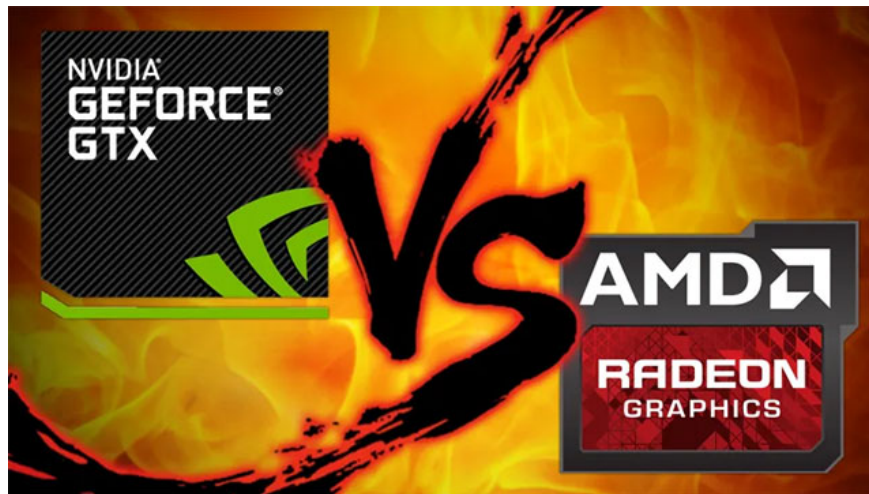


Radeon VII vs RTX 2080: Which GPU should you buy in the 700 USD segment?

Can Radeon VII defeat RTX 2080 in terms of price and performance and regain the 'face' for this manufacturer in the high-end segment?

As we know, the high-end GPU market in the past few years is really boring due to Nvidia's monopoly. Agree that Nvidia has also taken a lot of care for its flagship products, but it is impossible to mention AMD's disappointing breathlessness, so Nvidia has become the exclusive name in the high-end GPU market. is understandable. This fact has also allowed Nvidia to raise prices and focus on new features, far beyond the 'arms race' of standard configuration with a rival competitor.



1. AMD and Nvidia - who is the king of GPU dominance?

Of course, AMD could not be happy when the situation continued, causing its reputation to drop seriously. A series of proper changes and investments have been made, and initial effects have also appeared. This year AMD was officially ready to return to the game with the strategic Radeon VII card in the high-end segment. The GPU is currently priced at \$ 700, which means it will compete directly with Nvidia's GeForce RTX 2080, which has similar prices. So can Radeon VII defeat RTX 2080 in terms of price and performance and regain the 'face' for this manufacturer in the high-end segment?

Radeon VII is so named because it is based on the second generation Vega card (Radeon Vega 2), and is manufactured on a new 7nm process (Radeon 7). This suggests that AMD Radeon VII is bringing with it the leading technology of the US manufacturer, producing less heat and also completely power consumption will be guaranteed. New technologies applied to the production line allow AMD to compete fairly with Nvidia right now. But when it comes to the technological fights of the world's two largest chip makers in the high-end

segment in the future, Nvidia is still the one with more advantages with thick experience as well as leading technologies. has been verified by the community, while AMD's strategy card is likely to be second-generation high-bandwidth memory (HBM2), along with the 7nm process.



1. 7 things you need to know about discrete GPUs

Of course we will not discuss much about the future here. In this article, I and you will find out if at the moment Radeon VII is worth owning? Is it better than RTX 2080? And do you need more features such as video RAM or ray tracing and DLSS? Let's get to the point now.

Radeon VII vs RTX 2080

1. Gaming performance
2. Elements next to the frame rate
 1. RTX
 2. HBM2
 3. Work productivity
 4. Temperature and noise
3. So which product should you choose?

Gaming performance

In theory, Radeon VII and RTX 2080 are nearly equal when it comes to overall performance. The difference will only appear in certain situations. In general, the RTX 2080 will give significantly faster speeds in some games, while Radeon VII will be able to 'outplay' opponents in other games. This result is made after actual comparisons and benchmark-based analysis. Overall, you can count on the ability of both models to work with top games in 4K resolution and ultra settings.



1. How to monitor GPU performance in Task Manager of Windows 10

Specifically, Radeon VII and RTX 2080 have been tested with the following hardware configuration:

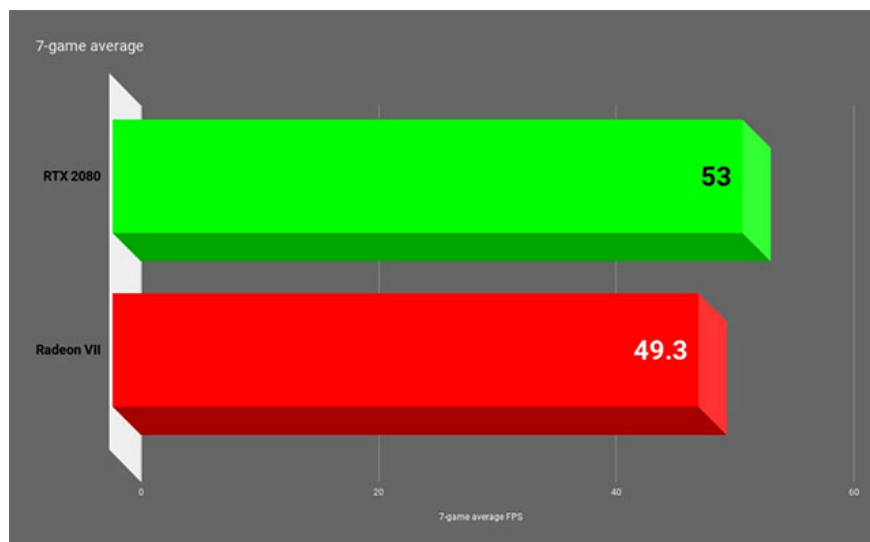
1. CPU: AMD Ryzen 2 2700X
2. Motherboard: Aorus X470 Ultra Gaming
3. Ram: Kingston HyperX Fury 16GB DDR4-3200
4. Hard drive: 970 Evo 500GB

The result is not surprising, Radeon VII offers faster speeds for games that are AMD logo closed. The RTX 2080 is similar, giving better speeds in games designed to support Nvidia products. For more neutral titles, the results show that RTX 2080 Grand Theft Auto V and Hitman are about 10% faster than Radeon VII. However Radeon VII performed better in The Division and Monster Hunter: World.

Below is the average frame rate of RTX 2080 and Radeon VII in 7 different titles. These games run in 4K resolution with the highest settings, except for vendor-specific features (like Nvidia Hairworks or HBAO +):



And this is the average speed for all 7 titles:



Elements next to the frame rate

Normally, considering only the overall performance, it is difficult to say exactly which GPU is better. These two products are no exception, but the good news is that both are premium models, so there are many other notable factors that we can pull out to measure.

While Nvidia places great emphasis on the potential of its strategic technologies such as real-time ray tracing and deep-learning super-sampling (DLSS), AMD is focusing on super fast production and memory. So what is there to compare between seemingly unrelated things? Of course yes, but it will have to depend heavily on the purpose as well as your usage needs in practice, because simply each feature will be directed to a different purpose.

1. Use GPU-Z to analyze graphics card parameters

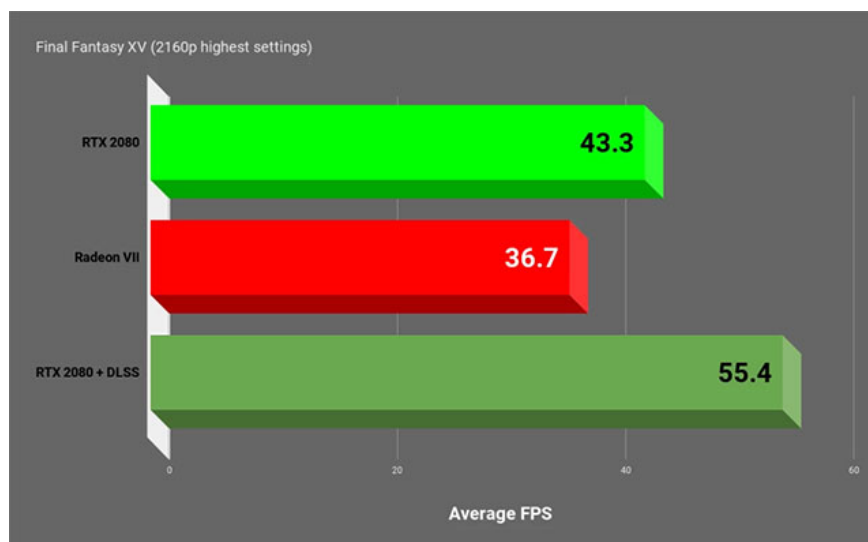
RTX

The problem with RTX is that there are very few games that support the technology it owns. For example, some popular games like Battlefield V, Metro Exodus and Final Fantasy XV do not support ray tracing or DLSS, so adding more money to these features while not being able to use it clearly is a waste not light.



The good news for Nvidia is that ray tracing is impressive, even if it hurts a bit of overall performance. Besides, DLSS also does not affect performance while still maintaining a sharp image in Final Fantasy XV.

When all Nvidia-specific features are turned off to score the RTX 2080 benchmark for Final Fantasy XV, this model's advantage over Radeon VII has also lost a bit. However, in general, Final Fantasy XV still supports DLSS and when enabled, the RTX 2080 has a 45% better benchmark than Radeon VII, which is a very worthwhile consideration.



But until developers launch RTX technology into more games, we cannot confirm whether this technology will play an important role in the future.

HBM2

For its part, AMD is expecting memory speeds to play a more important role in handling future games, as we can see that Radeon VII is equipped with a lot of extremely high-speed video RAM. This 16GB memory is capable of processing and through more than 1TB of data per second. So what does this number say? Well, it will allow developers to handle an incredible number of 4K frame structures or even 8K.



However, almost no game can consume so much memory that all 16GB must be used up, at least until now. This shows that developers have been able to start creating limitless games now, with a GPU as powerful as Radeon VII. Ubisoft's open world games seem to be the top contenders and AMD claims that there are a lot of scenes in Far Cry 5 that have benefited from their HBM2 technology.

Although there are some games that can take full advantage of Radeon VII, most of them will try to maintain and use much more modest video RAM to ensure system stability. So, like RTX, we have to wait and see whether this technology makes a big difference in actual use.

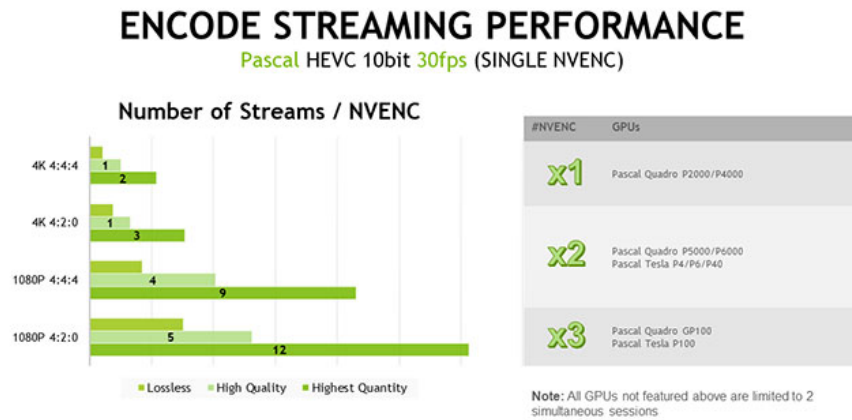
Work productivity

There is a very important element to GPU but rarely mentioned is productivity in work. In the case of Radeon VII vs RTX 2080, both models contain great features that make them the ideal choice in certain types of creative jobs.



Radeon VII will be a prominent choice in OpenCL tasks like Blender - at least you can make Blender work well. Overall, Radeon VII will serve as a great choice for graphic design engineers who want to work with OpenCL tools, which are conclusions derived from real experience and not is empty talk.

Neither of these GPUs has much of a difference as well as a significant advantage in video production - especially when working with software like Adobe Premiere. However, the RTX 2080 is equipped with the latest video encoder, making it more effective in recording games or playing live. The latest version of NVENC (Nvidia encoder) is currently only available on RTX cards and it is capable of eliminating the need to set up 2 PCs for current streamer.



With NVENC, you can play a game and then encode it on the GPU without affecting game performance and CPU. In the past, NVENC did not seem to be very effective and compressed quite a bit compared to x264 encryption provided by the CPU at the same bit rate. However, the new NVENC is especially suitable for x264 quality at lower bit rates and it makes the RTX card the ideal device for people who are constantly streaming, streamer.

Temperature and noise

As well as gaming performance, RTX 2080 and Radeon VII give quite similar results when it comes to temperature and noise during operation. No product exceeds 80 degrees Celsius even when loaded with the heaviest tasks.



However, considering the noise level, RTX 2080 will be a bit quieter. When both devices run at the highest fan speed, they produce quite similar noise levels. But Radeon VII's fan speed is increasing faster and more frequently, so in practical use, the noise Radeon VII emits is generally louder and more frequent than Nvidia's model. However, the noise that Radeon VII causes does not create discomfort and is completely acceptable.

1. Experience upgrading computer graphics cards

So which product should you choose?

After all, should you join the red team (AMD) or the blue team (Nvidia)? Don't rush, the answer will depend on a few more factors.

First, don't buy both models if you don't play games in 4K mode because it will be a terrible waste. Even if you want to have a resolution of 1440p at 144Hz, the \$ 350 RTX 2060 still has a good 'balance' (especially if you overclock it).



1. Instructions for overclocking graphics cards for better gaming performance

Second, you should choose Radeon VII if you have to work regularly with 3D graphic design applications like Blender. Just like going to the RTX 2080 team if you want to livestream on Twitch or shoot videos directly on YouTube, generally work related to streaming videos.

Finally, choose a product that can well support future technologies. Do you think features like ray tracing and DLSS will be the standard of the future or the ultra-fast high capacity memory is the market trend? Pay attention to the launch of new titles and tastes of other users to give you a reasonable choice.

From a personal point of view, I think that all three technologies mentioned above will develop very strongly in the future but to consider carefully, the investment for DLSS will probably be safer because this technology is being developed. Very high rating and signs of explosion in the next few years.

Meanwhile, developers tend to pay more attention to high-speed video memory, but they will have to continue to create games that work with console games and RTX 2060 devices with only 6GB of RAM. video. That will make it difficult for how a game can take advantage of Radeon VII. In the next four or five years, when RTX 2080 starts to become more slow, perhaps DLSS will be the factor that makes the RTX 2080 create a speed

advantage over Radeon VII.

These are the basic comparisons of the two popular GPU models on the market today: Radeon VII vs RTX 2080. What do you think about these products? Leave comments in the comment section below. I wish you all to choose a suitable product!

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