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Contents: [Dobrica PavlinuÄiÄ 's random unstructured stuff]

- Dobrica PavlinuÄiÄ 's random unstructured stuff (ADXL335)
- Dobrica PavlinuÄiÄ 's random unstructured stuff (MPU-9250)

This page tries to document my experiments using accelerometers

## ADXL335

Board: GY-61.

ADXL335 3-axis Accelerometer  
On-board 3.3V Voltage Regulator  
Analog voltage output centered at 1.65V  
Suitable for connection to 5V and 3.3V systems

Supply Voltage: 3V - 5V  
Full scale range: +/-3g  
Sensitivity: 300mV/g (Typ)

## MPU-9250

Board: Grove - IMU 10DOF v1.1

[https://wiki.seeedstudio.com/Grove-IMU\\_10DOF/](https://wiki.seeedstudio.com/Grove-IMU_10DOF/)

[Grove - IMU 10DOF v1.1.pdf](#)

MPU-9250 addr: 0x68  
BMP180 addr: 0x77

This board has 5V -> 3V3 level shifter but works with 3V3 as VCC

```
root@rpi4:~# i2cdetect -y 1
   0  1  2  3  4  5  6  7  8  9  a  b  c  d  e  f
00:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
10:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
20:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
30:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
40:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
50:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
60:  --  --  --  --  --  --  --  --  68  --  --  --  --  --  --
70:  --  --  --  --  --  --  --  77  --  --  --  --  --  --  --
```

```
root@rpi4:~# modprobe configs
root@rpi4:~# zgrep INV /proc/config.gz
CONFIG_INV_MPU6050_IIO=m
CONFIG_INV_MPU6050_I2C=m
# CONFIG_INV_MPU6050_SPI is not set

root@rpi4:~# modprobe inv-mpu6050-i2c
```

```

root@rpi4:~# echo mpu9250 0x68 > /sys/class/i2c-adapter/i2c-1/new_device
[Sat Jan  9 14:10:25 2021] inv-mpu6050-i2c 1-0068: mounting matrix not found: using identity...
[Sat Jan  9 14:10:25 2021] inv-mpu6050-i2c 1-0068: 1-0068 supply vddio not found, using dummy regulator
[Sat Jan  9 14:10:25 2021] inv-mpu6050-i2c 1-0068: trigger probe fail -22
[Sat Jan  9 14:10:25 2021] inv-mpu6050-i2c: probe of 1-0068 failed with error -22
[Sat Jan  9 14:10:25 2021] i2c i2c-1: new_device: Instantiated device mpu9250 at 0x68

root@rpi4:~# echo bmp180 0x77 > /sys/class/i2c-adapter/i2c-1/new_device
[Sat Jan  9 14:12:17 2021] i2c i2c-1: new_device: Instantiated device bmp180 at 0x77
[Sat Jan  9 14:12:17 2021] bmp280 1-0077: 1-0077 supply vddd not found, using dummy regulator
[Sat Jan  9 14:12:17 2021] bmp280 1-0077: 1-0077 supply vdda not found, using dummy regulator
[Sat Jan  9 14:12:17 2021] bmp280 1-0077: non-rising trigger given for EOC interrupt, trying to enable it
[Sat Jan  9 14:12:17 2021] bmp280 1-0077: unable to request DRDY IRQ

root@rpi4:~# iio_info
Library version: 0.16 (git tag: v0.16)
Compiled with backends: local xml ip usb serial
IIO context created with local backend.
Backend version: 0.16 (git tag: v0.16)
Backend description string: Linux rpi4 5.4.79-v7l+ #1373 SMP Mon Nov 23 13:27:40 GMT 2020 armv7l
IIO context has 1 attributes:
    local,kernel: 5.4.79-v7l+
IIO context has 1 devices:
    iio:device0: bmp180
        2 channels found:
            pressure: (input)
                3 channel-specific attributes found:
                    attr 0: input value: 100.646000000
                    attr 1: oversampling_ratio value: 8
                    attr 2: oversampling_ratio_available value: 1 2 4 8
            temp: (input)
                3 channel-specific attributes found:
                    attr 0: input value: 24800
                    attr 1: oversampling_ratio value: 1
                    attr 2: oversampling_ratio_available value: 1

```

Hm. bmp180 works, mpu9250 doesn't

It needs full device tree overlay

<https://github.com/dpavlin/linux-gpio-pinout/blob/master/device-tree/grove-imu10dof.dts>