

## **SBC-LCD02**

1.44" HD IPS TFT LCD

## 1. GENERAL INFORMATION

Dear customer

Thank you for choosing our product. In the following, we will show you what you need to bear in mind during commissioning and use.

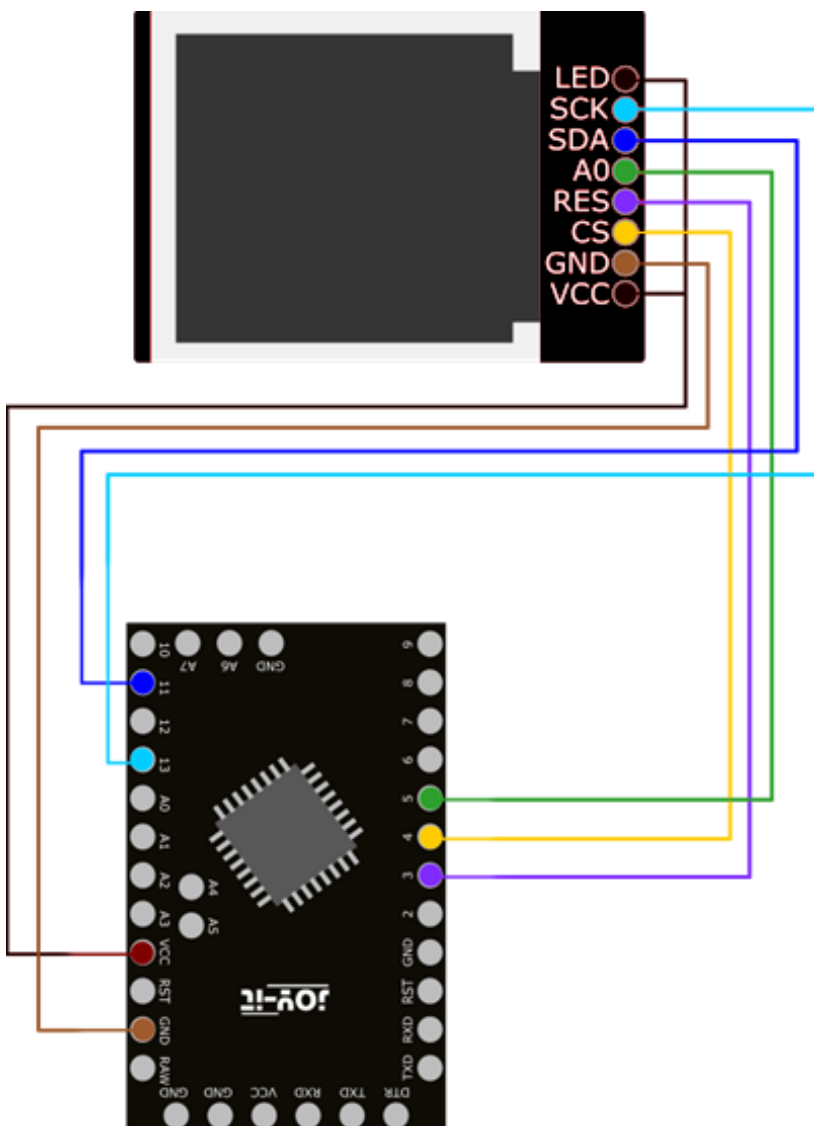
Should you encounter any unexpected problems during use, please do not hesitate to contact us.



These instructions were developed and tested for the Raspberry Pi 4 and Raspberry Pi 5 with the Bookworm OS operating system. It has not been tested with newer operating systems or newer hardware.

## 2. USE WITH THE ARDUINO

### 2.1 Connection



Arduino	Display
VCC (3V)	LED
Pin 13	SCK
Pin 11	SDA
Pin 5	A0
Pin 3	Reset
Pin 4	CS
GND	GND
VCC (3V)	VCC



Since the display works with a 3 V logic level and most Arduinos with 5 V, we use an Arduino Pro Mini 3.3 V in this example.

If you want to use an Arduino with a 5 V logic level, such as an Arduino

## 2.2 Code example

For the SBC-LCD02 we use the [ucglib](#) library from [olikraus](#) (in the library manager you will find the library under the name Ucglib, published by Oliver), which was published under the [bsd-License](#). You can download the library under **Sketch → Include library → Manage libraries...**

Now you can execute **GraphicTest** under **File → Examples → Ucglib → GraphicTest**. You can upload the code via **Upload**. First make sure that the **board** and **port** are selected correctly under **Tools**.

Before using the code example, **the constructor** must first be selected **in the code example**. This can be found in the **GraphicTest example in lines 49 to 90**. **Line 61** is required for the display used in these instructions. You can also use line 60 if you do not have the option of connecting your display to the hardware SPI pins and need or want to use other pins instead.



Please note that you may have to adjust the pins in the respective constructor so that they correspond to your hardware SPI pins or, if applicable, your desired pins.

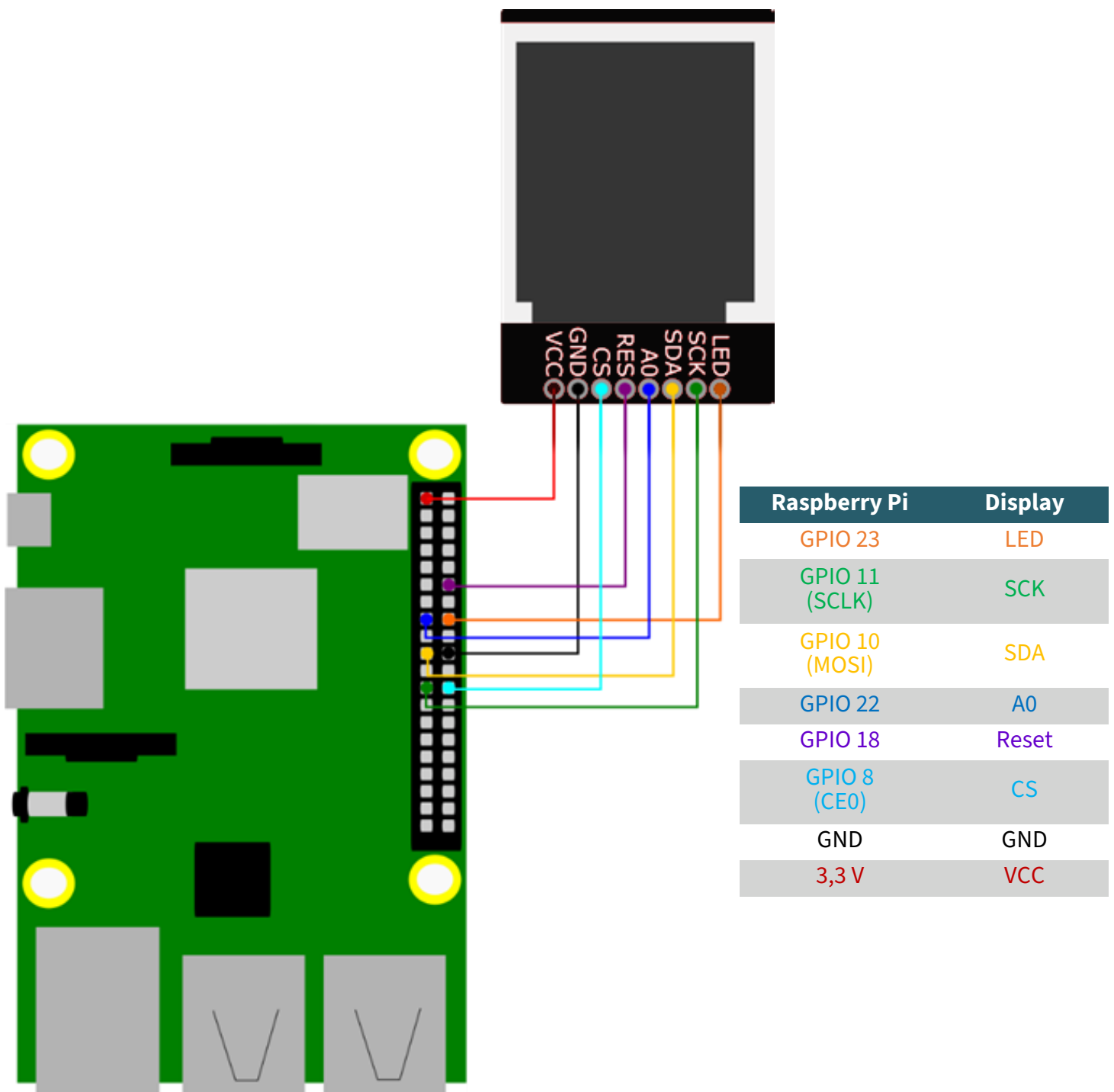
If you still have an older model of the display, here a display with a red circuit board instead of the newer model with the black circuit board, you can download a slightly customised library file [here](#). You must unzip this file and can then insert the unzipped file under **"C:\Users\username\Documents\Arduino\libraries\Ucglib\src\clib"** and thus replace the existing file there.

In **line 42** of the file that has now been inserted, you have the option of adjusting the offset of the y-axis.

If you set the **offset to 32**, this means that you are using the **display with the black board**. However, if you set the **offset to 0**, this means that you are using the **display with the red board**.

### 3. USE WITH RASPBERRY PI

#### 3.1 Connection



#### 3.2 Code example

First execute the following commands to set up the required virtual environment:

```
sudo apt-get install python3-venv -y
sudo apt install -y python3-dev python3-pip git
python3 -m venv .env
```

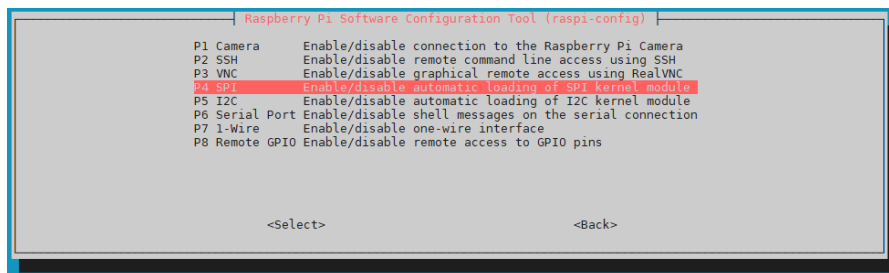
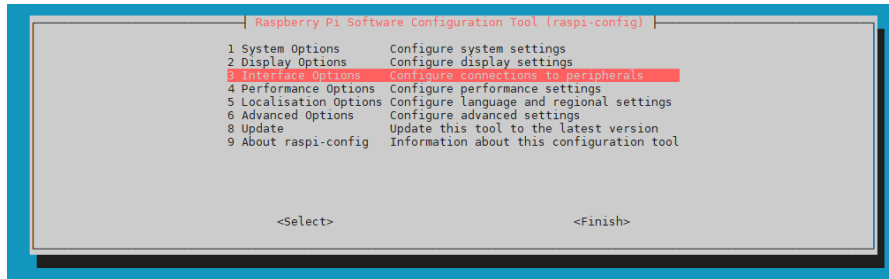
Now use the following command to start the virtual environment:

```
source .env/bin/activate
```

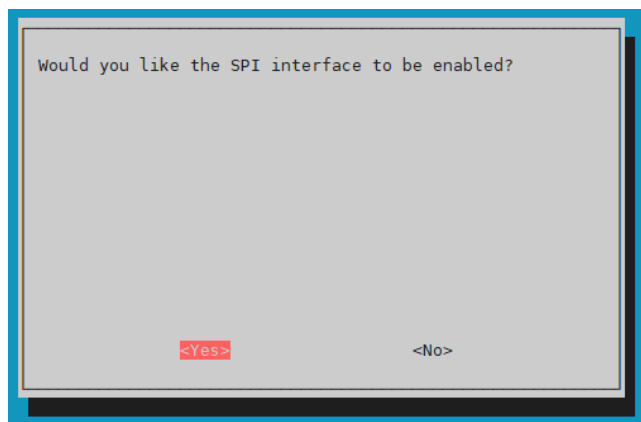
Now activate SPI in the settings of your Raspberry Pi. Call up the settings with the following command.

```
sudo raspi-config
```

Select **3 Interface Options** → **P4 SPI** from there. (P3 on the Raspberry Pi 5)



Confirm the following question ***Would you like the SPI interface to be enabled?***



Now that you have activated SPI on your Raspberry Pi, you need to execute the following commands in order to use our code example on the Raspberry Pi 4 and Raspberry Pi 5.

```
sudo apt remove python3-rpi.gpio
sudo apt install python3-gpiozero
pip3 install spidev
```

Now download the library [LIBtft144](https://github.com/BLavery/LIBtft144) from [BLavery](https://github.com/BLavery), which has been published under the [GNU General Public License Version 3](https://www.gnu.org/licenses/gpl-3.0.html).

```
git clone https://github.com/BLavery/LIBtft144.git
cd LIBtft144
```

We have modified the library file for use with the Pi5 and created a code example. You can download the files with the following command.

```
wget https://joy-it.net/files/files/Produkte/SBC-LCD02/SBC-LCD02.zip
```

Now unpack the zip file with the following command and replace the library file with the one we have modified.

```
unzip SBC-LCD02.zip && rm SBC-LCD02.zip
```

After entering the command, you will be asked if you want to replace the files `lib_tft144.py` and `smartGPIO.py`, confirm this with **y** and **Enter**.

You can now execute the sample code with the following command.

```
sudo python3 SBC-LCD02.py
```

#### 4. ADDITIONAL INFORMATION

Our information and take-back obligations according to the Electrical and Electronic Equipment Act (ElektroG)

##### Symbol on electrical and electronic equipment:



This crossed-out dustbin means that electrical and electronic appliances do not belong in the household waste. You must return the old appliances to a collection point.

Before handing over waste batteries and accumulators that are not enclosed by waste equipment must be separated from it.

##### Return options:

As an end user, you can return your old device (which essentially fulfills the same function as the new device purchased from us) free of charge for disposal when you purchase a new device.

Small appliances with no external dimensions greater than 25 cm can be disposed of in normal household quantities independently of the purchase of a new appliance.

##### Possibility of return at our company location during opening hours:

SIMAC Electronics GmbH, Pascalstr. 8, D-47506 Neukirchen-Vluyn, Germany

##### Possibility of return in your area:

We will send you a parcel stamp with which you can return the device to us free of charge. Please contact us by email at [Service@joy-it.net](mailto:Service@joy-it.net) or by telephone.

##### Information on packaging:

If you do not have suitable packaging material or do not wish to use your own, please contact us and we will send you suitable packaging.

#### 5. SUPPORT

If there are still any issues pending or problems arising after your purchase, we will support you by e-mail, telephone and with our ticket support system.

Email: [service@joy-it.net](mailto:service@joy-it.net)

Ticket system: <http://support.joy-it.net>

Telephone: +49 (0)2845 9360-50 (Mon - Thur: 09:00 - 17:00 o'clock,  
Fri: 09:00 - 14:30 o'clock)

For further information please visit our website:

[www.joy-it.net](http://www.joy-it.net)