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NVIDIA Resizable BAR GeForce RTX 30 Linux Benchmarks

NVIDIA Resizable BAR Linux benchmarks for a future article on Phoronix by Michael Larabel.

Automated Executive Summary

RTX 3090: Original had the most wins, coming in first place for 50% of the tests.

Based on the geometric mean of all complete results, the fastest (RTX 3090: ReBAR) was 1.576x the speed of the slowest (RTX 3060 Ti: ReBAR). RTX 3060 Ti: Original was 0.897x the speed of RTX 3070: Original, RTX 3090: Original was 1.569x the speed of RTX 3060 Ti: Original, RTX 3090: ReBAR was 1.003x the speed of RTX 3090: Original, RTX 3060 Ti: ReBAR was 0.635x the speed of RTX 3090: ReBAR, RTX 3070: ReBAR was 1.114x the speed of RTX 3060 Ti: ReBAR.

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

Total War: Three Kingdoms (Resolution: 3840 x 2160 - Graphics Preset: Medium - Scenario: Battle Benchmark) at 1.772x
Total War: Three Kingdoms (Resolution: 2560 x 1440 - Graphics Preset: Medium - Scenario: Battle Benchmark) at 1.754x
Shadow of the Tomb Raider (Resolution: 3840 x 2160 - Graphics Preset: Highest - Anti Aliasing: Off) at 1.748x
DiRT Rally 2.0 (Resolution: 3840 x 1600 - Graphics Preset: Ultra) at 1.726x
Shadow of the Tomb Raider (Resolution: 3840 x 2160 - Graphics Preset: Medium - Anti Aliasing: Off) at 1.725x

Total War: Three Kingdoms (Resolution: 3840 x 2160 - Graphics Preset: Ultra - Scenario: Battle Benchmark) at 1.707x
DiRT Rally 2.0 (Resolution: 2880 x 1620 - Graphics Preset: Ultra) at 1.696x
DiRT Rally 2.0 (Resolution: 3840 x 1600 - Graphics Preset: High) at 1.679x
HITMAN 2 (Resolution: 3840 x 2160 - Quality Level: Medium) at 1.656x
GravityMark (Resolution: 3840 x 2160 - Renderer: Vulkan) at 1.652x.

Test Systems:

RTX 3070: Original

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3801 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Western Digital WDS100T1X0E-00AFY0 + 1000GB Western Digital WD_BLACK SN850 1TB + 2000GB, Graphics: NVIDIA GeForce RTX 3070 8GB, Audio: NVIDIA GA104 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.10, Kernel: 5.13.0-14-generic (x86_64), Desktop: GNOME Shell 40.2, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.63.01, OpenGL: 4.6.0, Vulkan: 1.2.175, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
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 IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

RTX 3060 Ti: Original

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3801 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Western Digital WDS100T1X0E-00AFY0 + 1000GB Western Digital WD_BLACK SN850 1TB + 2000GB, Graphics: NVIDIA GeForce RTX 3060 Ti 8GB, Audio: NVIDIA GA104 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.10, Kernel: 5.13.0-14-generic (x86_64), Desktop: GNOME Shell 40.2, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.63.01, OpenGL: 4.6.0, Vulkan: 1.2.175, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
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 IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

RTX 3090: Original

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3801 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Western Digital WDS100T1X0E-00AFY0 + 1000GB Western Digital WD_BLACK SN850 1TB + 2000GB, Graphics: NVIDIA GeForce

RTX 3090 24GB, Audio: NVIDIA GA102 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.10, Kernel: 5.13.0-14-generic (x86_64), Desktop: GNOME Shell 40.2, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.63.01, OpenGL: 4.6.0, Vulkan: 1.2.175, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
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 IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

RTX 3090: ReBAR

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3801 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Western Digital WDS100T1X0E-00AFY0 + 1000GB Western Digital WD_BLACK SN850 1TB + 2000GB, Graphics: NVIDIA GeForce RTX 3090 24GB, Audio: NVIDIA GA102 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.10, Kernel: 5.13.0-14-generic (x86_64), Desktop: GNOME Shell 40.2, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.63.01, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.4.112, Vulkan: 1.2.175, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
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 IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

RTX 3060 Ti: ReBAR

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3801 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Western Digital WDS100T1X0E-00AFY0 + 1000GB Western Digital WD_BLACK SN850 1TB + 2000GB, Graphics: NVIDIA GeForce RTX 3060 Ti 8GB, Audio: NVIDIA GA104 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.10, Kernel: 5.13.0-14-generic (x86_64), Desktop: GNOME Shell 40.2, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.63.01, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.4.112, Vulkan: 1.2.175, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
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 IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

RTX 3070: ReBAR

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3801 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Western Digital WDS100T1X0E-00AFY0 + 1000GB Western Digital WD_BLACK SN850 1TB + 2000GB, Graphics: NVIDIA GeForce RTX 3070 8GB, Audio: NVIDIA GA104 HD Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 21.10, Kernel: 5.13.0-14-generic (x86_64), Desktop: GNOME Shell 40.2, Display Server: X Server 1.20.11, Display Driver: NVIDIA 470.63.01, OpenGL: 4.6.0, OpenCL: OpenCL 3.0 CUDA 11.4.112, Vulkan: 1.2.175, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

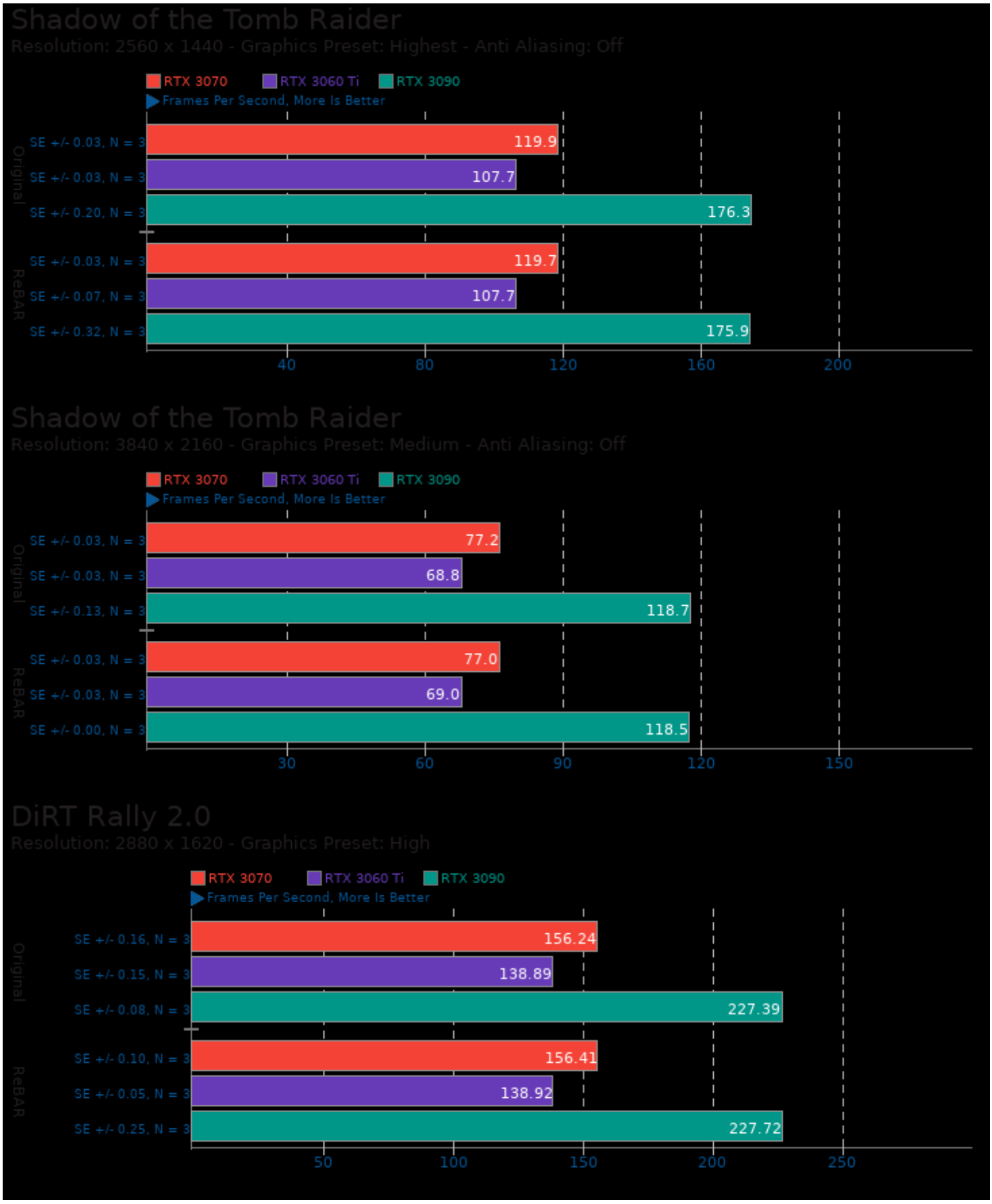
Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	RTX 3070: Original	RTX 3060 Ti: Original	RTX 3090: Original	RTX 3090: ReBAR	RTX 3060 Ti: ReBAR	RTX 3070: ReBAR
Total War: Three Kingdoms - 2560 x 1440 - Medium - Battle Benchmark (FPS)	132.6	**115.7**	**202.9**	197.8	116.1	130.1
Normalized	65.35%	57.02%	100%	97.49%	57.22%	64.12%
Standard Deviation	2.4%	0%	2.1%	2.1%	1.5%	0.5%
Shadow of the Tomb Raider - 2560 x 1440 - Medium - Off (FPS)	134.2	**120.6**	**195.3**	194.7	120.7	134.3
Normalized	68.71%	61.75%	100%	99.69%	61.8%	68.77%
Standard Deviation	0.1%	0.1%	0.2%	0.4%	0%	0%
Shadow of the Tomb Raider - 3840 x 2160 - Highest - Off (FPS)	67.1	**60**	**104.9**	104.7	60.1	67.4
Normalized	63.97%	57.2%	100%	99.81%	57.29%	64.25%
Standard Deviation	0.1%	0%	0.2%	0.1%	0.1%	0%
Shadow of the Tomb Raider - 2560 x 1440 - Highest - Off (FPS)	119.9	**107.7**	**176.3**	175.9	**107.7**	119.7
Normalized	68.01%	61.09%	100%	99.77%	61.09%	67.9%
Standard Deviation	0%	0.1%	0.2%	0.3%	0.1%	0%
Shadow of the Tomb Raider - 3840 x 2160 - Medium - Off (FPS)	77.2	**68.8**	**118.7**	118.5	69.0	77.0
Normalized	65.04%	57.96%	100%	99.83%	58.13%	64.87%
Standard Deviation	0.1%	0.1%	0.2%	0%	0.1%	0.1%
DiRT Rally 2.0 - 2880 x 1620 - High (FPS)	156.240061	**138.887975**	227.390086	**227.721232**	138.924545	156.413523
Normalized	68.61%	60.99%	99.85%	100%	61.01%	68.69%
Standard Deviation	0.2%	0.2%	0.1%	0.2%	0.1%	0.1%
DiRT Rally 2.0 - 3840 x 1600 - High (FPS)	135.022542	**119.322306**	**200.387746**	200.035253	119.364398	135.228582
Normalized	67.38%	59.55%	100%	99.82%	59.57%	67.48%
Standard Deviation	0%	0.1%	0.2%	0.1%	0%	0%
DiRT Rally 2.0 - 2880 x 1620 - Ultra (FPS)	95.981562	84.968228	143.404622	**143.889654**	**84.841840**	95.904421
Normalized	66.7%	59.05%	99.66%	100%	58.96%	66.65%
Standard Deviation	0.1%	0.1%	0.2%	0.4%	0.1%	0.1%

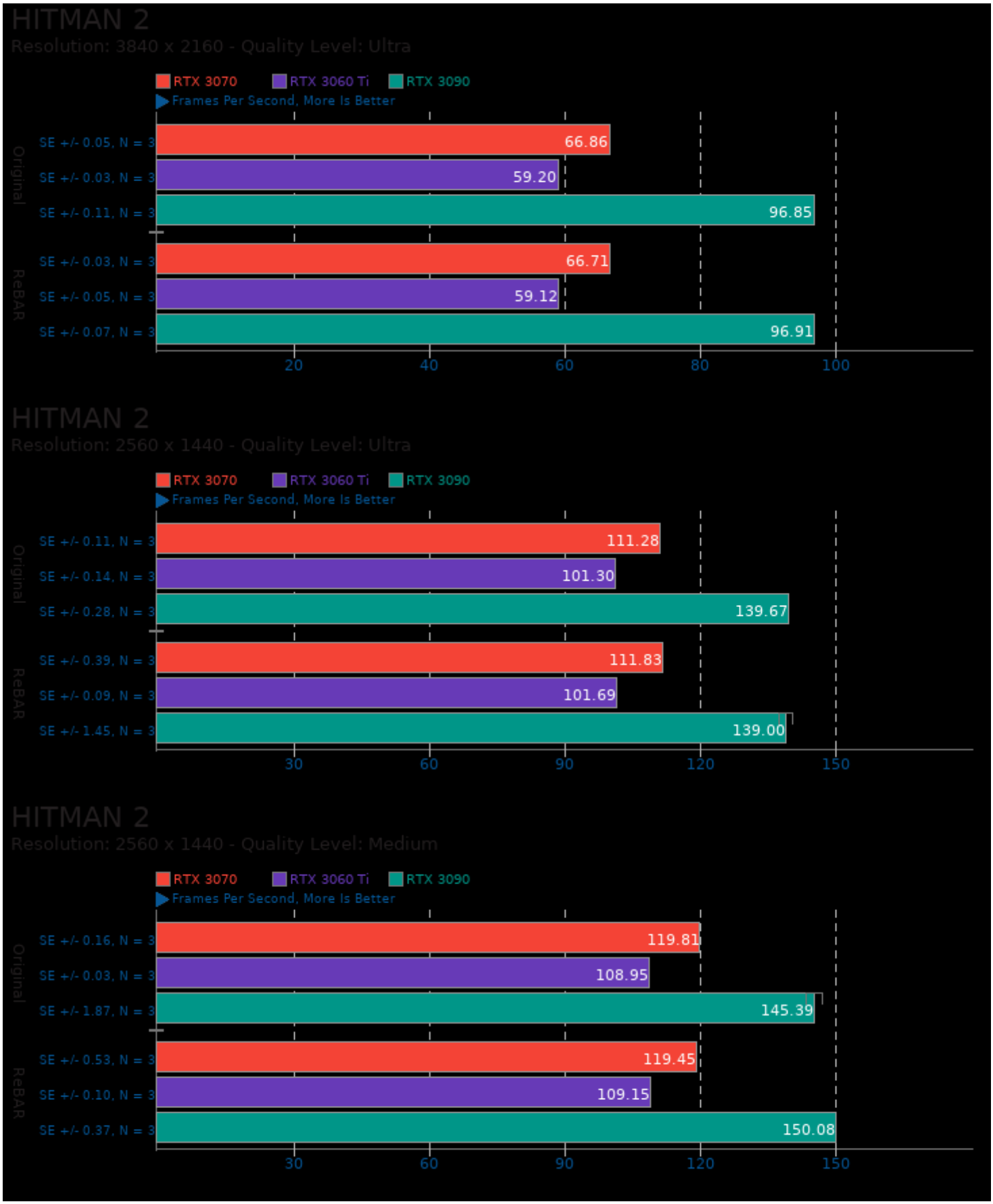
DiRT Rally 2.0 - 3840 x 1600 - Ultra (FPS)	82.697937	72.852905	125.499481	**125.615453**	**72.789200**	82.789248
Normalized	65.83%	58%	99.91%	100%	57.95%	65.91%
Standard Deviation	0.1%	0.1%	0.2%	0.2%	0.1%	0%
HITMAN 2 - 3840 x 2160 - Ultra (FPS)	66.86	59.20	96.85	**96.91**	**59.12**	66.71
Normalized	68.99%	61.09%	99.94%	100%	61.01%	68.84%
Standard Deviation	0.1%	0.1%	0.2%	0.1%	0.1%	0.1%
HITMAN 2 - 2560 x 1440 - Ultra (FPS)	111.28	**101.30**	**139.67**	139.00	101.69	111.83
Normalized	79.67%	72.53%	100%	99.52%	72.81%	80.07%
Standard Deviation	0.2%	0.2%	0.4%	1.8%	0.2%	0.6%
HITMAN 2 - 2560 x 1440 - Medium (FPS)	119.81	**108.95**	145.39	**150.08**	109.15	119.45
Normalized	79.83%	72.59%	96.88%	100%	72.73%	79.59%
Standard Deviation	0.2%	0%	2.2%	0.4%	0.2%	0.8%
HITMAN 2 - 3840 x 2160 - Medium (FPS)	70.88	62.21	102.50	**102.93**	**62.16**	70.87
Normalized	68.86%	60.44%	99.58%	100%	60.39%	68.85%
Standard Deviation	0.2%	0.1%	0.3%	0.2%	0.1%	0.1%
GravityMark - 2560 x 1440 - Vulkan (FPS)	166.0	**151.5**	**230.9**	230.8	151.8	162.7
Normalized	71.89%	65.61%	100%	99.96%	65.74%	70.46%
Standard Deviation	0%	0.3%	0.2%	0.5%	0.2%	0.3%
GravityMark - 3840 x 2160 - Vulkan (FPS)	116.6	107.3	176.3	**176.8**	**107.0**	115.1
Normalized	65.95%	60.69%	99.72%	100%	60.52%	65.1%
Standard Deviation	0.6%	0.3%	0.5%	0.1%	0.3%	0.4%
F1 2020 - 2560 x 1440 - High (FPS)	237	**223**	247	**252**	224	239
Normalized	94.05%	88.49%	98.02%	100%	88.89%	94.84%
Standard Deviation	0.5%	0.3%	1.3%	1%	0.3%	0.9%
F1 2020 - 2560 x 1440 - Ultra (FPS)	181	167	200	**207**	**166**	182
Normalized	87.44%	80.68%	96.62%	100%	80.19%	87.92%
Standard Deviation	1%	0%	1.3%	1.4%	0.3%	0.5%
F1 2020 - 3840 x 2160 - High (FPS)	165	**146**	227	**229**	**146**	164
Normalized	72.05%	63.76%	99.13%	100%	63.76%	71.62%
Standard Deviation	0.4%	0.4%	0.3%	0.3%	0%	0%
F1 2020 - 3840 x 2160 - Ultra (FPS)	125	111	176	**178**	**110**	125
Normalized	70.22%	62.36%	98.88%	100%	61.8%	70.22%
Standard Deviation	0.5%	0%	0.3%	0%	0%	0%
Total War: Three Kingdoms - 2560 x 1440 - Ultra - Battle Benchmark (FPS)	53.0	48.1	**72.1**	71.9	**48.0**	52.8
Normalized	73.51%	66.71%	100%	99.72%	66.57%	73.23%
Standard Deviation	0.9%	1.1%	0.4%	0.9%	0.9%	1.4%

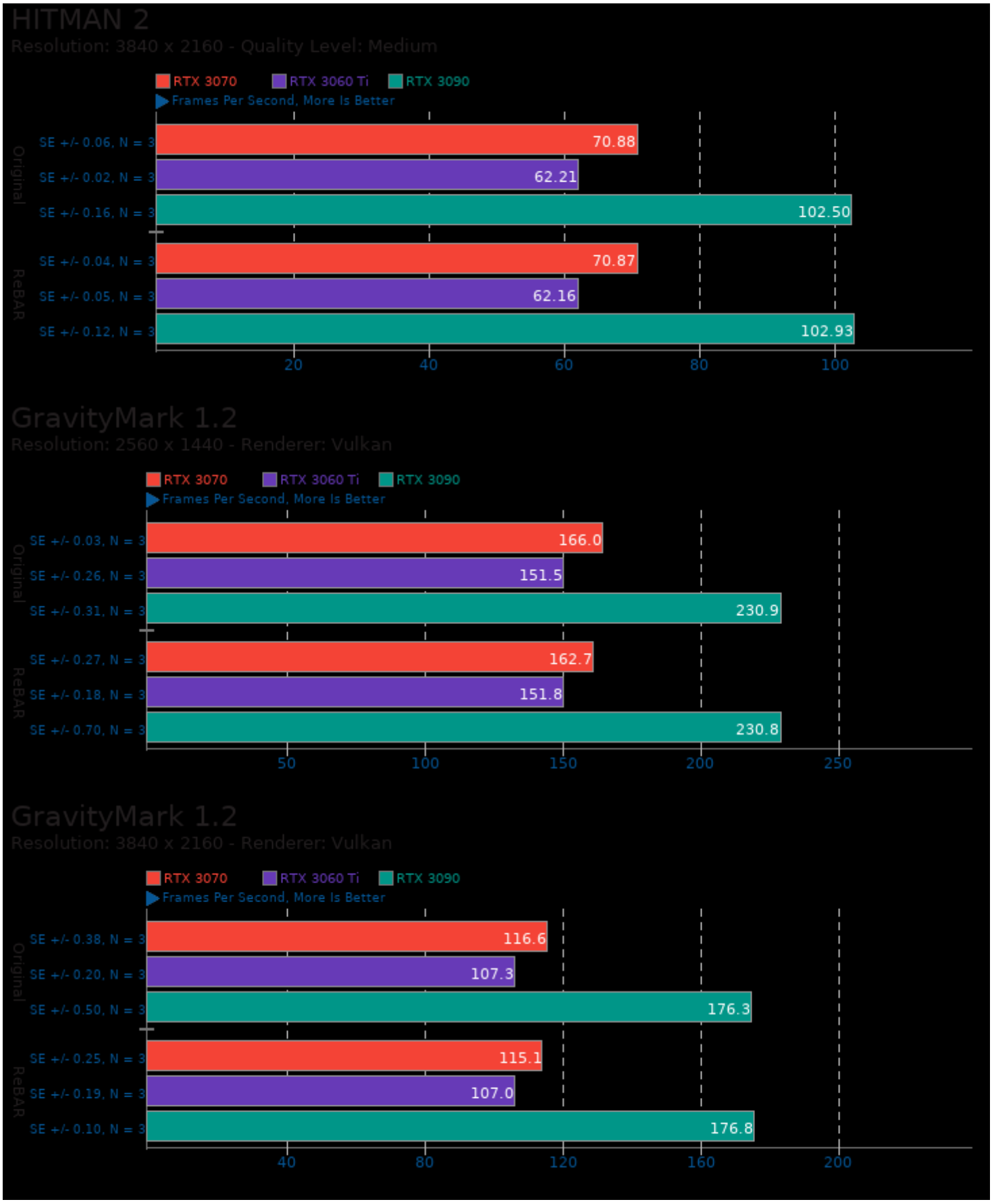
Total War: Three Kingdoms - 3840 x 2160 - Ultra - Battle Benchmark (FPS)	30.0	26.8	**44.9**	**44.9**	**26.3**	30.1
Normalized	66.82%	59.69%	100%	100%	58.57%	67.04%
Standard Deviation	0.8%	1%	0.6%	0.3%	1.3%	0.5%
Total War: Three Kingdoms - 3840 x 2160 - Medium - Battle Benchmark (FPS)	65.4	**57.8**	**102.4**	102.0	58.1	65.4
Normalized	63.87%	56.45%	100%	99.61%	56.74%	63.87%
Standard Deviation	0.6%	0.9%	0.7%	1.2%	0.6%	0.9%

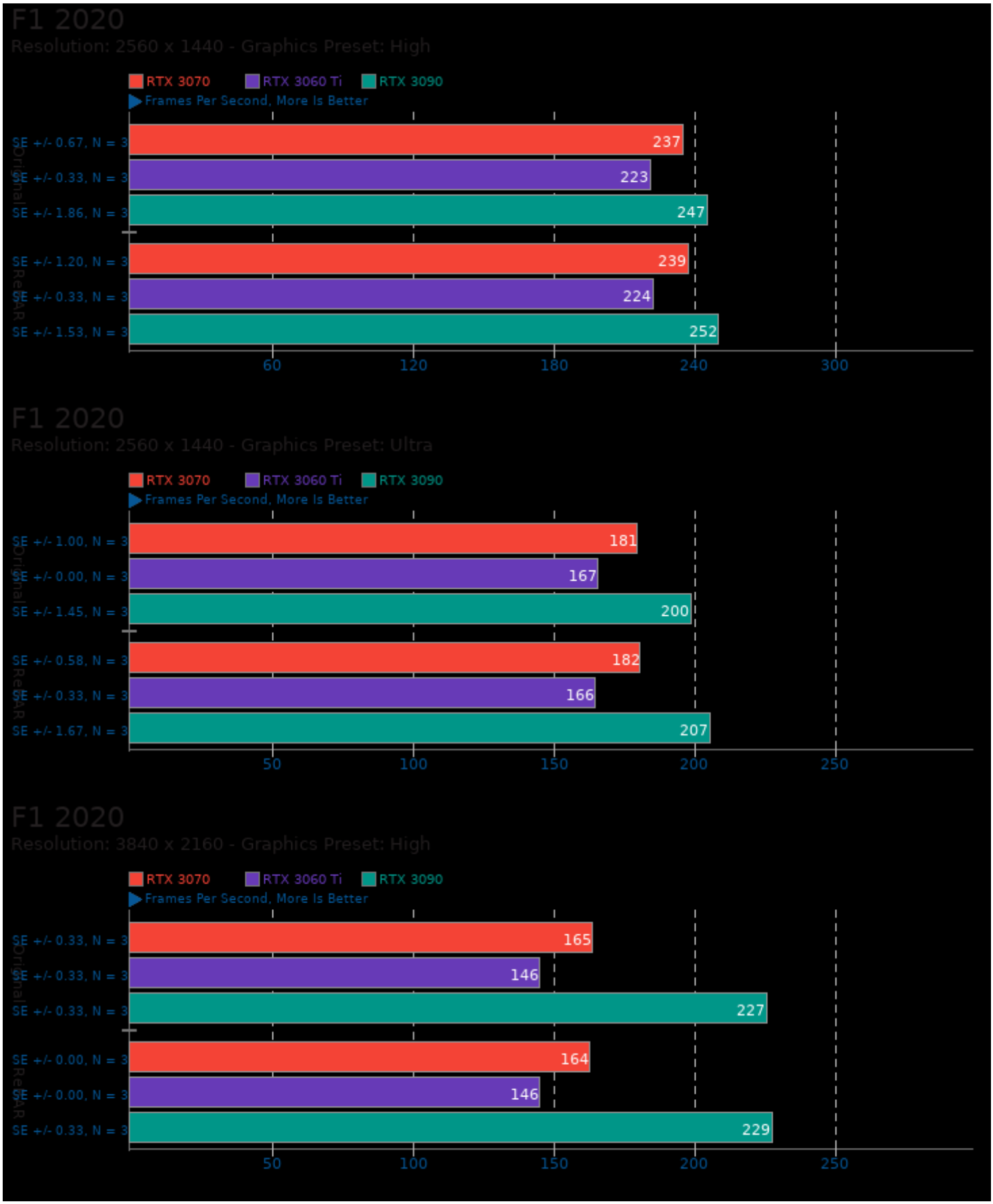

Total War: Three Kingdoms 1.0.1
Resolution: 2560 x 1440 - Graphics Preset: Medium - Scenario: Battle Benchmark
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
SE +/- 1.40, N = 5
132.6
SE +/- 0.03, N = 3
115.7
SE +/- 2.43, N = 3
202.9
ReBAR
SE +/- 0.37, N = 3
130.1
SE +/- 1.01, N = 3
116.1
SE +/- 2.03, N = 4
197.8
40
80
120
160
200
Shadow of the Tomb Raider
Resolution: 2560 x 1440 - Graphics Preset: Medium - Anti Aliasing: Off
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
SE +/- 0.06, N = 3
134.2
SE +/- 0.06, N = 3
120.6
SE +/- 0.18, N = 3
195.3
ReBAR
SE +/- 0.03, N = 3
134.3
SE +/- 0.03, N = 3
120.7
SE +/- 0.45, N = 3
194.7
40
80
120
160
200
Shadow of the Tomb Raider
Resolution: 3840 x 2160 - Graphics Preset: Highest - Anti Aliasing: Off
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
SE +/- 0.03, N = 3
67.1
SE +/- 0.00, N = 3
60.0
SE +/- 0.12, N = 3
104.9
ReBAR
SE +/- 0.00, N = 3
67.4
SE +/- 0.03, N = 3
60.1
SE +/- 0.09, N = 3
104.7
20
40
60
80
100


Shadow of the Tomb Raider
Resolution: 2560 x 1440 - Graphics Preset: Highest - Anti Aliasing: Off
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.03, N = 3
119.9
SE +/- 0.03, N = 3
107.7
SE +/- 0.20, N = 3
176.3
SE +/- 0.03, N = 3
119.7
SE +/- 0.07, N = 3
107.7
SE +/- 0.32, N = 3
175.9
40
80
120
160
200
Shadow of the Tomb Raider
Resolution: 3840 x 2160 - Graphics Preset: Medium - Anti Aliasing: Off
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.03, N = 3
77.2
SE +/- 0.03, N = 3
68.8
SE +/- 0.13, N = 3
118.7
SE +/- 0.03, N = 3
77.0
SE +/- 0.03, N = 3
69.0
SE +/- 0.00, N = 3
118.5
30
60
90
120
150
DiRT Rally 2.0
Resolution: 2880 x 1620 - Graphics Preset: High
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.16, N = 3
156.24
SE +/- 0.15, N = 3
138.89
SE +/- 0.08, N = 3
227.39
SE +/- 0.10, N = 3
156.41
SE +/- 0.05, N = 3
138.92
SE +/- 0.25, N = 3
227.72
50
100
150
200
250

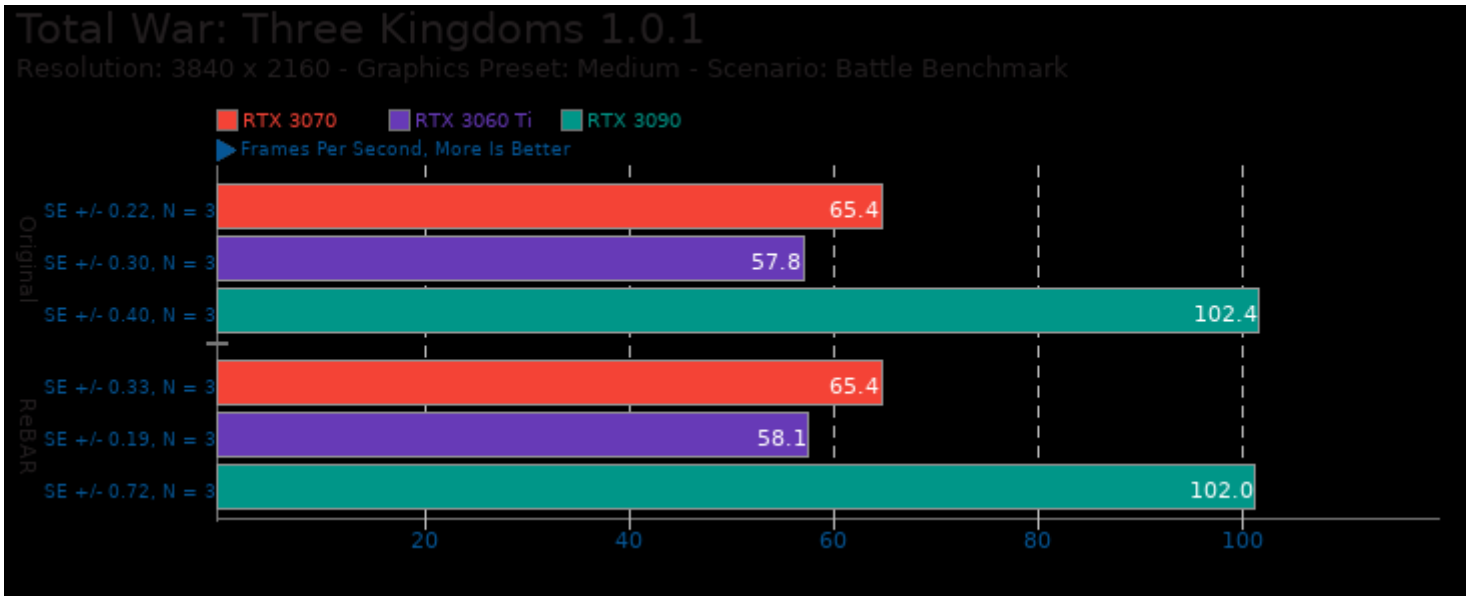

DiRT Rally 2.0
Resolution: 3840 x 1600 - Graphics Preset: High
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.04, N = 3
135.02
SE +/- 0.05, N = 3
119.32
SE +/- 0.29, N = 3
200.39
SE +/- 0.02, N = 3
135.23
SE +/- 0.02, N = 3
119.36
SE +/- 0.17, N = 3
200.04
40
80
120
160
200
DiRT Rally 2.0
Resolution: 2880 x 1620 - Graphics Preset: Ultra
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.06, N = 3
95.98
SE +/- 0.07, N = 3
84.97
SE +/- 0.12, N = 3
143.40
SE +/- 0.06, N = 3
95.90
SE +/- 0.07, N = 3
84.84
SE +/- 0.33, N = 3
143.89
30
60
90
120
150
DiRT Rally 2.0
Resolution: 3840 x 1600 - Graphics Preset: Ultra
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.04, N = 3
82.70
SE +/- 0.04, N = 3
72.85
SE +/- 0.17, N = 3
125.50
SE +/- 0.02, N = 3
82.79
SE +/- 0.03, N = 3
72.79
SE +/- 0.13, N = 3
125.62
30
60
90
120
150


HITMAN 2
Resolution: 3840 x 2160 - Quality Level: Ultra
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.05, N = 3
66.86
SE +/- 0.03, N = 3
59.20
SE +/- 0.11, N = 3
96.85
SE +/- 0.03, N = 3
66.71
SE +/- 0.05, N = 3
59.12
SE +/- 0.07, N = 3
96.91
20
40
60
80
100
HITMAN 2
Resolution: 2560 x 1440 - Quality Level: Ultra
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.11, N = 3
111.28
SE +/- 0.14, N = 3
101.30
SE +/- 0.28, N = 3
139.67
SE +/- 0.39, N = 3
111.83
SE +/- 0.09, N = 3
101.69
SE +/- 1.45, N = 3
139.00
30
60
90
120
150
HITMAN 2
Resolution: 2560 x 1440 - Quality Level: Medium
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.16, N = 3
119.81
SE +/- 0.03, N = 3
108.95
SE +/- 1.87, N = 3
145.39
SE +/- 0.53, N = 3
119.45
SE +/- 0.10, N = 3
109.15
SE +/- 0.37, N = 3
150.08
30
60
90
120
150

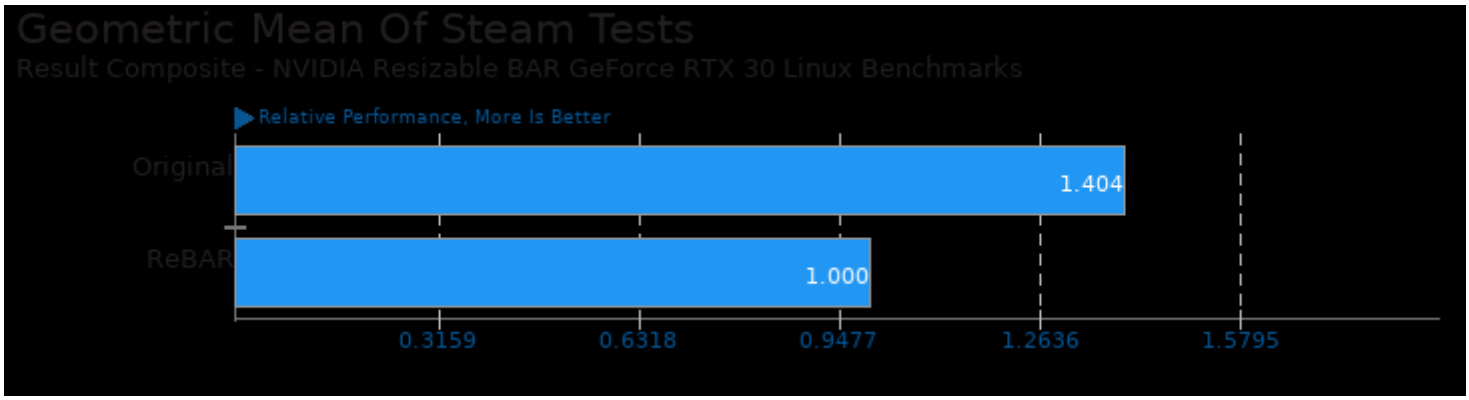

HITMAN 2
Resolution: 3840 x 2160 - Quality Level: Medium
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.06, N = 3
SE +/- 0.02, N = 3
SE +/- 0.16, N = 3
SE +/- 0.04, N = 3
SE +/- 0.05, N = 3
SE +/- 0.12, N = 3
70.88
62.21
102.50
70.87
62.16
102.93
20
40
60
80
100
GravityMark 1.2
Resolution: 2560 x 1440 - Renderer: Vulkan
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.03, N = 3
SE +/- 0.26, N = 3
SE +/- 0.31, N = 3
SE +/- 0.27, N = 3
SE +/- 0.18, N = 3
SE +/- 0.70, N = 3
166.0
151.5
230.9
162.7
151.8
230.8
50
100
150
200
250
GravityMark 1.2
Resolution: 3840 x 2160 - Renderer: Vulkan
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.38, N = 3
SE +/- 0.20, N = 3
SE +/- 0.50, N = 3
SE +/- 0.25, N = 3
SE +/- 0.19, N = 3
SE +/- 0.10, N = 3
116.6
107.3
176.3
115.1
107.0
176.8
40
80
120
160
200


F1 2020
Resolution: 2560 x 1440 - Graphics Preset: High
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.67, N = 3
SE +/- 0.33, N = 3
SE +/- 1.86, N = 3
SE +/- 1.20, N = 3
SE +/- 0.33, N = 3
SE +/- 1.53, N = 3
237
223
247
239
224
252
60
120
180
240
300
F1 2020
Resolution: 2560 x 1440 - Graphics Preset: Ultra
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 1.00, N = 3
SE +/- 0.00, N = 3
SE +/- 1.45, N = 3
SE +/- 0.58, N = 3
SE +/- 0.33, N = 3
SE +/- 1.67, N = 3
181
167
200
182
166
207
50
100
150
200
250
F1 2020
Resolution: 3840 x 2160 - Graphics Preset: High
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.33, N = 3
SE +/- 0.33, N = 3
SE +/- 0.33, N = 3
SE +/- 0.00, N = 3
SE +/- 0.00, N = 3
SE +/- 0.33, N = 3
165
146
227
164
146
229
50
100
150
200
250


F1 2020
Resolution: 3840 x 2160 - Graphics Preset: Ultra
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.33, N = 3
SE +/- 0.00, N = 3
SE +/- 0.33, N = 3
SE +/- 0.00, N = 3
SE +/- 0.00, N = 3
SE +/- 0.00, N = 3
125
111
176
125
110
178
40
80
120
160
200
Total War: Three Kingdoms 1.0.1
Resolution: 2560 x 1440 - Graphics Preset: Ultra - Scenario: Battle Benchmark
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.26, N = 3
SE +/- 0.30, N = 3
SE +/- 0.18, N = 3
SE +/- 0.43, N = 3
SE +/- 0.25, N = 3
SE +/- 0.38, N = 3
53.0
48.1
72.1
52.8
48.0
71.9
16
32
48
64
80
Total War: Three Kingdoms 1.0.1
Resolution: 3840 x 2160 - Graphics Preset: Ultra - Scenario: Battle Benchmark
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.15, N = 3
SE +/- 0.15, N = 3
SE +/- 0.15, N = 3
SE +/- 0.09, N = 3
SE +/- 0.20, N = 3
SE +/- 0.09, N = 3
30.0
26.8
44.9
30.1
26.3
44.9
10
20
30
40
50


Total War: Three Kingdoms 1.0.1
Resolution: 3840 x 2160 - Graphics Preset: Medium - Scenario: Battle Benchmark
RTX 3070
RTX 3060 Ti
RTX 3090
Frames Per Second, More Is Better
Original
ReBAR
SE +/- 0.22, N = 3
65.4
SE +/- 0.30, N = 3
57.8
SE +/- 0.40, N = 3
102.4
SE +/- 0.33, N = 3
65.4
SE +/- 0.19, N = 3
58.1
SE +/- 0.72, N = 3
102.0
20
40
60
80
100

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



Geometric mean based upon tests: pts/dirt-rally2, pts/f12020, pts/hitman2, pts/shadowofthetombraider and pts/twtk

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 08:42.