

# Add a Network Interface without using USB

The Pi Zero has the limitation of only having a single USB port. If you want to put your Pi Zero on the LAN, then you need to add a network port, this is normally done using a USB Nic.

I hate buying anything for the Pi Zero that costs proportionally more than the Pi Zero, and USB network adapters fall in to that category. Pay a few quid for one, and you only get a crappy unreliable Nic that is sold as USB2, but is normally an old USB 1.x and that fails all the time, believe me, I have tried a lot of them.

Then I came across this website <http://raspi.tv/2015/ethernet-on-pi-zero-how-to-put-an-ethernet-port-on-your-pi>

What they have done is used a network module that runs on the SPI bus. Its a cheap unit that you can get from ebay for around £3, and while they are cheap, they are reliable, albeit a little slow, but not so slow that they are unusable. I will take reliability over speed any day.

Here is the unit I purchased from eBay for £2.07p



The seller on eBay is [chips-fans](#) and while it has the same part number as the one used on raspi.tv, the pins are different, which is a bit annoying, but it wasn't too hard to work out.

## Connecting the NIC

Here are the connections I used for this board:

| GPIIO  | RPi Pin | Nic PNo | Nic Func |
|--------|---------|---------|----------|
| n/c    |         | 1       | CLK      |
| n/c    |         | 2       | WOL      |
| GPI010 | 19      | 3       | SI       |
| GPI008 | 24      | 4       | CS       |
| 3v3    | 17      | 5       | Vcc      |
| GPI025 | 22      | 6       | NT       |
| GPI009 | 21      | 7       | SO       |
| GPI011 | 23      | 8       | SCK      |
| n/c    |         | 9       | RST      |
| GND    | 20      | 10      | GND      |

## Configuration

Enable the SPI Pins:

```
From the command line
sudo raspi-config
Advanced Options - SPI - Yes to Enable
```

Add the following to your [/boot/config.txt](#)

```
dtoverlay=enc28j60
```

Now **reboot** the Pi

## Updates

**WARNING!!!** - I initially got kernel panics when I tested this unit, so using a standard USB nic, you need to do the following:

```
sudo apt-get upgrade
sudo apt-get update
sudo rpi-update (this forces a kernel update)
```

## Testing

You can use a command line version of speedtest.net if you install it...

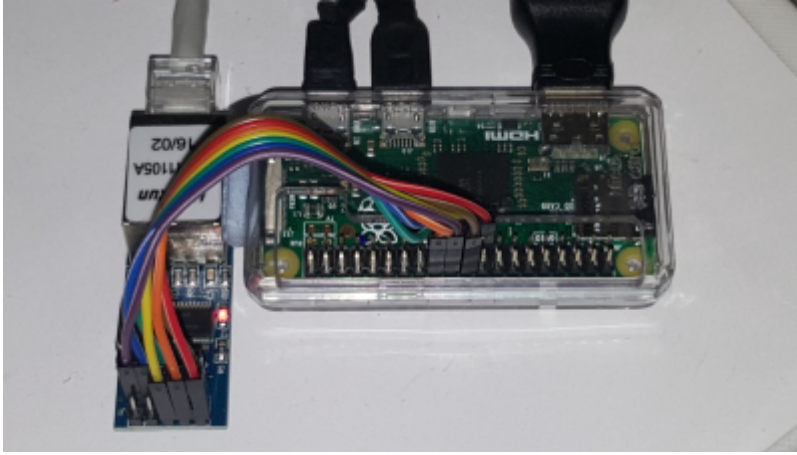
```
sudo apt-get install python-pip
sudo easy_install speedtest-cli
Run it with speedtest-cli
```

I am currently getting:

4Mb/s Download  
3Mb/s Upload

The best part is that it is super reliable (and cheap) and we can still use the USB port for something else :)





From:

<https://wiki.alanwalker.uk/> - WalkerWiki - [wiki.alanwalker.uk](https://wiki.alanwalker.uk/)

Permanent link:

[https://wiki.alanwalker.uk/doku.php?id=add\\_a\\_network\\_interface\\_without\\_using\\_usb&rev=1481664529](https://wiki.alanwalker.uk/doku.php?id=add_a_network_interface_without_using_usb&rev=1481664529)

Last update: **2023/03/09 22:35**

