

ELECRAFT Application Note

Adjusting Band Pass Filters for European 60 Meter Channels

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Background

The K3 is supplied with its 60-meter band pass filter adjusted for the USA frequencies. This filter needs to be readjusted for optimum performance on the 60 meter channels for use in some European countries. If the filters are not properly adjusted for the European channels, you will likely see an ERR TXG report when attempting to perform the TX Gain Calibration procedure.

⚠ Before you operate on any 60 meter frequency, be certain it is authorized in your country and familiarize yourself with the special regulations that apply to Amateur operations on the 60 meter frequencies. Special rules about the frequencies used, signal bandwidth, emission mode and effective radiated power apply that may be quite different from the other Amateur bands.

Tools and Test Equipment Needed

In addition to a power supply for your K3 you will need:

1. An antenna or signal generator capable of providing broad band noise (such as the Elecraft N-gen Wideband Noise Generator). If using an antenna, you only need enough to produce obvious noise when no signals are present. A random wire is adequate. You do not need to transmit or receive signals on the antenna.
2. RF Dummy load, 50 ohm, capable of handling 5 watts for a K3/10 and at least 50 watts for a K3/100 with cable/connector as needed to attach it to the K3 ANT1 connector.
3. Phillips screwdriver to open the K3 top cover
4. Blade type alignment tool.

Procedure

⚠ Observe ESD precautions when working inside your K3. Wear an ESD wrist strap or touch an unpainted, metal ground frequently while working. See your K3 Assembly Manual for more information.

- Remove the K3 top cover as shown in Figure 1.

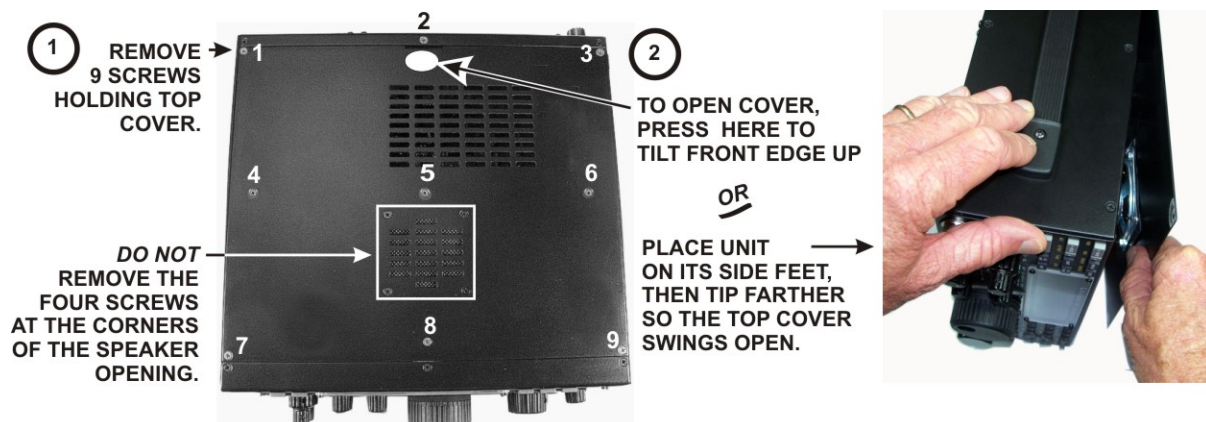


Figure 1. Removing the Top Cover.

- If you have the KBPF3 board installed, removed it as shown in Figure 2.

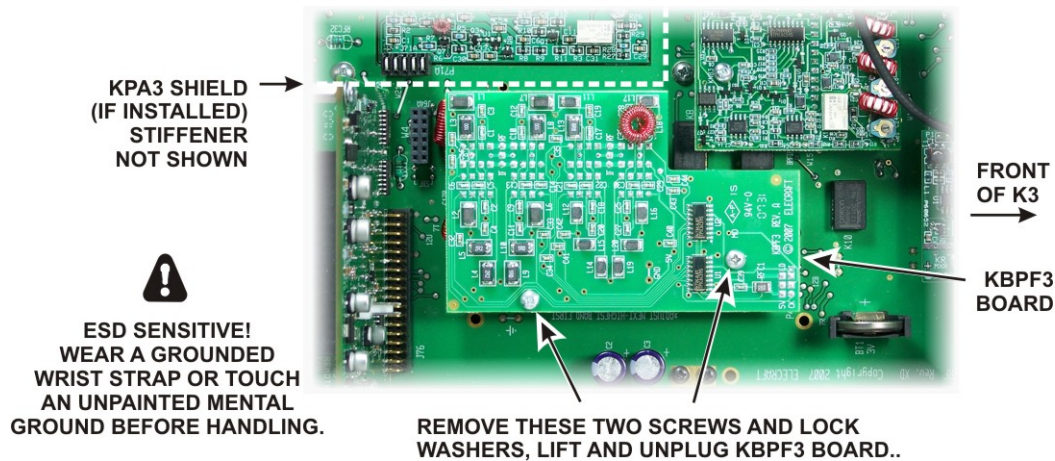


Figure 2. Removing KBPF3 Board.

- Connect an antenna or noise source to ANT1 on K3 rear panel.
- Connect headphones or loudspeaker to the K3. You can use an external speaker or prop up the top cover behind the K3 and plug it into the KIO3 board (see Figure 4).
- Connect power to the K3 and press **POWER** to turn the K3 on. If you had the KPBF3 installed, you will see an error message on the VFO B display: ERR BP2. That is normal and will be cleared in the next step.
- Configure the K3 controls as follows. Make a note of those values you are changing so you can reset them when you are done:
 - If the KAT3 ATU is installed, hold **ATU** so the VFO B display reads BYPASS.
 - Be sure SPLIT mode is not enabled; be sure **SPLT** does *not* appear between the VFO A and VFO B frequency displays. If necessary, hold **SPLIT** to toggle SPLIT mode off.
 - Tap **ANT** as needed to select Antenna 1 shown on the display.
 - If the KBFP3 module was installed, select **CONFIG** KBPF3: NOT INST
 - Set **CONFIG** TECH MD: ON
 - Set **CONFIG** TUNE PWR: NOR (turn VFO A counter-clockwise to zero to reach NOR)
- Tune the K3 VFO A to 5290.00 kHz using direct frequency entry to ensure the 60 meter bandpass filter is selected:
 - Tap **FREQ ENT**
 - On the number keys, enter: 5, 2, 9, 0
 - Tap

- Locate trimmer capacitors C133 and C146 near the rear left corner of the RF Board (see Figure 3).

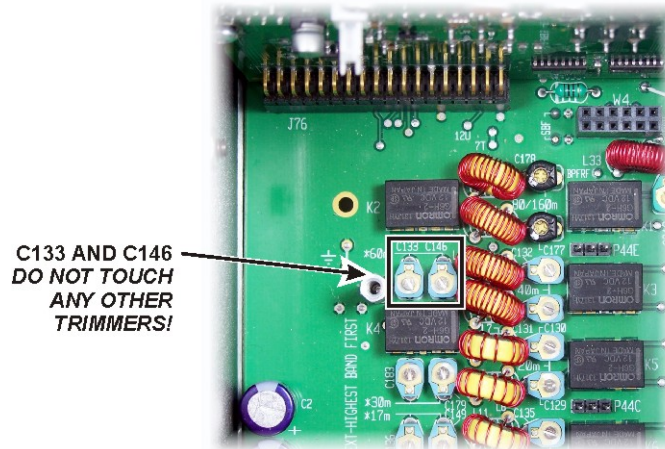


Figure 3. Location of 60 Meter Trimmers C133 and C146.

⚠ When making the following adjustments, do NOT touch any trimmers other than C133 and C146.

- Adjust C133 and C146 for maximum noise in receive.
- Adjust C133 and C146 for maximum power output in transmit as follows:
 - Set the PWR (power) control for 4.0 watts shown in the display.
 - Set **CONFIG** TX ALC: OFF
 - Hold **TUNE** to transmit. The VFO A display will read ALC OFF.
 - Adjust C133 and C146 for maximum transmit power indicated on the display. Both the power level shown in watts and the bar graph will change with the adjustments.
- Return the configuration menu TX ALC to ON.
- Run the Transmitter Gain calibration procedures in the Owner’s manual. Verify that no error message occurs.
- Replace the KBPF3 board (if used) using the screws and lock washers you removed earlier.
- Return the remaining configuration menu items you may have changed above to their original states.
- Replace the top cover, placing the rear tab under the top edge of the rear cover and routing the speaker cable under the stiffener bar. Plug the speaker wire into the KIO3 board at the left rear of the K3 as shown in Figure 4.

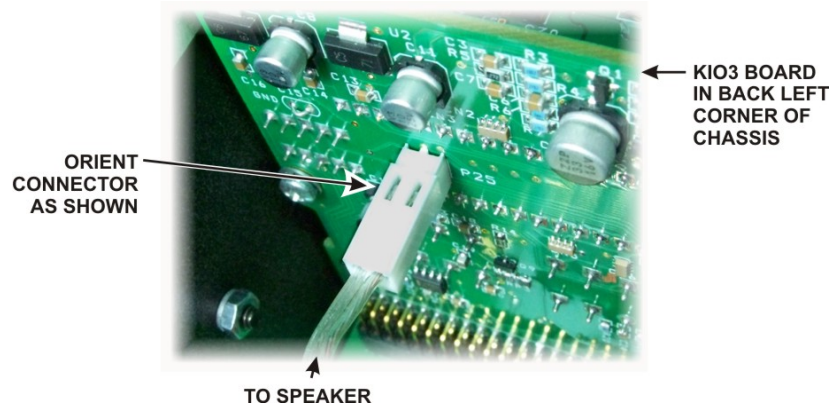


Figure 4. Connecting Speaker Wire.