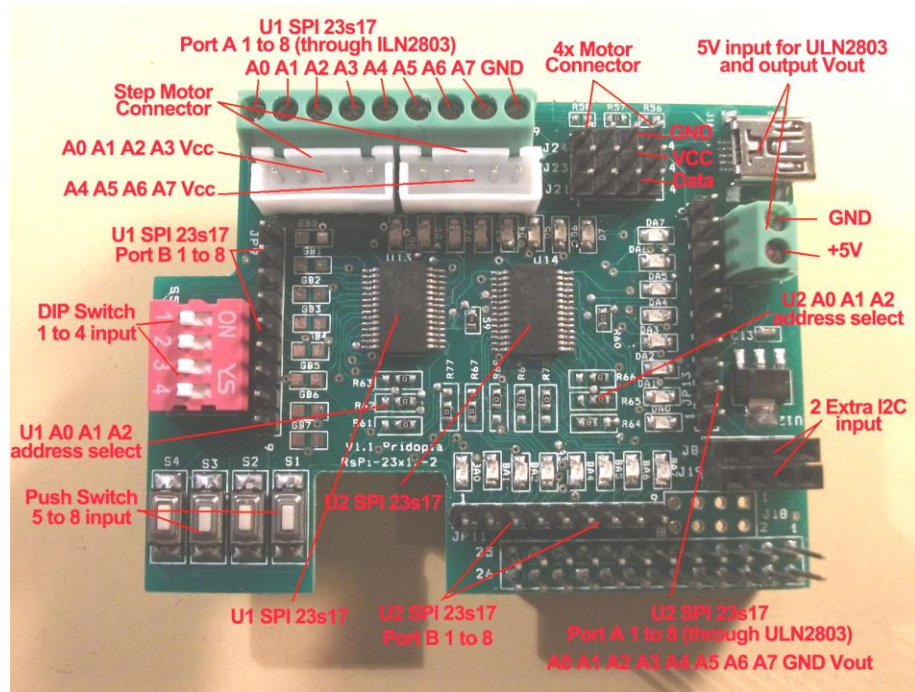


# Rs-Pi-SPI 23s17x2-2803x2 User Manual



each 23s17 port A output to ULN2803, first one 23017 port B for 8 switch input, second one 23s17 port B for normal output with 8 LED. with 3.5mm block terminal 9pin output, can plug in our 2803 relay board with two Step motor connector (5V,D0,D1,D2,D3) (5V,D4,D5,D6,D7) can use Step motor (28BYJ-48 5VDC) or 4 x 5V motor output port

1. J16 Mini USB 5V input & J25 2P 3.5mm terminal for uln2803 & output Vout
2. J18 Rs-Pi V2 GPIO output
3. JP5 D0 ~ D7 U13 Port A (through uln2803)
4. JP9 GB0 ~ GB7 U13 Port B
5. JP13 DA0 ~ DA7 U14 Port A (through iln2803)
6. JP11 BA0 ~ BA7 U14 Port B
- 7 R61,R62,R63 ( for U13 Address select A0,A1,A2 )

8. R64,R65,R66 ( for U14 Address select A0,A1,A2)
  9. U13 (000) 23s17 -1 Port A,B
  10. U14 (001) 23s17-2 Port A,B
  - 11 J8 I2C INPUT PIN 1,2,3, 4 (GND,3V3, SDL,SCL)
  12. J19 I2C INPUT PIN 1,2,3,4, (GND,5V,SDL,SCL)
  13. S1, S2, S3, S4 4 SMD push Switch input
  14. S5 4 DIP Switch input
  - 15, U5,U15 ULN2803
  - 16, J21 data, J23 Vcc ,J24 GND 4 x motor output
  17. J18 for RS-Pi V2 GPIO connector (got 4 more GPIO pin)
- \*\* for both port A output you need plug in 5V to Mini USB or 2P Terminal block**

## Install python and run the test program

Download test program on our web site 23s17-cs0.py

<http://www.pridopia.co.uk/pi-spi-23s17x2-2803x2.html>

```
# sudo apt-get install python-dev
# wget http://www.pridopia.co.uk/pi-pgm/RPi.GPIO-0.4.1a.tar.gz

# gunzip RPi.GPIO-0.4.1a.tar.gz

# tar -xvf RPi.GPIO-0-4-1a.tar

# cd RPi.GPIO-0-4-1a

# sudo python setup.py install

# sudo python 23s17-cs0.py
```

Install piface software test U1 (address 000) I/O

Detail information <http://piface.openlx.org.uk/174770794>

Java program information

<http://www.savagehomeautomation.com/projects/raspberry-pi-programming-pi-face-with-java-pi4j.html>

### Always enabling SPI

To always enable the SPI driver:

- After logging in, edit /etc/modprobe.d/raspi-blacklist.conf  

```
sudo nano etc/modprobe.d/raspi-blacklist.conf
```
- Insert a # at the start of the line containing blacklist spi-bcm2708  

```
#blacklist spi-bcm2708
```

To install and setup the software, ensure your Pi can access the Internet and type:

```
sudo apt-get update  
  
sudo apt-get install -y python-dev python-gtk2-dev git  
pushd ~/  
git clone https://github.com/thomasmacpherson/piface.git  
pushd piface/python  
sudo python setup.py install  
popd  
sudo piface/scripts/spidev-setup  
popd
```

The software will complete installing in a few minutes.

Reboot your Pi by typing:

```
sudo reboot
```

### Testing

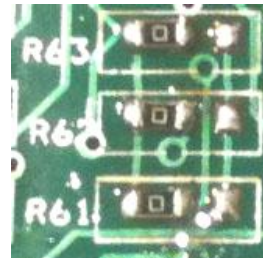
After installing the software and restarting, login and startx.

Start the PiFace emulator by typing in a terminal:

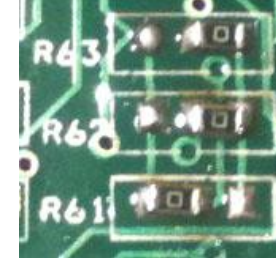
```
piface/scripts/piface-emulator
```

A0, A1, A2 address \* right side GND low - 0 \* left side Vcc High - 1

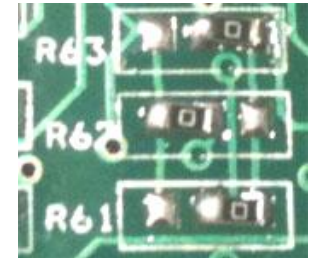
000 -



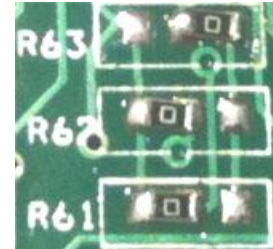
001 -



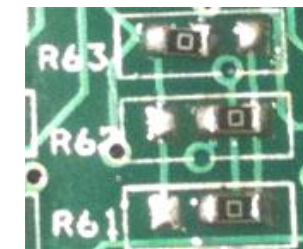
010 -



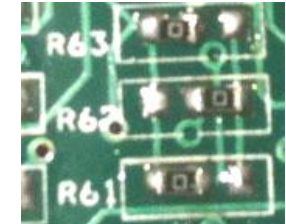
011



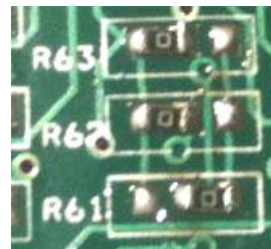
100



101



110



111

