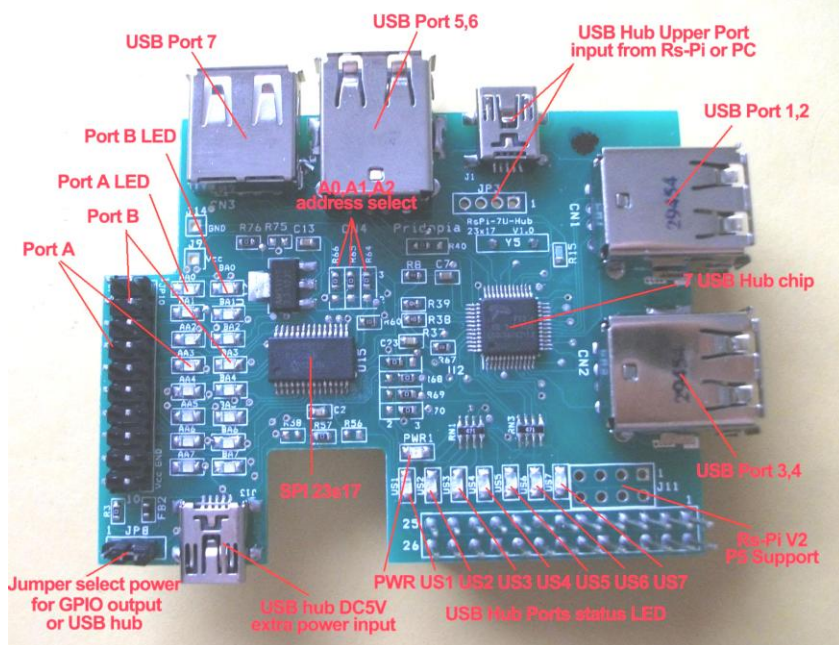


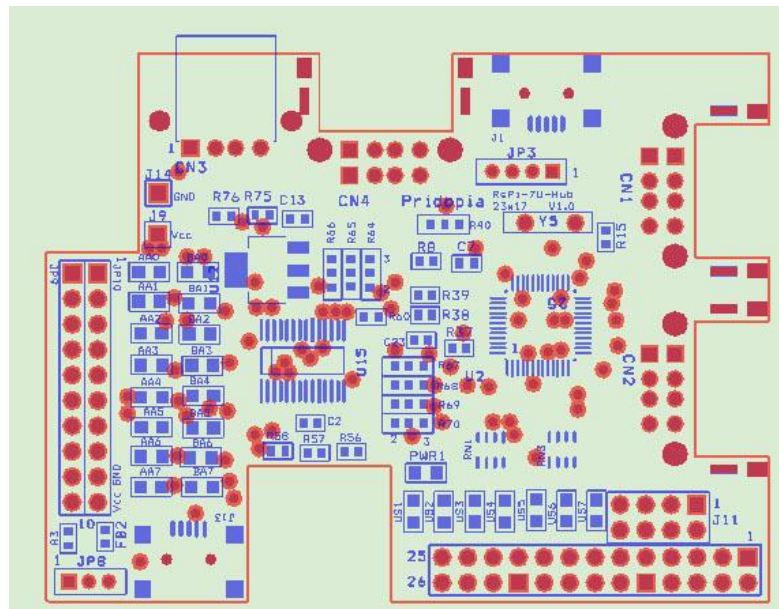
# Rs-Pi-7 USB hub + 23s17-1 SPI User Manual



1. J1 USB upper port input from Rs-Pi or PC
2. J13 Mini USB 5V input
3. J11 Rs-Pi V2 GPIO output
4. JP9 AA0 ~ AA7, GND, Vcc U15 Port A
5. JP10 BA0 ~ BA7, GND, Vcc U15 Port B
6. R64, R65, R66 ( for U15 Address select A0, A1, A2)
7. U15 23s17 -1 Port A, B
8. JP8 jumper select use external 5V from Mini USB connect(J13) for 7 Port Hub or output to GPIO pin 10

## Enable 7 port USB hub function.

\* use the Mini USB to USB cable we provide plug in one of the Raspberry Pi USB port to this 7 Port USB hub board Mini USB connector(J1) upper of the JP3



## Install python and run the test program

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

<http://www.pridopia.co.uk/pi-usb-7-hub-spi-23s17-1.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 mcp23s17-2.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

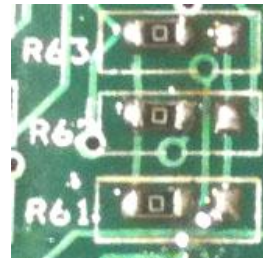
After installing the software and restarting, login and startx.

Start the PiFace emulator by typing in a terminal:

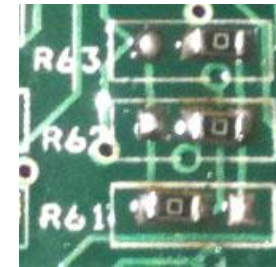
```
piface/scripts/piface-emulator
```

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

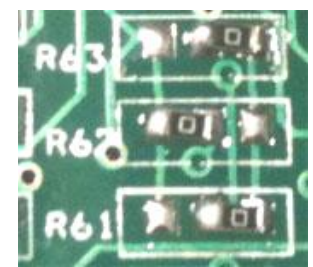
000 -



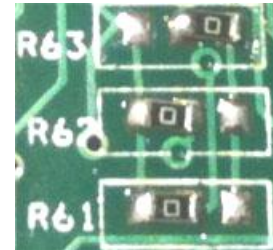
001 -



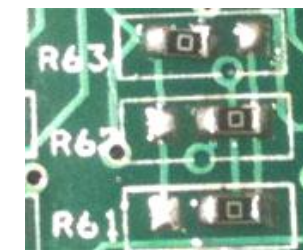
010 -



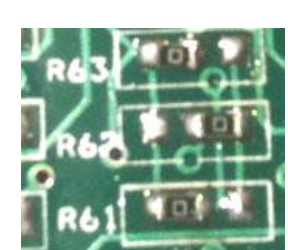
011



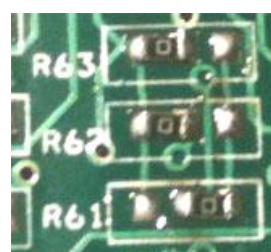
100



101



110



111

