

ELECRAFT APPLICATION NOTE

INTERFACING PowerCombo to FLEX 6000-Series RADIOS

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PURPOSE

The Elecraft PowerCombo of the KPA500 and KAT500 easily interfaces with radios featuring serial protocol, providing “Enhanced Mode” functionality that informs the amplifier and its tuner of frequency changes as soon as they are made by the transceiver. FlexRadio 6000-series transceivers, with their host-side USB ports are among these easily-interfaced radios. Three steps are involved:

- Connect Cabling
- Configure the Transceiver
- Configure the KPA500

Cabling

Three separate cables are required. For transmit keying, the phono-to-phono plug cables provided with the KPA500 and KAT500 daisy-chains between the transceiver’s keying output jack, the PTT RLY jacks on the KAT500, and the KEY IN jack on the KPA500. Flex uses different names for this keying output jack, depending upon the radio.

Flex Model	Keying Output connector
6300	TX
6400/6500(M)	TX1, TX2, TX3
6700/6800(M)	Out1, Out2, Out3

Frequency information is transferred using an Elecraft KXUSB cable plus a KUSB cable and adapters. The USB connector end of both cables plugs into the Flex Radio. The 3.5mm plug end of the KXUSB is inserted into the PC DATA jack on the rear panel of the KAT500. The DE9 end of the KUSB connects to a null modem cable and a “mini gender changer”, and then into the KPA500’s RS232(XCVR) jack.

SmartSDR Settings

Note: You will need to use SmartSDR version 2.1 or higher

Using SmartSDR, configure the Flex port that is created by plugging in the USB cable. Select Settings → USB Cables and confirm that two new CAT cables are recognized. Select the first of these new CAT cables and then click on Edit. Confirm that you have the following values:

- Name: New CAT Cable
- Cable Type: CAT
- Source: TX Slice
- Auto-Report: Enabled

Click on Advanced (the down arrow) to expand the dialog window and display the baud rate.

- Speed: 38400
- All others: leave at their defaults (8 bits, no parity, one stop)

Repeat these steps for the second new CAT cable.

KPA500 Configuration

Power on the KPA500 and access its menu by holding MENU. Using the down-arrow key to the right of the display, scroll to RADIO. Hold the EDIT button and use the down arrow to select “SERIAL”. Tap CURRENT to exit the edit mode. Tap the down arrow a few times until RS232 XCVR appears. Hold EDIT and select 38400 bps. Press MENU again to exit EDIT. Now scroll down to SER POLL. Hold the EDIT button and use the up arrow to select “ON”. mode. Tap HV then hold MENU to exit the KPA500 menu.

Operation

Test operation by changing bands on the transceiver. The KPA500 should quickly follow and change bands. As you tune your transceiver, the KAT500 will follow and automatically select the correct ATU tuning solution, even before transmitting.

If the amplifier does not follow the radio, double check that the KUSB and KXUSB are recognized by the Flex transceiver, that cables are fully plugged into all three units, and then confirm that the baud rate is set to the same value on both the transceiver and the KPA500.