

# Home Wi-Fi Extension

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## The Problem

I live in a house with stone walls. My broadband router is upstairs, and I have a weak signal downstairs. This frequently causes me problems, especially streaming to my fire stick, Internet radio and Apple HomePod. It can all be a bit frustrating.

A couple of months ago I thought it was probably time to try to fix it, ideally without spending too much or making anything too complicated.

How did I get on and how reliable has it been? To date I've had no real problems and things are really a lot better, especially streaming YouTube on the fire stick which is now far easier to watch as it plays smoothly.

This was a very easy project than any computer user should be able to do themselves.

## The Solution Design

My first idea was to One possibility is to try to reconfigure my old BT router (I moved to PlusNet a long time ago), unfortunately I could find the router but not the power supply so that that idea came to nothing.

I decided to remove all user devices from the router itself and to have everything connected via three repeaters

- Upstairs
- Downstairs
- Office

I separated work from home so that I can just turn the office repeater off when I'm not working as that obviously adds an extra layer of security.

## What is a Repeater?

I suppose the clue is in the name. A wireless repeater (also called wireless range extender or Wi-Fi extender) is a device that takes an existing signal from your existing Wi-Fi router, and it retransmits the to create a second network.

The repeater should place it within range of your router so that it gets a good signal but as far from it as possible so that it increases the total area of coverage.

# Preparation

Before setting up any sort of repeater, you are going to need to know the IP address of your broadband router. This was easy enough to find out

- From a PC this would be done using IPCONFIG, but I have a MacBook or an iPad
- From MacBook, go into system settings / network / Wi-Fi / advanced / TCP/IP, my router address is 192.168.1.254 but yours could be different but it will have this format.
- From iPad / iPhone go into settings / Wi-Fi, highlight the PLUSNET router and its IP address is clearly visible as 192.168.1.254

# Setting up the New Repeaters

## Office – Tenda N300

I bought a Tenda N300 for £9.80, it was new from eBay, this was the easiest of the three devices and works very well.

1. Plug in and power on
2. Using my iPad, I connected to Tenda\_EXT in Settings / Wi-Fi
3. Open the browser, a menu appears
4. Select network to be extended (my PlusNet router)
5. Enter existing PlusNet password
6. Enter new SSID, this is the network name you want and it defaults to name of the existing router, I chose 'Office'
7. Save the settings, the repeater will reboot
8. Setup and other devices to use the new repeater

## Upstairs - Netgear EX2700-100UKS

I found this second-hand on eBay for £6.34 including postage, a bit of a bargain. Again, it works well although it was harder to set up than the Tenda device.

- Plug in and power on
- Connect from iPad to NET-GEAR\_EXT in Settings / Wi-Fi
- Open the browser and enter <http://www.mtwifiext.net>
- Select 'Setup'
- Create a setup account and jot the details down somewhere safe
- Highlight network you want to extend (PlusNet)
- Enter the PlusNet password
- Create a network name, I wanted to use 'Upstairs' but it seems to insist on something at least 16 characters long and does not give a very helpful error message if you don't
- Select 'Same password'
- The repeater will reboot
- Connect to the repeater from the iPad
- Enter the password
- Connect your devices

## Downstairs – TP Link WR841-N

I bought a TP-Link WR841-N router for £18.99 from Amazon to try to reduce the downstairs dead spots. The area to cover is quite large as it includes my yard and these devices seem to get good reviews.

It was a quick process to set this up

- Power up, in same room as main PlusNet router, and allow it to boot up (30 seconds)
- Using my iPad,
  - Go into settings / Wi-Fi
  - Forget existing network connection for the PlusNet router
  - Connect to the new TP-Link router
  - Entered the password displayed on the bottom of the TP-Link router
  - Open the browser and enter the address <http://tplinkwifi.net>
  - Created a management password (jot it down and put it somewhere safe)
  - Selected 'continue'
  - Select 'range extender'
  - Selected my PlusNet router from the list displayed
  - Entered the PlusNet router password
  - Select 'customise to set name (I used 'Downstairs')
  - Select 'Finish' and the device reboots itself
- Now to test internet access
  - On the iPad connect to the new router in Settings / Wi-Fi
  - Enter the main PlusNet password
  - Using browser, access an internet site, all was good
- Relocate the new router to desired position, downstairs
- Test internet access with iPad
- Connect other devices using their instructions

## Updating Firmware

In principle, it is probably a good idea to update the firmware on these devices from time to time as security patches will get released. In reality I doubt very much whether I will ever get around to doing this.