

ELECRAFT[®] K3

Installing the KTCX03-1 TCXO

Revision C – June 24, 2008

Copyright © 2007, Elecraft, Inc; All Rights Reserved

The KTCX03-1 is an optional 1 ppm temperature-compensated crystal oscillator. It is capable of providing reference oscillator stability of 0.5 ppm when used with the temperature compensating firmware provided in the K3.

Contents

The kit components are as follows:

1. KREF3 TCXO Oscillator Module, 49.380 MHz with temperature compensation data sheet.
2. Insulator (rectangular, fits bottom of TCXO module)
3. Tie wrap.

Tools Needed

You will need a Phillips screwdriver and cutters to trim the tie wrap. Long nose pliers are handy for installing the tie wrap. A wrist strap grounded through a 1-megohm resistor is strongly recommended to protect your K3 from ESD damage.

Installation Procedure

- Disconnect power and all cables from your K3.
- Remove the top cover as shown in Figure 1. After the cover is open, lift it gently to reach the speaker wire connector. Unplug the speaker then set the top cover aside in a safe place.

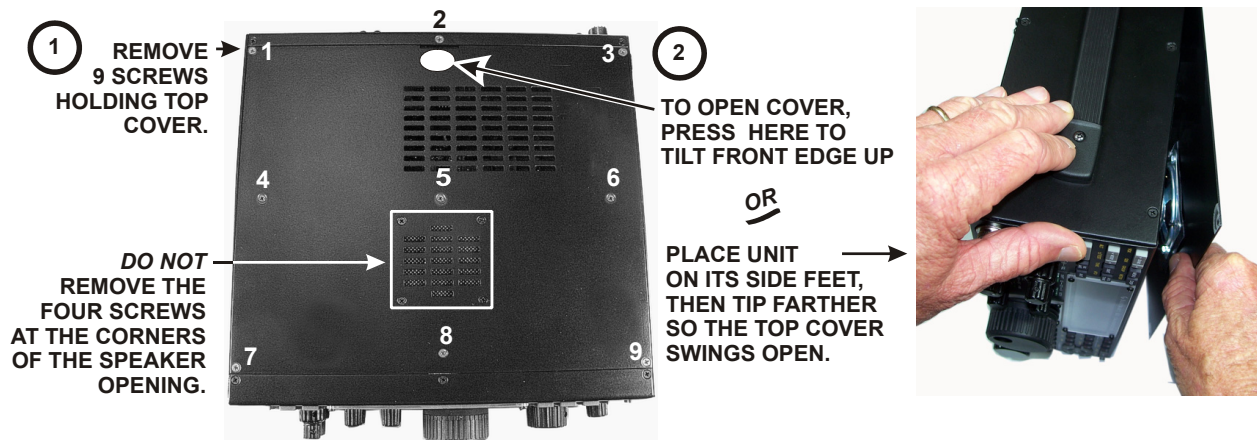


Figure 1. Removing the Top Cover

⚠ CAUTION: Touch an unpainted metal ground or wear a grounded wrist strap before touching components or circuit boards inside the K3.

- Locate the KREF3 circuit board. It is mounted against the metal shield running across the width of the K3 near the front panel (see Figure 2).
- Cut and remove the tie wrap holding the oscillator module in place. Notice how the tie wrap runs under the socket to hold the module. In a later step you'll need to install the new tie wrap in the same manner.

Remove the existing oscillator module.

⚠ If needed, remove the coaxial cables plugged into the KREF3 board. Pull only on the metal connector. Do not pull on the black cables!

Place the rectangular insulator over the TCXO leads so it covers the bottom of the oscillator module.

Install the 1 ppm TCXO oscillator module with one pin in each corner connector on the socket and the dot in the lower right as shown in Figure 2. If the new module has only three pins, the corner with the missing pin is the one with the colored dot and goes in the lower right. The insulator installed in the previous step should be between the oscillator module and the socket on the KREF3 board.

Slide the tie wrap between the socket and the KREF3 pc board and wrap it around the oscillator module to hold securely in place.

If you removed the black TMP cables to install the oscillator module, replace them as shown in Figure 2

Hold the top cover above the K3 and route the loudspeaker wire under the stiffening bar to the KIO3 board in the back left corner of the chassis. Plug it in at P25 with the connector oriented as shown in Figure 3.

Position the top cover on the K3. Note that the tab on the back center goes under the rear lip of the K3 rear panel. Secure the top cover with the nine 4-40 3/16" (4.8 mm) black flat head screws you removed earlier.

⚠ REPLACE ALL THE SCREWS!

The K3's chassis has excellent rigidity despite its light weight. The screws that hold the top cover in place are an important part of the structural design. Be sure to replace all the screws and verify they are tight whenever you replace the cover or other panels

Turn to your K3 Owner's manual *Calibration Procedures* and perform one of the reference oscillator procedures shown. Procedure 1 or 2 will result in a reference oscillator stability of 1 ppm. Procedure 3, using the information provided on the temperature compensation data sheet provided with your 1ppm oscillator module, will provide a stability of up to 0.5 ppm. **Put the temperature compensation data sheet in a safe place in case you need it again..**

That completes the installation of your 1ppm TCXO oscillator module.

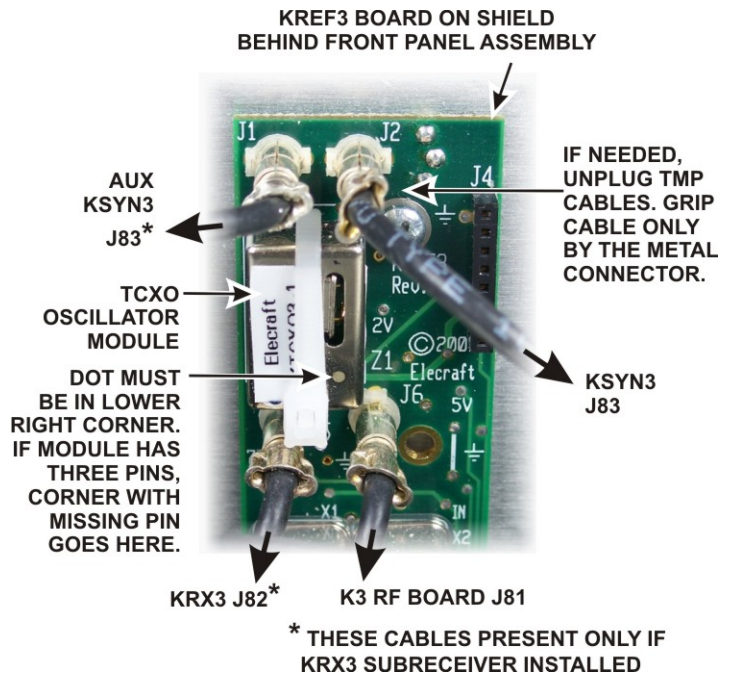


Figure 2. TCXO Module Installed on KREF3 PC Board.

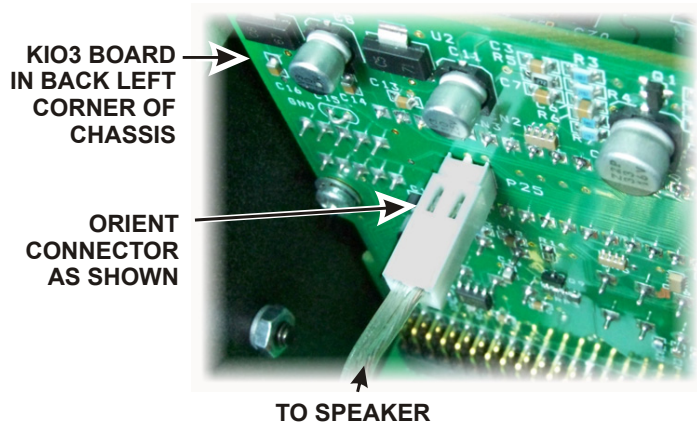


Figure 3. Reconnecting Speaker.