Riscufefe #5 badge repo

Some howto's below.

The GLITCHIFIER9000 in a nutshell

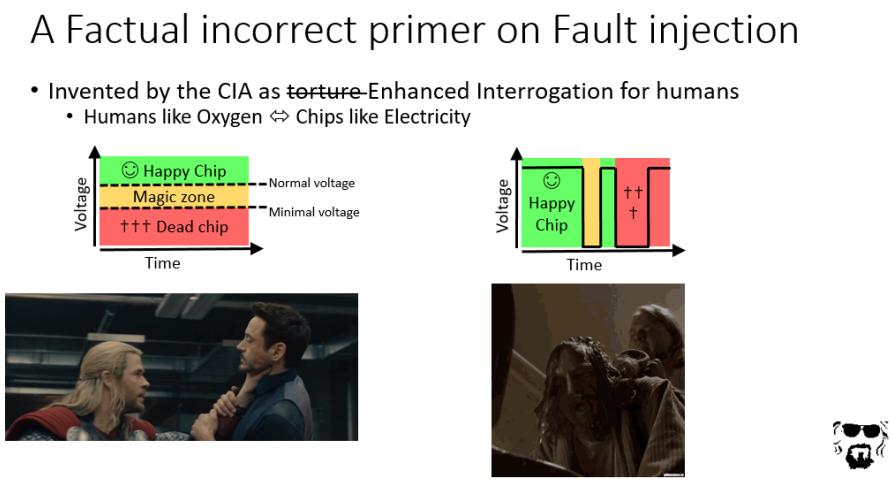


Figure 1: What is voltage glitching?

- Crowbar!

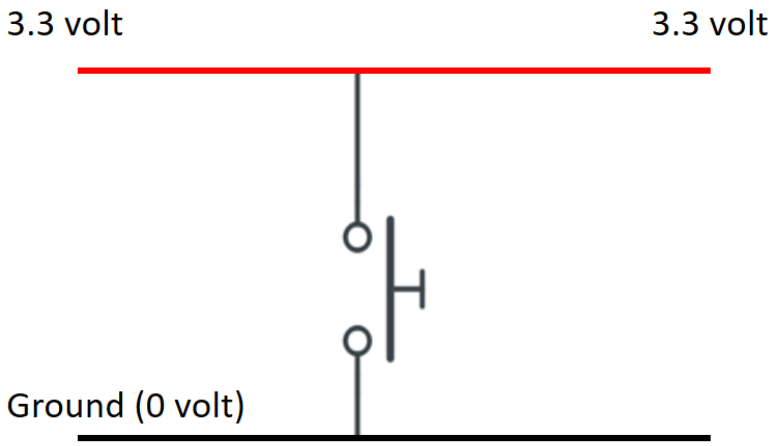


Figure 2: Normal operation

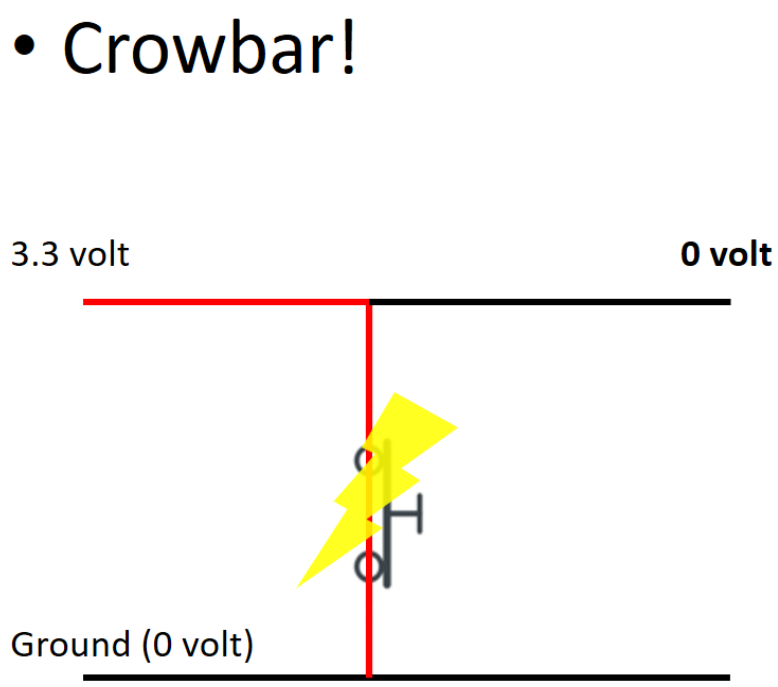


Figure 3: While glitching

Check out the schematics in this repo for more information!

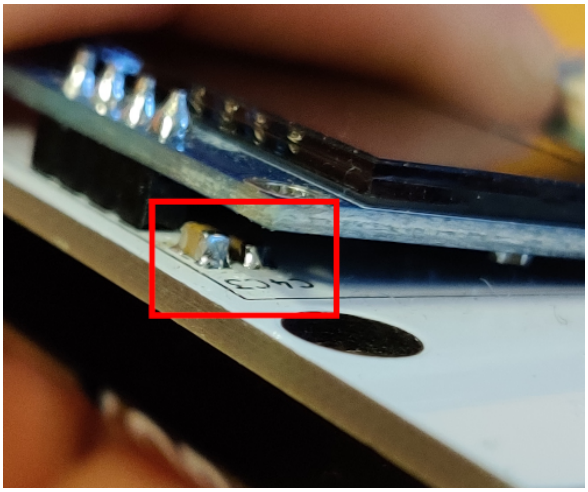
NOTE: The trigger input is currently set to the button for demo purposes, the use a different pin you have to modify this line.

Hardware DIY instructions

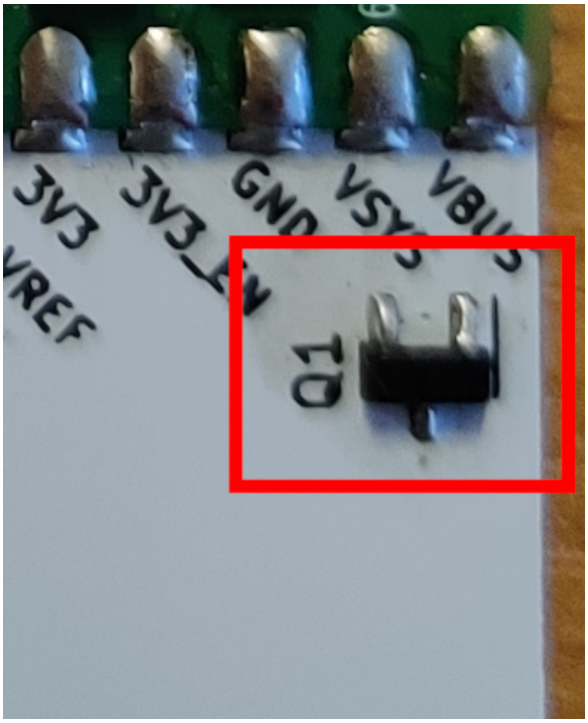
Minimal badge functionality

To get minimal badge functionality:

1. Solder C3, C4



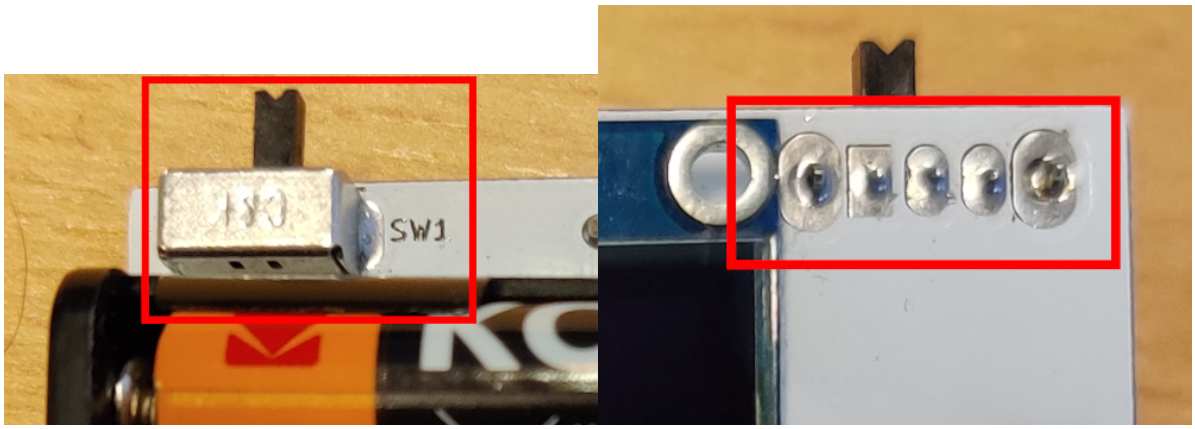
2. To protect your PICO from having battery and USB power at the same time, solder Q1:

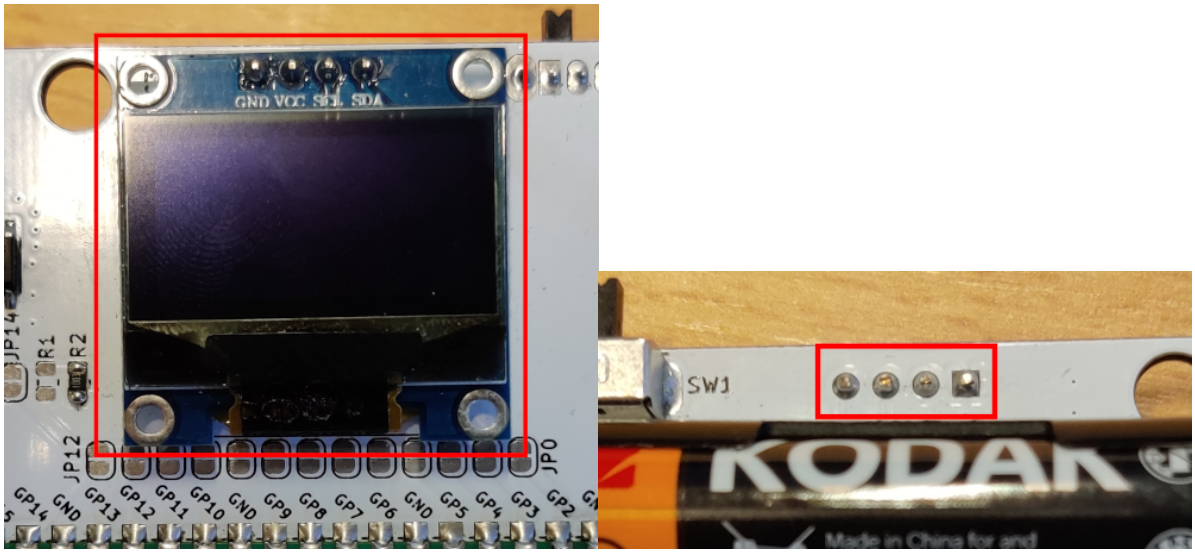


3. To be able to switch off the batteries, solder SW1:

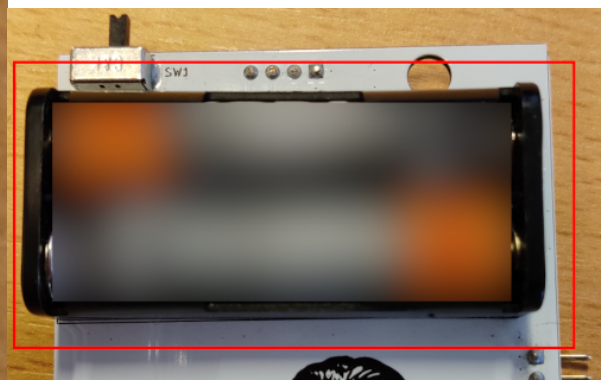
4. Attach the screen to the front:

5. Attach the AAA battery holder to the back:


SW1


GND VCC SCL SDA
JP14
R1
R2
JP12
JP0
GP14 GND GP13 GP12 GP11 GP10 GND GP9 GP8 GP7 GP6 GND GP5 GP4 GP3 GP2
SW1
KODAK


JD0
GP5
GP4
GP3
GP2
GND
GP1
GP0


SW1

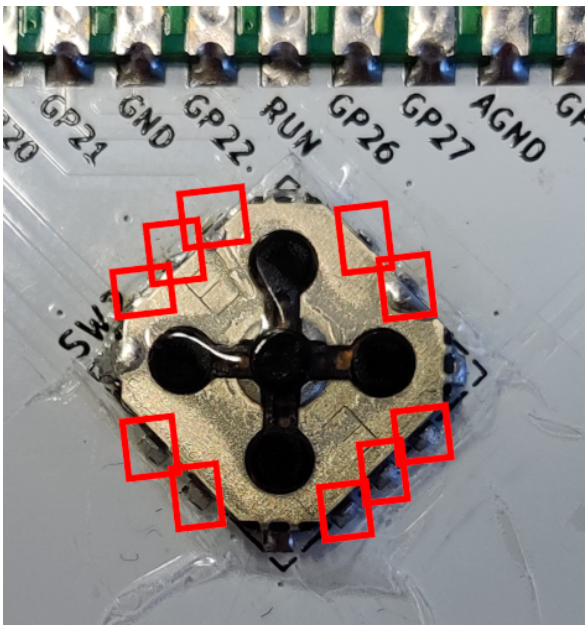
6. Insert 2xAAA batteries:

You should now be able to see stuff on the screen, and you can interact over USB / serial.

Button controls

To control the badge with the button:

1. Solder the 10 (3, 2, 3, 2) points of the button at SW1:

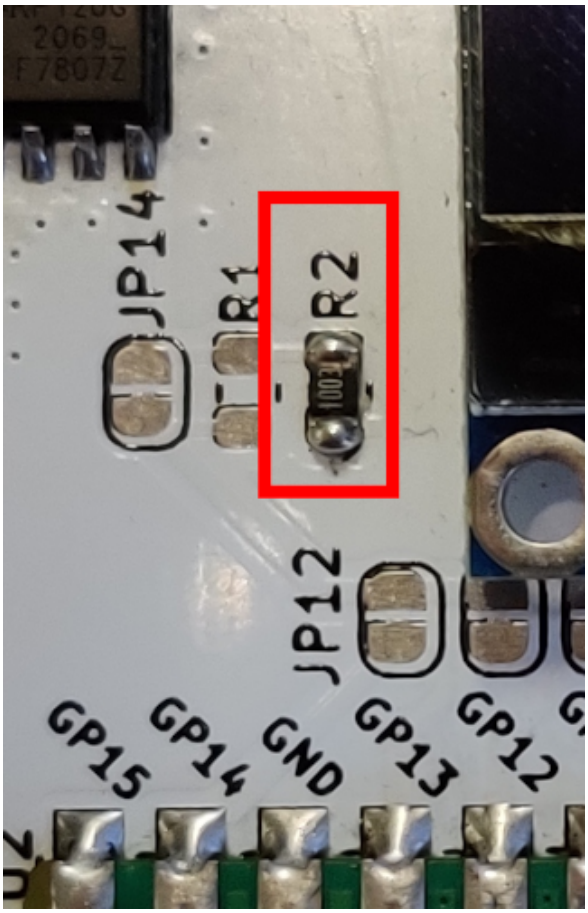


You should now be able to use the botton.

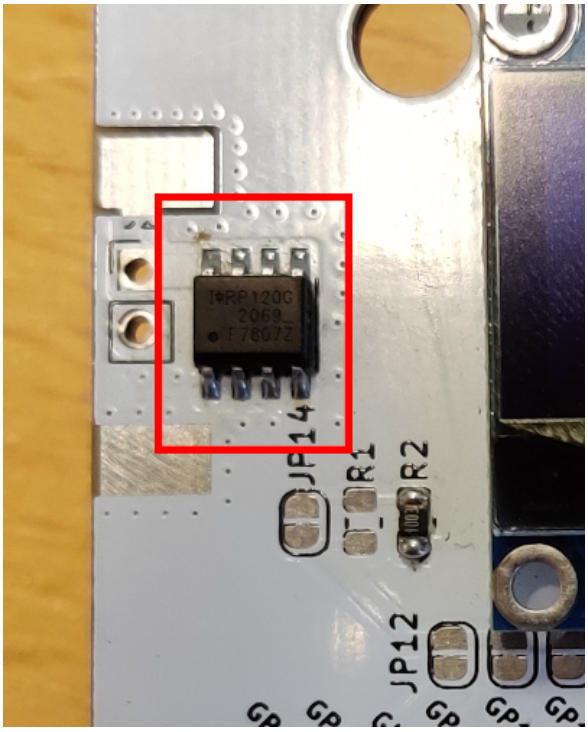
GLITCHIFIER9000

To add GLITCHIFIER9000 functionality:

1. Solder R2



2. Solder unlabeled SOT8 MOSFET:



Ready to glitch!

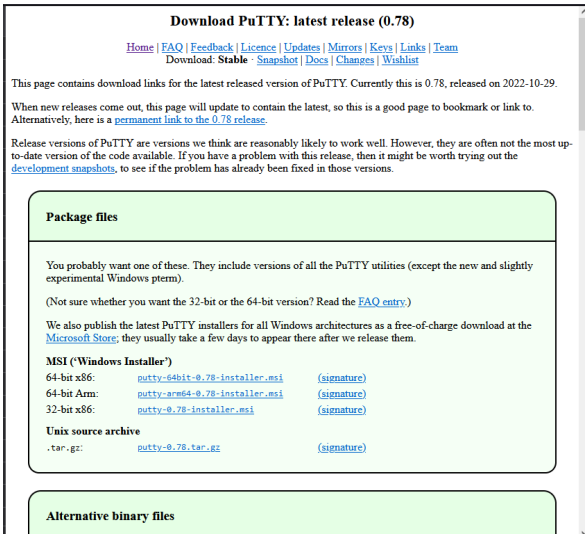
Talk to the badge over USB

1. Plug in micro-usb cable.

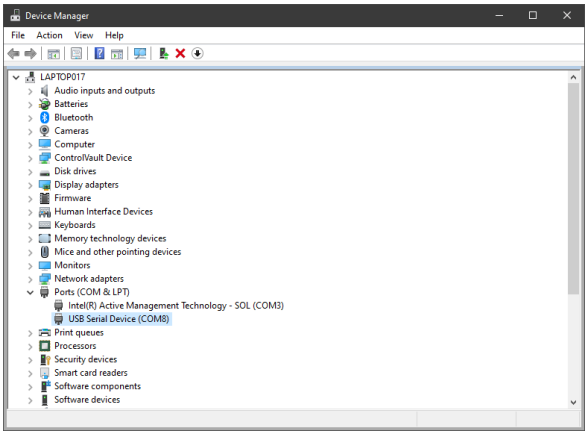
Ready to talk!

On Windows

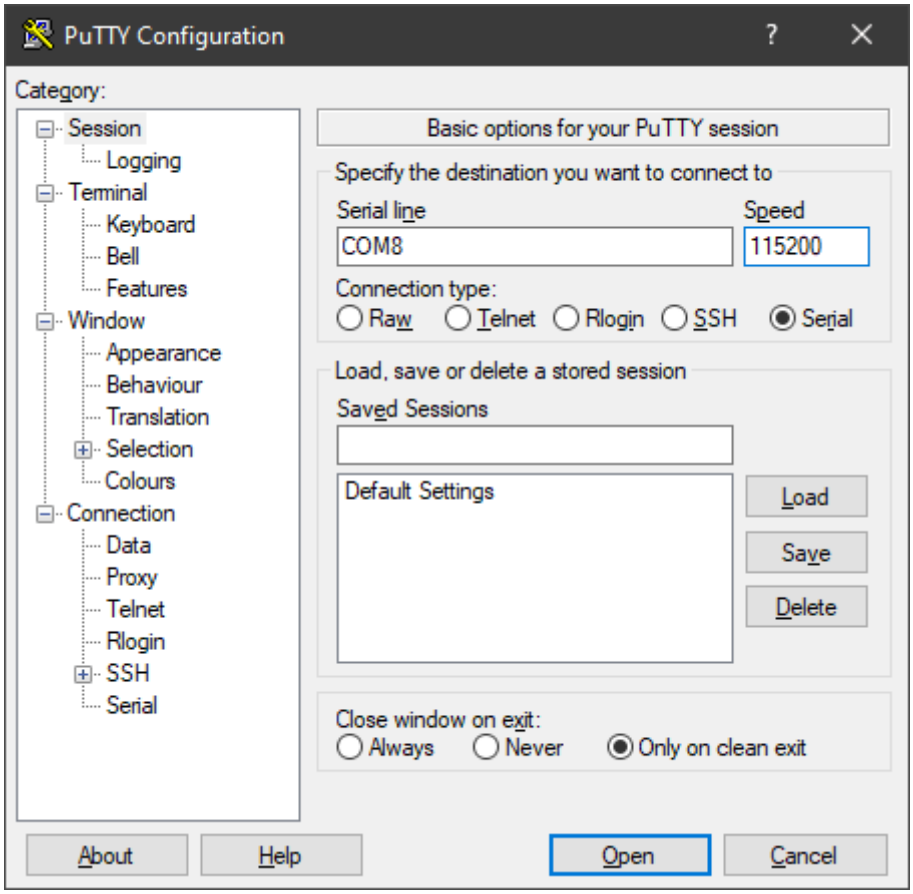
1. Install a program to talk serial, like putty



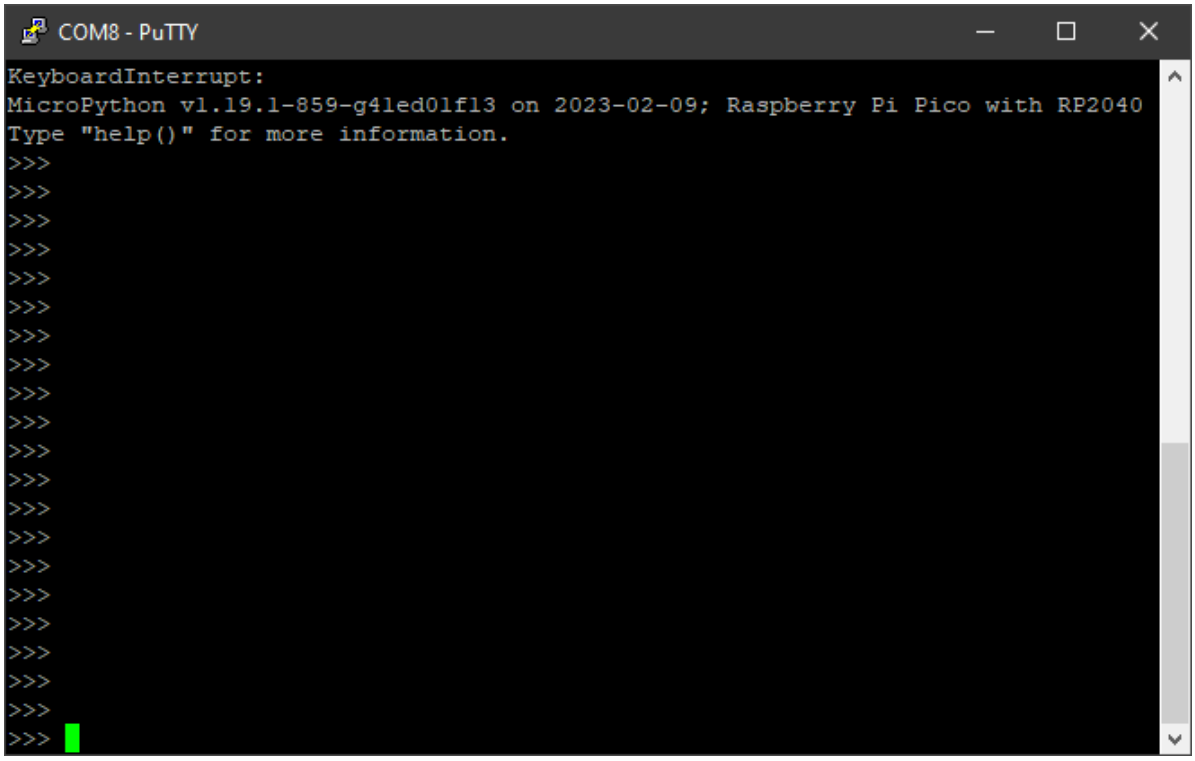
2. Find the COM port that pops up when you plug in the USB cable in device manager



3. Set up that COM port with speed 115200



4. Type some buttons, see what happens (also try CTRL+C and CTRL+D)



Ready to talk!

On Linux

1. You probably know yourself

Set up badge firmware on a plain Raspberry Pi Pico

Set up PICO for badge

1. Set up micropython firmware
   - Boot RPI into bootloader mode (hold BOOTSEL button and plug in USB)
   - Copy micropython `uf2` file to storage device (download yourself or located in `firmware/upython/rp2-firmware/rp2-pico-latest.uf2`)
2. Copy firmware folder to device, for example with `mpytool`
   - `mpytool -p SERIALPORT put firmware/upython/badge/`

To do stuff over serial, connect with `SERIALPORT`, baudrate 115200.

Misc

To build this document in to various formats:

```
quarto render README.qmd --to pdf && \
quarto render README.qmd --to html && \
quarto render README.qmd --to docx && \
quarto render README.qmd --to gfm
```