

ELECRAFT Operating Note

Maximizing Battery Life in the KX3

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The Elecraft KX3 has been designed with mobile applications in mind and that means that maximizing battery life can be important. Built into the KX3 are a number of features and capabilities that can be enabled separately. In this way, your battery life can be improved by minimizing the KX3's receive and transmit current drain. This paper discusses a number of techniques to reduce battery life with the KX3.

Receive

The KX3 already has far lower receive-mode current drain than most all-band/all-mode transceivers, but you can further reduce it in several ways:

- ⤴ Use headphones (10-100 mA saved depending on volume level)
- ⤴ Turn off the LCD backlight (25 mA)
- ⤴ Turn off the RX I/Q port when not needed (10 mA; see MENU:RX I/Q)
- ⤴ Turn off the preamps:
 - 5 mA can be saved for the 20 dB preamp
 - 10-15 mA can be saved for the 10-dB preamp
 - Turn off the RX isolation amp (a savings of ~10-15 mA; see MENU:RX ISO)

Using all of the above techniques, receive-mode current drain can be as low as 150 mA, varying a bit per-band.

Transmit

In transmit mode, current drain varies with power level, supply voltage, band, and load impedance. An antenna tuner (such as the internal KXAT3 option) can help ensure the transmitter sees a good match.

There are some thresholds where the transmit current drain is automatically reduced by switching in a higher-impedance PA output transformer winding. In this case a decimal point is added to the right of the power display when you adjust it (e.g., "3.0 W."). Here are the conditions under which TX current is reduced:

- ⤴ 5.0 W or less in CW, FSK-D, and FM modes when key-down supply voltage is 11 V or higher

TX current in this case is typically 1 amp -- about 50% lower than what you'll see if you move power just a bit above 5.0 W. This is especially useful for QRP Field Day outings (etc.) where the rig is powered from an external 12 to 14 V battery.

- ⤴ 3.0 W or less in all modes, regardless of supply voltage

This is the generally recommended power level when operating from an internal NiMH battery pack. If you're more interested in power output than operating time, you can run up to 5 watts from the internal battery.

Optimize your field operations to maximize battery life with these features.