

Protect your PC from harmful spikes and power outages

By Bruce A. Love

Vampires don't like spikes, and neither do computers. With home computers, the spikes I refer to are sharp nasty electrical signals that can significantly shorten the life of computers (and most other home electronic equipment). Lightning strikes, downed wires, and fluctuating load demands can produce spikes, surges, sags and other power problems for your personal computer. Fortunately, there are a number of products that can help protect your PC. Surge protectors, surge suppressors, UPSs, and line conditioners, are some of the options available to combat "disturbances in the force."

Spikes and surges are examples of over-voltage situations. Spikes are characterized by sharp voltage increases of extremely short duration. Power surges have longer durations, but typically have lower peak voltages. Both conditions deliver higher voltage than desirable and can be harmful to your computer and peripheral equipment. Some sort of protection is important to guard your electronic investments against over-voltage situations.

When you walk into your favorite office supply store, you will see a selection of power strips with a wide range of price tags. The least expensive ones are basically multi-socketed extension chords that provide no additional protection from power line problems. They look ideal for plugging in PCs, monitors, printers, and other devices, but you should avoid these cheap solutions for use with sensitive electronics. You will also see some power strips advertising "surge protection." This usually means that the strip is fused, or will shut off like a circuit breaker. These strips also should be avoided.

Some power strips have "surge suppression" capabilities. Rather than shutting down power to your PC, which is what a surge protection "circuit breaker" strip would do under extreme situations, surge suppressors eliminate temporary high voltage conditions that would otherwise reach your personal computer. Surge suppression strips typically have one or 2 LED lights, which indicate that the surge suppressor is working properly, and that your equipment is properly grounded. Surge suppressors range in price from about \$10 to about \$50. Higher priced models last longer and are able to block higher surges and spikes. These devices eventually wear out as they

sacrifice themselves over time to protect your more valuable equipment.

Line conditioning units are the most robust devices to eliminate spikes and surges. They also regulate low voltage fluctuations to bring these temporary situations up to optimal levels. Line conditioners use a transformer to buffer line inputs from the outputs connected to your computer equipment. Conditioners also use similar surge suppression and filtering techniques used in surge suppression strips. These units can run from \$100 to \$200 and even higher.

When the snow is weighing heavily on the power lines, or when electrical storms threaten to knock out power, we have another option that will help us avoid losing work if power suddenly fails. The Uninterruptible Power Supply (UPS) gives computer users an opportunity to save work and power down properly when the lights go out. All UPSs also perform surge suppression.

UPSs have VA ratings. The higher this number, the longer your equipment can operate on the unit's battery before you ultimately have to shut down your computer during blackouts. With higher VA ratings come higher price tags. Some units (rated at 1000 to 1200 VA) are priced under \$100 and can power your computer and monitor for more than a half hour.

Most surge suppressors, conditioners, and UPS units provide data protection ports. These allow you to protect telephone modem lines and other external data sources from dangerous line conditions. Make sure the device you select offers this kind of protection.

There are a number of good options available to protect your computer from the external forces that try to destroy them. Surge suppression strips offer a good, affordable option, while line conditioners and UPS units can provide more robust protection. With all this protection, however, it is still unwise to operate sensitive electronic equipment during an electrical storm. Do you really think a lightning bolt, after traveling hundreds of feet, will pause before jumping a fraction of an inch across the contacts in your surge suppressor and computer's power switch? Not likely! This is why it is best to unplug all sensitive electronic equipment during lightning storms.

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