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Intel JCC Erratum Microcode Update Gaming Benchmarks

Intel Core i9-7960X + NVIDIA GeForce RTX 2080 SUPER 8GB gaming benchmarks from Intel JCC microcode update. Benchmarks by Michael Larabel for a future article.

Automated Executive Summary

Existing Microcode had the most wins, coming in first place for 69% of the tests.

Based on the geometric mean of all complete results, the fastest (Existing Microcode) was 1.008x the speed of the slowest (New Microcode).

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

HITMAN (Resolution: 2560 x 1440 - Quality Level: Low - Total Frame Time) at 31.974x
HITMAN (Resolution: 2560 x 1440 - Quality Level: Ultra - Total Frame Time) at 29.433x
Total War: WARHAMMER II (Resolution: 1920 x 1080 - Graphics Preset: Medium - Scenario: Fallen Gates Battle - Total Frame Time) at 24.871x
Total War: Three Kingdoms (Resolution: 2560 x 1440 - Graphics Preset: High - Scenario: Battle Benchmark - Total Frame Time) at 22.535x
Total War: Three Kingdoms (Resolution: 1920 x 1080 - Graphics Preset: High - Scenario: Battle Benchmark - Total Frame Time) at 19.449x
Total War: WARHAMMER II (Resolution: 1920 x 1080 - Graphics Preset: High - Scenario: Fallen Gates Battle - Total

Frame Time) at 18.809x
Total War: WARHAMMER II (Resolution: 2560 x 1440 - Graphics Preset: High - Scenario: Fallen Gates Battle - Total Frame Time) at 17.816x
HITMAN 2 (Resolution: 2560 x 1440 - Quality Level: Low - Total Frame Time) at 12.098x
HITMAN 2 (Resolution: 2560 x 1440 - Quality Level: Ultra - Total Frame Time) at 10.257x
ET: Legacy (Renderer: Renderer2 - Resolution: 3840 x 2160) at 1.09x.

Test Systems:

Existing Microcode

New Microcode

Processor: Intel Core i9-7960X @ 4.40GHz (16 Cores / 32 Threads), Motherboard: MSI X299 SLI PLUS (MS-7A93) v1.0 (1.A0 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 16384MB, Disk: Samsung SSD 970 EVO 250GB + 2000GB SABRENT, Graphics: NVIDIA GeForce RTX 2080 SUPER 8GB (1650/7750MHz), Audio: Realtek ALC1220, Monitor: Acer B286HK, Network: Intel I219-V + Intel I211

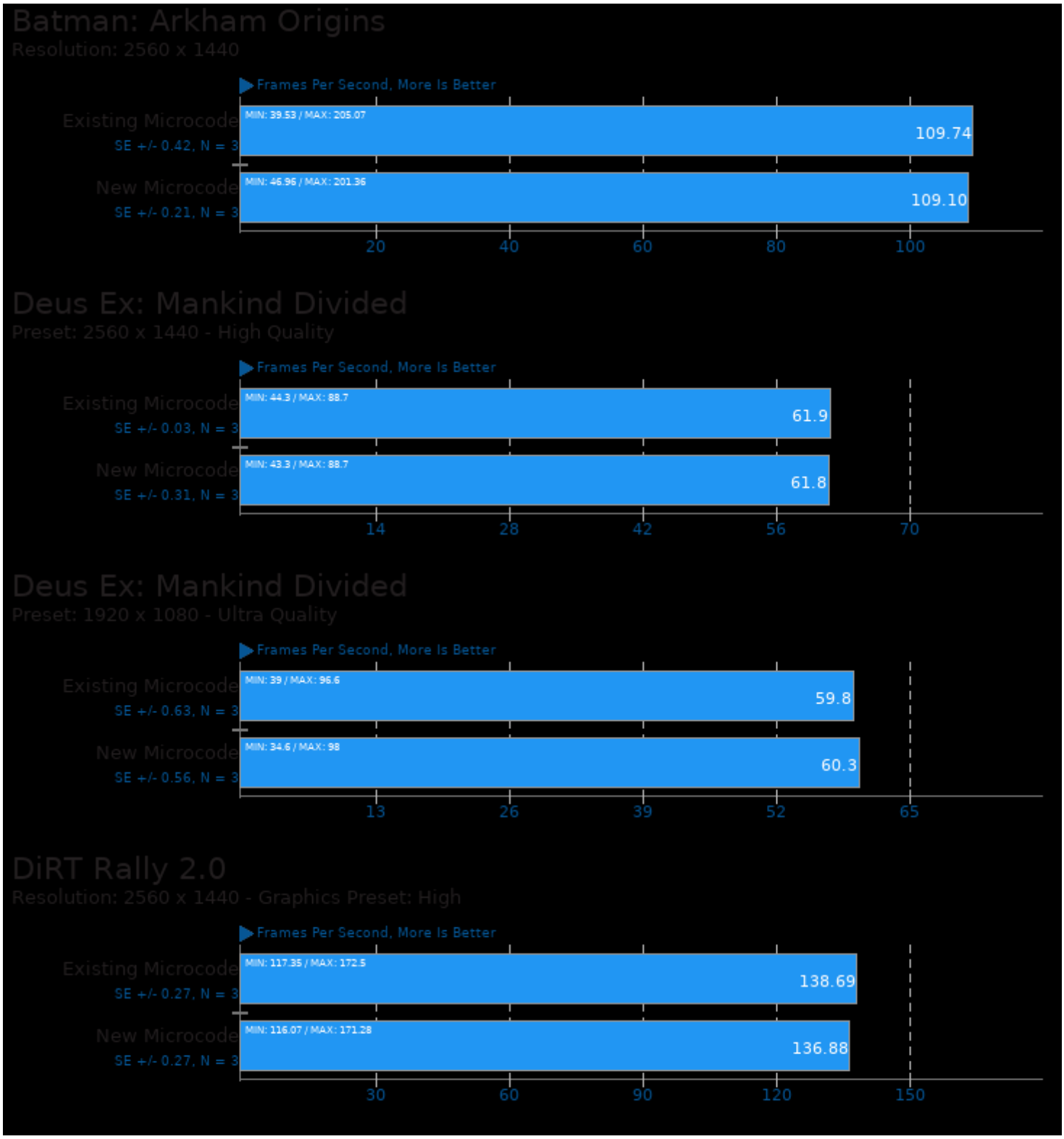
OS: Ubuntu 19.10, Kernel: 5.3.0-19-generic (x86_64), Desktop: GNOME Shell 3.34.1, Display Server: X Server 1.20.5, Display Driver: NVIDIA 440.31, OpenGL: 4.6.0, Vulkan: 1.1.119, Compiler: GCC 9.2.1 20191008, File-System: ext4, Screen Resolution: 3840x2160

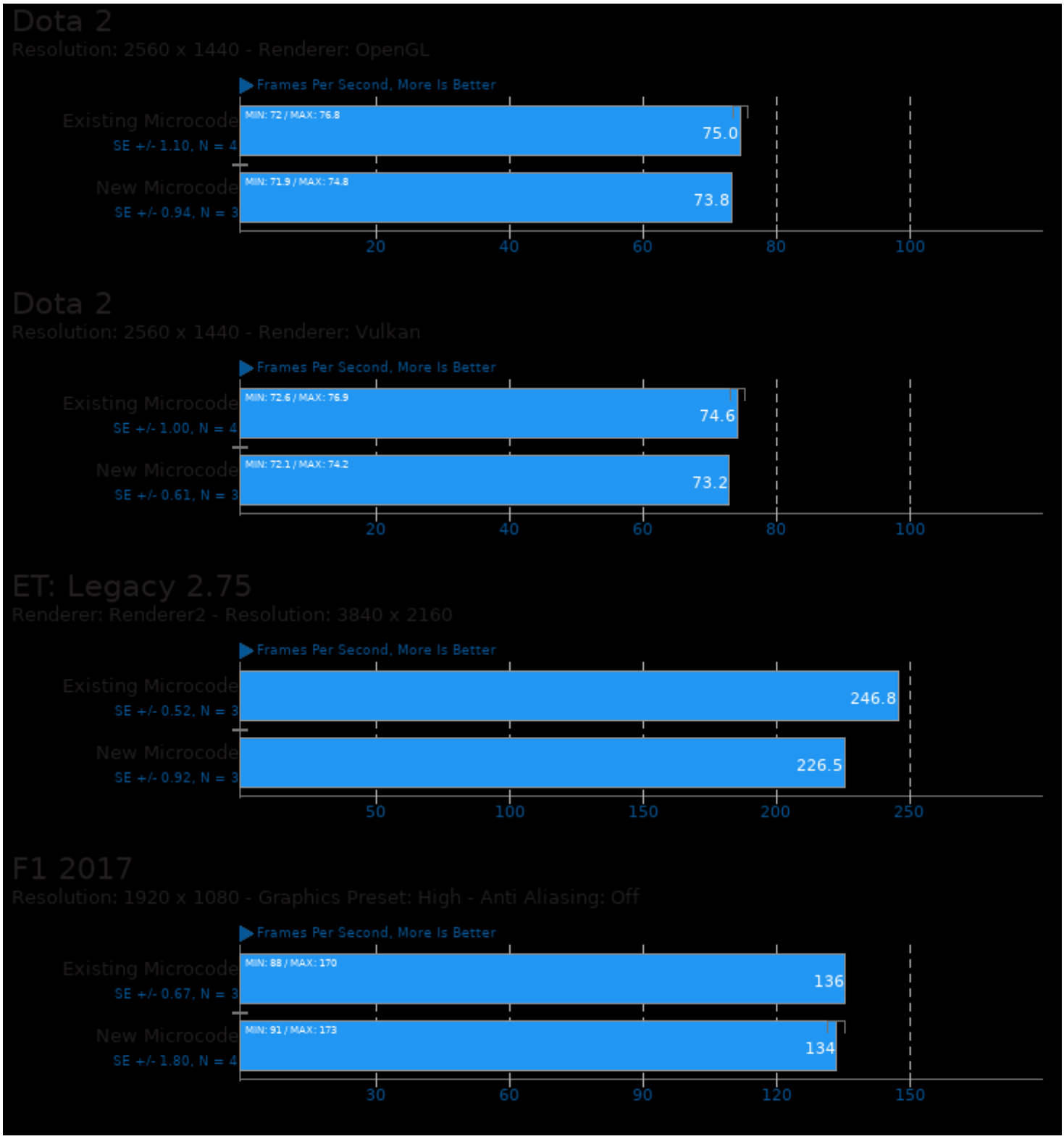
Processor Notes: Scaling Governor: intel_pstate performance - CPU Microcode: 0x2000064
Security Notes: l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling

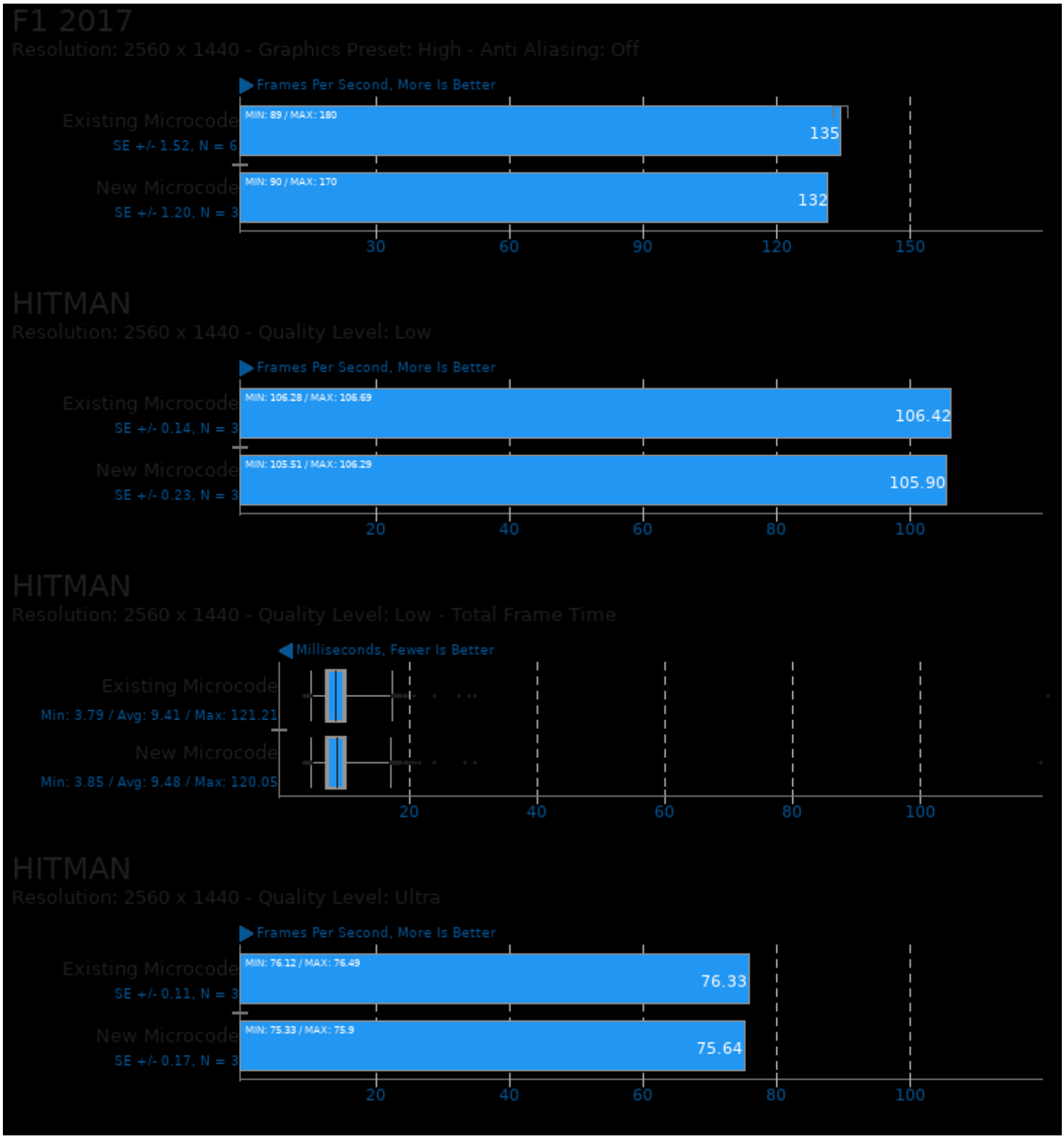
	Existing Microcode	New Microcode
Batman: Arkham Origins - 2560 x 1440 (FPS)	**109.74**	**109.10**
Normalized	100%	99.42%
Standard Deviation	0.7%	0.3%
Deus Ex: Mankind Divided - 2560 x 1440 - High Quality (FPS)	**61.9**	**61.8**
Normalized	100%	99.84%
Standard Deviation	0.1%	0.9%
Deus Ex: Mankind Divided - 1920 x 1080 - Ultra Quality (FPS)	**59.8**	**60.3**
Normalized	99.17%	100%
Standard Deviation	1.8%	1.6%
DiRT Rally 2.0 - 2560 x 1440 - High (FPS)	**138.687714**	**136.876821**
Normalized	100%	98.69%
Standard Deviation	0.3%	0.3%
Dota 2 - 2560 x 1440 - OpenGL (FPS)	**75.0**	**73.8**
Normalized	100%	98.4%

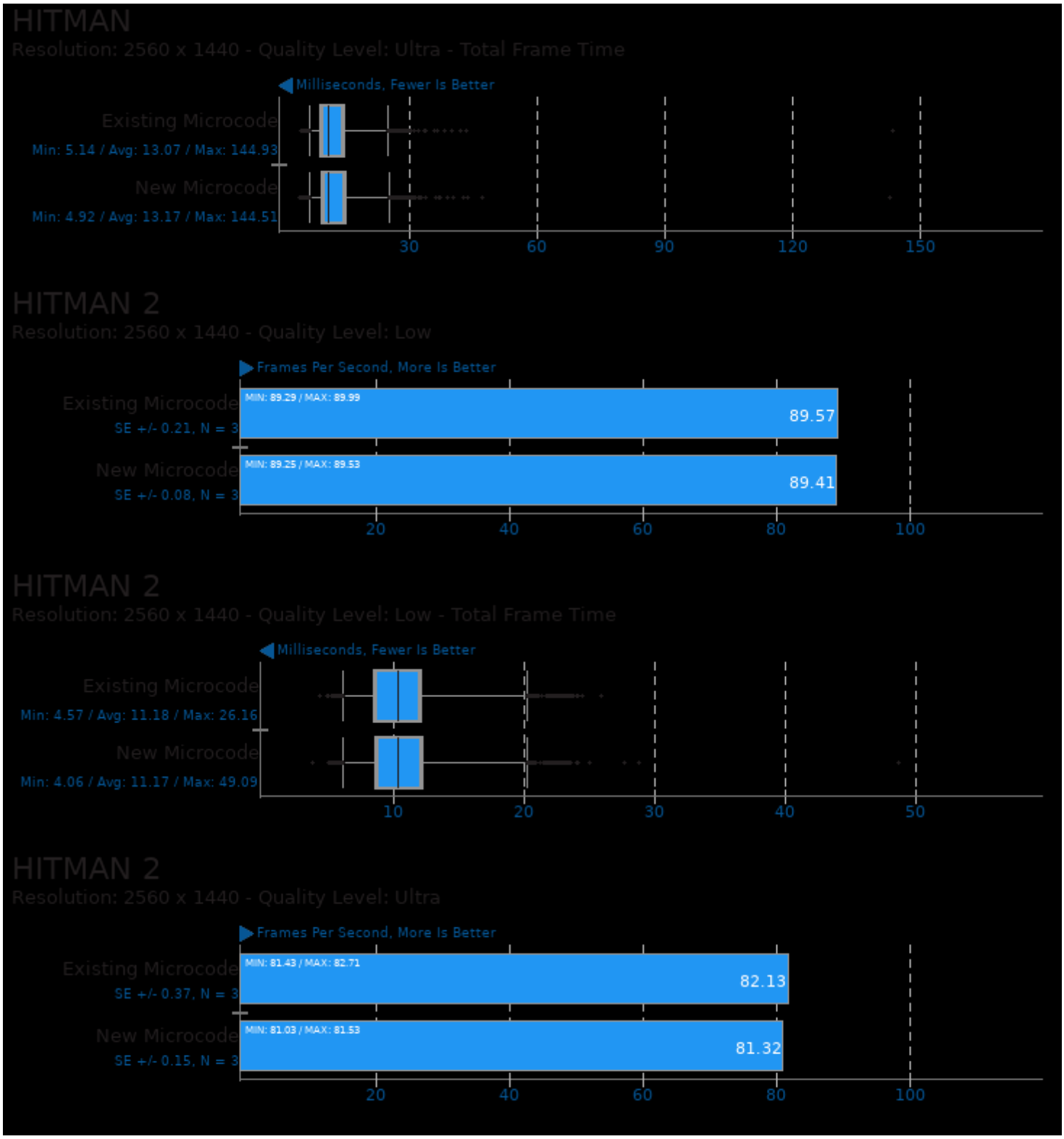
Standard Deviation	2.9%	2.2%
Dota 2 - 2560 x 1440 - Vulkan (FPS)	**74.6**	**73.2**
Normalized	100%	98.12%
Standard Deviation	2.7%	1.4%
ET: Legacy - Renderer2 - 3840 x 2160 (FPS)	**246.8**	**226.5**
Normalized	100%	91.77%
Standard Deviation	0.4%	0.7%
F1 2017 - 1920 x 1080 - High - Off (FPS)	**136**	**134**
Normalized	100%	98.53%
Standard Deviation	0.9%	2.7%
F1 2017 - 2560 x 1440 - High - Off (FPS)	**135**	**132**
Normalized	100%	97.78%
Standard Deviation	2.8%	1.6%
HITMAN - 2560 x 1440 - Low (FPS)	**106.42**	**105.90**
Normalized	100%	99.51%
Standard Deviation	0.2%	0.4%
HITMAN - 2560 x 1440 - Ultra (FPS)	**76.33**	**75.64**
Normalized	100%	99.1%
Standard Deviation	0.2%	0.4%
HITMAN 2 - 2560 x 1440 - Low (FPS)	**89.57**	**89.41**
Normalized	100%	99.82%
Standard Deviation	0.4%	0.2%
HITMAN 2 - 2560 x 1440 - Ultra (FPS)	**82.13**	**81.32**
Normalized	100%	99.01%
Standard Deviation	0.8%	0.3%
Rise of the Tomb Raider - 2560 x 1440 - High - FXAA - S.O.T.M (FPS)	**153.1**	**151.9**
Normalized	100%	99.22%
Standard Deviation	1.5%	0.2%
Rise of the Tomb Raider - 2560 x 1440 - High - FXAA - Prophets Tomb (FPS)	**124.5**	**123.2**
Normalized	100%	98.96%
Standard Deviation	0.2%	0.5%
Rise of the Tomb Raider - 2560 x 1440 - High - FXAA - Geothermal Valley (FPS)	**128.4**	**126.7**
Normalized	100%	98.68%
Standard Deviation	0.8%	0.9%
Shadow of the Tomb Raider - 2560 x 1440 - Medium - Off (FPS)	**144.4**	**143.2**
Normalized	100%	99.17%
Standard Deviation	0.3%	0.3%
Strange Brigade - 2560 x 1440 - Low (FPS)	**94.1**	**94.0**
Normalized	100%	99.89%
Standard Deviation	0.2%	0.1%
Strange Brigade - 2560 x 1440 - High (FPS)	92.9	92.9
Standard Deviation	0.4%	0.1%
Strange Brigade - 2560 x 1440 - Ultra (FPS)	**93.3**	**92.8**
Normalized	100%	99.46%
Standard Deviation	0.4%	0.4%
SuperTuxKart - 2560 x 1440 - Fullscreen - High - 8 - Candela City (FPS)	**88.088262**	**86.145877**
Normalized	100%	97.79%
Standard Deviation	1.8%	1.4%

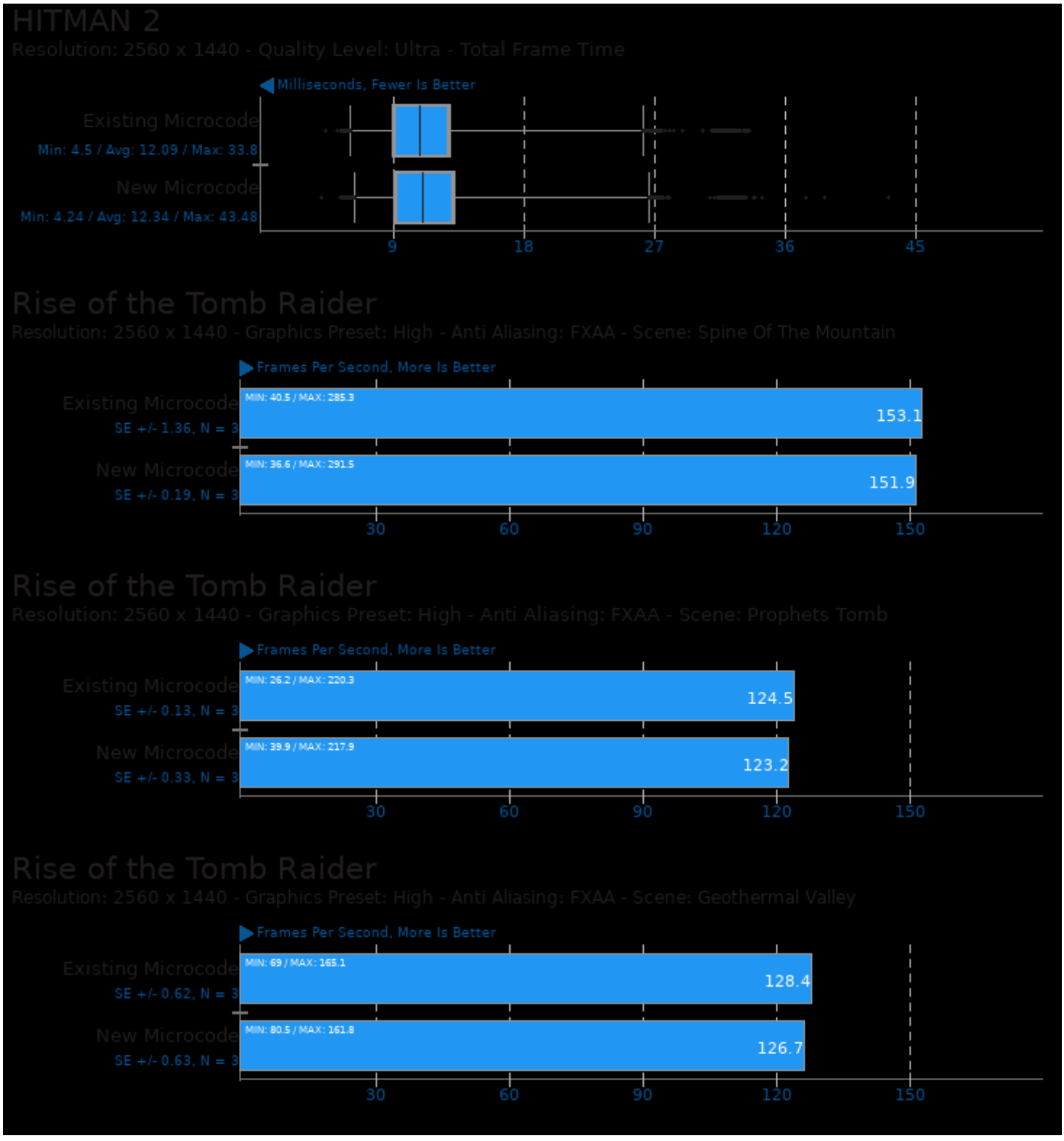
SuperTuxKart - 2560 x 1440 - Fullscreen - High - 8 - Cocoa Temple (FPS)	**140.572006**	**141.346914**
Normalized	99.45%	100%
Standard Deviation	2.8%	2.8%
Shadow of the Tomb Raider - 1920 x 1080 - High - Off (FPS)	**143.0**	**144.2**
Normalized	99.17%	100%
Standard Deviation	0.1%	0.2%
Shadow of the Tomb Raider - 2560 x 1440 - High - Off (FPS)	**143.8**	**144.3**
Normalized	99.65%	100%
Standard Deviation	0.1%	0.3%
Total War: Three Kingdoms - 1920 x 1080 - High - Battle Benchmark (FPS)	**98.0**	**98.5**
Normalized	99.49%	100%
Standard Deviation	0.7%	0.3%
Total War: Three Kingdoms - 2560 x 1440 - High - Battle Benchmark (FPS)	**68.7**	**69.2**
Normalized	99.28%	100%
Standard Deviation	0.4%	0.7%
Total War: WARHAMMER II - 1920 x 1080 - High - F.G.B (FPS)	**125.6**	**126.0**
Normalized	99.68%	100%
Standard Deviation	0.3%	0.3%
Total War: WARHAMMER II - 2560 x 1440 - High - F.G.B (FPS)	**89.9**	**89.7**
Normalized	100%	99.78%
Standard Deviation	0.3%	0.2%
Total War: WARHAMMER II - 1920 x 1080 - Medium - F.G.B (FPS)	**162.6**	**163.7**
Normalized	99.33%	100%
Standard Deviation	0.5%	0.3%
Unigine Superposition - 2560 x 1440 - Fullscreen - Medium - OpenGL (FPS)	**88.6**	**88.7**
Normalized	99.89%	100%
Standard Deviation	0.2%	0.1%
Xonotic - 3840 x 2160 - Ultra (FPS)	**304.8696795**	**298.4864425**
Normalized	100%	97.91%
Standard Deviation	0.3%	0.3%
Xonotic - 3840 x 2160 - Ultimate (FPS)	**226.3383771**	**224.1621922**
Normalized	100%	99.04%
Standard Deviation	0.5%	0.2%
X-Plane - Very High - 2560 x 1440 (FPS)	**79.94**	**79.98**
Normalized	99.95%	100%

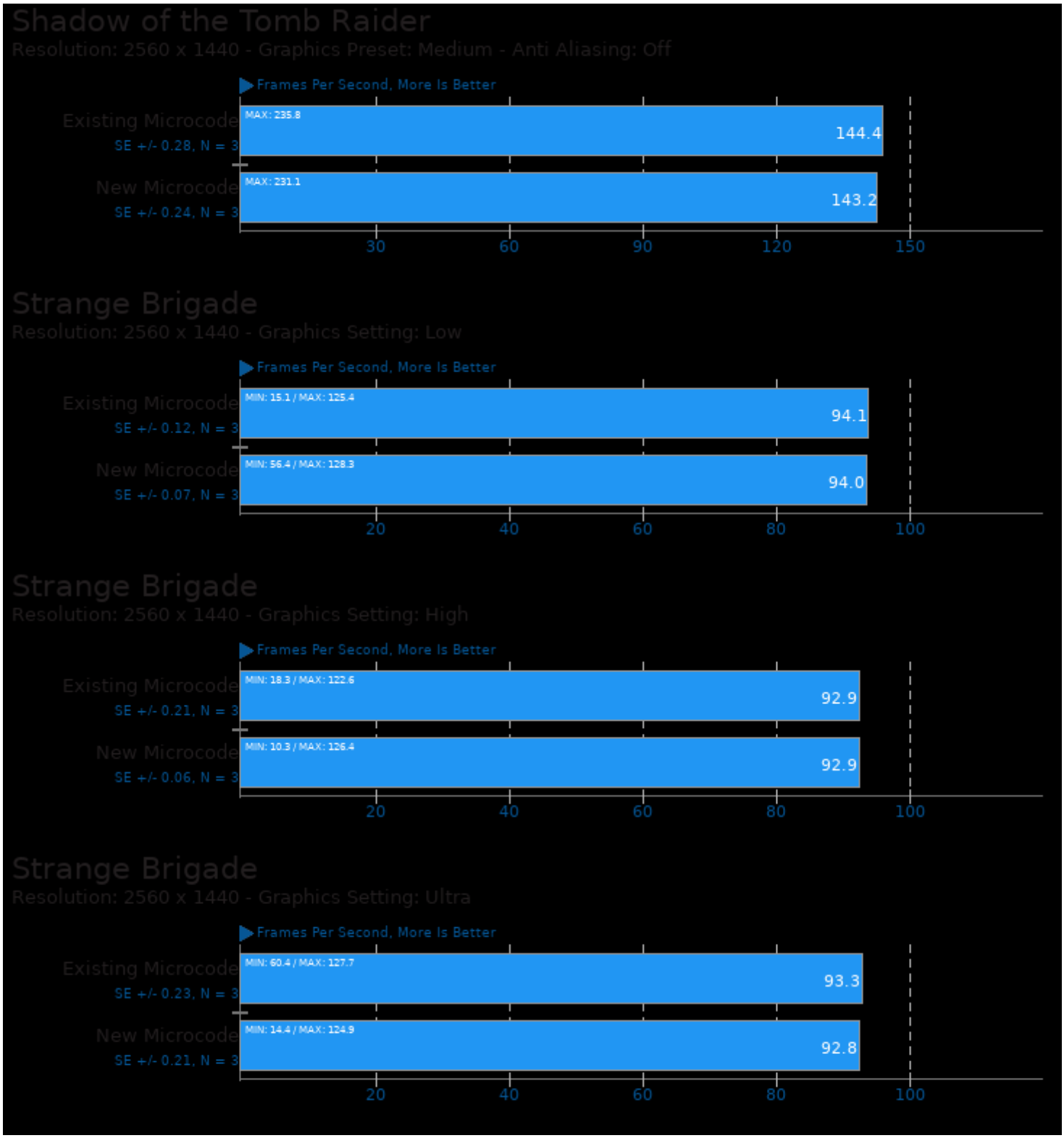

Batman: Arkham Origins
Resolution: 2560 x 1440
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.42, N = 3
MIN: 39.53 / MAX: 205.07
109.74
New Microcode
SE +/- 0.21, N = 3
MIN: 46.96 / MAX: 201.36
109.10
20
40
60
80
100
Deus Ex: Mankind Divided
Preset: 2560 x 1440 - High Quality
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.03, N = 3
MIN: 44.3 / MAX: 88.7
61.9
New Microcode
SE +/- 0.31, N = 3
MIN: 43.3 / MAX: 88.7
61.8
14
28
42
56
70
Deus Ex: Mankind Divided
Preset: 1920 x 1080 - Ultra Quality
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.63, N = 3
MIN: 39 / MAX: 96.6
59.8
New Microcode
SE +/- 0.56, N = 3
MIN: 34.6 / MAX: 98
60.3
13
26
39
52
65
DiRT Rally 2.0
Resolution: 2560 x 1440 - Graphics Preset: High
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.27, N = 3
MIN: 117.35 / MAX: 172.5
138.69
New Microcode
SE +/- 0.27, N = 3
MIN: 116.07 / MAX: 171.28
136.88
30
60
90
120
150

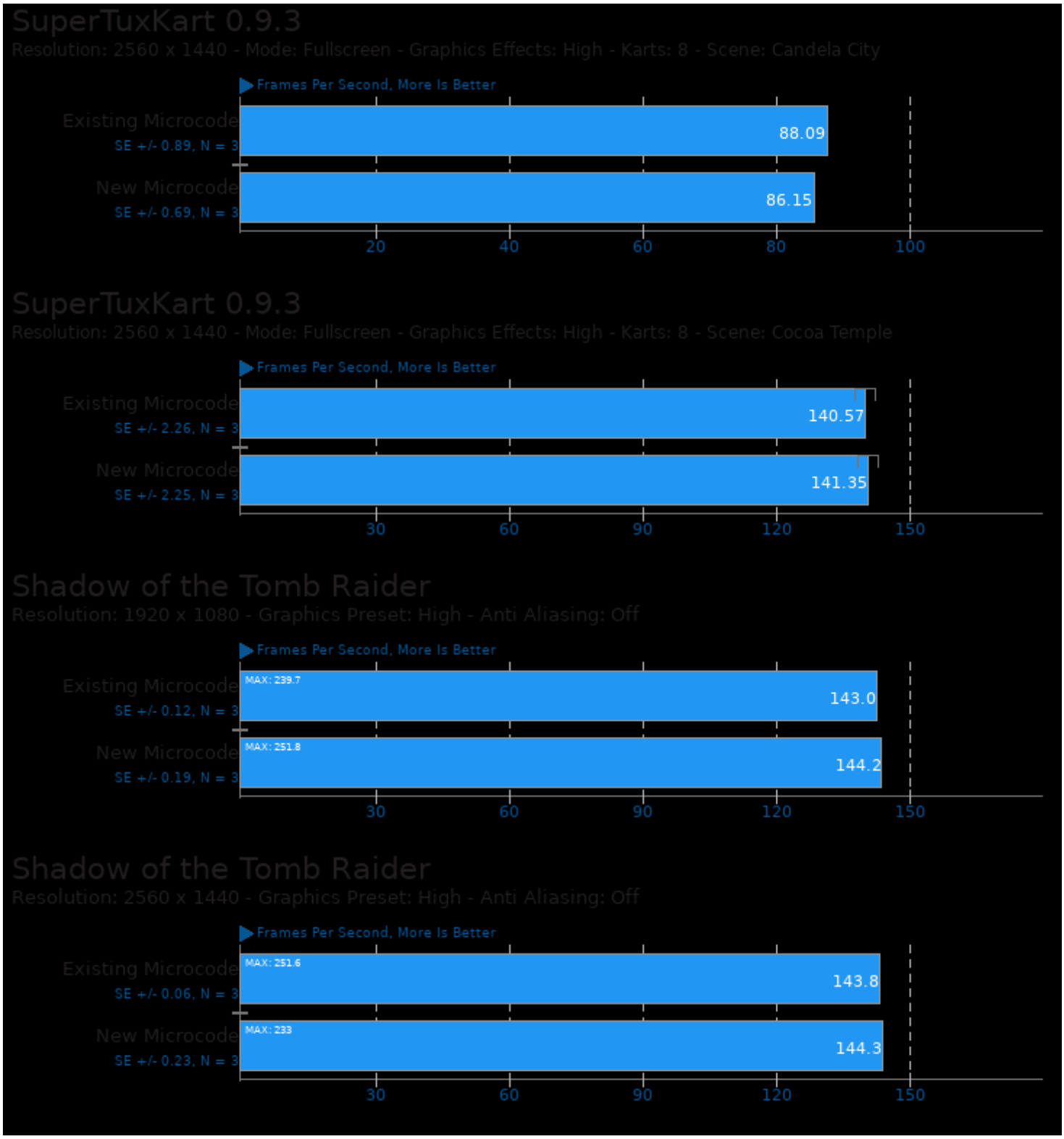

Dota 2
Resolution: 2560 x 1440 - Renderer: OpenGL
Frames Per Second, More Is Better
Existing Microcode
SE +/- 1.10, N = 4
MIN: 72 / MAX: 76.8
75.0
New Microcode
SE +/- 0.94, N = 3
MIN: 71.9 / MAX: 74.8
73.8
20
40
60
80
100
Dota 2
Resolution: 2560 x 1440 - Renderer: Vulkan
Frames Per Second, More Is Better
Existing Microcode
SE +/- 1.00, N = 4
MIN: 72.6 / MAX: 76.9
74.6
New Microcode
SE +/- 0.61, N = 3
MIN: 72.1 / MAX: 74.2
73.2
20
40
60
80
100
ET: Legacy 2.75
Renderer: Renderer2 - Resolution: 3840 x 2160
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.52, N = 3
246.8
New Microcode
SE +/- 0.92, N = 3
226.5
50
100
150
200
250
F1 2017
Resolution: 1920 x 1080 - Graphics Preset: High - Anti Aliasing: Off
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.67, N = 3
MIN: 88 / MAX: 170
136
New Microcode
SE +/- 1.80, N = 4
MIN: 91 / MAX: 173
134
30
60
90
120
150

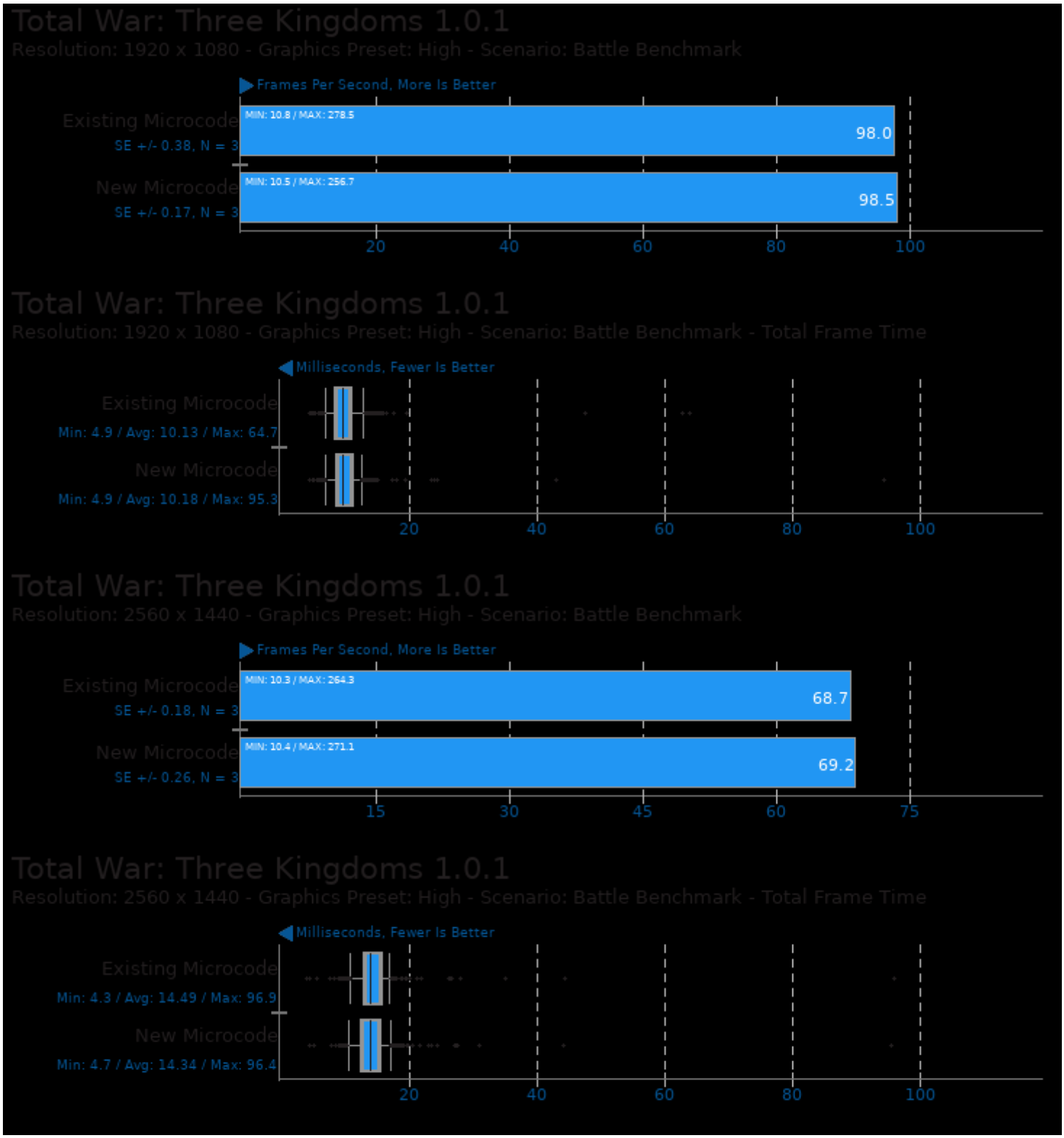

F1 2017
Resolution: 2560 x 1440 - Graphics Preset: High - Anti Aliasing: Off
Frames Per Second, More Is Better
Existing Microcode
SE +/- 1.52, N = 6
MIN: 89 / MAX: 180
135
New Microcode
SE +/- 1.20, N = 3
MIN: 90 / MAX: 170
132
30
60
90
120
150
HITMAN
Resolution: 2560 x 1440 - Quality Level: Low
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.14, N = 3
MIN: 106.28 / MAX: 106.69
106.42
New Microcode
SE +/- 0.23, N = 3
MIN: 105.51 / MAX: 106.29
105.90
20
40
60
80
100
HITMAN
Resolution: 2560 x 1440 - Quality Level: Low - Total Frame Time
Milliseconds, Fewer Is Better
Existing Microcode
Min: 3.79 / Avg: 9.41 / Max: 121.21
New Microcode
Min: 3.85 / Avg: 9.48 / Max: 120.05
20
40
60
80
100
HITMAN
Resolution: 2560 x 1440 - Quality Level: Ultra
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.11, N = 3
MIN: 76.12 / MAX: 76.49
76.33
New Microcode
SE +/- 0.17, N = 3
MIN: 75.33 / MAX: 75.9
75.64
20
40
60
80
100

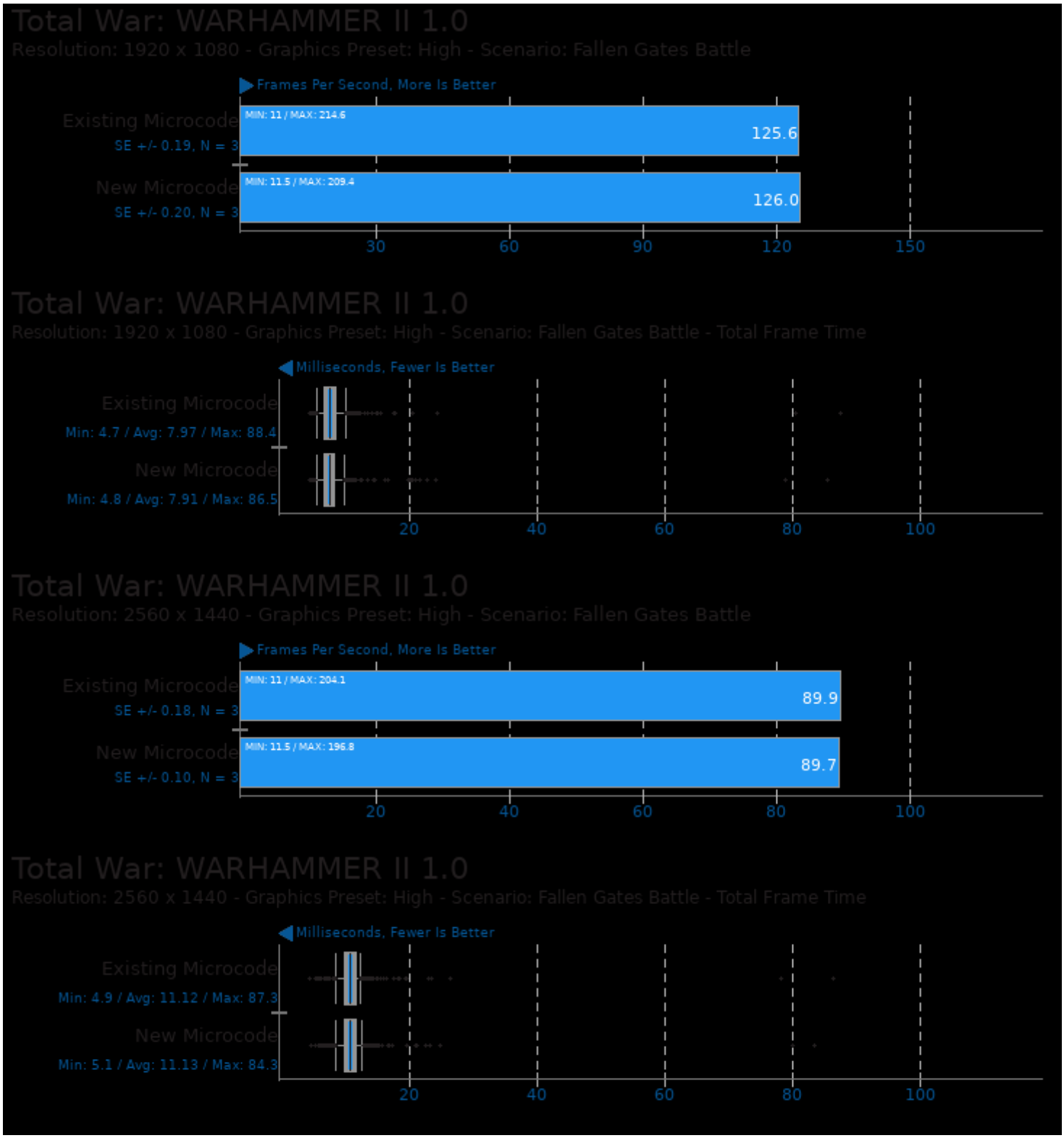

HITMAN
Resolution: 2560 x 1440 - Quality Level: Ultra - Total Frame Time
Milliseconds, Fewer Is Better
Existing Microcode
Min: 5.14 / Avg: 13.07 / Max: 144.93
New Microcode
Min: 4.92 / Avg: 13.17 / Max: 144.51
30
60
90
120
150
HITMAN 2
Resolution: 2560 x 1440 - Quality Level: Low
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.21, N = 3
MIN: 89.29 / MAX: 89.99
89.57
New Microcode
SE +/- 0.08, N = 3
MIN: 89.25 / MAX: 89.53
89.41
20
40
60
80
100
HITMAN 2
Resolution: 2560 x 1440 - Quality Level: Low - Total Frame Time
Milliseconds, Fewer Is Better
Existing Microcode
Min: 4.57 / Avg: 11.18 / Max: 26.16
New Microcode
Min: 4.06 / Avg: 11.17 / Max: 49.09
10
20
30
40
50
HITMAN 2
Resolution: 2560 x 1440 - Quality Level: Ultra
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.37, N = 3
MIN: 81.43 / MAX: 82.71
82.13
New Microcode
SE +/- 0.15, N = 3
MIN: 81.03 / MAX: 81.53
81.32
20
40
60
80
100

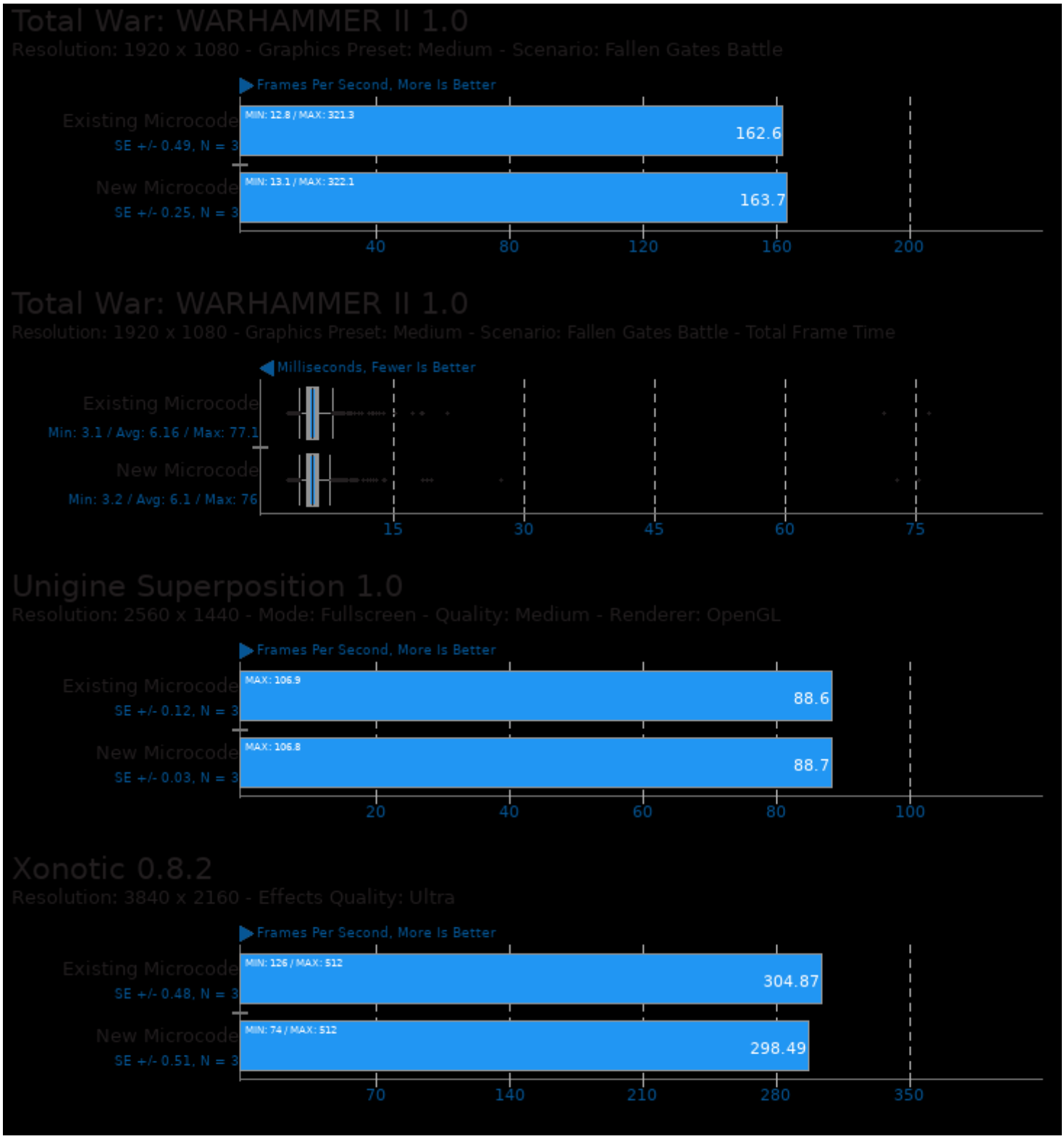

HITMAN 2
Resolution: 2560 x 1440 - Quality Level: Ultra - Total Frame Time
Milliseconds, Fewer Is Better
Existing Microcode
Min: 4.5 / Avg: 12.09 / Max: 33.8
New Microcode
Min: 4.24 / Avg: 12.34 / Max: 43.48
9
18
27
36
45
Rise of the Tomb Raider
Resolution: 2560 x 1440 - Graphics Preset: High - Anti Aliasing: FXAA - Scene: Spine Of The Mountain
Frames Per Second, More Is Better
Existing Microcode
SE +/- 1.36, N = 3
MIN: 40.5 / MAX: 285.3
153.1
New Microcode
SE +/- 0.19, N = 3
MIN: 36.6 / MAX: 291.5
151.9
30
60
90
120
150
Rise of the Tomb Raider
Resolution: 2560 x 1440 - Graphics Preset: High - Anti Aliasing: FXAA - Scene: Prophets Tomb
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.13, N = 3
MIN: 26.2 / MAX: 220.3
124.5
New Microcode
SE +/- 0.33, N = 3
MIN: 39.9 / MAX: 217.9
123.2
30
60
90
120
150
Rise of the Tomb Raider
Resolution: 2560 x 1440 - Graphics Preset: High - Anti Aliasing: FXAA - Scene: Geothermal Valley
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.62, N = 3
MIN: 69 / MAX: 165.1
128.4
New Microcode
SE +/- 0.63, N = 3
MIN: 80.5 / MAX: 161.8
126.7
30
60
90
120
150

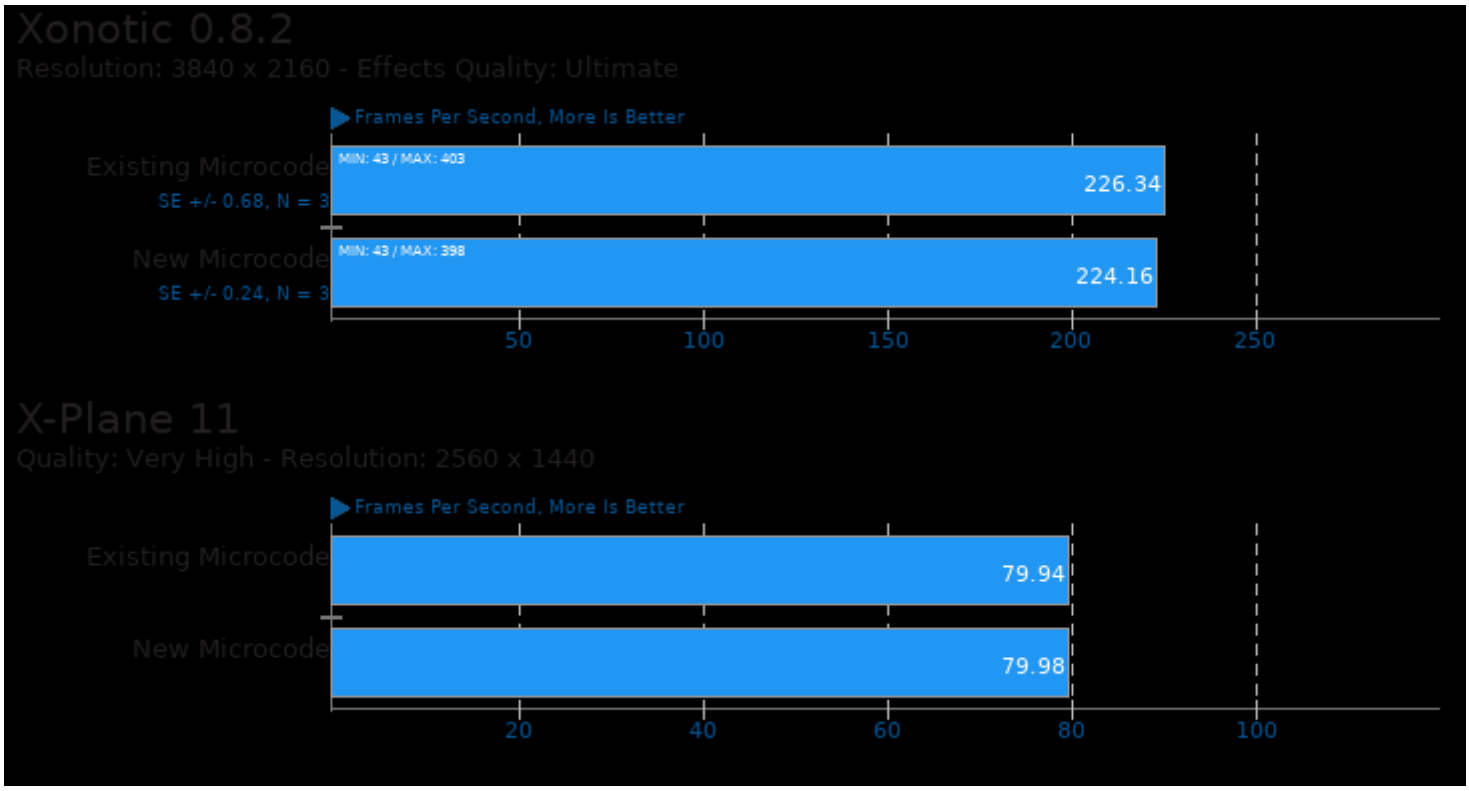

Shadow of the Tomb Raider
Resolution: 2560 x 1440 - Graphics Preset: Medium - Anti Aliasing: Off
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.28, N = 3
MAX: 235.8
144.4
New Microcode
SE +/- 0.24, N = 3
MAX: 231.1
143.2
30
60
90
120
150
Strange Brigade
Resolution: 2560 x 1440 - Graphics Setting: Low
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.12, N = 3
MIN: 15.1 / MAX: 125.4
94.1
New Microcode
SE +/- 0.07, N = 3
MIN: 56.4 / MAX: 128.3
94.0
20
40
60
80
100
Strange Brigade
Resolution: 2560 x 1440 - Graphics Setting: High
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.21, N = 3
MIN: 18.3 / MAX: 122.6
92.9
New Microcode
SE +/- 0.06, N = 3
MIN: 10.3 / MAX: 126.4
92.9
20
40
60
80
100
Strange Brigade
Resolution: 2560 x 1440 - Graphics Setting: Ultra
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.23, N = 3
MIN: 60.4 / MAX: 127.7
93.3
New Microcode
SE +/- 0.21, N = 3
MIN: 14.4 / MAX: 124.9
92.8
20
40
60
80
100


SuperTuxKart 0.9.3
Resolution: 2560 x 1440 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Candela City
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.89, N = 3
88.09
New Microcode
SE +/- 0.69, N = 3
86.15
20
40
60
80
100
SuperTuxKart 0.9.3
Resolution: 2560 x 1440 - Mode: Fullscreen - Graphics Effects: High - Karts: 8 - Scene: Cocoa Temple
Frames Per Second, More Is Better
Existing Microcode
SE +/- 2.26, N = 3
140.57
New Microcode
SE +/- 2.25, N = 3
141.35
30
60
90
120
150
Shadow of the Tomb Raider
Resolution: 1920 x 1080 - Graphics Preset: High - Anti Aliasing: Off
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.12, N = 3
MAX: 239.7
143.0
New Microcode
SE +/- 0.19, N = 3
MAX: 251.8
144.2
30
60
90
120
150
Shadow of the Tomb Raider
Resolution: 2560 x 1440 - Graphics Preset: High - Anti Aliasing: Off
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.06, N = 3
MAX: 251.6
143.8
New Microcode
SE +/- 0.23, N = 3
MAX: 233
144.3
30
60
90
120
150

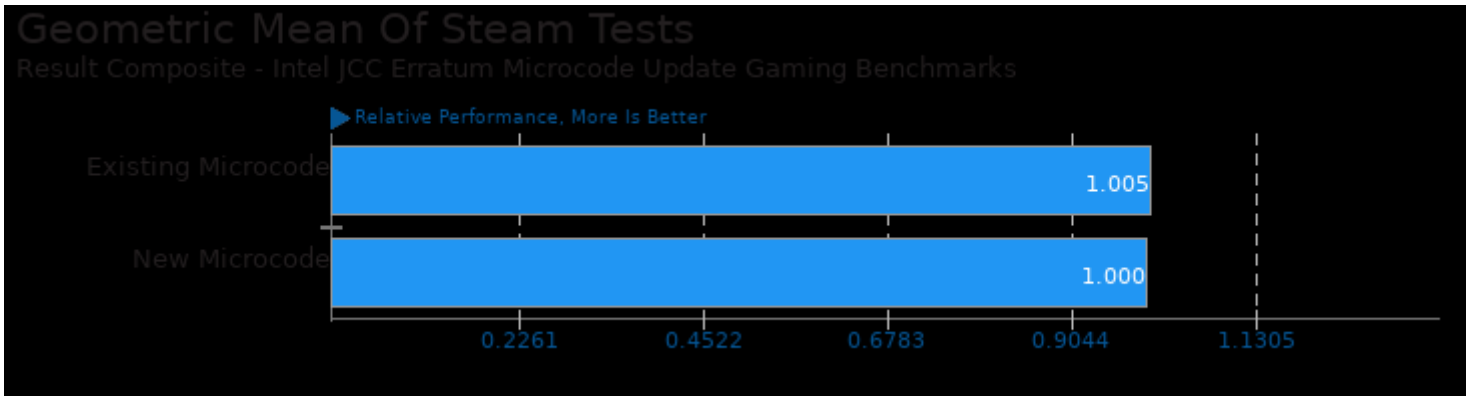

Total War: Three Kingdoms 1.0.1
Resolution: 1920 x 1080 - Graphics Preset: High - Scenario: Battle Benchmark
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.38, N = 3
MIN: 10.8 / MAX: 278.5
98.0
New Microcode
SE +/- 0.17, N = 3
MIN: 10.5 / MAX: 256.7
98.5
20
40
60
80
100
Total War: Three Kingdoms 1.0.1
Resolution: 1920 x 1080 - Graphics Preset: High - Scenario: Battle Benchmark - Total Frame Time
Milliseconds, Fewer Is Better
Existing Microcode
Min: 4.9 / Avg: 10.13 / Max: 64.7
New Microcode
Min: 4.9 / Avg: 10.18 / Max: 95.3
20
40
60
80
100
Total War: Three Kingdoms 1.0.1
Resolution: 2560 x 1440 - Graphics Preset: High - Scenario: Battle Benchmark
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.18, N = 3
MIN: 10.3 / MAX: 264.3
68.7
New Microcode
SE +/- 0.26, N = 3
MIN: 10.4 / MAX: 271.1
69.2
15
30
45
60
75
Total War: Three Kingdoms 1.0.1
Resolution: 2560 x 1440 - Graphics Preset: High - Scenario: Battle Benchmark - Total Frame Time
Milliseconds, Fewer Is Better
Existing Microcode
Min: 4.3 / Avg: 14.49 / Max: 96.9
New Microcode
Min: 4.7 / Avg: 14.34 / Max: 96.4
20
40
60
80
100


Total War: WARHAMMER II 1.0
Resolution: 1920 x 1080 - Graphics Preset: High - Scenario: Fallen Gates Battle
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.19, N = 3
MIN: 11 / MAX: 214.6
125.6
New Microcode
SE +/- 0.20, N = 3
MIN: 11.5 / MAX: 209.4
126.0
30
60
90
120
150
Total War: WARHAMMER II 1.0
Resolution: 1920 x 1080 - Graphics Preset: High - Scenario: Fallen Gates Battle - Total Frame Time
Milliseconds, Fewer Is Better
Existing Microcode
Min: 4.7 / Avg: 7.97 / Max: 88.4
New Microcode
Min: 4.8 / Avg: 7.91 / Max: 86.5
20
40
60
80
100
Total War: WARHAMMER II 1.0
Resolution: 2560 x 1440 - Graphics Preset: High - Scenario: Fallen Gates Battle
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.18, N = 3
MIN: 11 / MAX: 204.1
89.9
New Microcode
SE +/- 0.10, N = 3
MIN: 11.5 / MAX: 196.8
89.7
20
40
60
80
100
Total War: WARHAMMER II 1.0
Resolution: 2560 x 1440 - Graphics Preset: High - Scenario: Fallen Gates Battle - Total Frame Time
Milliseconds, Fewer Is Better
Existing Microcode
Min: 4.9 / Avg: 11.12 / Max: 87.3
New Microcode
Min: 5.1 / Avg: 11.13 / Max: 84.3
20
40
60
80
100


Total War: WARHAMMER II 1.0
Resolution: 1920 x 1080 - Graphics Preset: Medium - Scenario: Fallen Gates Battle
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.49, N = 3
MIN: 12.8 / MAX: 321.3
162.6
New Microcode
SE +/- 0.25, N = 3
MIN: 13.1 / MAX: 322.1
163.7
40
80
120
160
200
Total War: WARHAMMER II 1.0
Resolution: 1920 x 1080 - Graphics Preset: Medium - Scenario: Fallen Gates Battle - Total Frame Time
Milliseconds, Fewer Is Better
Existing Microcode
Min: 3.1 / Avg: 6.16 / Max: 77.1
New Microcode
Min: 3.2 / Avg: 6.1 / Max: 76
15
30
45
60
75
Unigine Superposition 1.0
Resolution: 2560 x 1440 - Mode: Fullscreen - Quality: Medium - Renderer: OpenGL
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.12, N = 3
MAX: 106.9
88.6
New Microcode
SE +/- 0.03, N = 3
MAX: 106.8
88.7
20
40
60
80
100
Xonotic 0.8.2
Resolution: 3840 x 2160 - Effects Quality: Ultra
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.48, N = 3
MIN: 126 / MAX: 512
304.87
New Microcode
SE +/- 0.51, N = 3
MIN: 74 / MAX: 512
298.49
70
140
210
280
350


Xonotic 0.8.2
Resolution: 3840 x 2160 - Effects Quality: Ultimate
Frames Per Second, More Is Better
Existing Microcode
SE +/- 0.68, N = 3
MIN: 43 / MAX: 403
226.34
New Microcode
SE +/- 0.24, N = 3
MIN: 43 / MAX: 398
224.16
50
100
150
200
250
X-Plane 11
Quality: Very High - Resolution: 2560 x 1440
Frames Per Second, More Is Better
Existing Microcode
79.94
New Microcode
79.98
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/batman-origins, pts/dirt-rally2, pts/dota2, pts/f12017, pts/hitman, pts/hitman2, pts/riseofthetombraider, pts/shadowofthetombraider, pts/strange-brigade, pts/twtk, pts/tww2, pts/xplane11 and pts/deus-exmd

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 15:53.