Elecraft KX3
Tuning Noise Suppression Modification

Revision A, July 2, 2013
Copyright © 2013, Elecraft, Inc. All Rights Reserved

Introduction

KX3s with the KXFL3 filter installed may exhibit noticeable "zipper" noise when the VFO is tuned on quiet bands. (KX3s without the KXFL3 typically exhibit far weaker tuning noise.) To minimize the noise, you can do one or more of the following: set the VFO NR menu entry to ON; set the RX SHFT menu entry to 8.0; turn on the KX3's regular noise blanker, setting it to a low level. All of these settings are per-band, so they need only be used on affected bands. However, some audible artifacts may result when these techniques are used on very busy bands, and the use of RX SHFT=8.0 prohibits use of the filters on that band.

The minor hardware modification described here is an alternative for those who have the KXFL3 module. It can greatly reduce the noise, often eliminating the need to use the firmware settings. The modification removes three pins from the KXFL3 connector that plugs into the KX3 RF board. No soldering is required. You will need a No.1 Phillips screwdriver, small diagonal cutters and small long-nose pliers.

Procedure

⚠ **A grounded wrist strap and ESD dissipating mat are recommended whenever you work inside your KX3. Optionally, touch a bare metal ground frequently while working.**

☐ Disconnect any leads, including external power if used, and open the KX3 as if you are replacing the batteries. This procedure is described in the KX3 Owner's Manual under Internal Batteries.

☐ Locate the KXFL3 board located between the battery holder nearest the end of the KX3 and the heat sink. Loosen the retaining screw and remove the KXFL3 board as shown in Figure 1.
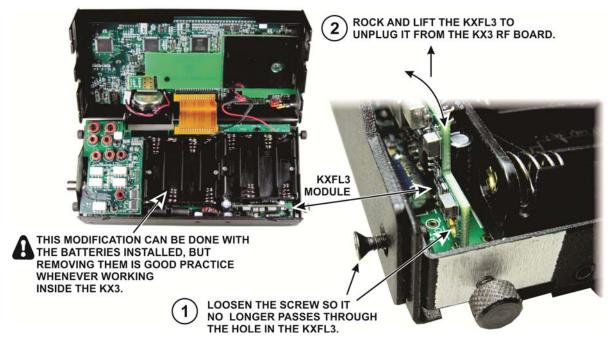

Figure 1. Removing the KXFL3 Module.

⚠ **Handle the KXFL3 board carefully. Do not press on the square capacitors C1, C2, C3, C9, C10 or C11 shown in Figure 2. If you do, you may alter their capacitance enough that you will need to repeat the entire calibration procedure found in the KXFL3 manual. (If needed, the KXFL3 manual can be downloaded from www.elecraft.com.)**

⚠ DO NOT PRESS AGAINST THESE CAPACITORS WHILE WORKING.

Figure 2. Sensitive Capacitors.

☐ On the front of the KXFL3 module, locate pins 10, 11 and 12 (see Figure 3).

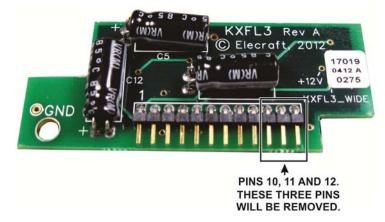PINS 10, 11 AND 12. THESE THREE PINS WILL BE REMOVED.

Figure 3. Connector Pins to be Removed.

☐ Cut through the plastic to separate Pins 10, 11 and 12 from the others. Cut as close to pin 10 as possible to avoid removing the plastic from pin 9 next to it (see Figure 4). Handle the board gently. Do not press down against the sensitive capacitors (Figure 2).
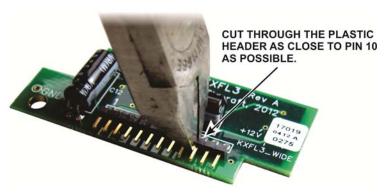

CUT THROUGH THE PLASTIC HEADER AS CLOSE TO PIN 10 AS POSSIBLE.

Figure 4. Cutting the Plastic Header.

☐ Once the plastic header is cut through, use your needle nose pliers to bend the pins 10, 11 and 12 up away from the board as shown in Figure 5.
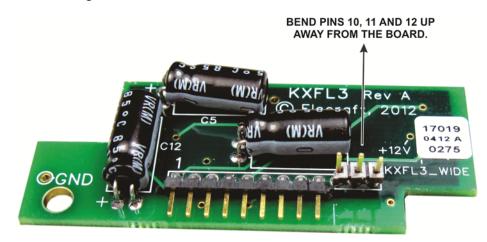

Figure 5. Preparing to Cut Pins 10, 11 and 12.

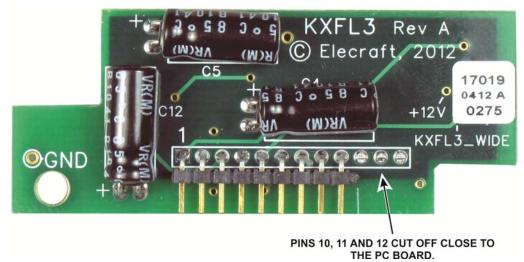☐ Cut pins 10, 11 and 12 off close to the pc board as shown in Figure 6.

Figure 6. Pins 10, 11 and 12 Cut.

☐   Replace the KXFL3 module in the KX3 and tighten the screw that retains the board as shown in Figure 7. The screw is there only to ensure the KXFL3 module cannot be dislodged by rough handling of the KX3. It does not provide a ground return or other function.
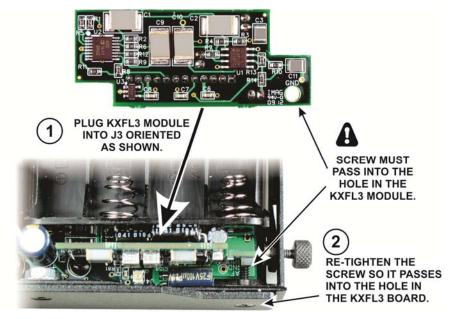

Figure 7. Replacing the KXFL3 module in the KX3.

☐   Replace the KX3 internal batteries (if used) and reassemble the KX3.

That completes the modification.