

Elecraft KX2

Harmonic Level Reduction

E740304

Revision B, June 7, 2017

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Introduction


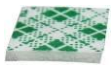




This modification reduces the level of harmonics present in the KX2 output for early KX2 transceivers. No soldering is required. If you prefer, Elecraft can install the modification for you. E-mail k3support@elecraft.com or call 863-763-4211.

Has my KX2 Been Modified?

You can check to see if the modification is installed by opening the case as if you were changing the battery (see Figure 1 on page 2). Inspect the transistors mounted on the end panel near the antenna connector (see Figure 7 on page 5). If the thermal insulator is present between the transistor heat sinks and the end panel, or if you can see a copper strip connecting the two heat sinks (when no KXAT2 is installed) the modification has been done.

Parts Required

You can order a kit containing the required parts from Elecraft. Order KX2MDKTHS

IMAGE	QUANTITY	DESCRIPTION	ELECRAFT PART NUMBER
	1.25" (3.18 cm)	Copper Tape Do not remove from backing until instructed to do so.	E980339
	0.4" (10.2 mm)	Foam Tape Do not remove from backing until instructed to do so.	E980338
	2	Thermal Insulator Both insulators may be supplied on the same paper backing. Do not remove from backing until instructed to do so.	E700002
 Shoulder Enhanced in Image	2	Shoulder Washer	E700001
	2	Nut, 4-40, 0.062" (1.6 mm) Thick	E700055
	2	#4 Lock Washer, Internal Tooth	E700010

Tools Required

1. A No 1 Phillips-head screwdriver.
2. Thin nose (1/8" or 3 mm) pliers to hold nuts with limited clearance space (see Figure 7, page 5).
3. A small rule (see Figure 4, page 3).
4. A soft surface that you can lay the KX2 on without scratching the LCD cover or case.
5. A grounded wrist strap and ESD dissipating mat are recommended whenever you work inside your KX2. Optionally, touch a bare metal ground frequently while working.

Procedure

- Disconnect all cables and, if used, external power from your KX2.
- With the KX2 face down, loosen the two thumb screws and carefully remove the bottom cover as shown in Figure 1. Take care to avoid pulling on the cable leading to the speaker.

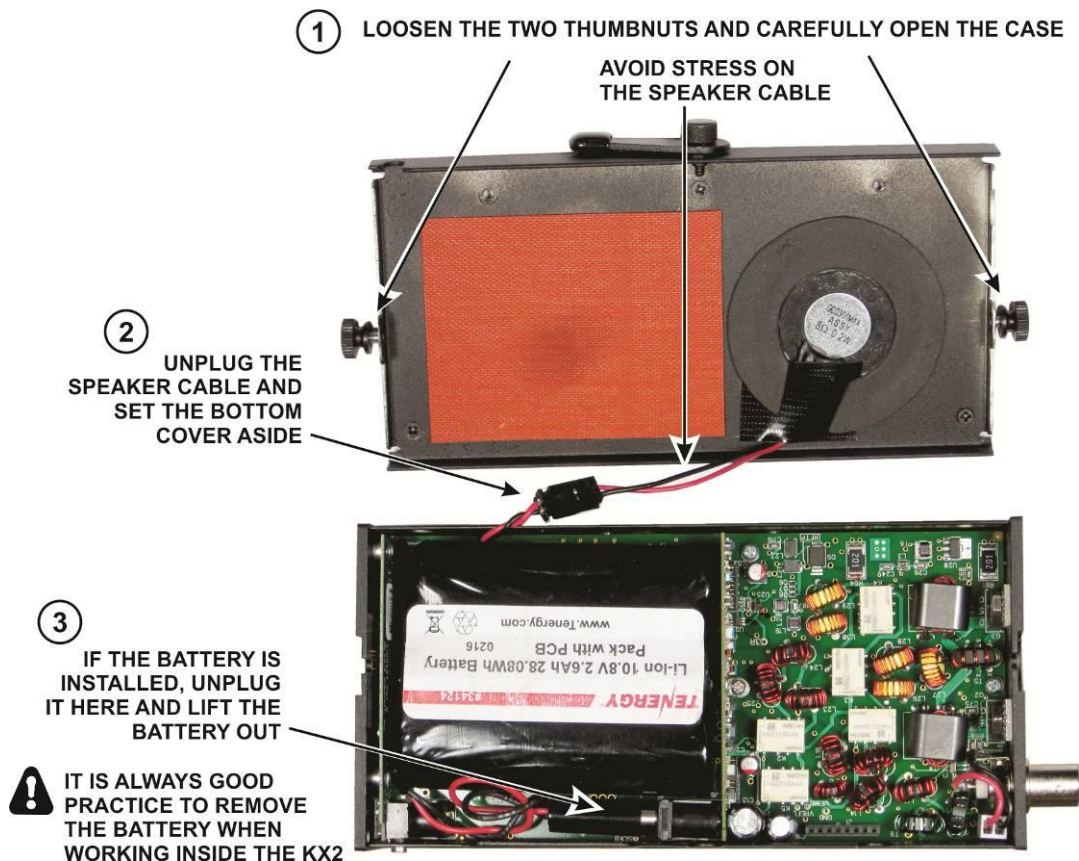


Figure 1. Opening the KX2.

⚠ A grounded wrist strap and ESD dissipating mat are recommended whenever you work on pc boards inside your KX2. Optionally, touch a bare metal ground frequently while working.

- Remove the screws from the end plate with the BNC connector as shown in Figure 2.

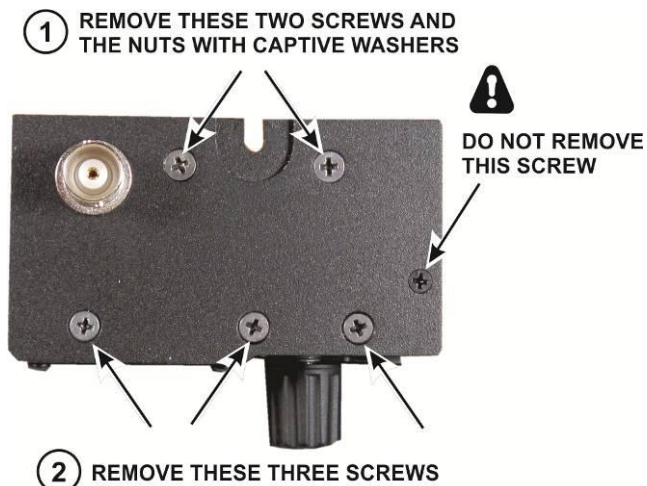


Figure 2. Removing the End Plate Screws.

- ☐ Unplug the BNC connector to free the end plate as shown in Figure 3.

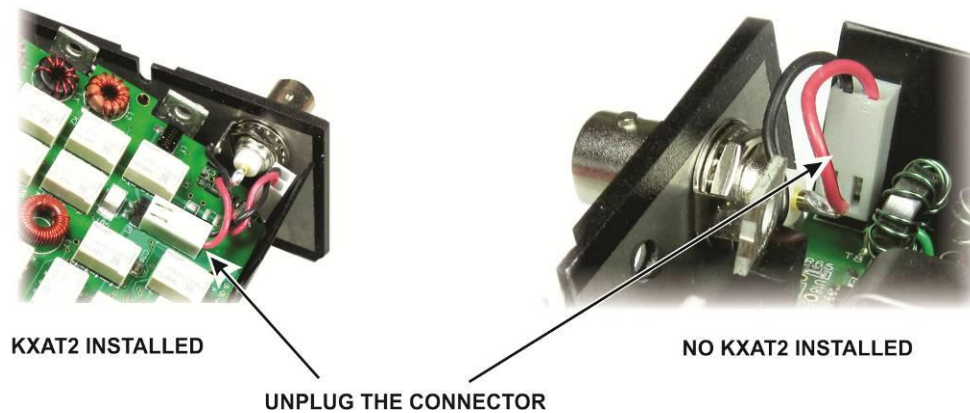


Figure 3. Unplugging the Antenna Connector.

- ☐ Mount the thermal insulators and foam tape on the inside surface of the end panel as shown in Figure 4. Be sure the thermal insulators are positioned as shown, with the holes directly over the screw holes in the end panel and aligned square with the edges of the panel.

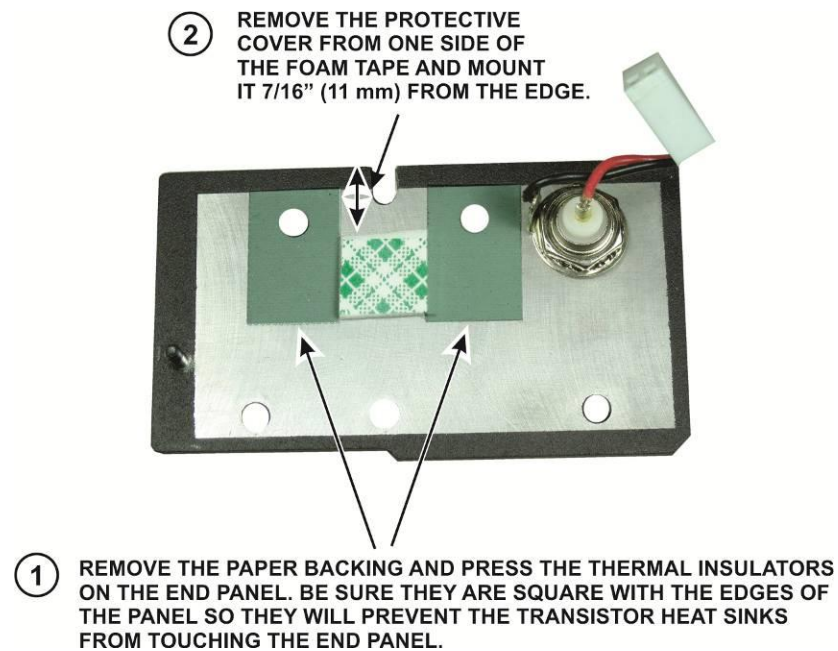


Figure 4. Mounting the Thermal Insulators and Foam Tape.

- ☐ Remove the protective covering from the foam tape and from the copper tape. Carefully position the copper tape as shown in Figure 5. When the end panel is replaced, the copper tape must contact both transistor heat sinks, but not touch the end cover at any point.

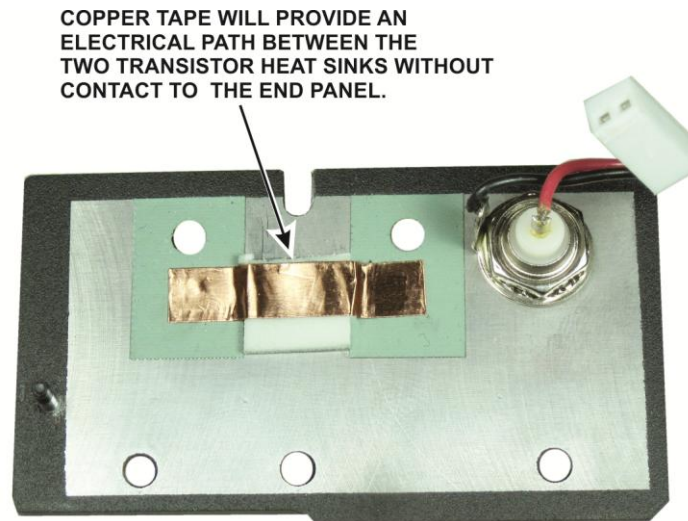


Figure 5. Modified End Panel.

- ☐ Replace the end panel with the three screws that thread into the bracket on the front panel. Do not reattach the transistor heat sinks yet.
- ☐ Use the new shoulder washers, 4-40 nuts and interior tooth lock washers to reattach the transistor heat sinks as shown in Figure 6. This hardware replaces the nuts with captive washers you removed. They will not be used. A magnetized screwdriver can help hold the lock washer on the screw while starting the nut, especially if the KXAT2 ATU is installed.

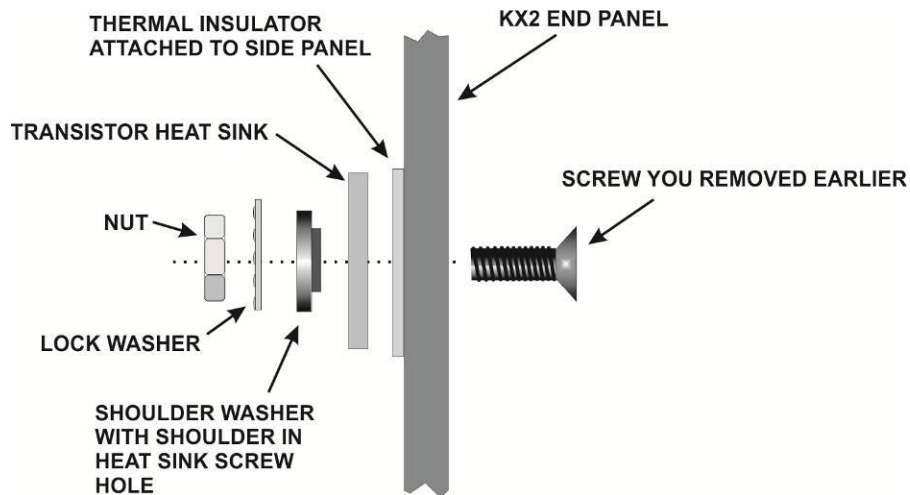


Figure 6. New Transistor Mounting Hardware.

- Be sure the hardware is tightened to ensure the transistor heat sinks are in firm contact with the thermal insulators and the antenna connector is reattached to either the RF board if KXAT2 or to the KXAT2. The completed installation is shown in Figure 7.

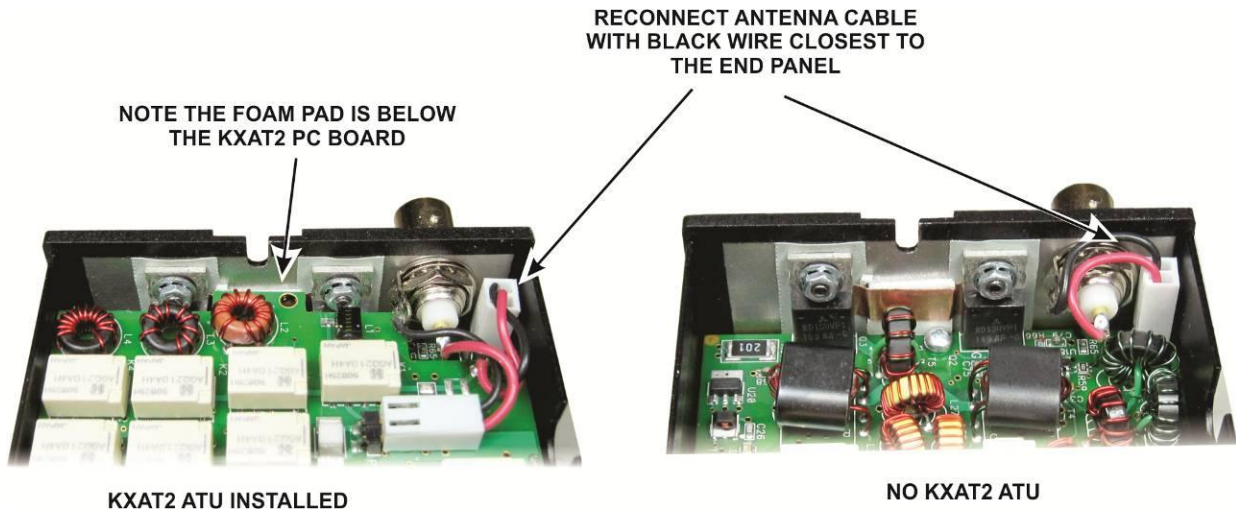


Figure 7. Completed Modification.

- Replace the battery (if installed) and close the case (see Figure 1 on page 2).

That completes the modification.