K3/K3S Integration with KPA500 and KAT500: Set Up and Configuration

This Application Note can be used as a checklist of steps to ensure that the K3/K3S and KPA500 plus KAT500 combo are optimized for operation. While all the steps are found in individual manuals, this Application Note is intended to ensure that all the items to be set up are covered. It assumes that all the proper cables have been purchased and are available to be connected as called for. Please contact Elecraft sales if there are questions about cables.

Please confirm that you have the K3/KPA500/KAT500 connected properly. Here's how we recommend it be wired up. When using the AUX cables, cable #4, please be sure not to use the RCA cables provided with the KPA/Kat500 combo.
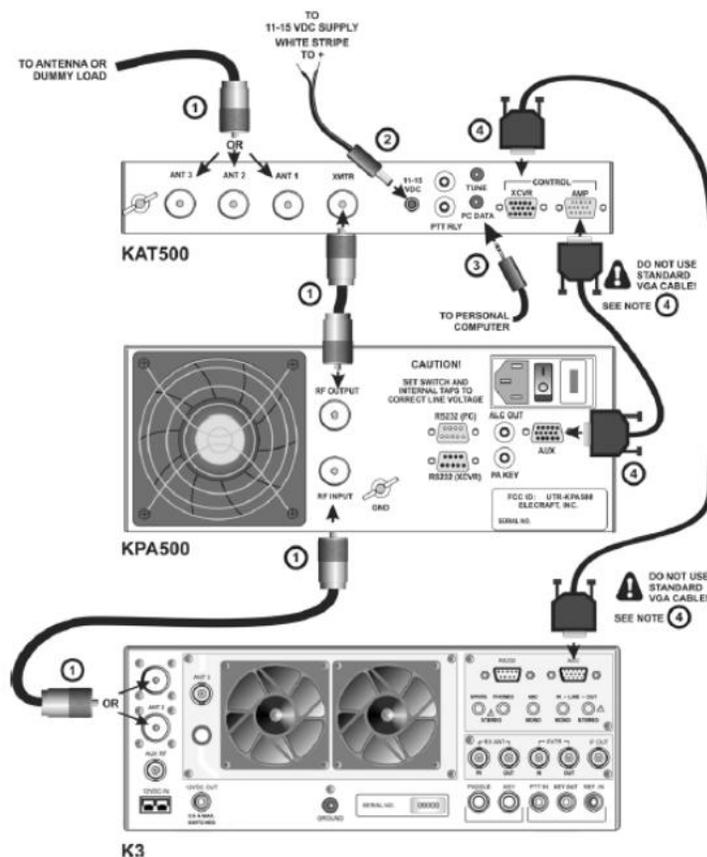
 Larger image on page 2.

Figure 1. Cabling Diagram: Elecraft K3, KPA500 and KAT500 Using E850463 Aux Interface Cables.
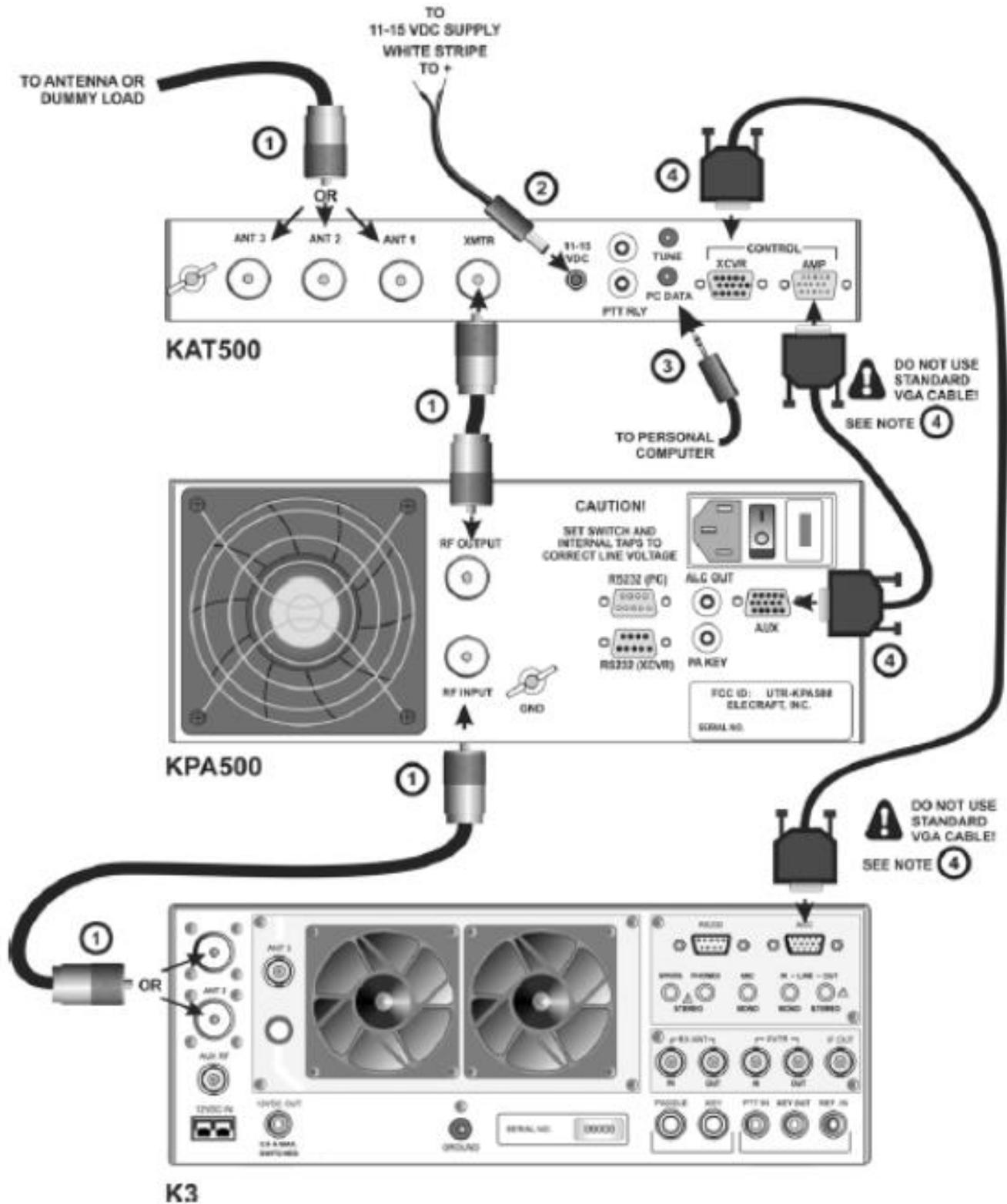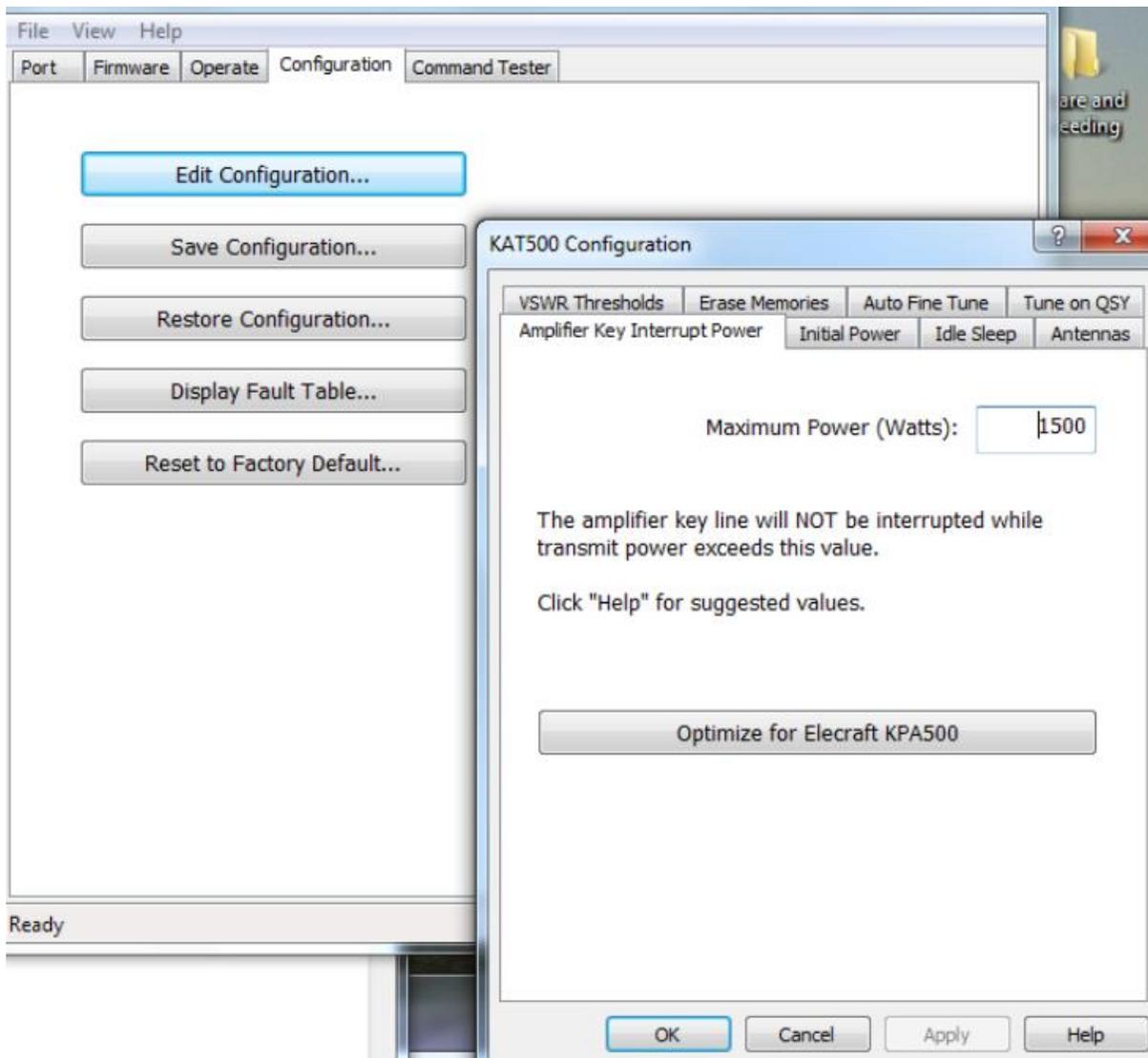
Figure 1. Cabling Diagram: Elecraft K3, KPA500 and KAT500 Using E850463 Aux Interface Cables.

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1. On the K3, please enter the CONFIG menu and set item PWR SET = PEr bAnd. This allows the KPA500 to tell the K3 when it enters OPER mode. The K3 then will remember individual power settings by band.

2. While in the K3 Config menu, please select item, KAT3. Then, tap 1 (same as the A/B button). You should see KAT500Y in the VFO B window to confirm that the KAT500 will now read the K3's VFO frequency.

3. Set up the KAT500 to interoperate with the KPA500. Please enter the KAT500 Utility and select the Configuration tab then click on the button to Optimize for KPA500.

Training the Tuner

Overview

We will be stepping through each band where you have an antenna connected to the KAT500, selecting the top, bottom and places in the middle of each band where you expect to operate. At each of these points, we will be causing the K3 to emit a steady-state, CW RF signal for the KAT500 to use while it executes a full tune cycle. Since the KAT500 is an Automatic Tuner, it will remember the settings it finds at each of the points in the band. This is referred to as 'Training the Tuner'.

The following sequence assumes that the K3, KAT500 and, if appropriate, the KPA500 are installed as specified in the KAT500 Owner's Manual, Figure 1.

Set up

- On the K3, go to CONFIG: TUN PWR: Set to 25 watts
- On the KAT500, select the MAN mode.
- On the KAT500, Tap the ANT button to select the appropriate antenna for the selected band. The ANT LED will light solidly indicating the antenna port selected.
- On the K3, select the appropriate band with the Band UP/DN button. Then, adjust VFO A to the lowest spot in that band where your antenna will work.

For each VFO Setting perform the following to Train the KAT500:

1. Tap the MODE button so that AUTO is enabled. The AUTO LED will stay on solidly. This places the tuner into Automatic mode so that it will remember the settings found during the upcoming tune cycle.
   - Next, Tap the TUNE button on the KAT500. The AUTO LED will now start to Flash. This indicates that the KAT500 is now awaiting the RF needed to execute a full tune cycle.

2. On the K3, HOLD the XMIT button to enter TUNE mode. The K3's TX LED will come on and the VFO A window will indicate the SWR while the VFO B window will indicate power, which should be close to 25W.

3. The KAT500 will begin to clatter as it searches for a low SWR. This is the Full Tune Cycle. The clattering will stop once a low SWR is found and the KAT500 AUTO LED will now be solid. This indicates that the full tune cycle is complete and the results have been memorized.

On the K3, adjust VFO A frequency for the upper end of the band where your antenna will operate. Repeat Steps 1-3 above for this setting. Then, move into the middle of the band and repeat

Steps 1-3 again.

Train the tuner on all Bands

Next, step to other bands where your antenna can operate within a 10:1 SWR ratio. Perform the same steps above as with the first band chosen.
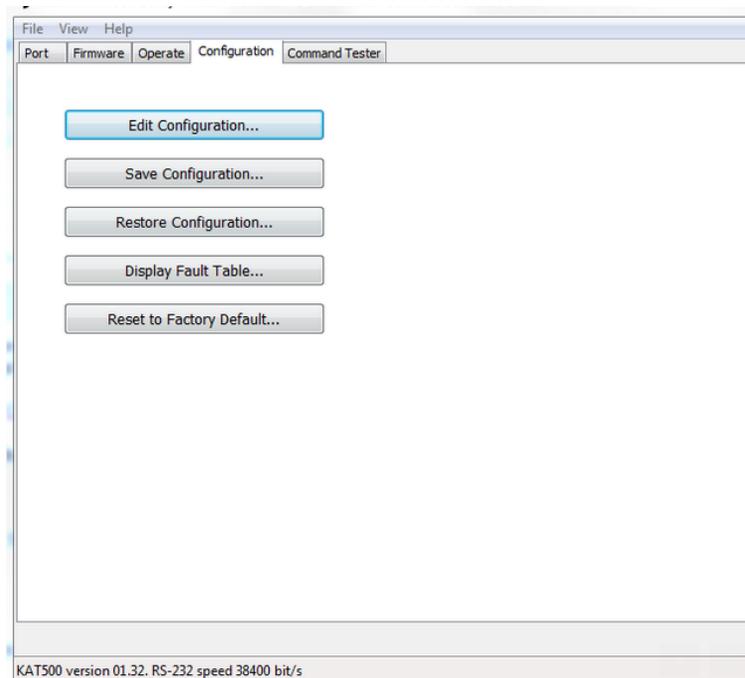
How do you know how many times per band needed to fully train the tuner? Here's the answer from the KAT500 Owner's Manual.

Training the tuner with all your antennas

If you have more than one antenna, continue to ANT 2 and ANT 3 ports using the same technique above for those antennas. The KAT500 tuner can remember settings for all 3 antenna ports separately!

Make it easy for your Tuner to remember what it was trained to do.

Once you have fully trained your KAT500 tuner on all bands and all Antennas, you can save your work using the KAT500 Utility. Go to the Configuration tab in the Utility and select Save Configuration to complete your tuner's training.

During operation, if you encounter any more faults in the KPA500, please send us your configuration file to us via email for analysis.