ELECRAFT APPLICATION NOTE
INTERFACING KPA1500 to FLEX 6000-Series RADIOs

PURPOSE

The KPA1500 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 USBus ports are among these easily-interfaced radios. Three steps are involved:

- Connect Cabling
- Configure the Transceiver
- Configure the KPA1500

Cabling

Two cables are required. For transmit keying, the phono-to-phono plug cable provided with the KPA1500 connects between the transceiver's keying output jack and the KEY IN jack on the KPA1500. Flex uses different names for this keying output jack, depending upon the radio model.

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. The 3.5mm plug end is inserted into the PC DATA jack on the rear panel of the KPA1500 and the USB connector plugs into one of the Flex Radio's ports.

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)

KPA1500 Configuration

Power on the KPA1500 and access its menu by tapping MENU. Using the down-arrow key to the right of the display, scroll to RADIO TYPE. Hold the MENU button (EDIT) and use the down arrow to select "SERIAL". Tap MENU to exit edit mode. Tap the down arrow a few times until SERIAL SPEED XCVR appears. Hold MENU (EDIT) and select 38400 bps (or match the serial bits per second rate set in the radio). Similarly, turn on TECH MODE (TECH MD ON). Tap STATUS to exit the KPA1500 menu.

Operation

Press the Down button to select the XCVR Frequency status screen. Change frequencies on the radio and confirm that the displayed XCVR Frequency matches.

Change bands on the transceiver. The amplifier should quickly follow to the new band. As you tune your transceiver, the KPA1500 will automatically select the correct ATU tuning solution, even before transmitting.

If the amplifier does not follow the radio, double check that the KXUSB is recognized by the Flex transceiver, that the KXUSB cable is fully seated at both ends, and then confirm that the baud rate is set to the same value on both the transceiver and the KPA1500. Once operation is verified, you may choose to disable TECH MODE.