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EL-34 Installation Guide

VFO Stabilizer for EICO 753 Transceiver

Required Reference Manual - ELcon FLL VFO-Stabilizer



Figure 1 – EICO 753 after Modifications

Installation description

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



Watch it! Absolutely observe.

1 Introductory remarks

The Eico 753 is a triband transceiver that was available from 1965 as a kit or factory-wired. The kit sold for \$179, and the matching power supply (751) cost \$79 as a kit. The low-price tag appealed to many hams but the radio soon had a bad reputation of drifting. The EICO factory spec. was 3 kHz during the first hour and 400 cycle thereafter.

EICO soon came out with a free transistor VFO PC board update modification to help with the drift. I have both tube and transistor VFO radios and the transistor VFO didn't help much. The solution is to install the ELcon EL-34 stabilizer. This is an excellent kit that keeps the VFO drift to less than 40 Hz. Here are some features of the EL-34.

Available on line at https://shop.elcon.ch/yaesu/universeller-fll-vfo-stabilisierer.htm

- I used PayPal to complete my purchase.
- All high-quality parts provided included programmed 14 pin PIC microprocessor.
- Easy to build thru hole PCB, with plated thru holes and silk screen.
- Excellent manual in English.
- Easy to install in radio.
- Excellent factory support.

This document describes how to install the EL-34 in a EICO 753 Transceiver. The EL-34 has two connectors required for installation.



Figure 1 FLL-VFO Stabilizer E-34

2 Installation Summary

The EICO 753 has a front panel RIT control that shifts the receive frequency about +- 2 KHz. The RIT circuit in both VFO versions is a very poor design and contributes to the drift. As part of my installation, I disable the RIT so that the receive and transmit frequency are always the same. The EL-34 has a clarifier input if you desire to use the RIT function. I left the EL-34 clarifier input open.

The EL-34 has an on board 5-volt regulator. Power to this regulator is obtained by a half wave rectifier and a 1000uF capacitor obtained from the EICO 12.6 VAC used in the tube

filaments. This provided 16 volts DC for the EL-34.

7B26 1000 F/25V $12.6VMC \xrightarrow{Pin 1} 10$ $12.6VMC \xrightarrow{Pin 2} \xrightarrow{Pin 2} \xrightarrow{Pin 3} \xrightarrow{Pin 3} \xrightarrow{Pin 4} + 16V \xrightarrow{Pin 4}$ 1N4004 N lok

Figure 2- EICO 753 Power Supply for EL-34



Figure 3- EICO 753 Power Supply and EL-34 in place

2.1 Installation Steps

- (1) Connect +16 VDC to EL-34 J1 pin 1 and EICO ground to EL-34 J1 pin 2.
- (2) To disable RIT, remove RIT wire at junction of C35 and L5 on VFO PCB Pt A (see also Figure 4 and Figure 5).
- (3) Connect EL-34 J2 pin 4 (control voltage) to point where RIT wire was removed from VFO PCB Pt A.
- (4) Connect EL-34 J2 pin 3 (ground) to Eico 753 ground
- (5) <u>Transistor VFO</u>: connect a 47 pF (at least 100 volt) capacitor from junction of Q2 collector and L2 Pt B to EL-34 J2 pin 6. Connect 100pF capacitor from EL-34 J2 pin 6 to ground on EICO 753





Figure 4 and Figure 5 illustrates connection points A and B (marked red).



Figure 4- EICO 753 Transistor VFO Schematic

(6) <u>Tube VFO:</u> connect a 24pF (at least 500 volt) capacitor from junction of V11 plate Pt B and L2 to EL-34 J2 pin 6. Connect 100pF capacitor from EL-34 J2 pin 6 to ground on EICO 753.





2.2 Mounting and final Step

I used 2 ¼ inch 4-40 spacers to mount the EL34 to the green perf. board that the power supply is built on. I used 2 more spacers to mount the green perf. board to the VFO cover. I removed the VFO cover to drill the 2 holes.



A slight realignment was necessary after the EL34 installation to get the dial line perfectly vertical.

If you have questions or comments, I can be reached at <u>blessed_duck@yahoo.com</u>

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.