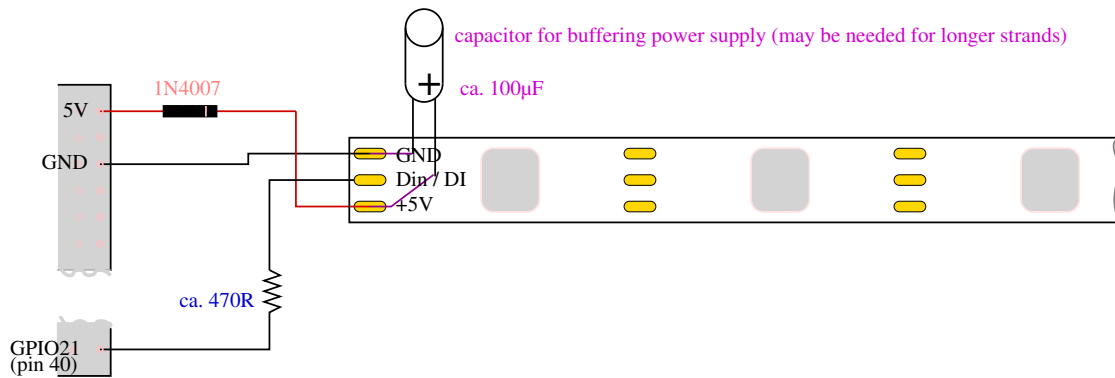


## One sheet instructions for ws2812b\_rpi

Wiring:



Driving WS2812B pixel from a Raspberry Pi makes use of two libraries: `rpi_ws281x` by J. Garff (for low level functions) and `ws2812b_rpi` (for matrix addressing, common interface shared with other instances for AVR or Arduino). I install both of them, so that they are both available for new projects. Maybe I have to type `sudo apt-get install cmake` on a freshly installed RPi, before I'm ready to do these steps::

```
cd /tmp
git clone https://github.com/jgarff/rpi_ws281x.git
cd rpi_ws281x
mkdir build ; cd build ; cmake .. ; sudo make install
cd /tmp
git clone https://github.com/Mattscheibe/ws2812b_rpi.git
cd ws2812b_rpi
sudo make install
cp Examples/Makefile /tmp/Makefile ; cp Examples/main5.c /tmp
```

Now there's a Makefile in `/tmp` as a template for new projects, and a program file example. I copy this example to my project's directory, I type `make` (and change the file name), then `make edit` (and type in my program) and then `make run` (to start it).

- I either connect my strand to pin 40 (GPIO21) (which is the default). I need not change anything on the RPi (except for that I must not try to run digital audio via I2S) and I initialize my strand with `initLEDs(width,length,type,21)`; or with `initLEDsPCM(width,length,type)`; this way I can drive up to 5400 pixels (...).
- Or I connect my strand to pin 12 (GPIO18). In that case, I have to switch off headphone socket PWM audio:

- I create a file `/etc/modprobe.d/snd-blacklist.conf` with the following content:

```
blacklist snd_bcm2835
```

- I comment the corresponding module in file `/etc/modules`.

- I edit `/boot/config.txt` to contain:

```
hdmi_force_hotplug=1
hdmi_force_edid_audio=1
```

- I reboot my Pi.

I initialize my strand with `initLEDs(width,length,type,18)`; or with `initLEDsPWM(width,length,type)`; this way I can drive up to 2700 pixels.

- Or I connect my strand to pin 19 (GPIO10). In that case, if running on a Pi 3 or a Pi 4 (or Pi 400), I have to set its `core_freq` to a fixed value:

- I add to `/boot/cmdline.txt` an entry like:

```
spidev.bufsiz=32768
```

- On a Pi 3 I will add to `/boot/config.txt` something like:

```
core_freq=250
```

- On a Pi 4 or a Pi 400 I will add to `/boot/config.txt` something like:

```
core_freq=500
core_freq_min=500
```

- I add user „pi“ to group „gpio“: `sudo adduser pi gpio`

- I reboot my Pi.

I initialize my strand with `initLEDs(width,length,type,10)`; or with `initLEDsSPI(width,length,type)`; this way I can drive up to 5400 pixels. (If I use more than 96 pixels, RPi will use DMA transfer which, again, imposes this on me...)