

How to choose power supply for the copy controller

General speaking, a power supply is marked with the voltage it provides with the current, besides the name and model, etc. Here is an example:

Voltage	+5V	+12V
Ampere	23A	10A

V stands for Volt, the unit for voltage, and A stands for Ampere, the unit of electrical current. This is the simplest table. Some others may even provide other kind of voltage such as 3.3V, -5V, and -12V. The Ampere may be even separated with MAX and MIN current. However, both +5V and +12V are must for most of computer devices. A computer, for example, is usually with 2 hard drivers and 2 DVD writers. Let say a HDD takes 0.75A(750mA) on +5V and 1.6A(1600mA) on 12V, also a DVD writer takes 2A on +5V and 3A on +12V. The total power required are 5.5A on +5V and 7.2A on +12V. The mother board take +5V, and the required current depends on CPU and the number of RAM modules, plus CPU fan/cooler and optional adapters, plus USB/eSATA devices. By the calculation, it is obvious that a generic power supply could fully support it, and why a power supply is designed for such capacity. However, to using power supply to provide power for a duplicator that has up to 10 devices is another story. It takes 20A on +5V and 30A on +12V, plus what the controller required. The capacity of above power supply is obvious not enough. Moreover, there is common difference on those values. The difference on some unknown power supplies may even surprise the users.

Power supply that is unable to fully support a duplicator is even worse than a broken one. It makes problems that floating everywhere. For example, it may burn DVD copies that could only be read by certain DVD reader because the burners do not have enough power to burn stable copies. Some of the burners in the duplicator may not be able to burn any copy at all because they just do not have enough power to function well. The malfunction may be on different DVD burners in each time the duplicator is turned on because each one of the burners share different power at each time it is on. There are other problem that may even more confuse just because the controller do not have the enough power. One or more components work on abnormal signals. If a power supply provides power on the board line, the problem may be even confusing. That is why an old power supply that is taken from a computer should be only using on 1-1 duplicator. Do not use on others unless it is calculated safe to use on 1-3 or above 1-3 duplicator. On 1-11 DVD duplicator, for example, is using with 11 DVD writers and 1DVD reader, which takes 24A on +5V and 36A on +12V. If it add controller and HDD, the total power required better are 30A on +5V and 40A on +12V or higher. However, when duplicator face obscure problems, please disassemble the copy tower and calculate

the power requirement.

Below is an example to show you how to choose and calculate a suitable power supply for your copy controller:

Power requirement for each device in the copy tower:

	5V	12V
Controller	1A	0A
HDD	1A	1A
ROM	1.5A	1.5A
Writer	X	Y

Plus writers, the total power requirement will be:

	5V	12V
1-10	3.5A+10*X	2.5A+10*Y
1-9	3.5A+9*X	2.5A+9*Y
1-7	3.5A+7*X	2.5A+7*Y
1-5	3.5A+5*X	2.5A+5*Y
1-3	3.5A+3*X	2.5A+3*Y
1-1	3.5A+1*X	2.5A+1*Y

Firstly, let's take Pioneer BDR-S05XLB 12X BD Writer for example.

It requires 1.1A in 5V (X) and 1.2A in 12V (Y).

Therefore, the total power requirement for BD copy towers can be calculated

	5V	12V
1-10	14.5A	14.5A
1-9	13.4A	13.3A
1-7	11.2A	10.9A
1-5	9A	8.5A
1-3	6.8A	6.1A
1-1	4.6A	3.7A



Let's take Lite-On 24X DVD Writer for example.

It requires 1.5A in 5V (X) and 2.5A in 12V (Y).

Therefore, the total power requirement for DVD copy towers can be calculated as:

	5V	12V
1-10	18.5A	27.5A
1-9	17A	25A
1-7	14A	20A
1-5	11A	15A
1-3	8A	10A
1-1	5A	5A



If the power supply we got with below spec, then it is okay to use it in a 1-9 DVD copy tower and BD copy tower. However it is not suitable to be used in a 1-10 or 1-14 copy tower.



Note: Different brand and writer have their own “the unit of electrical current” (Ampere). Please follow the power label to do calculation.