

[AZ] All information about what is VRAM? Simple way to increase VRAM capacity

What is Vram? What is the main function of Vram? How to increase Vram capacity to meet usage needs as well as help display and process images more smoothly.

In addition to CPU, RAM, . VRAM is also an indispensable part of a complete laptop. Without VRAM, the graphics display will not be uniform and smooth. However, many people do not know **what VRAM is** ? How to upgrade VRAM capacity? Let's find out the details with **TipsMake** in the article below.

What is the definition of VRAM?

What is VRAM ? VRAM stands for Video Random Access Memory. This is a special type of memory used to store images and videos being displayed by the computer. It acts as a buffer between the CPU and the video card. When the first image is displayed on the screen, it will be written to VRAM through the vertical processor.



VRAM has a fast access speed. At the same time, it allows the graphics card to process and display complex images and videos smoothly and quickly. It can be mounted directly on the graphics card or shared from the computer's main memory.

In addition to VRAM, NVRAM is also of interest to many people. So *what is NVRAM* ? This is a type of non-volatile memory, meaning that the data stored will not be lost when **the computer** is turned off. It is used to store important computer configuration and data such as BIOS/UEFI.

What is vram for?

In addition to answering: ' **What is VRAM ?** ', you also need to know some of the main uses of VRAM. Below are a few applications that TipsMake has compiled and listed:

Image and video data storage: VRAM is used to store temporary data related to images and videos. This includes information about color, resolution, color depth and other graphics buffers. This allows the graphics system to access quickly and efficiently to process and display images smoothly.



Image and video processing: VRAM provides a working space for graphics operations. It allows the graphics card to perform transformations and calculations. In addition, it provides independent graphics processing capabilities and reduces the load on the system's main processor.

3D Graphics and Gaming: It stores complex graphics data such as 3D models, materials, lighting, and other information related to displaying graphics. VRAM helps increase graphics performance and ensures the best gaming experience.



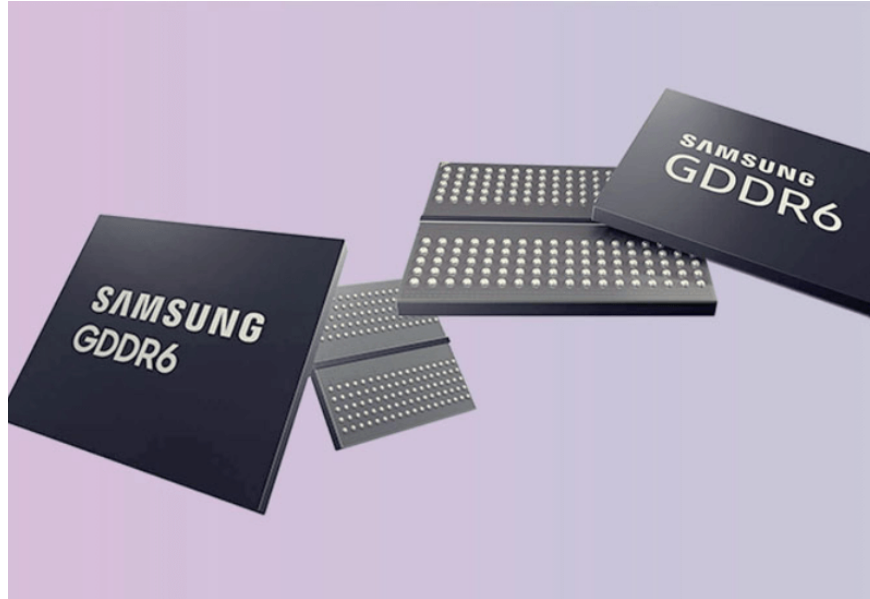
Multi-monitor: VRAM also supports connecting and displaying on multiple monitors at the same time. It allows the graphics system to process and store image data for each monitor independently. This helps ensure consistent display on different monitors.

Difference between VRAM and RAM

What are the differences between RAM and VRAM ? Let's follow the information below.

About function

1. **VRAM:** VRAM is mainly used in graphics cards and image processing devices to store and process image and video data. It is responsible for displaying images on the screen, processing 2D and 3D graphics, and supporting graphics-related tasks. To ensure the best image quality, you can use *VGA Vram* or *Samsung Vram* .



1. **RAM:** RAM is a general type of memory in a computer system, used to store and temporarily access data and running programs. It is responsible for storing data and code that the operating system and applications are using.

Intended use

1. **VRAM:** VRAM is specially designed to meet the needs of graphics processing and image display. It holds image data, video and related graphics information, helping to enhance graphics performance and user experience.
2. **RAM :** RAM is used to store data and code that programs are running on the system. It provides space to temporarily store data and allows quick and flexible access.

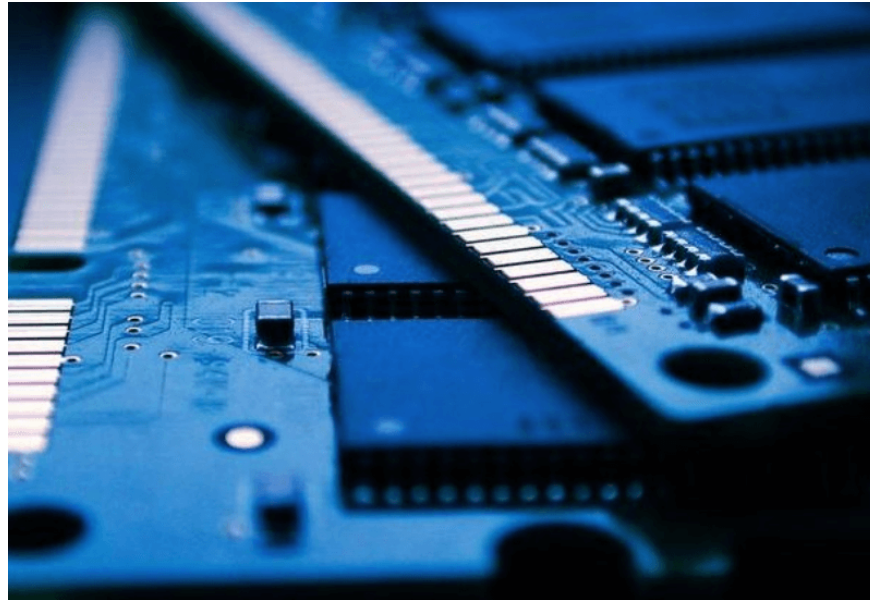
Location features

1. **VRAM:** VRAM is often integrated directly into the graphics card or image processing devices. This helps reduce latency and increase the speed of accessing graphics data.
2. **RAM:** RAM is usually mounted directly on the motherboard **or** in special RAM modules. It can be accessed by all other components of the system.

Specifications

1. VRAM: VRAM usually has high access speed and large bandwidth to meet the requirements of fast graphics processing. It can have different capacities such as: *1gb vram, 4gb vram, 8gb vram, .*
2. RAM: RAM has higher access speed and larger capacity than VRAM. RAM usually has faster data transfer speed, but lower bandwidth than VRAM.

Detailed instructions on how to check VRAM capacity



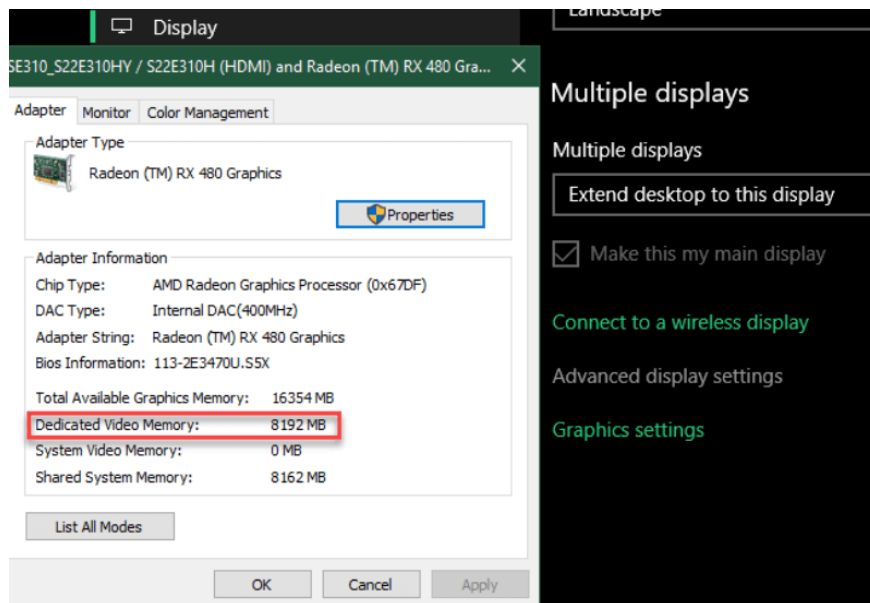
To check how much VRAM your computer has, you can perform the following tests:

Step 1: Use the Windows + I shortcut to open the Settings window.

Step 2: When the Settings window appears, find and select System. Then, in the left frame, click Display.

Step 3: Next, find and select Advanced display settings.

Step 4: Then, select the screen you want to check the VRAM capacity, and in the bottom corner click Display adapter properties



Step 5: A new window appears, here you select Dedicated Video Memory to check VRAM capacity.

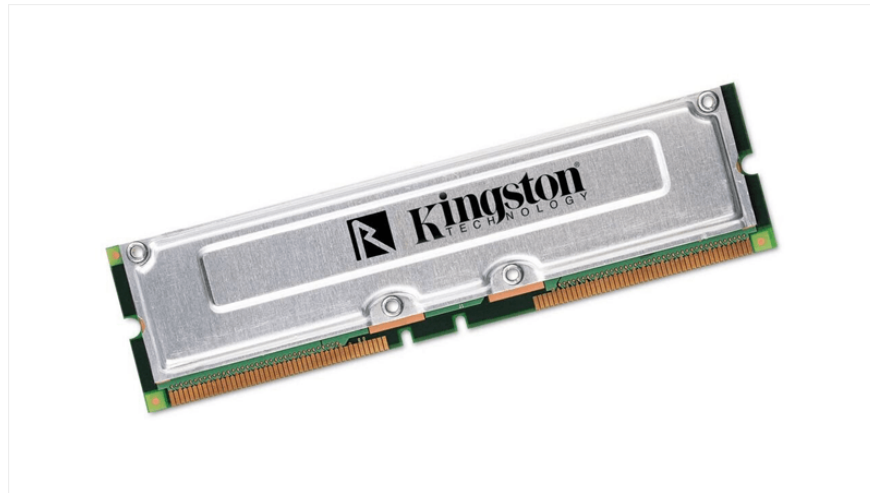
In addition, if your computer has VGA VRAM, you should regularly check *the VRAM for VGA errors*. So what is VGA VRAM error? This error often occurs when there is a problem related to the graphics memory on the computer's graphics card. This can cause problems such as incorrect image display, lag, or system crashes.

Available vram classification

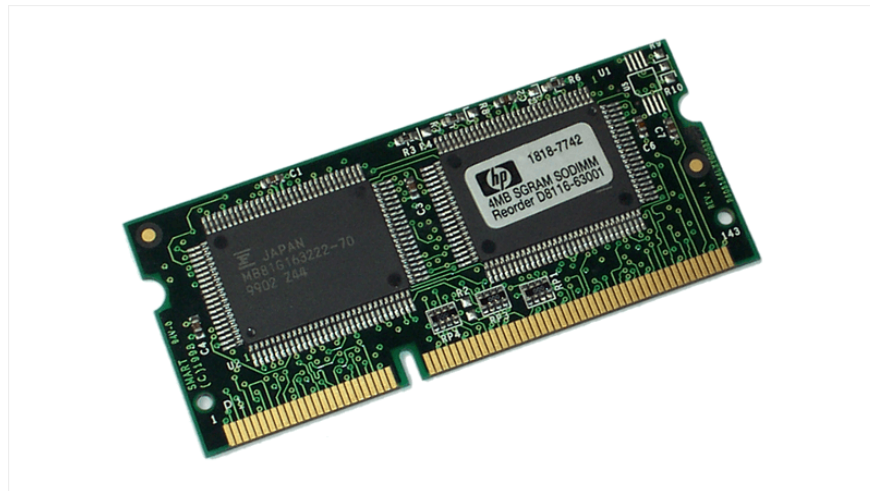
Multibank Dynamic RAM (MDRAM): This is a high-performance RAM developed by MoSys. The RAM can be accessed individually because it is divided into multiple 32 KB blocks. This helps to transfer memory more efficiently, thereby increasing overall performance. In particular, the price of this MDRAM is usually lower than other types of VRAM.



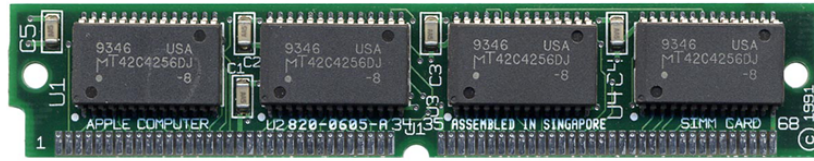
Rambus Dynamic RAM (RDRAM): Manufactured by Rambus. It is designed with a proprietary bus that speeds up the flow of data between VRAM and the frame buffer.



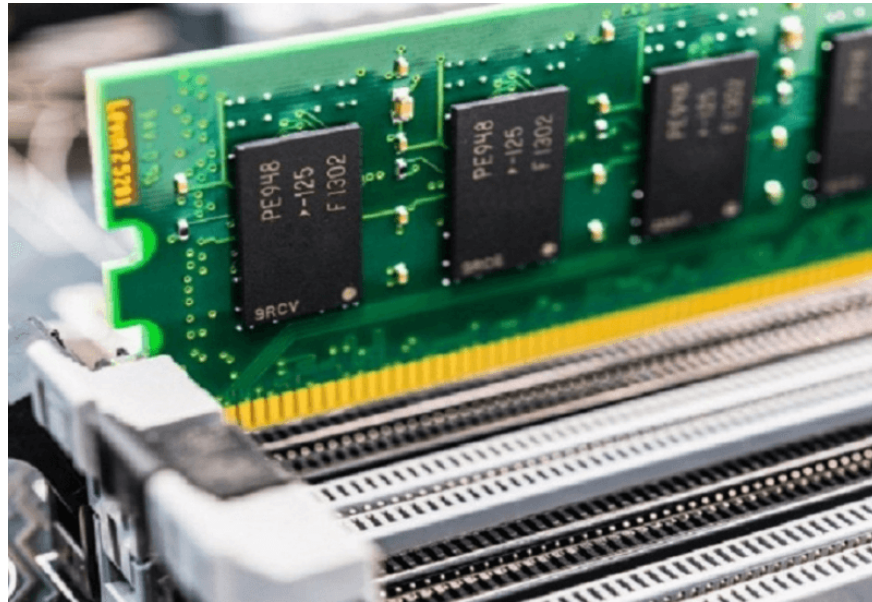
Synchronous Graphics RAM (SGRAM): This is a type of VRAM that is quite cheap. Because it is DRAM but is synchronized with the system clock. SGRAM is a single-port memory, but can open two pages of memory at the same time. In addition, it can also function like dual-port memory.



Window RAM or WRAM for short - a type of VRAM that has extremely high performance. It is capable of operating as dual-port memory and has about 25% higher bandwidth than standard VRAM. However, the cost is lower.



Instructions on how to increase vram capacity



Before increasing VRAM capacity, you need to know 'What is MSI VRAM clock offset?' It is a feature in MSI's control software that allows users to adjust the VRAM clock speed on the graphics card. This will help the machine achieve better performance with graphics requirements. Below are the 2 most commonly used ways to increase capacity today. Please refer to it.

Use BIOS to increase VRAM capacity

Step 1: Access BIOS, go to the menu and select Advanced Features, Advanced Chipset Features or similar options.

Step 2: Then, select Graphics Settings, Video Settings or VGA Share Memory Size.

Step 3: In the Pre-Allocated VRAM section, you can increase the VRAM capacity to suit your needs. The default VRAM capacity is 128MB, you can increase it to 256MB or 512MB.

Step 4: Then save the configuration and restart your computer, changing your VRAM capacity is complete.

However this method will not work for all types of motherboards.

Use Registry Editor to increase VRAM capacity

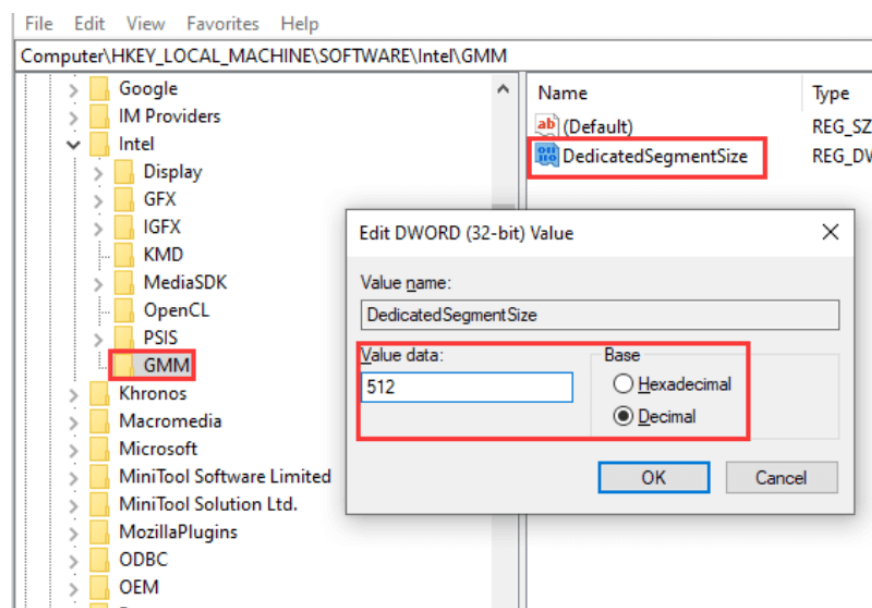
Step 1: Use the Windows + R shortcut to launch the Run window. Then, type 'regedit', press Enter to open the Registry Editor.

Step 2: After the Registry Editor window appears, use the link below to navigate:
HKEY_LOCAL_MACHINE\Software\Intel

Next, right-click, select Intel, select New => Key. You use the new key name GMM.

Step 3: In the left frame, select GMM then select New => Dword (32-bit) Value and name the new value DedicatedSegmentSize.

Step 4: Find DedicatedSegmentSize then double click, in the Value data frame change the value to 512. In the Base section, select Decimal.



Step 5: Once completed, save the configuration and restart your computer.

With the detailed information above, **TipsMake** has just answered your question: **What is VRAM ?** Hopefully with this article, you have all the necessary knowledge to better understand computers and graphics cards. For any questions, please contact the hotline: 1900.1903 or website <https://hacom.vn/> for free advice from our experts!

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