ELECRAFT APPLICATION NOTE
INTERFACING PowerCombo to YAESU RADIOS

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PURPOSE

The Elecraft PowerCombo of the KPA500 and KAT500 easily interfaces with radios featuring BCD (binary coded decimal) band data protocol. Elecraft offers cables that take advantage of the BCD band data to select the proper operating band even before the first transmission is made. Three steps are involved:

- Connect Cabling
- Configure the Transceiver
- Configure the KPA500 and KAT500

Cabling

Two different interface systems are possible. The simplest provides the transceiver's keying signal to the amplifier and places it into transmit mode. A slightly more complicated cable also sends band data to the amplifier so its relays may switch and settle before the first burst of RF is applied.

Keying-Only

For larger Yaesu radios, the phono-to-phono KEY IN cables supplied with the amplifier and tuner connects from the transceiver's TX GND jack to one of the KAT500's PTT RLY phono jacks, then another phono cable runs from the other PTT RLY jack to the KEY IN jack on the KPA500.

Smaller Yaesu (generally mobile) radios use the CBL-YAESUKEY, an 8-Pin MiniDIN to phono plug cable to implement standard amplifier keying. Different Yaesu radios use different pinouts and names for this 8-Pin MiniDIN, so care is required to select the correct version. For example, this jack is labeled "TUN/LIN" on the FT-991, FT-857, and FT-897. It is named "TUNER" on the FT-450, FT-950, and FT-1200. The FT-817 and FT-818 will key the KPA1500 through their "ACC" jack. Plug the phono-plug end of CBL-YAESUKEY into one of the KAT500's PTT RLY phono jacks, then run a phono cable (included with the tuner) from the other PTT RLY jack to the PA KEY jack on the KPA500.

No KPA500 or KAT500 configuration is needed for keying-only cables. Test functionality by placing the KPA500 into OPER mode and transmitting with the transceiver.

Band Data and Keying Cable

Implementing the band data feature requires a different cable, which also replaces the functionality of the keying cables described above. Large Yaesu radios have an 8-Pin DIN jack labeled "BAND DATA". As the name implies, operating band information is available here, and amplifier keying is also provided. For these radios, connect CBL-YAE-BANDKEY to the DIN jack on the radio and the XCVR CONTROL DE15 jack on the KAT500. Run the E850463 AUX cable between the AMP CONTROL DE15 and the AUX DE15 jack on the KPA500. Note that the phono cable is no longer required for keying.

Smaller Yaesu radios with their variety of connectors require a variety of cables. The following provide both band data and key-line drive.

Transceiver	Connector Name/Type	Elecraft Cable
FT-450, FT-950, FT-1200	LINEAR, 10-Pin MiniDIN	CBL-YAE-BKDIN10
FT-857, FT-891, FT-897, FT-991	TUN/LIN, 8-Pin MiniDIN	CBL-YAE-BKMINI
FTDX-3000	LINEAR, DA-15	CBL-YAE-BKDA15

The FT-817 and FT-818 do not supply BCD band data.

Menu Settings

No menu configuration is necessary for the larger Yaesu radios.

On some of the smaller transceivers, specifically the FT-857 and FT-897, the MiniDIN jack may be programmed for multiple functions. Referring to your transceiver's manual, set the jack to its "LINEAR" mode.

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 "BCD". Tap CURRENT to exit the edit mode. Tap HV then hold MENU to exit the KPA500 menu.

No configuration is necessary for the KAT500.

Operation

Test operation by changing bands on the transceiver. The amplifier should instantaneously follow and change bands, and the KAT500 will retune to the antenna jack and last frequency segment used in that band, even before transmitting.

If the amplifier does not follow the radio, double check that the cable is fully plugged in at both ends. If the KPA500 keys but the system does not respond to band changes, check that the radio's band data jack is configured in "LINEAR" mode.