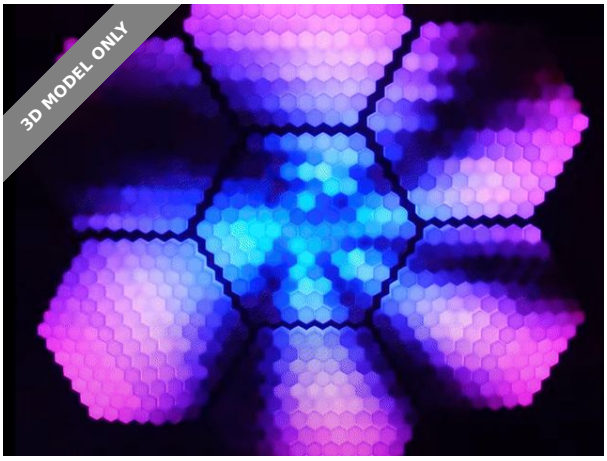


PrismLume 7XL

f flipsht

VIEW IN BROWSER

updated 1. 7. 2024 | published 1. 7. 2024

Summary

I liked the original so i made it bigger by stitching 7 of them in to one.

Hobby & Makers > Electronics

Tags: lamp leds esp32 ledstrip wled

Here is my take on a XL 7 panel version of the PrismLume project by How To Homemade

I had a large space on a wall to fill, so i made it bigger!
A Cople of things to note:

- You need to use a ESP32.
  ESP8266 does not have enough memory.
- As the total of LEDs in the entire strip exceedes what a single output can do we have to split the chain in to two or more outputs.
  I split mine in two, at about half
- I recommend using a 12V type strip at this is a lot of leds and potentially a lot of amps.
  I used WS2815 strips, (you need 15m, or three 5m spools)
- It can be a bit tight running all the wires all over the place, so a BUS for the power is a good option. see my red and black arrows.

=== Hardware ===

15m of WS2815 60leds/m. (3x 5m spools)
1x 12v 5A PSU
1x ESP32 (hopefully)
1x 12v to 5v converter (giving the ESP 12v makes it fart...)
98x M2x4mm countersink screws
98x M2x2.5x3.2 heat set insert

You probably dont need to fill all the screw holes, i used 3 screws on each panel.
Thing is heavy, omit screw at your own risk. ;)
=== Printing ===

You'll need:
7x Base
7x Cover Ring
7x Grid
889x Caps
Optional for hanging on wall:
5x Base
1x Base with ear - Right side
1x Base with ear - Left side
For the Base, Cover Ring and Grid
Use something dark preferably black to stop light leakage.

For the Caps:
White, natural white.
eSUN PLA+ White is perfect.
Do not use Cold White as it blocks too much light.
All parts can be printer without supports.
(you might have to flip the Cover ring in the slicer)

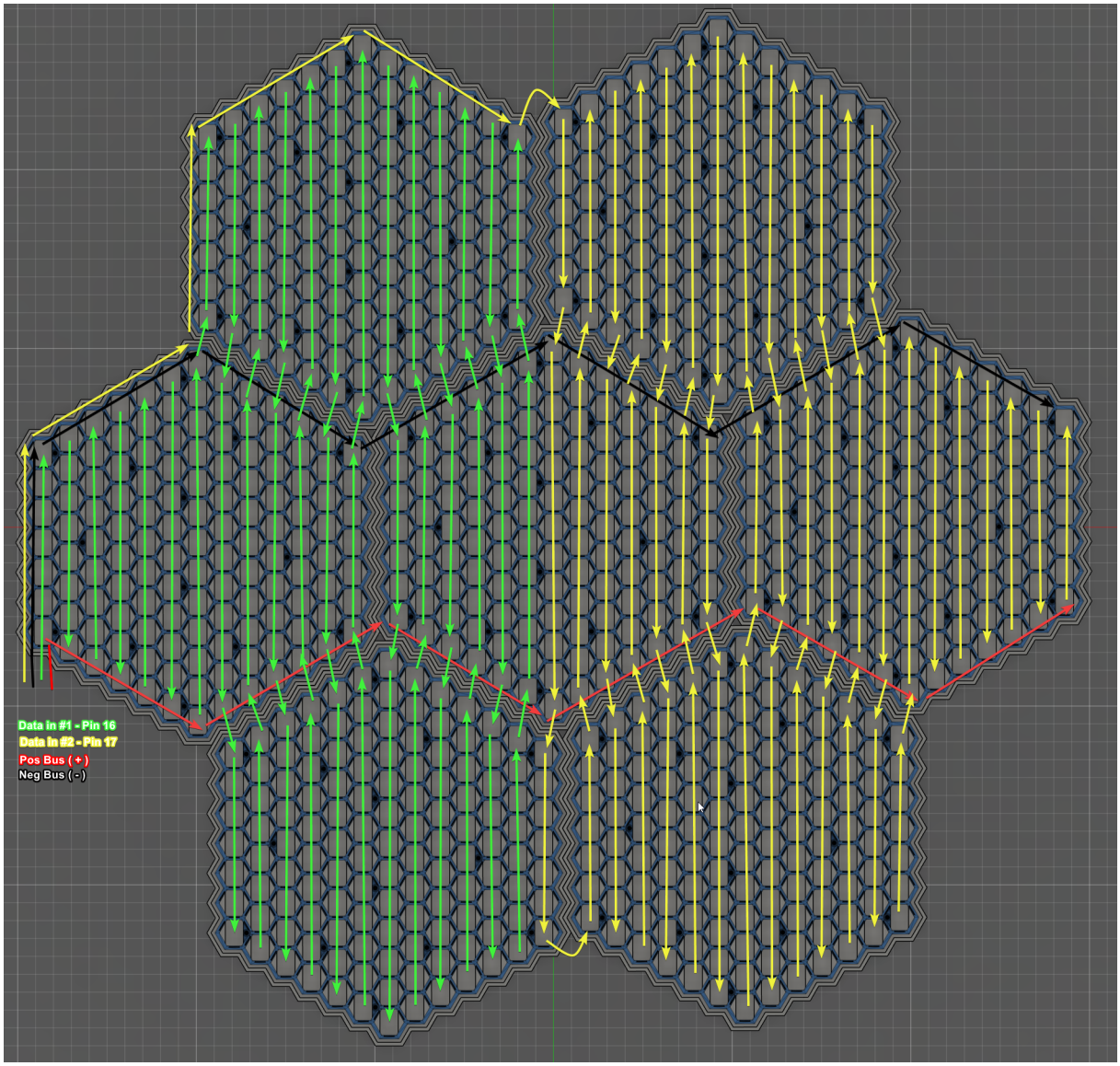
=== Construction ===

I didn't do anything fancy in order to stick the panles to eachother.
i just used a un-healty ammount of super glue and but-joined them.
You most probably have to poke some holes here and there in order to get wires trough some places, depending on how you choose to do the power wiring.
Using a soldering iron to poke trough will melt and fuse the panels as well.

=== Wiring ===

Take note of the positive and negative power buses to deal with Voltage drop.
And the split in the middle to make two chains of output on the ESP32.

The Pin 17 wire needs to be routed trough to the top panel.
Other than that, the wiring information from the original project holds true.



=== Configuration ===

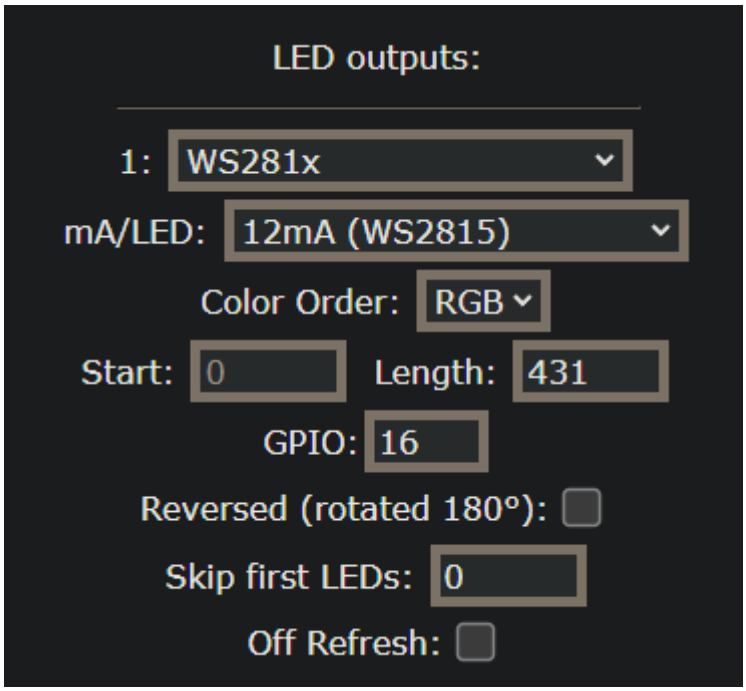
I will go trough the steps to configure this as i dont want to share my config backup.
The backup will contain my wifi settings and thus make your device unreacable when you try to load it.
So, I'll split this in to what page this is in the WLED ui.
Remember to save after each section!

Install WLED

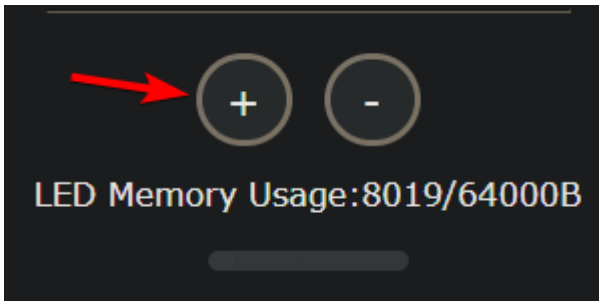
1. Grab a USB cable and you ESP32, and plug them in to your computer.
2. Go to https://install.wled.me/ and install WLED on your ESP32
   (If you have any problems, check out the first part of this tutorial)

In LED Preferences:

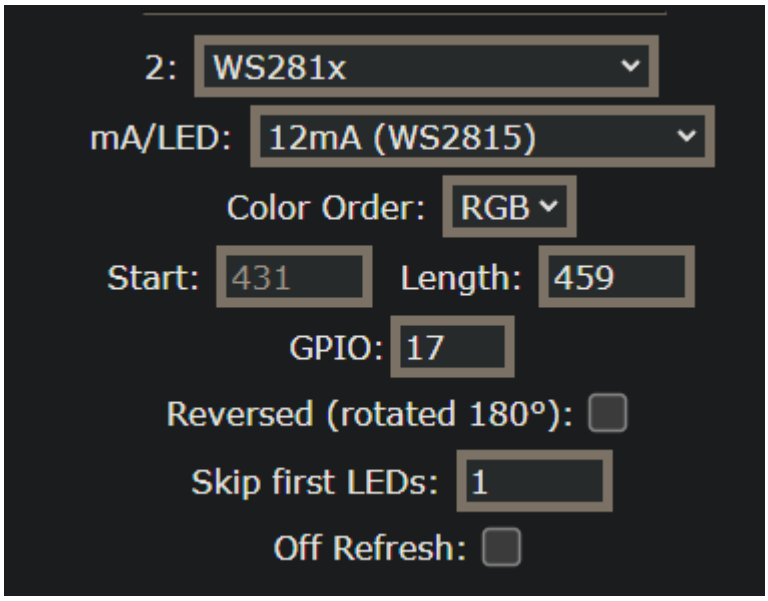
For the first LED output take note of;
mA/LED = 12mA (WS2815)
Start = 0 and Length = 431
GPIO should reflect what you are using on the physical ESP32 (16 in my case)



Then click the + buttin to add another output.



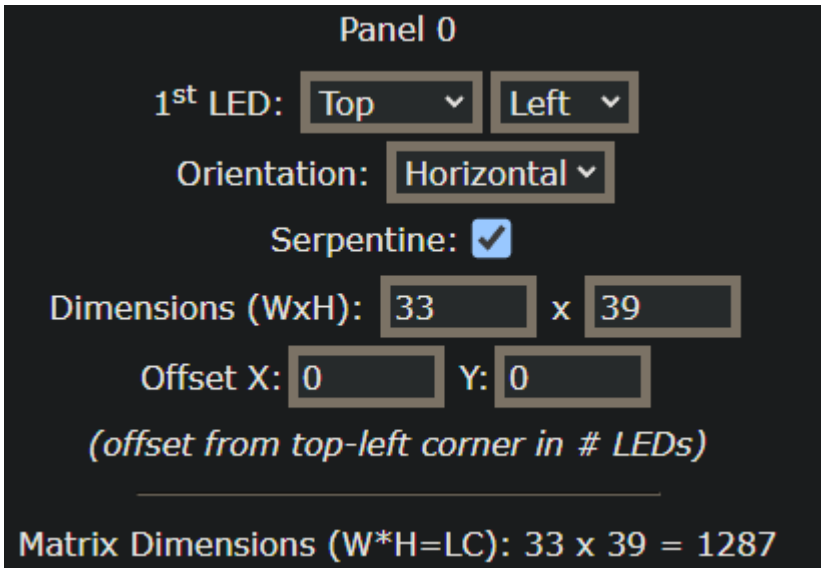
For the second Output:
Set the WS2815 under mA/LED
Start = 431 and Length = 459
GPIO should reflect what you are using on the physical ESP32 (17 in my case)
Skip first LEDs = 1 ← **This is very important or your whole mesh will be mesed up.**



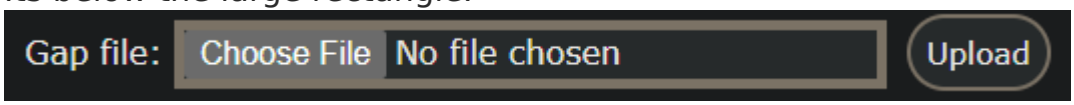
Then go to the top or bottom and hit the **Save** button.

In 2D Configuration:

Scroll down to **LED panel layout**
Dont mess with the “1st LED”, even if its wrong. We'll fix that later.
Make sure Orientation is **Horizontal**
Select **Sepentine**
Dimensions should be **W=33** and **H=39**
No offset.



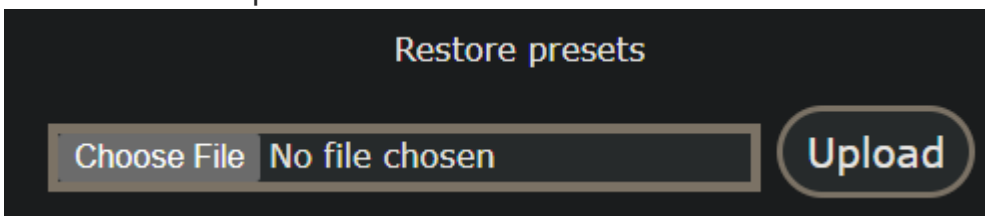
Scroll down to the bottom and fint the Gap file upload section.
Its below the large rectangle.



In the downloaded files there should be a .Zip with a file named **“2d-gaps.json”**
Upload that file and click Save at the top or bottom of the page.

In the Security & Updates:

Scroll down to **Backup & Restore**
in the Restore Presets box, upload the **“Big Hex presets Working.json”** file from the .Zip archive.

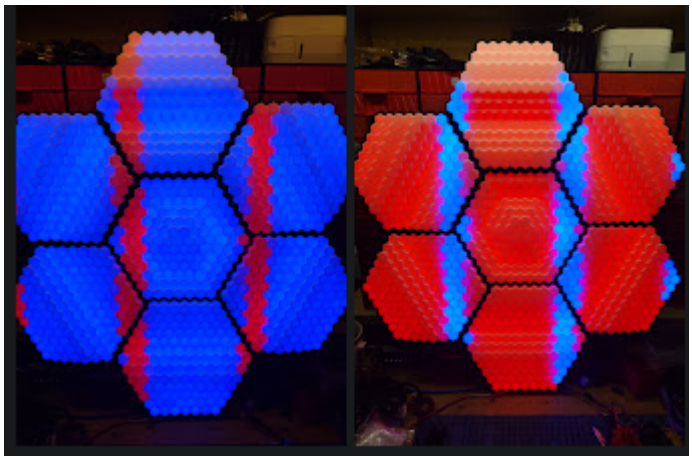


Hit save...

=== See if it works! ===

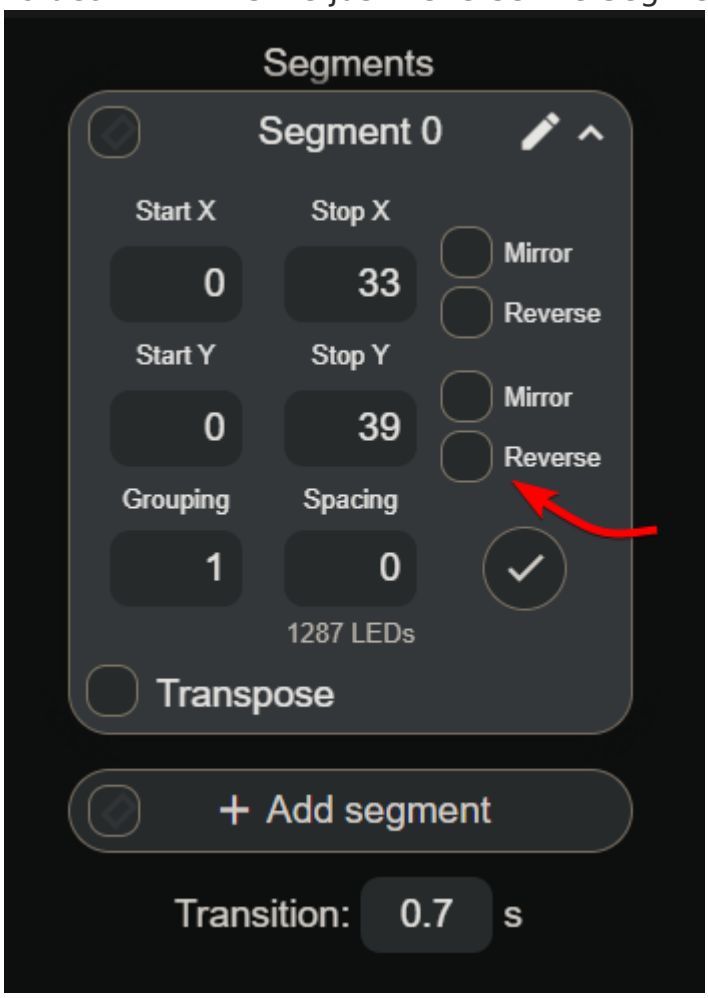
The presets contain a couple good tests, one is the Black Hole.
The white dot should be perfeclty in the middle.

You also have Solid Pattern 1 and 2.
These will show if and where you might have a issue.



Finally:

And i said we'd fix the first LED setting thing.
Most animations this don't matter, but some do, like the fire and rain ones.
To deal with this we just Reverse the Segment settings on the main page.



This remix is based on

PrismLume

by How To Homemade

Model files

Caps 4 files

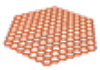
small-cap.stl

medium-cap.stl

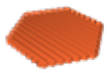
large-cap.stl

extra-large-cap.stl

cover-ring.stl

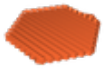


grid.stl



base.stl

base-with-ear-right-side.stl



base-with-ear-left-side.stl

Other files

extra-files-gap-and-preset.zip

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