Save Power on Raspberry Pi

Save power when running on battery by turning off unused peripherals, or features.

#pi #power

Last update: April 23, 2021

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1. Turn off USB

Turn **OFF** the USB chip:

```
echo '1-1' |sudo tee /sys/bus/usb/drivers/usb/unbind
```

Turn *ON* the USB chip:

```
echo '1-1' |sudo tee /sys/bus/usb/drivers/usb/bind
```

2. Turn off HDMI

Turn **OFF** the HDMI output:

```
sudo /opt/vc/bin/tvservice -o
```

Turn *ON* the HDMI output:

```
sudo /opt/vc/bin/tvservice -p
```

3. Throttle CPU

Reduce the clock of the core by changing some parameters in the */boot/config.txt* file:

/boot/config.txt

```
arm_freq_min=250
core_freq_min=100
sdram_freq_min=150
over_voltage_min=0
```

4. Disable Wi-Fi & Bluetooth

Starting from Raspberry Pi 3, Wifi and Bluetooth are added on hardware, so Raspbian has its method to control these signals in */boot/config.txt* file:

/boot/config.txt

```
dtoverlay=pi3-disable-wifi
dtoverlay=pi3-disable-bt
```

It's correct to use the word `pi3` in the params's value, for other version of RPi.

Soft-block

The `rfkill` command can be used to soft-block the wireless connections:

```
rfkill list              # displays the state of the modules
rfkill block wifi
rfkill block bluetooth
```

but this does not completely turn off the hardware of the WiFi and the Bluetooth module. They will still draw a little power in the background.

5. Disable on-board LEDs

Add below params to the */boot/config.txt* file:

/boot/config.txt

```
dtparam=act_led_trigger=none
dtparam=act_led_activelow=on
```