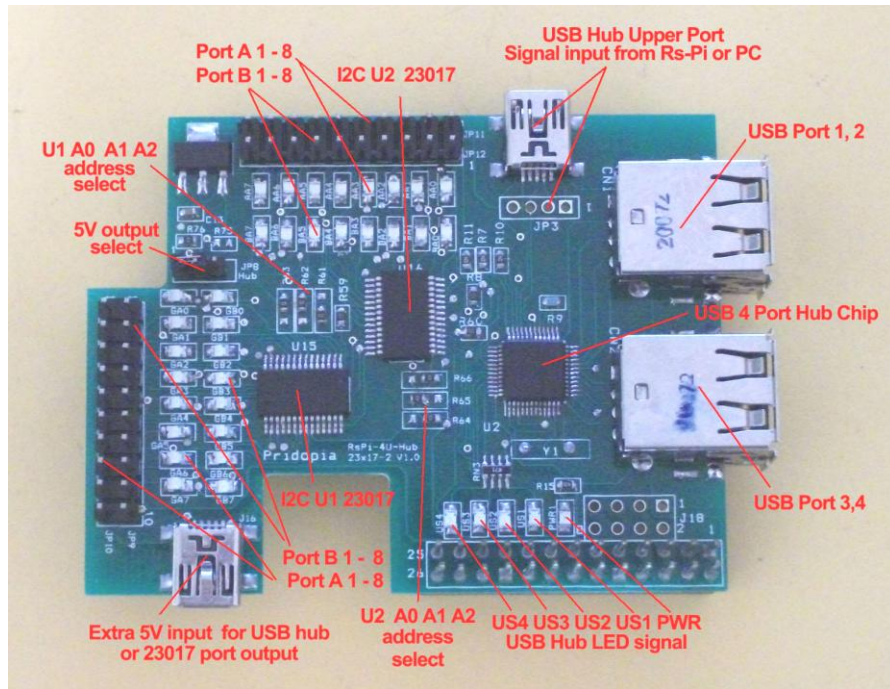


Rs-Pi-4 USB hub & 23017x2 User Manual



1. J16 Mini USB 5V input
2. J18 Rs-Pi V2 GPIO output
3. JP10 GA0 ~ GA7, GND, Vcc U15 Port A
4. JP9 GB0 ~ GB7, GND, Vcc U15 Port B
5. JP11 AA0 ~ AA7, GND, Vcc U16 Port A
6. JP12 BA0 ~ BA7, GND, Vcc U16 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. U15 (21) 23017 -1 Port A, B
10. U16 (22) 23017-2 Port A, B
11. JP8 Power input select (J16) for USB hub or GPIO output to PIN 10
12. J18 for RS-Pi V2 GPIO connector (got 4 more GPIO pin)

Enable USB hub function.

* use the Mini USB to USB cable we provide plug in one of the Raspberry Pi USB port to this 4 Port USB hub board Mini USB connector upper of the JP3

1. Make sure you I2C driver are enable

To enable it all you need to do is comment out a line by putting # in front
[sudo nano /etc/modprobe.d/raspi-blacklist.conf](#)

```
COM37 - PuTTY
# blacklist spi and i2c by default (many users don't need them)
#blacklist spi-bcm2708
#blacklist i2c-bcm2708

[ Read 4 lines ]
^G Get Help  ^O WriteOut  ^R Read File  ^Y Prev Page  ^K Cut Text   ^C
^X Exit      ^J Justify   ^W Where Is   ^V Next Page  ^U UnCut Text ^T
To Spell
```

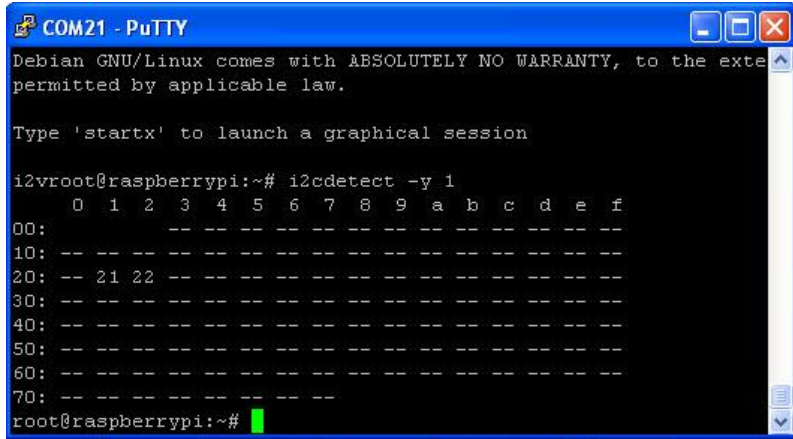
2. Add i2c-dev in /etc/modules by use
[sudo nano /etc/modules](#)

```
COM37 - PuTTY
# /etc/modules: kernel modules to load at boot time.
#
# This file contains the names of kernel modules that should be load
# ed
# at boot time, one per line. Lines beginning with "#" are ignored.
# Parameters can be specified after the module name.

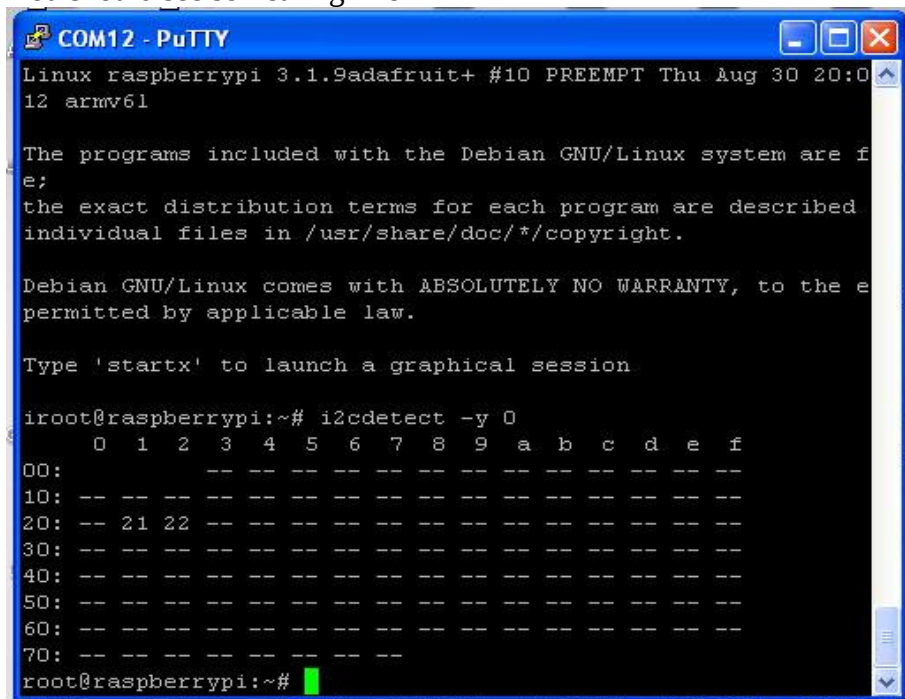
snd-bcm2835
spi-bcm2708
i2c-bcm2708
i2c-dev
rtc-1307
tmp102

[ Read 12 lines ]
^G Get Help  ^O WriteOut  ^R Read File  ^Y Prev Page  ^K Cut Text   ^C
^X Exit      ^J Justify   ^W Where Is   ^V Next Page  ^U UnCut Text ^T
To Spell
```

If you already install I2c driver , then
`i2cdetect -y 0` `i2cdetect -y 1`
if Rs-Pi-v2 you need change 0 to 1



You should see something like



i2c bus detect status 21 & 22 -> 23017 x2

you can change this address

Next install the python-smbus python module:

`sudo apt-get install python-smbus`

`sudo apt-get install i2c-tools`

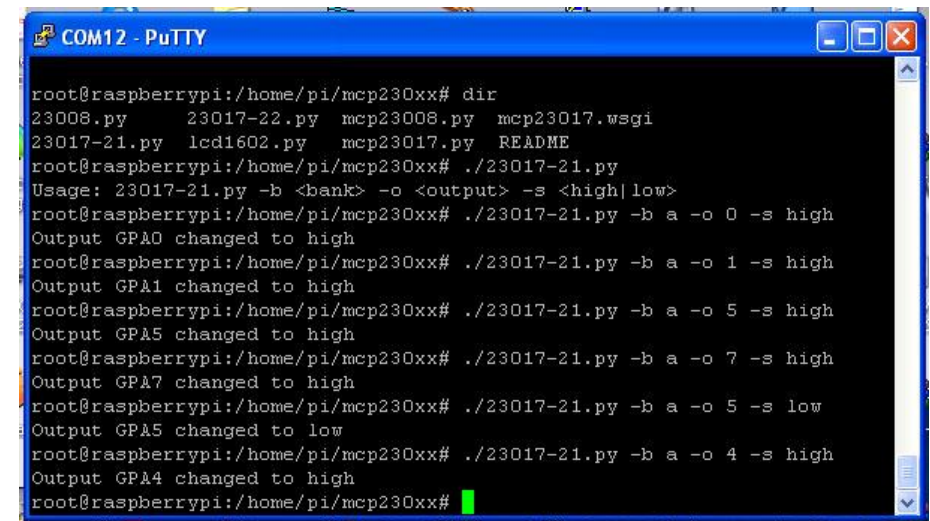
Now you are ready to use the i2c with python.

Some 23017 program information

<http://nathan.chantrell.net/20120524/python-tools-for-the-mcp23017-io-expander/>

<http://nathan.chantrell.net/20120602/raspberry-pi-io-expander-board>

<http://learn.adafruit.com/mcp230xx-gpio-expander-on-the-raspberry-pi/hooksing-it-all-up>



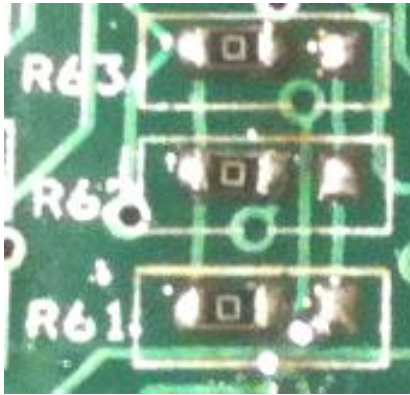
use 23017-21.py set each bit to be High or Low

or use led-21.py and led-22.py led chaser program, can download from our web site

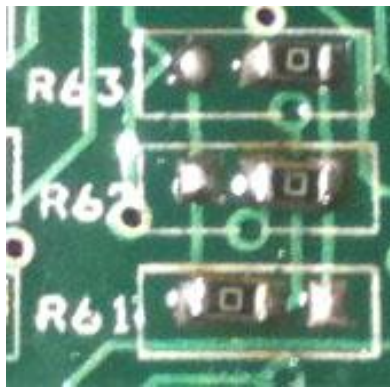
A0, A1, A2 address

* right side GND low - 0 * left side Vcc High - 1

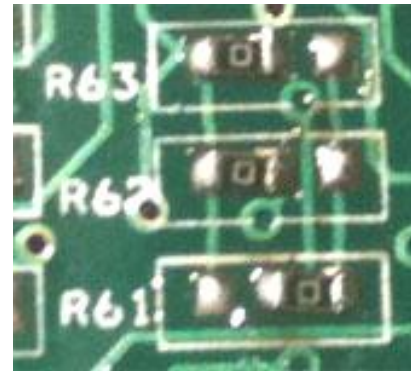
000 - 20



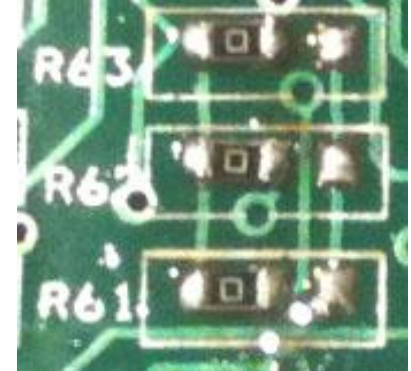
001 - 21



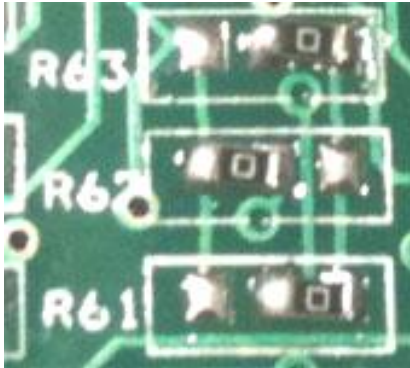
110 - 26



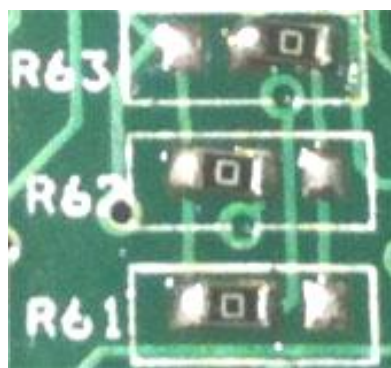
111 - 27



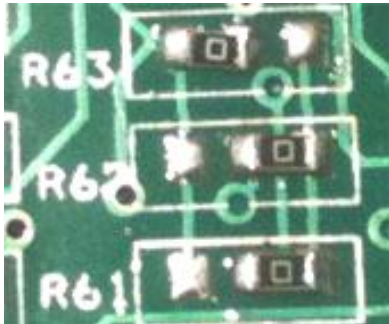
010 - 22



011 - 23



100 - 24



101 - 25

