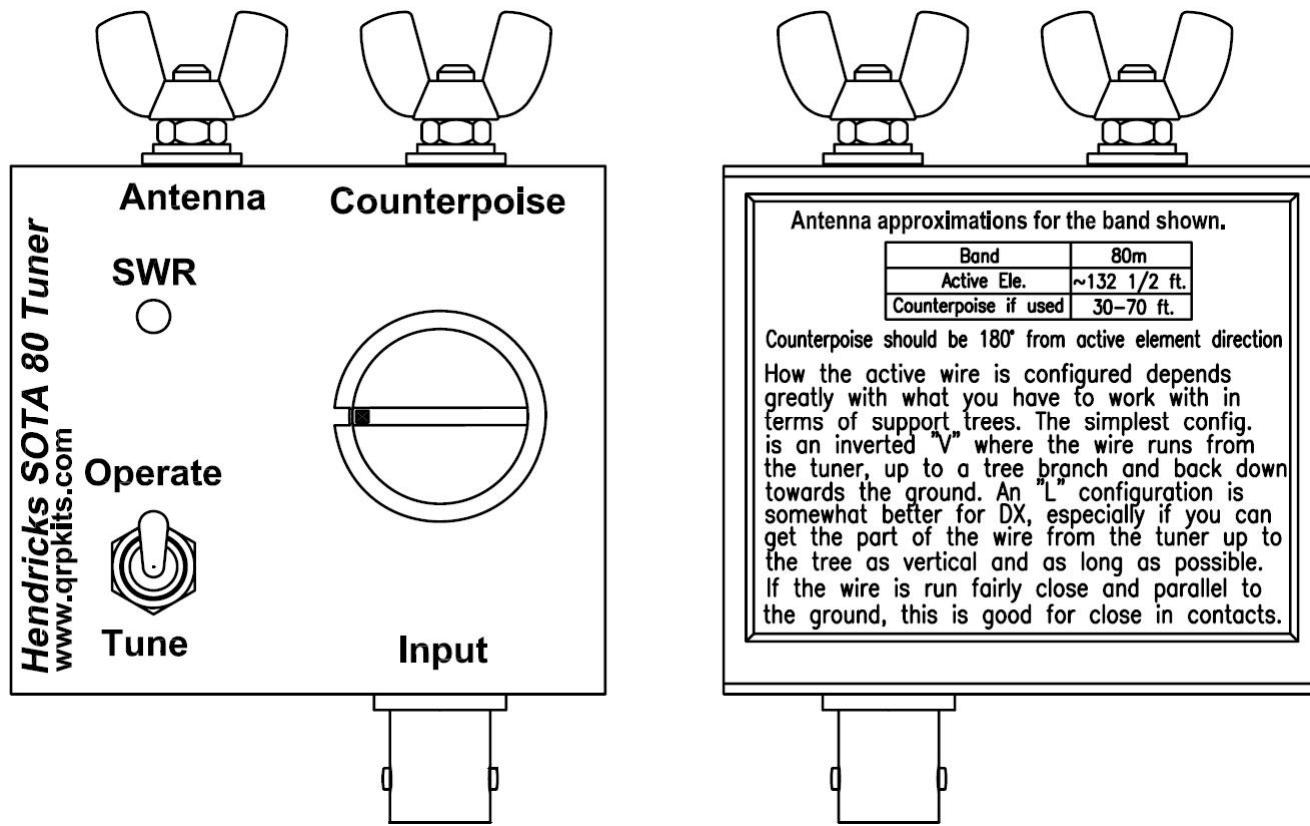


Hendricks 80m SOTA EFW Tuner

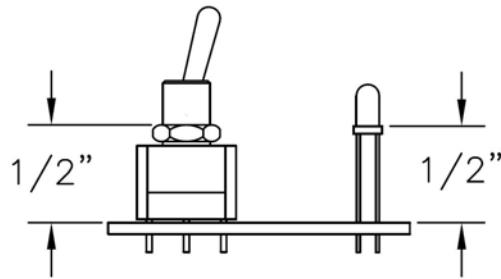


- First, familiarize yourself with the parts and check for all the components.

Parts Inventory

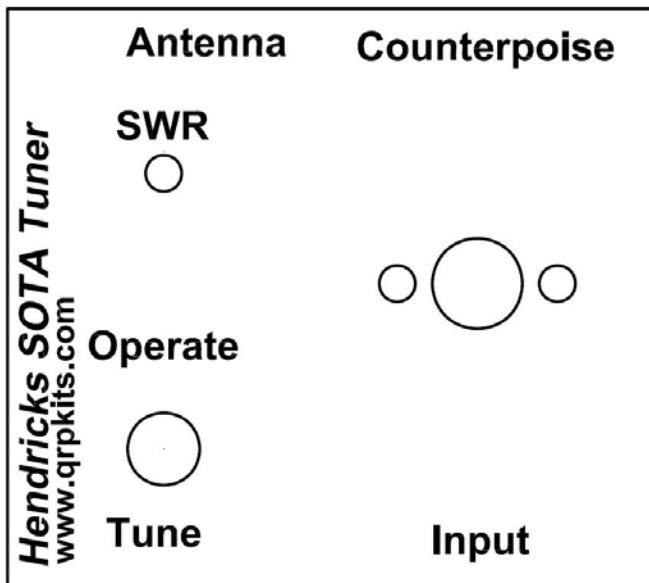
1 - Tayloe SWR Indicator kit
 1 – T94-2 core (red), T50-6 (yellow) not used for 80m
 1 – poly-varicon, w/shaft and mounting hardware
 72" - magnet wire for the toroid
 2 - 6-32 x 5/8" Philips pan head screw
 2 - #6 s.s lock washer
 2 - #6 s.s. flat washer
 2 - 6-32 s.s. wingnut
 2 - #6 nylon step washer
 2 - #8 nylon flat washer
 2 - #6 tinned solder lug
 2 - 6-32 s.s. nut
 2 - 4-40 x 1/4" undercut flat head screw
 1 - bnc female, chassis mount
 1 - 1/4" shaft knob
 18" - 22 AWG hook-up wire
 1 - chassis
 1 - decal set

Begin by assembling the Tayloe SWR Indicator Kit. Dan's complete assembly instructions are located in the appendix of this document or on-line at <http://www.qrpkits.com/swrindicator.html> .



The last component to solder to the Tayloe SWR board is the LED. Use the above dimensions to locate the lip of the LED, and adjust the inside nut of the switch, for the correct fit to the chassis. Then, set the SWR indicator aside, for now.

The rest of the assembly is done inside the chassis. So, now you need to prepare the chassis with the decals.

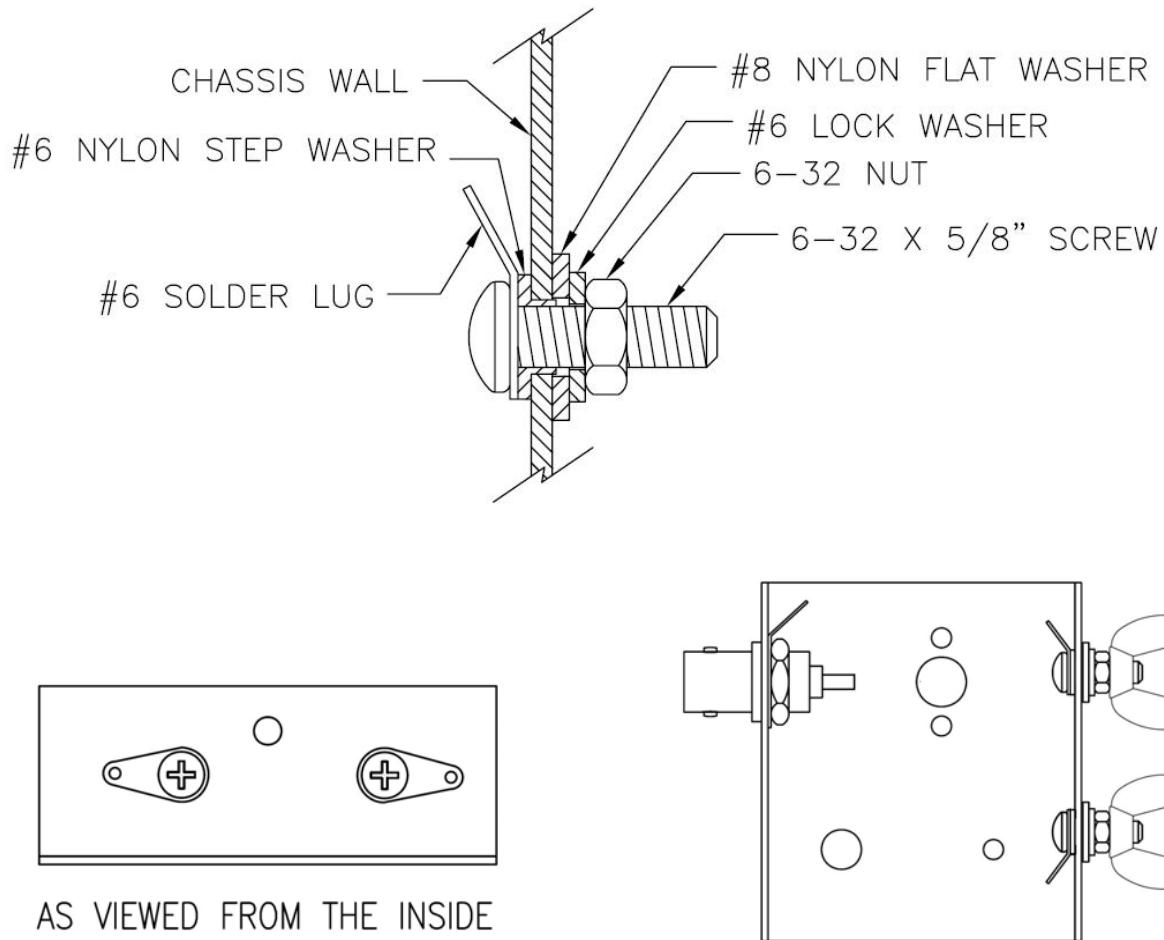


The decals are applied the same as model decals. Cut around each group of text or symbols you wish to apply. It doesn't have to be perfect as the background film is transparent. Apply the decals before you mount anything to the chassis. Use the above picture to get the correct spacing around the holes, as it is very easy to do a great decal installation and have a portion covered up with a knob.

Thoroughly clean the surface of the panel to remove any oils or contamination. If you do not paint your case, we have found that moving the decals into position on a bare aluminum chassis is more difficult, due to the brushed surface, so we advise pre-coating the chassis with the Krylon clear before applying the decals.

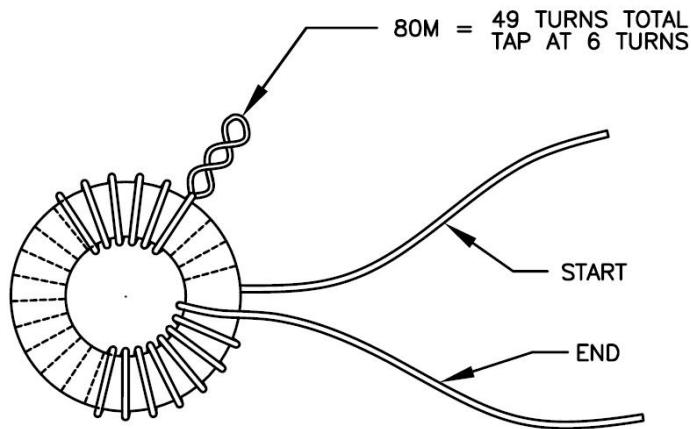
Trim around the decal. After trimming, place the decal in a bowl of lukewarm water, with a small drop of dish soap to reduce the surface tension, for 10-15 seconds. Using tweezers, handle carefully to avoid tearing. Start to slide the decal off to the side of the backing paper, and place the unsupported edge of the decal close to the final location. Hold the edge of the decal against the panel, with your finger, and slide the paper out from under the decal. You can slide the decal around to the right position, as it will float slightly on the film of water. Use a knife point or something sharp to do this. When in position, hold the edge of the decal with your finger and gently squeegee excess water out from under the decal with a tissue or paper towel. Work from the center, to both sides. Remove any bubbles by blotting or wiping gently to the sides. Do this for each decal, and take your time. Allow to set overnight, or speed drying by placing near a fan for a few of hours. When dry, spray two **light** coats of matte finish, Krylon, clear to seal and protect the decals, and allow to dry in between coats. All decals come with two complete sets, in case you mess one up.

Allow plenty of time for the clear spray to harden up, and continue as follows:

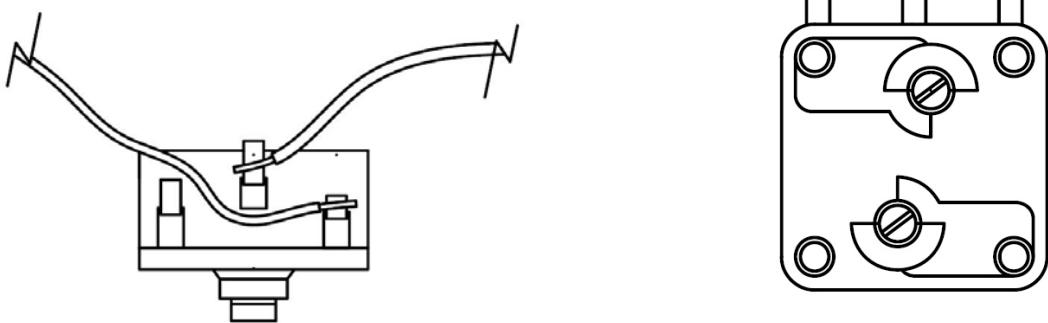


- Using the above details, assemble the two antenna connections and the bnc connector to the chassis cover. The nylon step washers keep the antenna connections insulated from the aluminum chassis. Position the solder tabs as shown, and angled down slightly, so that the antenna lug does not short against the PEM nut when the case is assembled.

Check to see that there is no continuity between the lugs and the case.

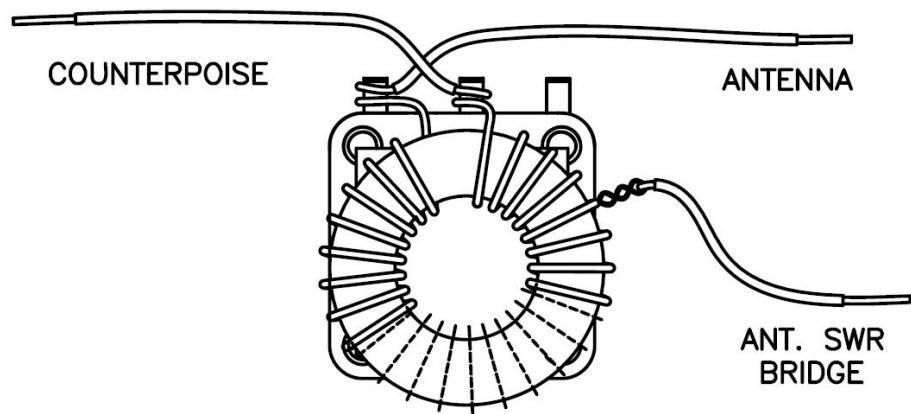


- Wind L1, using T94-2 (red) toroid using the magnet wire supplied to the above specifications and tap at the designated place described above from the "START" end. Remember, every time the wire passes through the center of the toroid, counts as one turn.

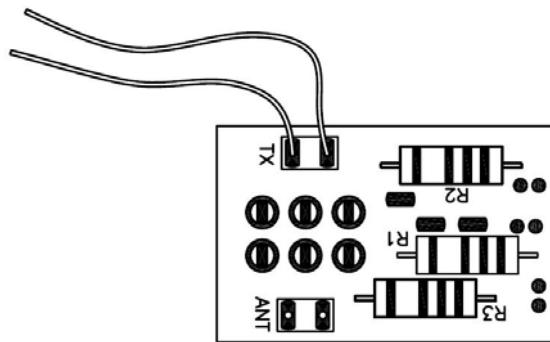


Half engagement

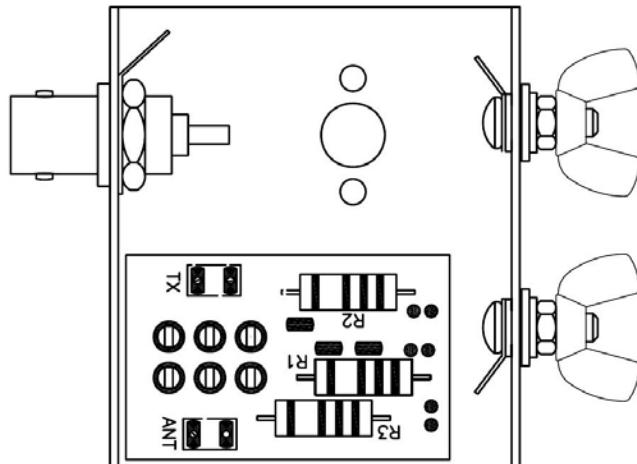
- Pre-wire the Poly-varicon as shown with 2" pieces of the hook-up wire, to the side shown. **We are only using the 150pF side for 80m.** At this time, adjust the small trimmers on the back of the poly-varicon for half engagement.



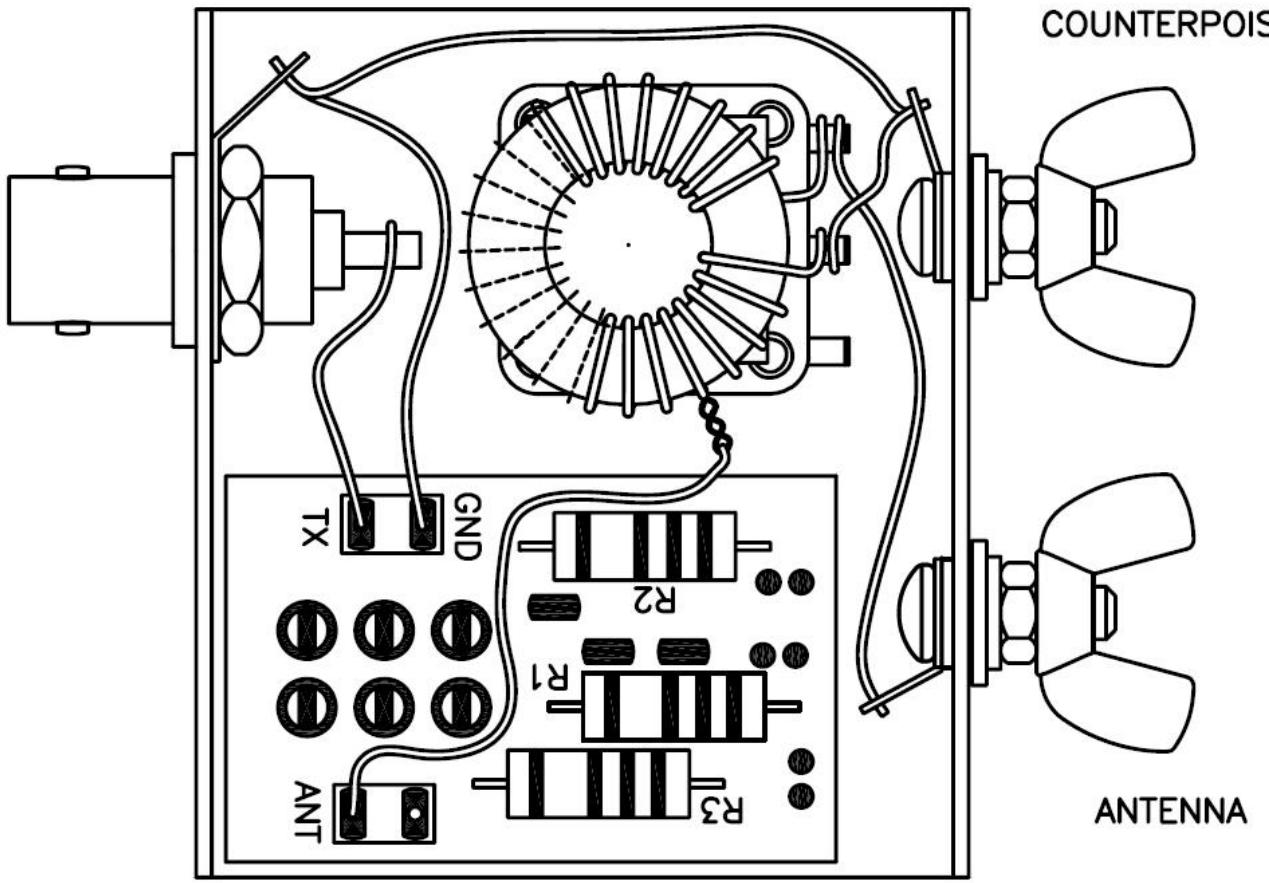
- Cover the back of the poly-varicon with electrical tape. This will act as a surface to secure the toroid. Wire the toroid to the poly-varicon as shown, and solder three pieces of 2" long hook-up wire as shown. We will secure the toroid later with a couple of drops of hotmelt glue or suitable adhesive. Mount the poly-varicon shaft with the screw provided.



- Pre-wire the Tayloe SWR indicator as shown with 3" long pieces of hook-up wire.



- Install the pre-wired Tayloe SWR indicator as shown, and secure it to the chassis with the remaining toggle switch nut.



- Study the above picture carefully to complete the final interconnections.

1. Mount the poly-varicon/toroid assembly to the chassis cover, with the two 2.6mm screws.
2. Solder the wire from center connection of the poly-varicon to the counterpoise lug.
3. Solder the wire from the side connection of the poly-varicon to the antenna lug.
4. Solder the toroid tap wire to the "ANT" pad of the swr indicator.
5. Solder the "TX" wire from the swr indicator center connection of the BNC connector.
6. Solder the "GND" wire from the swr indicator to the BNC ground lug.

Before proceeding, test with the toggle switch in the "OPERATE" position, there should be no continuity between the wingnuts and the case.

7. Now, solder a wire from the BNC ground lug to the counterpoise ground lug.
8. Position the toroid so that clearance can be achieved with the cover attached and secure the toroid to the back of the poly-varicon with some adhesive.
9. Fit the bottom half of the case to the top and secure it with the two flat head 4-40 screws.
10. Install the knob on the poly-varicon shaft

Antenna approximations for the band shown.	
Band	80m
Active Ele.	~132 1/2 ft.
Counterpoise if used	30-70 ft.

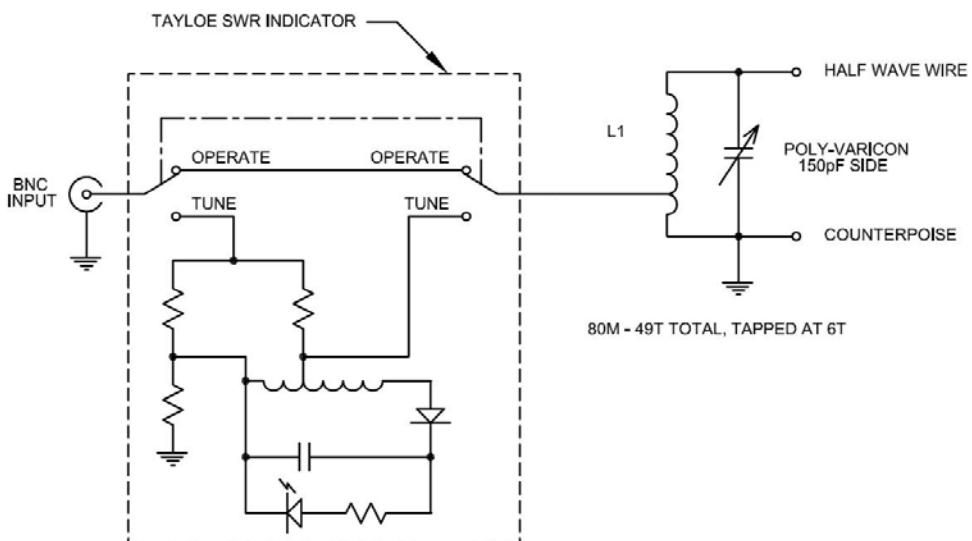
Counterpoise should be 180° from active element direction
How the active wire is configured depends greatly with what you have to work with in terms of support trees. The simplest config. is an inverted "V" where the wire runs from the tuner, up to a tree branch and back down towards the ground. An "L" configuration is somewhat better for DX, especially if you can get the part of the wire from the tuner up to the tree as vertical and as long as possible. If the wire is run fairly close and parallel to the ground, this is good for close in contacts.

Print out the above label, and scale if necessary to fit the bottom of the chassis. Cover it with a piece of clear packaging tape, and attach it with two-sided tape. The above values are starting points, not absolutes. Your lengths may vary due to many conditions. Some users even omit the counterpoise. Ground conditions, angle of elements in respect to ground, can all affect the overall length. Note what works best for your conditions and make your own chart.

Using your Hendricks SOTA Halfwave Tuner

Use some light weight wire and start with the lengths suggested, for the band you wish to operate. How the wire is configured depends greatly what you have to work with in terms of support trees and structures. The simplest configuration is an inverted "V", where the active element runs from the antenna connection of the tuner, up to a tree branch, and back down towards the ground. An "L" configuration for the active element is somewhat better for DX, especially if you can get the part of the wire from the tuner up to the tree as vertical as possible. If the wire is run fairly close to the ground, it favors close in contacts. Try to keep the counterpoise 180 degrees from the active element.

If you are looking for more dimming of the LED at resonance, try reducing the total number of turns on L1, in the SWR bridge, to 15 or 10 turns, and leave the tap at 5 turns.



Schematic