

Elecraft KXPA100 + KX3

Power Calibration (Optional)

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Introduction

The KXPA100 is factory calibrated to an Elecraft lab-standard KX3 transceiver, measuring and saving expected KX3 drive power for a given KXPA100 output power. This alignment is performed separately on each band and is generally accurate. Some users report that when their specific KX3 is connected to the KXPA100 via the KX3-KXPA adapter cable, output power control is less accurate than desired. If this is the case, an optional calibration procedure pairs a specific KX3 to a specific KXPA100 and eliminates this power output discrepancy.

Parts and Tools Required

You will need a 100-W, 50-Ω dummy load, a KXPACBL cable set, your KX3 and your KXPA100. The KX3 firmware must be version 1.87 or later, and your KXPA100 must have firmware version 1.04 or later.

Procedure

- Cable your station, using the KXPACBL cable set. Attach your 50-Ω dummy load to the ANT 1 jack of the KXPA100.
- Turn on both the KX3 and KXPA100. Ensure PA MODE to ON in the KX3 menu.
- If you have the KXAT100 Antenna Tuner installed, cycle through each band and confirm that ANT 1 is selected and that the tuner is in BYP mode on each band.
- Return to the PA MODE menu entry on the KX3. Change the setting to PA MODE to Pout CAL. Exit the menu. Set the KX3 frequency to the 1.8 MHz band. Change the KX3 PWR setting to "CAL 75W".
- Press TUNE. The KX3 will transmit for a short while then stop. During this transmission, the KX3 and KXPA100 will determine what drive level is needed to get to 75 W. It will then save this number.
- Repeat this step on each band. When you reach 50 MHz, reconfirm the power is set to CAL 75W. (Power output is set separately on 50 MHz).
- After completing 75-W calibration on all bands, set PA MODE to ON in the KX3 menu. This completes the optional power-calibration procedure.

The TX GAIN menu entry can be used to view the calibration drive level. To use this menu entry, set PA MODE to ON, have the KX3 connected to the KXPA100 via the control cable, and set PWR to higher than 10 W. In this case the TX GAIN menu parameter will be something like "ALC A2.5". The "2.5" means that on the current band, 2.5 W is needed to get to 75 W. The "A" in front of the 2.5 means that the drive number in use is the one that came from the amplifier.

On any band where you perform a Pout CAL at 75 W, the KX3's new drive number will override the factory-programmed value from the amplifier. For example, suppose that on 40 m the original TX GAIN parameter had been "ALC A2.5". After doing Pout CAL the number might change to "ALC T2.5" (or something close to this). The "T" in front of the drive power means that the *transceiver* is now providing the calibration number.

To erase the transceiver's TX GAIN number and go back to the amp's drive power, hold CLR while in the TX GAIN menu entry. This will make the "T2.5" go back to "A2.5" (with the applicable levels displayed).

Pout CAL is performed and saved on a per-band basis. Erasing the "T" value is also per-band. You could for example do Pout CAL on all bands, just to see how it impacts power output control, then go back and erase some or all of the "T" values.