

HOW TO POWER A PROJECT

Overview

This tutorial will cover the various ways you can power your electronic projects. It will go into some detail about voltage and current considerations you may want to make. It will also go into the extra considerations you have to make if your project is mobile/remote or, in other words, not going to be sitting next to a wall power outlet.

If this is truly your first electronic project, you have the option of reading through this tutorial or sticking with the recommended supply for the project or development board of your choice. The SparkFun Inventor's Kit contains the USB cable you need for power and works fine for all the projects in the kit as well as many more advanced projects. If you're feeling overwhelmed, that kit is the best place to start.

Ways to Power a Project

Here are some of the most methods used for powering a project:

- AC to DC power supplies (like a computer or laptop would use)
- Variable DC bench power supply
- Batteries
- Via a USB cable



Four common ways to supply power to your project

Which option should I pick to power my project?

The answer to this question largely depends on your project specific requirements.

If you're starting off with the SparkFun Inventor's Kit or another basic development board, you will likely just need a USB cable. The Arduino Uno is an example that requires only a USB A to B cable to supply the power to run the example circuits in the kit.

If you're in the business of building projects and testing circuits regularly, acquiring a variable DC bench power supply is highly recommended. This will allow you to set the voltage to a specific value depending on what you need for your project. It also buys you some protection as you can set a maximum current allowed. Then, if there is a short circuit in your project, the bench supply will shut down hopefully preventing harm to some components in your project.

A specific AC to DC power supply is often used after a circuit is proven. This option is also great if you often use the same development board again and again in your projects. These wall adapters usually have a set voltage and current output, so it's important to make sure that the adapter you choose has the correct specifications as the project you will be powering and to not exceed those specifications.

If you want your project to be mobile or based in a remote location away from where you can gather AC wall power from the grid, batteries are the answer you're looking for. Batteries come in a huge variety so be sure to check out the later parts of this tutorial so you can figure out precisely what to choose. Common choices include rechargeable NiMH AA's and lithium polymer ion.

Source : <https://learn.sparkfun.com/tutorials/how-to-power-a-project#ways-to-power-a-project>