

# *Display Shield Raspberry Pi*

*construction and programming manual*

Rev.	Date	Description
A	2017-01-18	First release

## 1.) *Electrical connection*

Pin	Cable color	Raspberry Pi	Description
1	black	N.C.	Optional Interrupt line – not used <sup>1</sup>
2	brown	GPIO3	SCL – I2C clock
3	red	GPIO2	SDA – I2C data
4	orange	3,3V	3,3V power supply
5	yellow	GND	Ground connection

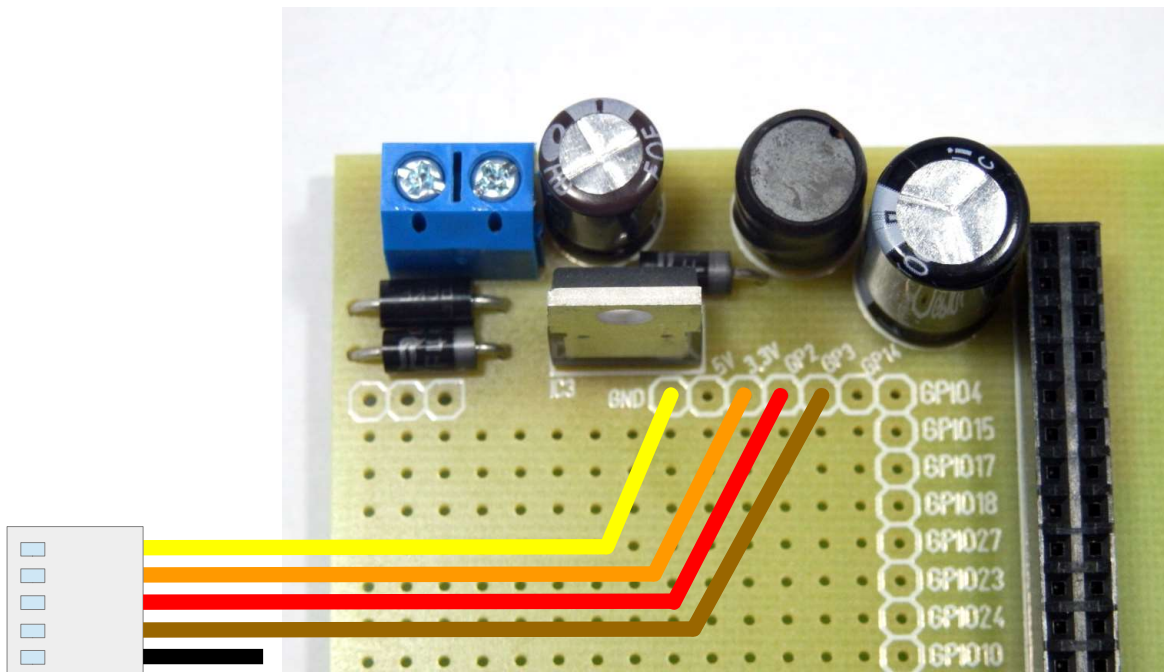


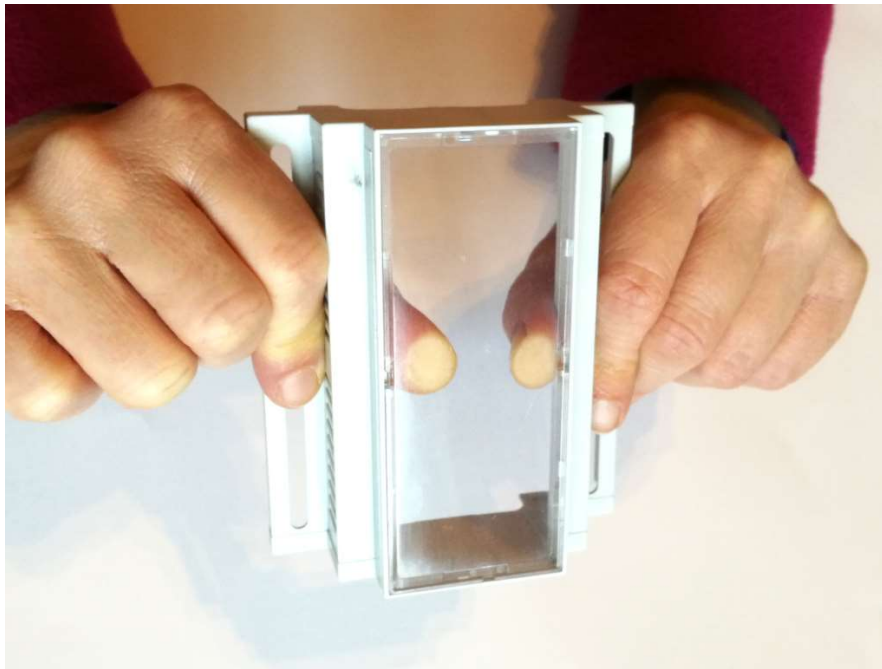
Fig 1: Wiring example for RasPiBox Open V1.2

<sup>1</sup> If you want, you can connect this wire with a GPIO of your choice. In our programming example we don't use this line!

## 2.) *Mechanical assembly in RasPiBox enclosure*

**Please note: The steps 2.1 and 2.3 are required for the standard version of the Display Shield only.**

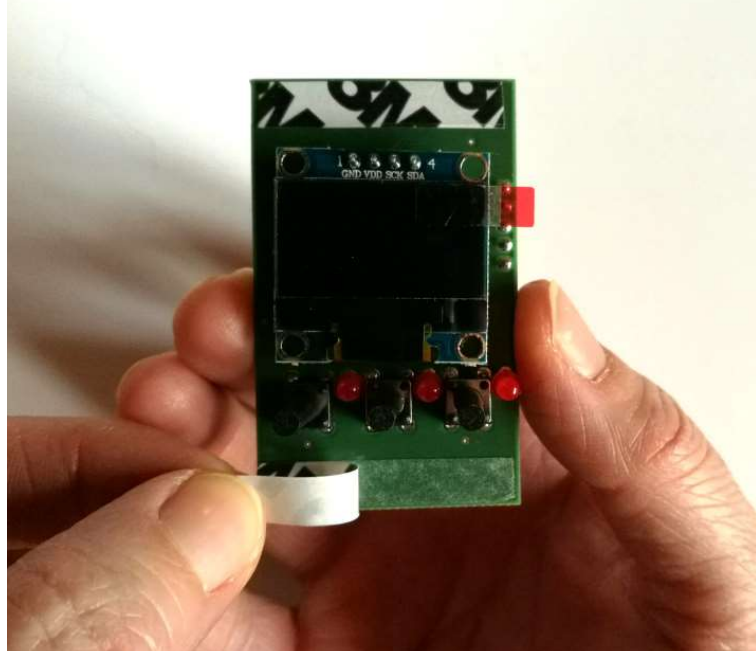
### 2.1) *Remove the old front glass from top shell*



*Press the glass careful with your thumbs out of the top shell.*

## 2.2) Assemble the Display Shield

*Remove the protection foil from the double adhesive tape first:*



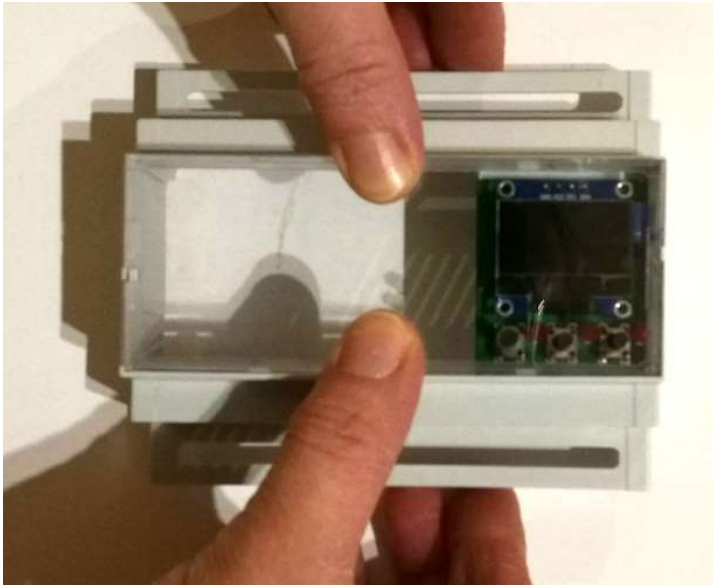
*Glue the shield into the top shell:*



*Place it exactly as in the picture above and close as possible to the left wall!*

**Please note: The basic version of the Display Shield can be placed on any position in the top shell. The standard version have to be placed exactly on the expected position.**

### 2.3) *Assemble the new front plate*



*Press the glass careful with your fingers from the top into the top shell.*

### 3.) *Programming in Python*

Before using the library you will need to make sure you have a few dependencies installed. Connect to your device using SSH and follow the steps below.

Install the RPi.GPIO library by executing:

```
sudo apt-get update  
sudo apt-get install build-essential python-dev python-pip  
sudo pip install RPi.GPIO
```

Install the Python Imaging Library and smbus library by executing:

```
sudo apt-get install python-imaging python-smbus
```

Now to download and install the SSD1306 python library code, execute the following commands:

```
sudo apt-get install git  
git clone https://github.com/adafruit/Adafruit\_Python\_SSD1306.git  
cd Adafruit_Python_SSD1306  
sudo python setup.py install
```

Now to download and install the MCP23008 python library code, execute the following commands (not required for basic version):

```
cd ..  
git clone https://github.com/adafruit/Adafruit\_Python\_GPIO.git  
cd Adafruit_Python_GPIO  
sudo python setup.py install
```

Now to download and install the sample code for the display shield, execute the following commands:

```
cd ..  
git clone https://github.com/hwhardsoft/Display\_Shield\_RPI.git  
cd Display_Shield_RPI
```

to run the demo enter for the basic version:

```
sudo python basic_test.py
```

to run the demo enter for the standard version:

```
sudo python standard_test.py
```

Press the 3 buttons to view different screens!