

What is motherboard? Learn about the mainboard in the computer

What is motherboard? Mainboard is the part that connects computer components together. The motherboard has a great influence on the operation of the computer.

To connect components and accessories in the computer together, the support of the mainboard is required. Therefore, the mainboard has a great influence on the operation of the computer. So, **what is the mainboard?** What is the structure and function? To understand better, let's find out with TipsMake in the article below!

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What is motherboard?

Mainboard , also known as **computer main board or motherboard** , is a circuit board that plays an extremely important role in the structure of computers and laptops. The mainboard has details to connect the internal components and accessories into a unified whole. Normally, the mainboard in a PC will be placed in the case or can also be integrated at the back of the screen for AIO computers.

Main structure of mainboard in computer

The mainboard in a computer is made up of many different components. Each component will have a different role to create the most complete motherboard.

1. Chipset

Chipset is one of the very important components in the mainboard. This part helps transfer data from the hard disk to memory and then will be transmitted to the CPU.

Besides, the chipset is also integrated with many other special functions such as raid control, etc. When using, you should use the best chipsets to ensure the computer can operate stably.

2. Sockets

Socket plays a key role in connecting motherboard components to other peripheral devices. To be able to connect, you need to change the connection speed.

Each motherboard will have a corresponding socket, but currently most sockets are integrated into the onboard card. Therefore, there is no need to install another separate card. In case you want to use the device to play games at high speed or do graphics, it is best to use a separate card to best support your operations.

3. CPU

CPU is also known as **central processing unit** . This part plays an important and indispensable role in the motherboard, the CPU is likened to the brain and computer. Information, data and operations entered into the computer will be carefully calculated by the CPU to be able to issue control commands and best handle all computer requirements.

4. Graphics card

This is a very necessary part for users to use graphics for gaming or design operations. Most mainboards can support graphics cards via PCI Express x16. Therefore, people can use it with complete peace of mind.

5. Sound card

The sound card is one of the components that plays an important role in the operation of the computer. This set of parts helps the mainboard integrate **all sounds** in the most realistic and accurate way.

Currently, the sound card has 6 integrated channels so it can best support users in watching movies and listening to music.

6.BIOS

BIOS is a basic input - output device, which plays an important role in every main Server. Because this part contains the basic working parameters of the system. Furthermore, the BIOS can also be soldered or attached directly to the motherboard, saving much of the computer's space.

7.Bus system

A **bus system** is a single system that plays a role in connecting the main parts of a computer system. Besides, this system also helps combine different functions of a data bus to transmit information and determine the destination of the information. After that, the system will control to issue commands.

8.ISA slot

ISA slot stands for ' **Industry Standard Architecture** ' and is a type of bus used in computers, used to attach additional expansion boards such as audio and video boards.

9.PCI slot

PCI slot is known as a communication standard between hardware components. The PCI slot will be the part that determines the compatibility between components in the computer system. Some parts are mentioned such as: internal modem, sound card,.

10.PCI Express slot

PCI Express slot is also known as **PCIe** . Is a generation of PCI communication standard that possesses superior data transfer speed compared to conventional PCI. PIC Express is usually used to connect expansion card components and RAM to the computer's mainboard.

How does the motherboard work?

Depending on each device, there will be different data transmission speeds. This transmission speed is called the bus. The motherboard will operate mainly based on **the transfer speed** .

The mainboard is made up of two chips: the south bridge and the north bridge. The job of these two chips is to connect the components together. For example, connect RAM to CPU or connect VGA Card to CPU.

When the computer operates, the components will automatically **connect together** to create a **transmission speed** . This transmission rate will be transmitted to the north bridge and south bridge for processing again. After that, the high-speed transmission line will be put into operation on the computer. This will help the computer operate in a unified and balanced manner.

However, the CPU transfer speed must always be guaranteed to be greater than or equivalent to the RAM transfer speed. Because only when there is this similarity can the CPU receive all signals from RAM. On the contrary, if the CPU transfer speed is small or the RAM speed is small, the CPU will not be able to receive RAM

completely. This imbalance will cause waste, because the computer cannot take full advantage of the CPU's power.

The role of the mainboard

The mainboard plays a very important role in the operation of the computer. Because the mainboard is the component that determines the computer's ability to operate, connect and function. The mainboard has the following specific roles:

1. This is a circuit that helps **connect** all components, accessories and peripherals of the computer to form a unified whole.
2. The motherboard provides **speed control** and the ability **to transfer data** from one device to another.
3. Distributes power to connected components on the main board.
4. The mainboard plays a role in deciding the configuration, structure and durability of the computer.

Types of mainboards

Similar to other types of computer components, mainboards also have many different types. Let's learn about the types of mainboards below with TipsMake.

1. AT standard computer mainboard

AT standard computer mainboard is the oldest type of mainboard. AT stands for Advanced Technology, a power connector, AT standard mainboard has been commonly used since the mid-1980s. The basic size of this mainboard ranges from 350.52 x 304.8mm. However, the AT standard computer motherboard also has a notable drawback: it is very difficult to install drives when needed.

2. ATX standard computer mainboard

ATX standard computer mainboards were born and developed in the mid-90s. Currently, this type of mainboard is still being used in many different computers. This is a major improvement on previous mainboards, such as the AT standard.

ATX is a computer mainboard design that is very commonly used in small sized motherboards such as: Micro-ATX, Flex ATX, nano-ITX, mini-ITX. The standard ATX mainboard has dimensions ranging from 304.8×243.84mm.

3. Main modern ATX computer

Modern ATX computer mainboards possess many outstanding advantages compared to the original ATX mainboard. Some of the enhanced features in this type of mainboard are:

1. Constructed with more power phases, helping to provide a more stable and cleaner power source.
2. The space around the CPU socket has been expanded to accommodate large radiator fans on the back.
3. Expand the distance between slots, making graphics card cooling more optimal.

4. Micro-ATX standard computer mainboard

The micro-ATX standard computer mainboard has a smaller size than the ATX standard mainboard. The normal size of this type of mainboard is **243.84 x 243.84mm** . Besides, this type of motherboard is also produced with a smaller size of about 243.84 x 205.74mm in some other manufacturers.

Most modern ATX mainboards will have a number of slots up to 7 PCI or PCI-Express expansion slots. Meanwhile, standard micro-ATX computer mainboards only have a maximum of 4 slots.

The micro-ATX standard computer mainboard has a number of features such as:

1. Quite compact in size, designed with more ports and slots than ATX mains.
2. The price of the motherboard is also cheaper than other types of ATX or ITX motherboards.

Mini ITX standard computer mainboard

Mini ITX standard computer mainframes are manufactured with dimensions of only about 170.18 x 170.18. This size is much smaller than any other type of computer main.

Mini ITX standard main computer possesses features such as:

1. Small in size and able to cool without using a fan. This helps **save energy** consumption.
2. This type of mainboard can be used in all cases, because mini ITX standard computer mainboards are designed for standard ATX, micro-ATX and other ATX variants.

E-ATX standard computer mainboard

E-ATX standard computer mainboard is an extended ATX mainboard. This type of mainboard is much larger in size than a standard ATX mainboard. However, this type of motherboard brings many superior features to users. E-ATX standard computer motherboards are often used for gaming computers. This main board can also be easily expanded to increase memory and help accommodate a more powerful, error-prone CPU.

Motherboard manufacturers in the world

Currently, there are many motherboard manufacturers around the world. However, not all companies receive trust and provide the best quality for users. These are the motherboard manufacturers chosen by many customers:

1. MSI mainboard.
2. Mainboard Asrock.
3. Asus mainboard.
4. Gigabyte motherboard.
5. Intel motherboards.

Compare mainboards on PCs and laptops

The mainboard on a laptop is a type of mainboard that is soldered onto a number of important components to save space for the CPU. At the same time, the GPU is also attached to the mainboard. In addition, there are a number of other replaceable parts such as PCIe and M2 SATA ports that can be easily replaced or added.

On the contrary, **the computer mainboard** is a part made up of connection slots such as slots for CPU, RAM, GPU, hard drive, power, etc.

What should you keep in mind before buying a motherboard?

Choosing a motherboard is very important, so it needs to be considered carefully. Some things to note before choosing to buy a motherboard are:

Select the appropriate Socket for the CPU

Each type of CPU will be compatible with a certain type of Socket. **Therefore, you need to search for CPU + Socket** names first so you can easily choose a suitable mainboard.

For motherboards on laptops

When choosing to buy a motherboard for the board on your laptop, you do not need to care about the Socket. Because the CPU on the laptop is attached to the motherboard. Instead, you need to consider the ability to upgrade components such as RAM and memory to easily upgrade your laptop later.

Epilogue

Through the above information, we can see the importance of the mainboard in the operation of the computer. Hopefully the information we have just provided can help you better know what a mainboard is and its structure. If you have any other questions, leave a comment below!

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