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Technical Description of a Nvidia GPU

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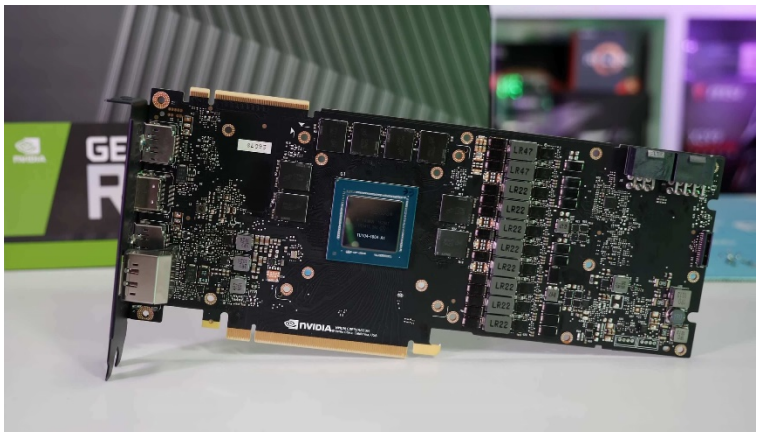
A GPU is a processor that can automatically perform a significant number of sequences or computations. It's a specially built chip that goes into a graphics card's circuit board. They accelerate up the process of creating images in a frame. Following that, the frames and pixels are sent to the display device, which could be a monitor, television, or even a smartphone. GPUs are used in a wide range of devices that need to show images. Computers, mobile devices, workstations, and gaming consoles such as the PlayStation and Xbox are all examples of this.



Nvidia was the first company to develop GPUs. They were the first business to introduce GPUs to the market. “The GeForce 256, also known as the Nvidia Single Chip Processor, was the first ever GPU. Integrated Transform, lighting triangle setup/ clipping, and rendering engines capable of processing a minimum of 10 million polygons per second," according to Nvidia Tech Radar. It was a big deal back then since it was the first time anyone had seen something like this. However, there are cards available now that are a million times quicker than this one. Nvidia has always been a step ahead of the competition in terms of GPU output and overall success. There has been greater rivalry in the GPU industry in recent years.

Graphics System

There 6 main things that make up an Nvidia Graphic Card, the chip (Graphics processing Unit), the Circuit Board, Heatsink, VRAM, The chassis (case), Power supply.

1.1 Circuit Board inside GPU Case

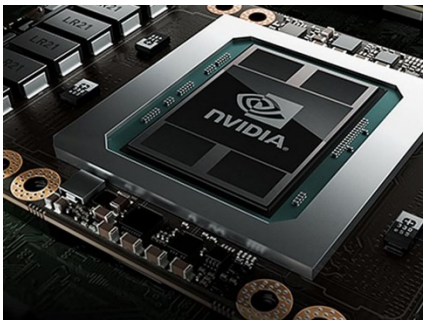
The motherboard is the main PCB in your computer. The board is essentially he backbone to all connectivity functions in the computer. All your internal components and external peripheral will connect to this motherboard. There are many different sizes to motherboard which all depend on the type of chassis or case you have. The most popular among the sizes is the ATX. The motherboard is where the computer transmits data through the different bridges of the chip. The Slots of the motherboard have been labeled on the right.

(Figure 1) →

1.2 Central Processing Unit of GPU

The central Processer the brain of the GPU. It does directly into the circuit board to give the chip power and stability. and it has the responsibility to communicate with other sections of the computer Whenever data is being used. This central processer is responsible for rendering images and video. Graphic Processing Units are especially important for those who intend on gaming or graphic design since more modern GPUs are very efficient at image processing.

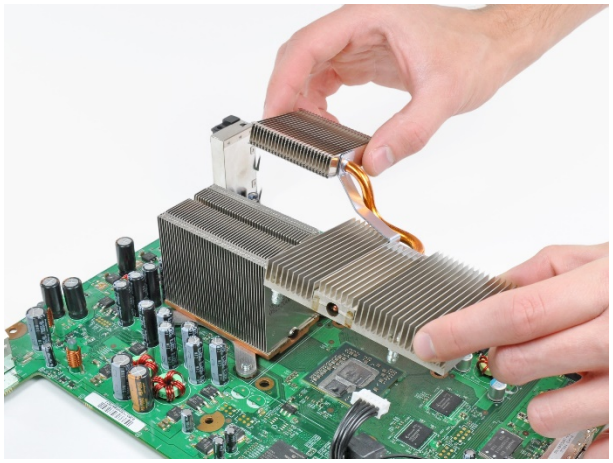
(Figure 2) →



2.1 Heat Sink

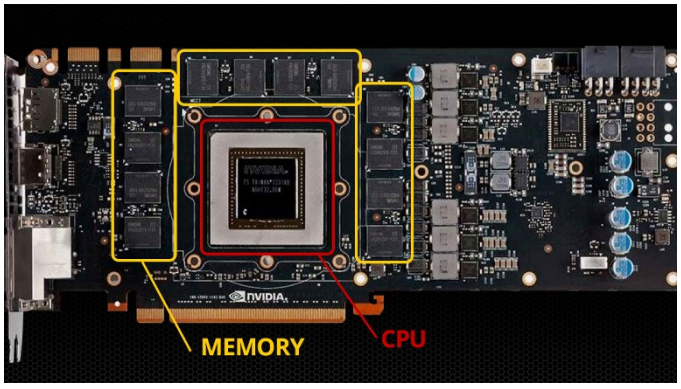
GPU tend to get extremely hot in a short amount of time. A way to prevent that is using a heat sink. The heat sink is directly on top of the main chip (GPU) inside the case of the graphic card. They work by redirecting heat flow from the main area to the surface area. Then the case which usually has a fan attached will disperse that hot air around the environment. This will disperse hot air and not allow it to be so concentrated.

(Figure 3)



2.2 Video Random Access Memory (VRAM)

The VRAM is responsible for storing data on a short-term basis. This type of memory role is to store information to your computer that you actively use, so that it can be accessed quickly. It's used to load and run programs. It essentially is used to store graphics data.



(Figure 4)

3.1 The Chassis (Case) Graphic Card

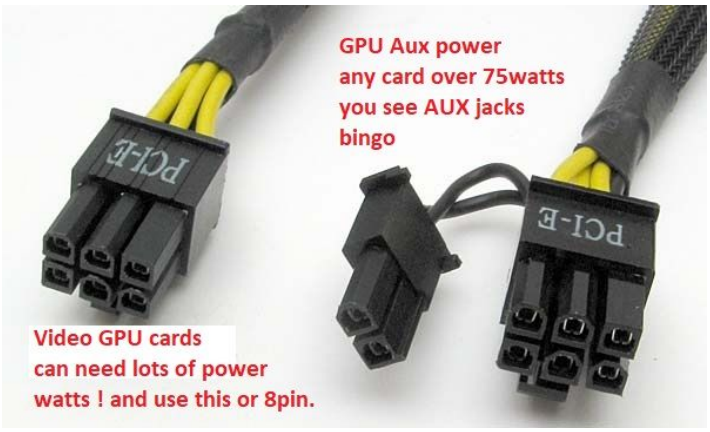
- The case is where the main circuit board will go
- The circuit board will have the GPU chip, the Vram storage build in, and the heatsink on top of the chip.
- The Chassis usually includes a fan that is directly above the heat sink that allows heat to disperse.
- The case has slots that allow you to plug the Power supply connectors.

(Figure 5)

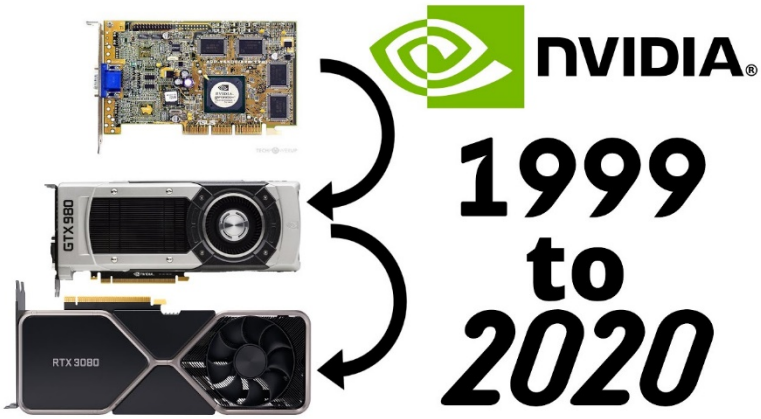
3.2 Power Supply Unit (PSU)

- Power your graphic card along with cooling system
- Connects to GPU Via 6 pin connector and 8 pin connectors (cables are found on PSU)
- Supplies power to generate image and rendering capabilities.

(Figure 6)



The Nvidia Gpu is a superb intricate piece of technology. It revolutionized the way computers work today. The amount of power they hold is simply incredible. A company like Nvidia who is always working to achieve a more powerful energy efficient GPU is the reason why the computers will always be evolving. The GPUs design and purpose has had a tremendous impact on the world we know today. Nowadays there are tons of Gamers, streamers, video editors who require power graphic card which allow them to superscale their work. The development of the GPU has allowed computers to become more powerful and faster. Which In turn allowed Nvidia to grow as a company because of their development of the GPU.



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SELF REFLECTION

The Graphics Processing Unit is a wonderful invention that definitely changed the way computers work. I learned a lot more than I intended to, through the use of this project. The research I did helped me understand how and why they work. The GPU is an intricate piece of technology that helped revolutionize modern graphics. Its important to learn how the gpu powers and delivers our rendered images. I was able to learn all the different parts of the Graphics card, I didn't think that so much went into. It's essentially a machine that goes into another machine, that's why its usually the most expensive part in a computer build. This project was an eyeopener on how power a graphic card can be, Nvidia latest graphics card the GeForce RTX 3090, it can deliver 8K gaming performance along with 3D rendering. Doing this research helped me understand the company much more. Nvidia is a great company that specializes in developing graphic cards and were one of the first to market them. This technical description project has taught me a lot. Its important to be as specific as possible. Having that specification allows your readers to more immersed because they understand much more. I also learned that its quite tough to find pictures of individual components of an item. I learned that using image can also help illustrate to the reader what exactly you are talking about. Images help hook the reader as well. This assignment addressed, how to practice using various library resources, online databases, and the internet to locate sources appropriate to writing projects. It also helped me strengthen and enhance strategies for reading, drafting, revising, editing, and self-assessment.