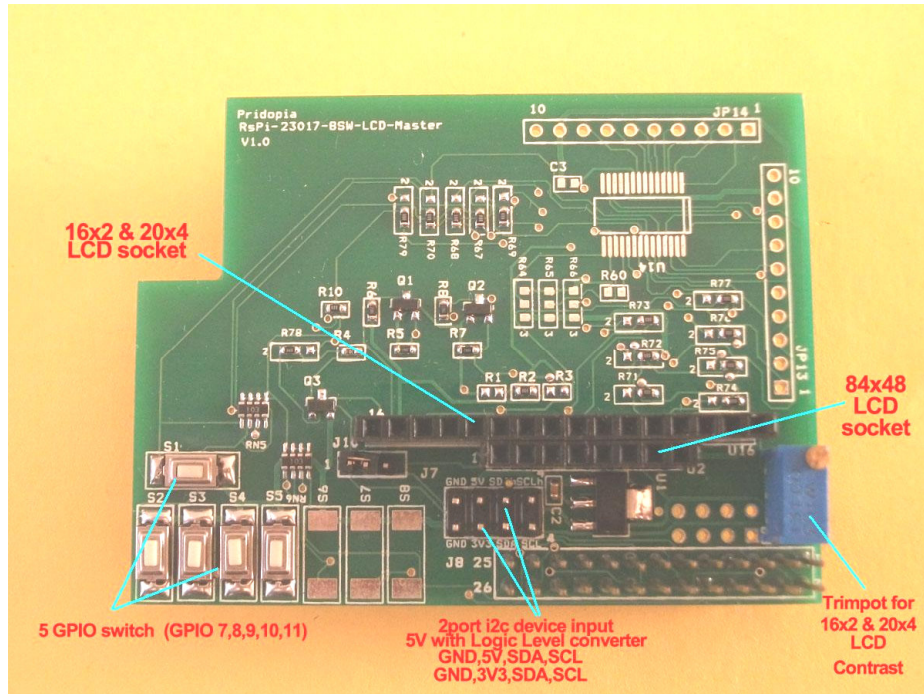# RsPi- 20x4 character GPIO LCD Master Board User Manual

1. 5 GPIO (7,8,9,10,11) Micro Switch

2. back light control circuit can control by software

3. software LCD contrast control for 84x48 pixels LCD

4. support our Scratch control driver

5. 2 i2c device input port J7 (GND, 5V,SDA,SCL) & J8 (GND,3V3,SDA,SCL)
   J7 with Logic Level converter

6. build-in 3v3 power regulator provide 3v3 to 84x48 LCD

7. 10k Trimpot for 16x2 & 20x4 LCD contrast control

8. GPIO interface for 16x2 & 20x4 LCD

9. GPIO interface for 8xx48 LCD
   Din = GPIO 23 , SCLK = GPIO 24, DC = GPIO 22 ,RST = GPIO 17 , CS =GPIO 27

10. J10 2-3 84X48 LCD back light always ON, 1-2 control by GPIO18

11. 16X 2 & 20X4 LCD GPIO Pin
   pin 1 to 16 (VSS,VDD,V0,RS,RW,E,D0,D1,D2,D3,D4,D5,D6,D7,A,K)

VSS - GND, VDD - 5V, V0 to 10K trimpot, RS - pin 22 GPIO 25 , RW - GND
E - pin 18 GPIO 24 , A – 5V, K - pin 12 GPIO 18
4bit mode   D4 - pin 16 GPIO 23 , D5 - pin 11 GPIO 17, D6 - pin 13 GPIO 27
             D7 - pin 15 GPIO 22

Test Program can be download from our web site
http://www.pridopia.co.uk/pi-2004-LCD-master.html
2004-lcd-lib.rar -- C & Python codc for 20x4 LCD

Pi_Scratch interface software download from our web site
http://www.pridopia.co.uk/rs-pi-set-scratch.html

Install GPIO Library for software

https://pypi.python.org/pypi/RPi.GPIO   GPIO library

GPIO library - RPi.GPIO-0.5.3a.tar.gz

**WiringPi LCD library   84x48 LCD library**

http://wiringpi.com/

Install python , library and run the test program

sudo apt-get install python-dev

wget http://www.pridopia.co.uk/pi-pgm/RPi.GPIO-0.5.3a.tar.gz
gunzip RPi.GPIO-0.5.3a.tar.gz
tar –xvf RPi.GPIO-0.5.3a.tar
cd RPi.GPIO-0.5.3a
sudo python setup.py install
sudo python xxx.py (xxx.py it's your test program)

Package Content
1x Rs-Pi 20x4 GPIO LCD Master board
1x 20x4 character blue/white LCD
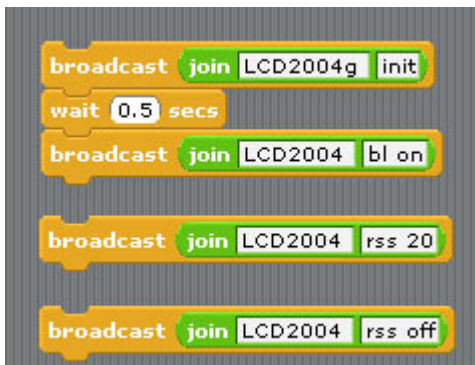1x manual

(1) 5 GPIO Switch GPIO 7,8,9,10,11
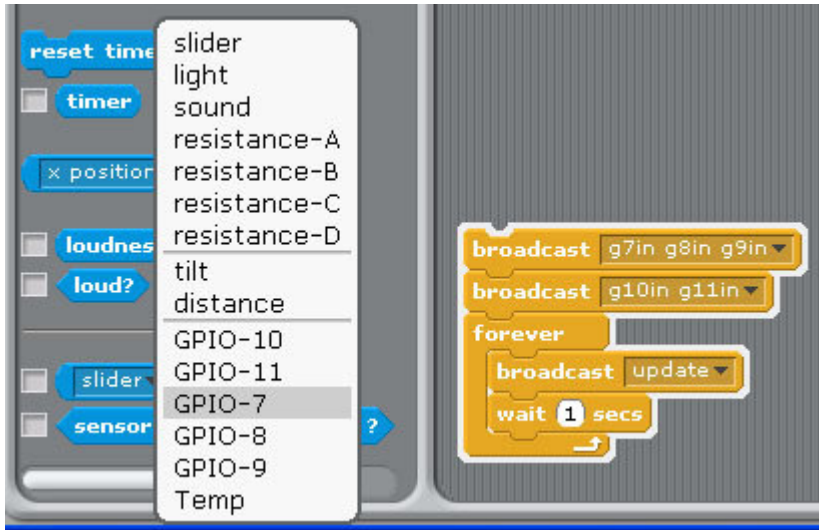
1. Setting GPIO 7,8,9,10,11 as input

2. broadcast "Update"

3. in Sensing --> Slider , you will see the GPIO-7 ,8, 9, 10, 11 in the list
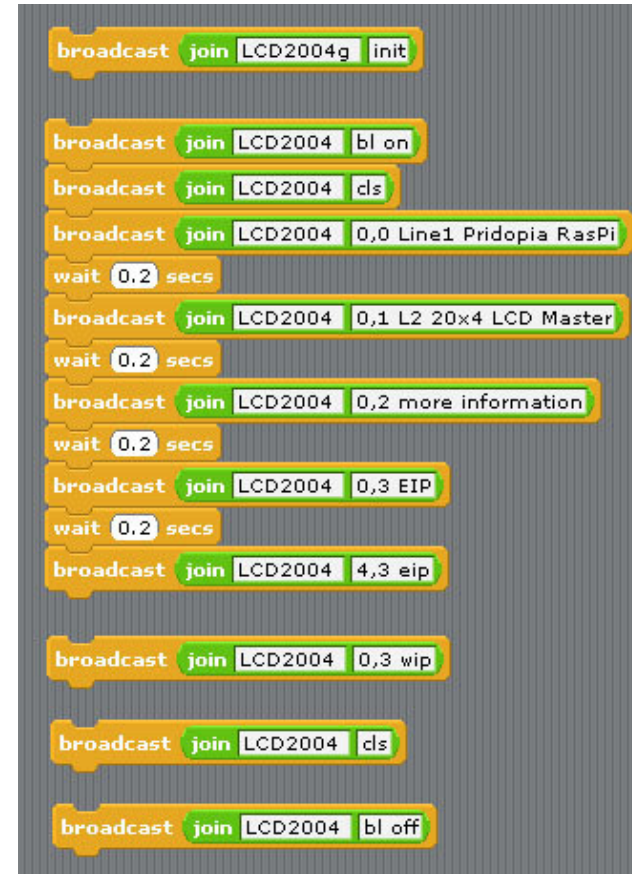

(2) 20x4 Character LCD

RSS function (Scrolling text Display top 3 News message)

BBC world news RSS feed

command "LCD2004g init"   initial GPIO 20x4 LCD

command "LCD2004 bl on"   Turn On LCD back light

command "LCD2004 "rss"+ " speed"   Active RSS function (need have internet)

LCD2004 rss 5   speed (1 to 20 - 1 is fast , 20 is slow)

command "LCD2004 rss off"   stop RSS function

(3) command

command "LCD2004g " + "init"   initial GPIO 20x4 LCD

command   "LCD2004 " + "X , Y " + " MESSAGE"   Display message to LCD in location x,y

command "LCD2004 " + "cls"   clean screen

command "LCD2004 " + "bl " + "on/off"   LCD back light ON / OFF

command "LCD2004 " + "X , Y " + " wip"   Display WiFi IP to LCD in location x,y

command "LCD2004 " + "X , Y " + " eip"   Display Ethernet IP to LCD in location x,y

command "LCD2004 " + "X , Y " + " time"   Display Time to LCD in location x,y

command "LCD2004" + "X , Y " + " date"   Display Time to LCD in location x,

command   "LCD2004 " + "X , Y " + " ram"   Display RAM usage in location x,y

command   "LCD2004 " + "X , Y " + " wifi" + " ip" Display WiFi IP in location x,y

command   "LCD2004 " + "X , Y " + " wifi" + " ssid"   Display WiFi SSID in location x,y

command   "LCD2004 " + "X , Y " + " wifi" + " gsig"   Display wifi signal with bar chart in location x,y