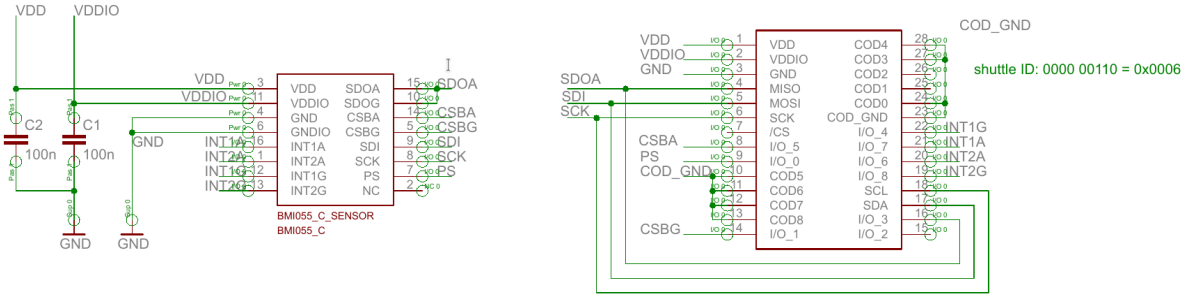
BMI055

Datasheet and details regarding the shuttleboard can be found at:
https://www.bosch-sensortec.com/products/motion-sensors/imus/bmi055.html

The BMI055 is an inertial measurement unit (IMU) for the detection of movements and rotations in 6 degrees of freedom (6DoF). Both – acceleration and angular rate – are measured in three perpendicular room dimensions, the x-, y- and z-axes.

We are using the BMI055 Shuttleboard which is basically a PCB built around the main sensor. It's pin diagram is given below.



The board operates in a power range of 1.2V to 3.6V. Make sure to provide a voltage of **3.3 V and not 5V.**
We'll be using the I^2C protocol for communication. Follow the wiring below to get the board up and running:

Pin Name	Pin No.	Remark
VDD	1	Power with 3.3V
VDDIO	2	Power with 3.3V
GND	3	GND
SCL	18	SCL
SDA	17	SDA
PS	9	Select I^2C

As per the datasheet, the state of the 'PS' (Protocol Select) pin decides whether the sensor will communicate via I^2C or via SPI. Setting it to the same state as 'VDDIO' selects the I^2C protocol. Setting to GND selects SPI.

Slave Addresses:

Accelerometer	0x18/0x19
Gyro	0x68/0x69

Gyroscope Sub-addresses:

Address	Name	Access	Description
0x02	Rate output X LSB	Read	LSB of X-axis angular rate
0x03	Rate output X MSB	Read	MSB of X-axis angular rate
0x04	Rate output Y LSB	Read	LSB of Y-axis angular rate
0x05	Rate output Y MSB	Read	MSB of Y-axis angular rate
0x06	Rate output Z LSB	Read	LSB of Z-axis angular rate
0x07	Rate output Z MSB	Read	MSB of Z-axis angular rate
0x0F	Get/Set Range	Read/Write	Get/Set the Gyro range and resolution. Refer table below.
0x11	Get/Set Power Mode	Read/Write	Get/Set the Gyro power mode.
0x3C	Built-in Self Test	Read/Write	Perform test to see if sensor is ok.

Range/resolution selection:

Register Value	Range	Resolution
0x00	[−2000°/s, 2000°/s]	16.4 LSB/°/s ⇔ 61.0 m°/s/LSB
0x01	[−1000°/s, 1000°/s]	32.8 LSB/°/s ⇔ 30.5 m°/s/LSB
0x02	[−500°/s, 500°/s]	65.6 LSB/°/s ⇔ 15.3 m°/s/LSB
0x03	[−250°/s, 250°/s]	131.2 LSB/°/s ⇔ 7.6 m°/s/LSB
0x04	[−125°/s, 125°/s]	262.4 LSB/°/s ⇔ 3.8 m°/s/LSB