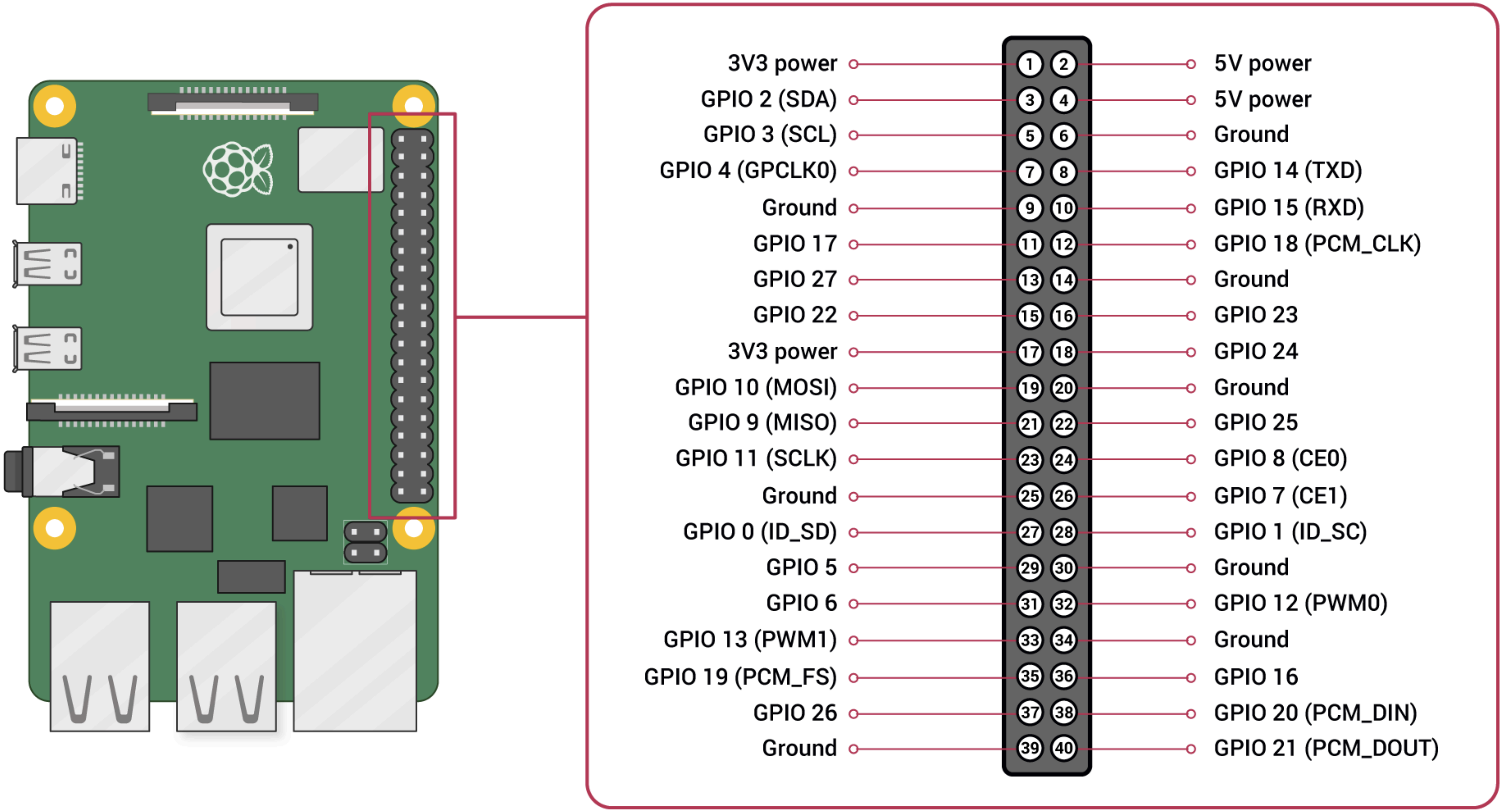
MP FLASHLOADER TOOL

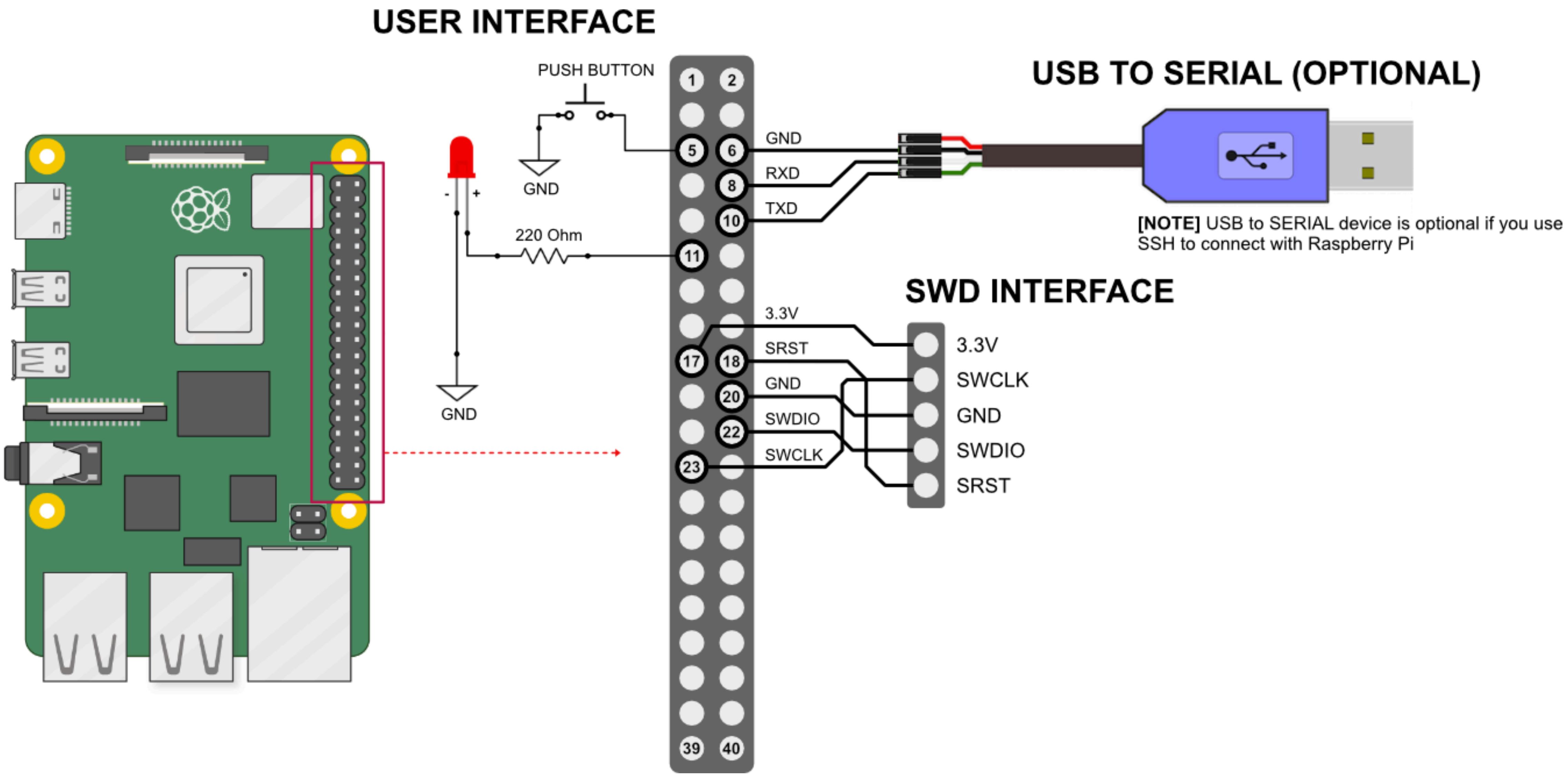
USER GUIDE

Raspberry Pi pinout



3V3 power	1	2	5V power
GPIO 2 (SDA)	3	4	5V power
GPIO 3 (SCL)	5	6	Ground
GPIO 4 (GPCLK0)	7	8	GPIO 14 (TXD)
Ground	9	10	GPIO 15 (RXD)
GPIO 17	11	12	GPIO 18 (PCM_CLK)
GPIO 27	13	14	Ground
GPIO 22	15	16	GPIO 23
3V3 power	17	18	GPIO 24
GPIO 10 (MOSI)	19	20	Ground
GPIO 9 (MISO)	21	22	GPIO 25
GPIO 11 (SCLK)	23	24	GPIO 8 (CE0)
Ground	25	26	GPIO 7 (CE1)
GPIO 0 (ID_SD)	27	28	GPIO 1 (ID_SC)
GPIO 5	29	30	Ground
GPIO 6	31	32	GPIO 12 (PWM0)
GPIO 13 (PWM1)	33	34	Ground
GPIO 19 (PCM_FS)	35	36	GPIO 16
GPIO 26	37	38	GPIO 20 (PCM_DIN)
Ground	39	40	GPIO 21 (PCM_DOUT)

Hardware Setup



USER INTERFACE

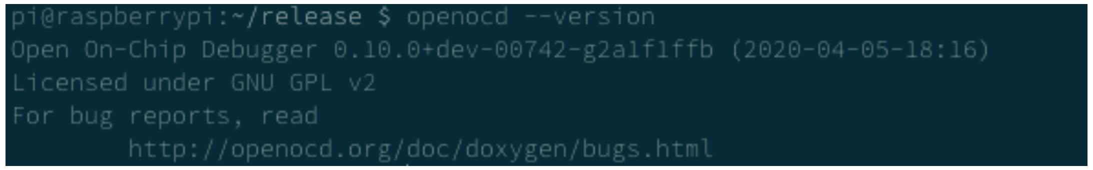
USB TO SERIAL (OPTIONAL)

SWD INTERFACE

[NOTE] USB to SERIAL device is optional if you use SSH to connect with Raspberry Pi

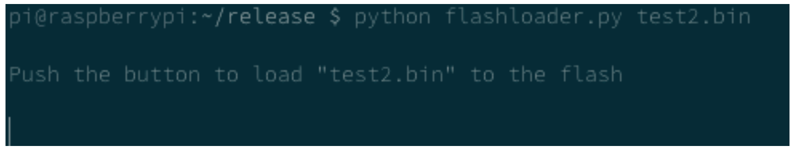
Software Setup

- Copy **flashloader_bundle_v1.tgz** to raspberry pi
- Extract the bundle: tar xvfz flashloader_bundle_v1.tgz
- This bundle contains:
  - flashloader.py (python script to run the flashloader)
  - **source** folder (this folder contains openocd source files)
  - test2.bin (binary file example, you can replace it with your own)
- Install openocd:
  - prerequisite:
    - sudo apt-get update
    - sudo apt-get install git autoconf libtool make pkg-config libusb-1.0-0 libusb-1.0-0-dev
  - cd source/openocd (change to openocd directory)
  - Inside openocd directory run the following commands:
    - ./bootstrap
    - ./configure --enable-sysfsgpio --enable-bcm2835gpio
    - make
    - sudo make install
    - openocd --version (see whether the installation is succeed or not)



```
pi@raspberrypi:~/release $ openocd --version
Open On-Chip Debugger 0.10.0+dev-00742-g2a1f1ffb (2020-04-05-18:16)
Licensed under GNU GPL v2
For bug reports, read
        http://openocd.org/doc/doxygen/bugs.html
```

- Running flashloader.py script:
  - cd to flashloader.py directory
    - **NOTE IMPORTANT**: make sure your “image.bin” on the same directory with flashloader.py
  - run: python flashloader.py your_image.bin

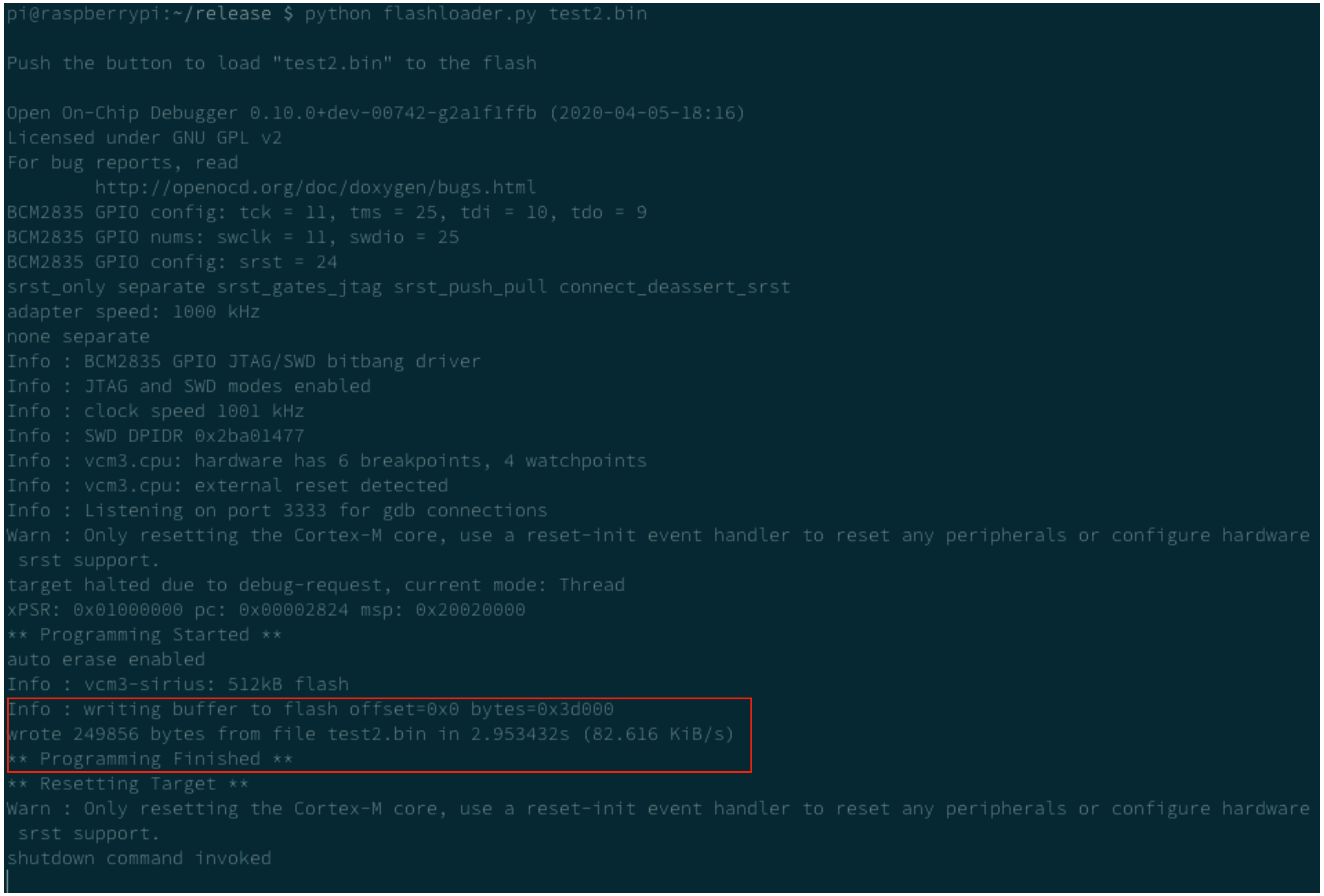


```
pi@raspberrypi:~/release $ python flashloader.py test2.bin

Push the button to load "test2.bin" to the flash

|
```

  - At this point you should see the led is “breathing” on and off, meaning that its ready to flash the image.
  - Push the button and wait until the led is breathing again and we are ready for the next round.

Software Setup

- If everything run smoothly you should see something like this:



```
pi@raspberrypi:~/release $ python flashloader.py test2.bin

Push the button to load "test2.bin" to the flash

Open On-Chip Debugger 0.10.0+dev-00742-g2a1f1ffb (2020-04-05-18:16)
Licensed under GNU GPL v2
For bug reports, read
        http://openocd.org/doc/doxygen/bugs.html
BCM2835 GPIO config: tck = 11, tms = 25, tdi = 10, tdo = 9
BCM2835 GPIO nums: swclk = 11, swdio = 25
BCM2835 GPIO config: srst = 24
srst_only separate srst_gates_jtag srst_push_pull connect_deassert_srst
adapter speed: 1000 kHz
none separate
Info : BCM2835 GPIO JTAG/SWD bitbang driver
Info : JTAG and SWD modes enabled
Info : clock speed 1001 kHz
Info : SWD DPIDR 0x2ba01477
Info : vcm3.cpu: hardware has 6 breakpoints, 4 watchpoints
Info : vcm3.cpu: external reset detected
Info : Listening on port 3333 for gdb connections
Warn : Only resetting the Cortex-M core, use a reset-init event handler to reset any peripherals or configure hardware
 srst support.
target halted due to debug-request, current mode: Thread
xPSR: 0x01000000 pc: 0x00002824 msp: 0x20020000
** Programming Started **
auto erase enabled
Info : vcm3-sirius: 512kB flash
Info : writing buffer to flash offset=0x0 bytes=0x3d000
wrote 249856 bytes from file test2.bin in 2.953432s (82.616 KiB/s)
** Programming Finished **
** Resetting Target **
Warn : Only resetting the Cortex-M core, use a reset-init event handler to reset any peripherals or configure hardware
 srst support.
shutdown command invoked
```