Compare Snapdragon 7+ Gen 3 and Snapdragon 8 Gen 2 benchmarks

Qualcomm introduced the new Snapdragon 7+ Gen 3 just a few days ago and OnePlus announced the OnePlus Ace 3V in China with this chipset. Today's article will compare Snapdragon 7+ Gen 3 with Snapdragon 8 Gen 2, a flagship chipset from 2022.

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Note : Benchmark tests on OnePlus Ace 3V powered by Snapdragon 7+ Gen 3 and OnePlus 12R powered by Snapdragon 8 Gen 2.

Compare specifications

Before moving forward, let's learn how Snapdragon chipsets are named and see the specs comparison between Snapdragon 7+ Gen 3 and Snapdragon 8 Gen 2.

	Snapdragon 7+ Gen 3	Snapdragon 8 Gen 2
Release date	March 2024	November 2022
Node processing	TSMC 4nm	TSMC 4nm
CPU	Octa-core Kryo CPU 1x 2.8GHz (Cortex-X4) 4x 2.6GHz (Cortex-A720) 3x 1.9GHz (Cortex-A520)	Octa-core Kryo CPU 1x 3.2GHz (Cortex-X3) 2x 2.8GHz (Cortex-A715) 2x 2.8GHz (Cortex-A710) 3x 2.0GHz (Cortex-A510)
GPU	Adreno 732 GPU Super Resolution AFME 2.0 Game Post Processing Accelerator	Adreno 740 GPU Ray Tracing is hardware-accelerated with Unreal Engine 5 Game Post Processing Accelerator
NPU	Hexagon NPU Runs AI models on the device	Hexagon NPU
Camera support	Cognitive ISP, 3 18-bit ISPs Up to 200MP Bokeh Engine 2.0 Snapdragon Low Light Vision Google Ultra HDR	18-Bit Spectra ISP Cognitive ISP Snapdragon Sight

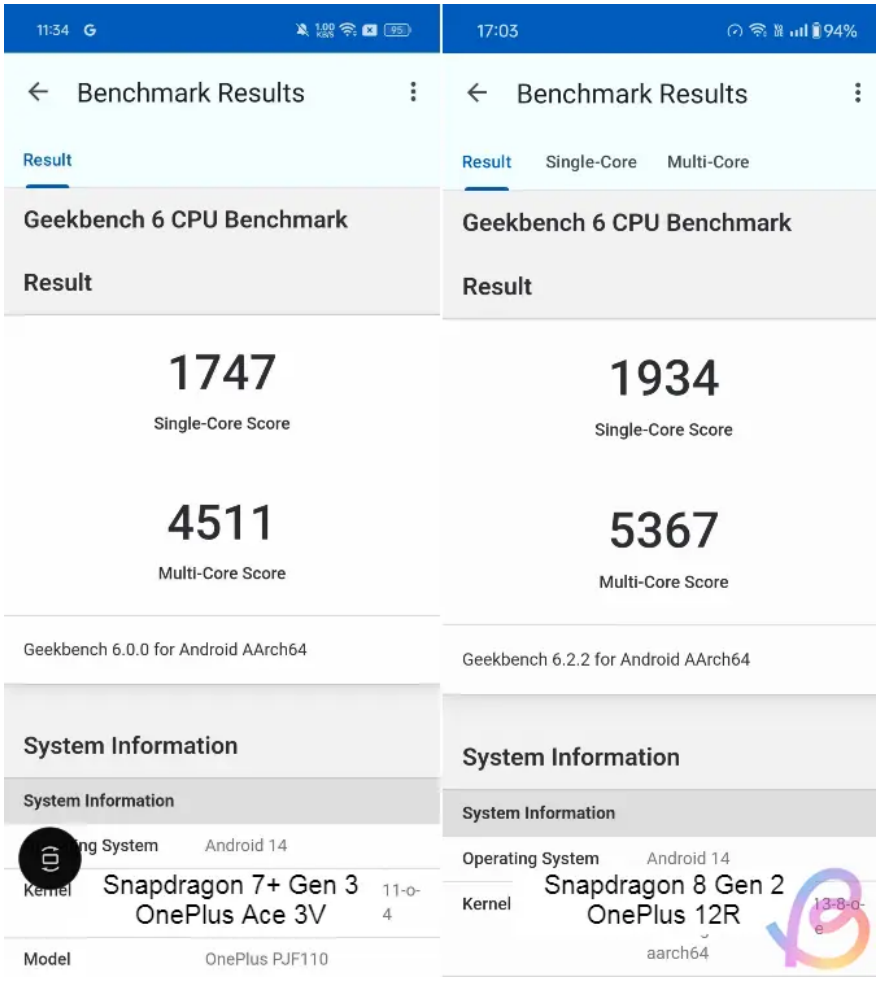
Connect	Wi-Fi 7, Bluetooth 5.4, LE	Wi-Fi 7, Bluetooth 5.3, LE
Modem	Snapdragon X63 5G Modem Peak download speed 4.2 Gbps	Snapdragon X70 5G Modem Peak download speed 10 Gbps
Memory/RAM support	UFS 4.0 LPDDR5X memory up to 4200 MHz	UFS 4.0 LPDDR5X memory up to 4200 MHz
NavIC support	Have	Have
AV1 Decoding	Are not	Have

Geekbench score 6

First of all, Geekbench 6 was tested on both Snapdragon 7+ Gen 3 and Snapdragon 8 Gen 2 to evaluate their CPU performance. Snapdragon 7+ Gen 3 scored 1,747 points in the single-core test and 4,511 in the multi-core test. For comparison, the Snapdragon 8 Gen 2 scored slightly higher at 1,934 in single-core tasks and 5,367 in multi-threaded tasks.

Even though the Snapdragon 8 Gen 2 has older cores, the high CPU frequency (up to 3.2 GHz) ensures it gets more performance out of the chipset. On the other hand, Snapdragon 7+ Gen 3 clocks up to 2.8 GHz, delivering good performance while maintaining efficiency. For a 7-series chipset to get closer to the flagship 8-series SoC is certainly exciting.

Geekbench 6	**Snapdragon 7+ Gen 3**	**Snapdragon 8 Gen 2**
Single core	1,747	1,934
Multi-core	4,511	5,367



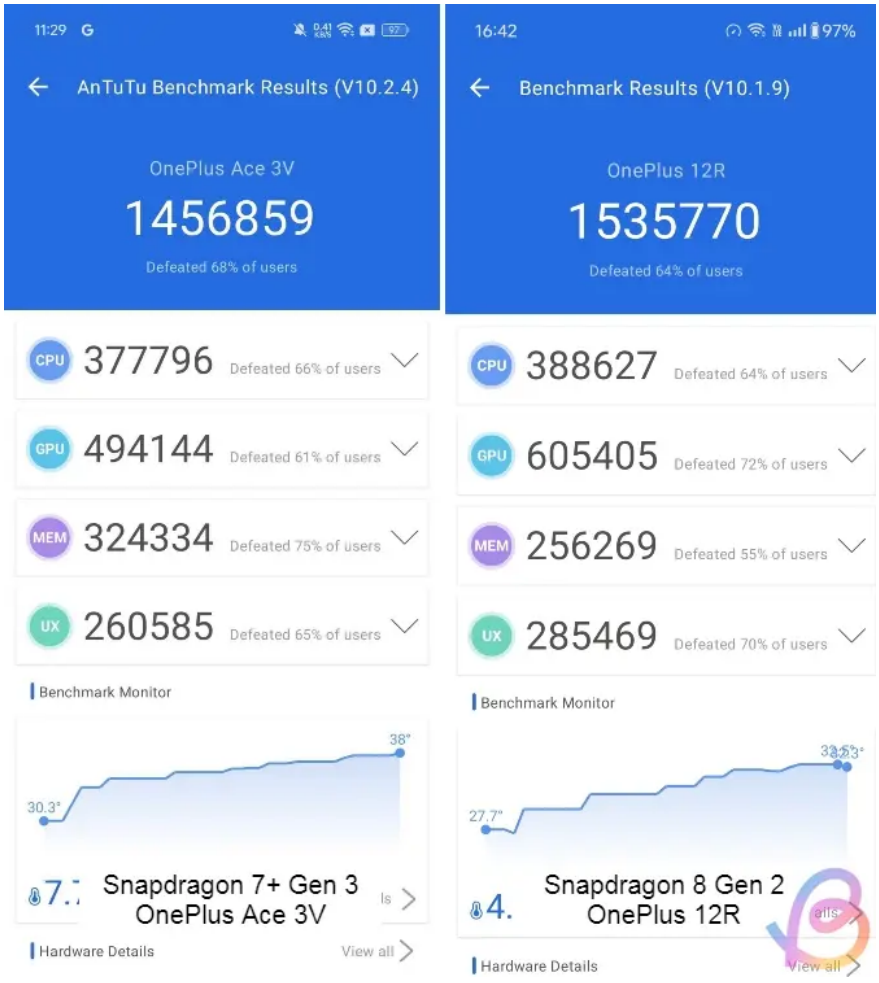
AnTuTu benchmark score

In the AnTuTu benchmark test, Snapdragon 7+ Gen 3 came close to Snapdragon 8 Gen 2. SD 7+ Gen 3 scored 14,56,859 points in the AnTuTu test while SD 8 Gen 2 scored 15,35,770 points. There is only a 5% difference in overall performance. In the CPU test, it was almost on par with the 8 Gen 2.

However, in the GPU test, the Adreno 740 GPU on Snapdragon 8 Gen 2 has a slight lead. But the Adreno 732 GPU on Snapdragon 7 Plus Gen 3 is no less competitive. In the memory test, Snapdragon 7+ Gen 3 performed well when paired with UFS 4.0 storage.

The OnePlus 12R used in this test has older UFS 3.1 storage, which may affect its performance. Both come with LPDDR5X memory. In UX text, both chipsets operate on similar lines.

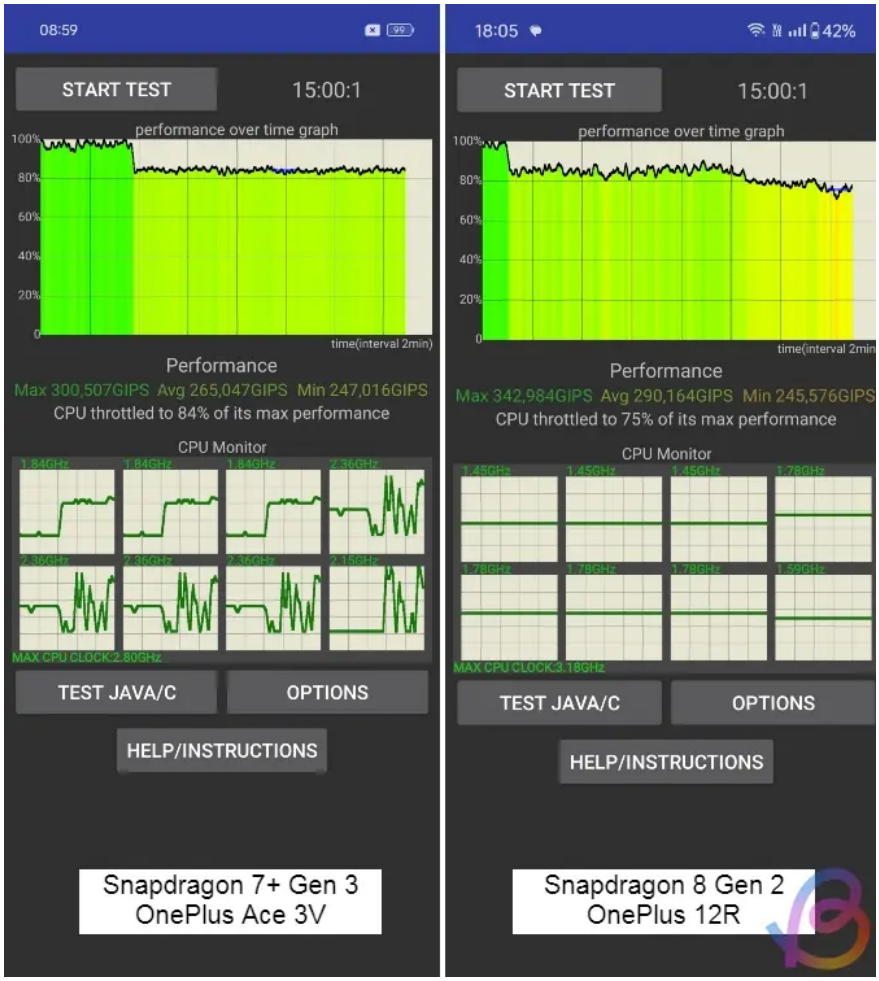
AnTuTu Benchmark	Snapdragon 7+ Gen 3	Snapdragon 8 Gen 2
AnTuTu score	14,56,859	15,35,770
CPU	3,77,796	3,88,627
GPU	4,94,144	6,05,405
Memory	3,24,334	2,56,269
UX	2,60,585	2,85,469



Check CPU Throttling

In the CPU Throttling test, Snapdragon 7+ Gen 3 performed very well. It includes newer, very efficient CPU cores. The SD 7+ Gen 3 accelerated to 84% of maximum performance, showing minimal performance degradation after the 15-minute test. The author of the article ran the test at least 7 times and the results were quite consistent.

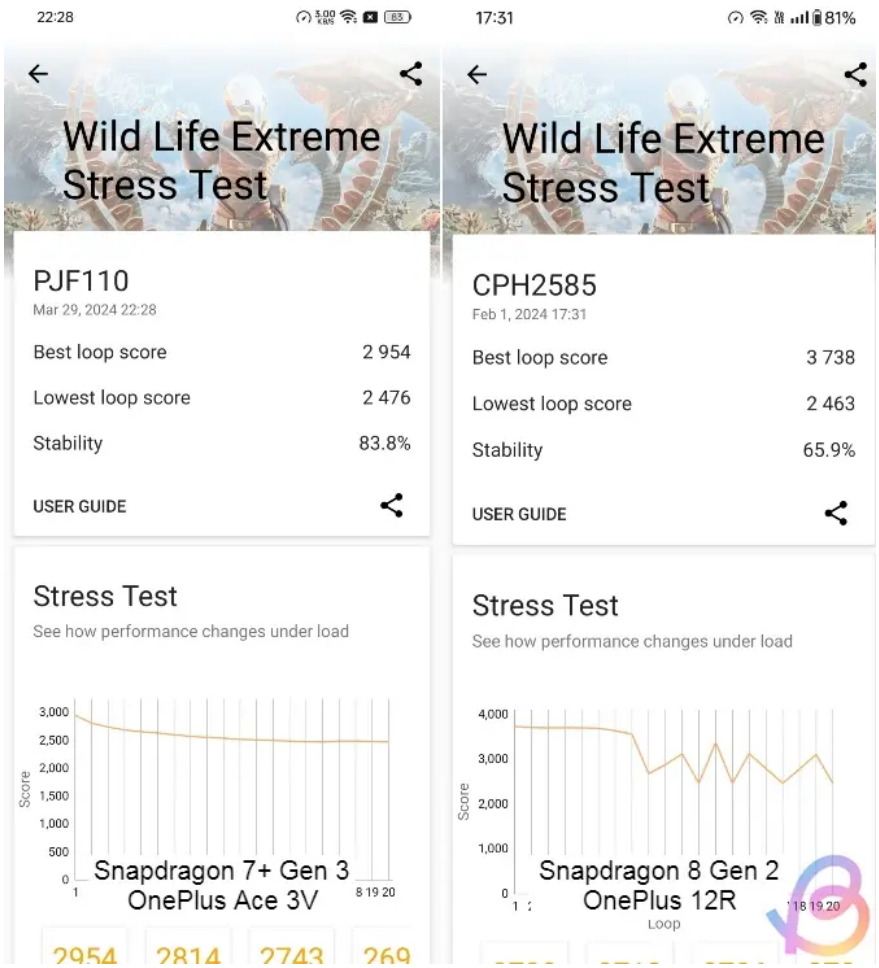
The Snapdragon 8 Gen 2 accelerated to 75% of maximum performance, however, it executed more commands in the 15-minute test. Towards the end, the CPU shows a decrease in performance. In terms of efficiency and ability to sustain high CPU pressure, the Snapdragon 7+ Gen 3 performed better than the flagship Snapdragon 8 Gen 2 SoC.



Stresstest 3DMark Wild Life Extreme

To test the GPU's performance, the 3DMark Wild Life Extreme stresstest was run intensively. The Adreno 732 GPU on Snapdragon 7+ Gen 3 has the best loop score of 2,954 and the lowest loop score of 2,476 with a stability of 83.8%.

On the other hand, Snapdragon 8 Gen 2's Adreno 740 GPU achieved the best loop score of 3,738 and the lowest loop score of 2,468 with a stability of 65.9%. The Adreno 740 GPU is actually more powerful, probably due to its higher clock speed. It also has hardware-accelerated Ray Tracing, which the Adreno 732 GPU lacks.



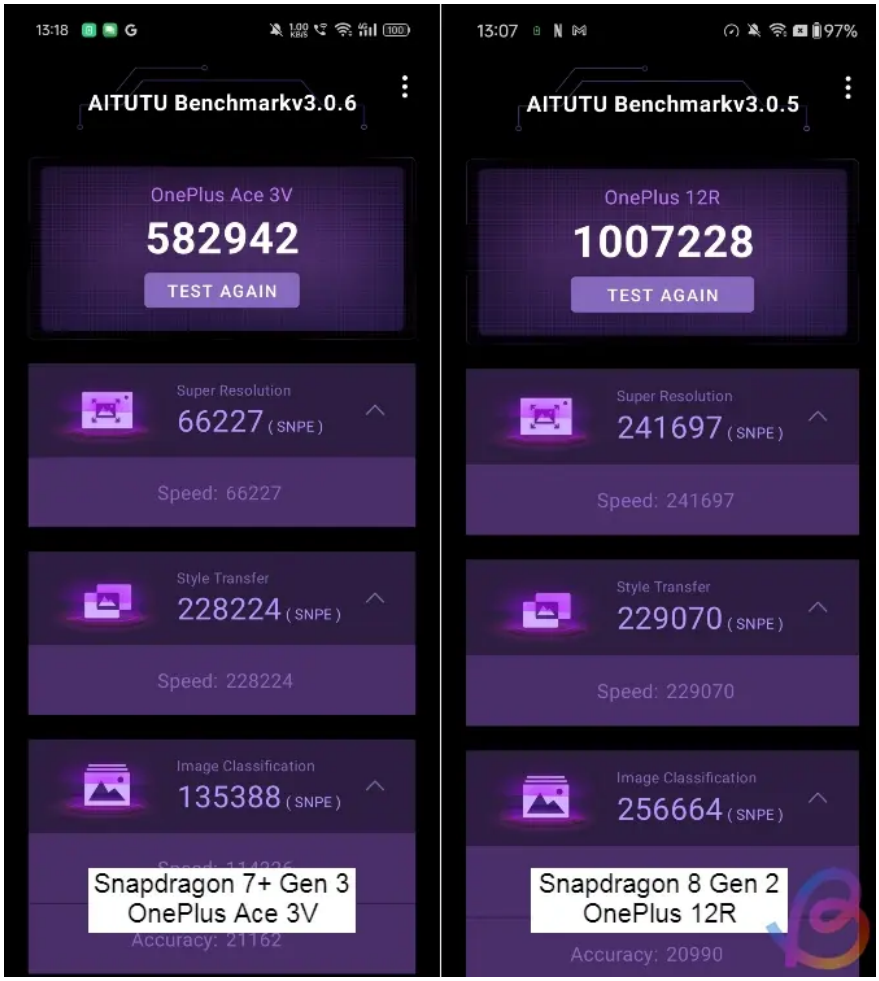
While the Snapdragon 7+ Gen 3 doesn't beat the flagship Adreno 740 GPU on the Snapdragon 8 Gen 2, it has a powerful GPU and is competitive with the top GPUs available today. Solar Bay was not tested because Snapdragon 7+ Gen 3 does not support Ray Tracing.

Stress Test 3DMark Wild Life Extreme	**Snapdragon 7+ Gen 3**	**Snapdragon 8 Gen 2**
Best loop point	2,954	3,738
Lowest loop point	2,476	2,463
Stability	83.8%	65.9%

Test AI performance

Coming to the AI ??performance test, the author ran the AITuTu benchmark and Snapdragon 7+ Gen 3 and achieved 5,82,942 points. On the contrary, Snapdragon 8 Gen 2 scored almost double the score, i.e. 10,07,228 points. That means the Hexagon NPU is almost twice as powerful as the Hexagon NPU on the Snapdragon 7+ Gen 3.

	Snapdragon 7+ Gen 3	**Snapdragon 8 Gen 2**
AITuTu Score	5,82,942	10,07,228

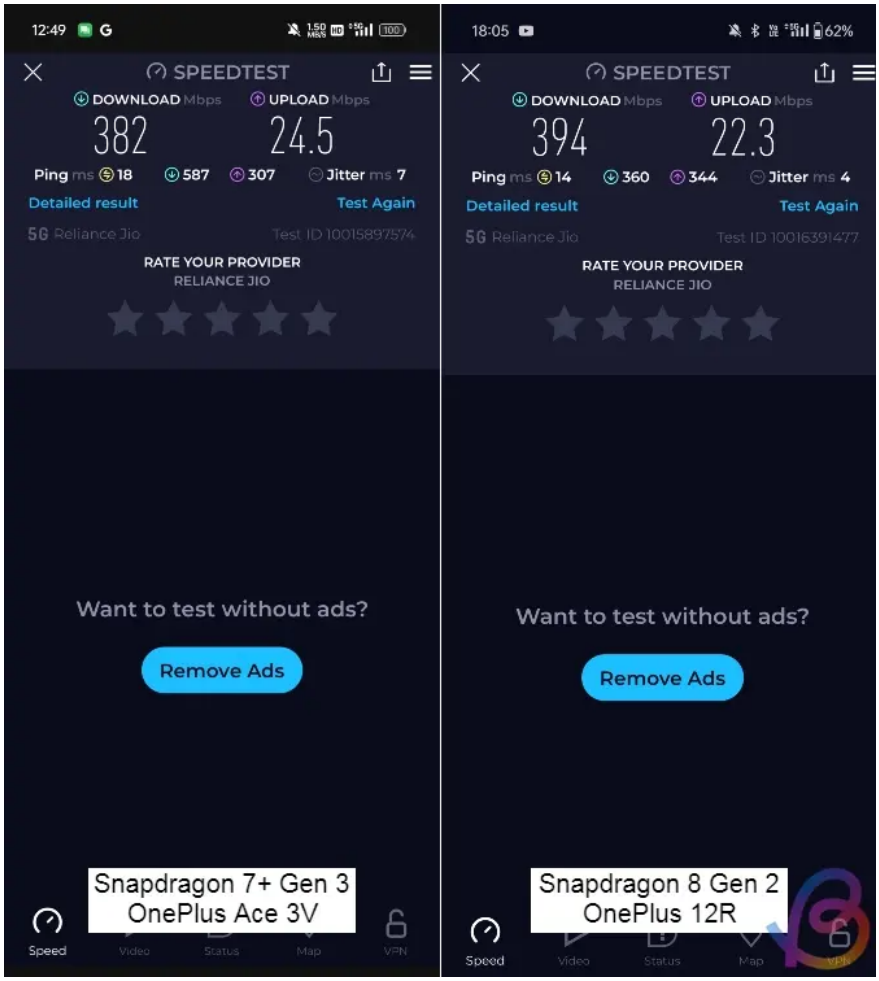


Test 5G speed

Finally, in the 5G speed test, the Snapdragon 8 Gen 2, which has an upgraded Snapdragon X70 5G modem, performed slightly better. It reaches a peak download speed of 394 Mbps and a peak upload speed of 22.3 Mbps.

Meanwhile, the older Snapdragon X63 5G modem on the Snapdragon 7+ Gen 3 achieved download speeds of 382 Mbps and upload speeds of 24.5 Mbps. Both the tests were conducted on Jio's 5G network.

Test 5G	Snapdragon 7+ Gen 3	Snapdragon 8 Gen 2
Download speed	382 Mbps	394 Mbps
Upload speed	24.5 Mbps	22.3 Mbps



Overall, the Snapdragon 7+ Gen 3 does not beat the Snapdragon 8 Gen 2 in any of the benchmark tests. However, it continues to show that the 7-series chipset can finally compete with older generation flagship SoCs. This makes Snapdragon 7+ Gen 3 an interesting chipset in the mid-range segment.

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