Connecting 4/3G USB modem with Raspberry PI B+ Model

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This tutorial is about connecting a Raspberry PI 2 Model B with ZTE MF823 4G-modem. This is a quite straight forward task but people could get confuse because of huge online material. Here are the few steps for making the PI setup working with mobile broadband.

USB current increase

First thing to do is increase the USB default current which is 600 mA. This could be increased to 1.2 A by using one of the two methods for the Raspberry Pi 2 Model B.
In first method for to /boot/config.txt and add max_usb_current=1. Reboot the system in order to get new configuration.
In second method, a software wiringPi is used for making the changes. Writing 0 means default values (600 mA) and 1 means increased values (1 A). First command shows that you make sure it is default and now going to increase it. For setting the values to default, reverse the first and third command.

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gpio -g write 38 0
gpio -g mode 38 out
gpio -g write 38 1
```

Power supply selection

Important thing is to select a right power supply which gives required current for the load.
My own experiment showed that together with PI visual, FLIR one thermal cameras, ZTE USB device, USB Bluetooth and HDMI the current even went up to 900 mA.

Plug in ZTE USB modem to PI

When you plug in the ZTE USB modem, you would see RED and perhaps green LEDs on the modem. Enter in the terminal

$ lsusb

And you would see the ZTE model listed in the device list which show that device is detected. Now enter the command

$ Ifconfig

And you would see *usb0* without any IP address

usb0 Link encap:Ethernet HWaddr 36:4b:53:b7:e3:6e
UP BROADCAST RUNNING 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)

Open any browser (Midori) in raspberry PI and enter http://192.168.0.1/index.html#home. You would be shown a message No USIM card or Card Invalid. Insert card and reboot the system.

Enter the command again

$ Ifconfig

And you would see *usb0* with any IP address

usb0 Link encap:Ethernet HWaddr 36:4b:53:b7:e3:6e
inet addr:192.168.0.131 Bcast:192.168.0.255 Mask:255.255.255.0
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets: 6090 errors:0 dropped:3 overruns:0 frame:0
TX packets:5593 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1000
RX bytes:2973105 (2.8 KiB) TX bytes:538500 (525.8 KiB)

Now open the browser again and go to the ***connection*** tab and then go to ***Network*** tab. In the ***Network Mode*** select ***4G Prefer.*** This is important as if there is no 4G coverage in the area.

The last thing to do is to press ***connect*** in the ***Home*** button.

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