

ELECRAFT Application Note

Operating on 630M with the K3S and K3

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Background

With the FCC now approving new operating privileges on 630M, Elecraft is one of the few companies producing radios that will operate there. This Application Note discusses what is needed to do so.

What you will need

To operate on 630M, you'll need to add these items to your K3S or K3.

K3S Option	K3 Options	What it provides
<i>Already installed</i>	<ul style="list-style-type: none">• KSYN3A	<ul style="list-style-type: none">• Extends the tuning range to include the 630M band.
<ul style="list-style-type: none">• KBPF3A	<ul style="list-style-type: none">• KBPF3A	<ul style="list-style-type: none">• Provides extended sensitivity to the 630M for Transmit and Receive.
<i>Already installed</i>	<ul style="list-style-type: none">• KBPF3MDKT	<ul style="list-style-type: none">• Adds a capacitor to the RF board to reduce noise levels.
<i>Already installed</i>	<ul style="list-style-type: none">• KXV3B	<ul style="list-style-type: none">• Adds the Transverter output and input• <u>Note:</u> If you have a row of 5 BNC connectors on your K3, you already have the KXV3 module installed

Operating 630M

For receive purposes, either the K3S or K3 transceiver is fully self-contained. For transmit, you'll need an external amp of some kind. See the Links at the end of this App Note

RECEIVE

The K3S, or a modified K3, will receive on this band via the XVTR IN jack (or RX ANT IN). You'll need:

- A KXV3 transverter interface module (standard with the K3S but optional for the K3)
- A KBPF3A filter module, or a KBPF3 with a small mod (see KBPF3MDKT). The KBPF3A mod kit also comes with a capacitor to be installed on the K3's RF board to suppress LF noise. RX performance is quite good on 630 meters.

Technical Note: The XVTR IN and RX ANT IN jacks work on 630 meters (472 kHz) because both are post-TR switch. The transmit/receive switch has high-pass filtering that rolls off starting around 1 MHz, so you can't use ANT 1 or ANT 2.

TRANSMIT

You can get a transmit signal out on 630 meters using the XVTR OUT jack (same requirements as above). Our initial tests shows about 0.5 milliwatts. In this case you'd use XVTR IN for receive, not RX ANT IN.

You'll then need an external amplifier. It could be keyed using the rig's KEY OUT jack. This signal could also be used to control a T/R switch if you needed to use the same antenna for both transmit and receive. If you use two different antennas, you'll still have to cut the RX antenna off during TX, most likely.

Firmware and Menu Setup

To use XVTR IN and OUT on this band, set up the radio for 160 meters, then set the CONFIG:KXV3 menu entry to TEST. This is necessary because 160 meter isn't available as a transverter IF selection (yet).

More Information

The market for higher power amplification is expected to grow in the next 12-24 months as interest in the 630M band increases. Expect to see the number of linear amplifiers available to increase. Until then, here are some links to how other operators have implemented 630M:

[VE7XL's Getting Started on 630M](#)

[Rudy Severns/N6LF on 630M Antennas](#)

[Using a Non-Directional Aviation Beacon amp as a linear](#)

[FCC details on obtaining certification to operate on 630M](#)