**Power Supply Notes**

1. Watts - Maximum amount of power your power supply can provide
   1. Every major component will have a wattage requirement and if your power supply doesn't provide enough, you system may fail to function properly or even turn off or fail to boot.
      1. Motherboard
         1. Will need either a 20pin or 24 pin power connector
         2. 20+4 pin will handle both
      2. CPU Power
         1. Will need either a 4-pin or 8-pin CPU power connector
         2. 4+4 CPU power connector will handle both
      3. Graphics card
         1. Will take either 6-pin or 8-pin PCI-e power connector
         2. 6+2 PCI-e power connector will handle both
   2. This is shown on the back of your power supply and will be a number followed by "W"
   3.  850W means 850 Watt power supply
   4. Typically a 500W power supply will handle the needs of even high end computer systems.
   5. However, if you make sure of multiple graphics cards, you may need to go higher.
2. Modular Cabling
   1. Instead of all cables permanently connected to power supply, you can just plug in the ones you need.
   2. Eliminates unused cables from congested the inside of your case.
3. Form Factor - We have power supplies to fit different case sizes
   1. ATX
   2. Micro-ATX
   3. Mini-ATX (Also called SFX)
4. 80 PLUS Certification
   1. Must match certain industry guidelines for power efficiency to get this "stamp of approval".
   2. Bronze, Silver and Gold levels
5. Power Supply Life Expectancy
   1. MTBF - Mean Time Between Failure
   2. Looks for minimum 100,000 hours.
6. Overvoltage Protection
   1. If the voltage hits a certain level, the power supply will shut itself off to save internal components.
   2. Some cheap power supplies may not have this feature and that is a risk.
7. Types of Power Supply Connections

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| --- | --- | --- |
| Name | What It Powers | Image |
| 4-pin Berg | Floppy Disk Drives | floppy power cable |
| 4-pin Molex | Older hard drives and optical drives | 4 Pin peripheral power cable |
| 20-pin ATX main power | Older motherboards | 20 pin ATX main power cable |
| 24-pin ATX main power | Newer motherboards | 24 pin ATX main power cable |
| 20+4 pin ATX main power | Adaptable to fit new and old motherboards | 20+4 pin ATX main power cable |
| 4-pin CPU power | Older, less powerful CPUs | 4 pin ATX +12 volt power cable |
| 8-pin CPU | Newer CPUs | 8 pin EPS +12 volt powercable |
| 4+4 pin CPU power | Adaptable to fit newer and older CPUs | 4+4 pin +12 volt power cable |
| 6-pin PCI Express power | older, less powerful video cards | 6 pin PCI Express power cable |
| 8-pin PCI Express power | newer, more powerful video cards | 8 pin PCI Express power cable |
| 6+2 pin PCI Express Power | Fits both new and old video cards | 6+2 pin PCI Express power cable |
| SATA power cable | Fits newer hard drives and optical drives | SATA power cable |