

SCUTTLE Wiring Guide (Pi variant)

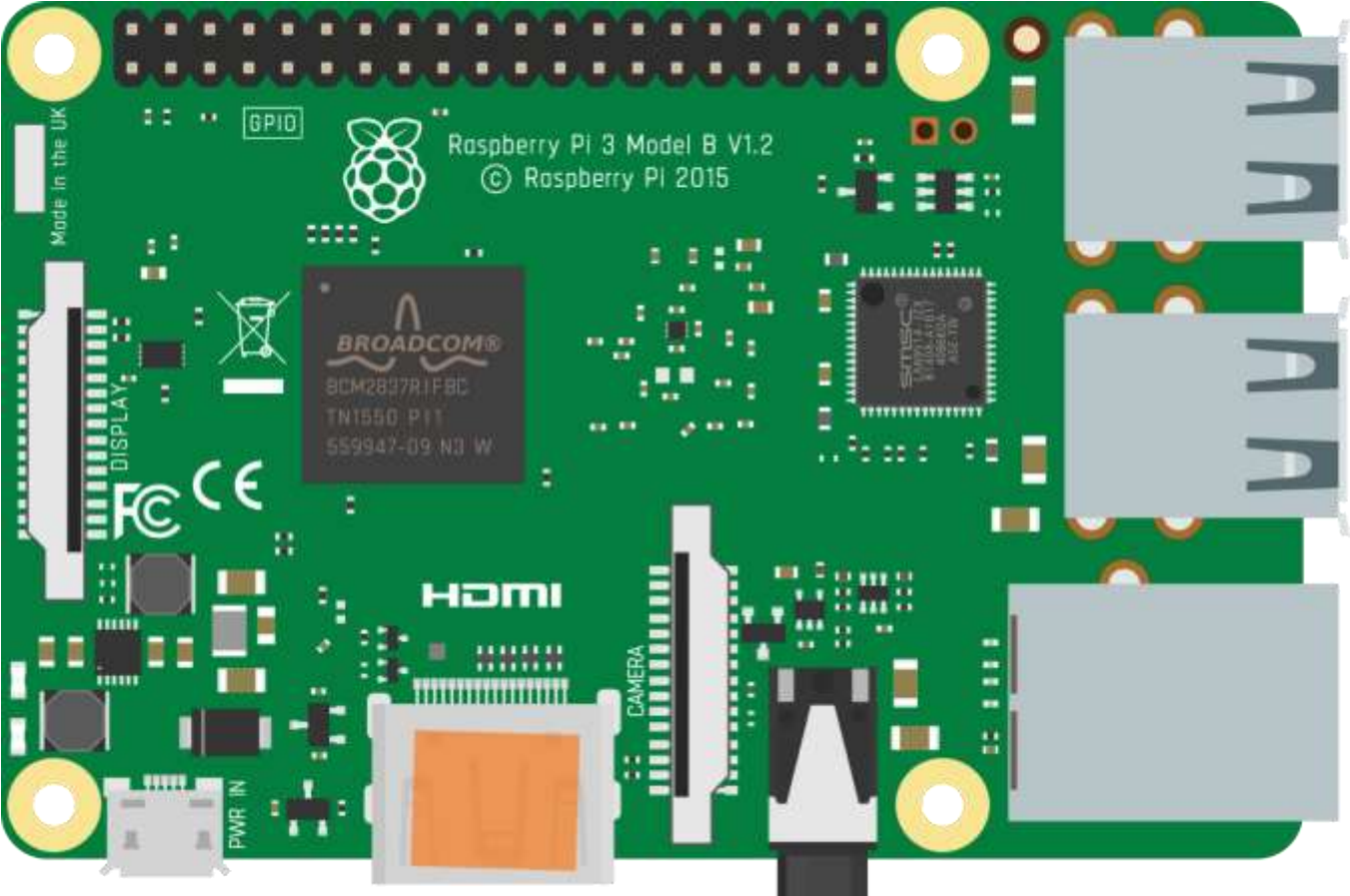
Last Updated
2020.11.01



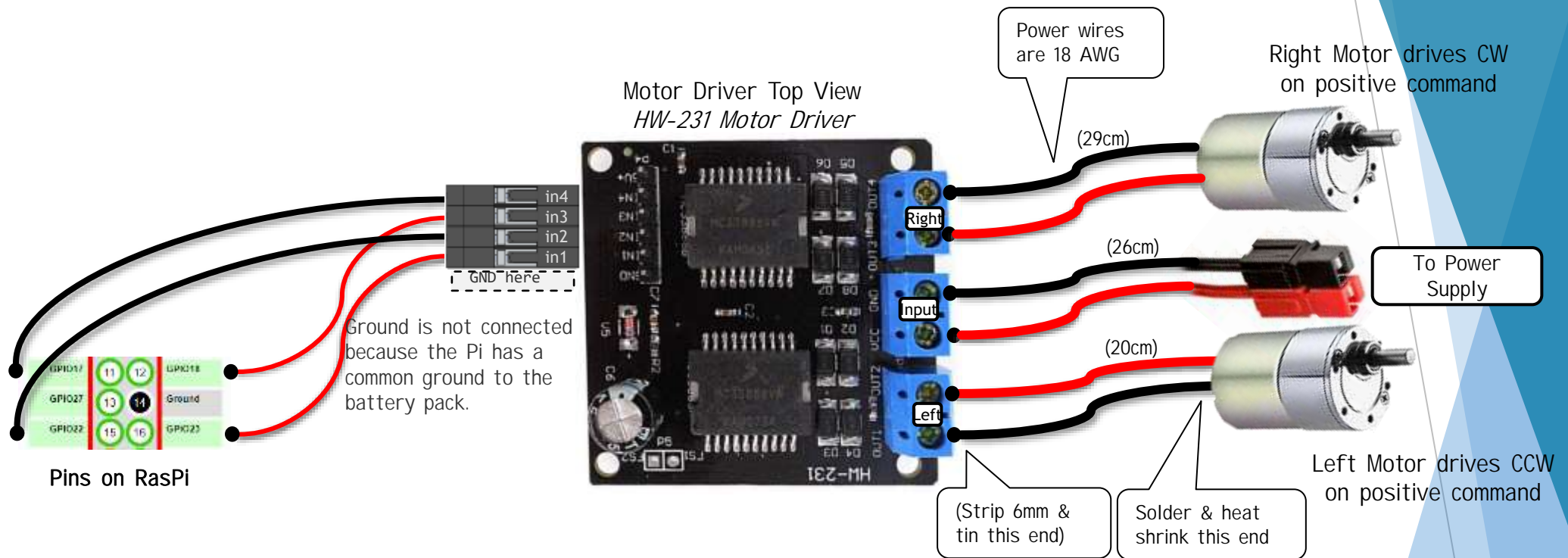
Note: This guide is secondary to the wiring guide using beaglebone blue, which has more extensive testing and more details. The selections for pi on wire colors, configurations, and pin locations are improving continuously.

Pin Number Convention

All Models		
3V3 Power	1	2 5V Power
GPIO2 SERIAL TX	3	4 5V Power
GPIO3 SERIAL RX	5	6 Ground
GPIO4	7	8 GPIO14 SERIAL TX
Ground	9	10 GPIO15 SERIAL RX
GPIO17	11	12 GPIO18
GPIO27	13	14 Ground
GPIO22	15	16 GPIO23
3V3 Power	17	18 GPIO24
GPIO16 SPI MISO	19	20 Ground
GPIO8 SPI MISO	21	22 GPIO25
GPIO11 SPI MISO	23	24 GPIO8 SPI CS
Ground	25	26 GPIO7 SPI CS
ID 5D I2C ID	27	28 ID 5C I2C ID
GPIO5	29	30 Ground
GPIO6	31	32 GPIO12
GPIO13	33	34 Ground
GPIO19	35	36 GPIO16
GPIO26	37	38 GPIO28
Ground	39	40 GPIO21
40 pin models only		
USB Ports		

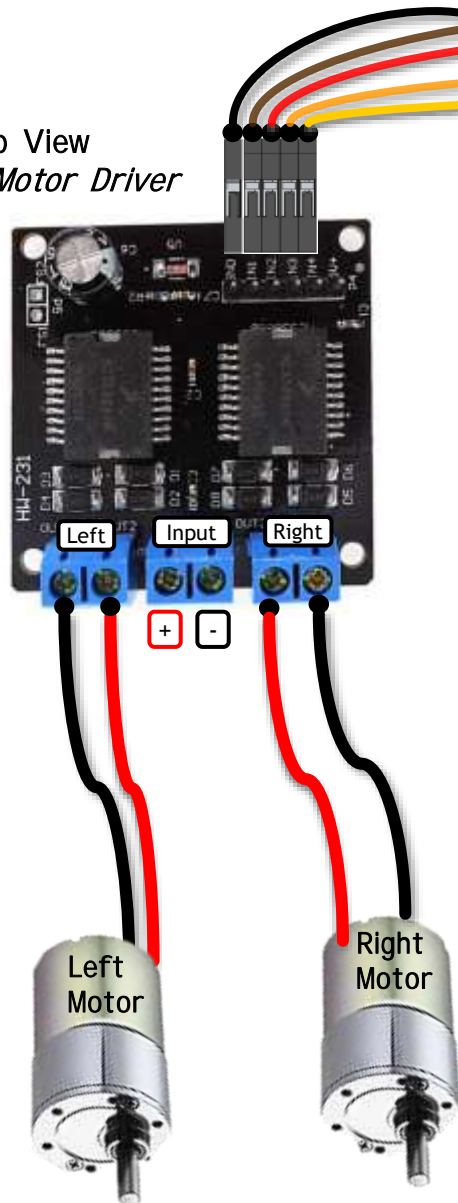


Motor Driver Signal Cables

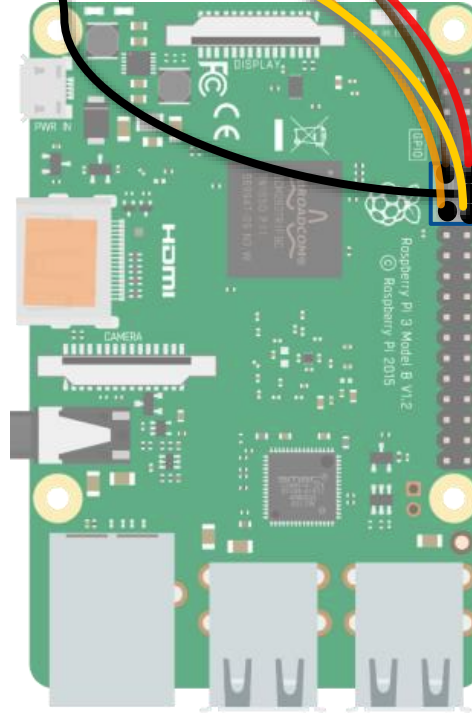


Motor Driver Signal Cables

Top View
HW-231 Motor Driver



*Keep the wires bonded
To each other, if possible.*



Pins on RasPi

GPIO17	11	12	GPIO18
GPIO27	13	14	Ground
GPIO22	15	16	GPIO23

Encoder AMS AS5048 (I2C)

Left Hand Encoder

A1 is pulled **down** to GND

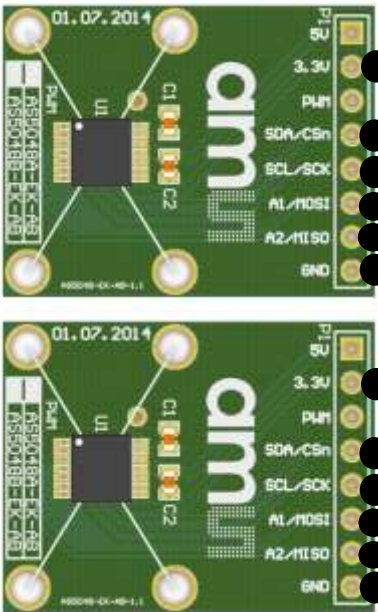
I2C address is 0x40

Left

Right

Nodes on the I2C bus board
are indicated here

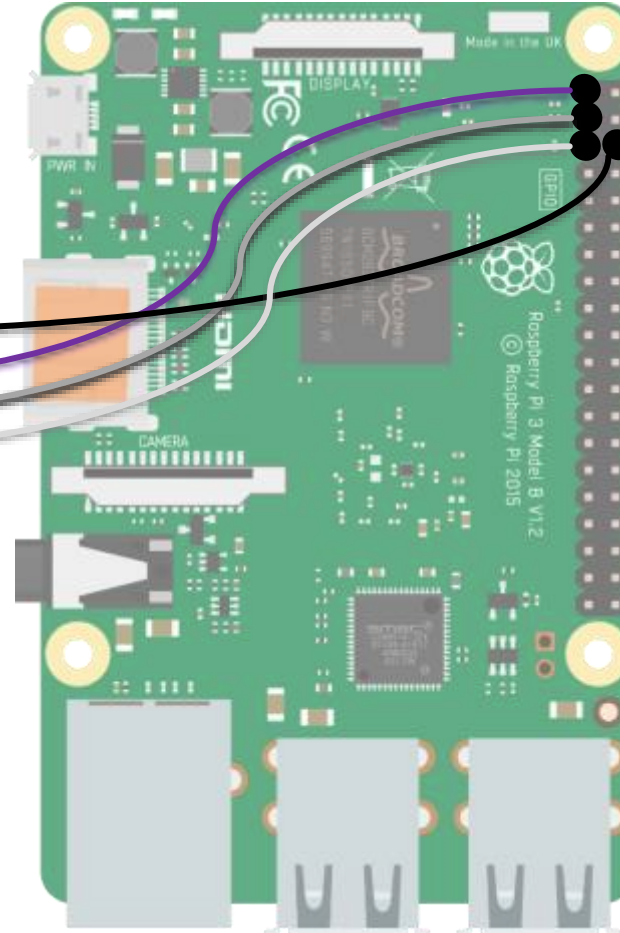
Gnd
3.3v
SCK
SDA
3.3v
Gnd



Right Hand Encoder

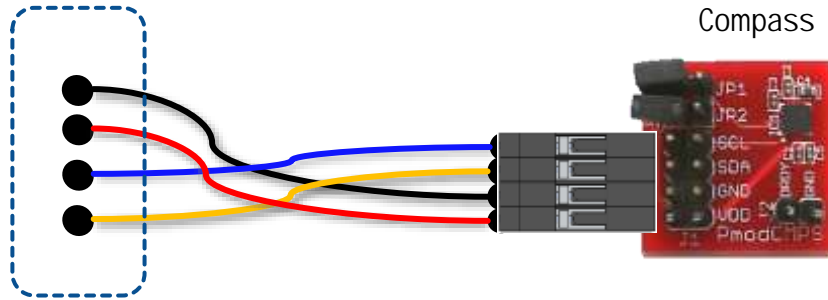
A1 is pulled **up** to 3.3v

I2C address is 0x41



Compass CMPS or CMPS2 (I2C)

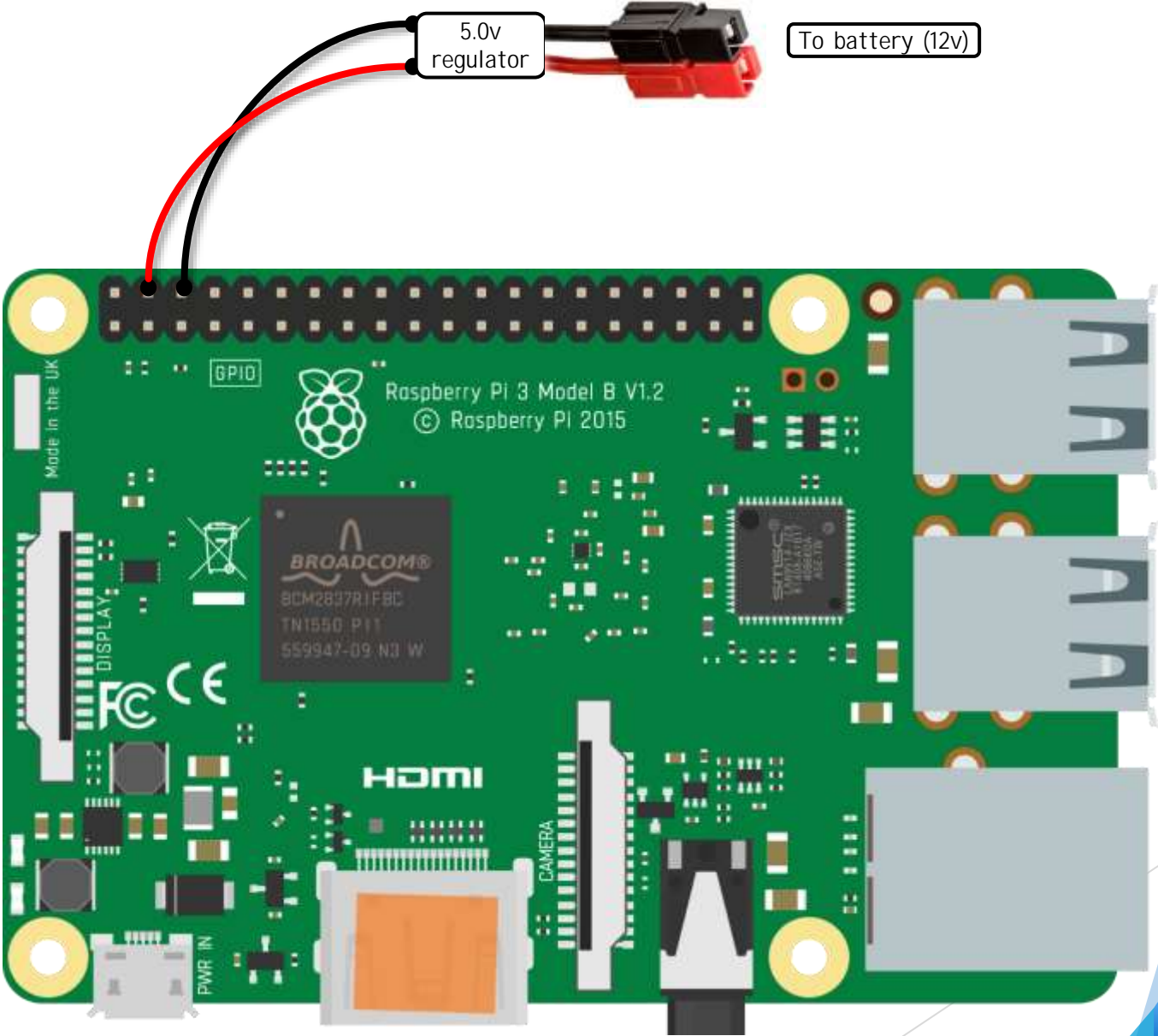
Plugs Into I2C Bus Board



This compass is not necessary since you can access the compass on the beaglebone blue. Be sure to calibrate the compass on the blue since it lies within close proximity of magnetic hardware on the robot.



Power



Configuration for remo.tv

This slide will document a tested, successful configuration of hardware on RasPi B 3+, and indicate the associated device numbers that belong in software. (i.e., alsamixer)

