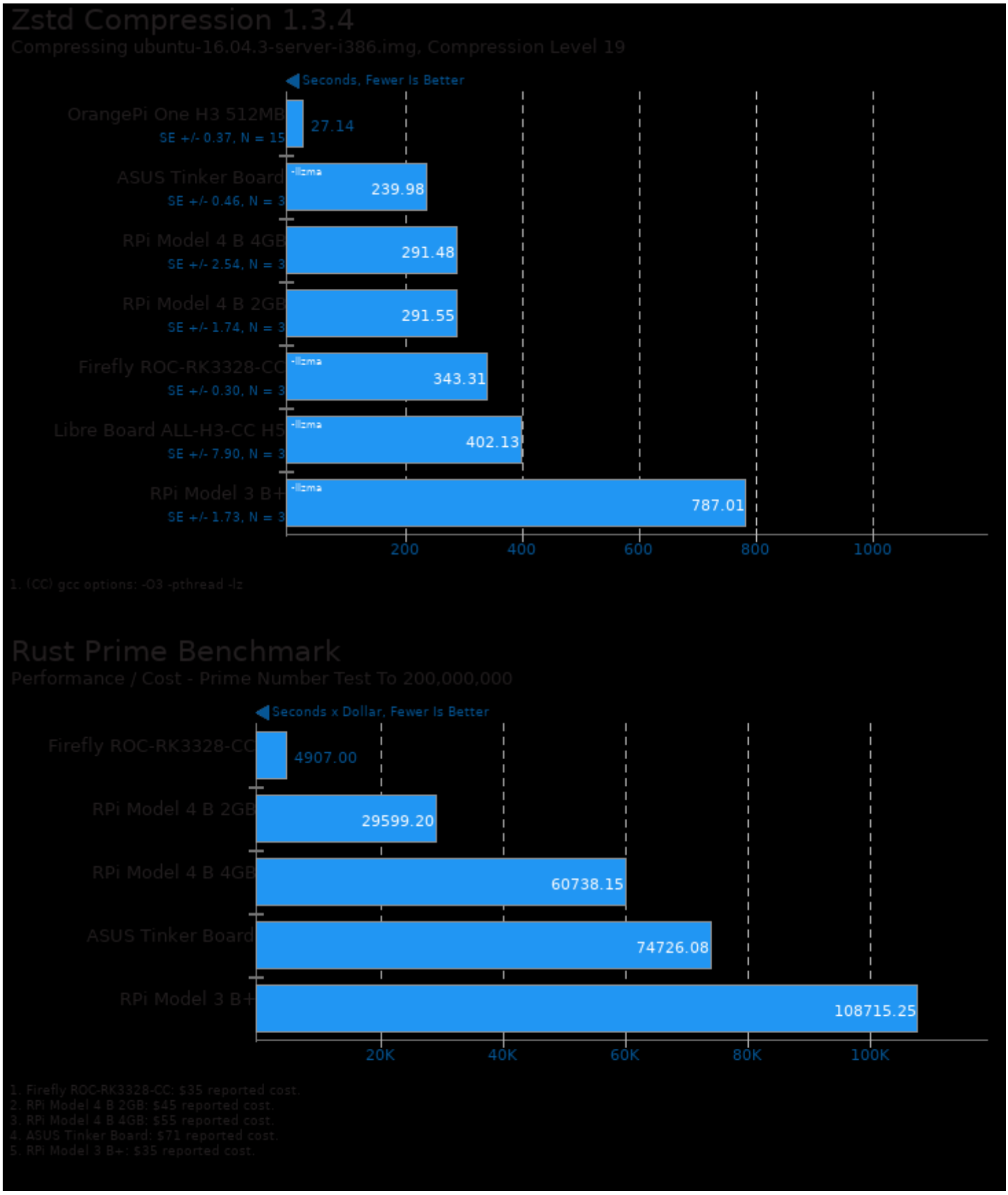
GraphicsMagick 1.3.30

Performance / Cost - Operation: Rotate

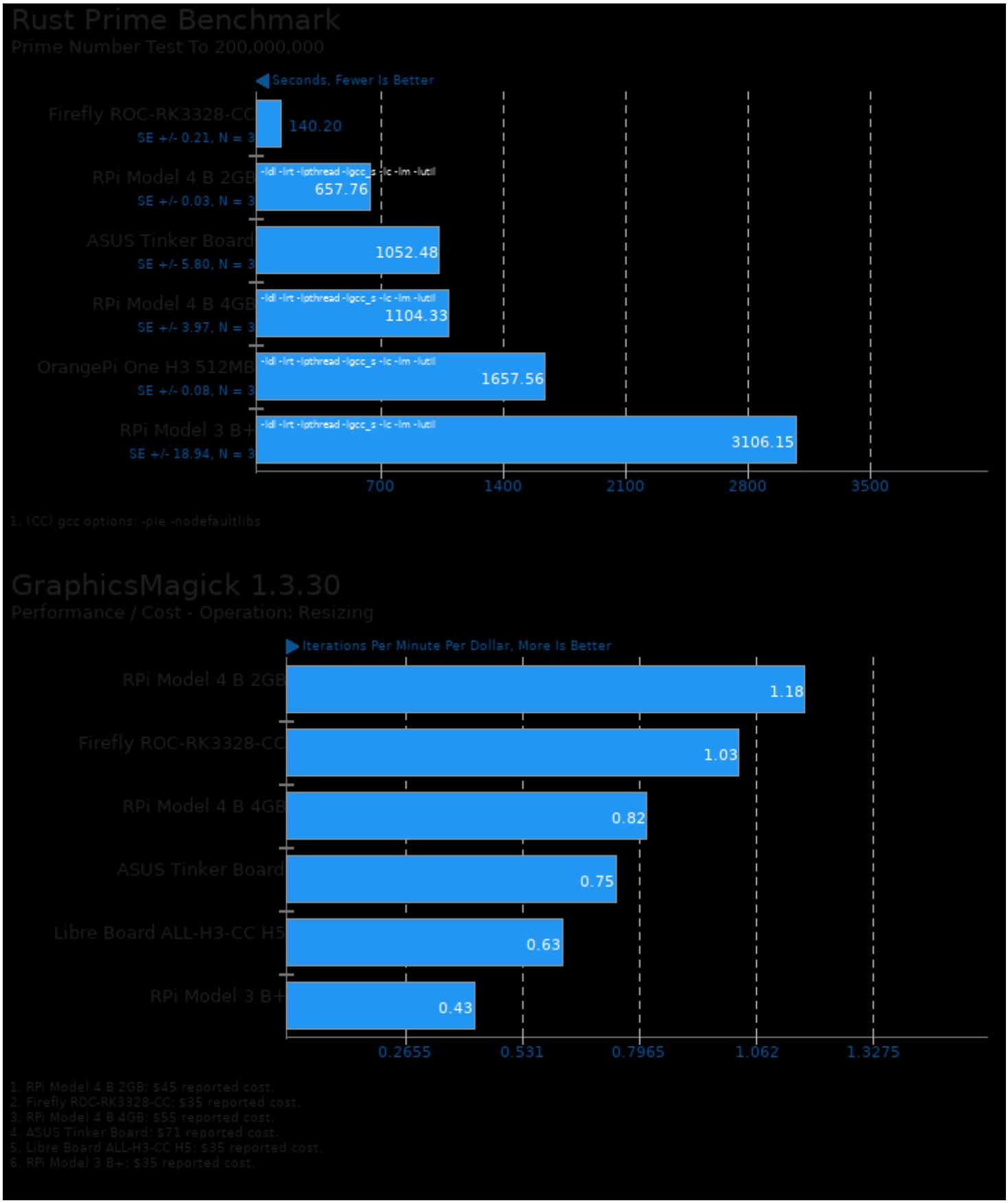


1. RPi Model 4 B 2GB: $45 reported cost.
2. Firefly ROC-RK3328-CC: $35 reported cost.
3. RPi Model 4 B 4GB: $55 reported cost.
4. ASUS Tinker Board: $71 reported cost.
5. Libre Board ALL-H3-CC H5: $35 reported cost.
6. RPi Model 3 B+: $35 reported cost.

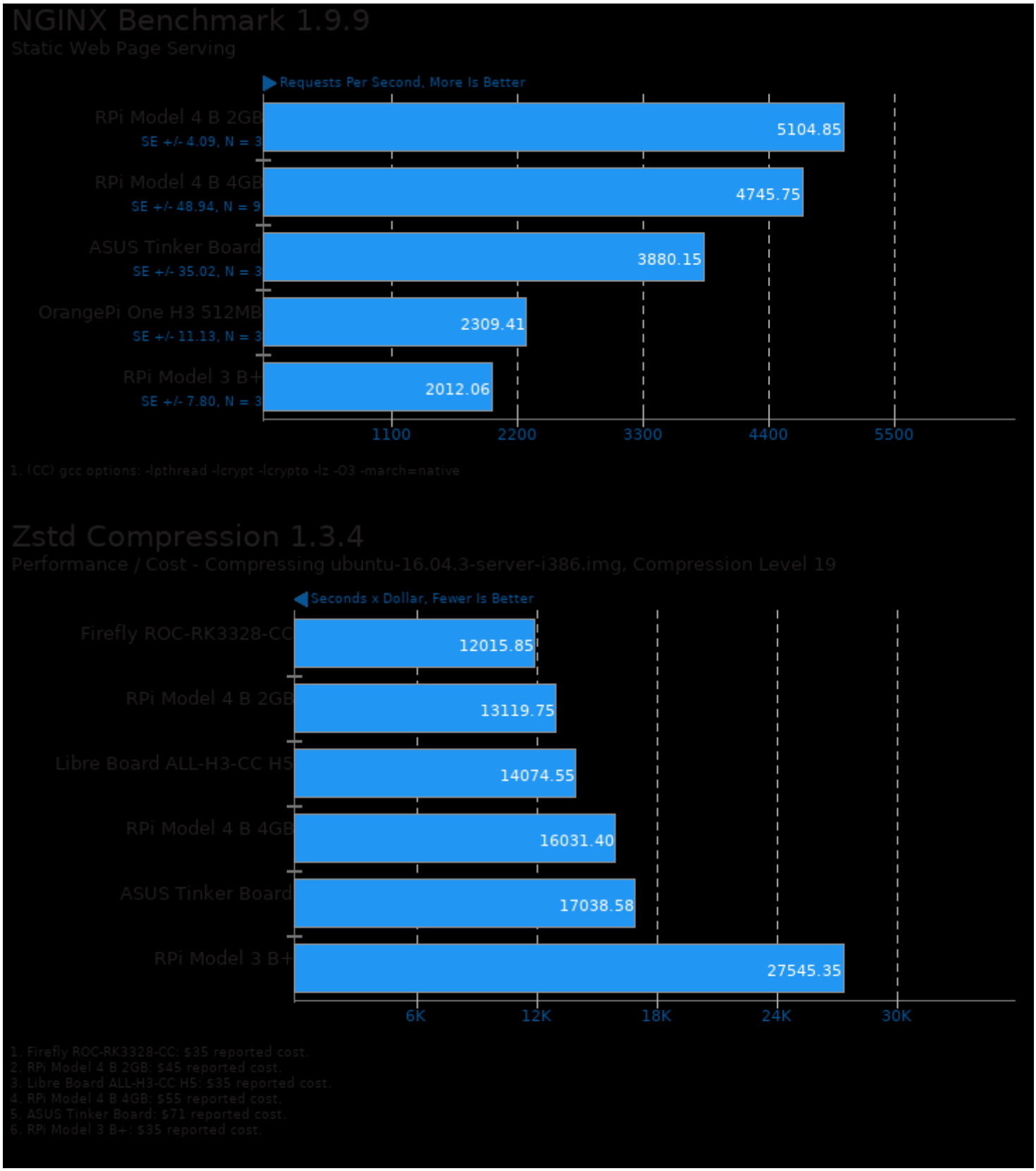
Raspberry Pi Model 4 Benchmarks



Raspberry Pi Model 4 Benchmarks



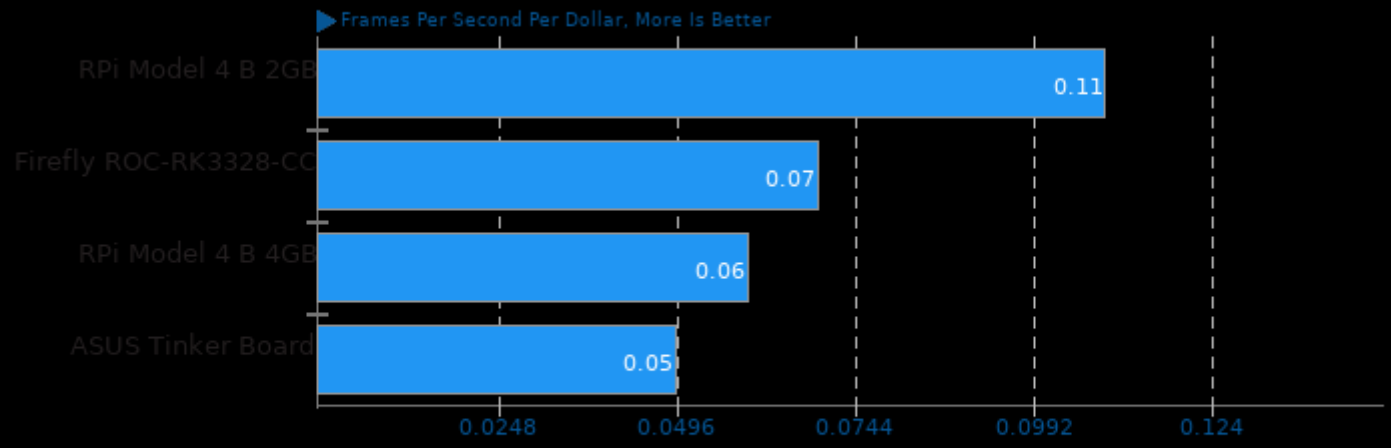
Raspberry Pi Model 4 Benchmarks



Raspberry Pi Model 4 Benchmarks

x264 2018-09-25

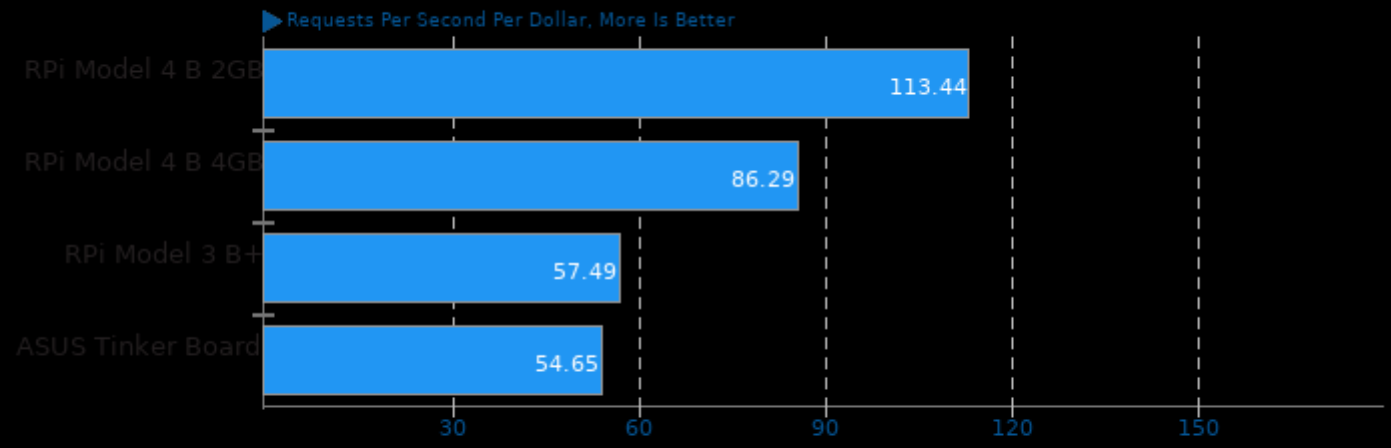
Performance / Cost - H.264 Video Encoding



1. RPi Model 4 B 2GB: $45 reported cost.
2. Firefly ROC-RK3328-CC: $35 reported cost.
3. RPi Model 4 B 4GB: $55 reported cost.
4. ASUS Tinker Board: $71 reported cost.

NGINX Benchmark 1.9.9

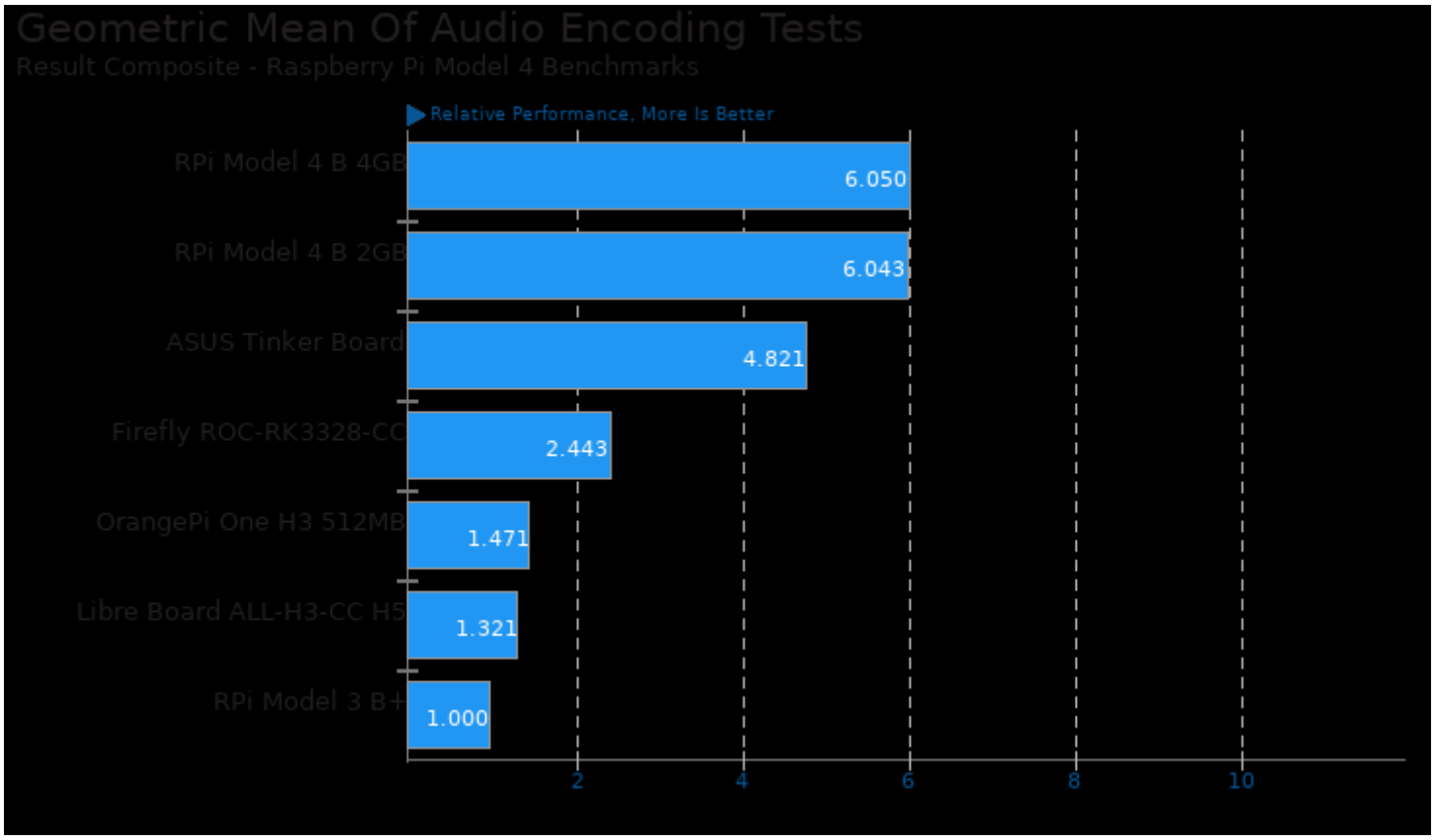
Performance / Cost - Static Web Page Serving



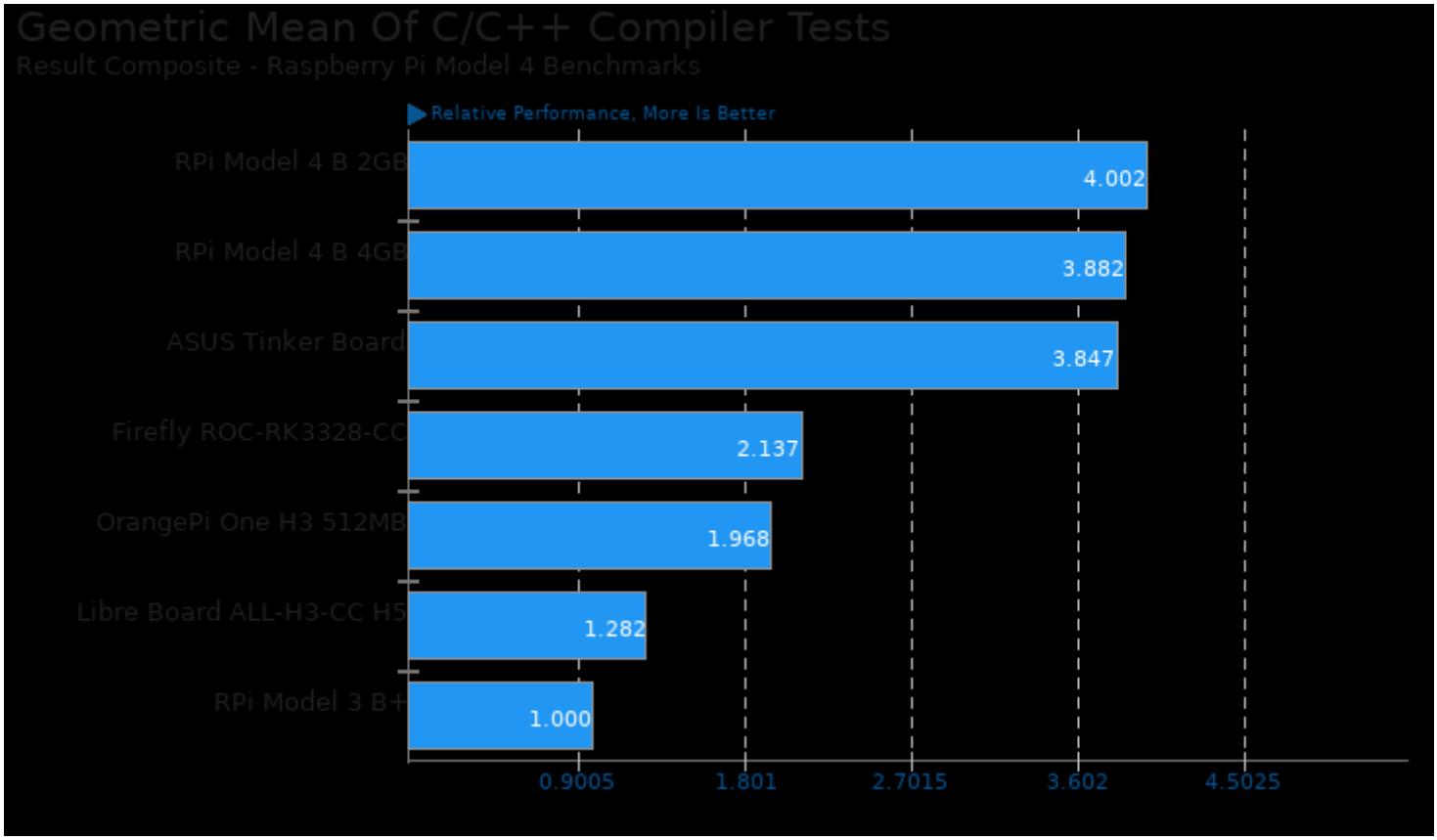
1. RPi Model 4 B 2GB: $45 reported cost.
2. RPi Model 4 B 4GB: $55 reported cost.
3. RPi Model 3 B+: $35 reported cost.
4. ASUS Tinker Board: $71 reported cost.

Raspberry Pi Model 4 Benchmarks

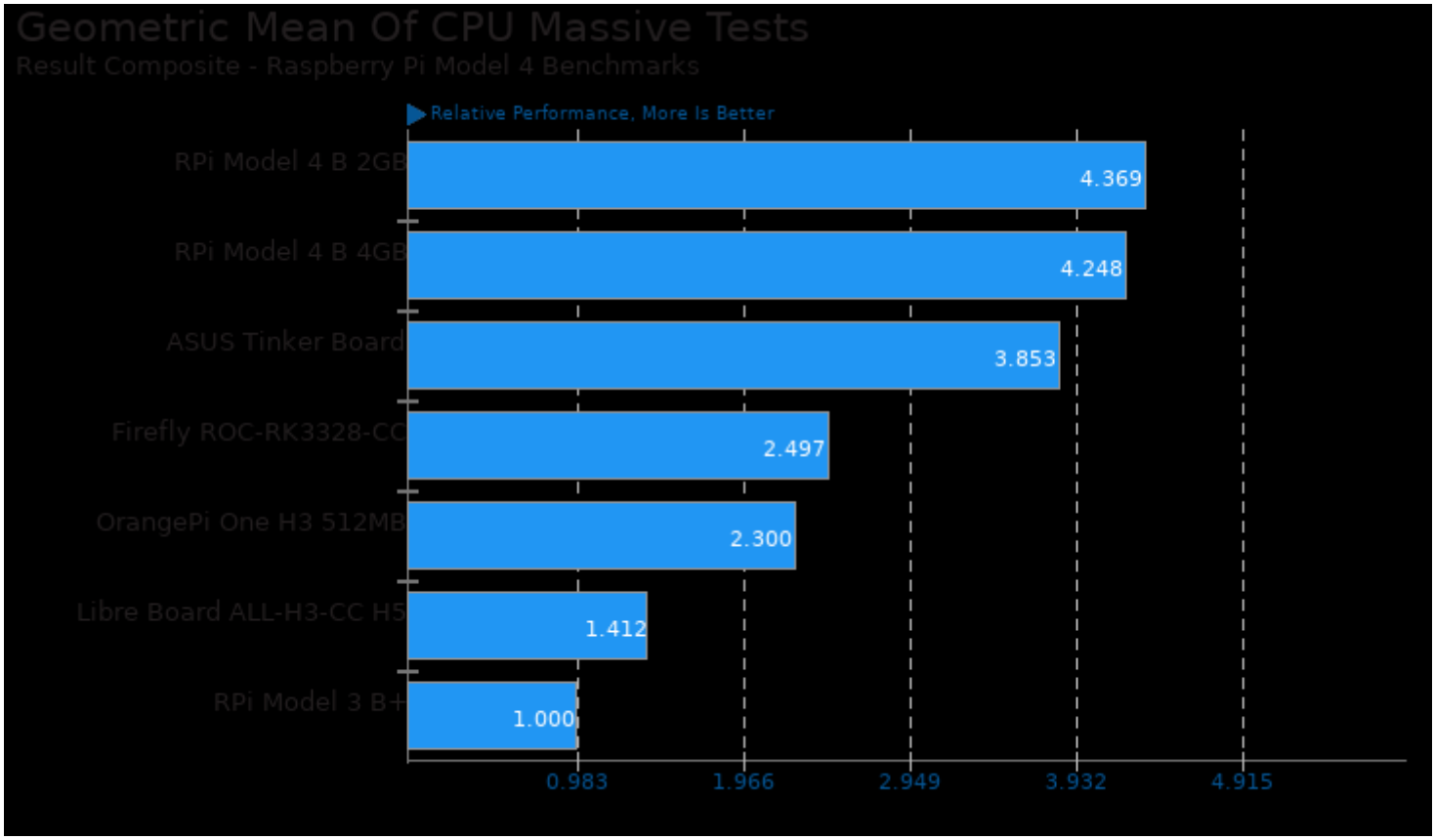
These geometric means are based upon test groupings / test suites for this result file.



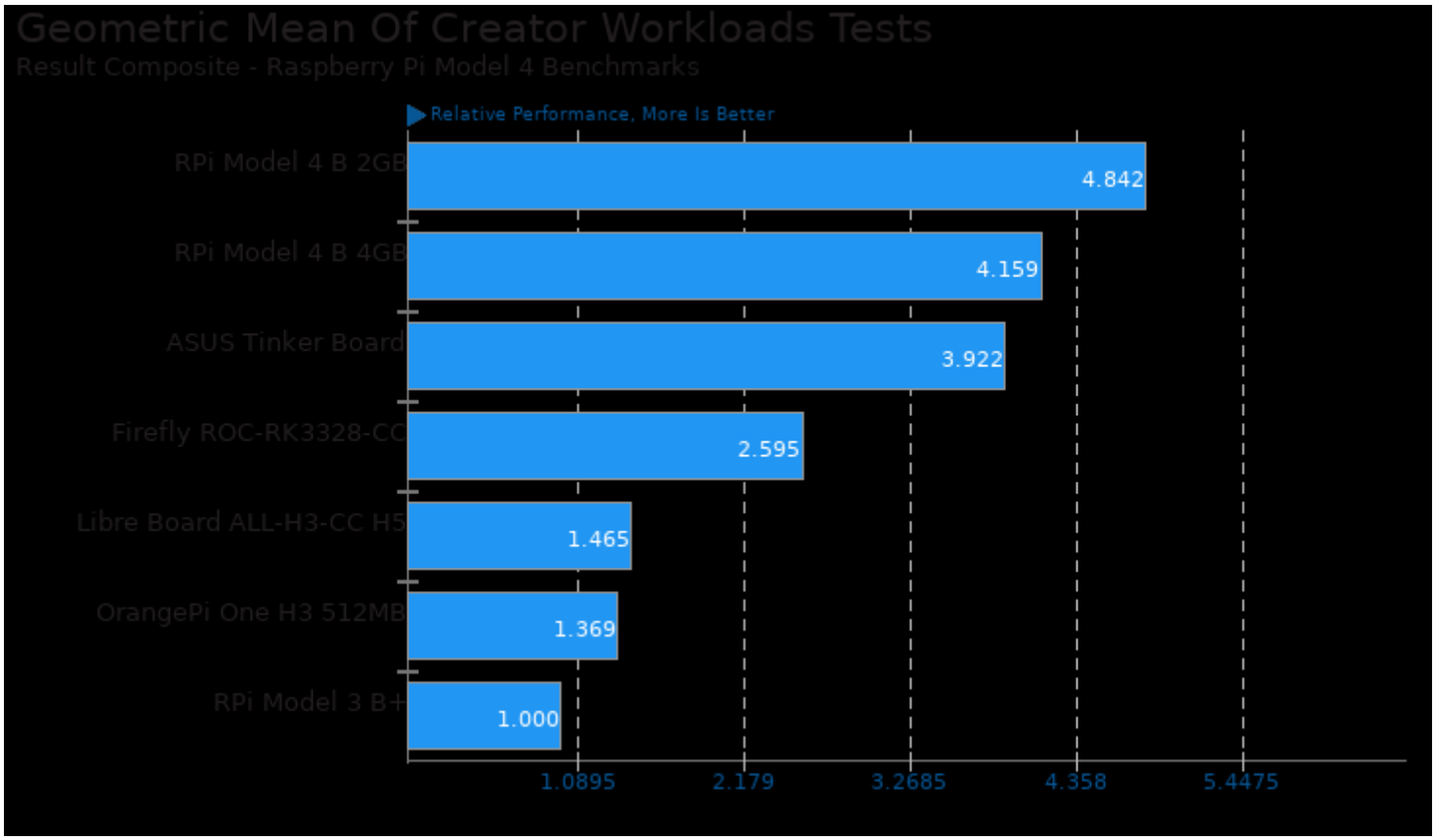
Geometric mean based upon tests: pts/encode-mp3 and pts/encode-flac



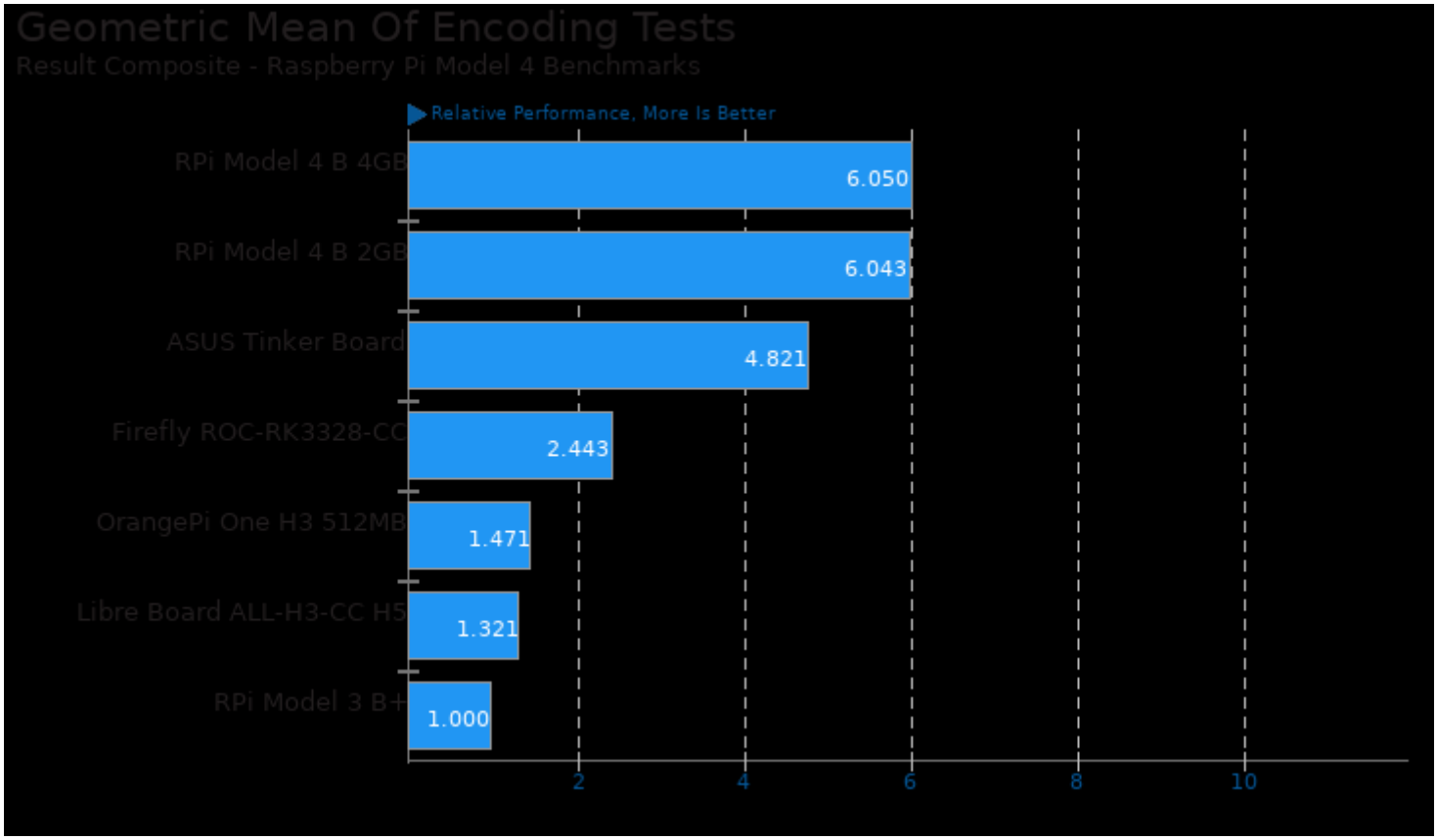
Geometric mean based upon tests: pts/scimark2, pts/graphics-magick, pts/encode-mp3, pts/encode-flac, pts/x264, pts/compress-zstd and pts/nginx



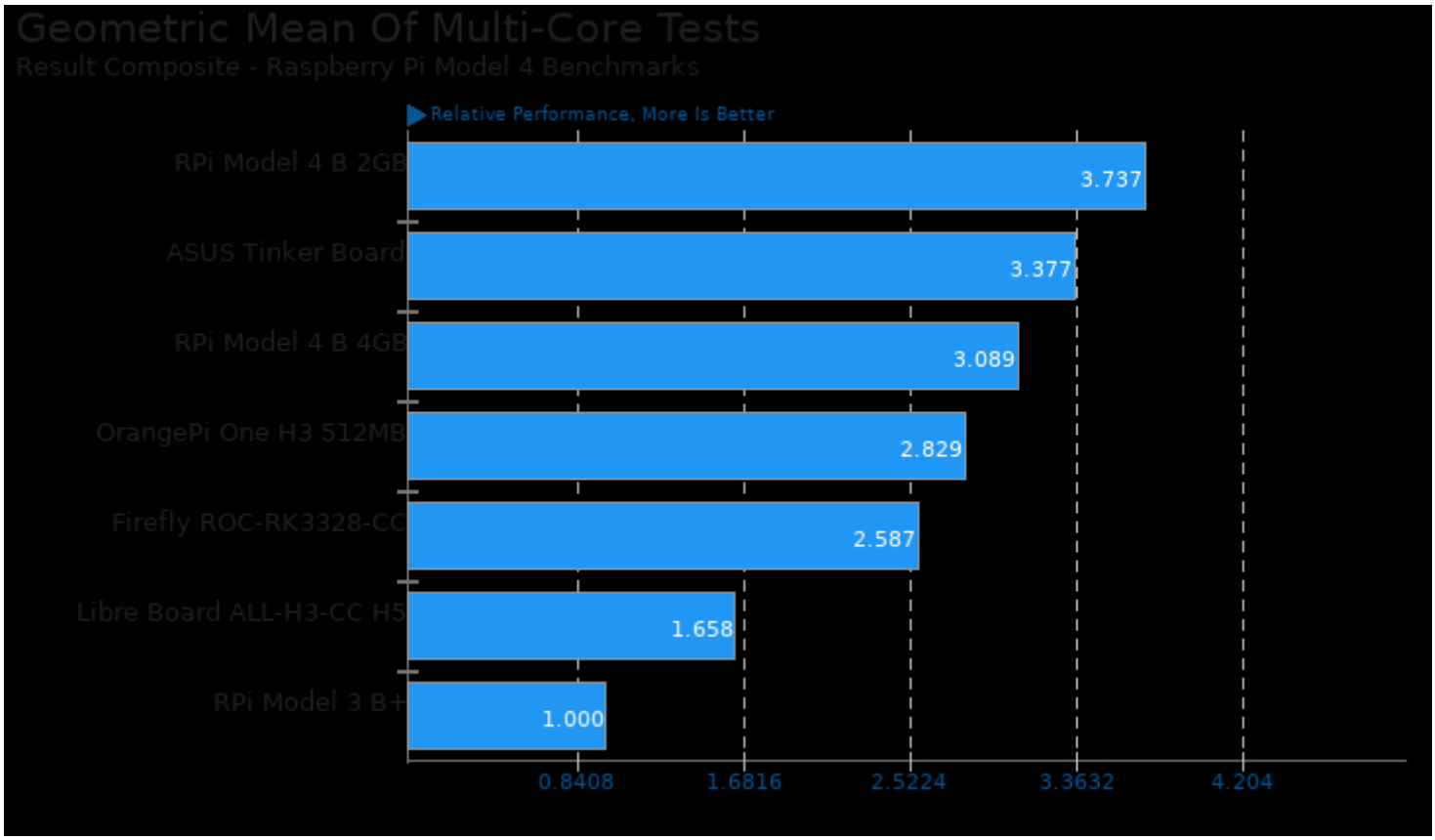
Geometric mean based upon tests: pts/compress-zstd, pts/x264, pts/encode-flac, pts/encode-mp3, pts/graphics-magick, pts/nginx, pts/phpbench and pts/rust-prime



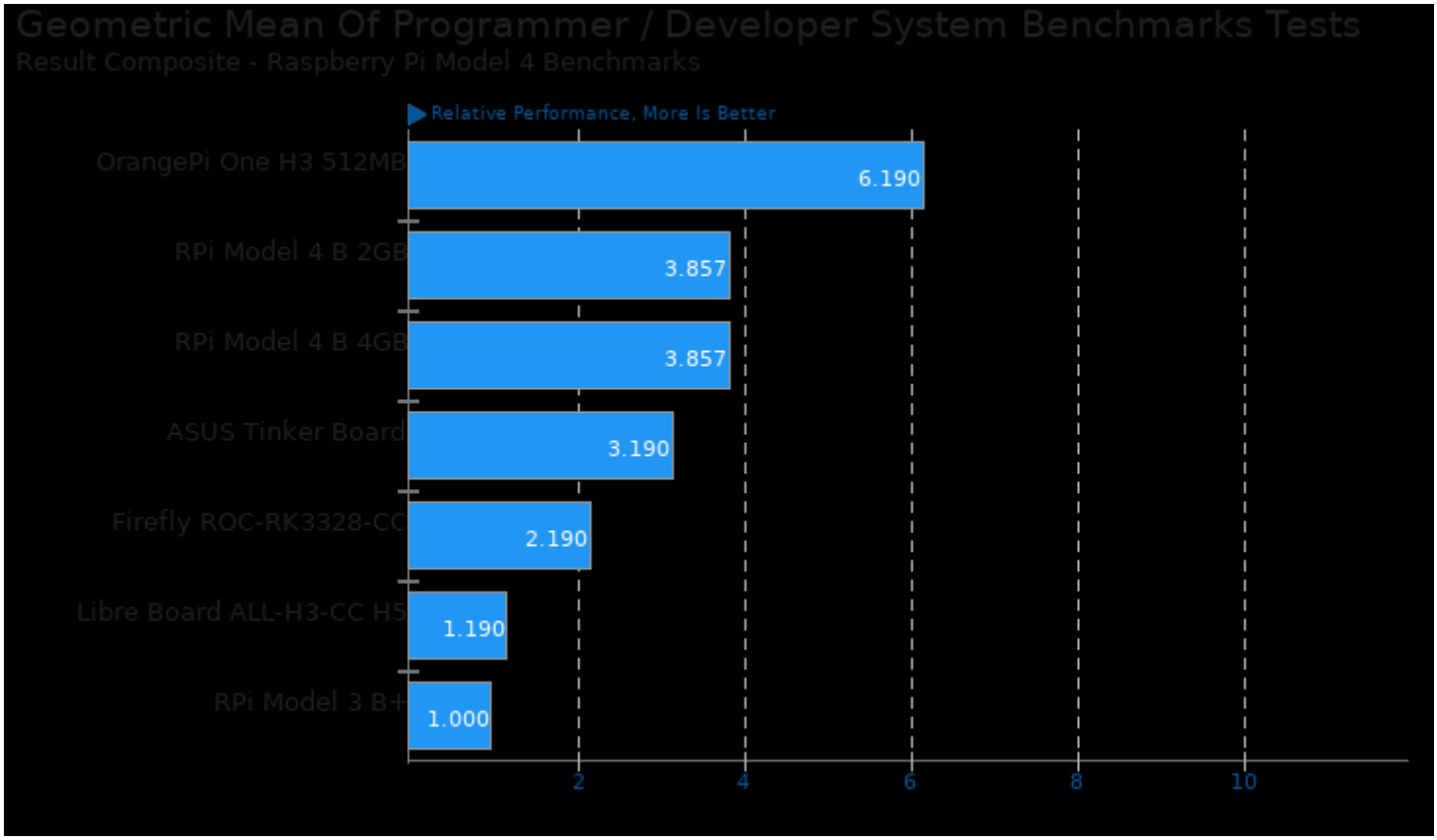
Geometric mean based upon tests: pts/smallpt, pts/x264, pts/encode-mp3, pts/encode-flac and pts/graphics-magick



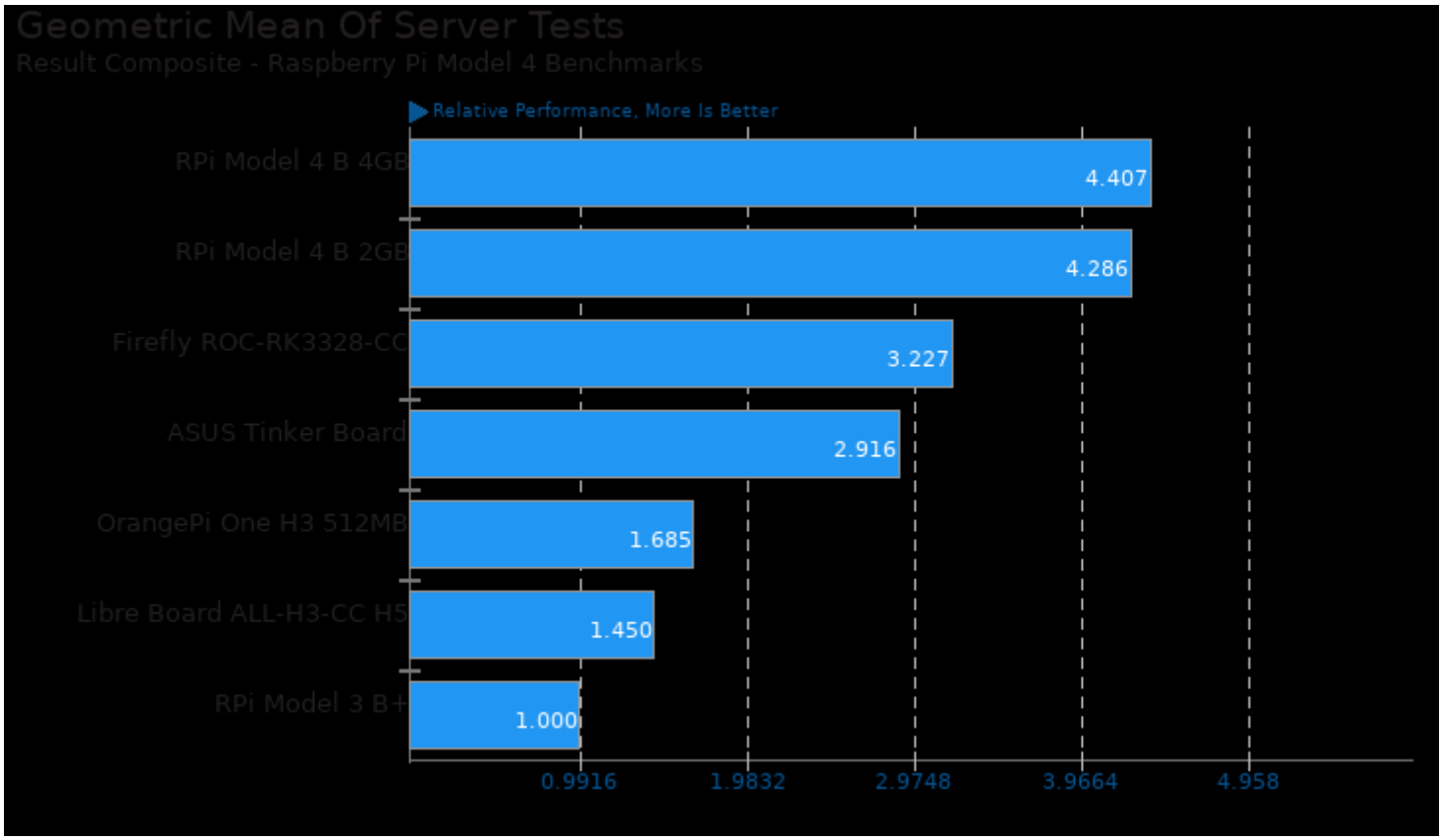
Geometric mean based upon tests: pts/encode-mp3, pts/encode-flac and pts/x264



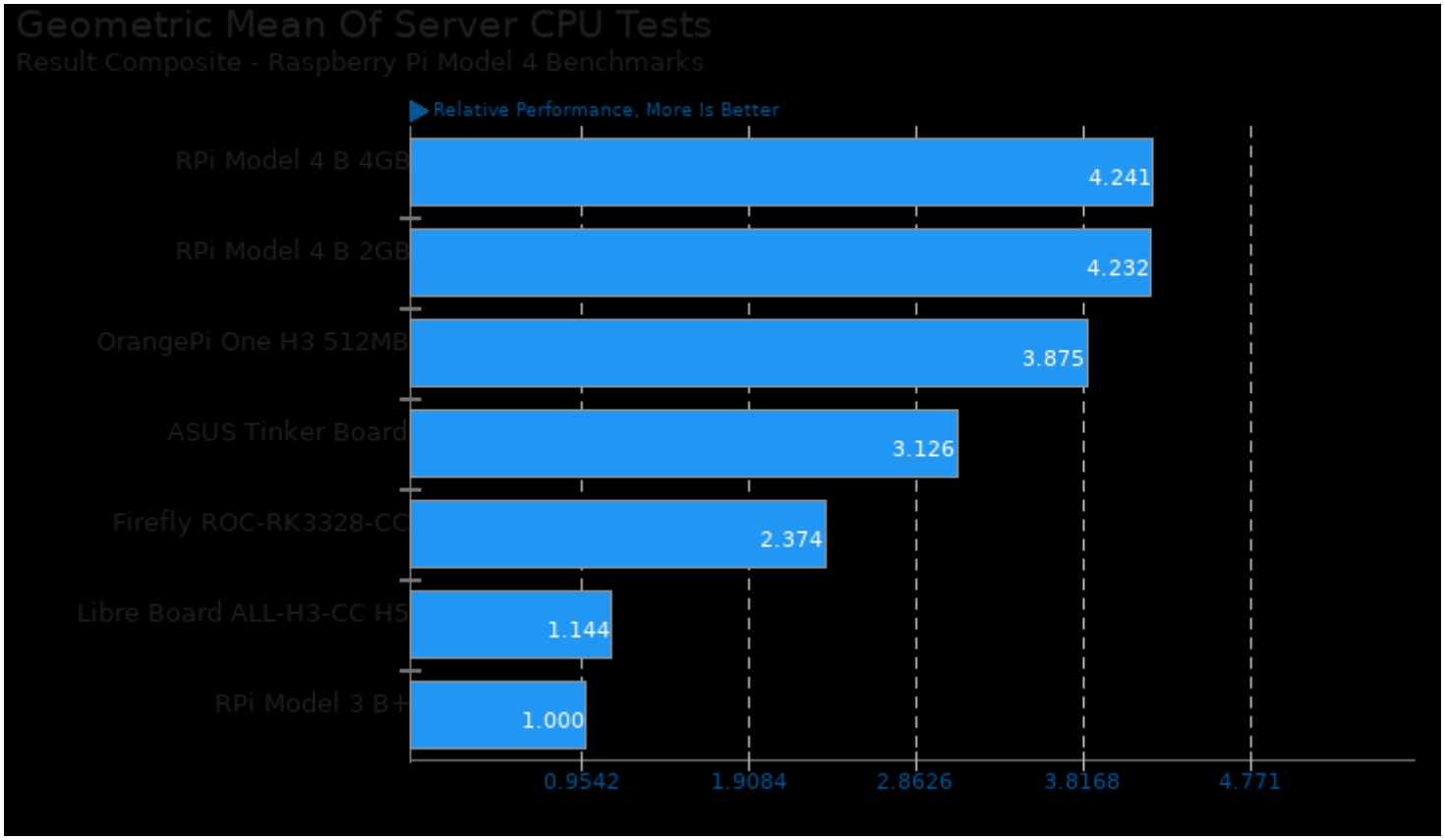
Geometric mean based upon tests: pts/x264, pts/smallpt, pts/graphics-magick, pts/compress-zstd and pts/rust-prime



Geometric mean based upon tests: pts/compress-zstd and pts/pybench

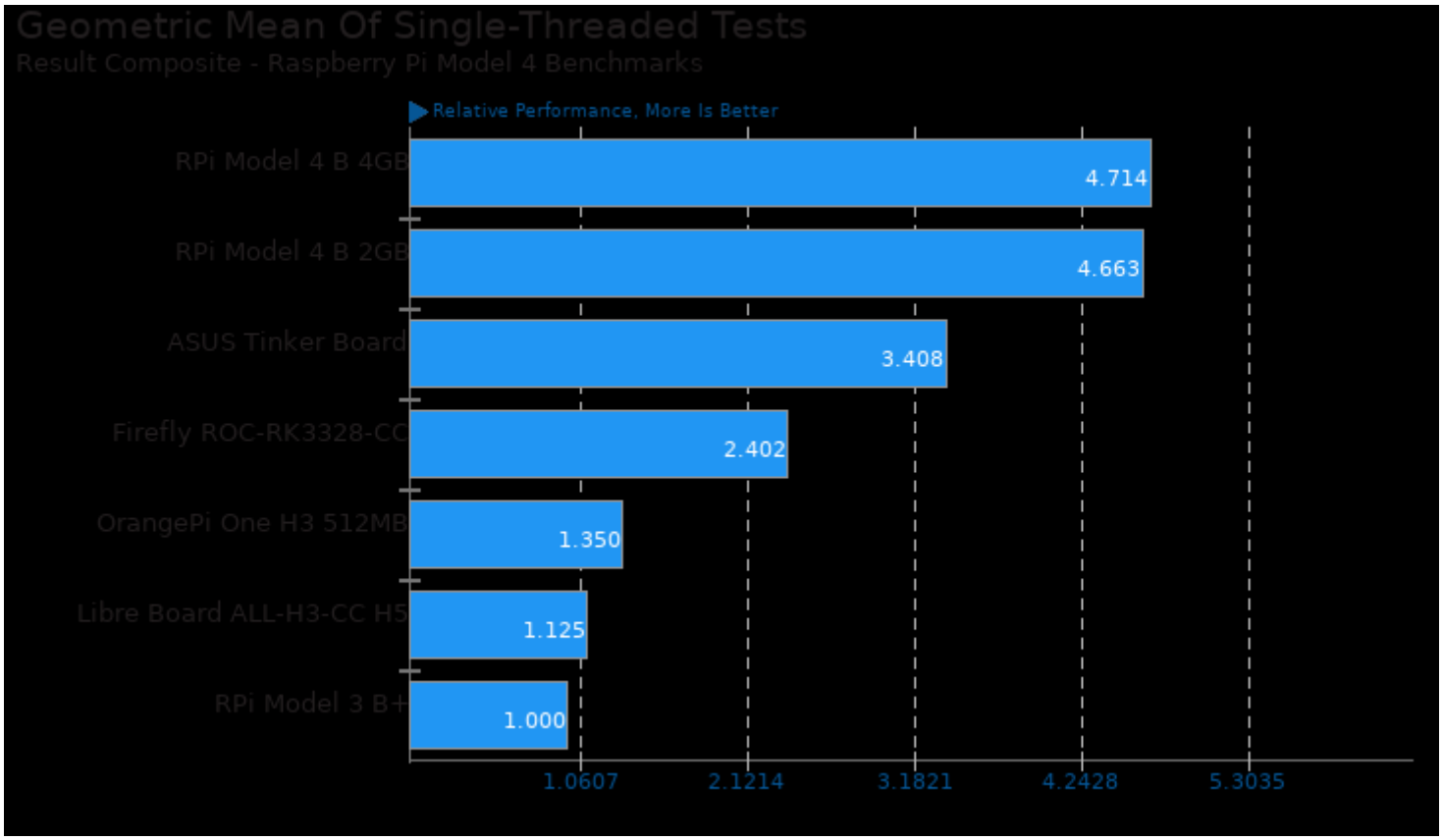


Geometric mean based upon tests: pts/nginx, pts/phpbench and pts/perl-benchmark



Geometric mean based upon tests: pts/x264, pts/compress-zstd, pts/pybench and pts/phpbench

Raspberry Pi Model 4 Benchmarks



Geometric mean based upon tests: pts/scimark2, pts/encode-flac, pts/encode-mp3, pts/perl-benchmark, pts/pybench, pts/phpbench and pts/nginx

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 16:54.