

EL-34

Installation Guide

VFO Stabilizer for YAESU FT-101 Transceiver
Required Reference Manual - ELcon FLL VFO-Stabilizer



Figure 1- FT-101 after EL-34 modification

Installation description

Version 1.0b

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Important! Hints or tips for the correct function of the EL-34.



Watch it! Absolutely observe.

1 Introductory remarks

Very crowded radio. 50 years ago, this was a very compact portable radio. There is the shelf I am pointing at. The other side of that is the high voltage section.

Close to the VFO and you see double sided sticky tape. I'll just stick it to the chassis and voila!! To the left, the two green coaxes with the yellow sleeves? That is the VFO!

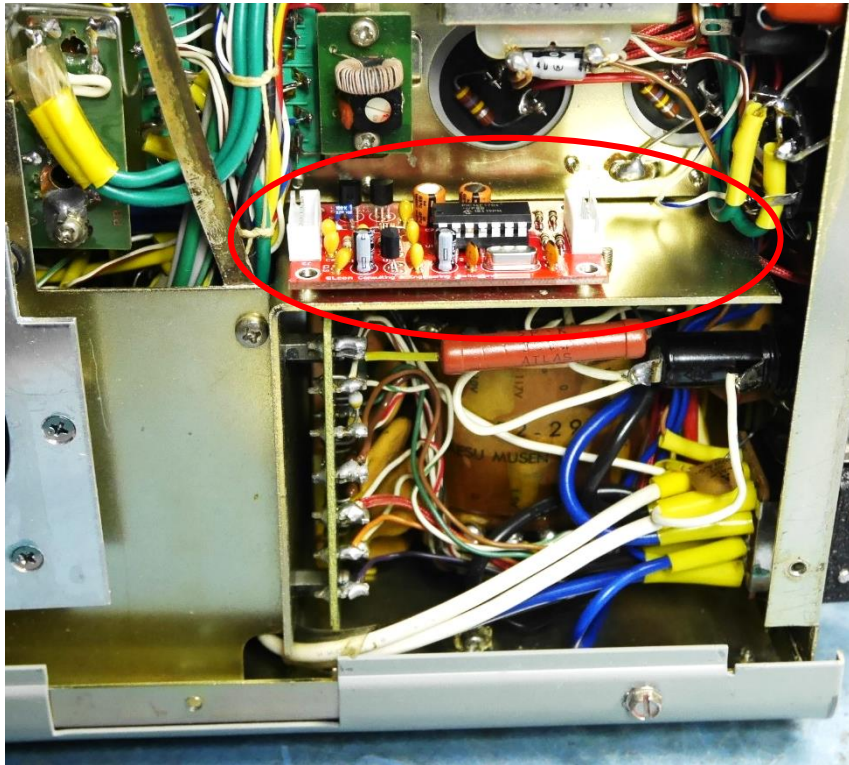


Figure 2- Space for the circuit board

2 Installation Summary

- (1) Build, wire and test EL-34 per manual.
- (2) Some models have a large electrolytic capacitor mounted in the position shown in picture. This capacitor is in conjunction with the transformer T-12 as a ripple filter. If you have this big cap in yours move it out of the way or replace it with a smaller one like some models use. The one in the picture is physically small and is soldered to the transformer T-12 Just observe ufd's and voltage rating.
- (3) I use double sided sticky tape to secure the EL-34 to the partition.
- (4) Once it is secured and wires plugged in with JST plugs it is time to interface.

2.1 Installation Steps

(1) Assembled unit in test mode.

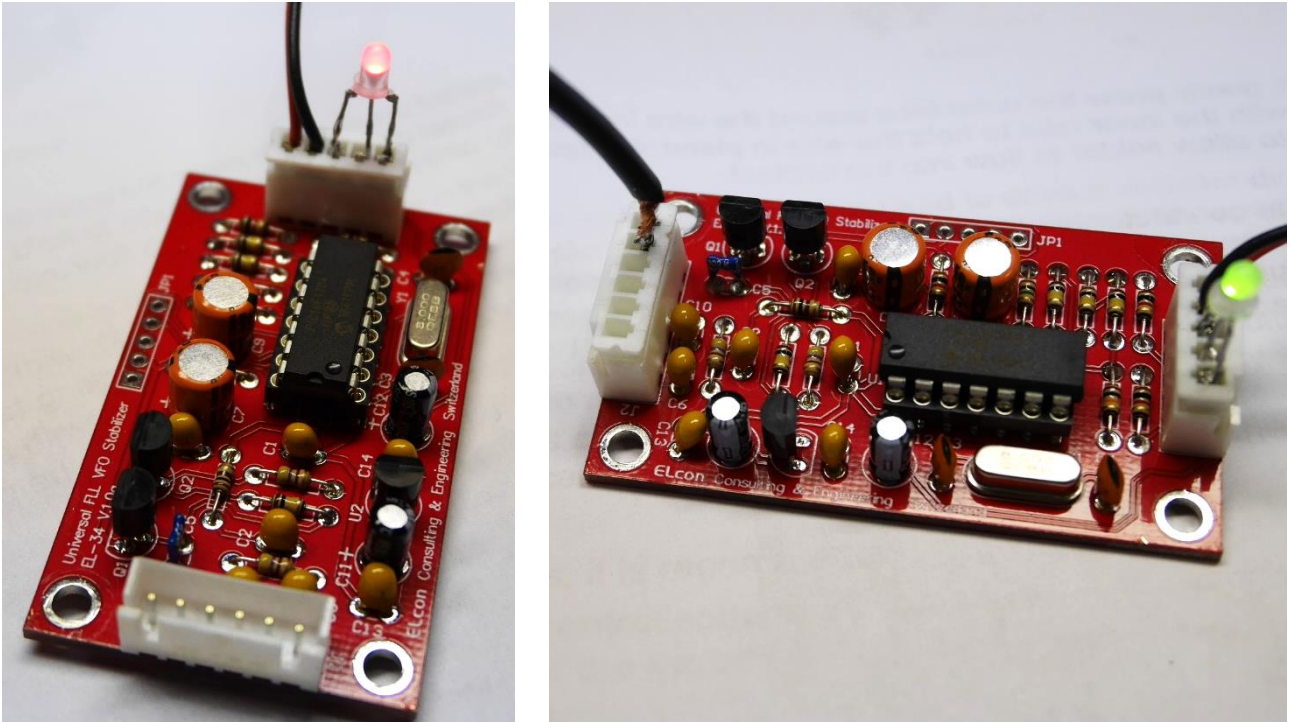


Figure 3- Pre-test of the EL-34

(2) Follow testing instruction in manual.

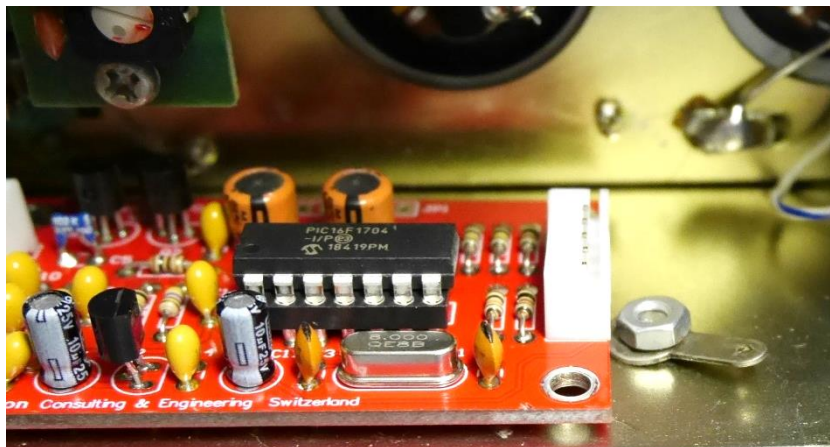


Figure 4- Ground connection

(3) There is convenient screw sticking through from the high voltage cage (see Figure 4- Ground connection). We will turn this into ground mounting stud with the use of nut and ground lug. Position the EL-34 so the power wires are on the right end of board next to ground lug to keep lead length short.

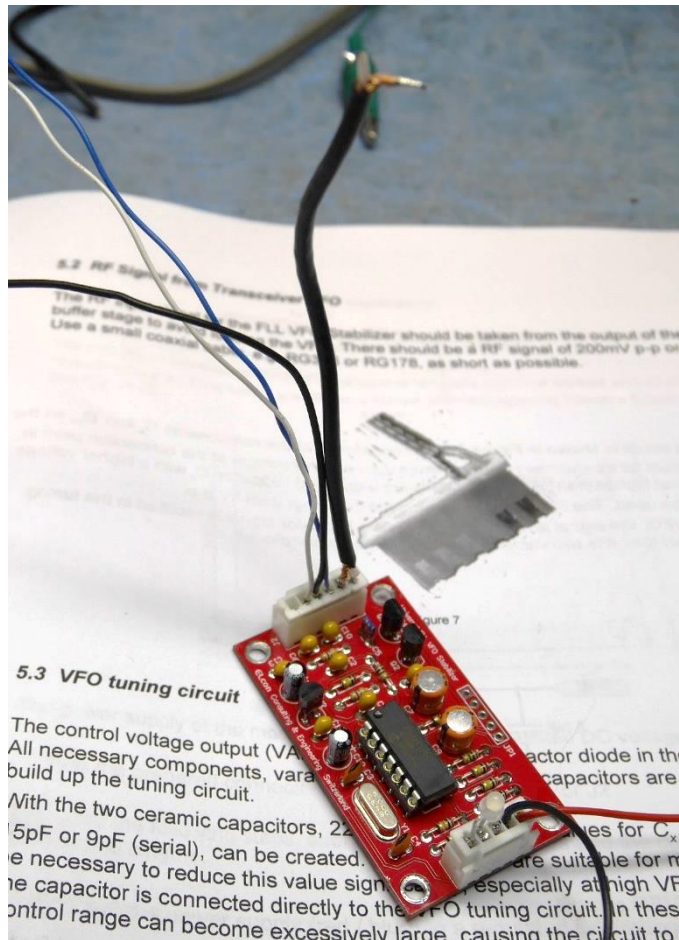


Figure 5- all PCB connections

- (4) This is very convenient spot! Note picture. Solder ground wire to ground lug we created. Then solder A+ wire to the capacitor attached to T-12. Once again, this capacitor is different sizes in different radios? In this radio the picture is of the original capacitor. Now the EL-34 is mounted and hooked to A+. You are now ready to begin interface.

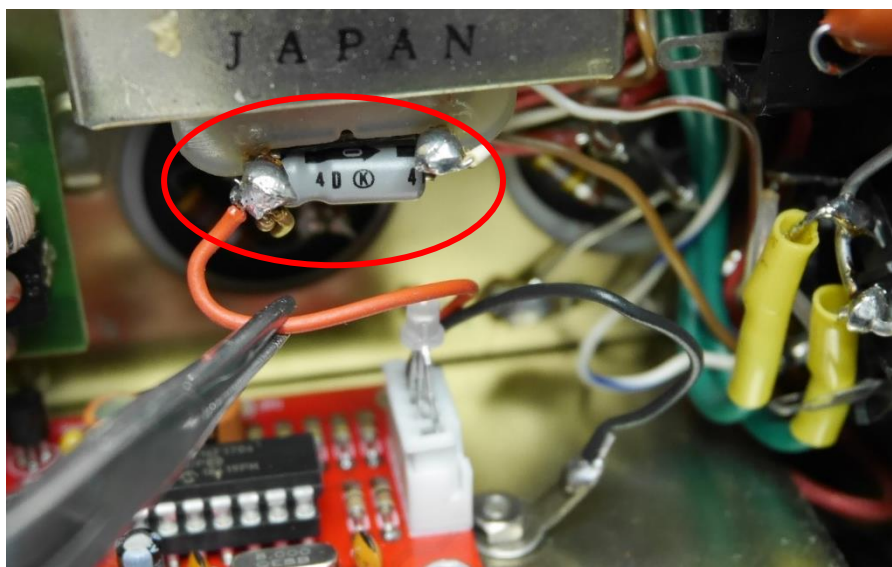


Figure 6- EL-34 DC connection

I have labeled the VFO just to make it easy to identify connection points. 6-volt pin is not used.

- (1) Cut wires on left side of EL-34 to approximate length. Note there is a ground between every connection. Since the wires are short and all go to the same basic place, I opted to leave off one ground as it would be redundant in this application.
- (2) Cut RG-174 (or equivalent) to length leave short service loop, and solder the center conductor to the VFO output pin. Remember any wire cut to length will be to short! Solder the braid to the convenient ground lug sticking off of VFO. This is where the two coaxes with yellow sleeves go. Basically, just hook in parallel with these coaxes.
- (3) Unsolder wire from pin labeled CLAR in Figure 7 which comes from the wiper of the CLAR pot. Solder this wire from the CLAR pot to the wire coming from pin 2 (CLAR In) of the EL-34. Use heat shrink to insulate. Solder the wire from pin 4 (VAR, Control Voltage Out) of the EL-34 to the lug labeled CLAR on the VFO Figure 7. The EL-34 runs in series with the CLAR wire.

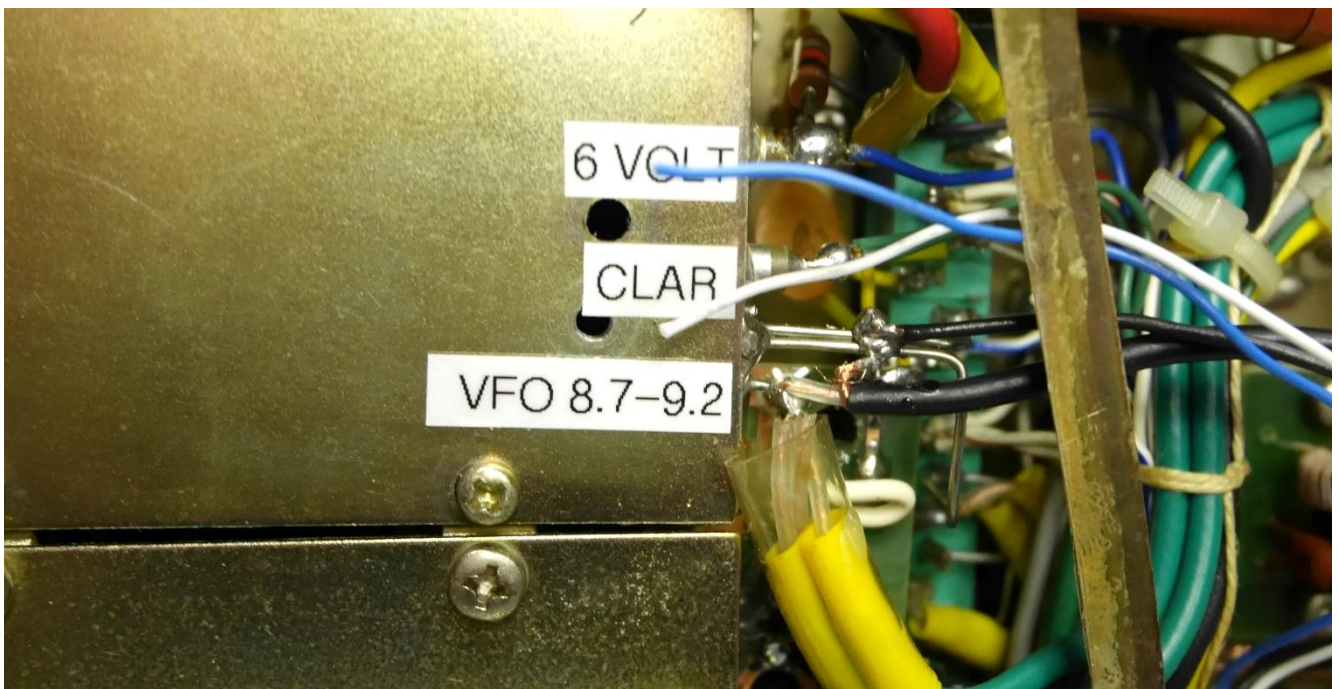


Figure 7- Connections to the VFO

2.2 The modification of the CLAR control.

- (1) Because of the way the EL-34 compensates for drift the wires on the Clarifier pot have to be reversed. Read tech manual if you want to understand why. (optional)
- (2) Remove radio from case to gain access to the back of the CLAR pot.
- (3) Looking at the back of the CLAR pot you can easily see the three lugs on the back of the pot. Basically, everything on the left lug has to be moved to the right-hand lug and everything on the right lug has to be moved to the left lug.



Figure 8-Components at the CLAR potentiometer

- (4) Remove the blue wire the yellow wire and the CLAR calibration pot from the back of CLAR pot. See Figure 9.



Figure 9- desoldered zero-point potentiometer and the two wires

- (5) Solder the blue wire that you removed from the left lug to the right-hand lug.
- (6) Solder the yellow wire that you removed from the right-hand lug and solder it to the left-hand lug.

- (7) This leaves the CLAR calibration pot to reinstall. (see Figure 11)
- (8) Fabricate extension for this step. I used the lead from a 2-watt resistor. Form it per pictures. 10 -15mm in length max! About (1/2 inch) MAX! If it is too long it will not align up in original spot.
- (9) Solder to pot per Figure 11. Solder to left hand lug on back of CLAR pot. This will put the CLAR calibration pot back in the original spot.

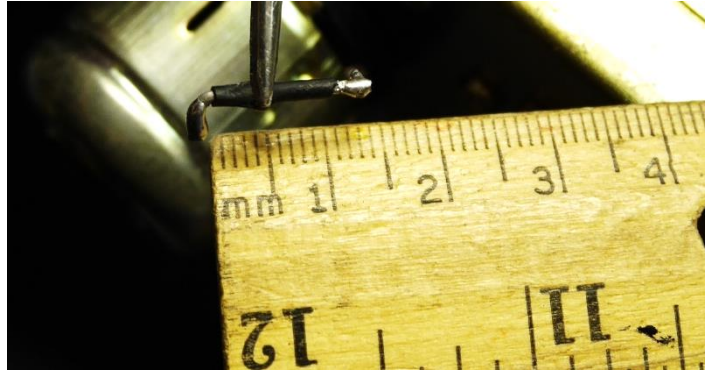


Figure 10- Extension wire used for the zero-point potentiometer

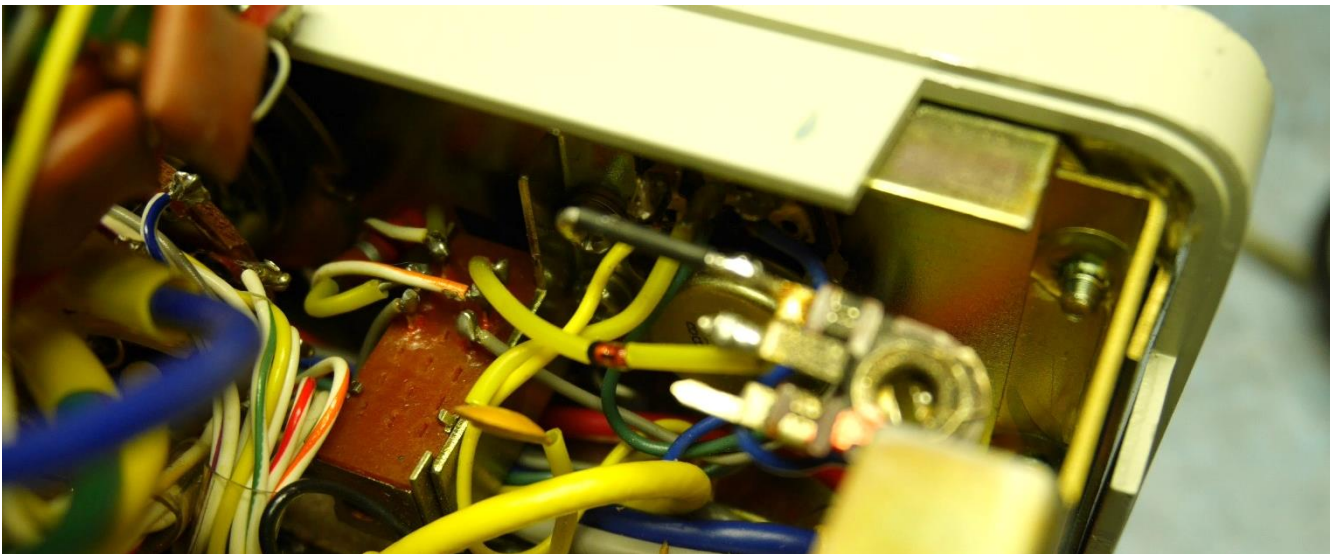


Figure 11- Extension wire

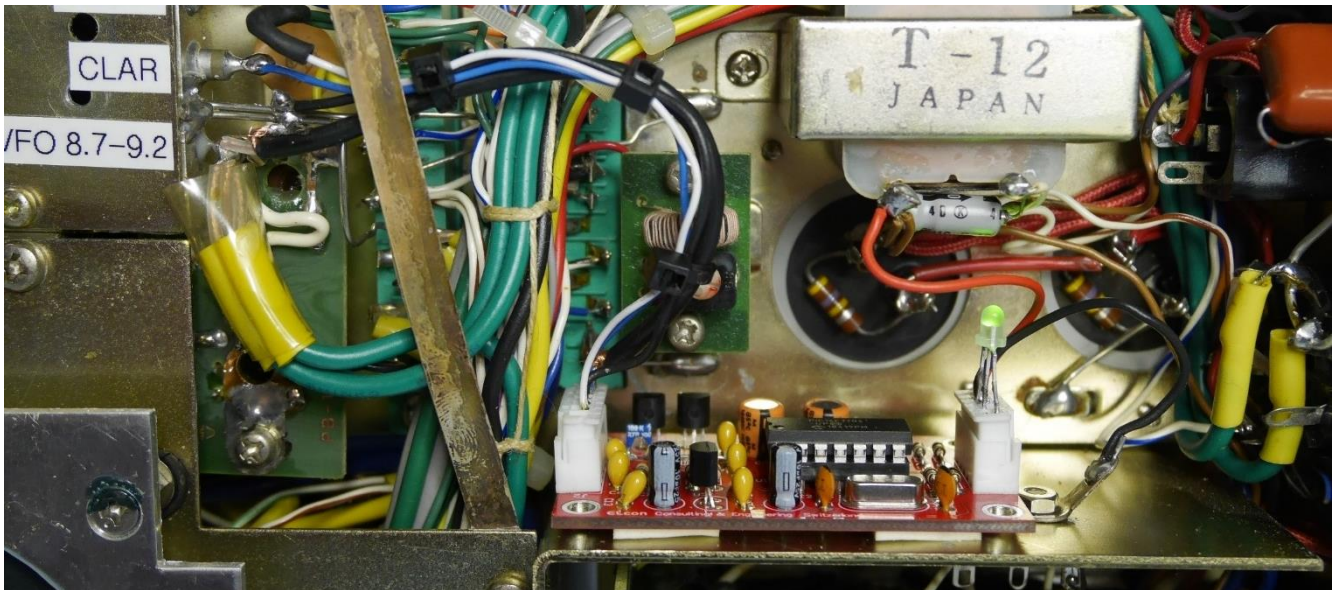


Figure 12- Fully installed and functional VFO stabilizer

2.3 Final lead dress

- (1) Note service loop and lead dress in Figure 13. Wires are tie wrapped together and routed so as not to interfere with existing components.
- (2) Perform start-up per manual. Confirm LED turns green! Check your work! Replace in case and enjoy.

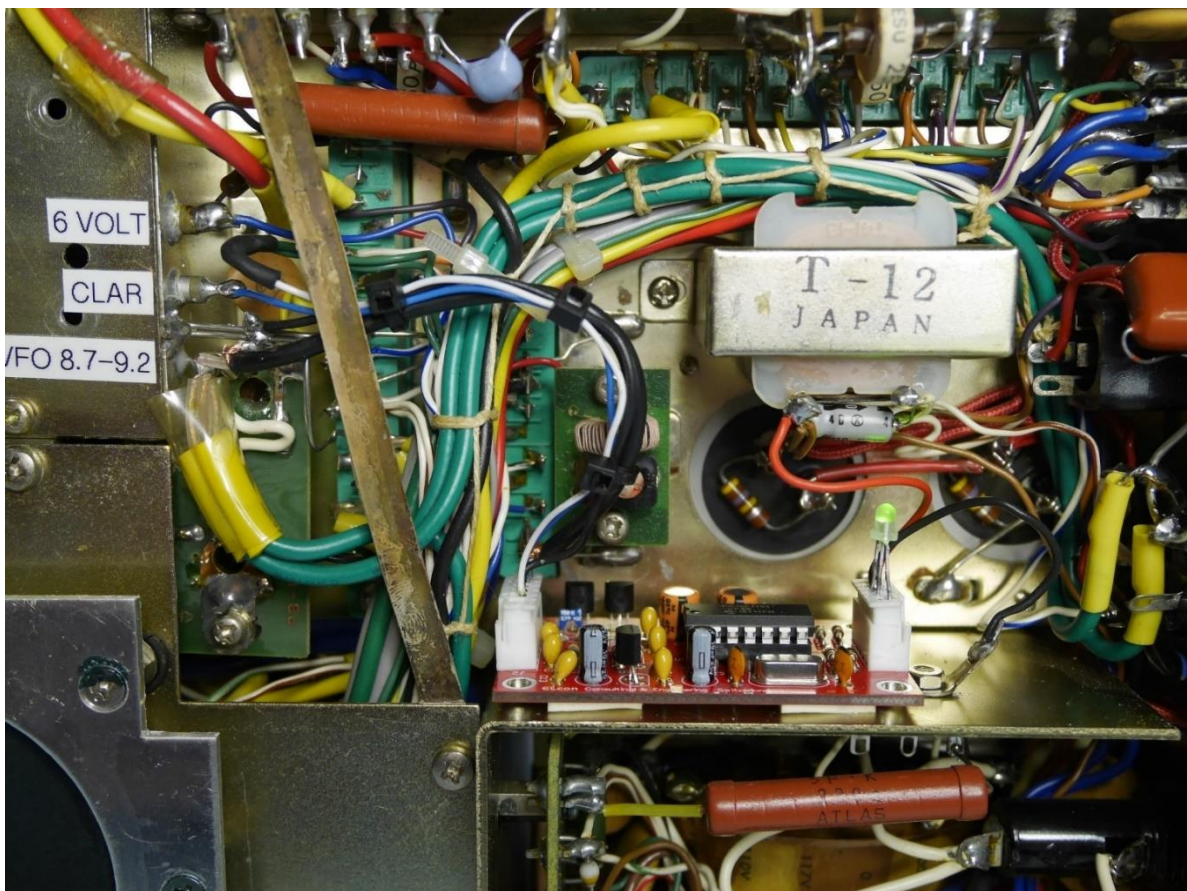
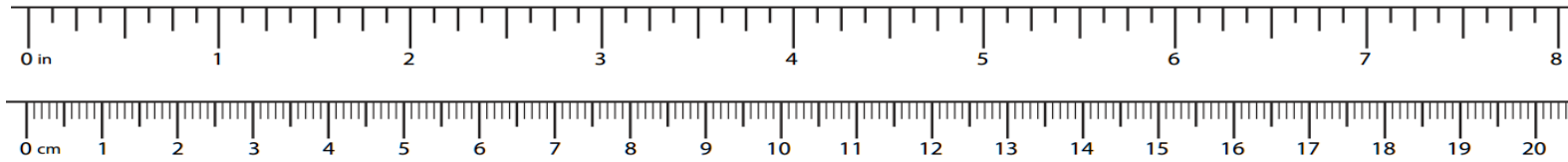


Figure 13 - Completed Top View

3 Appendix

3.1 Ruler



3.2 Disclaimer of liability

Any actions based on the information contained in this document are taken at the user's own responsibility. Any liability is excluded, both for direct and indirect damages and consequential damages that may arise in connection with the use of the information contained in this document.