GPIO RPi Shield

Hardware installation

Installing the shield is as simple as placing over the raspberry pi 3B/3B+/4B and using the included spacers to ensure structural stability.

Each pin of the GPIO shield is labelled and there is an easy tap-out for BCM pins 2 – 20

Software setup

Firstly, install the python3 package SMBUS

```
sudo apt install -y python3-smbus
```

And enable the i2c communications in raspi-config. You can make sure it's all working by typing the following in the terminal.

```
i2cdetect -y 1
```

You should see an output that suggests that the device is at address 0x48 which shows that it is both connected and communicating correctly.

Python software example

For more information about command parameters, please have a look at the datasheet

```python
#!/usr/bin/env python3
import time
from smbus import SMBus
bus = SMBus(1)

# this device should be address 0x48
def readChannel(params):
    global bus
    bus.write_byte(0x48, params & 0x03) # select the channel
    bus.write_byte(0x48, 0)  # give it time to convert
    return bus.read_byte(0x48)

def analogOut(out):
    global bus
    bus.write_byte(0x48, 0x40)
    bus.write_byte(0x48, out & 0xFF)
    bus.write_byte(0x48, 0x00)

def readAll():
    global bus
    bus.write_byte(0x48, 0x04) # auto-increment command
    data = []
    for _ in range(4):
        data.append(bus.read_byte(0x48))
    return data

while(True):
    print('all values are:')
    print(readAll())
    print('channel 1 is:')
    print(readChannel(1))
    print('check AOUT, should be about 2.5v')
    print(analogOut(255 / 2))
    time.sleep(3)
```

Australia

www.jaycar.com.au

techstore@jaycar.com.au

1800 022 888

New Zealand

www.jaycar.co.nz

techstore@jaycar.co.nz

0800 452 922

jaycar

Page **1** of **1**

XC9050