Solar Powered DIY Portable HotSpot Part 2

For those of you that may have missed it please see part one of the Solar Powered DIY HotSpot





I recently built another one of these little units that can be taken literally anywhere. By mounting the entire setup into a portable backpack this can be taken anywhere and not stand out so much. Well, maybe;-)

This is about the perfect little addition to this project as it allows for one to take it on a bike or simply carry it by the detatchable strap. This untit still runs on 5 AA batteries however as mentioned in the first article, one could use a small 12 volt battery in place of the 6 volts currently being used. This would be handy for those that wanted a larger battery and run time and would be using a small/cheap charge controller.

Thanks to everyone for your comments and your support.

Here are some pics of this build.





As you can see from the photos this is the front of the backpack. It also has a built in pocket so you can take all of your gadgets with you. Cell phones, etc. The other photo you can see the solar panel attached to the bag that keeps the wifi router running by keeping the batteries charged by sunlight.





Here you can see the back of the unit as well as the front pocket that is used to store other things you want to carry with you. In the corner you can see the little antenna sticking out. You could get even more range out of this by simply screwing on a higher gain antenna however at some point the antenna would be so large that it may not be as portable as it is with simply the default 3-5 Dbi antenna.





The wifi antenna sticking out of the bag. On the right, my iPhone sitting on top of the bag to better give an idea on the size.





On the left you can see a wifi router. On the right you can see my iPhone tucked away neatly inside the front pocket.





To better give you an idea on the size of the bag you can see my iPhone sitting on top of the front of the bag.

There are a couple of very important issues with these types of builds that the DIY's need to be aware of:

1) You need a low voltage and low amperage wifi router to use for this project. The lower the energy it uses the better.

2) The wifi router needs to be able to support the open source Linux firmware. This firmware will replace the original firmware and give the router much, much, much more options and features that it did not have with the original firmware. Like being able to repeat any open wifi signals automatically. And yes, you still have an online browser based control panel.

3) You need to make sure that the solar panel is powerful enough to actually run the system. I know many of you many different types of solar powered products on the market however none of them will actually power the units with the SOLAR PANEL ALONE. What they do is they attach some small cheap solar panel that will charge a battery pack but it will take 12 to 18 hours to fully charge the battery. (With the average of 8 hours of sun a day that is 2 DAYS!) Who the hell has time to wait 2 days for anything?

So, we need a solar panel that has the minimum voltage as well as the min. current that the router needs to be able to run as long as it is in the light. In this project our 7.2 volt solar panel does not have enough voltage to over charge the 6 volt battery bank. It does however have enough to run the entire system without the batteries at all. This eliminates the need for a charge controller for this system. Now if we were to use a 12 volt solar panel and a 12 volt battery then things would be different and we would want some type of charge controller to protect the battery from being over charged.

We can get as complicated as anything else if we want to with this type of system however to keep it simple and portable we stick to the basics of electronics which not only helps to keep costs down but makes it alot easier to upgrade, fix, or mod/tweak.

Here are some pics of the open source online control panel called dd-wrt.

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CAMO BAG:

The bag is made for being used outside and is lined with a water proof liner to help keep things dry when it is wet outside. I would not however throw it into the lake and expect it to still work when it is removed;-)

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Post your comments below and I will do the best I can to anwser them.

As with the last article for those that either do not have the time or the patience to put together a project like this, you can contact me and I will custom build one for you and ship it via online tracking number direct to your door!