# 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 to hard to work out.

### Connecting the NIC

Here are the connections I used for this board:

| GPIO | RPi Pin | Nic PNo | Nic Func |
|---|---|---|---|
| n/c | | 1 | CLK |
| n/c | | 2 | WOL |
| GPIO10 | 19 | 3 | SI |
| GPIO08 | 24 | 4 | CS |
| 3v3 | 17 | 5 | Vcc |
| GPIO25 | 22 | 6 | NT |
| GPIO09 | 21 | 7 | SO |
| GPIO11 | 23 | 8 | SCK |
| n/c | | 9 | RST |
| GND | 20 | 10 | GND |

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