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R32_4_3_TX2_N310_Camera_IMX290_six_1

ARMv8 Cortex-A57 testing with a quill and NVIDIA Tegra X2 on Ubuntu 18.04 via the Phoronix Test Suite.

Test Systems:

eMMC

eMMC_W

USB3.0

USB3.0_W

Processor: ARMv8 Cortex-A57 @ 2.04GHz (4 Cores), Motherboard: quill, Memory: 8192MB, Disk: 16GB Storage Media + 31GB 032G34, Graphics: NVIDIA TEGRA, Monitor: Acer KG241Q

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 1.0.0, OpenGL: 4.6.0, Vulkan: 1.2.131, Compiler: GCC 7.5.0 + CUDA 10.2, File-System: ext4, Screen

Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --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
Disk Notes: CFQ / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

USB2.0

USB2.0_W

SD

SD_W

Processor: ARMv8 Cortex-A57 @ 2.04GHz (6 Cores), Motherboard: quill, Memory: 8192MB, Disk: 8GB FLASH DRIVE + 31GB 032G34, Graphics: NVIDIA Tegra X2, Monitor: Acer KG241Q

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.4.3, OpenGL: 4.6.0, Vulkan: 1.2.131, Compiler: GCC 7.5.0 + CUDA 10.2, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --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: tegra_cpufreq schedutil
Disk Mount Options Notes: data=ordered,relatime,rw

mSATA

mSATA_W

Processor: ARMv8 Cortex-A57 @ 2.04GHz (6 Cores), Motherboard: quill, Memory: 8192MB, Disk: 16GB InnoDisk + 31GB 032G34, Graphics: NVIDIA Tegra X2, Monitor: Acer KG241Q

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.4.3, OpenGL: 4.6.0, Vulkan: 1.2.131, Compiler: GCC 7.5.0 + CUDA 10.2, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --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
Disk Notes: CFQ / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

mPCIE

mPCIE_W

Memory

CPU

Processor: ARMv8 Cortex-A57 @ 2.04GHz (6 Cores), Motherboard: quill, Memory: 8192MB, Disk: 31GB Ultra USB 3.0 + 31GB 032G34, Graphics: NVIDIA Tegra X2, Monitor: Acer KG241Q

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.4.3, OpenGL: 4.6.0, Vulkan: 1.2.131, Compiler: GCC 7.5.0 + CUDA 10.2, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --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: tegra_cpufreq schedutil

RS232

UART

GPU

Processor: ARMv8 Cortex-A57 @ 2.04GHz (6 Cores), Motherboard: quill, Memory: 8192MB, Disk: 31GB 032G34, Graphics: NVIDIA Tegra X2, Monitor: Acer KG241Q

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.4.3, OpenGL: 4.6.0, Vulkan: 1.2.131, Compiler: GCC 7.5.0 + CUDA 10.2, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: tegra_cpufreq schedutil
Python Notes: Python 2.7.17 + Python 3.6.9

Lan

Processor: ARMv8 Cortex-A57 @ 2.04GHz (6 Cores), Motherboard: quill, Memory: 8192MB, Disk: 31GB 032G34, Graphics: NVIDIA Tegra X2, Monitor: ASUS VN248

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.4.3, OpenGL: 4.6.0, Vulkan: 1.2.131, Compiler: GCC 7.5.0 + CUDA 10.2, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --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: tegra_cpufreq schedutil

	eMMC	eMMC_W	USB 3.0	USB 3.0_W	USB 2.0	USB 2.0_W	SD	SD_W	mSATA	mSATA_W	mPCIE	mPCIE_W	Memory	CPU	RS232	UART	GPU	Lan

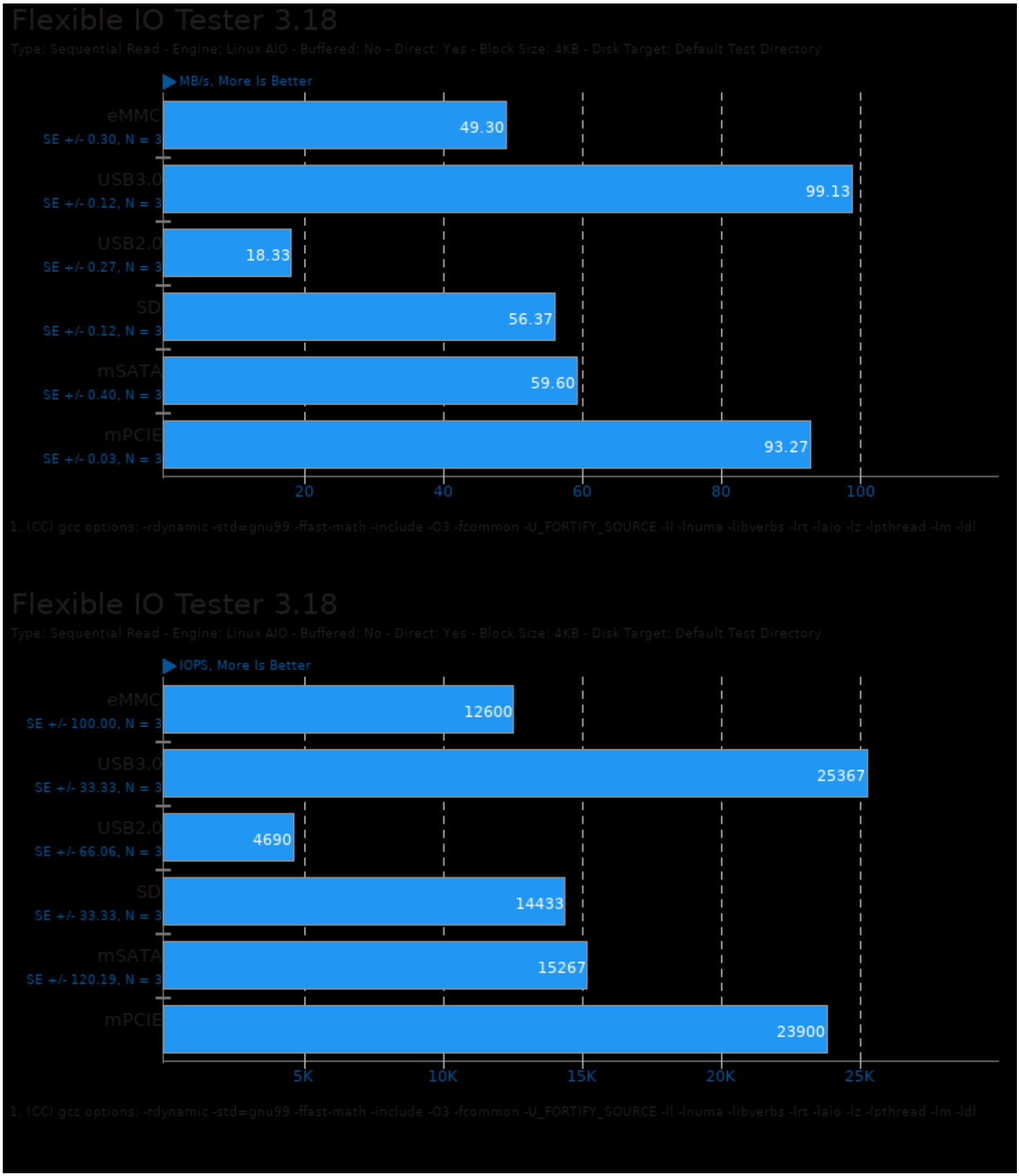
R32_4_3_TX2_N310_Camera_IMX290_six_1

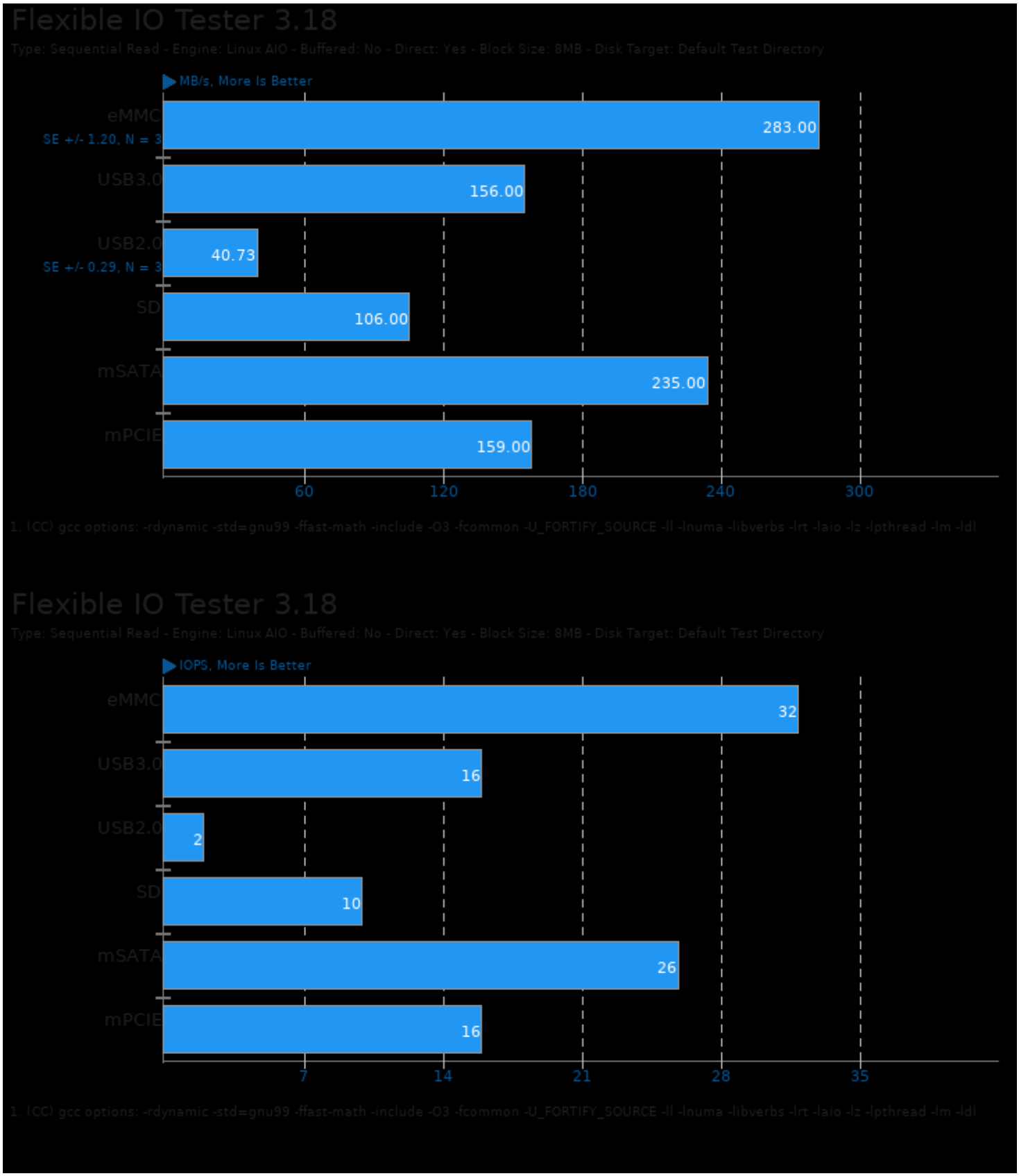
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 4KB (MB/s)	49.30	**99.13**	**18.33**	56.37	59.60	93.27
Normalized	49.73%	100%	18.49%	56.86%	60.12%	94.09%
Standard Deviation	1.1%	0.2%	2.5%	0.4%	1.2%	0.1%
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 4KB (IOPS)	1260	**2536**	**4690**	1443	1526	2390
	0	**7**		3	7	0
Normalized	49.67%	100%	18.49%	56.9%	60.18%	94.22%
Standard Deviation	1.4%	0.2%	2.4%	0.4%	1.4%	
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 8MB (MB/s)	**283**	156	**40.73**	106	235	159
Normalized	100%	55.12%	14.39%	37.46%	83.04%	56.18%
Standard Deviation	0.7%		1.2%			
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 8MB (IOPS)	**32**	16	**2**	10	26	16
Normalized	100%	50%	6.25%	31.25%	81.25%	50%
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 4KB (MB/s)	**41.10**	38.85	**6.12**	13.57	20.93	38.17
Normalized	100%	94.53%	14.89%	33.02%	50.92%	92.87%
Standard Deviation	2.1%	8.9%	10.9%	0.4%	0.3%	9.4%

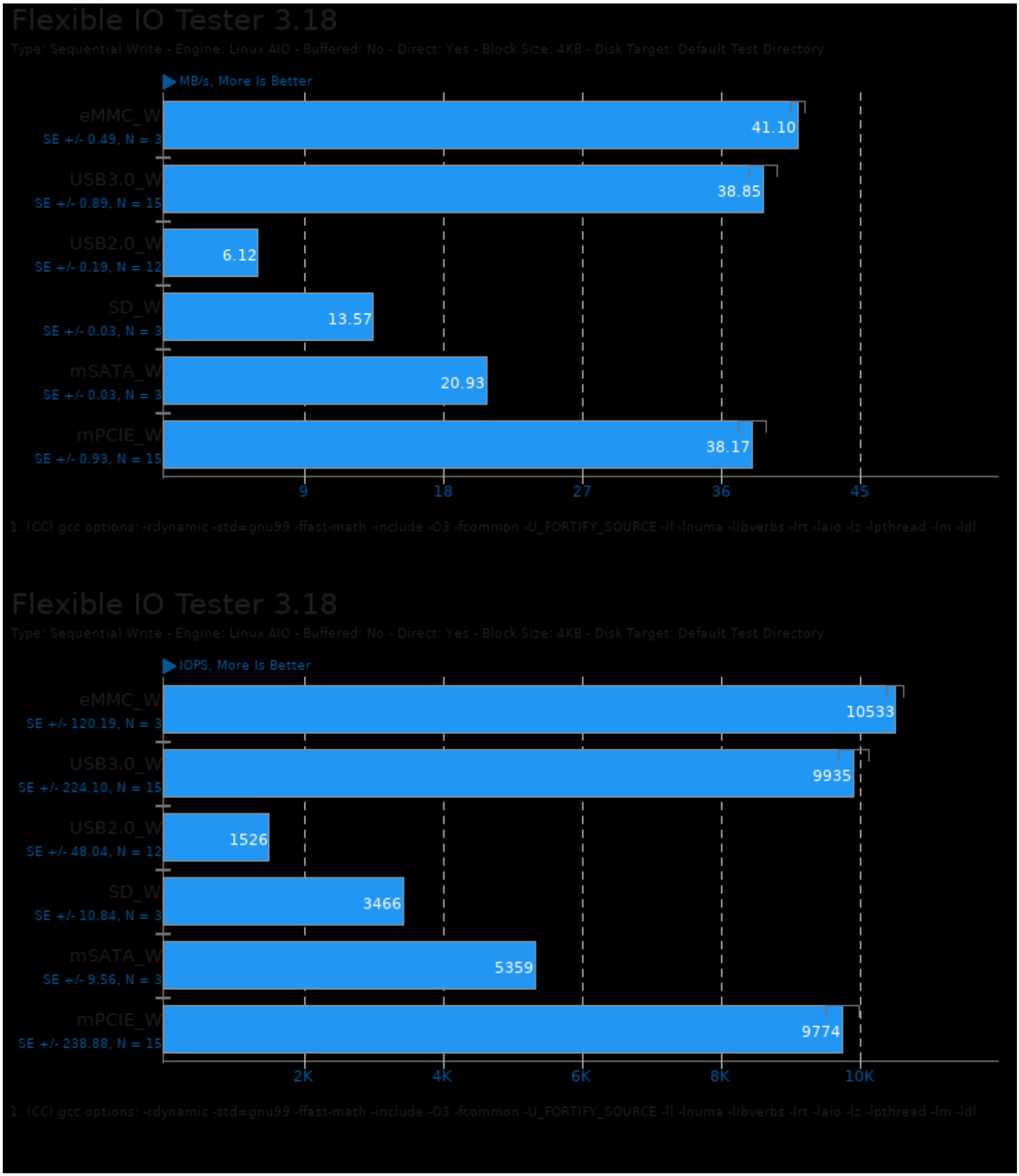
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 4KB (IOPS)	**10533**	9935	**1526**	3466	5359	9774	
Normalized	100%	94.32%	14.49%	32.91%	50.88%	92.79%	
Standard Deviation	2%	8.7%	10.9%	0.5%	0.3%	9.5%	
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 8MB (MB/s)	**150**	66.89	**27.37**	56.53	40.03	78.47	
Normalized	100%	44.59%	18.25%	37.69%	26.69%	52.31%	
Standard Deviation		38.3%	0.4%	1%	0.3%	22.8%	
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 8MB (IOPS)	**15**	6		4	**2**	7	
Normalized	100%	40%		26.67%	13.33%	46.67%	
Standard Deviation		33.2%				8.4%	
Stream - Copy							2492.0
Standard Deviation							3%
Stream - Scale (MB/s)							2405.7
Standard Deviation							2.8%
Stream - Triad							2415.8
Standard Deviation							0.9%
Stream - Add (MB/s)							2147.7
Standard Deviation							1.3%

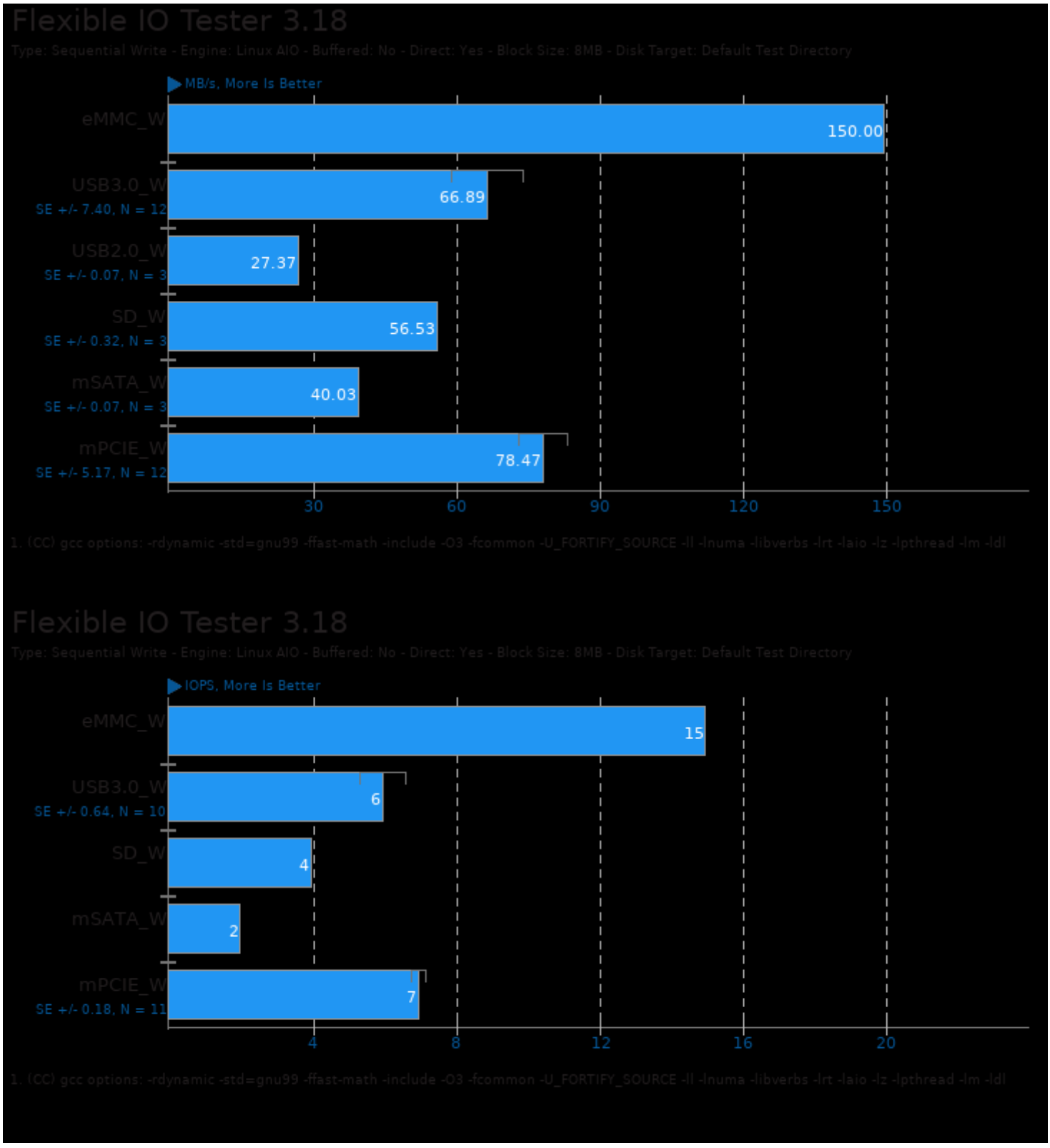
Stress-NG - Crypto (Bogo Ops/s)	610.12
Standard Deviation	0.5%
Stress-NG - Forking (Bogo Ops/s)	1749
Standard Deviation	2.8%
Stress-NG - CPU Stress (Bogo Ops/s)	348.16
Standard Deviation	0.9%
Stress-NG - Matrix Math (Bogo Ops/s)	3261
Standard Deviation	6.8%
Stress-NG - Vector Math (Bogo Ops/s)	2025.8
Standard Deviation	0.1%
Stress-NG - Memory Copying (Bogo Ops/s)	909.03
Standard Deviation	0.5%
Stress-NG - G.C.S.F (Bogo Ops/s)	1367.01
Standard Deviation	0.6%
Stress-NG - G.Q.D.S (Bogo Ops/s)	24.82
Standard Deviation	3%

GLmark2 - 800 x 600 (Score)	2143	
GLmark2 - 1024 x 768 (Score)	2025	
GLmark2 - 1280 x 1024 (Score)	1790	
GLmark2 - 1920 x 1080 (Score)	1474	
iPerf - 192.168.1.2 - 5201 - 10 Seconds - UDP - 100Mbit Objective - 1 (Mbits/s)		100
iPerf - 192.168.1.2 - 5201 - 10 Seconds - UDP - 1000Mbit Objective - 1 (Mbits/s)		286
Standard Deviation		3.2%

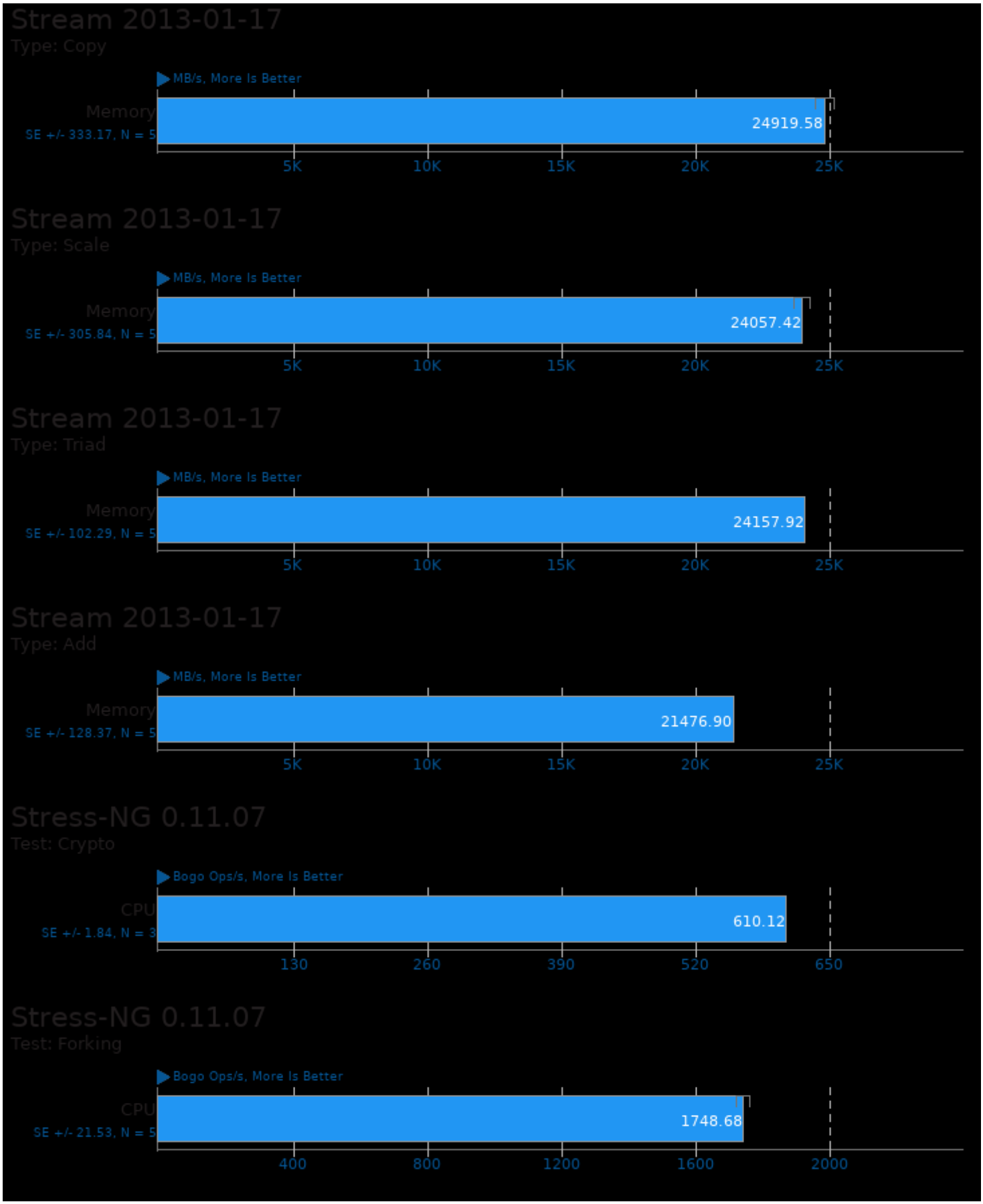

Flexible IO Tester 3.18
Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
eMMC
SE +/- 0.30, N = 3
49.30
USB3.0
SE +/- 0.12, N = 3
99.13
USB2.0
SE +/- 0.27, N = 3
18.33
SD
SE +/- 0.12, N = 3
56.37
mSATA
SE +/- 0.40, N = 3
59.60
mPCIE
SE +/- 0.03, N = 3
93.27
20
40
60
80
100
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lpthread -lm -ldl
Flexible IO Tester 3.18
Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
eMMC
SE +/- 100.00, N = 3
12600
USB3.0
SE +/- 33.33, N = 3
25367
USB2.0
SE +/- 66.06, N = 3
4690
SD
SE +/- 33.33, N = 3
14433
mSATA
SE +/- 120.19, N = 3
15267
mPCIE
23900
5K
10K
15K
20K
25K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lpthread -lm -ldl

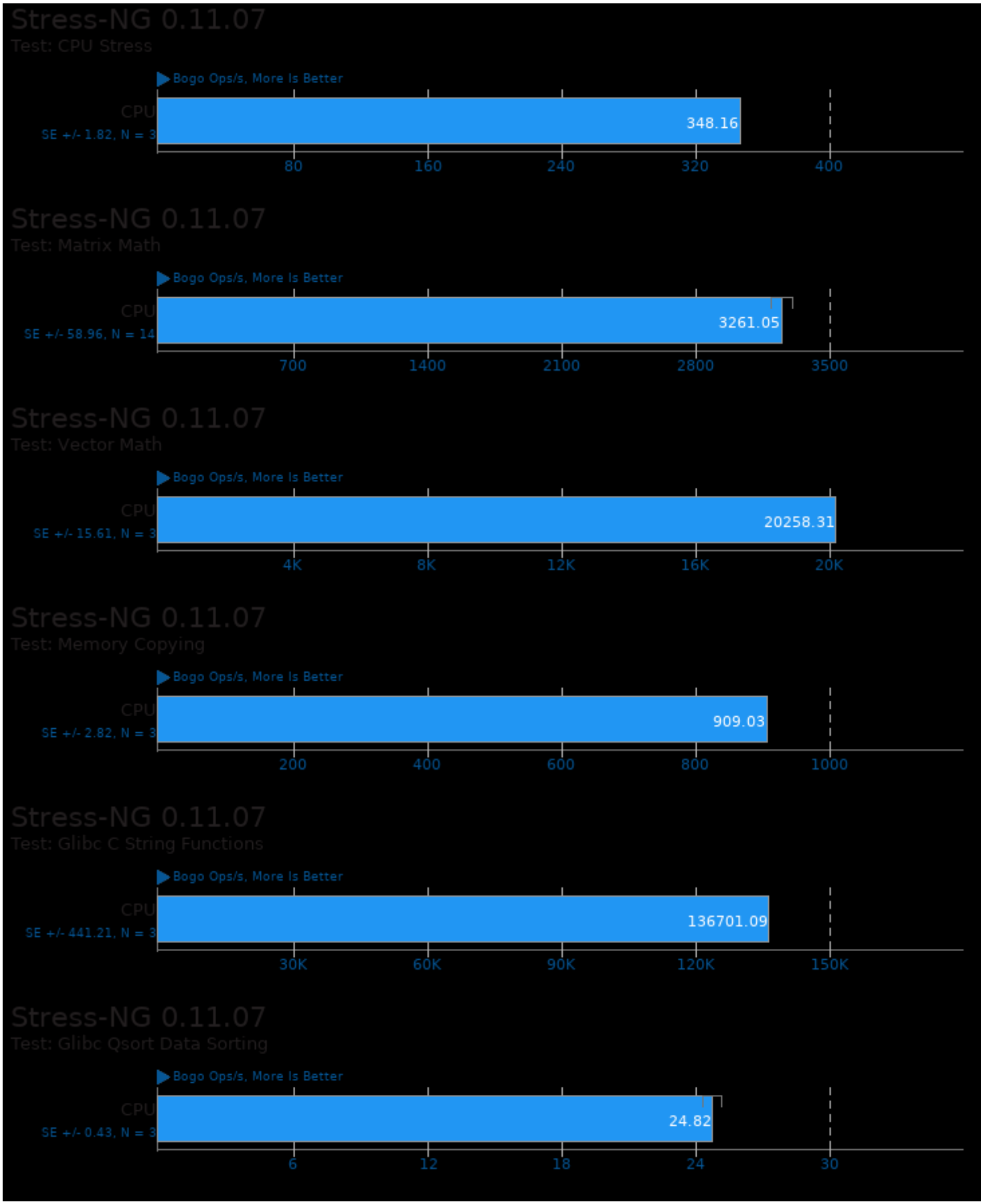

Flexible IO Tester 3.18
Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
eMMC
SE +/- 1.20, N = 3
283.00
USB3.0
156.00
USB2.0
SE +/- 0.29, N = 3
40.73
SD
106.00
mSATA
235.00
mPCIE
159.00
60
120
180
240
300
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lpthread -lm -ldl
Flexible IO Tester 3.18
Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
IOPS, More Is Better
eMMC
32
USB3.0
16
USB2.0
2
SD
10
mSATA
26
mPCIE
16
7
14
21
28
35
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lpthread -lm -ldl


Flexible IO Tester 3.18
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
eMMC_W
SE +/- 0.49, N = 3
41.10
USB3.0_W
SE +/- 0.89, N = 15
38.85
USB2.0_W
SE +/- 0.19, N = 12
6.12
SD_W
SE +/- 0.03, N = 3
13.57
mSATA_W
SE +/- 0.03, N = 3
20.93
mPCIE_W
SE +/- 0.93, N = 15
38.17
9
18
27
36
45
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lpthread -lm -ldl
Flexible IO Tester 3.18
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
eMMC_W
SE +/- 120.19, N = 3
10533
USB3.0_W
SE +/- 224.10, N = 15
9935
USB2.0_W
SE +/- 48.04, N = 12
1526
SD_W
SE +/- 10.84, N = 3
3466
mSATA_W
SE +/- 9.56, N = 3
5359
mPCIE_W
SE +/- 238.88, N = 15
9774
2K
4K
6K
8K
10K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lpthread -lm -ldl


Flexible IO Tester 3.18
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
eMMC_W
150.00
USB3.0_W
SE +/- 7.40, N = 12
66.89
USB2.0_W
SE +/- 0.07, N = 3
27.37
SD_W
SE +/- 0.32, N = 3
56.53
mSATA_W
SE +/- 0.07, N = 3
40.03
mPCIE_W
SE +/- 5.17, N = 12
78.47
30
60
90
120
150
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lpthread -lm -ldl
Flexible IO Tester 3.18
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
IOPS, More Is Better
eMMC_W
15
USB3.0_W
SE +/- 0.64, N = 10
6
SD_W
4
mSATA_W
2
mPCIE_W
SE +/- 0.18, N = 11
7
4
8
12
16
20
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lpthread -lm -ldl

R32_4_3_TX2_N310_Camera_IMX290_six_1




Stress-NG 0.11.07
Test: CPU Stress
Bogo Ops/s, More Is Better
CPU
SE +/- 1.82, N = 3
348.16
80
160
240
320
400
Stress-NG 0.11.07
Test: Matrix Math
Bogo Ops/s, More Is Better
CPU
SE +/- 58.96, N = 14
3261.05
700
1400
2100
2800
3500
Stress-NG 0.11.07
Test: Vector Math
Bogo Ops/s, More Is Better
CPU
SE +/- 15.61, N = 3
20258.31
4K
8K
12K
16K
20K
Stress-NG 0.11.07
Test: Memory Copying
Bogo Ops/s, More Is Better
CPU
SE +/- 2.82, N = 3
909.03
200
400
600
800
1000
Stress-NG 0.11.07
Test: Glibc C String Functions
Bogo Ops/s, More Is Better
CPU
SE +/- 441.21, N = 3
136701.09
30K
60K
90K
120K
150K
Stress-NG 0.11.07
Test: Glibc Qsort Data Sorting
Bogo Ops/s, More Is Better
CPU
SE +/- 0.43, N = 3
24.82
6
12
18
24
30

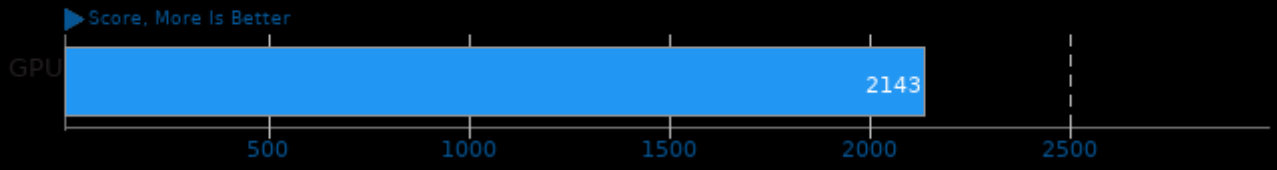
Serial Loopback Test

/dev/ttyS0, /dev/ttyS2, /dev/ttyTHS1, /dev/ttyTHS2, /dev/ttyTHS3

	/dev/ttyS0	/dev/ttyS2	/dev/ttyTHS1	/dev/ttyTHS2	/dev/ttyTHS3
RS232	PASS	FAIL	FAIL	PASS	FAIL
UART	FAIL	FAIL	FAIL	PASS	FAIL

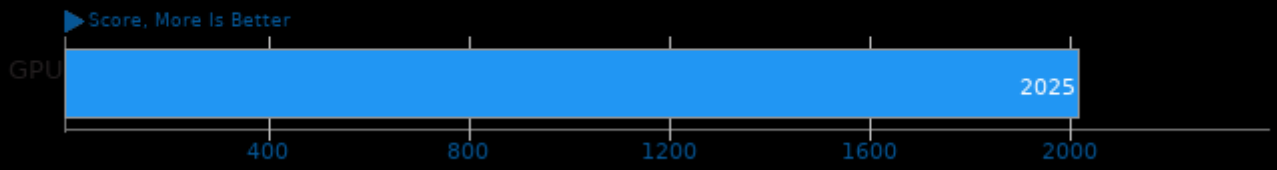
GLmark2 2020.04

Resolution: 800 x 600



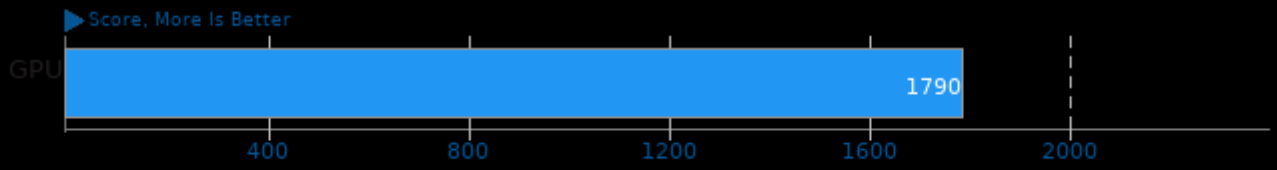
GLmark2 2020.04

Resolution: 1024 x 768



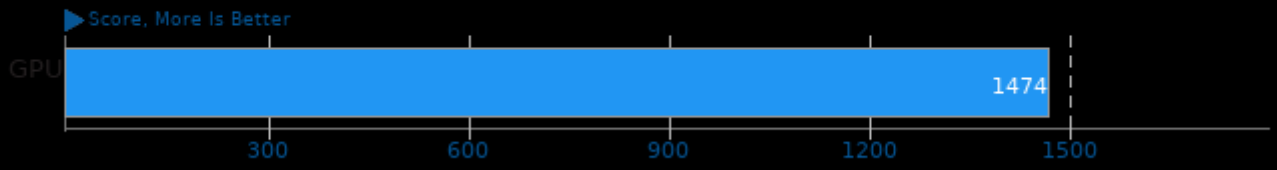
GLmark2 2020.04

Resolution: 1280 x 1024

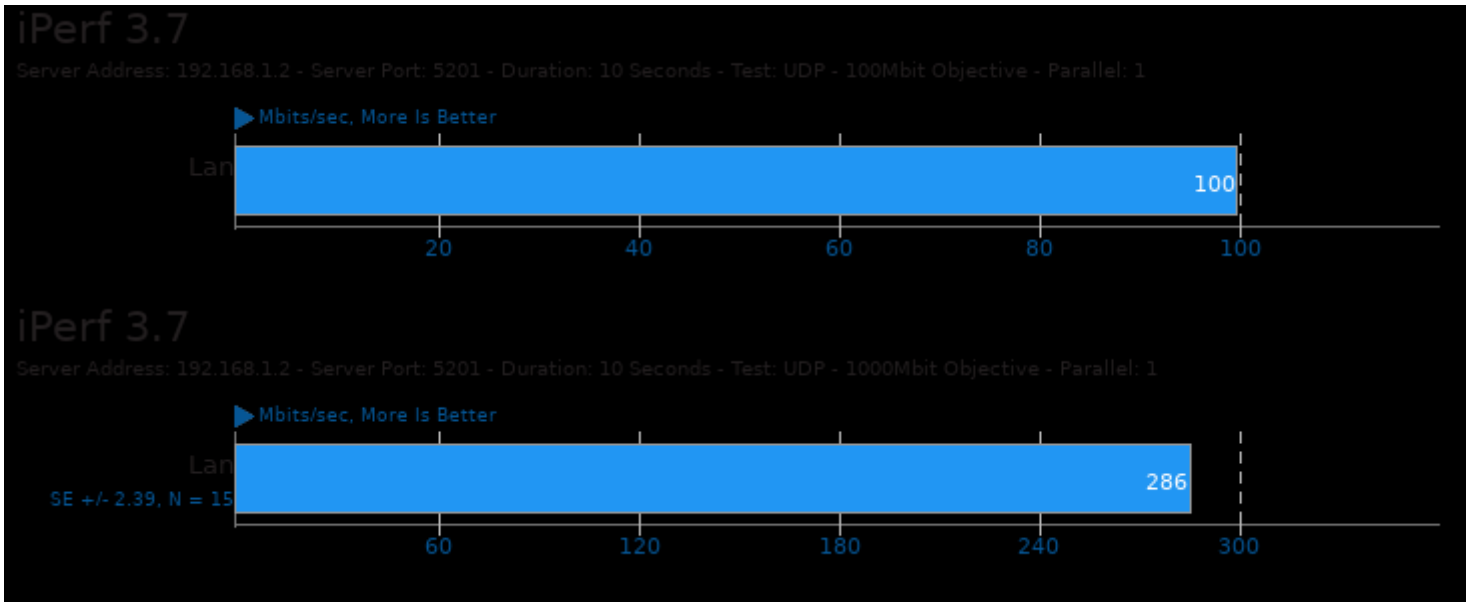


GLmark2 2020.04

Resolution: 1920 x 1080



R32_4_3_TX2_N310_Camera_IMX290_six_1



This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 20:25.