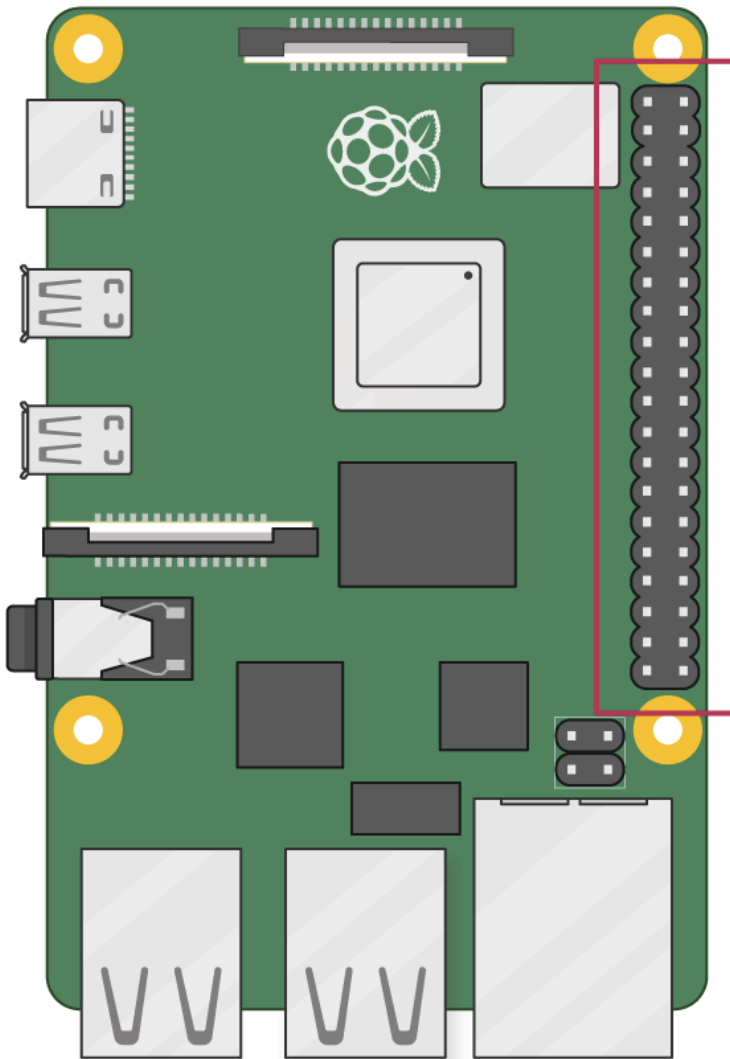


# **MP FLASHLOADER TOOL V2.4**

## USER GUIDE

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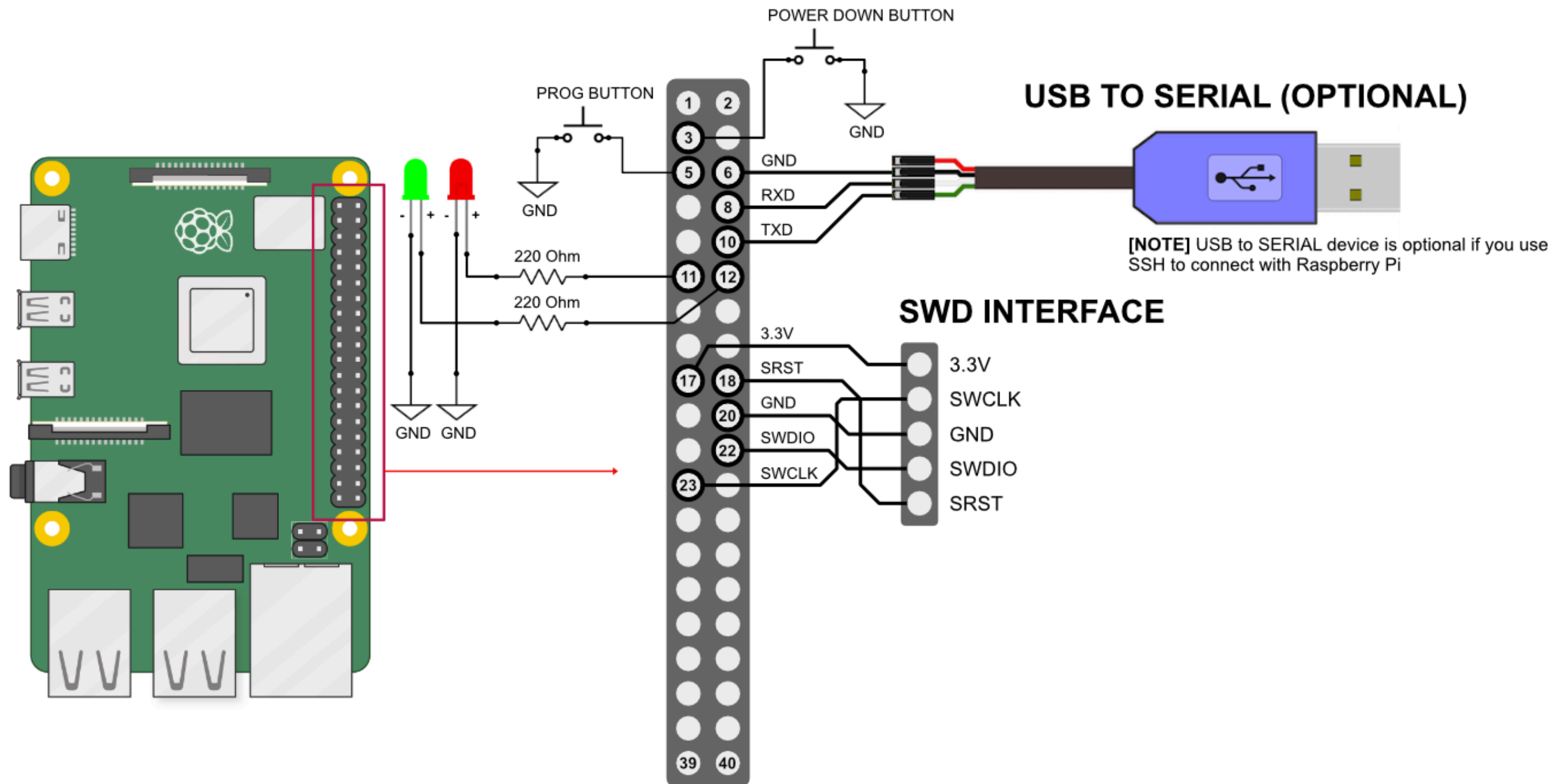
# Raspberry Pi pinout



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



# Software Setup

- Copy **flashloader\_bundle\_v2\_4.tgz** to **/home/pi/** directory.
- Extract the bundle: **tar -xvzf flashloader\_bundle\_v2\_4.tgz**
- This bundle contains:
  - **main.py** (python script to run the flashloader)
  - **source** folder (this folder contains openocd source files)
- 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)
- Install script prerequisite:
  - **sudo apt-get install pmount**
  - **sudo apt-get install ntfs-3g**
  - **sudo apt-get install exfat-fuse**
- Run main.py script manually:
  - **python main.py**

# Software Setup

- Run the script automatically after boot up using "crontab":
  - **Note [IMPORTANT]:**
    - Before you set the script to run automatically make sure you can successfully run the main.py script manually. Type Ctrl+C then 'y' to exit the script when it run manually
  - run: **crontab -e** (to edit the cron table)
  - Select the editor: The first time you run crontab you'll be prompted to select an editor; If you are not sure which one to use, choose **nano** by pressing **Enter**.
  - Then add this line at the end of the file: **@reboot python /home/pi/main.py &**
  - **sudo reboot** (after reboot the main.py will run automatically and the LED indicator will start)
    - Note:

You still can log in to your RPi if you need to do other stuff and it wont affect the flashloader main.py script. In other words the script is still running.

# LED Operation State & Guidelines

State	Status	LED 	LED 	Actions Available	Note
1	No *.bin File or Multiple *.bin Files is detected	<b>Blinking</b>	<b>OFF</b>	Add *.bin file by plug-in the USB drive (with the *.bin file) to RPi and long press the button for ~1 seconds. Make sure there is only one *.bin file in your USB drive.	After press the button for ~1 seconds, the RED led will start or keep blinking. If the *.bin file is successfully added the GREEN led will be ON and RED led will be OFF.
2	Valid *.bin File	<b>OFF</b>	<b>ON</b>	Short clicked the button to start the programming or long pressed the button (~1 seconds) if you want to updated the *.bin file from USB drive.	If you long pressed the button (~1 seconds) the RPi will try to update the current *.bin image in RPi with the *.bin file from the USB Drive. Make sure there is only one *.bin file on your USB drive.
3	In-Programming	<b>ON</b>	<b>ON</b>	None	Wait until one of the LED is OFF to see the programming result.
4	Programming SUCCEED	<b>OFF</b>	<b>ON</b>	Same as state 2.	At this state *.bin is successfully programmed to the MCU.
5	Programming FAILED	<b>ON</b>	<b>OFF</b>	You can retry the programming process by short clicked the button to see if it is still failed. But do not update the *.bin file at this state.	If it's keep failing try to test the other MCU first. It might be the MCU problem.
6	POWER DOWN in PROGRESS	<b>Blinking</b>	<b>Blinking</b>	None	Long pressed the power down button for ~4 seconds (until the GREEN and RED led start blinking) and then wait until those led are OFF. It is safe to wait about 10 more seconds before you completely plug off the power.