

## RGB Mega Tree WS2811 Strips

The RGB Mega tree was constructed with WS2811 LED strips. The center pole is telescoping square tube and a round plate at the top to hold a Topper sphere.

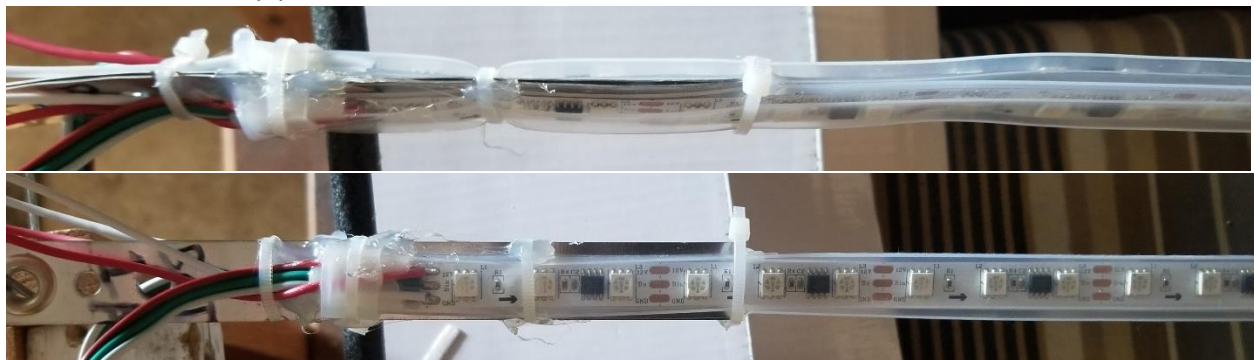
The Mega is defined in Xlights as 16 strings with 270 Degrees. I have 4 data lines from the Falcon F16 V3 to feed data every 4 strings at the bottom. The data lines are 75 to 100ft from the F16V3 controller.

There are two boxes at the base each containing 2-42Amp 12V power supplies for a total of 4 x 42 Amp supplies. I added cooling fans to each of the boxes, although this seems overkill. Some of my other power supplies get quite warm and need ventilation.

What I did differently, Each string as actually 2 WS2811 strips attached back to back. I like this because it is very bright. If there is some wind or breeze, the strings can rotate and the tree still looks good in the display. I run the same data to both strands using a Y connector. I power Each stand at the lower end. My original plan was to use the two stings differently, hence, I am using 4 ports on the F16V3 when I could use 2 ports.



I attached them at the ends with plumber pipe hanger steel strapping. I folded the steel strapping over and pressed 2 steel grommets into each end. I put notches into the steel strap to hold the zip ties in place. I used hot glue gun to secure the zip ties and the wiring to the metal strapping. 3 inch white zip ties should be snug but not too tight. The zip ties on the Wires I leave loose until I get the hot glue squeezed in then I tighten the zip ties into the glue. The top grommet is used for a steel screw attachment to the top plate.



The strands are attached with a screw to the top plate. The bottom of the strands are held down with a Bungie (smallest available at Harbor Freight) to a 12 inch spike in the ground (lowes 12in spike). I use hundreds of zip ties which I get at Harbor freight. I also attached the two LED strips together along the length with a 3 inch zip tie but only barely snug. I used a drop of permatex silicone RTV to hold the zip

tie in place to the silicone tube enclosed WS2811 strips. [Amazon Permatex 80050 Clear RTV Silicone Adhesive](#)



4x 42 Amp Power Supplies. I used tab Quick Disconnects that seemed to work well. I was prepared to switch to Anderson Powerpole connectors rated at 45 Amps. I added a ventilation port and some fans I found on Amazon. The wiring to the Tree strands is 10 Awg landscape wire with connectors.

BOM for Power Boxes ( ordered from 2 different Aliexpress suppliers)

Power SupplyA [Plant Light Factory Store](#) I liked the quality of A better than B

Power SupplyB [XINQI YQXINQIDZ Store](#)

Enclosure Hammond CHKO12126 [Newark](#)

Enclosure, Hinge Door, Quarter Turn, Knockouts, Type 1, Electrical / Industrial, Steel

I sealed the knockouts with silicone caulk and formed a rain roof with aluminum roof flashing. I cut notches in the bottom for the wiring to exit and too allow air to enter. I used liquid Electrical tape to coat the edges. [Amazon Liquid Tape](#)

I used super magnets from Amazon to attach these units to the square steel tub that is the center support for the Mega tree. [Amazon Super Magnets](#)

WS2811 LED Strips [Aliexpress Sage LED store](#) I used the Sage store several times and I've been happy.

Power connectors for WS2811 Strips [Amazon 18AWG Power Pigtail 12V 5A](#)

Spice connectors IDC [Amazon Insulation Displacement Connector](#) This is for the 10 AWG main power lines to pigtail connectors; However I use these types (just smaller) for the pigtails to strips.

BUD INDUSTRIES IPV-1115 [Newark](#)

Enclosure Accessory, Polycarbonate, External Vent, NEMA Box Enclosures

Cooling 12V fans from Amazon [Fan 60x60x10 mm DC 12V](#)

I use Ethernet Patch cords to carry data long distances. I have had good success with 75 and 100ft lengths. I buy the patch cords at monoprice and wait all year for them to go on sale. Often, different colors are much cheaper. [Monoprice Ethernet Patch cables](#)

I made interfaces to connect Ethernet cables to F16V3 and to JST sm connectors. JST sm are the connectors on the WS2811 LED strips.

RJ45 pc board [Amazon RJ45](#)

RJ45 Connectors [Amazon RJ45 connectors](#)

Interface pair image.

This shows both ends for connecting to the Ethernet patch cable. I solder 4 pins to the portion that interfaces with the F16V3 for structural support. I usually leave the power connection open from the F16V3 because I need to inject power to all of my elements.

