Computer source: Things to know

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>>>**CPU: Speed ??is not all**

Computer source - Don't underestimate!

Referring to a terrible gaming PC, gamers often think of what components? Huge graphics card, powerful processor, battle-mounted RAM kit, motherboard with many VGA slots . Very rarely do they think of power supplies.

Less knowledgeable users often overlook the power supply when building a new PC. A lot of people often give this option to salespeople according to 'the cheaper the better'. Or when there is a need to upgrade, gamers often forget to consider whether the power supply they are using has a 'balance' of new components. They do not know that an unstable power supply will shorten the life of components significantly. Especially when there is a need to 'become a fortress', it is possible that they do not go away alone and entice some comrades in the case to go along. What if it was an expensive graphics card or a precious motherboard?

Fire source!

The following article will give readers a few important criteria to evaluate a power supply. Then there will be a brief list of some common power sources that should be of interest or should be avoided at the end of the article.

Rated capacity

This is the first parameter that consumers need to consider when choosing to buy sources. Nominal power (also known as real power or rated power) is the largest value that the source can also operate when powering the external circuit. Beyond this value, the current flowing in the source generates so much heat that the heat dissipation of the elements in the source (coil, resistor, chip .) does not meet the requirements, resulting in fire or mixed operation. disorder. Overload due to 'drowning' capacity is one of the most common deaths in the PSU world.

Be wary of the manufacturer's naming! A typical example is the ACBel E2 470 power supply with a real power of only 420 W (it is impossible to conclude a fraudulent NSX because of the power supply name . without the W letter). Typically, 500 -> 600 W real power is sufficient for the new Intel Core-i system and the graphics card requires 2 extra 6-pin sources.

Performance & power factor

These two indicators represent the power efficiency of the power supply and are all less than 1. There is never a 100% performance chance because some of the energy is consumed in the form of heat. It is also difficult to encounter a power supply with a power factor of 1 because components such as resistors (inductors) and capacitance (capacitors) do not always maintain a fixed value (this depends on voltage and frequency of grid power). For example, if your system consumes 500 W, the power supply has an efficiency of 80% and a power

factor of 0.9, the electricity bill to be paid will be: 500 / (0.8 x 0.9) = 694 W.

A powerful power supply with standard 80 Plus Gold (90%).

To save power, try to find the power supply with the highest efficiency and power factor.

Common confusion: (real capacity) = (nominal capacity printed on the product) x (performance)

Electric current on the outgoing (rail) lines

This line parameter is always printed on the source.

An important parameter but few people pay attention. Take the example of the CoolerMaster Extreme 550 Power Plus power supply. In terms of power, this power supply is fully capable of carrying the GTX 570 graphics card system. However, its 12 V rail line only reaches 32 A - smaller than the minimum GTX 570 requirement of 38. A. So using this power supply for GTX 570 is not safe.

Important protection features

Over- ***capacity protection:*** when the total power supply at the output exceeds the maximum capacity, the PSU will temporarily stop operating. This feature is intended to limit the sudden death due to the capacity of the writer mentioned above.

Overcurrent protection: The PSU will cease to operate when one of its rail lines crosses the PSU maximum current limit. This is the case of GTX 570 and CoolerMaster Extreme 550 Power Plus mentioned above.

Short circuit protection: The PSU immediately stops working when a short circuit occurs (like dropping a screw on the board). Without this protection, the component's ability to exit when short-circuited is almost certain.

All of the three protection modes above are equipped with reliable power sources from CoolerMaster, AcBel, FSP . There is also one more feature that you cannot ignore when approaching expensive products. money:

Active PFC (Power Factor Correction): Power supplies with Active PFC have a high power factor to save power (greater than 0.9), and they also have the ability to eliminate noise and align power lines. to enter. Currently soft middle-class products such as FSP Hexa 500 can also be equipped with this feature.

Investment value

This is the factor that consumers are most interested in. If a 500 W power supply costs VND 1,000,000, the average cost to pay is VND 2,000 / W. Obviously, the lower the index, the higher the investment value.

Famous source brands in Vietnam

FSP: Source brand is too famous in the world. Recently, the price policy of FSP in Vietnam is very good. This is good news for domestic users. Most of FSP's power supplies feature Active PFC.

Seasonic: Like FSP, Seasonic quality is free and is a dream of many gamers. While both companies have a modest number of products and lower investment value than CoolerMaster or AcBel, both brands, reliability and components are far more distant.

CoolerMaster: The most popular name in Vietnam. However, savvy users do not appreciate CoolerMaster. While the Pro Gold high-end line has a poor investment value, the Extreme Power series lacks the trendy Active PFC and ripple noise is considered high compared to names like FSP or Seasonic. However, Extreme Power series is quite soft if compared to other power sources of other manufacturers, so it is quite suitable for users who need to have a high capacity.

AcBel: In terms of popularity, the name AcBel is about the same as CoolerMaster. Their Intelligent Power mid-range and high-end R88 series also have good investment value and reliable quality. In general, products of 500 W or more are worth buying, but less than 500 W is not competitive with FSP (quality) and CoolerMaster (cost

price).

XFX - the name is quite new in Vietnam

XFX: Brand link is too famous but rarely known. Gamers exposed to XFX mostly through portable graphics cards. Recently appearing in Vietnam, XFX PSU has a competitive price. According to foreign review sites, their product quality is also extremely good. Only the name XFX will make many people think that this is a new brand, so it is easy to ignore.

Huntkey: The name Huntkey is not very popular in the high-capacity product line because the investment value is not good and it does not impress consumers. However, at mid and low levels, the Green Power series power supplies are also not bad choices.

Corsair: There is not much to comment beyond the two words 'extreme crisis' and 'out of reach'.

Some remarkable sources

The following is a list of typical power sources for each power level. In addition, some names are popular but should not be invested.

Less than 400 W: for systems that do not use graphics cards need extra power

400 -> 460 W: for systems using a graphics card with a secondary source

Avoid: AcBel E2 470 (800,000 VND). Reason: FSP Saga II 400W better.

500 -> 650 W: for systems using 2-source graphic cards

Avoid: CoolerMaster Extreme Power 500W (1,100,000 VND). Reason: FSP Hexa 500W better.

Over 700 W: for systems that use extremely powerful graphics cards or multiple graphics cards.

Tên	Giá	Active PFC	Hiệu suất	PCIe-connector
CoolerMaster Elite Power 350W	375.000 VND	Không	70%	Không
FSP Saga II 400W	800.000 VND	Có	80%	1 x 6pin
CoolerMaster Extreme Power 460W	900.000 VND	Không	70%	1 x 6pin
FSP Hexa 500W	950.000 VND	Có	84%	1 x 6pin 1 x (6+2)pin
CoolerMaster Extreme Power Plus 550W	1.350.000 VND	Không	70%	2 x (6+2)pin
CoolerMaster Extreme Power Plus 600W	1.500.000 VND	Không	70%	2 x (6+2)pin
FSP Epsilon 600W	1.700.000 VND	Có	85%	2 x (6+2)pin
CoolerMaster Extreme Power Plus 650W	1.600.000 VND	Không	70%	2 x (6+2)pin
FSP Epsilon 700W	1.800.000 VND	Có	85%	2 x (6+2)pin
Seasonic JS750 750W	2.100.000 VND	Có	86%	2 x 6pin 2 x (6+2)pin
Corsair GS800 800W Gaming Series	3.050.000 VND	Có	80%	4 x (6+2)pin
XFX ProSeries 850W	2.900.000 VND	Có	85%	2 x 6pin 2 x (6+2)pin
CoolerMaster Silent Pro Gold 1000W	4.600.000 VND	Có	90%	4 x (6+2)pin
CoolerMaster Silent Pro Gold 1200W	5.600.000 VND	Có	90%	4 x (6+2)pin
Corsair AX1200 1200W Professional Gold	7.500.000 VND	Có	90%	6 x (6+2)pin

Sources of concern (in terms of quality & investment value).