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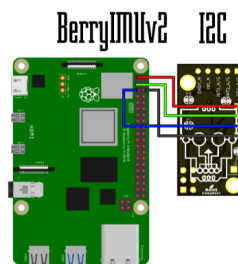
BerryIMU Quick Start Guide

Topics covered in the BerryIMU Quick Start Guide;

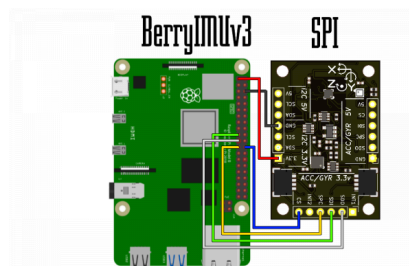
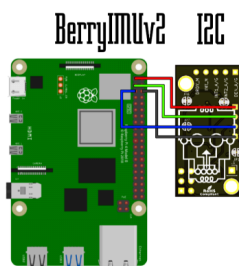
- Connecting BerryIMU to a Raspberry Pi.
- Connecting BerryIMU to an Arduino
- BerryIMU sensor datasheets.
- BerryIMU i2c addresses.
- Mechanical dimensions.
- Sample code.
- Guides and tutorials

Connecting BerryIMU to a Raspberry Pi

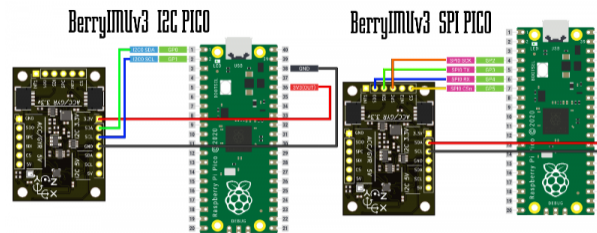
BerryIMUv2 only supports I2C and connects as shown below.



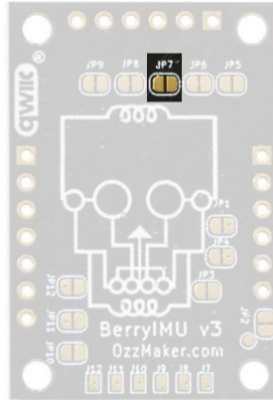
BerryIMUv3 supports I2C and SPI.



The **BerryIMUv3** also works with the Raspberry Pi Pico

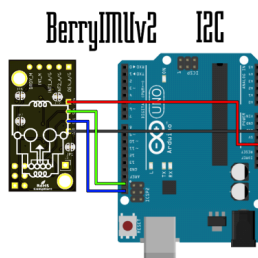


By default, the BerryIMUv3 is configured to work with I2C. To use SPI, you will need to close jumper JP7 (shown below) to complete the SPI connection. This can be done by placing a solder blob on the jumper.

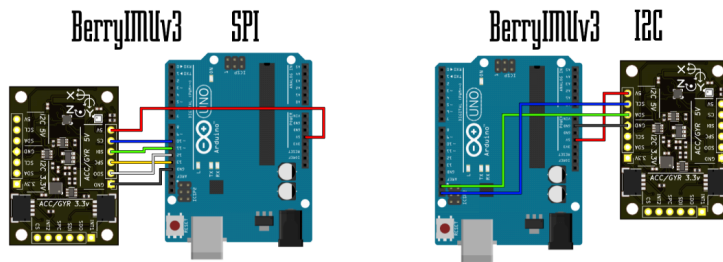


Connecting BerryIMU to an Arduino

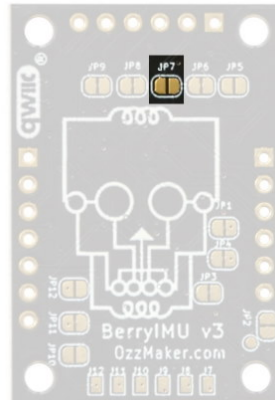
BerryIMUv2 only supports I2C and connects as shown below.



BerryIMUv3 supports I2C and SPI.



By default, the BerryIMUv3 is configured to work with I2C. To use SPI, you will need to close jumper JP7 (shown below) to complete the SPI connection. This can be done by placing a solder blob on the jumper.



BerryIMU jumper SPI

Datasheets for BerryIMU

Datasheets for BerryIMU v2

- LSM9DS1 – Magnetometer, accelerometer and gyroscope datasheet can be found [here](#).
- BM280 – Pressure sensor datasheet can be found [here](#).

Datasheets for BerryIMU v3

- LSM6DSL – Accelerometer and gyroscope datasheet can be found [here](#).
- LIS3MDL – Magnetometer datasheet can be found [here](#)
- BM388 – Pressure sensor datasheet can be found [here](#).

BerryIMU i2c Addresses

BerryIMUv2

The default i2c addresses on the BerryIMUv2 are;

-
- The image displays two PCB layout examples. The left PCB features components labeled DRDY_M, INT_M, INT1_A/G, INT2_A/G, DEN_A/G, JP6, JP7, JP2, and JP1. It includes a large white arrow pointing upwards and a RoHS Compliant logo. The right PCB features components labeled P5, BerryIMU 2.3, C6, R7, C5, U2, R6, R4, P2, C7, R3, JP4, JP3, JP5, R2, P3, R1, C3, U1, and C4. Both PCBs have red boxes highlighting specific components or areas: JP2 and JP1 on the left, and JP3, JP4, and JP5 on the right. The right PCB also has a large white 'X' and a large white 'Z' with a circular arrow around it.

Solder the pads on **JP5** together will change the address for the gyroscope from **0x6A** to **0x6B**.

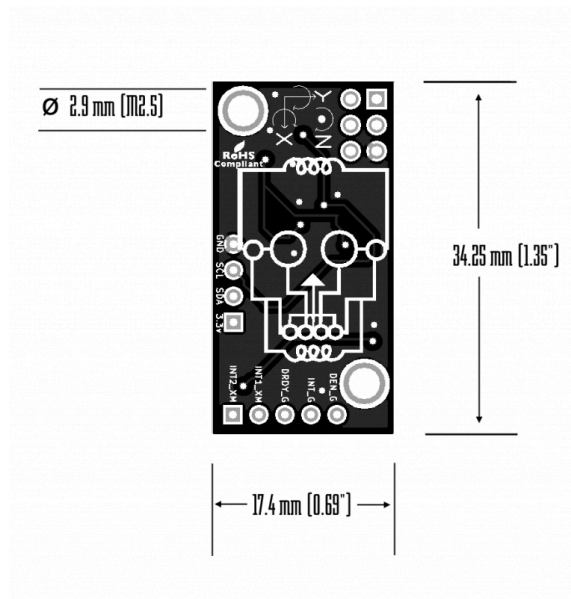
The default i2c addresses on the BerryIMUv3 are;

-

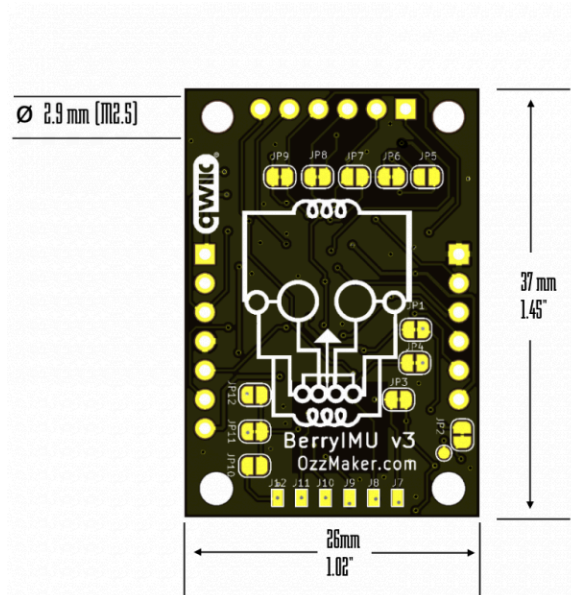
Solder the pads on **JP12** together will change the address for the magnetometer from **0x1C** to **0x1E**. Solder the pads on **JP5** together will change the address for the accelerometer and gyroscope from **0x6A** to **0x6B**.

Mechanical Dimensions

BerryIMUv3



BerryIMUv3



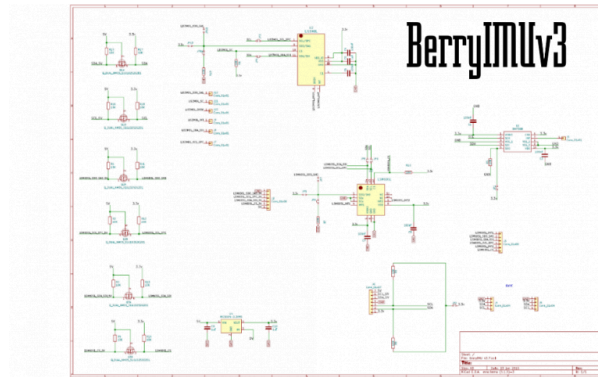
Sample Code

Git repository [here](#)

The code can be pulled down to your Raspberry Pi with;

```
pi@raspberrypi ~ $ git clone http://github.com/ozzmaker/BerryIMU.git
```

Schematic



BerryIMU v3 Schematic

Guides and Tutorials

- [Guide to interfacing a Gyro and Accelerometer with a Raspberry Pi](#)
- [Guide to interfacing a Gyro and Accelerometer with a Raspberry Pi – Kalman Filter](#)
- [Create a Digital Compass with the Raspberry Pi – Part 1 – “The Basics”](#)
- [Create a Digital Compass with the Raspberry Pi – Part 2 – “Tilt Compensation”](#)
- [Create a Digital Compass with the Raspberry Pi – Part 3 – “Calibration”](#)
- [Create a Digital Compass with the Raspberry Pi – Part 4- “Smartphone Replica”](#)
- [Converting values from an Accelerometer to Gs – “ Proper Acceleration”](#)
- [Using the BerryIMUv3 on a Raspberry Pi Pico](#)
- [Double tap detection with BerryIMUv3](#)
- [Connect BerryIMUv3 via SPI](#)

[How to Create an Inclinator using a Raspberry Pi and an IMU](#)
[Raspberry Pi Digital Spirit Level](#)