Display Shield
PP2040 (Raspberry Pi Pico)
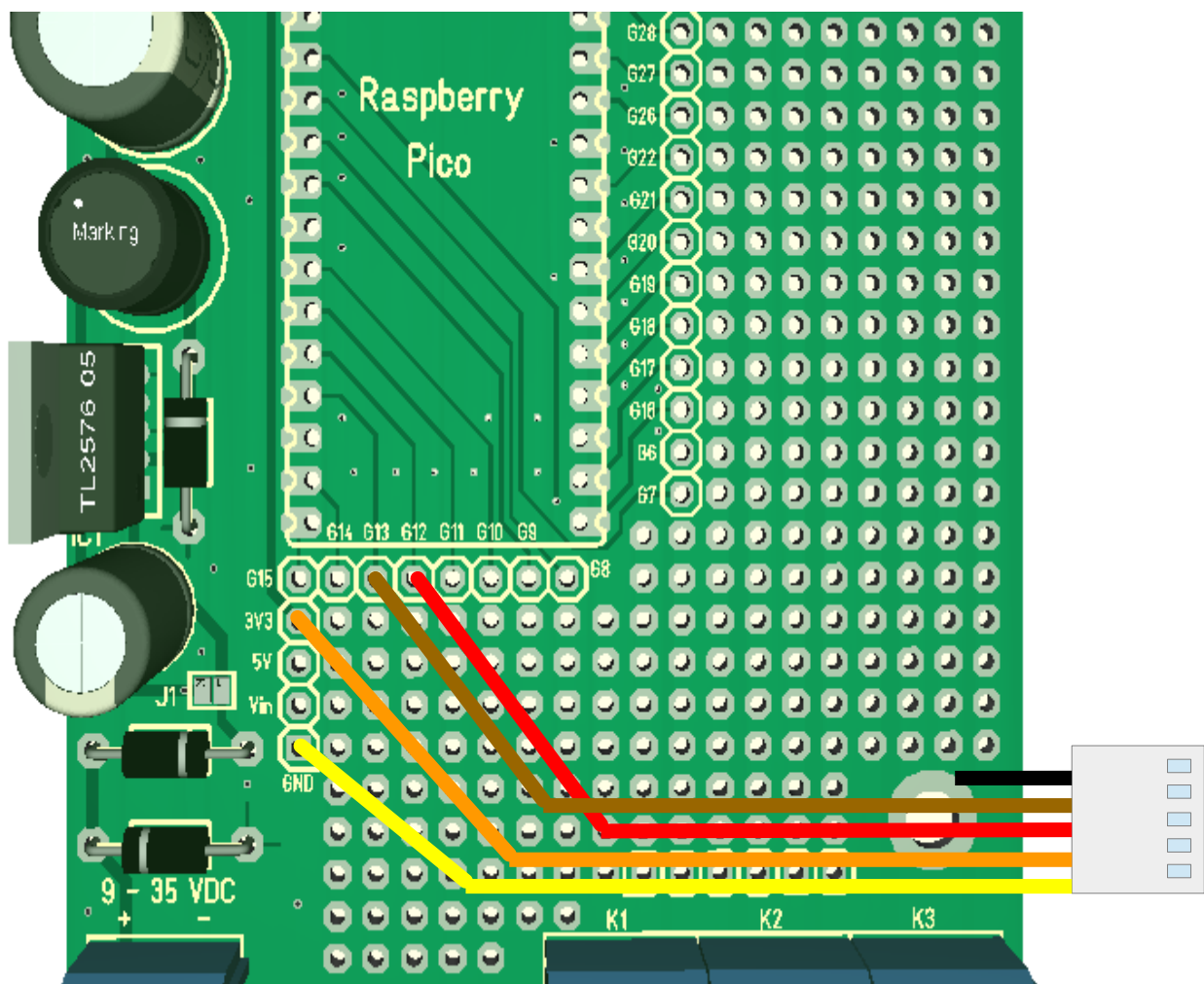
construction and programming manual

Rev.	Date	Description
A	2021-11-03	First release

1.)   Electrical connection

| Pin	Cable color	Arduino	Description
1	black	N.C.	Optional Interrupt line – not used[1]
2	brown	GP13	SCL – I2C clock
3	red	GP12	SDA – I2C data
4	orange	3,3V	3,3V power supply
5	yellow	GND	Ground connection

Connections in RasPibox Pico:

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1   This line will generate an interrupt whenever a button is pressed. If you want, you can connect this wire with a digital input of your choice. In our programming example we don't use this line!

2.) Mechanical assembly in Arduibox enclosure

Remove the protection foil from the double adhesive tape first:
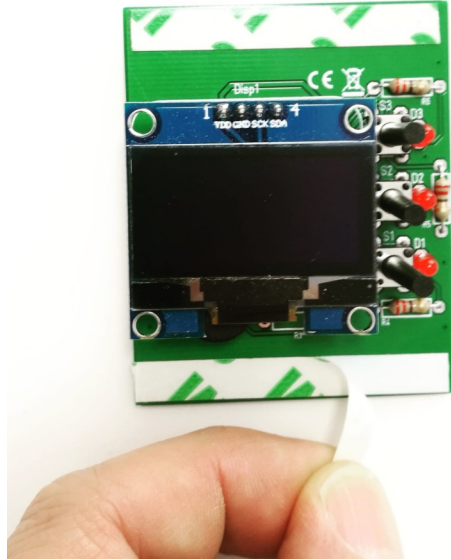
Glue the shield into the top shell:
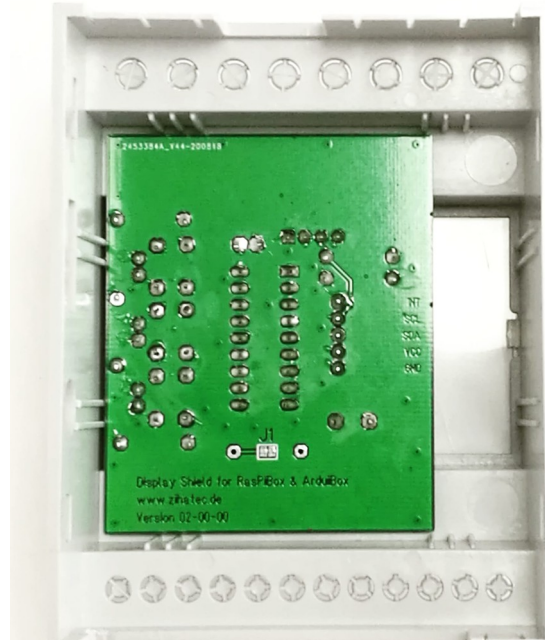
Place it exactly as in the picture above and close as possible to the left wall!

3.) Programming

3.1) Install CircuitPython

Download the CircuitPython version for the Raspberry Pi Pico:

https://circuitpython.org/board/raspberry_pi_pico/

Copy the downloaded file in the root directory of your Pi Pico.

For more information, please visit this link:

https://learn.adafruit.com/getting-started-with-raspberry-pi-pico-circuitpython

3.2) Install additional libraries
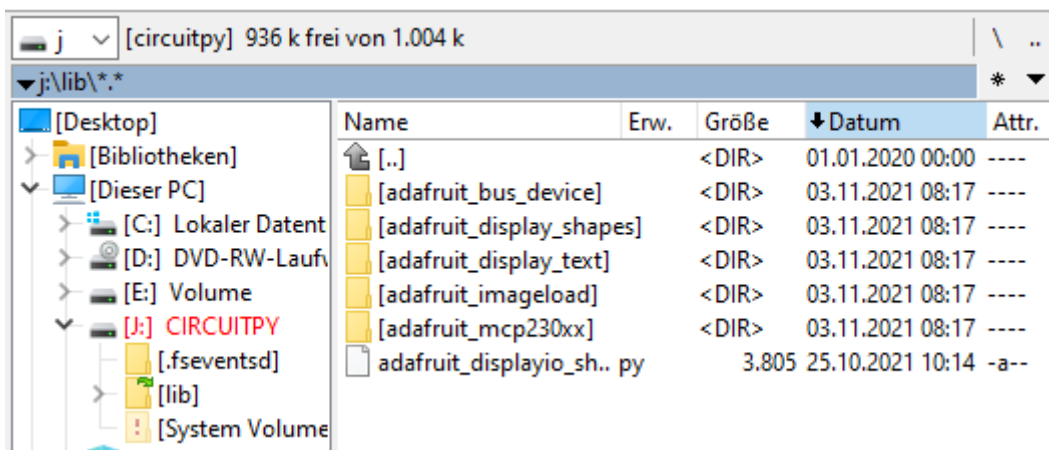
Create a sub folder „lib" in the root directory of the „CIRCUITPY" drive. Copy now the following libraries in this subfolder.

- adafruit_bus_device

- adafruit_display_shapes

- adafruit_display_text

- adafruit_imageload

- adafruit_mcp230xx

- adafruit_displayio_sh1106.mpy

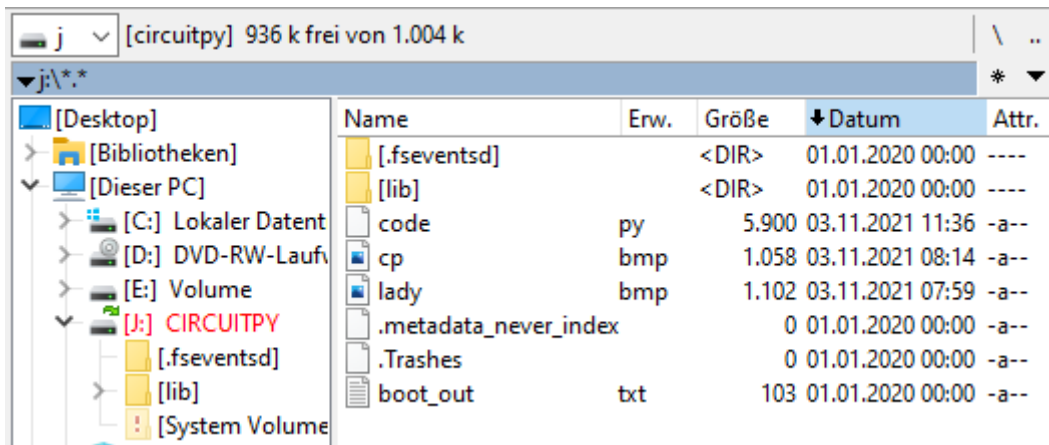You will find all needed libraries here

https://github.com/adafruit/Adafruit_CircuitPython_Bundle/releases

Name	Erw.	Größe	↓Datum	Attr.
🔼 [..]		<DIR>	01.01.2020 00:00	----
[adafruit_bus_device]		<DIR>	03.11.2021 08:17	----
[adafruit_display_shapes]		<DIR>	03.11.2021 08:17	----
[adafruit_display_text]		<DIR>	03.11.2021 08:17	----
[adafruit_imageload]		<DIR>	03.11.2021 08:17	----
[adafruit_mcp230xx]		<DIR>	03.11.2021 08:17	----
adafruit_displayio_sh..	py	3.805	25.10.2021 10:14	-a--

3.3) Install the demo program

Copy now the files of the demo program in the root directory of the CIRCUITPY drive.

Name	Erw.	Größe	↓Datum	Attr.
[.fseventsd]		<DIR>	01.01.2020 00:00	----
[lib]		<DIR>	01.01.2020 00:00	----
code	py	5.900	03.11.2021 11:36	-a--
cp	bmp	1.058	03.11.2021 08:14	-a--
lady	bmp	1.102	03.11.2021 07:59	-a--
.metadata_never_index		0	01.01.2020 00:00	-a--
.Trashes		0	01.01.2020 00:00	-a--
boot_out	txt	103	01.01.2020 00:00	-a--

3.4) Run the demo

The demo will start automatically after overwriting the existing code.py with our file.

Press the buttons beside the display to show different screens and to switch the leds on.