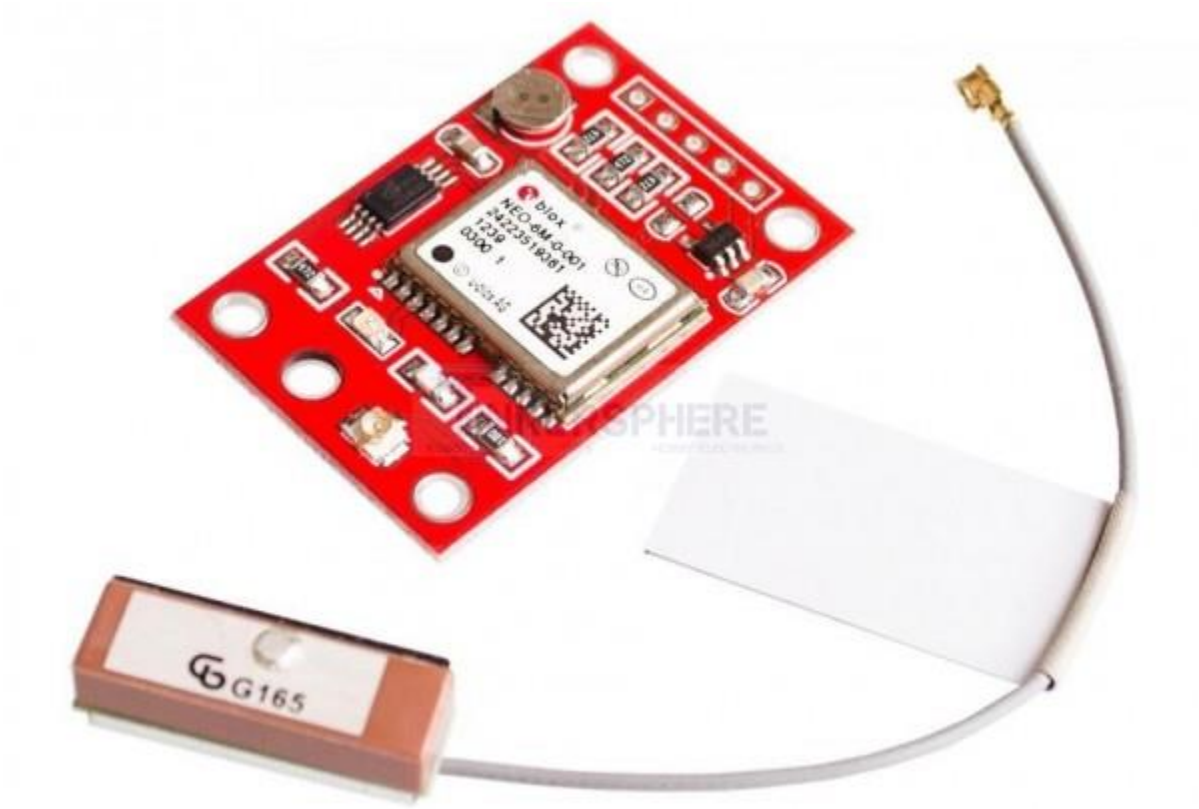
Raspberry Pi And GPS

3B+ vs. GY-NEO-6MV2

GPS Module: Ublox NEO6MV2 Breakout

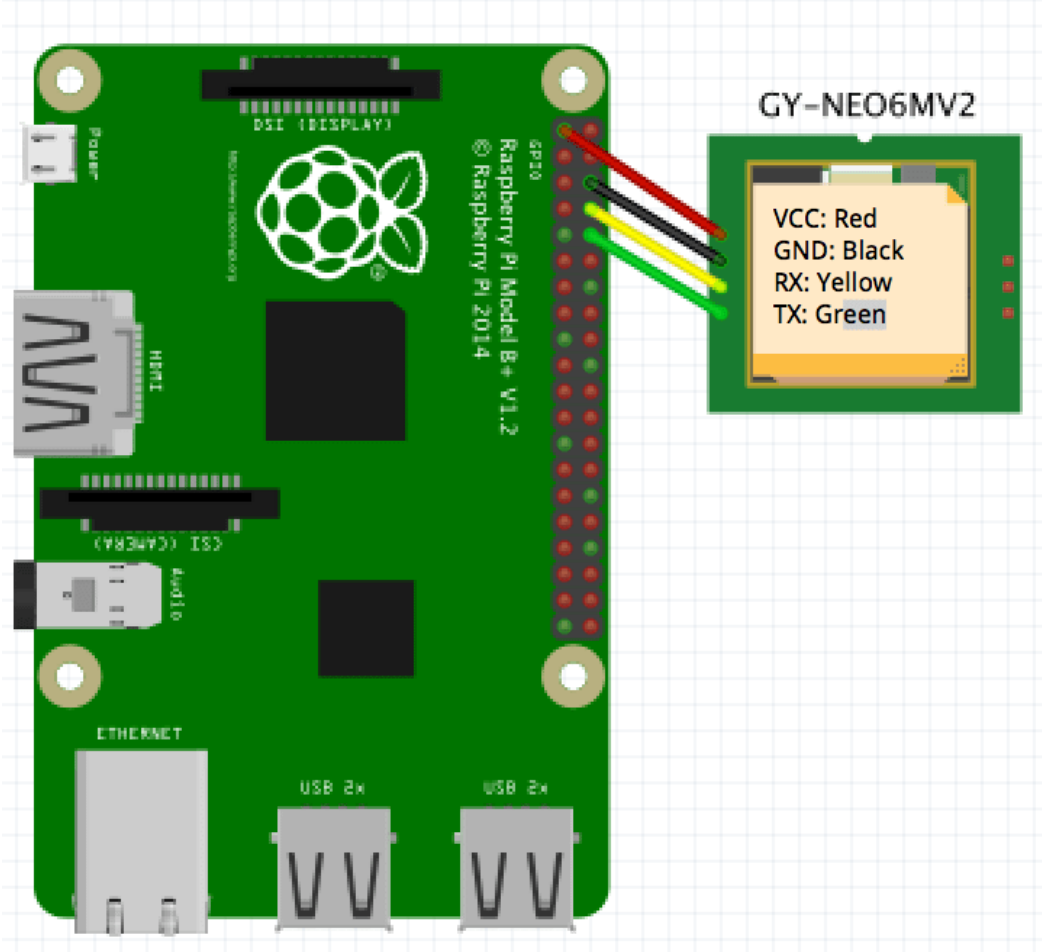
- Hardware Specs:
  - Operating Voltage: 3V - 5V DC
  - Type: GPS6MV2
  - Default Baud Rate: 9600



$4 on ebay [$40 in TinkerSphere: https://tinkersphere.com/sensors/1226-gps-module-ublox-neo6mv2.html]

Wiring Breakout to Raspberry Pi 3B+

- Hardware Specs:
  - Operating Voltage: 3V - 5V DC
  - Type: GPS6MV2
  - Default Baud Rate: 9600
- Wiring:
  - GND --- GND
  - VCC --- 3.3V or 5V
  - RXD --- TXD
  - TXD --- RXD



https://www.xarg.org/2016/06/neo6mv2-gps-module-with-raspberry-pi/

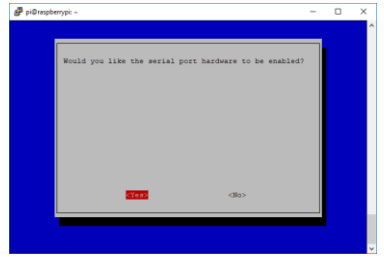
Hardware Configuration

- Configuration:
  - @ sudo su
  - # raspi-config
    - 5 Interfacing Options
      - P6 Serial
        - Would you like a login shell to be accessible over serial? **No** !
        - Would you like the serial port hardware to be enabled? **Yes** !

```
pi@raspberrypi:~ $ sudo su
root@raspberrypi:/home/pi# raspi-config
```

```
1 Change User Password
2 Network Options
3 Boot Options
4 Localisation Options
5 Interfacing Options
6 Overclock
7 Advanced Options
8 Update
9 About raspi-config
```

```
P1 Camera
P2 SSH
P3 VNC
P4 SPI
P5 I2C
P6 Serial
P7 1-Wire
P8 Remote GPIO
```



- Port /dev/ttyS0 is now available to read GPS at 9600 baud per second
- Install essential Python Library
  - pip3 install PySerial pynmea2

https://www.raspberrypi.org/documentation/configuration/uart.md

Python Code

- Python Library:
  - PySerial
  - pynmea2
- Code:

In [1]:
```
import serial, pynmea2
s = serial.Serial(port='/dev/ttyS0', baudrate=9600, timeout=3)
while 1:
    data = s.readline()
    if data[0:6] == b'$GPGGA': # NMEA data
        msg = pynmea2.parse(data.decode())
        lon, lat = msg.lon, msg.lat
        print('Longitude:', lon, '\nLatitude:', lat)
        break
```

```
Longitude: 07401.09082
Latitude: 4038.35759
```