



# ELECRAFT® K•POD

## CONTROL PANEL

### OWNER'S MANUAL

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E740285

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## Note Regarding K3/K3S References

Text referring to the K3 also pertains to the K3S unless otherwise noted.

## Key to Symbols and Text Styles



**Important – read carefully**



**Operating tip**

*CONFIG:SQ MAIN*    **Transceiver menu entries**

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# Introduction

The K-Pod control panel is an ideal companion to your Elecraft K4 or K3 transceiver, maximizing convenience and operating efficiency. It's small enough to be placed anywhere the action is, typically next to a computer keyboard. It's versatile enough to integrate multiple transceiver and station control functions.

Features include:

- A heavy, free-spinning knob that can be assigned to VFO A, VFO B, or RIT/XIT offset.
- Control of 16 functions using tap and hold operation of 8 programmable switches.
- On a K4, switch functions can be set up using the radio's built-in macro editor. On a K3, the *K3 Utility* PC software application can be used. In either case, simple or complex functions may be performed, such as selecting bands, modes, frequencies, or power levels; sending messages; clearing RIT; changing tuning rates, etc. Examples are provided in this manual.

Additional capabilities will be provided with future firmware releases, such as direct control of the unit's three general-purpose relay drive outputs.

## In the Box

- K-Pod module
- DC Power Cable, 2.1 mm Barrel Connector to RCA Connector, 24" (61 cm), E850427
- K3 Data Cable, 6P6C Connectors, 30" (76 cm), E980326
- K4/Computer Data Cable, USB A to B Connector, 36" (91 cm), E850629
- Allen Wrench (for Knob Set Screw), 5/64" (2 mm), E980004
- K3 Modification Kit (for some older K3 Transceivers, see page 16), E850755

## Installation

### Placing the K-Pod

The K-Pod module may be operated in any position. A built-in tilt stand may be deployed by loosening the two thumb screws to hold it at a convenient angle (see image on page 1). In addition two threaded holes for 8-32 screws are provided for mounting it on a user-supplied bracket or support.

### Adjusting the Knob Drag

Friction to limit the ease with which the knob turns is provided by two felt washers between the knob and the K-Pod panel, just as is done on K4 and K3 weighted knobs.

To adjust the friction, remove the finger grip to access the set screw holding the knob on the encoder shaft. Place your thumbs on the center of the knob and pull forward on the edge of the grip to slide it off of the knob. Avoid using tools since they can scratch the knob finish.

Use the supplied Allen wrench to loosen the set screw and position the knob for the desired friction. A popular technique is to loosen the knob, lay the K-Pod flat on the desk, and then tighten the set screw. This allows the amount of friction to be determined by the weight of the knob. Then, if further adjustment is desired, loosen the set screw again and either press the knob toward the panel to increase the friction or move it slightly away to reduce the friction.

## Data Connection

### *K4 Transceiver*

Connect the supplied K4/computer USB cable between the USB-B connector on the K-Pod and one of the K4's three USB-A connectors. The radio will power the K-Pod via this cable, eliminating the need to provide power to the K-Pod's 12-15 VDC connector. A longer USB cable may be substituted if desired.

### *K3 Transceiver*

Connect the supplied data cable between the RADIO connector on the K-Pod and the data connector on your K3. The K3 data connector is on the bottom of the K3 near the front panel as shown in Figure 2. If you need a data cable length different from the 30" (76 cm) supplied, you can make your own as shown on page 19.

The data connector on a K3S serial number 10787 (kit) or 10801 (factory assembled) or later will power the K-Pod through the data cable, eliminating the need for providing power to the 12-15 VDC connector. Earlier K3S transceivers or any K3 can be modified to power the K-Pod through the data connector by changing one resistor inside the K3/ K3S. This is a simple mod that you can do yourself if you are equipped with a suitable soldering iron (see Appendix A on page 16), or you can have Elecraft do it for you (see Customer Service and Support on page 15).

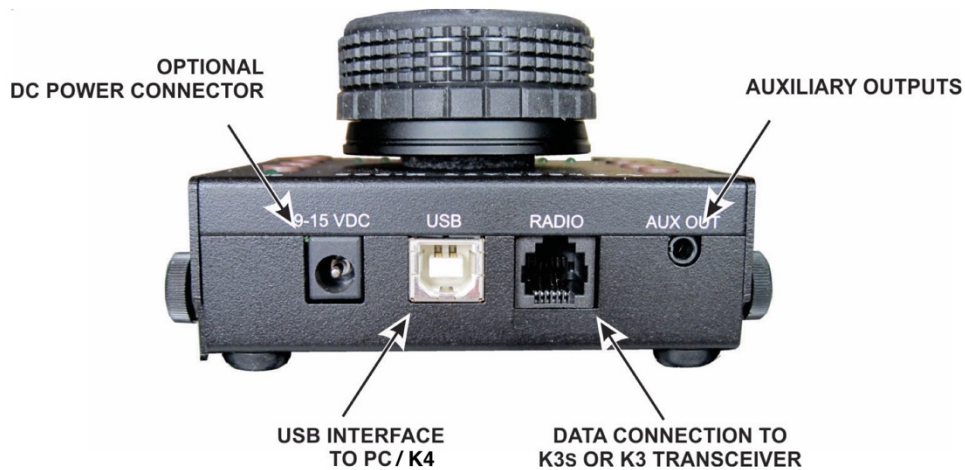


Figure 1. Interface Connectors.

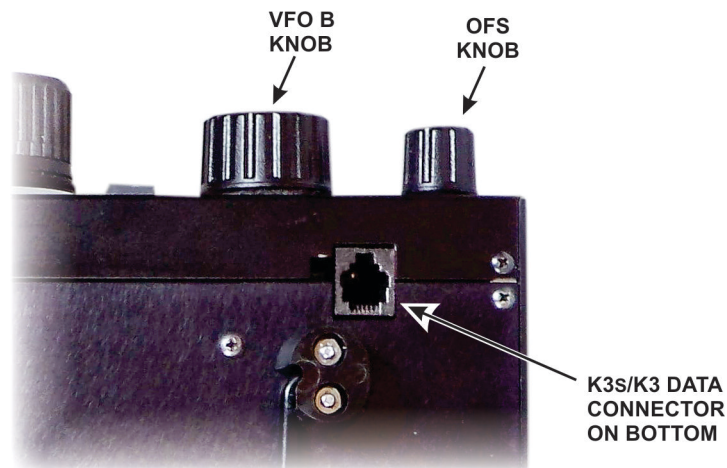


Figure 2. K3 Data Connector

## Optional Power Connection (K3 Only)

If you are not powering the K-Pod through the data or USB connector (see above), connect a 9-15 Vdc power supply to the optional dc power connector shown in Figure 1. The K-Pod requires about 50 mA. This power can be taken from the switched 12VDC OUT connector on the K3 rear panel. If you are powering other equipment such as a P3 Panadapter you can use a Y-cable to power both providing you do not exceed the current limit shown next to the connector. Some older K3 transceivers are limited to a maximum of 0.5A from this connector and will be labeled that way. A modification kit to increase the current limit to 1A is available, order the K312VMDKT, or you can have Elecraft do it for you (see Customer Service and Support on page 15).

Also you can power the K-Pod from any 9-15 Vdc power supply capable of providing 50 mA.

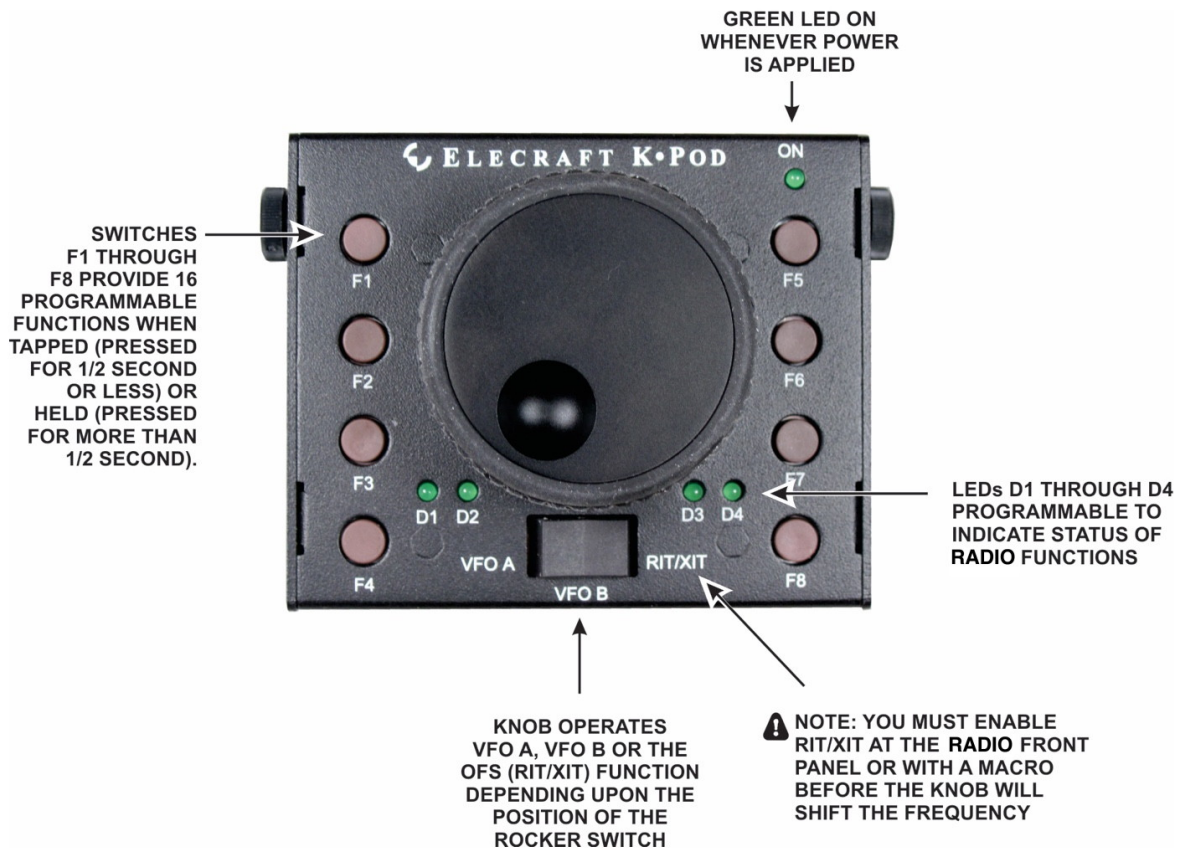
## USB Interface

The USB interface is used with a K4 transceiver, as well as to update the K-Pod's firmware. For the latter purpose it may be connected to any USB-A connector on a PC. For further details, see **Firmware Upgrades**, page 14.

## Auxiliary Outputs

A 3.5 mm tip-ring-ring-shield (TRRS) connector provides three programmable outputs to control external devices. Each open-drain output can handle up to 50 Vdc at 100 mA.

## Controls and Indicators



# Operating the K-Pod

## Feedback Tone

An annunciator in the K-Pod produces a brief audible tone whenever switches F1 through F8 are pressed. In addition, changing the position of the rocker switch produces a brief tone as follows:

Rocker Switch Position	Tone
VFO A	1000 Hz
VFO B	1500 Hz
RIT/XIT	2000 Hz

## Controlling a K4 or K3 Transceiver from the K-Pod

 **Firmware updates may be required:**


To use the K-Pod with a K3, the transceiver must be equipped with firmware version 5.54 or later and the K-Pod must be equipped with firmware version 1.06 or later. Refer to the K3 owner's manual for firmware version check and update instructions.

To use the K-Pod with a K4, the K-Pod must be equipped with firmware version 1.09 or later. Version 1.12 or later is strongly recommended.

See *Firmware Upgrades* on page 14 for instructions on updating your K-Pod firmware.

### *K-Pod Tuning Knob Functions*

Connecting the K-Pod to the K3 or K4 immediately gives you control over the VFOs and OFS (RIT/XIT) controls depending upon the position of the rocker switch. Also, by default K-Pod LEDs D1-D3 indicate the control selected: D1 for VFO A, D2 for VFO B and D3 for RIT/XIT (OFS). These can be reprogrammed.

 **When using the K-Pod with a K4, you can configure the K-Pod encoder to use the same number of counts per turn as the VFO A/VFO B/OFS encoders on the transceiver. Use *MENU: VFO Counts Per Turn* to select the desired setting.**

### *Using Switch Functions*

Other transceiver functions may be controlled by K-Pod switches. When pressed (tap or hold), these activate *macros* (strings of one or more transceiver control commands) stored in the K3 or K4 transceiver as described below. Macros are simple to create and store. If you're not familiar with the process, please refer to the instructions in Appendix C (page 20). Some popular macros are provided below.

K-Pod switch functions are mapped to K4 and K3 macros as follows:

- *Holding*  switches F1 through F8 (pressing for 1/2 second or more) launches K4 macros 1H through 8H, or K3 macros 1 through 8.
- *Tapping*  switches F1 through F8 (pressing for less than 1/2 second) launches K4 macros 1T through 8T, or K3 macros 9 through 16.

### *Setting Up K-Pod Switch Functions – K4*

The K4's built-in macro editor is used to both create custom functions and assign them to switches on the K-Pod. In the macro editor these are identified as **K-pod.1T** (switch 1 tap) through **K-pod.8H** (switch 8 hold).

To launch the macro editor at the K4, tap Fn in the bottom row of LCD touch controls, then hold MACROS. Use VFO A to scroll to the desired K-Pod switch, as identified in column 1 in the LCD window. Tap on the label field (column 2) to assign a label to your macro (for reference). Then tap on the macro field to enter one or more control commands. See examples below and more detailed instructions in Appendix C.

### ***Setting Up K-Pod Switch Functions – K3***


Store the macros you wish to launch from the K-Pod in memory locations 1 through 16 on your K3S/K3 using the K3 Utility program as follows:

- Be sure you have K3 Utility Program rev. 1.16.3.11 or later installed on your personal computer (older versions will not allow you to store macros 9-16).
- Connect your K3S or K3 to your personal computer and run the K3 Utility Program.
- Click on the Command Tester/K3 Macros tab.
- In the window that pops up, click on the Edit Macros button
- Enter the macros and macro labels in the spaces provided. Note that your macro label cannot exceed seven characters including spaces. See sample macros below and in Appendix C.
- Click on Write to K3 to store the macros in the K3.

### **Sample Macros**

The following sample macros are divided into groups popular for contesting, chasing DX and operating a DXpedition station in CW or SSB modes. In addition are sample macros for RTTY and PSK operation, general macros that are useful in any operating environment, and several K4-specific macros.

To use them, create and assign the desired macros as described above. (Further details on creating macros can be found in Appendix C.) The suggested macro label may be changed as long as you observe the seven-character limit. The Command Sequence lists the commands included in each macro in the order they execute.

 **Every command used in a macro must be terminated with a semicolon (;)**

#### ***Contest Operation Macros***

##### **Transfer VFO B to VFO A Including Filter Selection and Preamp Setting**

Suggested Macro Label: B>A ALL  
Command Sequence: Exchange VFOA and VFO B frequencies. Copy VFO B to VFO A, Copy VFO B filter and preamp settings to VFO A.  
Macro: K3: SWT11;SWT13;SWT11;  
K4: AB4; (Note: To copy only VFO B frequency to VFO A, use AB1;)

##### **Enter Split Mode and Move the Transmit Frequency (VFO B) up 2 kHz**

Suggested Macro Label: SPLIT+2  
Command Sequence: Copy VFO A frequency to VFO B. Copy VFO A filter and preamp settings to VFO B. Enter SPLIT. Move VFO B up 2 kHz. Clear any RIT setting. Clear any XIT setting. Lock the VFO A frequency.  
Macro: K3: SWT13;SWT13;FT1;UPB5;RT0;XT0;LK1;  
K4: AB3;FT1;VOS+2000;RT0;XT0;LK1;



## Work Stations Calling

Suggested Macro Label: RUN  
Command Sequence: Copy VFO A frequency to VFO B. Copy VFO A filter and preamp settings to VFO B. Exit SPLIT (TX on VFO A). Turn on RIT. Clear any XIT setting. Clear any RIT offset. Normalize any filter shift.  
Macro: K3: SWT13;SWT13;FT0;RT1;XT0;RC;SWH58;  
K4: AB3;FT0;RT1;XT0;RC;SW129;

## *DXing Macros*

### Calling on CW up 2 kHz

Suggested Macro Label: CW UP2  
Command Sequence: Set CW Mode. Set both VFOs on same frequency. Set filter and preamp settings the same for both VFOs. Enter SPLIT. Set xmit frequency up 2 kHz. Clear any RIT setting. Clear any XIT setting. Lock VFO A frequency. Toggle filter bandwidth.  
Macro: K3: MD3;SWT13;SWT13;FT1;UPB5;RT0;XT0;LK1;SWT58;  
K4: MD3;AB3;FT1;VO\$+2000;RT0;XT0;LK1;SW129;

### Calling on CW up 5 kHz

Suggested Macro Label: CW UP5  
Command Sequence: Set CW Mode. Set both VFOs on same frequency. Set filter and preamp settings the same for both VFOs. Enter SPLIT. Set xmit frequency up 5 kHz. Clear any RIT setting. Clear any XIT setting. Lock VFO A frequency. Toggle filter bandwidth.  
Macro: K3: MD3;SWT13;SWT13;FT1;UPB7;RT0;XT0;LK1;SWT58;  
K4: MD3;AB3;FT1;VO\$+5000;RT0;XT0;LK1;SW129;

### Calling on SSB up 5 kHz

Suggested Macro Label: SSB UP5  
Command Sequence: Set both VFOs on same frequency. Set filter and preamp settings the same for both VFOs. Enter SPLIT. Set xmit frequency up 5 kHz. Clear any RIT setting. Clear any XIT setting. Lock VFO A frequency. Toggle filter bandwidth (K3 only). Set bandwidth to 2.1 kHz  
Macro: K3: SWT13;SWT13;FT1;UPB7;RT0;XT0;LK1;SWT58;BW0210;  
K4: AB3;FT1;VO\$+5000;RT0;XT0;LK1;BW0210;

### Calling on SSB up 10 kHz

Suggested Macro Label: SSB UP10  
Command Sequence: Set both VFOs on same frequency. Set filter and preamp settings the same for both VFOs. Enable split. Set xmit frequency up 10 kHz. Clear any RIT setting. Clear any XIT setting. Lock VFO A frequency. Toggle filter bandwidth (K3 only). Set bandwidth to 2.1 kHz  
Macro: K3: SWT13;SWT13;FT1;UPB7;UPB7;RT0;XT0;LK1;SWT58;BW0210;

K4: AB3;FT1;VO\$+10000;RT0;XT0;LK1;BW0210;

## ***DXpedition Macros***

### **Receive 2 kHz above Xmit Frequency**

Suggested Macro Label: RX UP 2  
Command Sequence: Set both VFOs on same frequency. Set filter and preamp settings the same for both VFOs. Enter SPLIT. Set receive frequency up 2 kHz. Clear any RIT setting. Clear any XIT setting. Lock VFO B (xmit) frequency.  
Macro: K3: SWT13;SWT13;FT1;UP5;RT0;XT0;LK\$1;  
K4: AB3;FT1;VO\$+2000;RT0;XT0;LK\$1;

### **Receive 5 kHz Above Xmit Frequency**

Suggested Macro Label: RX UP 5  
Command Sequence: Set both VFOs on same frequency. Set filter and preamp settings the same for both VFOs. Set receive frequency up 5 kHz. Enter SPLIT. Clear any RIT setting. Clear any XIT setting. Lock VFO B (xmit) frequency.  
Macro: K3: SWT13;SWT13;FT1;UP7;RT0;XT0;LK\$1;  
K4: AB3;FT1;VO\$+5000;RT0;XT0;LK\$1;

### **Set VFO A on VFO B Frequency**

Suggested Macro Label: B>A  
Command Sequence: K3: Swap A/B, copy A to B, swap back.  
K4: Copy VFO B frequency directly to VFO A.  
Macro: K3: SWT11;SWT13;SWT11;  
K4: AB1;

## ***Data Mode Macros***

### **RTTY Setup**

Suggested Macro Label: RTTY  
Command Sequence: Switch to Data Mode A. Switch to RTTY. Optional: Enable dual passband.  
Macro: K3: MD6;DT1;SWH29; (see note below)  
K4: MD6;DT1;

Note: In the K3 macro, each time the macro is executed, the SWH29 command toggles between dual FSK passband (mark/space) and normal passband. In the K4, a more straightforward method would be to assign a PF1..PF4 switch to *MENU: FSK Dual-Tone Filter*.

### **PSK Setup**

Suggested Macro Label: PSK  
 Command Sequence: Switch to Data Mode A. Switch to PSK D. Set bandwidth to 250Hz. Turn on Fine tuning for ease of tuning. Turn on RIT so received station tuning can be adjusted without changing transmit frequency.  
 Macro: K3: MD6;DT3;IS 0600;BW0025;SWT49;RT1;  
 K4: MD6;DT3;IS 0600;BW0025;VT0;RT1;

### ***General-Use Macros***

#### **Return Settings to Normal**

Suggested Macro Label: Cleanup  
 Command Sequence: Exit SPLIT (transmit on VFO A). Clear any RIT setting. Clear any XIT setting. Unlink VFOs. Turn off squelch. Set both VFOs on same frequency. Set filter and preamp settings the same for both VFOs. Noise blanker off. Sub receiver or dual watch off. Both VFOs unlocked.  
 Macro: K3: FT0;RT0;XT0;LN0;SQ000;SWT13;SWT13;SWH58;  
 NB0;NB\$0;SB0;LK0;LK\$0;  
 K4: FT0;RT0;XT0;LN0;SQ000;AB3;SWH58;  
 NB0;NB\$0;SB0;LK0;LK\$0;

#### **Enable Diversity Reception**

Suggested Macro Label: Divrsty  
 Command Sequence: Clear split operation. Unlink VFOs. Unlock VFOs. Enable sub receiver. Clear any RIT setting.  
 Macro: K3: FT0;LK0;LK\$0;SB1;DV1;RC;  
 K4: FT0;LK0;LK\$0;SB1;DV1;RC;

#### **Clear RIT**

Suggested Macro Label: RIT Clr  
 Command Sequence: Clear RIT  
 Macro: K3: RC;  
 K4: RC;

### ***K4-Specific Macros***

Please refer to the K4 Programmer's Reference for descriptions of the commands used in these macros. These illustrate just a few of the dozens of commands available.

#### **Save a screen shot of the current LCD display to a USB flash drive**

Suggested Macro Label: SCRNV  
 Macro: SS0;

#### **Toggle diversity mode and SUB RX on and off**

Suggested Macro Label: DIVSUB  
 Macro: DV\;

**Toggle the value of a binary (ON/OFF or YES/NO) menu setting like *MENU:Speaker + Phones***

Suggested Macro Label: SPK+PH  
Macro: MO72;UP;MO00;

**Turn receive attenuator ON, both MAIN and SUB, 6 dB**

Suggested Macro Label: ATT MS ON  
Macro: RA06;RA\$06;

**Turn both receive attenuators OFF, both MAIN and SUB**

Suggested Macro Label: ATT MS OFF  
Macro: RA00;RA\$00;

**Toggle last receive attenuator setting ON and OFF, both MAIN and SUB**

Suggested Macro Label: ATT MS OFF  
Macro: RA/;RA\$/;

## Controlling K-Pod LEDs and Auxiliary Outputs

Commands are provided to control the K-Pod's LEDs, as well the Auxiliary Outputs at its AUX OUT connector. These commands can be added to the macros stored in the transceiver. The transceiver stores the state of all K-Pod LEDs and Auxiliary outputs so they are restored to their last condition after a power off/on cycle. So you need not send them again once set, although you may include them in your macros to be resent to ensure the LEDs or auxiliary outputs are in the desired state.

**⚠ When testing these commands by executing them directly in the K3 Utility Program Command Tester/K3 Macros window, a delay of up to 2 seconds may occur before the change is reflected at the K-Pod, instead of the about 200 ms normally experienced when the command is part of a macro executed by pressing a switch at the K-Pod.**

**⚠ Place these command at the beginning of a macro string to be sure they are acted upon even if the K4 or K3 is performing a lengthy operation such as a band change.**

### Controlling K-Pod LEDs

By default, LEDs 1, 2 and 3 indicate the rocker switch position (VFO A, VFO B, or RIT/XIT, respectively). By contrast, LED 4 is always under user control. The following commands are used:

KPLED4ON; turns LED 4 on            KPLED4OFF; turns led 4 off

The command **KPLEDROFF**; overrides control of LED's 1, 2 and 3 so you can assign them to other uses as with LED 4. Note that you can place all three LEDs under your control, or leave all three controlled by the rocker switch; you cannot reassign only one or two of them.

Once you have overridden rocker switch control of the LEDs with **KPLEDROFF**; you can control LEDs 1 through 3 with the commands **KPLEDnON**; and **KPLEDnOFF**; where n is the number of the LED 1, 2 or 3.

Use the command **KPLEDRON**; to resume rocker switch control over LEDs 1, 2 and 3.

## Controlling K-Pod Auxiliary Outputs

Three auxiliary outputs are available at the tip and ring connections on the K-Pod AUX OUT connector referenced to the shield (ground). Each output can handle up to 50 Vdc and sink up to 100 mA.

Output 1 is the tip connection, output 2 is the first ring behind the tip and Output 3 is the second ring. Each output is controlled independently

In the off state each output is a high impedance (open drain) circuit. When turned on each output is a closure to ground that can be used to activate a relay, etc.

To turn an output on, use the command KPOUTnON; where n is the output number 1, 2 or 3.

To turn an output off, use the command KPOUTnOFF; where n is the output number 1, 2 or 3.

### Examples

**1. Control an external device such as an external antenna switch, amplifier, transverter, etc. with Auxiliary Output 1 and have a K-Pod LED light when it is on.**

Turn on the external device with Auxiliary Output 1 and light LED 4 by tapping F1 on the K-Pod:  
KPOUT1ON;KPLED4ON;

Turn off the external device and LED 4 by holding F1 on the K-Pod:

KPOUT1OFF;KPLED4OFF;

Unlike LED 4 (above), using LEDs 1, 2 or 3 requires that you shut off control of the rocker switch of those LEDs. The associated macros would be:

KPOUT1ON;KPLEDROFF;KPLEDnON;

and

KPOOUTOFF;KPLEDnOFF;

where n is 1 through 3 corresponding to D1 through D3 on the K-Pod.

To restore normal operation of LEDs D1 through D3 with the rocker switch, send:

KPLEDRON;

**2. Turn the K4/K3 RIT function on and off at the K-Pod and have LED D4 on when RIT is active.**

The process is identical to Example 1 except that, instead of a command to turn an Auxiliary Output on and off, you use a command to activate RIT.

Turn RIT and LED 4 on:

RT1;KPLED4ON;

Turn RIT and LED 4 off:

RT0;KPLED4OFF;

You can put both commands on the same K-Pod switch (one tap, one hold) and use other LEDs as described in Example 1.

Any function you control at the K4/K3 can be associated with an LED in the same way. Also, you can combine functions, controlling a function at the K4/K3 and a K-Pod output, such as:

KPOUT1ON;RIT1;KPLED4ON;

to turn on RIT at the K4/K3 and activate Auxiliary Output 1. Similarly:

KPOUT1OFF;RIT0;KPLED4OFF;

will turn on RIT and turn Auxiliary Output 1 off.

## **Using the K-Pod with PC Software Applications**

When a K-Pod is connected to a computer via the USB interface, the computer will recognize it as a human interface device such as a keyboard or mouse. This may be useful for many applications both in amateur radio and beyond.

Software applications that use the K-Pod may require modification in order to access the K-Pod's knob, switches, etc. If you are a software developer, please contact Elecraft directly for details.

# Firmware Upgrades

New features and improvements are available to K-Pod owners via firmware upgrades as they become available. To obtain our free firmware download application, **K-Pod Utility**, visit this web page:

<https://elecraft.com/pages/k-pod-remote-control-module-firmware-and-utility>

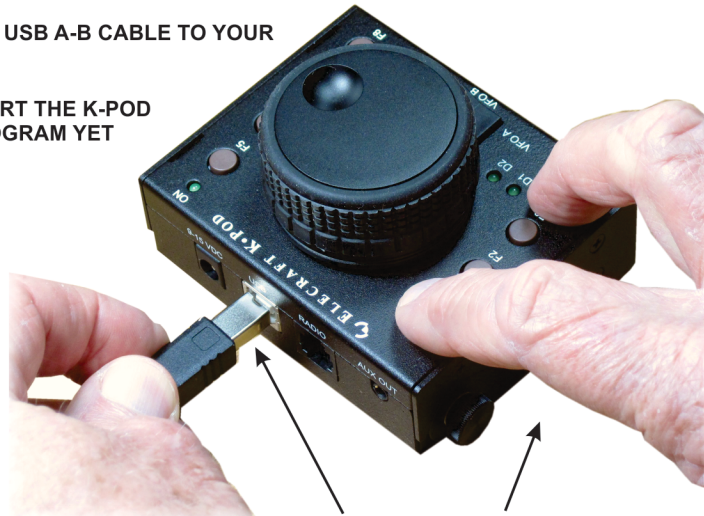
## Connecting the K-Pod To your Computer

Be sure you have the K-Pod Utility program installed on your computer, but **do not** run the Utility Program until instructed to do so.

① DISCONNECT ALL CABLES FROM THE K-POD

② CONNECT THE USB A-B CABLE TO YOUR COMPUTER

⚠ DO NOT START THE K-POD UTILITY PROGRAM YET



③ PRESS AND HOLD THE F1 AND F4 SWITCHES AND THEN INSERT THE USB CONNECTOR IN THE K-POD

Figure 3. Connecting the K-Pod to Your Computer to Update Firmware.

When you insert the USB connector the green ON LED should light and LED D4 should blink (see Figure 4). D4 may blink slowly at first until your computer recognizes the K-Pod, then D4 will start blinking rapidly. The K-Pod is now ready to receive firmware. If D4 is on but not blinking, you did not have both the F1 and F4 switches depressed when you plugged in the USB cable.

Start the K-Pod Utility program on your computer. On the main screen near the center is Installed in K-Pod giving you the version of the firmware currently installed and under Available the version of any new firmware.

To update your firmware, click on Copy New Files from Elecraft. When the download is complete, click on Send New Firmware to K-Pod to update the K-Pod. When the download is complete, you can reconnect the K-Pod to your K4 or K3 transceiver.

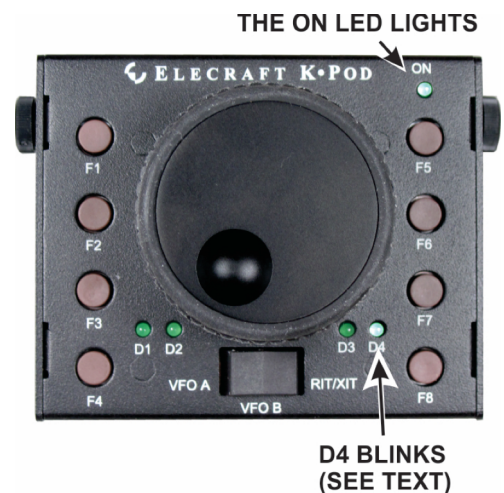


Figure 4. LED display when K-Pod is Communicating with Computer.

# Customer Service and Support

## **Technical Assistance**

You can send e-mail to [support@elecraft.com](mailto:support@elecraft.com) and we will respond quickly - typically the same day Monday through Friday. Telephone assistance is available from 9 A.M. to 5 P.M. Pacific time (weekdays only) at 831-763-4211. Please use e-mail rather than calling when possible since this gives us a written record of the details of your problem and allows us to handle a larger number of requests each day.

## **Repair / Alignment Service** *(We want to make sure everyone succeeds!)*

If necessary, you may return your Elecraft product to us for repair or alignment. (Note: We offer unlimited email and phone support to get your kit running, so please try that route first as we can usually help you find the problem quickly.)

**IMPORTANT: You must contact Elecraft before mailing your product** to obtain authorization for the return, what address to ship it to and current information on repair fees and turn around times. (Frequently we can determine the cause of your problem and save you the trouble of shipping it back to us.) Our repair location is different from our factory location. We will give you the address to ship your kit to at the time of repair authorization. *Packages shipped to Elecraft without authorization will incur an additional shipping charge for reshipment to our repair depot.*

## **Elecraft's 1-Year Limited Warranty**

This warranty is effective as of the date of first consumer purchase (or if shipped from factory, date product is shipped to customer). It covers both our kits and fully assembled products. For kits, before requesting warranty service, you should fully complete the assembly, carefully following all instructions in the manual.

**Who is covered:** This warranty covers the original owner of the Elecraft product as disclosed to Elecraft at the time of order. Elecraft products transferred by the purchaser to a third party, either by sale, gift or other method, who is not disclosed to Elecraft at the time of original order, are not covered by this warranty. If the Elecraft product is being bought indirectly for a third party, the third party's name and address must be provided to Elecraft at time of order to insure warranty coverage.

**What is covered:** During the first year after date of purchase, Elecraft will replace defective or missing parts free of charge (post-paid). We will also correct any malfunction to kits or assembled units caused by defective parts and materials. Purchaser pays inbound shipping to Elecraft for warranty repair. Elecraft will pay shipping to return the repaired equipment to you by UPS ground service or equivalent to the continental USA and Canada. Alaska, Hawaii and outside U.S. and Canada actual return shipping cost paid by owner.

**What is not covered:** This warranty does not cover correction of kit assembly errors. It also does not cover misalignment; repair of damage caused by misuse, negligence, or builder modifications; or any performance malfunctions involving non-Elecraft accessory equipment. The use of acid-core solder, water-soluble flux solder, or any corrosive or conductive flux or solvent will void this warranty in its entirety. Also not covered is reimbursement for loss of use, inconvenience, customer assembly or alignment time, or cost of unauthorized service.

**Limitation of incidental or consequential damages:** This warranty does not extend to non-Elecraft equipment or components used in conjunction with our products. Any such repair or replacement is the responsibility of the customer. Elecraft will not be liable for any special, indirect, incidental or consequential damages, including but not limited to any loss of business or profits.



# Appendix A: Modifying Earlier K3S/K3 Transceivers to Power the K-Pod via the Data Connector


The data connector on a K3S serial number 10787 (kit) or 10801 (factory assembled) or earlier cannot power the K-Pod through the data cable. This mod describes a simple change that will allow you to power the K-Pod through the data cable instead of using the separate dc power cable.

The modification involves soldering a resistor onto your K3 or K3S front panel board.

If you would like Elecraft to install this modification for you, contact Elecraft technical support at [support@elecraft.com](mailto:support@elecraft.com) or call 831-763-4211.

## Parts and Tools Required

Two resistors are supplied with the kit so you can install the type that is easiest for you:

 **Use only one of these resistors as described in the following procedure.**


Description	Elecraft Part Number
6.8 Ohm, 1/10 W SMD (0603 size).	E850755
6.8 Ohm, 1/8 W Leaded Resistor	

You will need the following tools:

1. A temperature-controlled ESD-Safe soldering station and fine solder.
2. #0 and #1 size Phillips screwdrivers. To avoid damaging screws and nuts, **do not use a power screwdriver**. Use the screwdriver that best fits the screw in each step.
3. Blade screwdriver (see Figure 7).
4. Diagonal cutters.
5. Fine-tipped needle nose pliers or tweezers are handy for positioning small parts, especially the SMD.

## Procedure

### *Removing the K3 or K3S Front Panel Assembly*

 **A grounded wrist strap and ESD dissipating mat are recommended whenever you work inside your K3 or K3S. Optionally, touch a bare metal ground frequently while working.**

- Disconnect power and all cables from your K3.

- ☐ Remove the three screws on the top lip of the front panel (see Figure 5)

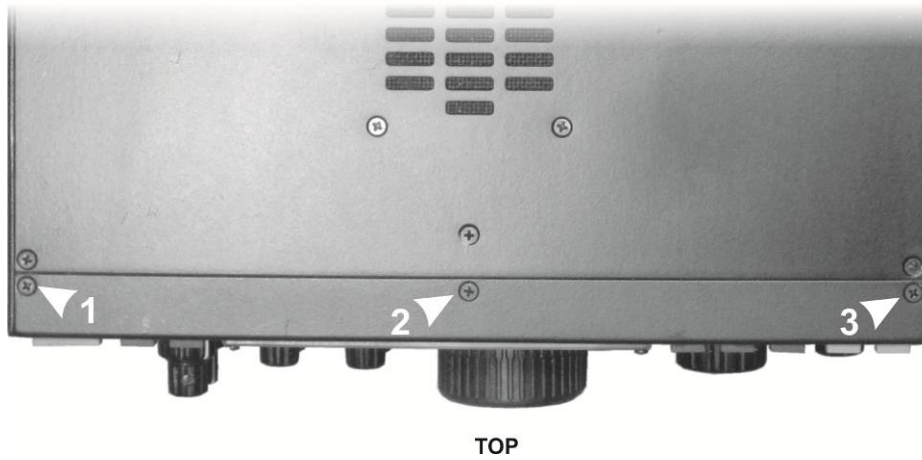


Figure 5. Removing the Top Front Panel Screws.

- ☐ Turn the K3/K3S over and remove the two screws on the bottom shown in Figure 6

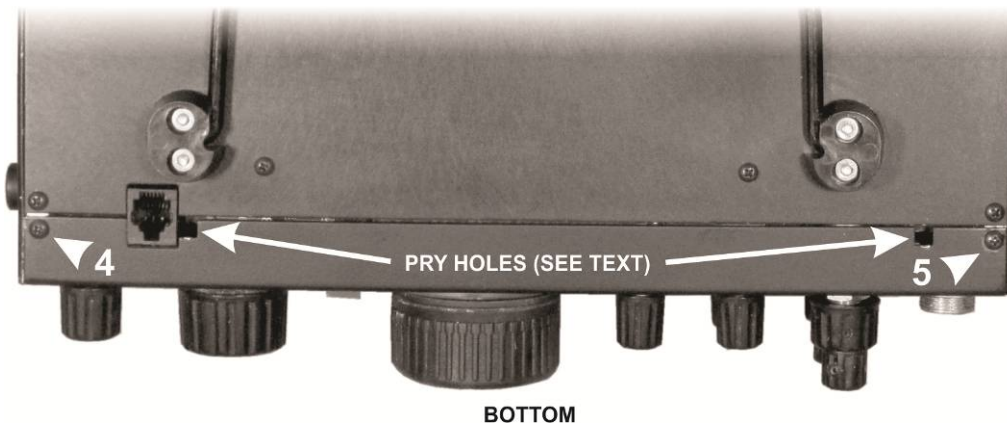


Figure 6. Removing the Bottom Front Panel Screws.

- ☐ Be sure all five screws have been removed, and then pry the front panel loose as shown in Figure 7. There are four multi-pin connectors between the front panel assembly and the main chassis. Work carefully, loosening one end a bit and then the other.

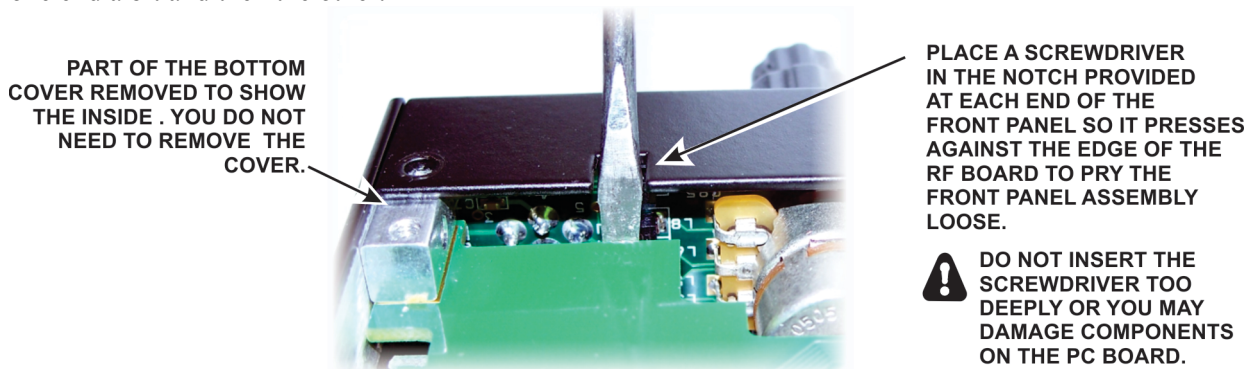


Figure 7. Disengaging the Front Panel Assembly.

## Installing the Modification and Reassembling the Transceiver

Install either the leaded resistor or the SMD resistor across R82 on the back of the front panel assembly as shown in Figure 8. If installing the leaded resistor, position it as shown to avoid it interfering with the main RF board when you reassemble the K3/K3S.

**⚠** The existing resistor R82 is a 10k ohm resistor. The new resistor is 6.8 ohms, so it can be placed across the 10k ohm resistor with no impact on performance. However, if you have de-soldering tools and wish to do so, you can remove the existing R82 and replace it with the 6.8 ohm resistor supplied.

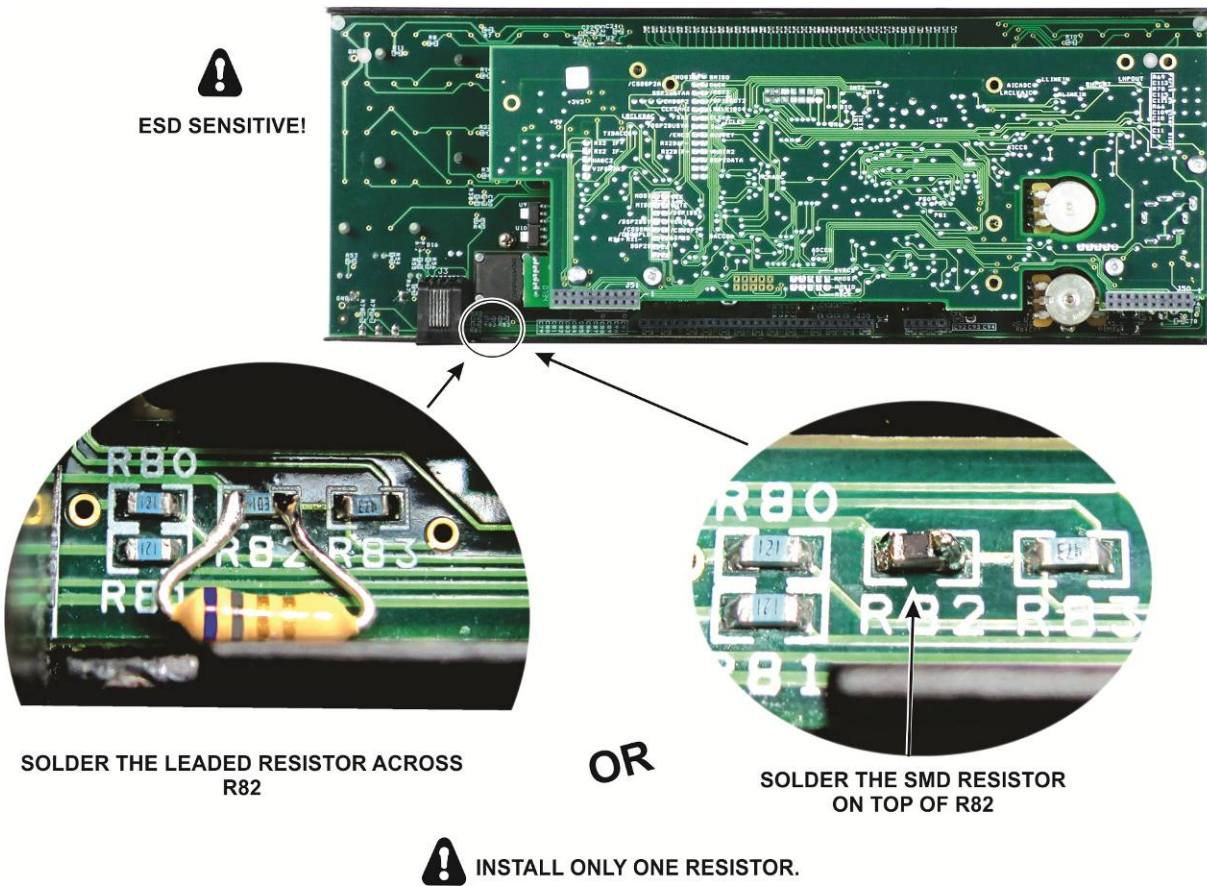


Figure 8. Installing Resistor Across R82.

Inspect the installation carefully for solder bridges and, if the leaded resistor is used, to ensure the leads are not shorted to any nearby pads.

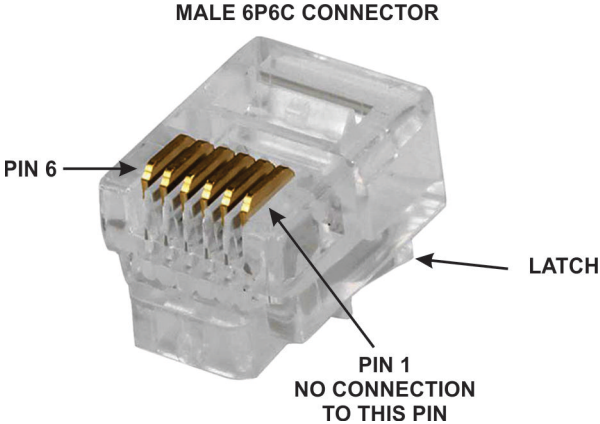
Replace the front panel assembly. Be sure the two bottom connectors are aligned correctly before you press the front panel in place, and then replace all five screws. Note that the two round (pan) head screws go on the bottom and the three flat head screws go on the top.

That completes the modification.

# Appendix B: Data Cable Wiring

You can make your own K3 to K-Pod data cable if you need one with a different length than the cable supplied. The cable uses two 6P6C modular male connectors and requires 5 conductors.

**⚠ Do not use a common RJ12 cable unless you modify it to disconnect the wire to pin 1. If you disconnect the wire at only one end, be sure that end is plugged into your K3.**



The connectors are wired pin-to-pin from one connector to the other as shown below:

MALE 6P6C CONNECTOR PIN	WIRING	MALE 6P6C CONNECTOR PIN
1	NO CONNECTION	1
2	↔	2
3	↔	3
4	↔	4
5	↔	5
6	↔	6

## Appendix C: Macro Basics

A macro (short for “macro instruction”) consists of a string of one or more transceiver remote-control commands, each terminated in a semicolon (;). These commands are normally sent from PC software applications such as HRD or N1MM, both to control the radio and determine its settings. However, remote control commands – in the form of macros – can also be used to customize switch functions at the radio itself, as well as those of the K-Pod.

This appendix provides an introduction to creating macros. There are two sections, one for the K4, and one for the K3.

### Using K4 Macros

The K4 provides a built-in macro editor application to create macros and assign them to K4 user-programmable switches or to the switches on the K-Pod.

As an example, here’s how to use the macro editor to create a macro that sets the span of the panadapter to 50 kHz and assigns it to K-Pod switch F1/Tap:

- enter the K4’s macro editor by tapping Fn, then holding the button labeled **MACROS**
- use VFO A to scroll to the entry for **K-pod.1T** (identified in column 1 of the macro editor window)
- tap on the label field (column 2), then enter the label **SPAN 50** using the on-screen keyboard
- exit the keyboard by tapping **ENTER**
- tap on the macro text field, then enter **#spn50;**      ← **Semicolon (;) must be included**
- exit the keyboard by tapping **ENTER**
- exit the macro editor by tapping the curved arrow button

**Note:** In this case of K-Pod switches, the label you provide is for reference only, and appears only in the macro editor. If instead you assign a macro to one of the K4’s user-programmable LCD button functions (F1...F8), then the label will replace the F1...F8 button label on the LCD. These are visible during normal operation whenever you tap Fn.

### *Other K4 Control Commands*

A number of sample macros are provided in this manual, starting on page 7. These are made up of some of the most commonly used K4 and K3 remote control commands. **Table 2** in the next section also lists some commands that pertain to both the K3 and K4.

Many additional commands are available, each described in detail in the **K4 Programmer’s Reference**, which is available via the Elecraft manuals page:

<https://elecraft.com/pages/manuals-downloads>

**⚠** The K4 remote control command set is, in general, a superset of K3 commands. However, there are exceptions, most notably in the switch emulation commands. These are addressed in the **K4 Programmer’s Reference**.

## Using K3 Macros

K3 macros may be created and tested using the K3 Utility program. To become familiar with macros on the K3, do the following:

- Connect your K3 to a personal computer and launch the *K3 Utility Program*. Be sure it is Version 1.16.6.25 or newer<sup>1</sup>. The version is shown at the top of the Utility program screen.
- With your K3 turned on and communicating with the Utility program, note which band is selected at the K3. It can be any band.
- At the Utility program click on the Command Tester/K3 Macros tab.
- In the text space near the top of the screen that opens, type: SWT09
- Now add a semicolon after the 9, and watch what your K3 does. If you entered it correctly your K3 just changed bands.

That is an example of a simple macro with just one command. You can make up longer macros by entering a string of commands. You must enter a semicolon after each command to execute it before going on to the next command. The commands must be entered in the order you want them executed at your K3.

The macros are stored in K3 memory and executed from the K-Pod as described under **Controlling the K3 from the K-Pod** (page 6).

### *K3 Switch Emulation Commands*

You can simulate tapping or holding any switch on the K3 front panel using SWT (tap) and SWH (hold) commands. For example, the command **SWT26**; alternates between ANT 1 and 2 as if you had tapped the ANT switch. **Table 1** lists identifiers for all front panel switches, including those actuated by pressing on the multi-function encoder knobs. Column “nn” shown the identifier for each switch.

**Table 1. K3 Switch Command Identifiers.**

TAP	HOLD	nn	TAP	HOLD	nn	TAP	HOLD	nn
BAND V	VOX	09	FREQ ENT	SCAN	41	CWT (0)	TEXT DEC	40
BAND ^	QSK	10	FINE	COARSE	49	AFX ◀ <sup>J</sup>	DATA MD	43
MODE V	ALT	17	RATE	LOCK	50	V▶M	AF REC	15
MODE ^	TEST	18	SUB	DIV	48	M▶V	AF PLAY	23
MENU	CONFIG	14	A/B (1)	BSET	11	M1	M1 (repeat)	21
XMIT	TUNE	16	REV (2)	--	12	M2	M2 (repeat)	31
RX ANT	--	25	A▶B (3)	SPLIT	13	M3	M3 (repeat)	35
DISP	METER	08	PRE (4)	ATT	24	M4	M4 (repeat)	39
ATU TUNE	ATU	19	AGC (5)	OFF	27	REC	MSG BANK	37
ANT	ANT(name)	26	XFIL (6)	APF	29	RIT	PF1	45
SHIFT/LO	NORM	58	NB (7)	LEVEL	33	XIT	PF2	47
WIDTH/HI	I/II	59	NR (8)	ADJ	34	CLR	--	53
SPD/MIC	DELAY	57	NTCH (9)	MANUAL	32			
CMP/PWR	MON	56	SPOT (.)	PITCH	42			

<sup>1</sup> To download the latest K3 Utility Program visit: <https://elecrafter.com/pages/firmware-software>

### ***K3 Knob Function Control Commands***

The knob on the K-Pod can only control the VFO A, VFO B, and OFS (RIT/XIT) K3 knob functions. The K3's remaining knob functions can be controlled using commands shown in Table 2. (Note: The K4 also recognizes the commands in Table 2.)

**Table 2. Commands Associated with K3 Multifunction Knobs.**

Knob Function	Macro Format	Notes
SHIFT	IS*nnnn	nnnn is the AF center frequency in Hz. There must be a space before the frequency (i.e., in the location marked *).
WIDTH	BWnnnn	nnnn is bandwidth in 10 Hz steps: 0000 to 9999 but may be range limited depending upon operating mode
SPEED	KSnnn	Keyer speed: nnn = 008 (8 wpm) to 050 (50 wpm)
MIC	MGnnn	Microphone Gain: 000 (lowest gain) to 060 (maximum gain).
CMP	CPnnn	Speech Compression: . 000 no compression to 040
PWR	PCnnn	Power (Requested) 000 to 012 (W) if no KPA3 enabled 000 to 110 (W) if KPA3 enabled 000 to 150 (.01-1.50 mW) on transverter bands with low level output enabled
MON	MLnnn	Monitor Level: 000 (no output) to 060 (maximum)
AF	AGnnn	Main receiver audio gain: 000 (minimum) to 255 (maximum)
SUB	AG\$nnn	Sub receiver audio gain: 000 (minimum) to 255 (maximum)
RF/SQL	RGnnn	Main receiver RF gain: 000 (min gain/-60 dB attenuation) to 250 (max gain, 2 dB attenuation).
	SQnnn	Main receiver squelch level: 000 to 029 (see note below).
	SQ\$nnn	Sub receiver squelch level: 000 to 029 (see note below).
SUB	RG\$nnn	Sub receiver RF gain: 000 (min gain/-60 dB attenuation) to 250 (max gain, 2 dB attenuation).

**Note:** Squelch control behavior depends upon K3S/K3 configuration menu settings. If *CONFIG:SQ MAIN* is set to a numeric value (000 to 029), then SQnnn applies to the main receiver and SQ\$nnn applies to the sub receiver. If *CONFIG:SQ MAIN* is set to = *SUB POT*, an SQnnn or SQ\$nnn command will apply to both receivers and a sub receiver RF gain command (RG\$nnn) will control both receivers as well.

### ***Other K3 Control Commands***

Many additional K3 remote control commands are available, providing full access to menu settings, contents of the VFO displays, etc. Please refer to the **K3S/K3/KX3/KX2 programmer's reference**, at:

<https://elecraft.com/pages/manuals-downloads>