

Xiaomi Mi 11 gaming performance review: Is Snapdragon 888 as hot as rumors?

Xiaomi has officially launched the Mi 11 - its latest flagship generation at the end of December last year. At the same time, this is also the first smartphone in the world to be equipped with Qualcomm's most advanced Snapdragon 888 processor today.

The Snapdragon 888 is built on a 5nm process, with a total of eight cores - including one Cortex-X1 core clocked at 2.84GHz, three Cortex-A78 cores clocked at 2.4GHz, and four Cortex-A55 cores clocked at 1.8GHz.



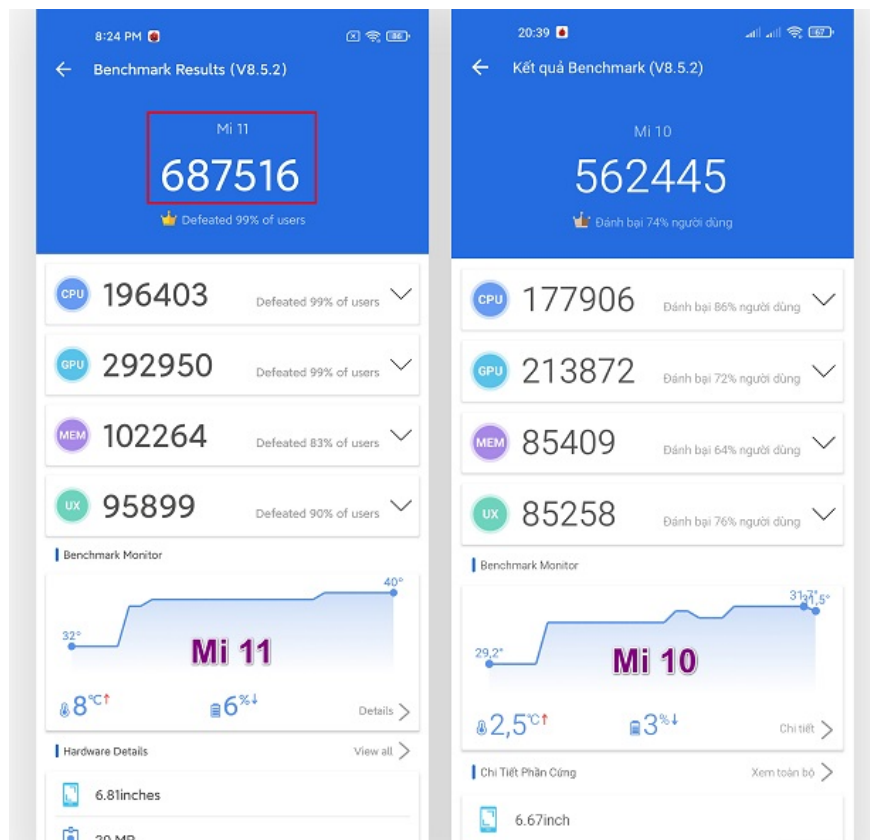
Xiaomi Mi 11 with Snapdragon 888 processor, Adreno 660 GPU, LPDDR5 RAM and UFS 3.1 memory.

According to an official announcement from Qualcomm, the Cortex-X1 core of the Snapdragon 888 is 33% stronger than the Cortex-A78 on the Snapdragon 865, while the Kryo 680 core offers 25% more performance and 25% more power savings. In terms of graphics processing power, the Snapdragon 888 comes with Adreno 660 GPU, 35% faster and 20% less power consuming than Adreno 650 GPU on Snapdragon 865.

To verify that, we will do some tests to evaluate the gaming performance of the Xiaomi Mi 11. The first is the benchmark test using the 3 most popular performance scoring software today - AnTuTu, Geekbench and 3DMark.

Test conditions: Indoors with a temperature of about 15 ° C, the screen of Xiaomi Mi 11 is set at 2K resolution and 120Hz refresh rate.

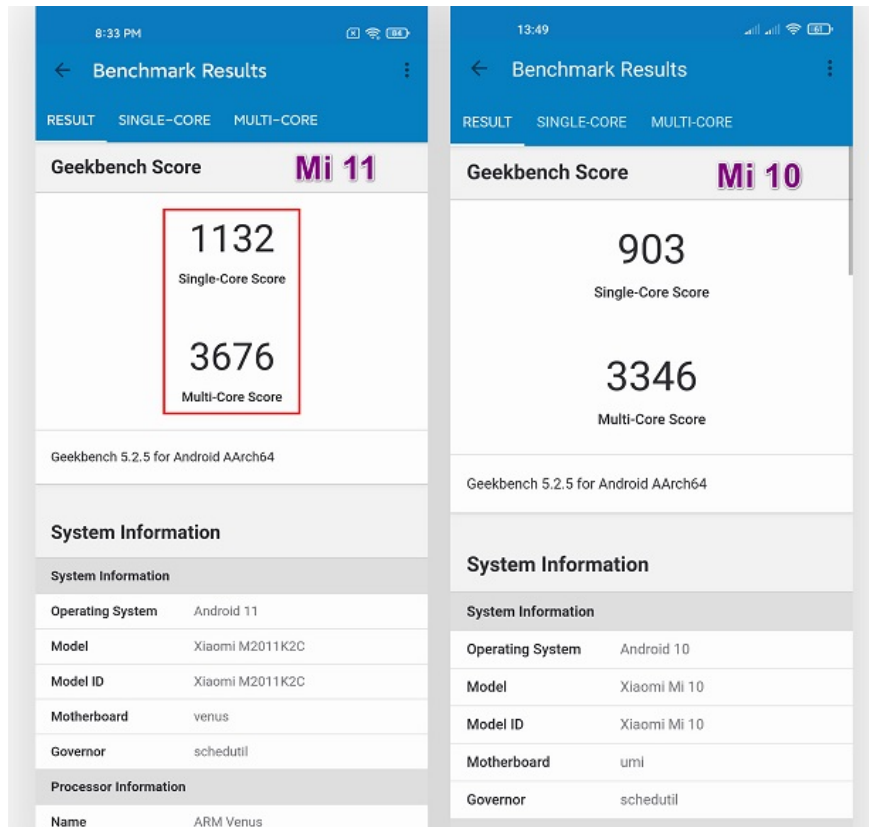
- **AnTuTu:** 687,516 points, including 196,403 CPU points, 292,950 GPU points, 102,264 points of Memory and 95,899 UX points (User Experience - User Experience).



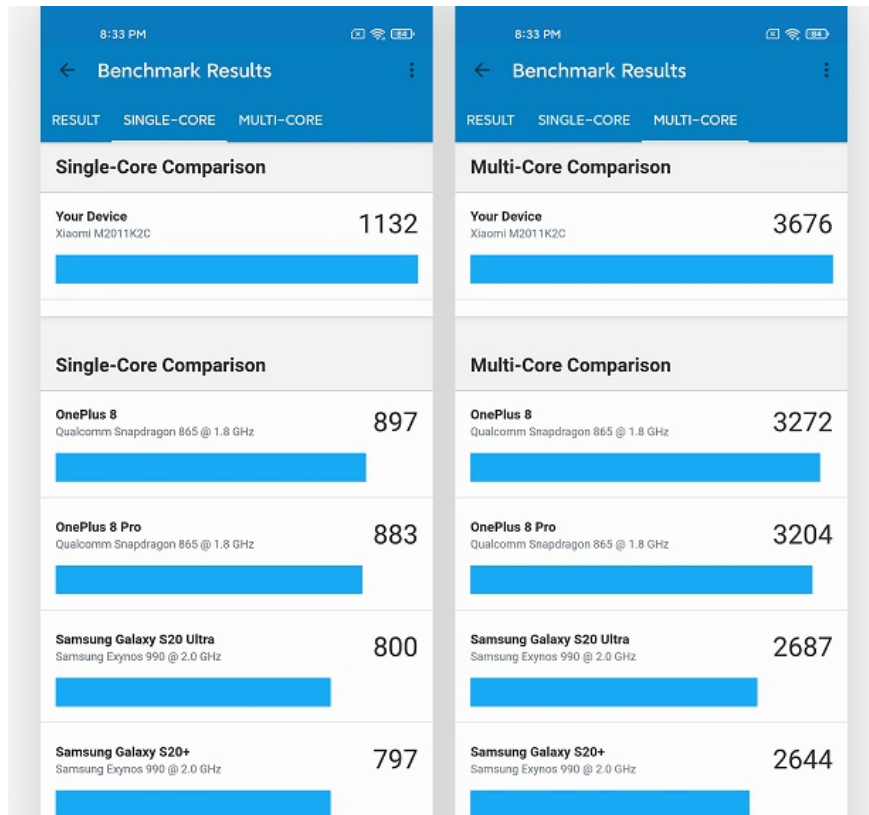
Mi 11 (Snapdragon 888 + Adreno 660) scored 687,516 AnTuTu, about 150,000 points higher than Mi 10 (Snapdragon 865 + Adreno 650).

Despite getting more impressive results, after one test, the Xiaomi Mi 11 we were using heated up quite quickly (40 ° C) - an increase of 8 ° C and a 6% battery drop. Meanwhile, the Mi 10 only increased 2.5 ° C (the temperature after finishing the test was 31.7 ° C) and dropped 3% battery, which consumes less power and is only half of the Mi. 11.

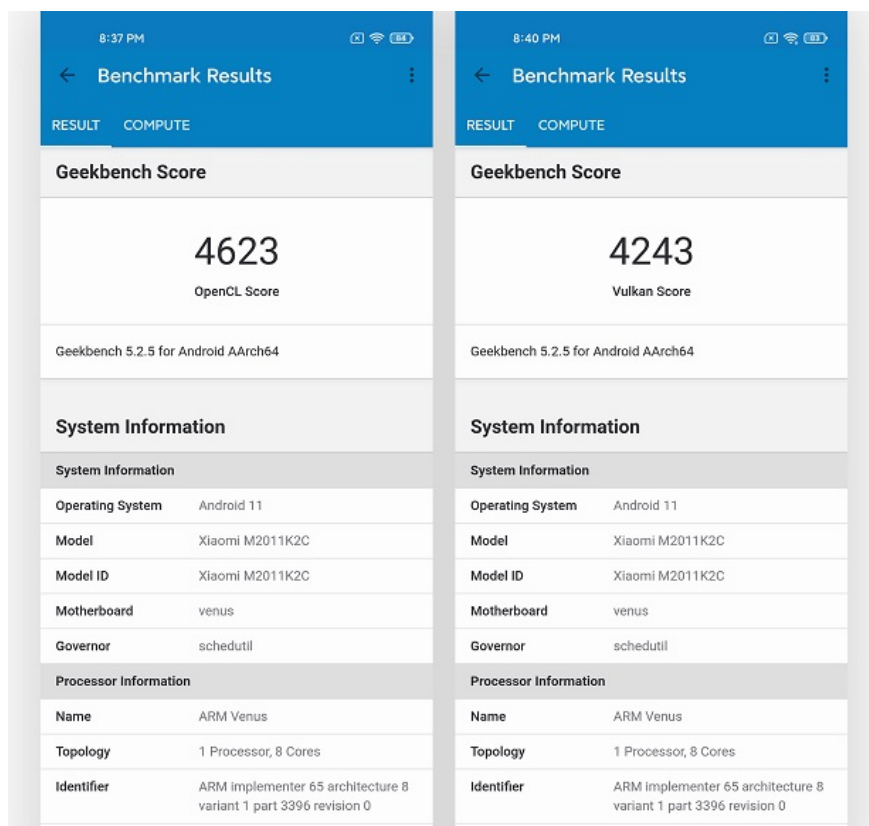
- **Geekbench:** 1132 single-core and 3676 multi-core (CPU) points, 4623 OpenCL points and 4243 OpenCL points (GPU).



Snapdragon 888 (on Mi 11) has 25% higher single core score, 10% higher multi-core score than Snapdragon 865 (on Mi 10).



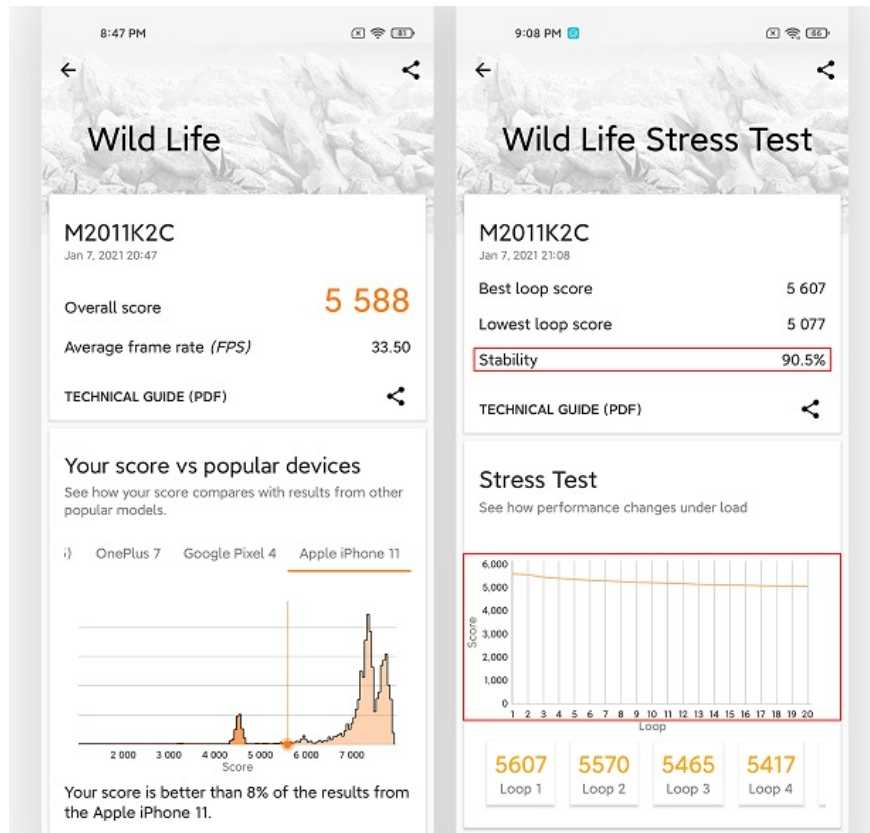
Based on Geekbench comparison, it can be said that the Snapdragon 888 is much more powerful than other high-end Android chipset models at the moment (Snapdragon 865, Exynos 990 .)



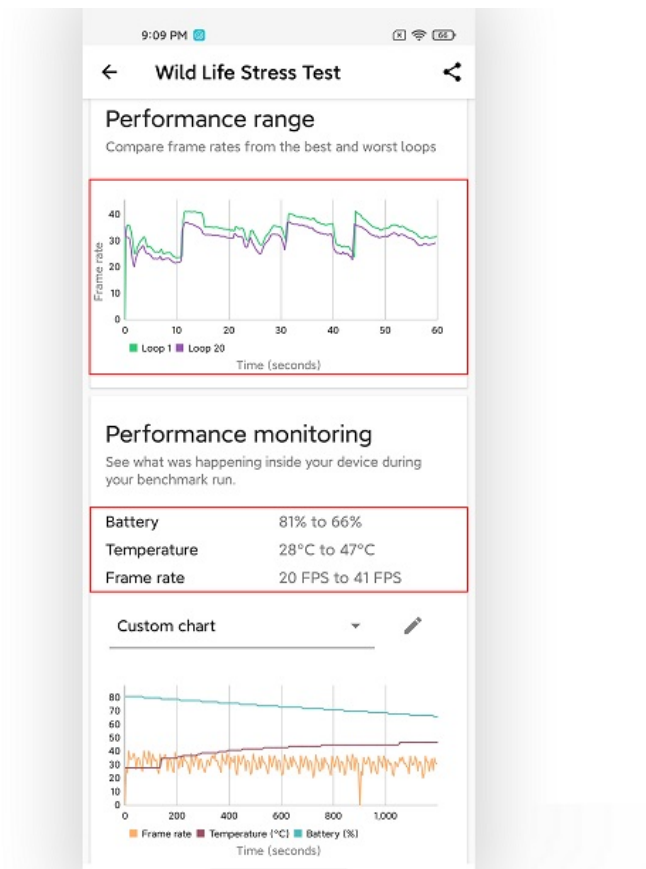
The GPU that comes with the Snapdragon 888 is the Adreno 660, has an OpenCL score of 4623 and a Vulkan score of 4243.

- **Benchmark GPU with 3DMark Wild Life (20 tests):** Highest 5607 points, lowest 5077 points, average FPS of 33.5, stability is 90.5%.

3DMark says the Adreno 660 GPU with the Snapdragon 888 is 8% more powerful than the integrated GPU on Apple's A13 Bionic chip (used on the iPhone 11 series).



Stability is only 90.5%, at the same time the score also decreases gradually after 20 tests.



After 20 tests, Mi 11 dropped 15% battery and the temperature of the device increased from 28 ° C to 47 ° C.

In the next part, we will try to play 4 hot games currently are League of Legends: Speed ??Chien, Lien Quan Mobile, PUBG Mobile and Genshin Impact. The number of frames per second (FPS) in the game will be displayed in the upper left corner of the screen. In addition, we also use PerfDog software to monitor FPS during game play.

League of Legends: Rapid War

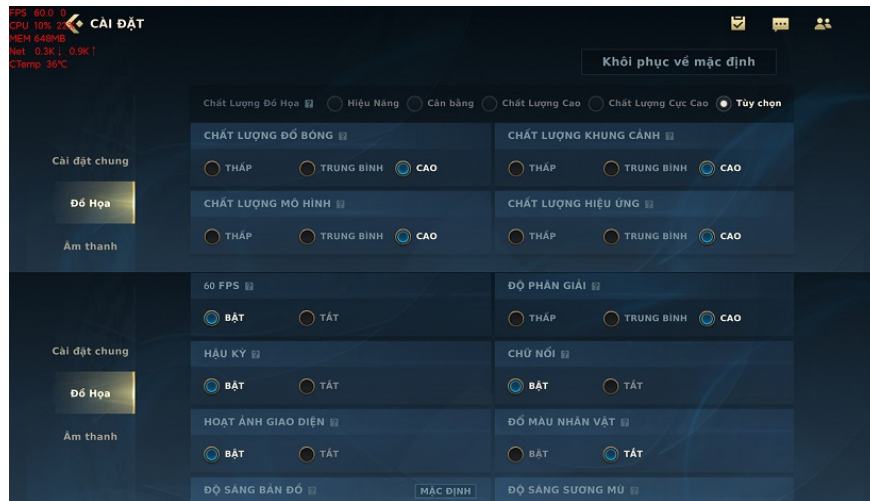
The first test started with League of Legends: Speed ??Chien, the famous mobile moba game of Riot Games. This is also one of the games that will probably be interested by a lot of young people, using it as a criterion for choosing a smartphone at the present time.



At the highest graphics level, Xiaomi Mii 11 can easily achieve 60 FPS.



During the game, the frame rate remained stable at 60 - 61 FPS.

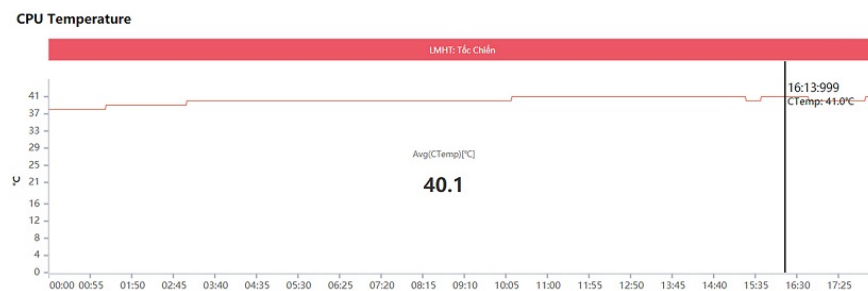


Parameter settings of League of Legends game: Speed ??War is used in the test.

Xiaomi Mi 11 can easily achieve 60 FPS when playing League of Legends game: Speed ??Chien with max setting configuration (all settings are at high level, turn on "Post-production" and "Interface Animation") . During the fighting phase, the frame rate remained stable in the range of 60 - 61 FPS (average ~ 60.2), not even dropped to 59 FPS.



FPS chart when playing League of Legends: Speed ??War at the highest graphics level on Xiaomi Mi 11.



Average CPU temperature when playing League of Legends: Speed ??War is 40.1 ° C, lowest 38 ° C and highest 41 ° C.

Arena of valor

Launched at the end of 2016, Lien Quan Mobile still has an extremely large number of players and is one of the favorite games of many young people today.

Like League of Legends: Speed ??War, this game does not require much graphics or too high hardware configuration. Instead, players need a good, constant and stable network connection to avoid lagging, disconnection while playing games.



For Lien Quan Mobile, Xiaomi Mi 11 easily achieves 60 FPS at the highest graphics level.



The frame rate was stable at 60 - 61 FPS throughout the match, not even dropping to 59 FPS.



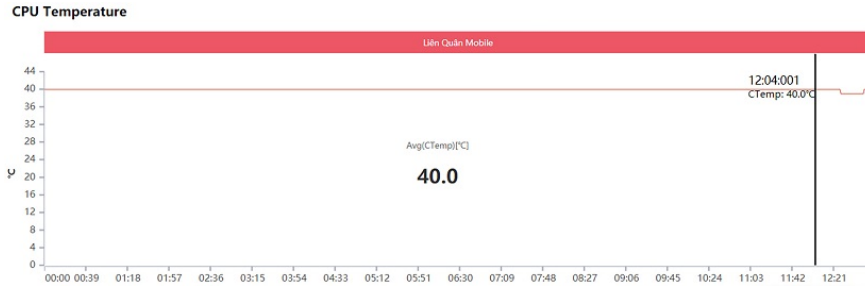
Parameter settings of the game Lien Quan Mobile are used in the test.

Xiaomi Mi 11 users can set parameters in Lien Quan Mobile game at max setting (including "High FPS", "HD Resolution - Super High", "Image Quality - HD" and "Detail Quality - High").

During the process of playing Lien Quan Mobile, the machine for FPS was extremely stable. Statistics from the PerfDog software show that the average frame rate that Mi 11 achieved when playing this game was 60.7 FPS.



FPS chart when playing Lien Quan Mobile at the highest graphics level on Xiaomi Mi 11.

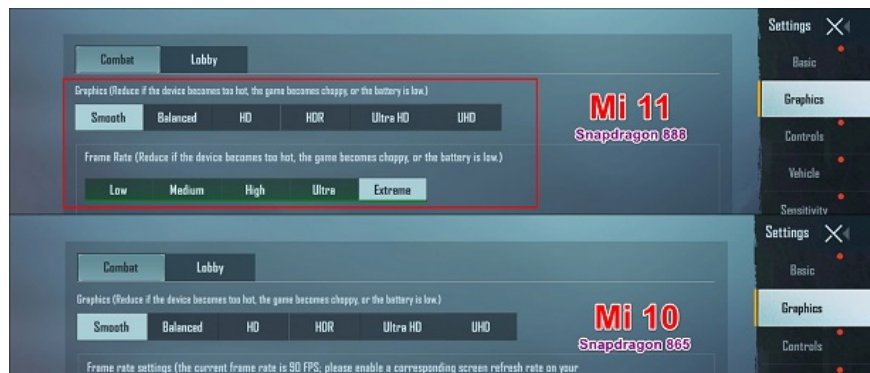


The average CPU temperature when playing Lien Quan Mobile is 40 ° C, the lowest is 39 ° C and the highest is 40 ° C.

PUBG Mobile

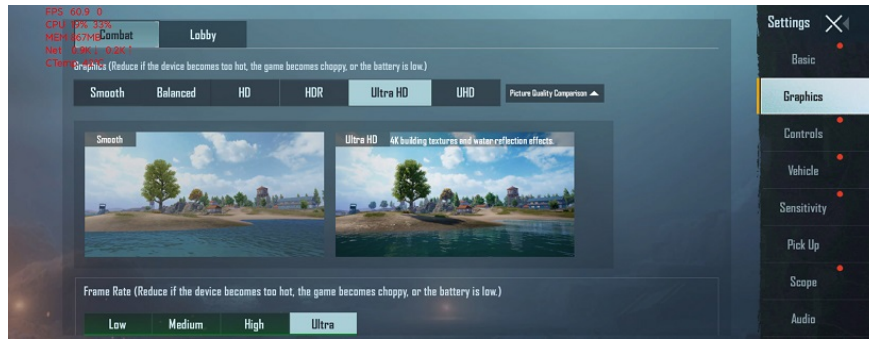
The third test continues with PUBG Mobile, the mobile version of the popular PC game PlayerUnknown's Battlegrounds. Compared to League of Legends: Speed ??Chien and Lien Quan Mobile, it can be said that PUBG Mobile is "heavier" than a lot and requires quite high hardware configuration.

Although the Xiaomi Mi 11 is equipped with a 120Hz display (2K resolution), even if the *Graphics (Image Quality)* setting is set as low as *Smooth* , the *Frame Rate* is still limited. at 60 FPS (*Extreme*) .



Xiaomi Mi 11 does not yet support 90 FPS in the PUBG Mobile game.

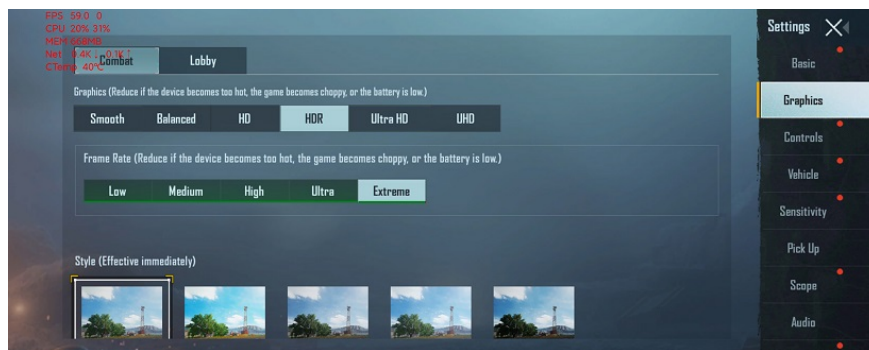
Perhaps, Snapdragon 888 is not yet optimized for PUBG Mobile, because on Mi 10 - using Snapdragon 865 processor (weaker than SD888), users can still set *Frame Rate (Frame Rate)* at high level. than the Mi 11 is 90 FPS.



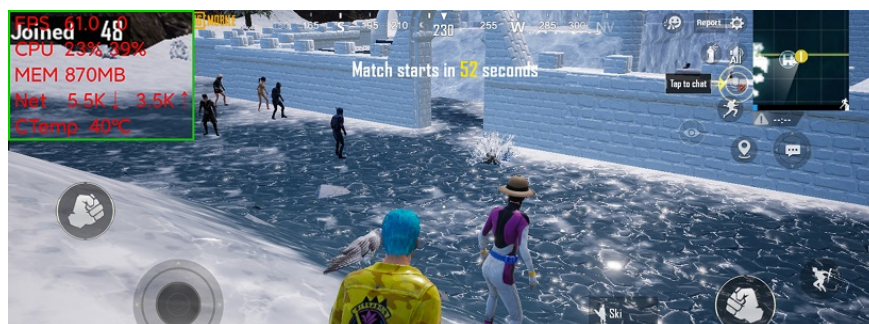
The highest level of PUBG Mobile graphics can be set on Xiaomi Mi 11.

With Snapdragon 888 processor equipped on Xiaomi Mi 11, PUBG Mobile game allows players to set graphics at a maximum level of "Graphics - Ultra HD" and "Frame Rate - Ultra" (limited to 50 FPS).

However, to get the highest FPS with the best graphics, we'll set *Graphics* at the highest possible *HDR* and *Frame Rate* to *Extreme* (which is limited at 60 FPS).



PUBG Mobile game settings are used in the test.



After downloading the map, Xiaomi Mi 11 starts with 60 frames per second.



When parachuting, the frame rate of the game ranges from 59 - 60 FPS.

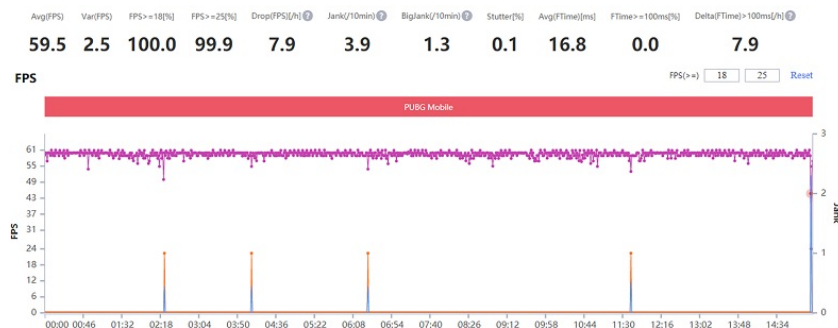


After landing and throughout the match, FPS remained stable at 58 - 61 FPS.

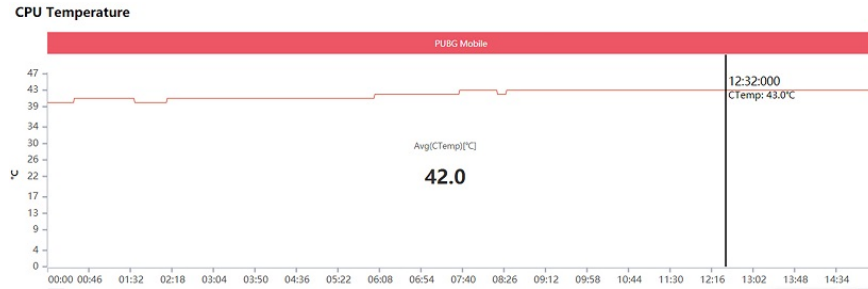


Xiaomi Mi 11 performed extremely impressively with PUBG Mobile, giving a stable frame rate of 58-60 FPS and no lag during the match.

Statistics from PerfDog software show that the average frame rate of this phone achieved when playing PUBG Mobile at "Graphics - HDR" and "Frame Rate - Extreme" is 59.5 FPS.



FPS graph when playing PUBG Mobile at HDR - Extreme graphics level on Xiaomi Mi 11.



The average temperature of the machine is 42 ° C, the lowest is 40 ° C and the highest is 43 ° C.

Compared to League of Legends: War speed and League of Legends, Xiaomi Mi 11's temperature when playing PUBG Mobile is only a little higher (1-2 ° C). According to the writer's perception when tested in room temperature (about 15 ° C), this phone is just a bit warm and completely acceptable. In addition, there is also no lag phenomenon during game play.

Genshin Impact

The final test was Genshin Impact, an open-world action-adventure RPG developed by miHoYo, released last September. Due to the high-quality graphics platform, this game requires the device to have relatively good performance and is quite demanding - if not the "hardware killer" for smartphones.



Graphics settings are set to max setting - Highest and 60 FPS.



Once the map has loaded, the Xiaomi Mi 11 starts with 60 frames per second.



FPS in the game is constantly changing, and the temperature of the machine also increases quite quickly and hits 48 ° C after 3 minutes of gaming.



With some scenes with many effects, the frame rate dropped to about 23-25 ??FPS.



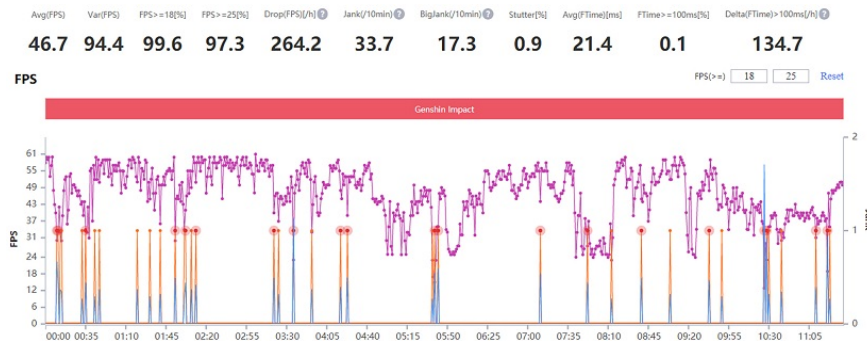
After playing for about 8 minutes, the machine had lag and dropped FPS, and even dropped to 15 FPS even without combat.



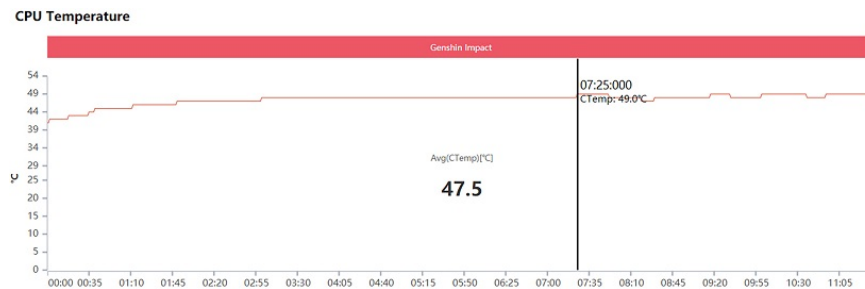
Since the 10th minute, the frame rate in the game has fluctuated continuously from 25-45 FPS.

Unlike the previous three games, Xiaomi Mi 11 heats up very quickly when playing Genshin Impact and even the CPU temperature reaches 49 ° C. The back of the device is really hot, even in quite cold weather and the room temperature is only about 15 ° C.

In addition, when the temperature starts to rise, the FPS is constantly changing and really unstable - sometimes dropping to 15 FPS. In the period from 9 minutes and 45 seconds until the end of the test, the frame rate on the Mi 11 when playing Genshin Impact fluctuated from 25 to 45 FPS and the highest was 50 FPS. Statistics from PerfDog software showed that the average FPS was 46.7.



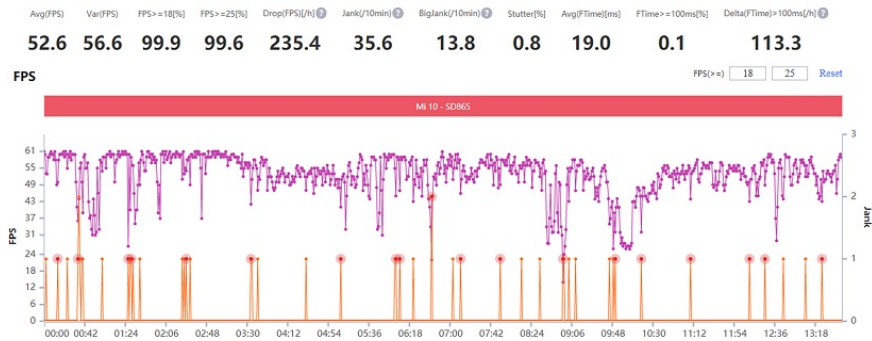
FPS chart when playing Genshin Impact at the max graphics setting on Xiaomi Mi 11.



Average CPU temperature is 47.5 ° C, lowest 41 ° C and highest 49 ° C.

For more objective results, we also tried the game Genshin Impact on Xiaomi Mi 10 with the same graphics settings at max setting. The phone uses the Snapdragon 865 processor, weaker than the Snapdragon 888 on the Mi 11, but for a fairly smooth, stable and not too hot experience like the Mi 11 - only about 43 ° C.

According to statistics from PerfDog software, Mi 10 has an average FPS number of 52.6 - higher than the result obtained on Mi 11 which is 46.7 FPS. During the game, most FPS is in the range of 45 - 61, sometimes there is a drop (the lowest is 25 FPS) but increases very quickly.



With the same graphics setup, the Xiaomi Mi 10 (using Snapdragon 865) gives a much smoother and more stable experience, although it sometimes drops to 25 FPS but increases very quickly.

conclude

With Snapdragon 888 processor, Xiaomi Mi 11 can completely "max setting" the current popular games, from the average level such as League of Legends: Speed ??War and Lien Quan Mobile, or games requiring high configuration. like PUBG Mobile and Genshin Impact.

However, Xiaomi Mi 11 has not been able to "take advantage of" all the advantages of the 120Hz screen because the Snapdragon 888 is still new and has not been fully optimized - limited to 60 FPS for some games with screen support. high frequency scan. In addition, this chip is also quite hot and consumes more power than the common ground (typically the Snapdragon 865).

Project	Device	Case	Avg(FPS)	Jank (/10min)	BigJank (/10min)	Peak(Memory) [MB]	Avg(AppCPU) [%]	Avg(AppCPU) [%] Normalized
Genshin Impact Android VersionName 1.2.0_1565149... Android VersionCode 132 com.miHoYo.GenshinImpact	Mi 10 小米10	Xiaomi Mi 10	52.6	35.6	13.8	1953	38.5	30.9
Genshin Impact Android VersionName 1.2.0_1565149... Android VersionCode 132 com.miHoYo.GenshinImpact	M2011K2C	Xiaomi Mi 11	46.7	33.7	17.3	1757	42.9	31.6
PUBG MOBILE Android VersionName 1.1.0 Android VersionCode 14465 com.tencent.tig	M2011K2C	Xiaomi Mi 11	59.5	3.9	1.3	1072	23.5	14.8
Liên Quân Mobile Android VersionName 1.37.1.4 Android VersionCode 47842364 com.garena.game.kgvm	M2011K2C	Xiaomi Mi 11	60.7	3.1	0	1308	15.3	8.4

FPS parameters when playing games on Xiaomi Mi 11.

Perhaps, we still need to wait for Qualcomm and Xiaomi to launch new software updates in the future, thereby optimizing the temperature and power consumption of the Snapdragon 888 in general, as well as the Xiaomi Mi 11 in particular. . The weakness of Mi 11 is that it is not yet optimized and all you have to trade in if you intend to buy this phone at the present time is just a matter of time.

In fact, with prices starting at 3,999 yuan for 8GB RAM + 128GB ROM, it can be said that the Xiaomi Mi 11 is one of the most powerful and high-end 5G smartphones available today - not just because of the processor. Snapdragon 888 but also 2K 120Hz AMOLED screen, new generation 108MP camera, huge battery and 55W super fast charging technology.

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