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Elecraft K4D Transceiver Factory User Guide

Contents

Elecraft K4D Transceiver Factory

Product Information

Specifications:

- **Model**: K4
- **Version**: K4D (fully independent dual-receiver)
- **Conversion Procedure**: K4 to K4D
- **Procedure Date**: May 2023

Product Usage Instructions

Section 1: Removing Covers and Side Panel

1. Remove the Top Cover.
2. Disconnect the speaker cable.
3. Remove the Bottom Cover.
4. Remove the Left Side Panel (the side with the handle).

Section 2: Removing Side Panel Bracket

There are two different side panels. Follow the instructions based on the type of side panel your radio has:

- If there is a screw, remove it. DO NOT remove the L Bracket.
- If there is no screw, your radio has a brazed bracket. Remove the screw from the bottom side of the radio.

Section 3: Removing SBC Shield

1. Remove the rear SBC bracket.
2. Remove five (5) screws and lift out the SBC shield.

Section 4: Installing KDDC4 Board

1. Sandwich the fiber washer, E700031, between the mounting lug of the KDDC4, E850799 board, and the KDUC board.
2. Plug the KDDC4 board into slot 2.
3. Carefully place the radio on its side and fasten the DDC4 board with screw E700381 inserted from the bottom of the radio.

Section 5: Reinstalling SBC and Left Side Panel

1. Reinstall the SBC by reversing the procedure you employed.
2. Install the SBC shield.
3. Install the rear SBC bracket.
4. Install SBC Cables if necessary.
5. Install Left Side Panel.

Section 6: Installing Subreceiver Board

1. Place the radio on its top.
2. Remove jumpers J20 and J21 from the RF board.
3. Plug in KRX4 Subreceiver PCB Assy E850801 into subreceiver slot (sockets that previously held the jumpers).
4. Fasten the subreceiver board with three (3) pcs E700381 using a #1 Phillips screwdriver.
5. Plug in coax cable, E770088 K4 KRX4 to RF Cable, into the RF Board connector SUB RX ANT on one end and the KRX4 Subreceiver board connector SUB RX IN on the other end.

FAQ

Q: Is there a video tutorial available for this conversion procedure?

A: Yes, a video tutorial is available on YouTube. You can watch it **here**.

Q: How do I confirm that my K4's low-power amplifier attachment screws have lock washers?

A: You can follow the procedure "Confirm Lock washers Under Low Power Amplifier (LPA) Machine Screws" at the end of the document.

K4 to K4D Conversion Procedure

E740372 Rev A May 2023

This guide shows how to convert a base K4 into a fully independent dual-receiver K4D. This procedure involves plugging in two PC boards, adding two cables and three machine screws. A video of this process is available on

YouTube: **https://youtu.be/uJD2gO09TY**

Procedure

Remove the Top Cover. Disconnect the speaker cable.

Remove the Bottom Cover. Note lock washers on the LPA heat spreader. See Photo 1.

Photo 1. Two lock washers secure the LPA heat spreader to the bottom cover. These are critical for heat dissipation.
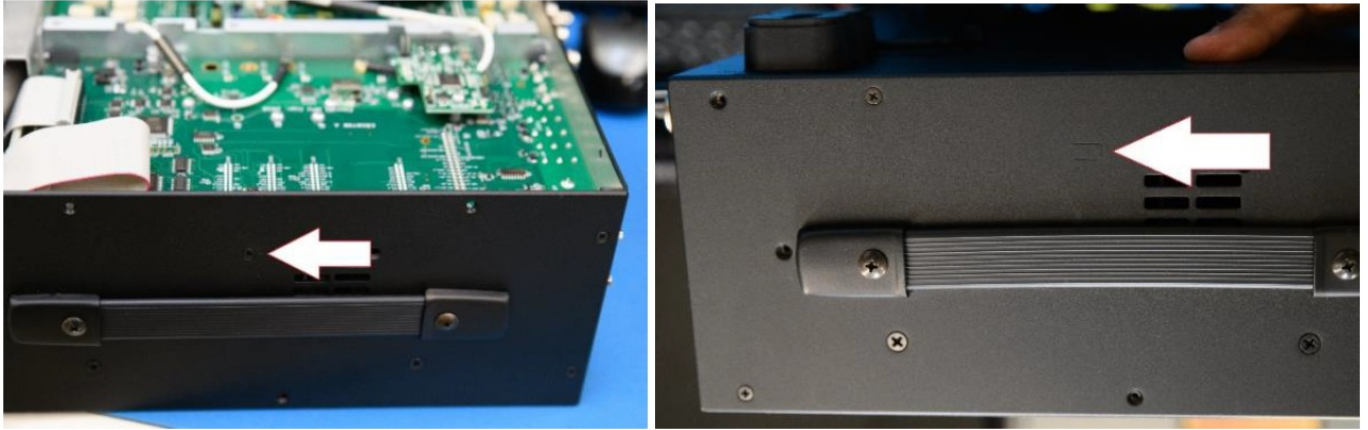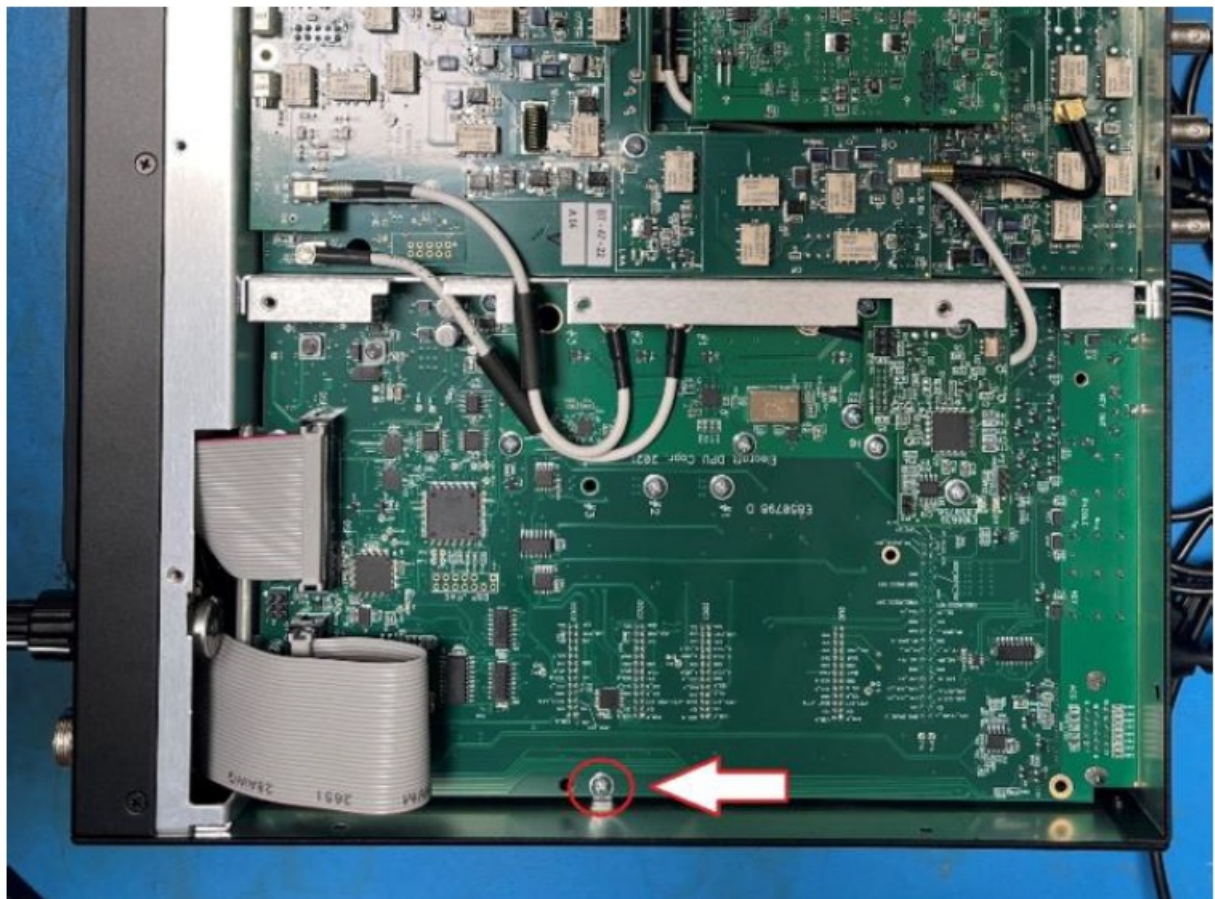Remove Left Side Panel (the side with the handle)

Photo 2. Side panel with Machine Screw (left). Side panel with brazed bracket (right)

There are two different side panels. One has a bracket that is attached to the side panel with a flathead screw, the other has a brazed-on bracket.
If there is a screw, remove it. DO NOT remove the L Bracket (see Photo 2, left)

If there is no screw (see Photo 2, right), your radio has a brazed bracket. Remove the screw from the bottom side of the radio (Photo 3).

Loosen or Remove the Single Board Computer to Access the DDC4 #2 Board Socket

There are two recommended techniques to access the sockets beneath the single-board computer (SBC). Method A involves removing the SBC completely while Method B has you lifting it up and working underneath it. If you chose Method A, you must be very careful with the delicate SBC cable connectors and avoid dislodging wires from the connector header when unplugging the cables. With Method B, you remove the screws, then lift and suspend the SBC without fully removing it. If you choose this method, you will be working underneath the SBC board. The video should help you decide which technique is best for you. Please view it at least once before proceeding. Both methods are described below and are shown in the video.

Method A. Remove the SBC

Suggestion: photograph the top of the radio including the SBC before removing the SBC so you may refer to its wiring in case of reassembly difficulty.

Disconnect all of the cables from the SBC, remove the screws, and lift out the SBC. To unplug the SBC cables, release tabs and pull on the connectors, do not pull on the wires. Remove four (4) machine screws holding the SBC to its bracket.

Remove the SBC and carefully place it aside.

Method B. Lift and support the SBC.
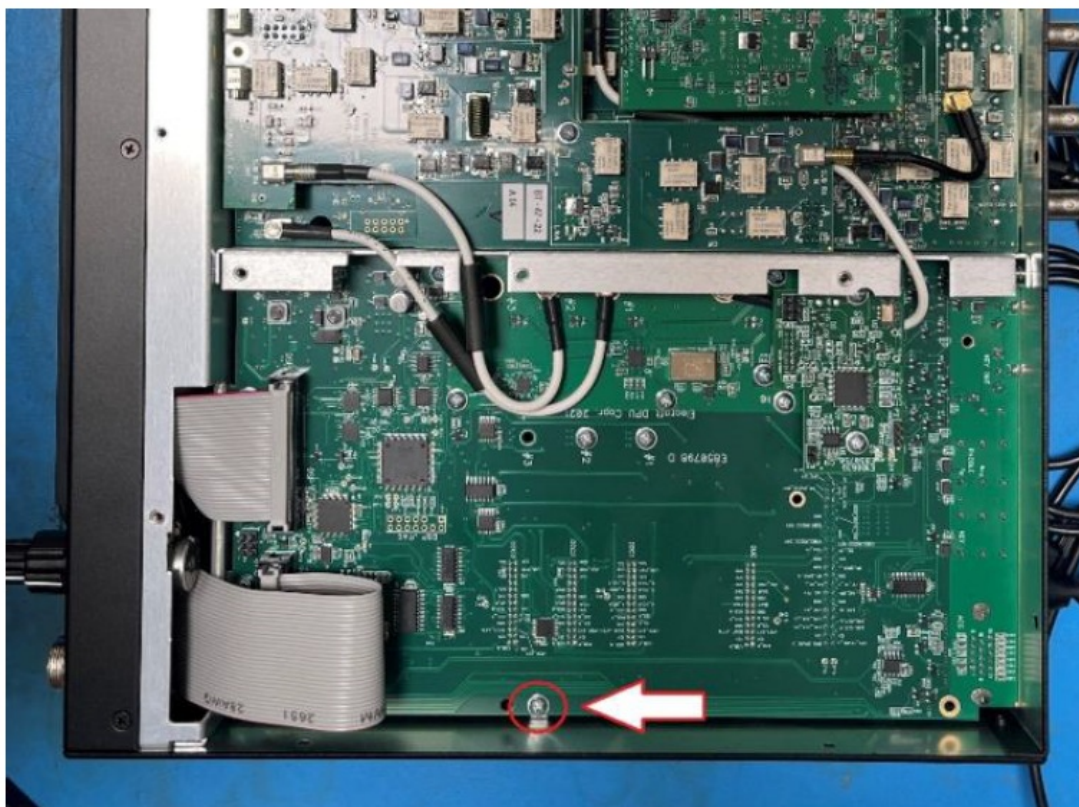
Remove four (4) machine screws holding SBC to its bracket. Carefully lift SBC upward to provide clearance and support it while working beneath it. Photo 4 shows a red ruler holding the board up and out of the way to provide access to the socket below. You may find that having two rulers aids stability.
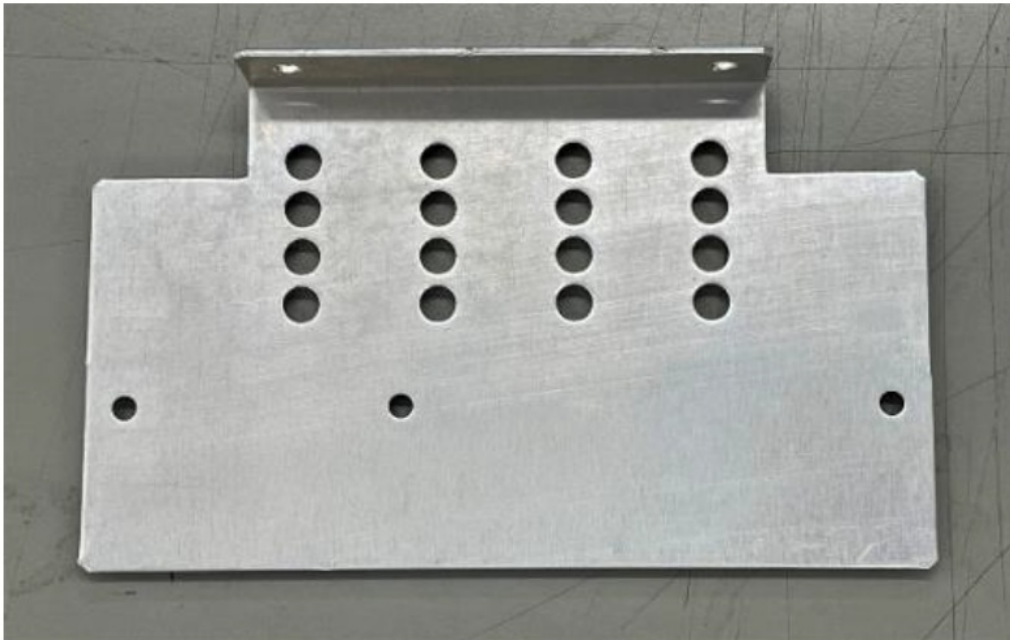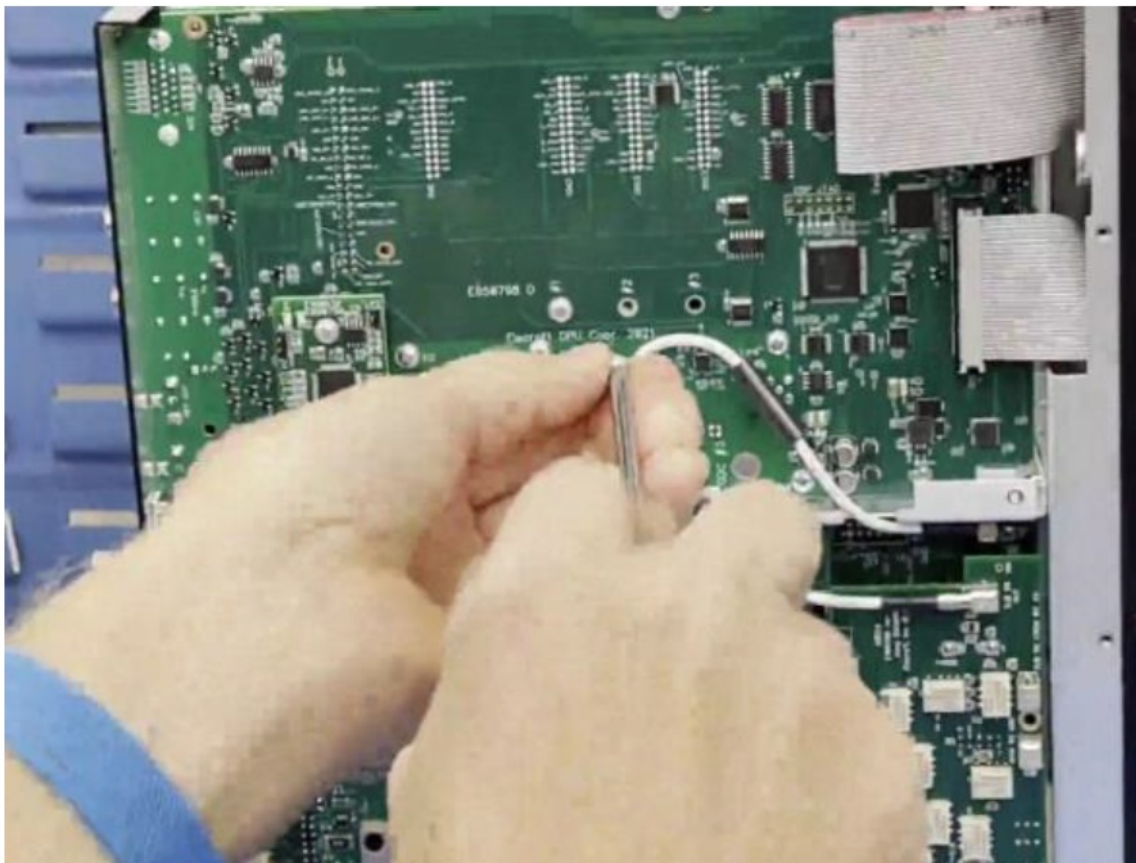
Photo 6. Fiber Washer spaces the KCCC4 board slightly above the KDUC board.

Photo 4. Supporting SBC using a non-conductive device (a ruler). Remove the rear SBC bracket. You need not loosen or remove the front bracket. Remove five (5) screws and lift out the SBC shield. Photo 5.SBC Shield

Carefully place the radio on its side and fasten the DDC4 board with screw E700381 inserted from the bottom of the radio. (Photo 7). Make sure the fiber washer is between the DDC4 board and the DUC board before continuing.

Sandwich the fiber washer, E700031, between the mounting lug of the KDDC4, E850799 board, and the KDUC board, and then plug the KDDC4 board into slot 2. (Photo 6)
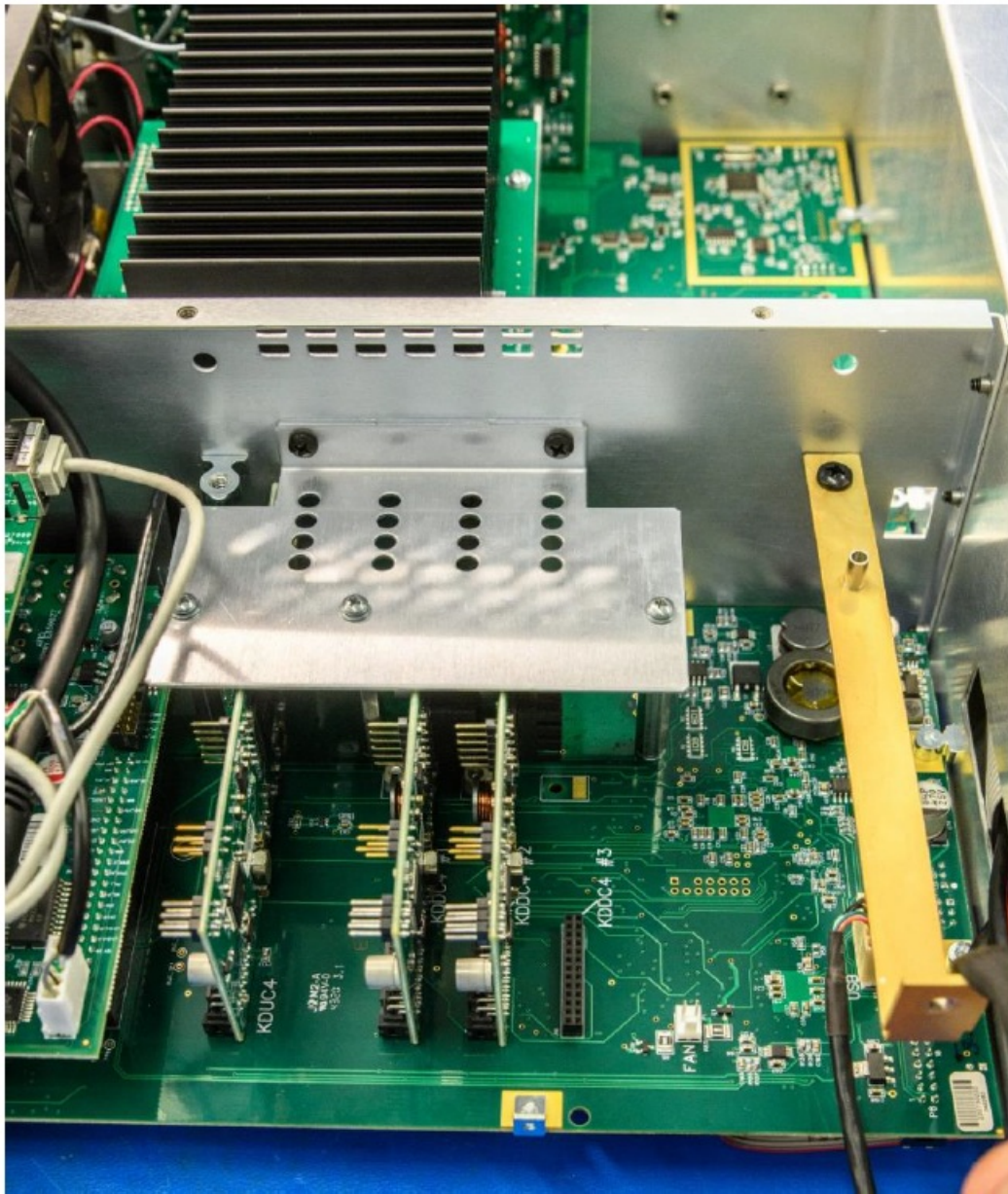
Photo 8. KDDC4 #2 Installed and Shield Replaced

Reinstall the SBC by reversing the procedure you employed. Install the SBC shield, Install the rear SBC bracket, Install SBC, and if necessary, plug in the SBC Cables. Your radio should look like Photo 8 now.

Install Left Side Panel.

Now is a good time to (optionally) check to confirm that your K4's low-power amplifier attachment screws have lock washers. This procedure, Confirm Lock washers Under Low Power Amplifier (LPA) Machine Screws, is documented at the end of this document.

Install Subreceiver Board
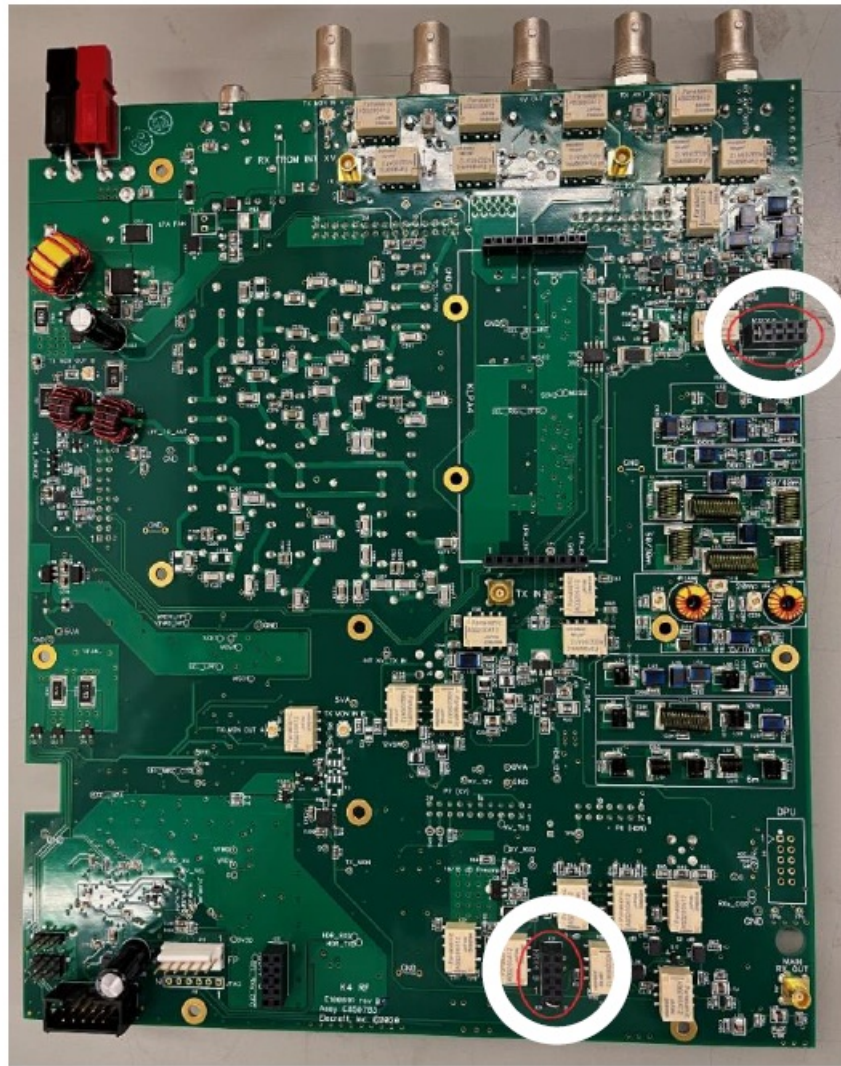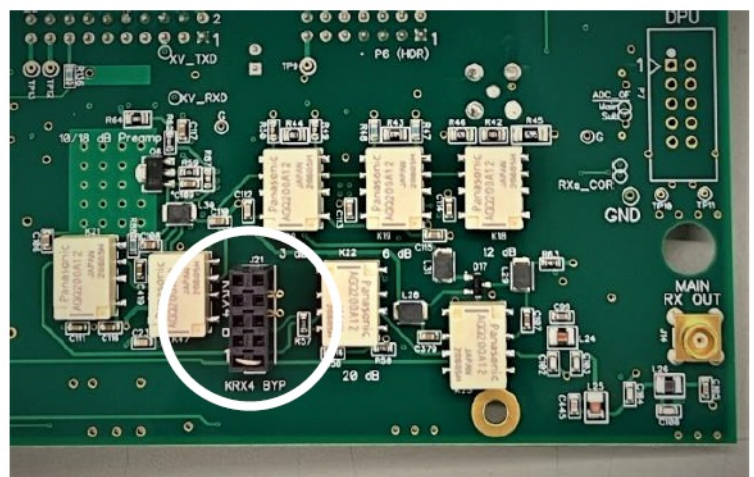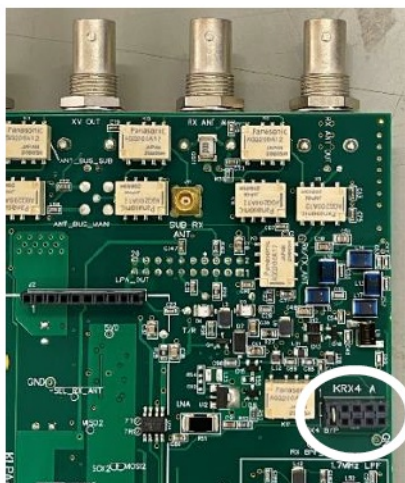
Photo 9. KRX4 Subreceiver Jumpers on the K4 RF board

Photo 10. Jumper 20 (left). Jumper 21 (right)

Referring to Photos 9 and 10, remove jumpers J20 and J21.

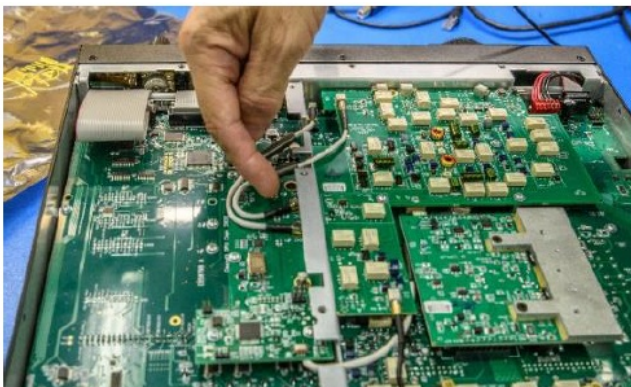Photo 11. K4 underside before Subreceiver is installed.

Photo 12. K4D with Subreceiver board and coaxial jumpers installed.

Plug in KRX4 Subreceiver PCB Assy E850801 into subreceiver slot. It plugs into the sockets that previously held the jumpers you just removed.

Fasten the sub-receiver board with three (3) pcs E700381 using a #1 Phillips screwdriver.
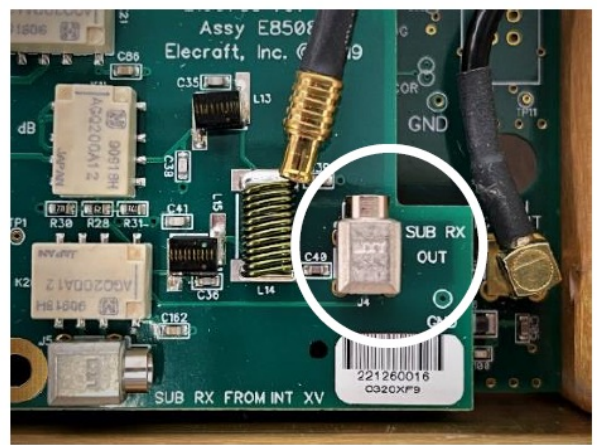
Photo 13. Coax Jumpers. Subreceiver antenna (left), DDC (right)

Plug in coax cable E770096 KDDC4 #2 to RF PCB Ferrite Cable. This connects the newly installed KDDC4 board RF connector protruding through the K4DPU board to the SUB RX OUT jack, J4, on the KRX4 subreceiver board. Install Bottom Cover. Make certain to re-install the lock washers over the LPA heat spreaders as shown in Photo 1. Install Top Cover. Make certain to connect the speaker cable first.

Sub receiver Enable
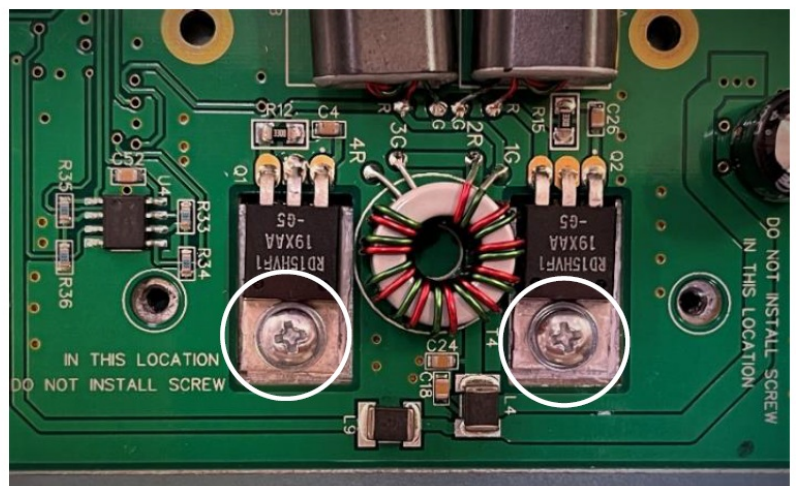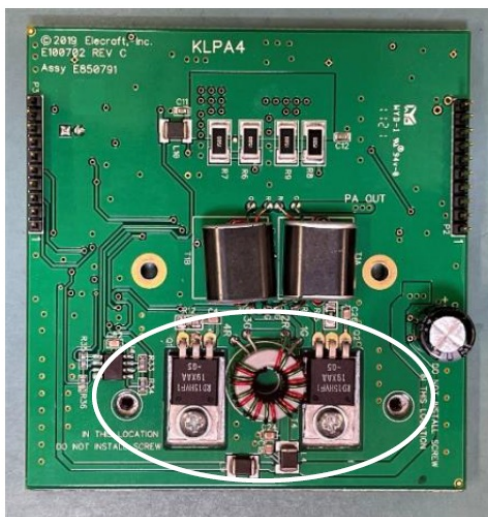
Power up K4D. Press MENU to enter the Menu. Scroll to KRX4 (the menu is organized alphabetically). Unlock the menu entry and enable KRX4.

Optional: Confirm Lock Washers Under Low Power Amplifier (LPA) Machine Screws While you are working on your radio, please confirm that LPA has lock washers fastening the TO-220 packages to the heat spreader. These are visible only when the LPA has been removed from the K4 and are in addition to the lock washers attached to the bottom cover of the K4.

Remove LPA, turn over and inspect. If no lock washers are installed on the transistors, remove the screw from one transistor, add the lock washer, then replace and tighten the screw. Afterward, remove the second transistor's screw, add the lock washer, and replace and tighten the screw. DO NOT REMOVE BOTH SCREWS SIMULTANEOUSLY. The board may reposition itself, making reassembly difficult.

Reinstall LPA.

Documents / Resources

Elecraft K4D Transceiver Factory [pdf] User Guide
K4D Transceiver Factory, K4D, Transceiver Factory, Factory

References

- **User Manual**