

UPS Information

Basic Information

Uninterrupted Power Supply (UPS) batteries are primarily used to provide a short-term solution to a power outage or power failure. A UPS also protects equipment against a number of power problems including voltage spikes and instability. UPS units come in sizes from what appears to be a power strip to units installed on the top of buildings to power entire data centers.

There are 2 types of UPS units. One is called “backup” and the other “online”. The backup unit has a “switch” in it that will, when the unit detects a drop in voltage, cut over to the battery. These units tend to be less expensive compared to an online of the same size. An online unit always has the battery “online” so that there is no delay between the power drop and the battery taking over. The voltage output from a backup unit will vary within the limits determined by the manufacturer whereas an online unit always puts out the same voltage regardless of the input voltage.



In a rural-residential building, the input voltage often varies from 90 volts to 135 volts. Most computer equipment will tolerate this variance but having a nice steady 120 volts out assures that the power going to the equipment is consistent and stable. An online UPS is, by definition, a power conditioner. A backup UPS may have circuitry to protect against surges, but it is not as effective as an online system. Online backup systems, which can be overwhelmed by a large voltage spike (over 2500 volts), protect against the day-to-day voltage variances.



Even if you have a generator on your home that automatically comes on during a power failure, there is a significant time lag before the generator comes up to speed and voltage plus the output voltage is very “noisy” compared to the power that comes from the electric company, so if you have a generator, you should definitely have a UPS.



So, a UPS will keep your equipment running for a “short” period of time during a power outage, but also protect your equipment from the day-to-day voltage spikes that takes a toll on all electronic equipment. However, the size does matter. Basically, the bigger the unit, the larger the battery and the longer it will keep your equipment operational. This also directly effects the price, the bigger the unit the more it will cost. There are many excellent manufacturers, and some offer an equipment warranty should the unit fail, so it is best to shop around and buy a “known” brand. Keep in mind, however, like other devices, the battery inside a UPS does have a life span and can degrade past a four- or five-year point. The batteries can be replaced so purchasing a UPS that has a replaceable battery is an important consideration.

Size and Usage Requirements

UPSs are placed between the power from the wall outlet and the devices that are to be connected based on the customer’s choice. This means that the customer must plug in the required equipment into the UPS and then plug the battery into the wall. UPS Batteries are relatively easy set up and offer many types depending on the needs of the customer. These devices are often freestanding and are intended to sit on the floor near the required device. Keep in mind that laptop computers already have a battery backup of sorts built in, so no need to connect them to the UPS.

In order to choose the right size UPS for your environment you need to know the electrical draw of each device. This “draw” is measured in watts (W) and is simply the voltage used times the current (A for amperage). The standard equipment used by Whip City Fiber has the following power consumption ratings:

SmartRG Router: 36W
OOMA Telo: 15W
Nokia ONT: <1 W

Based on these power consumption's, (and if all three devices are near each other), a 550VA UPS should last for up to just over 1 hour and cost under \$100. A 1500VA unit, costing around \$300, would last slightly over 2 hours. And you can buy a UPS that will last 50 hours for about \$2,500 but an investment in a generator might be more judicious. If your Nokia ONT is not located near your router and Ooma equipment, then an additional, small UPS would be necessary to keep the entire system running.

Depending on the time frame the customer wants to maintain power to this device, the customer may need to look and research further to find a device that suits their needs.

Summary

UPS Batteries are meant to be a temporary solution to a power interruption or outage. This device is not meant to be used for an extended period and can be more expensive depending on the customer's needs. These batteries can be extremely useful in residential settings, however, just for conditioning the power and maintaining service between the power outage and restoration. And by leaving the equipment off for most of the day, a UPS can stretch the customer's access for days.

While there are multiple types of UPS batteries, these devices are easy to purchase online and at retail stores where other computer and/or office supplies are sold. They can be easy to set up and have many options to choose from to fit the needs of different customers. APC, Tripp Lite and Cyberpower are all examples of reliable companies that make excellent UPS equipment.