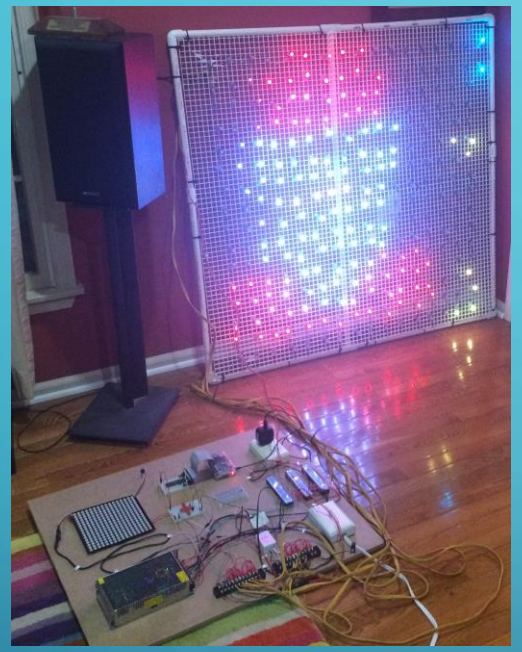
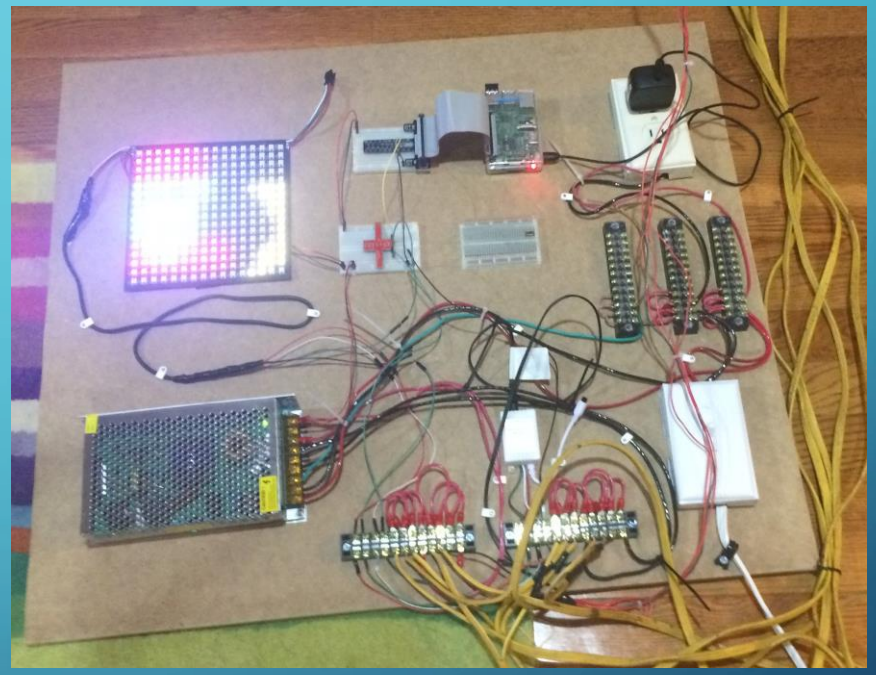
RASPBERRY PI

UTILIZING A RASPBERRY PI 3 TO CONTROL WS2811 NEOPIXELS

LEVERAGING PI 3 TO CONTROL MATRIX



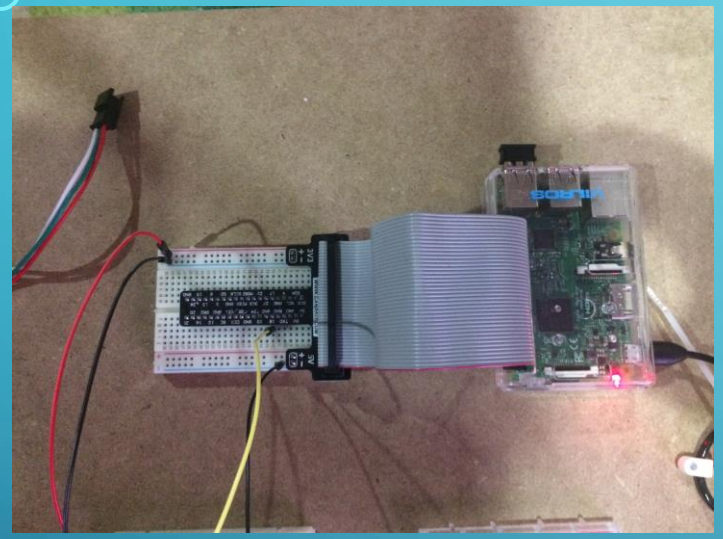


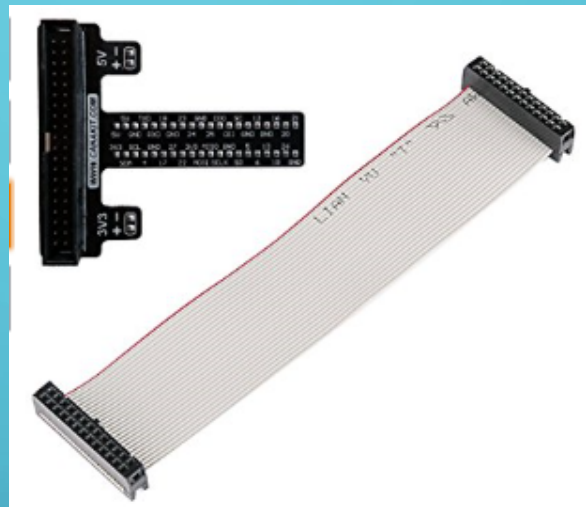
https://www.raspberrypi.org/blog/tag/andrew-oakley/

USING WS 2811 BULLET PIXELS

HTTPS://WWW.AMAZON.COM/GP/PRODUCT/B01AG923GI/REF=OH_AUI_DETAILPAGE_O00_S00?IE=UTF8&PSC=1

CONNECT PI TO CANAKIT EXPANDER





Roll over image to zoom in

CanaKit

CanaKit Raspberry Pi GPIO Breakout Board / Cobbler Bundle (40-Pin T-Shaped - Assembled)

79 customer reviews | 7 answered questions

Price: $18.95 Prime

Your $30.03 Amazon.com Gift Card balance can cover the cost of this item. Learn More.

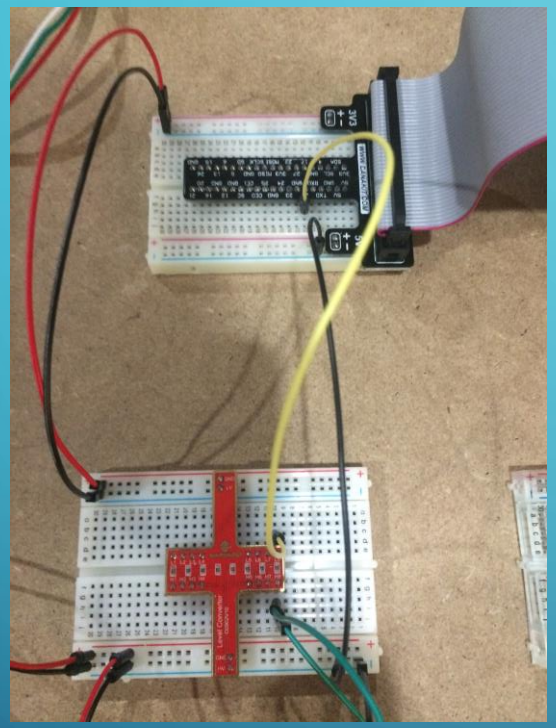
In Stock.

Sold by CanaKit and Fulfilled by Amazon. Gift-wrap available.

- Includes CanaKit 40-Pin T-Shaped (Assembled) Cobbler and 40 pin Ribbon Cable
- Includes GPIO Quick Reference Card
- Includes Jumper Wires, Breadboard
- Includes RGB LED, 8 x LEDs (Blue/Red/Yellow/Green), 15 x Resistors, 2 x Push Button Switches, CanaKit General Guide for Beginners to Electronic Component
- Compatible with the Raspberry Pi 1 Model A+, B+ and the new Raspberry Pi 2!

https://www.amazon.com/gp/product/B011D06Y4G/ref=oh_aui_detailpage_o06_s00?ie=UTF8&psc=1

CONNECT PI GPIO 18 TO LEVEL SHIFTER



Roll over image to zoom in

SunFounder

SunFounder 8 Channel Logic Level Converter Bi-Directional Shifter Module 5V to 3.3V for Raspberry Pi and Arduino

2 customer reviews

Price: $5.99 Prime

Your $30.03 Amazon.com Gift Card balance can cover the cost of this item. Learn More.

Only 1 left in stock.

Sold by SunFounderUS and Fulfilled by Amazon. Gift-wrap available.

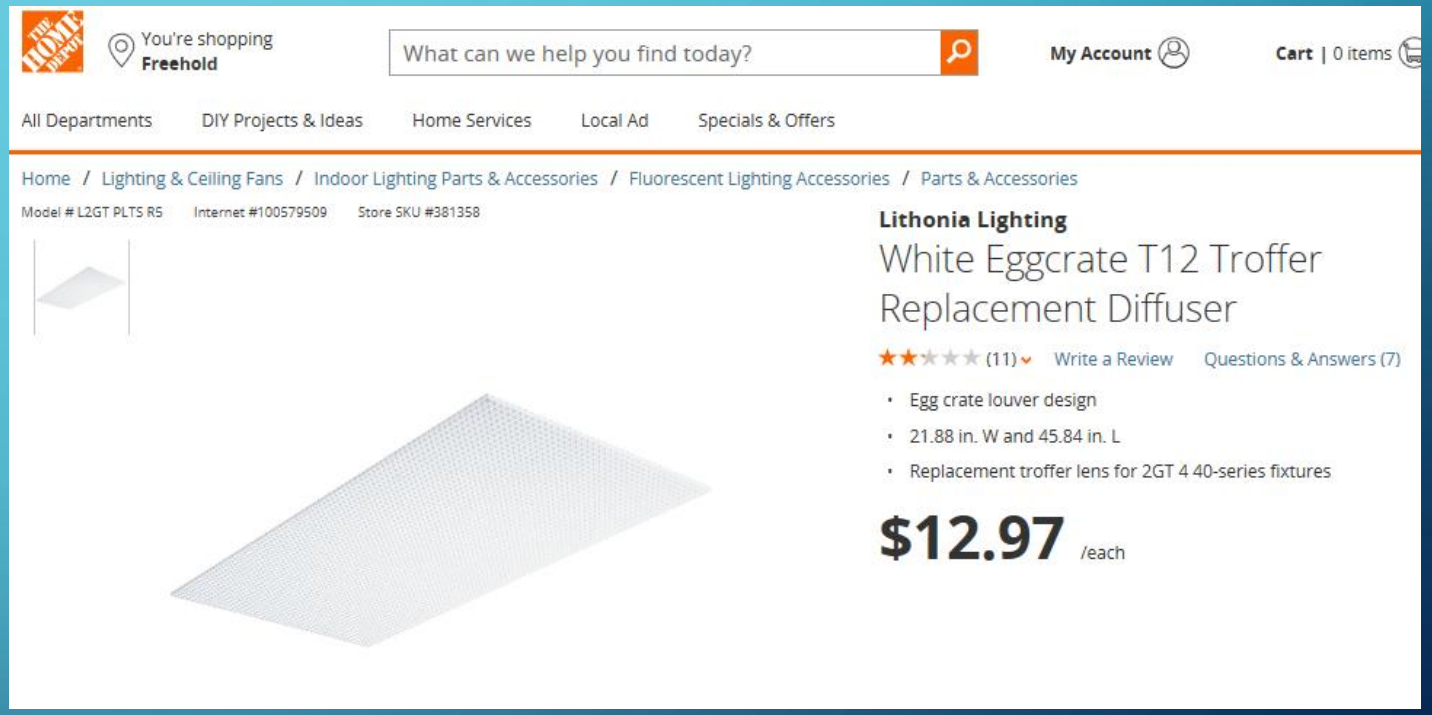
- It is a mini bidirectional logical level converter , micro size in 32.58mm x 53.26mm.
- Designed in a distinct cross shape, it can be inserted into the pin sockets of a MB102 bread board.
- With 8 channels, it can convert between high level and low level.
- Working with 5V-3.3V or 2.8V -1.8V devices.
- HV inputs high level, LV inputs low level and GND is connected to the common ground wire.

https://www.amazon.com/gp/product/B01JZ6SBWI/ref=oh_aui_detailpage_o06_s02?ie=UTF8&psc=1

CONNECT WS 2811 RED (5V) & BLUE (GND) WIRES TO POWER SUPPLY

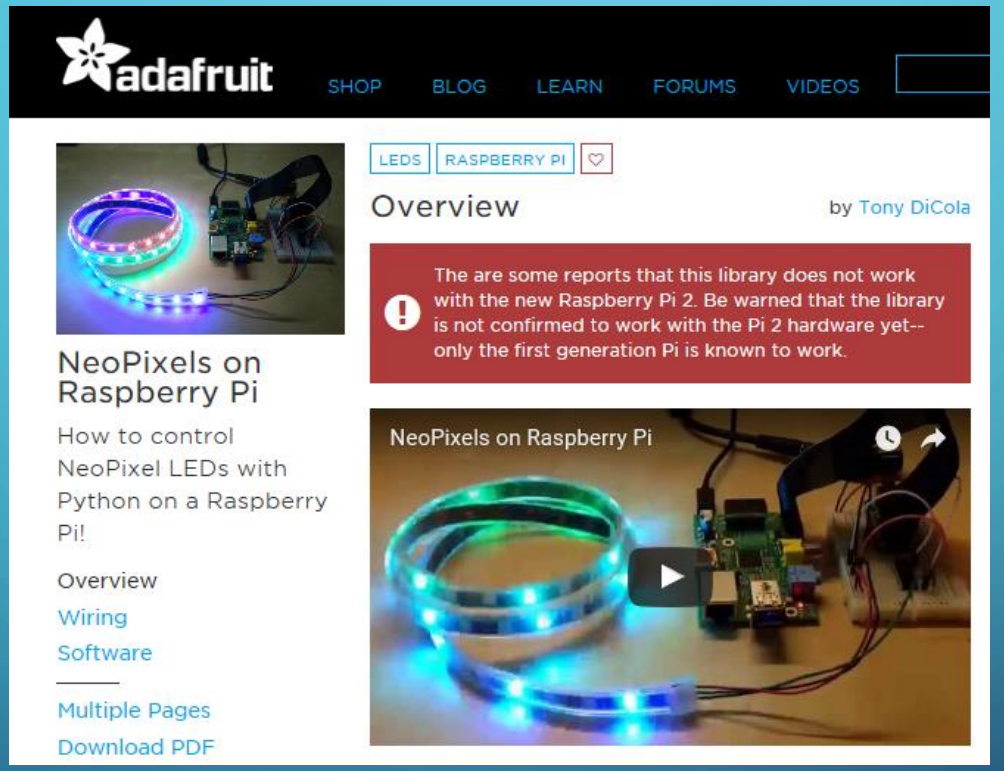
https://www.amazon.com/gp/product/B01HTM53W6/ref=oh_aui_detailpage_o02_s00?ie=UTF8&psc=1

MY GRID IS MADE FROM LIGHT DIFFUSER PANELS & PVC TUBING



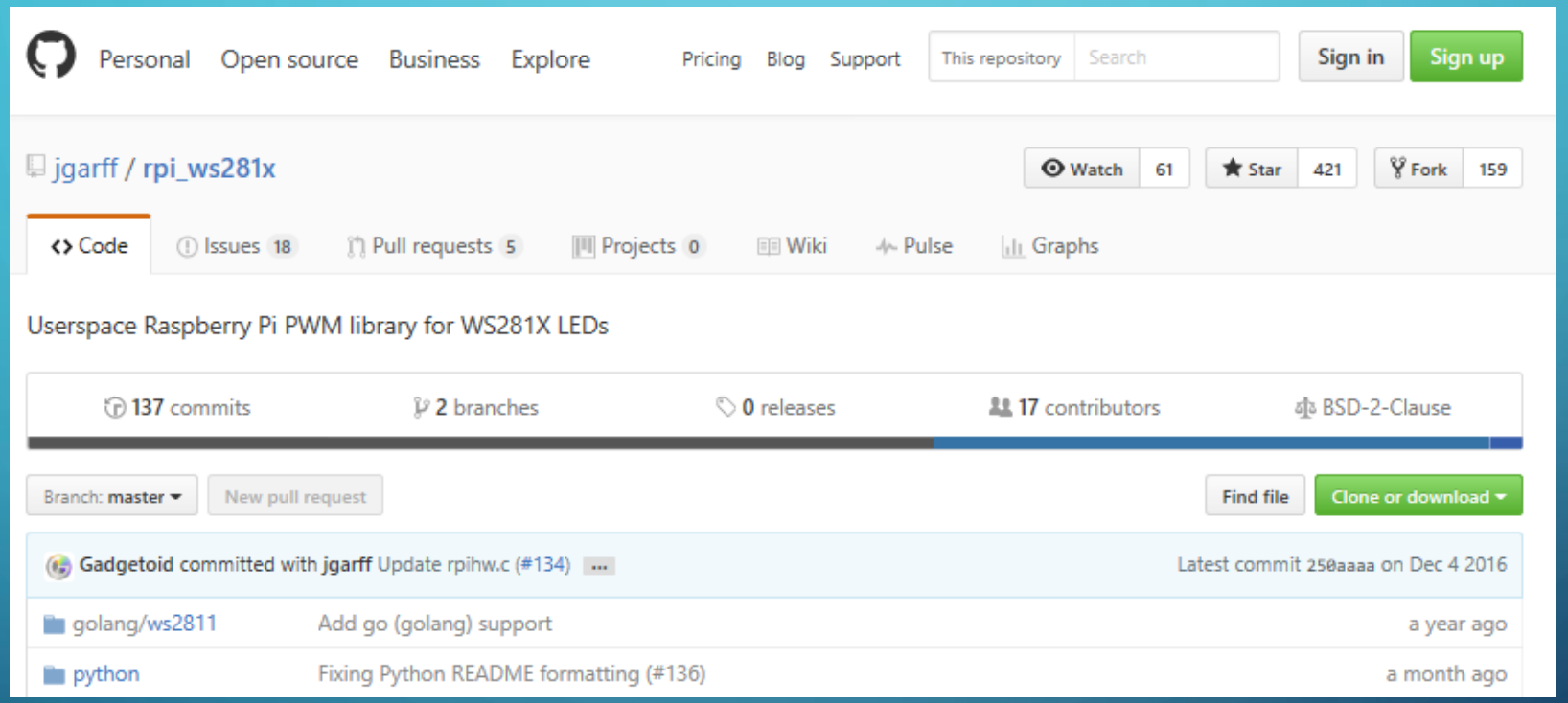
http://www.homedepot.com/p/Lithonia-Lighting-White-Eggcrate-T12-Troffer-Replacement-Diffuser-L2GT-PLTS-R5/100579509

ADAFRUIT NEOPIXEL WIRING INSTRUCTION



https://learn.adafruit.com/neopixels-on-raspberry-pi?view=all

LEVERAGING JEREMY GARFF'S GITHUB LIBRARY



https://github.com/jgarff/rpi_ws281x

AND ANDREW OAKLEY'S .PNG CONVERTER

The Matrix Program

Skip to the chase - here's my program:

- ledmatrix.zip - complete archive with program, Christmas and Hallowe'en sample files
- ledmatrix.py - download program only
- ledmatrix.py - view in browser
- christmas.png - sample image, which looks like this:

- christmas.txt - instructions to animate the image

As well as the rpi_ws281x library, you will need to install Python imaging:

```
sudo apt-get install python-imaging
```

You can use the program as follows:

```
sudo python ledmatrix.py christmas.png
```

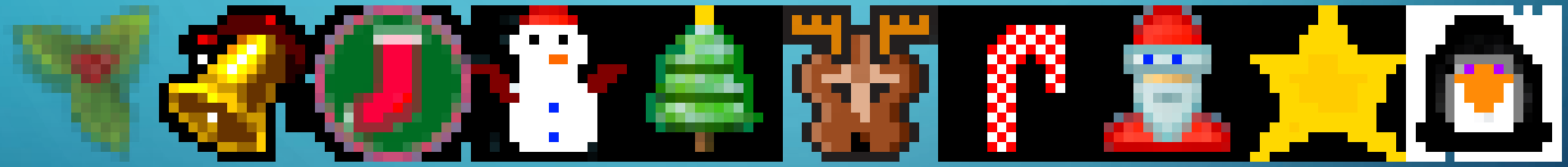
...where:

- `sudo` is optional if you are running Raspbian Jessie or newer
- `python` is probably Python 2.7. Feel free to email me with a Python 3 version - andrew@aoakley.com
- `christmas.png` is your image file. Minimum 12 pixels wide by 8 pixels high. Wider images will be scrolled from right to left. The program will attempt to resize taller images to fit (often with amusingly/artistically blurry results) but the aspect ratio must be landscape (wider than they are tall). If you want to animate the image by providing an accompanying .txt file, then you want it to be *exactly* 8 pixels high.

The program *should* be adaptable to a matrix of any size. In theory. Do let me know how you get on, if you try that.

http://www.aoakley.com/articles/2015-11-18-raspberry-pi-christmas-led-matrix.php

AND PAINT.NET TO CREATE THE IMAGE



http://www.getpaint.net/download.html