

## **SolarInnovate Energy Solutions**

# **Home uninterruptible power supply design solution**



## Overview

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What is an uninterruptible power supply?

An uninterruptible power supply, commonly called a UPS is a device that has the ability to convert and control direct current (DC) energy to alternating current (AC) energy. It uses a conventional battery of 12V rating as the input source and by the action of the inverter circuitry; it produces an alternating voltage which is sent to the load.

How do you design a home uninterruptible power supply (UPS)?

Design a home uninterruptible power supply (UPS) by using a car battery as a backup power source. This is connected to a buck-boost converter that generates a stable 12 V/5 A supply to power the Wi-Fi router, as well as a 6.5 V/1.5 A buck converter to power a cordless telephone. The circuit in Figure 1 was designed out of necessity.

How does an uninterrupted power supply work?

Most uninterrupted power supplies sold for computers 'switch' power, running a small inverter when power is interrupted, then switching back to 'normal' power when it's back on. This one simply produces AC power with a continuous duty inverter and assumes some system (s) will charge the DC battery supply it requires faster than it consumes it.

Why do we need an uninterruptible power supply for our home?

As the world becomes more advanced, our dependence on electricity becomes more acute. Power outages can reduce the most sophisticated homes to quite primitive ones and this article describes the design of an uninterruptible power supply for the home that keeps alive the home's most essential service: Wi-Fi.

Do I need an uninterruptible power supply (UPS)?

If the load calls for a particularly close-tolerance supply, or is intended for

24-hour daily use there is no alternative but to install a form of Uninterruptible Power Supply (UPS) to provide it with continuous, processed, clean power.

Why do we need an uninterrupted power supply for personal computer (PC)?

The design of this uninterrupted power supply (UPS) for personal computer (PC) is necessitated due to a need for enhanced portability in the design of personal computer desktop workstations.

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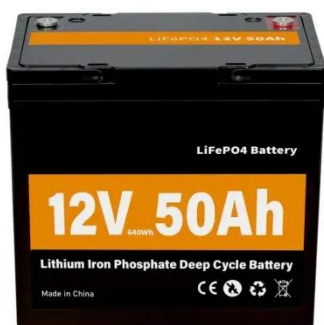
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