

How to use enc28j60 network interface card as a GPIO NIC

ENC28J60 card is supported by official Raspberry Pi system which works mainly for Raspberry Pi Zero, you can buy this module on ebay although we do not offer this module in the application kit.

Wire Connection:

- 1, Modify the configuration of config.txt
- 2, Download and install python-pip and speedtest-cli
- 3, Test network speed

Wiring Manual:

- int -----GPIO21
- 3.3v ----- 3.3v
- GND-----GND
- MOSI-----MOSI
- MISO-----MISO
- SCLK-----SCLK
- CS ----- CE0

Modify the configuration:

sudo vim.tiny /boot/config.txt

Type in:

```
dtparam = spi = on
```

dtoverlay = enc28j60, int_pin = 21, speed = 1000000

Restart Raspberry Pi and login in. You can see that spi0.0 has loaded Ethernet driver through dmesg |grep enc28j60 and there is one more network card eth1 with an IP address through **ifconfig**

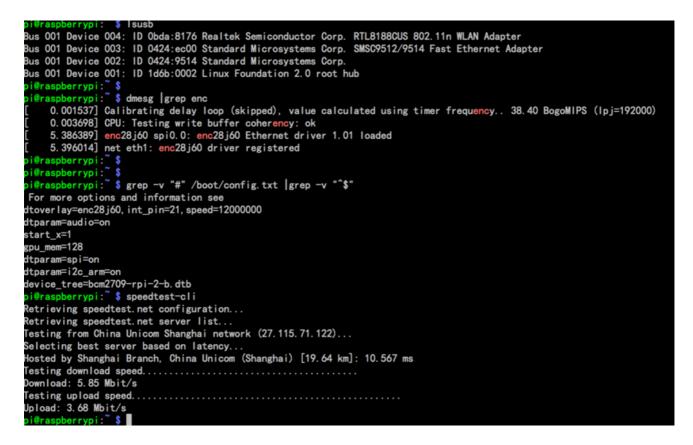
52Pi .cn	Tutorial	www.52pi	.com
[5.50 [5.52	<pre>arrypi: \$ dmesg grep enc28j60 09761] enc28j60 spi0.0: enc28j60 Ethernet driver 1.01 loaded 26871] net eth1: enc28j60 driver registered errypi: \$ ifconfig Link encap:Ethernet HWaddr b8:27:eb:33:85:0b inet6 addr: fe80::4709:5652:329f:f1ff/64 Scope:Link UP BROADCAST MULTICAST MTU:1500 Metric:1 RX packets:0 errors:0 dropped:0 overruns:0 frame:0 TX packets:0 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:1000 RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)</pre>		
eth1	Link encap:Ethernet HWaddr 3e:4a:23:4b:54:10 inet addr:192.168.3.43 Bcast:192.168.3.255 Mask:255.255.255.0 inet6 addr: fe80::c86a:471e:7b26:61cf/64 Scope:Link UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1 RX packets:424 errors:0 dropped:56 overruns:0 frame:0 TX packets:240 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:1000 RX bytes:42170 (41.1 KiB) TX bytes:32592 (31.8 KiB) Interrupt:245		
Ιο	Link encap:Local Loopback inet addr:127.0.0.1 Mask:255.0.0.0 inet6 addr: ::1/128 Scope:Host UP LOOPBACK RUNNING MTU:65536 Metric:1 RX packets:136 errors:0 dropped:0 overruns:0 frame:0 TX packets:136 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:0 RX bytes:11472 (11.2 KiB) TX bytes:11472 (11.2 KiB)		
wlan0	Link encap:Ethernet HWaddr e8:4e:06:0e:1f:d9 inet addr:192.168.3.42 Bcast:192.168.3.255 Mask:255.255.255.0 inet6 addr: fe80::5aaa:b8b5:28e7:4bfc/64 Scope:Link UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1 RX packets:235 errors:0 dropped:37 overruns:0 frame:0 TX packets:98 errors:0 dropped:1 overruns:0 carrier:0 collisions:0 txqueuelen:1000 RX bytes:33663 (32.8 KiB) TX bytes:14287 (13.9 KiB)		
speaker-		splitfont	sprof
speaker- pi@raspb Retrievin Retrievin Testing Selecting Hosted by Testing of Download Testing of	errypi: \$ sp test speedtest speedtest-cli splain split errypi: \$ speedtest-cli mg speedtest.net configuration mg speedtest.net server list from China Unicom Shanghai network (27.115.71.122) g best server based on latency y Shanghai Branch, China Unicom (Shanghai) [19.64 km]: 13.971 ms download speed : 0.76 Mbit/s upload speed	splitfont	sprof

Then run this command to finish the installation:

sudo apt-get update && sudo apt-get install -y python-pip && sudo easy_install speedtest-cli



When the installation is finished. Run the command and you will see the test result like shown above. As I adjust the speed to 1000000, the speed shows only 0.76Mbit/s. Edit the speed parameters and you will see the following result:



There is a Spi speedometer on Raspberry Pi official website. Test it one by one:

My friend told me that 125.0 and 62.5MHZ does not work fine. So I will try it with 15.6HMZ, it is better now. You may try it by yourself. Feel free to let me know if you have any question.