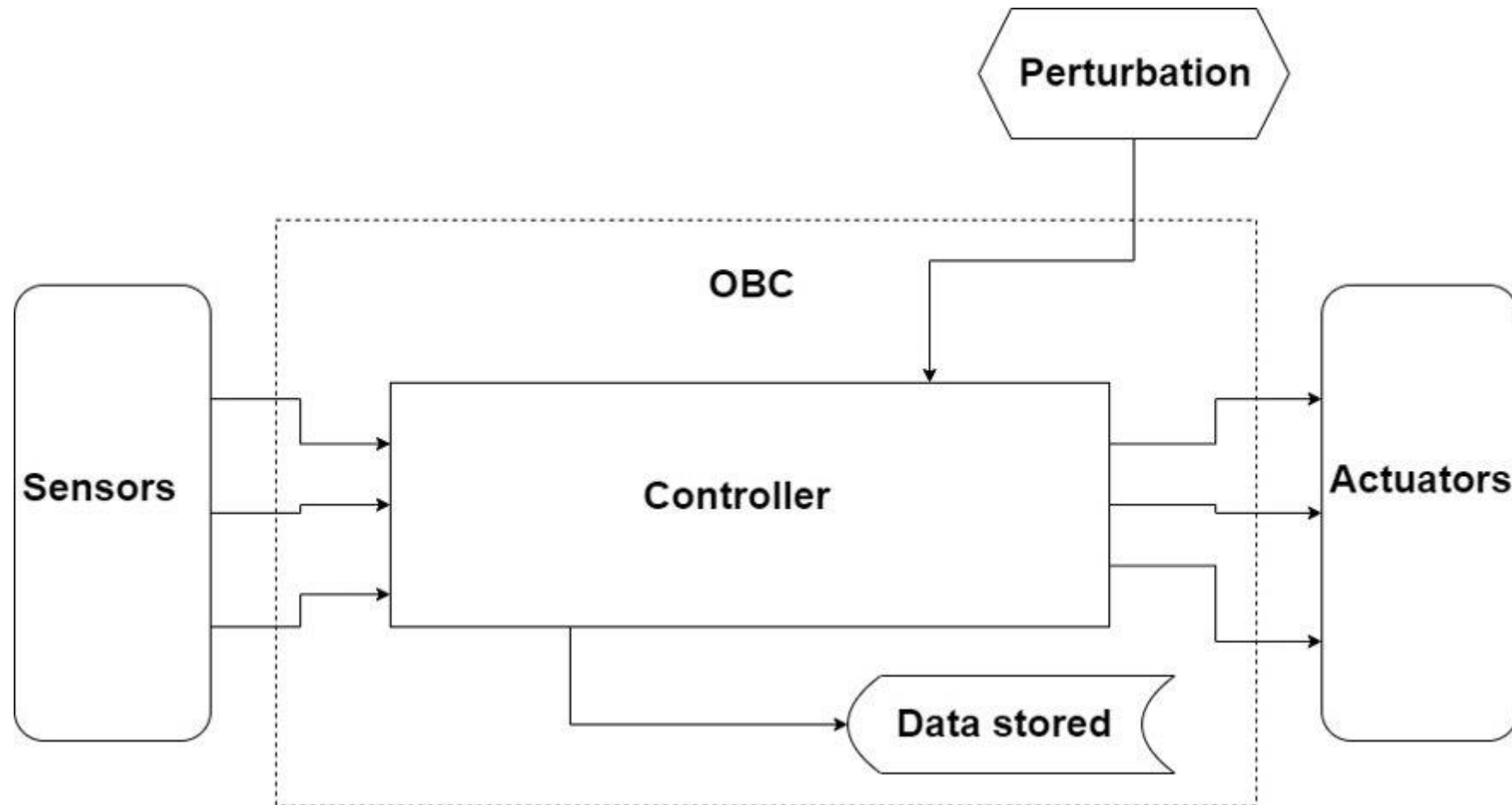
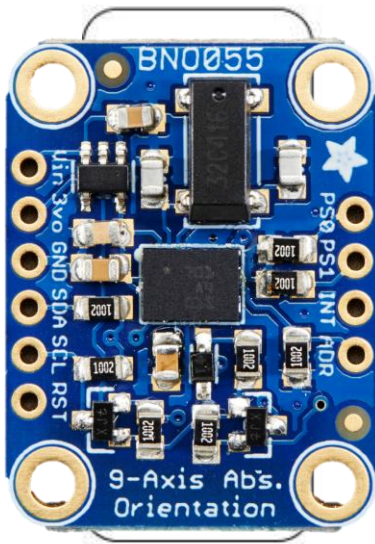
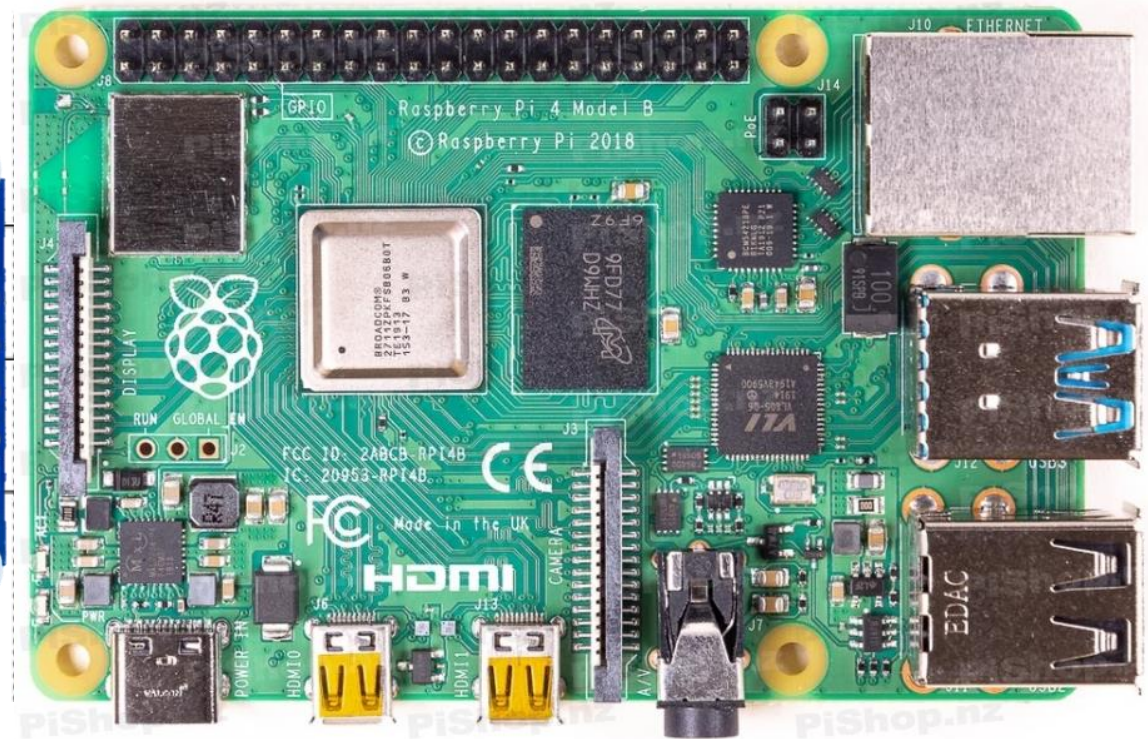


OBC Configuration





BNO055 IMU



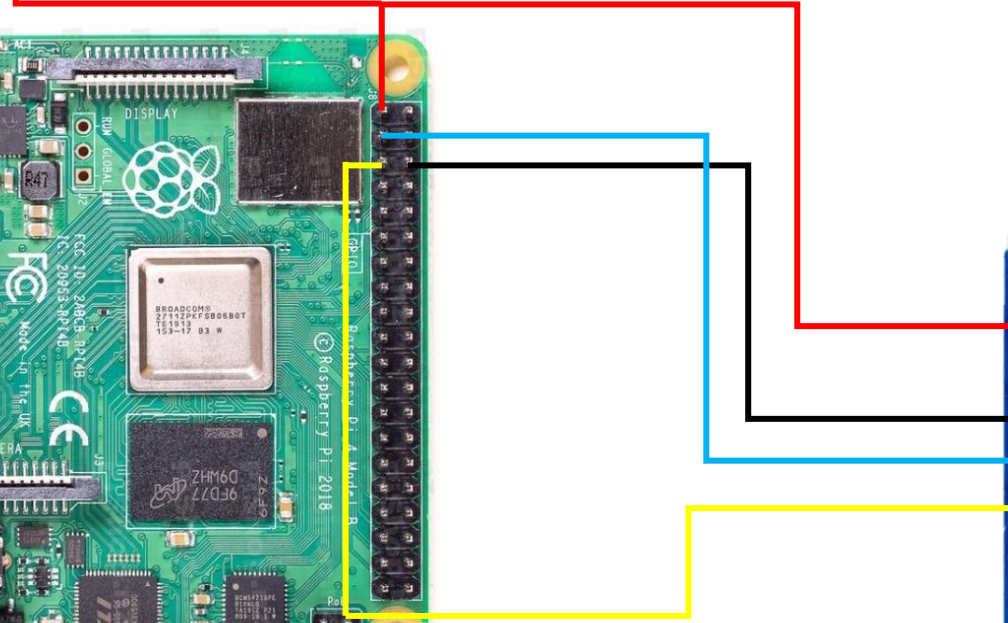
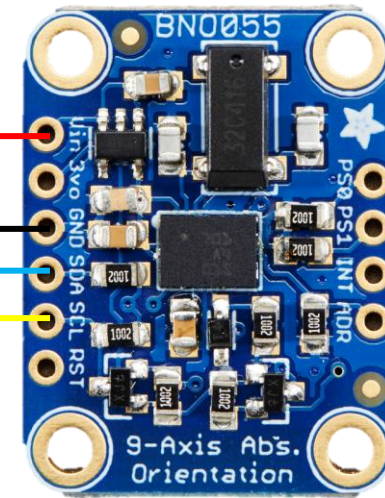
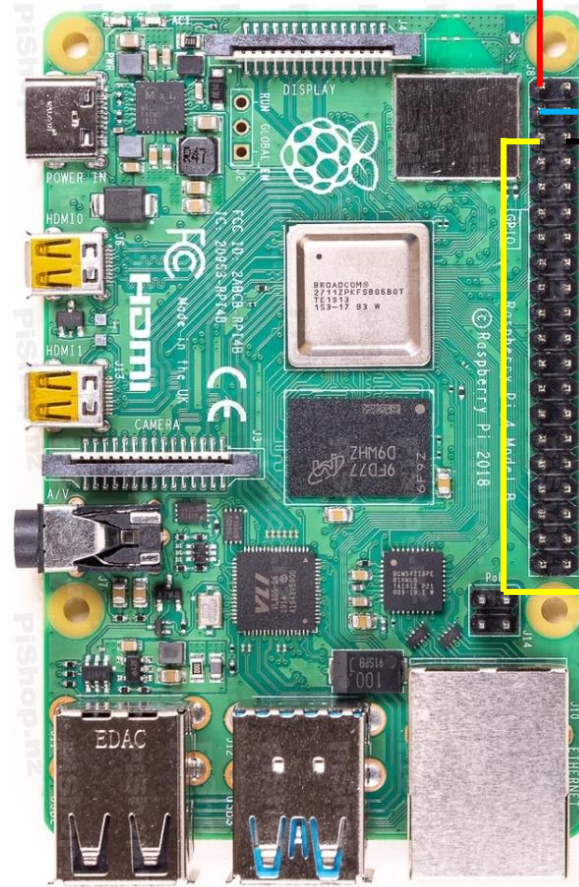
Raspberry Pi 4 Model B

Perturbation

Actuators

Power Supply
3.3V, 5V, 12V, 28V

3v3 Power	1	2	5v Power
GPIO 2 (I2C1 SDA)	3	4	5v Power
GPIO 3 (I2C1 SCL)	5	6	Ground
GPIO 4 (GPCLK0)	7	8	GPIO 14 (UART TX)
Ground	9	10	GPIO 15 (UART RX)
GPIO 17	11	12	GPIO 18 (PCM CLK)
GPIO 27	13	14	Ground
GPIO 22	15	16	GPIO 23
3v3 Power	17	18	GPIO 24
GPIO 10 (SPI0 MOSI)	19	20	Ground
GPIO 9 (SPI0 MISO)	21	22	GPIO 25
GPIO 11 (SPI0 SCLK)	23	24	GPIO 8 (SPI0 CE0)
Ground	25	26	GPIO 7 (SPI0 CE1)
GPIO 0 (EEPROM SDA)	27	28	GPIO 1 (EEPROM SCL)
GPIO 5	29	30	Ground
GPIO 6	31	32	GPIO 12 (PWM0)
GPIO 13 (PWM1)	33	34	Ground
GPIO 19 (PCM FS)	35	36	GPIO 16
GPIO 26	37	38	GPIO 20 (PCM DIN)
Ground	39	40	GPIO 21 (PCM DOUT)



Pin Configuration for IMU

3v3 Power	1		2	5v Power
GPIO 2 (I2C1 SDA)	3		4	5v Power
GPIO 3 (I2C1 SCL)	5		6	Ground
GPIO 4 (GPCLK0)	7		8	GPIO 14 (UART TX)
Ground	9		10	GPIO 15 (UART RX)
GPIO 17	11		12	GPIO 18 (PCM CLK)
GPIO 27	13		14	Ground
GPIO 22	15		16	GPIO 23
3v3 Power	17		18	GPIO 24
GPIO 10 (SPI0 MOSI)	19		20	Ground
GPIO 9 (SPI0 MISO)	21		22	GPIO 25
GPIO 11 (SPI0 SCLK)	23		24	GPIO 8 (SPI0 CE0)
Ground	25		26	GPIO 7 (SPI0 CE1)
GPIO 0 (EEPROM SDA)	27		28	GPIO 1 (EEPROM SCL)
GPIO 5	29		30	Ground
GPIO 6	31		32	GPIO 12 (PWM0)
GPIO 13 (PWM1)	33		34	Ground
GPIO 19 (PCM FS)	35		36	GPIO 16
GPIO 26	37		38	GPIO 20 (PCM DIN)
Ground	39		40	GPIO 21 (PCM DOUT)

5.1.2 GPIO Alternate Functions

GPIO	Default						
	Pull	ALT0	ALT1	ALT2	ALT3	ALT4	ALT5
0	High	SDA0	SA5	PCLK	SPI3_CEO_N	TXD2	SDA6
1	High	SCL0	SA4	DE	SPI3_MISO	RXD2	SCL6
2	High	SDA1	SA3	LCD_VSYNC	SPI3_MOSI	CTS2	SDA3
3	High	SCL1	SA2	LCD_HSYNC	SPI3_SCLK	RTS2	SCL3

GPIO Pins 2 and 3 are used for SDA and SCL and therefore need to be configured to use the ALT0 function.

GPFSEL0 Register

Bits	Name	Description	Type	Reset
31:30	Reserved.	-	-	-
29:27	FSEL9	FSEL9 - Function Select 9 000 = GPIO Pin 9 is an input 001 = GPIO Pin 9 is an output 100 = GPIO Pin 9 takes alternate function 0 101 = GPIO Pin 9 takes alternate function 1 110 = GPIO Pin 9 takes alternate function 2 111 = GPIO Pin 9 takes alternate function 3 011 = GPIO Pin 9 takes alternate function 4 010 = GPIO Pin 9 takes alternate function 5	RW	0x0
26:24	FSEL8	FSEL8 - Function Select 8	RW	0x0
23:21	FSEL7	FSEL7 - Function Select 7	RW	0x0
20:18	FSEL6	FSEL6 - Function Select 6	RW	0x0
17:15	FSEL5	FSEL5 - Function Select 5	RW	0x0
14:12	FSEL4	FSEL4 - Function Select 4	RW	0x0
11:9	FSEL3	FSEL3 - Function Select 3	RW	0x0
8:6	FSEL2	FSEL2 - Function Select 2	RW	0x0
5:3	FSEL1	FSEL1 - Function Select 1	RW	0x0
2:0	FSEL0	FSEL0 - Function Select 0	RW	0x0

Configuring the GPFSEL0 register can be used to set the two pins into SDA and SCL mode. This register is located at 0x7e200000. Setting bits 8 and 11 will configure the two pins into SDA and SCL.