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## Converting a Zsun Wifi Card Reader into a Wifi Range Extender

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This post is a follow-up post to my original where I successfully flashed [OpenWRT](#) onto these Zsun devices. Be sure to see [that post](#) first if you haven't already flashed OpenWRT onto the device.

Note that this tutorial should also work for any device upon which you can put [OpenWRT](#) (ie any compatible old router you have kicking around).

With this project, what I was really trying to do was create a legitimate 'mesh network' but my skills and time ran out so I resolved to have a 'half victory' which was to be able to use these little devices to expand our home wifi with small size footprint and lower energy usage, even if it was just on demand, as needed. For example, if I needed wifi to reach outside while gardening so I could listen to streamed music, etc, I could plug one of these in nearby and extend the range instantly.

Before beginning, it's important to note that this process may need your critical thinking to build on what I've done, and if you have further progress, it would be appreciated by all to know, if you could write them in the comments. For full disclosure I fried two Zsun devices while learning so make sure to heed my advice in the other blog if you are using this device.

Oh, one last useful statement: I recommend turning off the wifi in your master-router so that you (you) don't get confused by which wifi radio device you are connecting to since both devices will, by the end of the tutorial, be sharing the exact same SSID. It reduces confusion and headaches to turn this off (just the wifi, you can use wired connection if you have access). Also, while you are turning it off, take note as to what channel it is broadcasting on since you will want to choose a new channel that is far away from this one on the new device.

Ok, let's get started.

### Setting up the Device as an Access Point

For full credit I pulled the methods for this process from [this video](#), but the video wasn't super helpful because it required an internet connection to do the changes and I needed a static page with text instructions! These are those:

#### Step 1: Set up the Interface

1. Go to 'network' and 'interfaces' in the sub-servient (new word I made, enjoy, GNU license word..gnucabulary...) device (in my case the zsun).
2. If you have any other interfaces besides 'LAN', remove them as they won't be used
3. Edit the LAN
4. Change the IPv4 field to the static IP address that this device will have on your main home network. If your main router is 192.168.1.1 for example, then you could set this to 192.168.1.5 if it's available. If not, find one that is and set it. And don't lose it! You will need it to log back into the router after making the change.
5. Change the gateway IP address to the master (gnucabulary...) routers (ie. 192.168.1.1 if that's your router's admin login page)
6. In the "DHCP Server" settings below on the same page, there is a checkbox called 'ignore interface'. Check that box which will disable DHCP (the thing that sends out IP addresses to all your devices) since you won't need it

## 7. "Save and Apply" button at the bottom

Reminder note: your device will no longer be found at 192.168.1.1 if that's where you just logged in. It will now be accessible at the address you chose in step 4 above. I always forget this one, ha. Go find it and log back in...

### Step 2: Disable the Firewall

1. Go to 'System' and then 'Startup'
2. Scroll down until you see 'firewall'
3. Disable it by clicking on the 'enabled' button
4. 'Submit' button

### Step 3: Adjust the Wifi settings

1. Go to 'Network' then 'wifi'
2. Edit the active wifi entry
3. Change the channel (1 to 11) of the device to one that is fairly far away from that of your main router so there is a nice gap between the frequencies
4. In 'Interface Configuration' section, change the mode to 'access point' if it isn't already
5. change the SSID to exactly the same one as your main router (if it's slightly different it won't work)
6. Change the WPA2/psk password to exactly the same one as your main router is outputting. If you don't it won't work
7. 'Save & Apply' button

### Some Follow up Notes

As hinted at at the very beginning of this tutorial, from this point on you will not (or may not?) be able to access your subservient device while the wifi of the master router is on. The reason for this is because probably your computer will find the master router's wifi device and connect to that. I had big struggles trying to find this device again. If you need to access it, either unplug your master router (honestly this is the easiest way if no one will be angry at you for killing their internet) or go into the master router's settings and disable the wifi transmit. For me, I recommend turning off the master router's wifi transmit until it's all setup on the subservient first.

I had quite a bit of problems, even though my master router wasn't transmitting wifi, connecting to my newly-IP'd subservient device. After I cleared my browsers cache it did re-appear but I'm not sure that's why. You might need to mess around with your browser to be able to hit the admin page again. I think my problem might be because I have multiple devices running OpenWRT and the browser gets confused...

Special thanks to all the contributors at [OpenWRT!](#)

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