Add Powerdevices and Buttons to your Raspberry

To keep the price down, the Raspberry Pi Baird doesn't ship with a power button, yet it's easy to add your own! This guide will show you how to add a power button to your Raspberry Pi that can turn on/off your BATOCERA system.

If you don't want to build your own, several popular commercial options are available. They will add a power switch to your Raspberry Pu, sometimes provide a temperature-controller fan… and add a stylish look to your board.

- Commercial Power Switches
    - provide real power cuts
    - costs are around 10-25 USD
    - usually need some space to build in

- Simple Buttons or latching switches
    - very simple setup
    - low cost
    - no powercut possible

Why is a Raspberry Pi power button important?

You should never "yank" the power cord out of your Pi as this can lead to severe data corruption (and in some cases, physically damage your SD card). Even if BATOCERA is best prepared against file corruption it is recommended to safely shut down your Pi via BATOCERAs Quit Menu or even better, use a power button or switch

> Note: When we "shut down" the Pi, it will send it into a halt state, which still consumes a very small amount of power. This is similar to how all modern computers work. In this guide walk through the process of adding a power button that will both halt and wake the Pi up from a halted state. Additionally, after your Pi has shut down, you can safely disconnect the power supply (should you desire) without the worry of data corruption.

Commercial Power Switches

Here are some commercial powerdevices that are currently supported. These offer a real power cut, that means the Raspberry is really switched off. Usually these small power devices are plugged on top of the Raspberry using it's 40 Pin header. For further install instruction use the links provided.

| Device Name	system.power.switch	Where to buy and additional help to install	SideNotes
ATXRaspi	ATX_RASPI_R2_6	http://lowpowerlab.com/atxraspi/#installation	
Mausberry Circuits	MAUSBERRY	http://mausberry-circuits.myshopify.com/pages/setup	
Pimoroni OnOffShim	ONOFFSHIM	https://shop.pimoroni.com/products/onoff-shim	

Device Name	system.power.switch	Where to buy and additional help to install	SideNotes
msldigital PiBoard r2013	REMOTEPIBOARD_2003	http://www.msldigital.com/pages/support-for-remotepi-board-2013	
msldigital PiBoard r2015	REMOTEPIBOARD_2005	http://www.msldigital.com/pages/support-for-remotepi-board-plus-2015	
UUGear Witty Pi	WITTYPI	http://www.uugear.com/witty-pi-realtime-clock-power-management-for-raspberry-pi	
Retroflag Cases	RETROFLAG	http://www.retroflag.com	**NEW** NESPi4 support! Get more details here
Argon One for RPi4	ARGONONE	https://www.argon40.com/argon-one-raspberry-pi-4-case.html	Get more details here

Simple pushbutton or switches

It is possible to add a button to turn on and turn off your BATOCERA console properly! But how?

Which button to use?

You can add a power button to switch on/off BATOCERA. The button can be either a push button (momentary button) or a switch button (latching switch). Note on the push buttons: some GPIO have resistors pull-up built-in (resistors connected to the + 3.3V), so it is preferable to use switches normally open (abbreviated NO) with these pins.
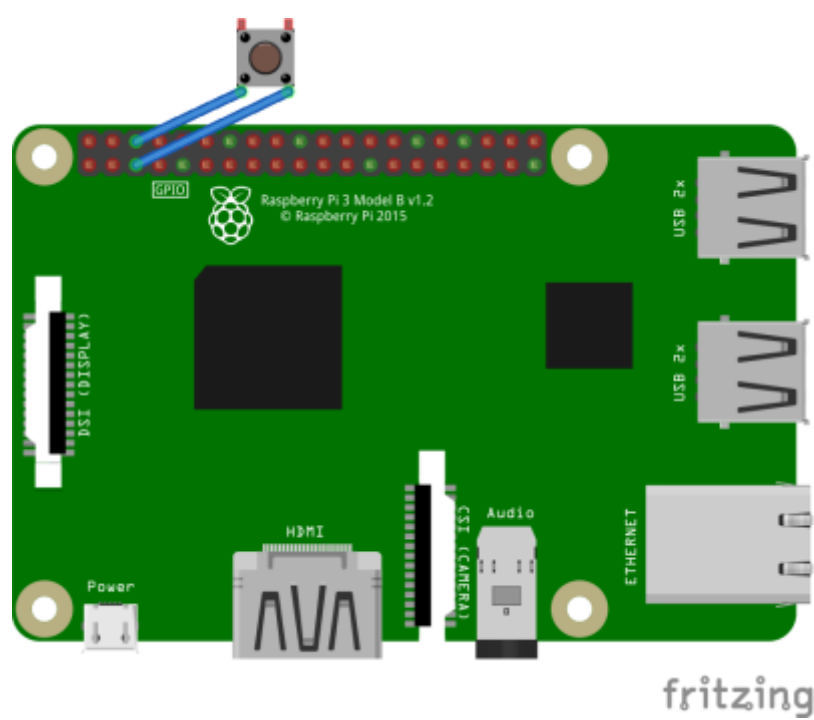
to connect the switch to the Raspberry Pi GPIO, plug a PIN on the GPIO3 (physical PIN 5 above on the left) and another on the mass located just to the right on the right (physical PIN 6):

Activation of the switch

Manual

Check in the table above what is the type of power switch you need.

Then, edit the config file `/userdata/system/batocera.conf` - in the example below with PIN56ONOFF.

- For a latching switch edit batocera.conf with your preferred text editor and add `system.power.switch=PIN56ONOFF`
- Reboot the system
- Alternatively, if you don't want to edit the file and you are logged in with SSH or you've a terminal open then enter

```
  batocera-settings --command set --key system.power.switch --value
PIN56ONOFF
```

Your BATOCERA system can now be turned on/off with a button!

GUI Menu Mode

Get a terminal window by quitting EmulationStation with a Keyboard or get a [access to terminal by SSH](). Now enter

- `rpi_gpioswitch` or
- `/etc/init.d/S92switch setup`

and you will see a terminal windows like in picture down. From there you can select and activate your power or switch device. The script will show you an already activated device (**ONOFFSHIM** in this case) and will later show you a small message box, if the value setup was successfully setted up. After this reboot the device and everything should work fine.
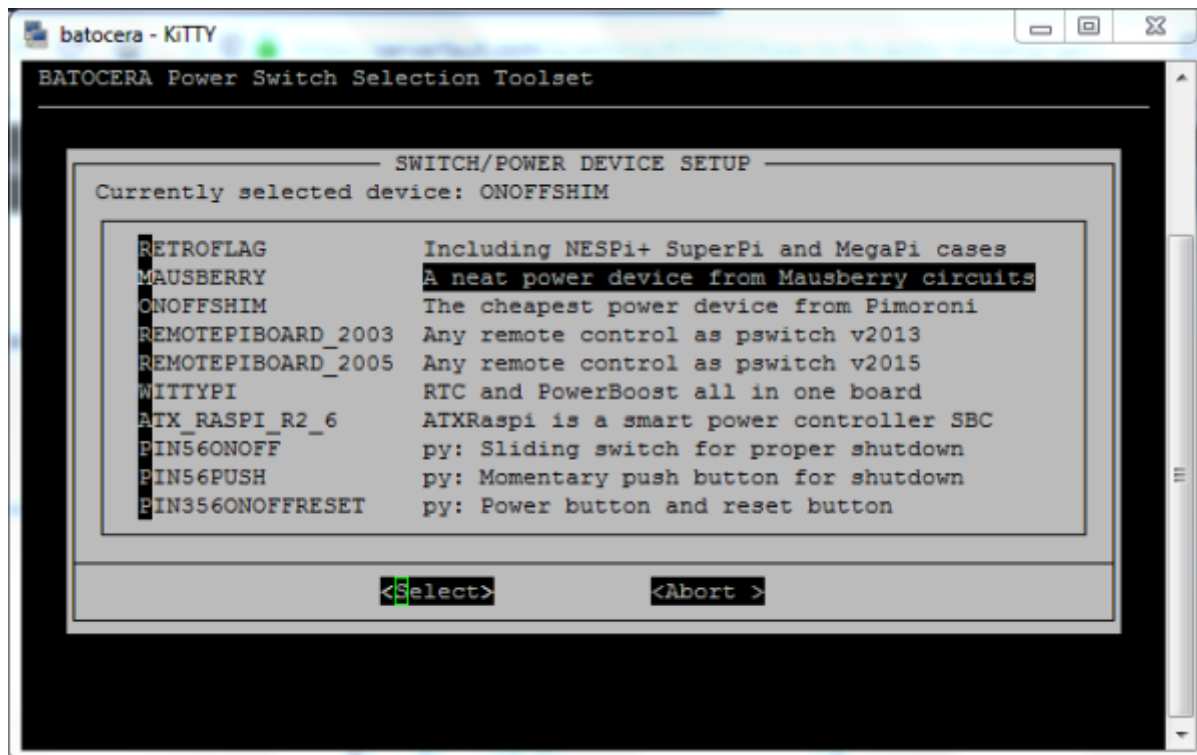
Retroflag

Retroflag is the manufacturer who takes focus on retro case for Raspberry pi series, retro game controller. In the last years they've managed to bring some pretty nice looking housings to the market. These are inspired of gaming devices from the golden area of game consoles. Besides the nice looking there are **always** working buttons for power and reset possible. But you have to take a few steps there.

1. Enable the safe shutdown mode. This small switch depends on the used housing, refer to the manual how to enable the switch
2. Edit `batocera.conf` and set the correct switch mode.
    1. You can edit the config file from SAMBA share with your dedicated text editor
    2. or use SSH and you can edit the config file with `nano /userdata/system/baocera.conf`
    3. or use the GUI mode
3. Activate or Select the correct powerswitch `system.power.switch=RETROFLAG`
4. Reboot, this will activate the Safe Shutdown feature

> **For the NESPi 4 case only**
>
> You have to do an additional reboot! Sorry guys, but we need to make an autoconfig behind the scenes!

Argon One

By default, the fan starts at 55 degrees Celsius. Your can define own temperature/fan speed ladder by

editing the file `/userdata/system/configs/argonone.conf` (it can be also edited from the network, via the SHARE SMB folder).

```
# Configuration file for Argon One Pi4 case
# temperatures are in Celsius
# fan_speed are from 0-100 percent
# syntax is: temp_threashold=fan_speed
# default is:
45=0
55=10
60=55
65=100
```

With this ladder, fan starts at 10% when reaching 55 degrees, and rises up to 100% when reaching 65 degrees Celsius. From the vendor recommendations, it is safe to start the fan at 55 degrees only. Less noisy. ;)

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