Elecraft KPA1500
Temperature Sensor Modification Kit

E740337

Revision A4, September 27, 2018

Introduction

This modification reduces the variation of the KPA1500 temperature sensor display by adding capacitance in the temperature sensor circuit. **This modification can be accomplished with either an additional leaded 1 uF capacitor across the output pin of the temperature sensor to ground, or by removing and replacing C1 & C12.** Parts for both modifications are included in this kit.

While a 0 to 3 degree displayed temperature shift between receive and full carrier transmit is normal, some amplifiers that display a larger temperature shift, especially on 40 m and lower, will benefit from this modification.

Minor soldering is required.

Has my KPA1500 been modified?

You can check to see if the modification is installed by removing the bottom cover and checking the revision level of the E850760 PCB, if the PCB is at Rev A6 or later the modification has been applied. The revision level is indicated on the white bar code label, and or hand written in the area bracketed in the top photo on page 2.

(Note: This change is now made at the factory on all new KPA1500s by changing the value of existing SMD caps on the PCB, and as a result may not have the additional leaded capacitor on the temperature sensor leads.)

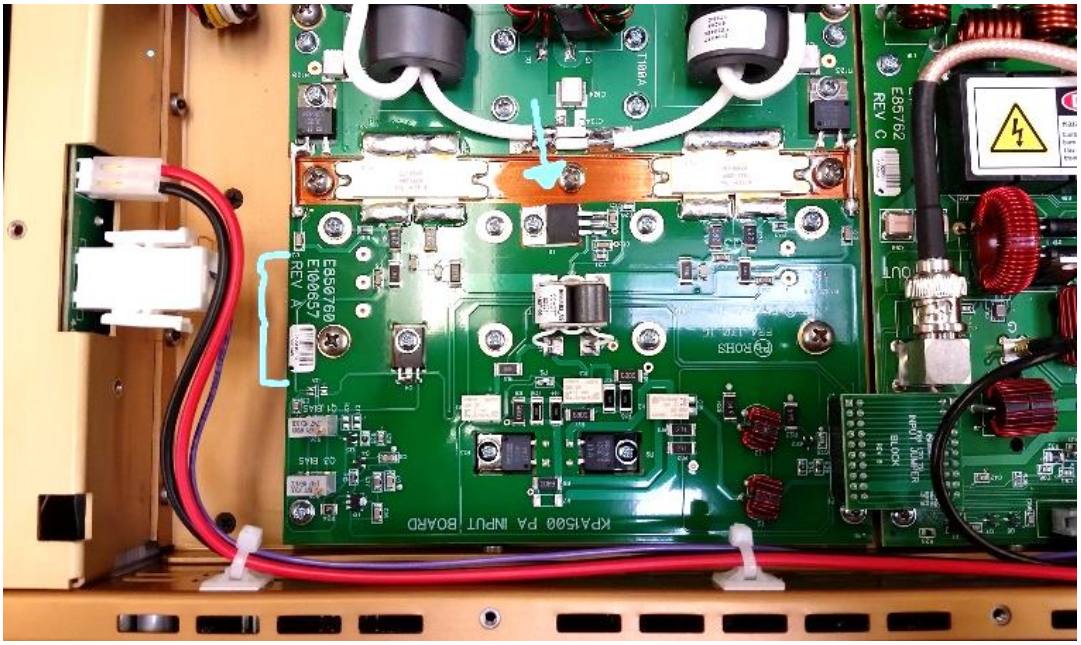
Tools required

1. A fine tip soldering iron.
2. A soft surface where you can lay the KPA1500
3. A grounded wrist strap and ESD dissipating mat are recommended when you work inside your KPA1500.

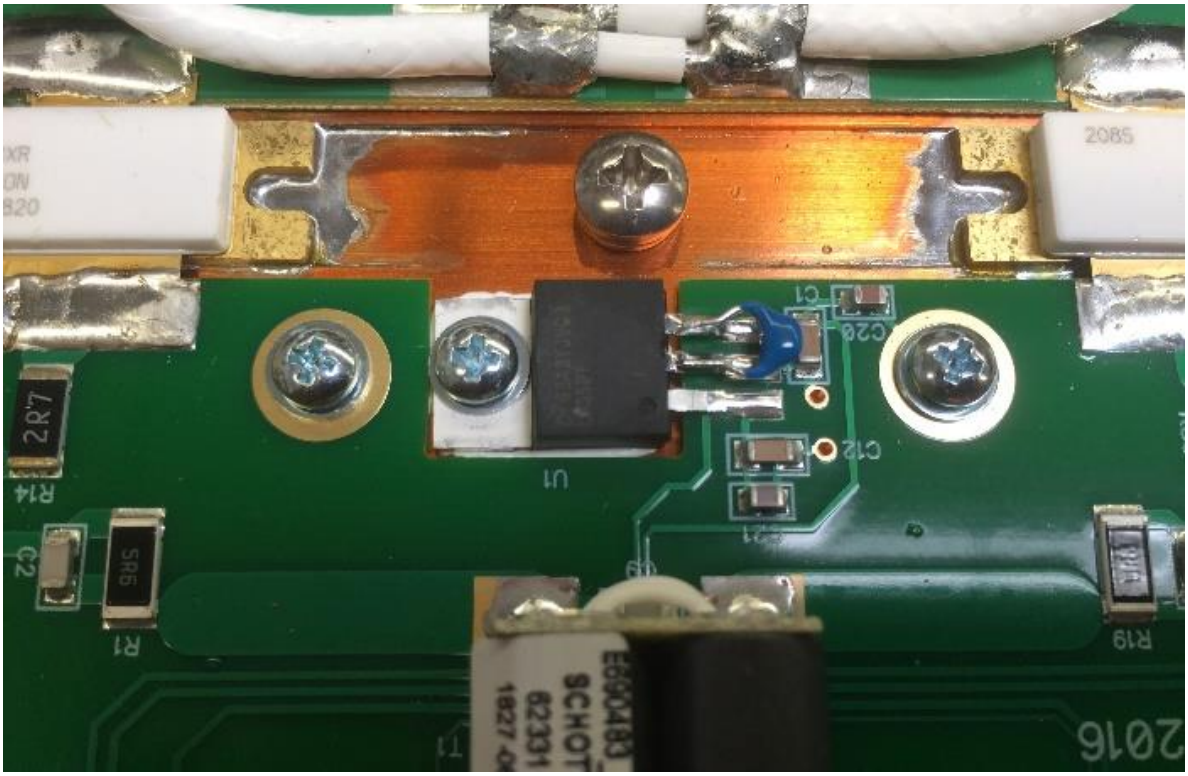
Procedure for leaded component modification.

This kit contains 2 leaded capacitors, you will only need to install 1 of them, 1 is a spare. Alternatively, if you opt to install the SMD components, we have provided 3, 2 to be installed, and 1 is a spare. This kit also contains 2 extra screws, use them if needed, i.e., you lose or strip one during disassembly or assembly.

1. Power the unit off and disconnect all cables.
2. Flip the RF Deck over on its top with the Front Panel facing you.
3. Remove 14 flat head screws from the perimeter of the bottom cover and remove bottom cover. (Note 4 of the screws are located on the sides, 2 on each side panel.)
4. Locate U1 (indicated by an arrow in the picture at the top of page 2) on the E850760 Input PCB, it is on the top center of the PCB, and just below the exposed portion of the copper heat spreader.
5. Trim the leads of 1 uF 25V 10% (X7R or equivalent) capacitor for a total component length of approximately 0.300” (7.5mm) before installation.
   Caution: The Capacitor body will crack if the leads are spread too wide.

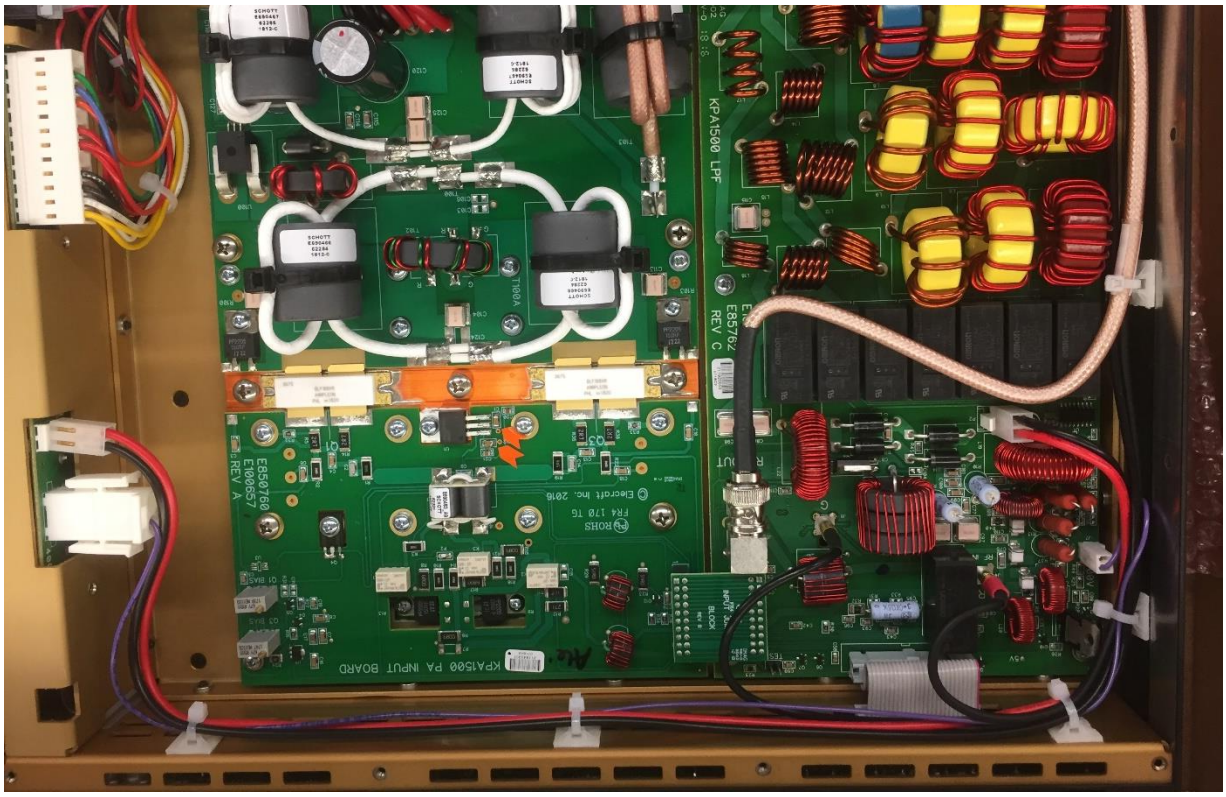


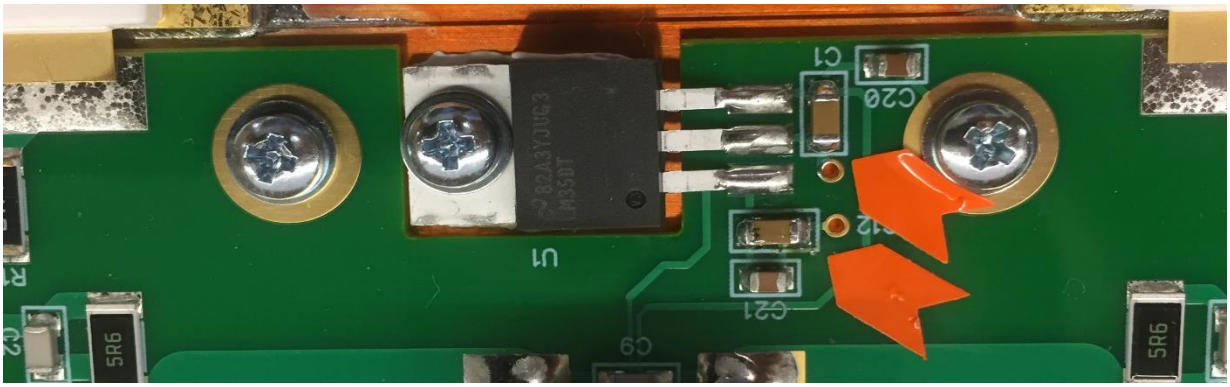
6. Lay the capacitor with its leads parallel to U1's leads as shown.
7. Solder the capacitor into place on each temperature sensor lead (two upper leads in the picture below.)
8. Replace the bottom cover. Install14 flat head screws.
9. Flip the RF Deck right side up and return it to service.



Procedure for SMD component modification.

1. Power the unit off and disconnect all cables.
2. Flip the RF Deck over on its top with the Front Panel facing you.
3. Remove 14 flat head screws from the perimeter of the bottom cover and remove bottom cover. (Note 4 of the screws are located on the sides, 2 on each side panel).
4. Locate C1 & C12 on the Input PCB as shown by the arrows below.
5. Remove C1 & C12 and replace them with E530756 0.47uF 25V X7R 1206, 3 are supplied, 1 is a spare.
6. Replace the bottom cover, install 14 flat head screws.
7. Flip the RF Deck right side up and return it to service.





If you have any questions or encounter problems performing these changes, please feel free to contact us at:
Email: support@elecraft.com Phone: 831-763-4211