

Phantom Load Reduction

Many electrical and electronic devices include a phantom load. A phantom load draws current; thus, power, when the device is turned-off. While the benefit of an “instant-on” device is tangible, there is a cost. While that cost may be acceptable when the device is in frequent use, the cost of the electricity is unnecessary when the device is usually turned-off.

There are two major means of conveniently turning-off phantom loads. Convenient labels for these categories are “dumb” and “smart”. The “dumb” category includes unplugging the device when not in use and turning-off power strips. The “smart” category includes remotely or automatically receptacles, switches, and other equipment. Some examples of each are described in the following:

The simplest (and most inconvenient) way to disable a phantom load is to unplug the device after turning-off. Never unplug a powered device, you could damage the device. A more convenient means is to plug the device or several devices into a power strip. When the power strip is turned-off, then the phantom loads consume no power. Power strips are available in a wide variety of sizes. Unless one is protecting a very simple device, a surge protector power strip is the better product to use. Surge protector power strips are available in a wide variety of sizes and some have additional features, e.g., can turn-off some outlets on the strip.

Similar solutions include surge protector power strips, voltage regulators, and uninterruptable power supplies (UPS). The cost of a simple power strip is quite low, while the UPS units can be expensive. Power strips should be used for electrical equipment, e.g., small motors (washing machine) or a power supply like a battery charger. Surge protectors or voltage regulators should be used for electronic equipment, e.g., TV, stereo. A UPS is often used with a computer or similar device that needs power for some amount of time when the grid is out.

Examples include:

1. Power strip: [Aubuchon Hardware](#) or [Home Depot](#)
2. Surge protectors: [Belkin](#) (general), [Belkin Home Theater](#) or [Home Depot](#)
3. Voltage regulators: [APC](#)
4. UPS: [APC](#), [Tripp Lite](#), or [Belkin](#)

Note, these links will take you to either the manufacturer or an on-line distributor or the Home Depot web page that describes the product.

The “smart” category includes a wide variety of technologies and devices to automate control of electrical and electronic devices within the home. The communication technologies include use of the power lines, infrared, and/or radio frequency protocols.

Examples of protocols include: [X10 Pro](#), [X10](#), [UPB](#), [Z-Wave](#), and [Insteon](#).

Essentially, devices are remotely and/or automatically controlled by central consoles or remotes. Signals are sent to the device that cause the device to execute the desired function, e.g., on, off, dims.

Since home automation using a “smart” technology requires a higher investment than a surge protector power strip or voltage regulator, one should investigate which protocol is best suited for their application. The links above go to web sites that provide more detailed information about the protocols, capabilities, limitations, and technology.

Home automation products are available from [SmartHome](#), [SmartHomeUSA](#), [HomeSeer](#), [AutomatedOutlet](#), [DiscountHomeAutomation](#), and others.

While I use surge protector power strips, voltage regulators, and UPS, I do not have any personal experience with the home automation products. I certainly recommend the voltage regulators and UPS from APC and have successfully used Belkin and Tripp Lite equipment before.