

QRPworks

SideKar Extreme™

User Manual



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Overview

Thank you for your purchase of the QRPworks SideKar Extreme.

Its purpose is to enhance your operating experience whether portable or in your home shack.

It can be used with any rig, but has specific interfaces to the:

- Elecraft KX3 / KX2 / K3 / K3S
- Yaesu FT817 / FT-818 / FT-857 / FT-897
- QRP Labs QCX family of rigs

These interfaces provide rig-specific features that are detailed later in this manual.

In a nutshell for all rigs,

- It is a message generator, allowing you to send up to 20 messages you have defined, with just a keystroke.
- It is a log, with space for 1000 QSOs
- The log will automatically be populated with the current date and time, so you don't have to enter it.
- It is an ADIF export tool, allowing you to export your logged QSOs in a standard ADIF format, which can then be imported into most commercially available logs,
- It is a log for events, such as Summits on the Air (SOTA), Parks on the Air, ARRL's Field Day, etc.
- It is portable, with a sunlight readable display.
- It is a low current device, using little of your battery capacity
- It can operate with a USB wired or wireless keyboard.
- It contains the popular WinKeyer, and allows you to change the keying mode, speed, paddle dits/dahs easily from a keyboard. The keyer can be used with **any rig** with a straight key input.

For the Elecraft KX- and K-Lines...

- The SideKar Extreme will display the scrolling rig-decoded PSK31, PSK63, RTTY, or CW text on an 80-character screen, with the ability to freeze the incoming data and scroll back.
- It will allow you to send up to 20 macros to the rig to control just about every aspect of it.

For the Elecraft KX- and K-Lines, Yaesu FT portable lines, QRP Labs QCX rigs, and Xiegu rigs

- It offers the Quick QSY™ feature, allowing you to change frequency and mode very easily from a keyboard
- Frequency and Mode are automatically populated in the log

The SideKar Extreme provides many features for the portable operator, whether out on the trail, in a park, on vacation, or at home.

73,

Shel Radin, KF0UR

Steve Silverman, KB3SII



SideKar Extreme Installation

The SideKar Extreme is designed to:

- Be mounted on the right side of the KX3
- Be mounted on top of the KX2
- Sit on a surface (i.e. desktop, rock on a trail)

The same SideKar Extreme can be mounted on the KX2 and KX3 just by changing a few simple brackets.

KX3 Installation

The SideKar Extreme is designed to mount on the right side of the KX3, above the antenna BNC connector. .

1. On the right side of the KX3, remove the black flat head Philips screw in the upper back position, closest to the A/B button.
2. Install the supplied shoulder screw and clear washer (already on the screw) in place of the screw removed. Do not overtighten. A good fit is when the screw starts to tighten and you feel more resistance.

Install supplied shoulder screw and washer



3. Loosen, but do not remove, the thumbscrew for the KX3 right foot. Fold the KX3 foot under the KX3 so it is not extended.

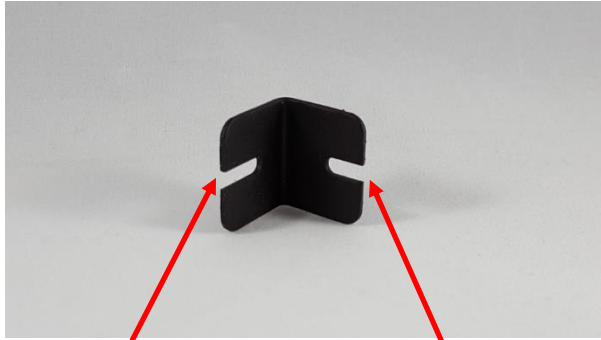
4. Install the supplied thumbscrew into the tapped hole on the back right side of the SideKar Extreme.

Thumbscrew installed for the KX3 mount



5. Install the KX3 mounting bracket under the thumbscrew as shown. Tighten the thumbscrew so the bracket is snug. The bracket edge should be even with the side of the SideKar Extreme.

Note the bracket is not symmetrical. The longer slot goes against the SideKar Extreme and the shorter slot goes against the KX3. If it is reversed, the SideKar Extreme can slide down too far and hit the antenna BNC connector.



Longer slot

Shorter slot



This hole is not used – Do
Not insert a screw in it

6. Position the SideKar Extreme so the installed shoulder screw on the KX3 is in the round portion of the keyed slot and flat against the KX3.



Align the Shoulder Screw in the round opening

7. Slide / wiggle the SideKar Extreme down until the notch at the bottom of the SideKar Extreme bracket is under the KX3's thumbscrew head. If the SideKar Extreme hits the BNC connector, the bracket is installed backwards. Remove it and put the longer slot against the SideKar Extreme.



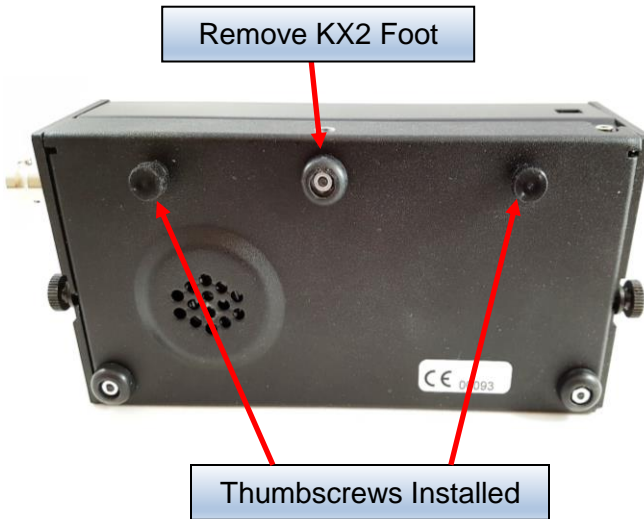
4. Lightly tighten the KX3 thumbscrew, and then swing the KX3 foot out to further tighten the foot. The SideKar Extreme should now be snug against the side of the KX3.



KX2 Installation

The SideKar Extreme sits on the top back of the KX2.

1. On the KX2, remove the Elecraft swinging foot and set it aside for later installation on the SideKar Extreme. Install 2 supplied thumbscrews into the holes in the back of the KX2, as shown.

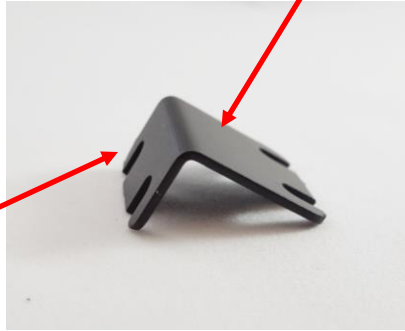


2. If not already installed, install 2 supplied thumbscrews in the bottom outside 2 holes in the SideKar Extreme. Install the 2 KX2 brackets under the thumbscrews as shown.

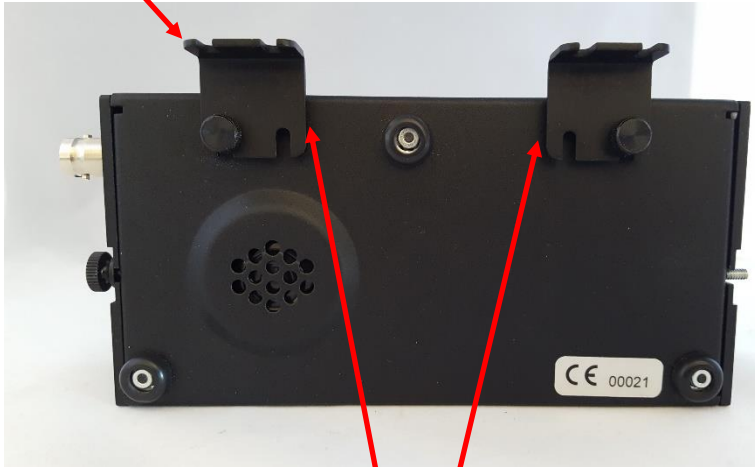
Note that the brackets are not symmetrical. The longer side goes on the SideKar Extreme. The shorter side will be on the KX2.

Install the swinging foot on one of the SideKar Extreme brackets, then tighten the thumbscrews.

Long side against the SideKar Extreme



Short side against the KX2



Long Side against the SideKar Extreme

3. Slide the 2 brackets on the SideKar Extreme under the thumbscrews on the back of the KX2. Tighten the thumbscrews.



Desktop Installation

To use the SideKar Extreme on a surface without mounting it on a rig, a tall leg is recommended. It's available at www.QRPworks.com

Remove the small flat head screw at the top center of the SideKar Extreme. Install the tall leg with a thumbscrew in its place.



Flat head screw removed. Tall leg installed with a thumbscrew.

Yaesu FT-817, FT-818, FT-857, FT-897 Installation

Interfacing the SideKar Extreme with a Yaesu FT-817, FT-818, FT-857, or FT-897 is done using the custom interface cable supplied when a SideKar Extreme is ordered for a Yaesu rig. It has an 8-pin mini DIN connector on one end for the Yaesu side and a 3.5mm right-angle connector for the SideKar Extreme side.

QRP Labs QCX Family of Rigs Installation

The QCX rigs the SideKar Extreme interfaces to include:

- QCX Classic, revisions 1-5
- QCX+
- QCX Mini

Interfacing the SideKar Extreme with a QCX rig is done using the double ended right-angle 3.5mm cable supplied (or equivalent). Plug one end in the QCX CAT port and the other end in the SideKar Extreme's "FT-Q" port, located on the right side of the SideKar Extreme. Do NOT plug it into the RS232 Rig port on the top of the SideKar Extreme. The QCX CAT port is 5 volts, not RS232 levels.

The QCX firmware required is version 1.06 and higher.

Xiegu G90 Installation

Interfacing the SideKar Extreme with a Xiegu G90 rig is done using the custom double ended right-angle 3.5mm cable available from QRPworks. Plug the end labeled "SKX" into the FT-Q port on the right side of the SideKar Extreme. Plug the other end labeled "Xiegu" into the Comm port on the Xiegu G90. This is the lower port on the left side of the rig near the power button. Do NOT use a straight cable as the SideKar Extreme is a 5 volt device while the Xiegu is 3.3 volt device and may be damaged if

the custom cable from QRPworks is not used. SideKar Extreme version 2.2.0 or higher is required. Contact us if an upgrade is needed.

Connections:

- **KX3/KX2:** connect the supplied 3.5 mm (1/8”) stereo cable from the SideKar Extreme “Rig RS232” port on the top to the KX3 ACC1 or KX2 ACC connectors. The right angle connectors on both ends are important to reduce the strain on the printed circuit boards. **Do not connect the radio cable if the PC cable is in use.**
- **K3:** use a DB9-M to 3.5 mm cable (available from QRPworks) from the K3 RS232 port to the SideKar Extreme KX Rig port. **Do not connect the radio cable if the PC cable is in use.**
- **K3s:** plug the RJ45 to DE9 adapter cable that was supplied with the K3s into the K3s RS232 port. Use a DB9-M to 3.5 mm cable (available from QRPworks) from the DE9 adapter to the SideKar Extreme KX Rig port. **Do not connect the radio cable if the PC cable is in use.**
- **Yaesu FT rigs:** There are 2 ways you can connect a FT-817/818/857/897 to the SideKar Extreme
 1. Use a serial cable from the rig’s ACC port (8 pin DIN) to the SideKar Extreme’s “Rig FT-Q” port on the right side. This is a custom cable with no driver electronics inside, available from QRPworks.

Updated Procedure: When using the custom cable from the Yaesu ACC port to the SideKar

Extreme “Rig FT-Q” port on the right side, turn the SideKar Extreme on **FIRST** before plugging in the cable. Once the SideKar Extreme powers on, it’s OK to plug the cable in.

Note: Do not connect an RS232 connection to this 5 volt maximum port, as an RS232 port exceeds 5 volts and will damage the SideKar Extreme.

2. Use a cable from the rig’s ACC port (8 pin DIN) to the “RIG RS232” port on the top of the SideKar Extreme. The Yaesu CT-62 cable with a DB-9 connector (or equivalent) can be used along with a DB-9 to 3.5 mm adapter cable (available from QRPworks).

In either case, **do not connect the radio cable if the PC cable is in use.**



To Yaesu rig,
using the custom
cable from
QRPworks

- Connect 8 ~15 VDC power using a 2.1 mm DC connector or use a 9 volt battery in the optional battery holder. For the DC connector, connect the DC positive voltage to the center pin.
- Connect a USB keyboard to the SideKar Extreme KYB port on the right. This is used for transmitting and controlling the rig. A wired or wireless keyboard may be used. The wireless keyboard must be a 2.4 GHz wireless keyboard and **NOT** a Bluetooth keyboard. Repeat: NOT Bluetooth. Plug the wireless receiver dongle received with the keyboard into the KBD port.
- The micro USB jack labeled “PC” is used for transferring log files from the SideKar Extreme to the PC, for transferring messages/rig macros, and for loading new software into the SideKar Extreme. A standard USB Micro to USB A cable can be used (same as what might have come with your Android smartphone). **This port must not be connected to a PC if the Radio serial port is connected to the radio.**
- Alternatively, the Elecraft KXUSB or KXSER cables can be used connected to the “Rig RS232” port.

QCX rigs: For the QCX Classic, a CAT port must be added. It is a simple circuit of 2 resistors, 1 diode, and a connector.

The schematic is in [Appendix A](#).

Details from QRP Labs are here:

https://www.qrp-labs.com/images/qcx/assembly_A4-Rev-4f.pdf

Note: QCX Classic revision 5 already has the resistors and diode included on the board. All you need is the connector.

If the SideKar Extreme is ordered specifying the QCX Classic as the rig, a free CAT Port Kit is included.

QCX+ and QCX Mini's already have the CAT port installed. Nothing further is needed.

NOTE: The QCX and QSX must always be connected to the FT-Q port on the SideKar Extreme NOT the RS-232 port on the top. QRPworks is not responsible for any damage to the SideKar Extreme or the QCX if the wrong serial port is used.

Elecraft KX3/KX2/K3/K3s Settings:

For the SideKar Extreme to display transmitted text, the KX3 firmware must be at MCU version 2.19 or later.

- Menu: RS232: set to 38400.
- Menu: CW Key1 or K3/K3s CW PADL: set at tip-dot or tip-dash, and not Hand. Plug your paddle directly into the Key jack on the rig. The rig will only decode transmitted text if the menu item CW Key 1/CW PADL is set to tip-dot or tip-dash, and not Hand.
- For RTTY or PSK31, set the mode to TX Data, by tapping the Data/Text button. Using VFO B, select:
 - PSK D for PSK31
 - FSK D for RTTY.“TX Data” will be the mode shown on the screen
- Text: DEC ON, by holding the Data/Text button.

Refer to the Data Modes section in the rig's manual

PX3, KXPA100, P3, KPA500, KPA1500 Connections:

The SideKar Extreme is always at the end of the serial connections. Basically, it takes the place of a PC. So it gets connected where the PC would be connected.

- If a PX3 is used and no KXPA100, connect the SideKar Extreme “RIG RS232” port to the PX3’s ACC1 PC port.
- If a KXPA100 amp is used, please see the special instructions in [Compatibility with Other Products](#)
- If a K3 / K3S and P3 are used, connect the K3/K3S and P3 as usual and then connect the SideKar Extreme “RIG RS232” port to the P3’s PC port using a DB-9 to 3.5 mm adapter cable (available from QRPworks).
- If a KPA500 is used, connect the SideKar Extreme “RIG RS232” port to the KPA500’s RS232 (PC) port using a DB-9 to 3.5 mm adapter cable (available from QRPworks).

Yaesu FT- Settings:

- Hold the Function (F) button to get to the menu. Rotate the Sel to menu #14, CAT RATE. Rotate the VFO knob to the selected baud rate (38400 recommended). Hold the Function button (F) again to save and exit.

QCX Settings:

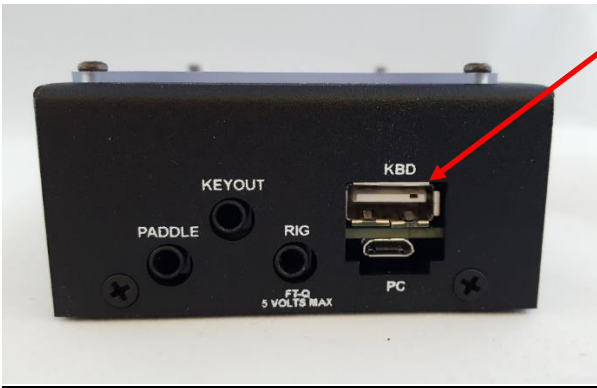
No specific settings are needed.

Keyboard Choices

The SideKar Extreme can be used with a wired or wireless USB keyboard.

Please note that the wireless keyboard must be a 2.4 GHz wireless keyboard, and NOT a Bluetooth keyboard. Plug the wireless receiver dongle received with the keyboard into the KBD port.

The SideKar Extreme can use a USA or UK keyboard. Pressing **Alt-K** will toggle between the two. In the SideKar Extreme, the difference is that the @ and “ characters are reversed between the two types.



Starting Up

When the SideKar Extreme is powered on, you will see a welcome screen briefly. For reference, the firmware version is displayed on this screen:

USB Keyboard Port



The internal WinKeyer will then be initialized. Upon success you will see:



If you see this screen instead, the WinKeyer initialization has failed. Re-starting the SideKar Extreme typically resolves this. If not and the screen persists, please contact QRPworks.



The SideKar Extreme will then automatically attempt to connect with the rig via its serial port. 38400 baud is the required speed. It will try 9 times before giving up.

If you don't wish to connect to a rig, hold the PB2 button to abort the process.

Note: turn the rig on first before turning the SideKar Extreme on.



When the SideKar Extreme establishes a connection to a rig, it will briefly let you know. A connection is established after the SideKar Extreme sends a command to the rig and the rig responds appropriately.



If the Elecraft rig is in the text mode and is displaying characters in the lower right of the screen, the SideKar Extreme will automatically show the characters. If the rig is not decoding and displaying characters, then the SideKar Extreme screen will be blank.

If the SideKar Extreme does not connect to the rig *and* you expect a connection, please see the [troubleshooting tips](#).

Using the SideKar Extreme Buttons

The 2 buttons labeled **PB1** and **PB2** are multipurpose and can be configured to perform your 2 most favorite functions with a just the press of a button. This is useful to access functions more quickly or just to use a function without touching the keyboard.

The buttons are configured individually at startup. When you see the following screen, hold both buttons until the screen changes as follows:

SKX Hold 2 Buttons Now



```
<Hold 2 buttons NOW  
to assign functions>
```

The screen will then show:



```
Tap Button to Config
```

Then tap either button to scroll through the list of functions until you see the one you want. Now hold the button of your choice until you see “Button 1 Set” or “Button 2 Set”. The function is now assigned to the button you held, and will be remembered even when powered off.

To assign the second button, reset the SideKar Extreme (**Alt-R**) and repeat this process.

The default functions shipped are:

- Log a QSO (PB2)
- Freeze the Display (PB1)

Available functions to select are as follows:

Function	Purpose	Notes
1. Freeze Disp	Freeze the Display	Same as Alt-F
2. Send Msg 1*	Send message 1	Same as F1
3. Send Msg 2*	Send message 2	Same as F2
4. Help	Show the help screen	Same as F11 or Alt-H
5. Log QSO	Log a QSO	Same as Alt-L, then L
6. Log Find	Finds a QSO logged	Same as Alt-L, then F
7. Manage Refs	Enter/edit (i.e. SOTA) references	Same as Alt-P, then M
8. Quick QSY	Commands the rig to go a freq and mode specified.	Same as Alt-Q
9. Enter Call	Enter a call to be used in messages and the log	Same as Alt-C
10. Serial Nbr	Enter contest serial number	Same as Alt-N
11. Rig Status	Shows rig's voltage, current, temp (KX2 / KX3 / K3 / K3S only)	Same as Alt-S
12. SideKar Extreme Voltage	Shows SideKar Extreme voltage and SideKar Extreme Serial Number	Same as Alt-V
13. Date/Time	Enters date/time	Same as Alt-D
14. Exit	Exits this function list	

The Keyer Inside

The SideKar Extreme can send CW to any rig that has a straight key input.

The keying functions are provided by the powerful K1EL WinKeyer, and its features are at your fingertips.

The SideKar Extreme offers the following keyer features:

- **Speed Change** – use the left/right arrows on the keyboard, or press **Alt-Y** and enter a specific speed. Each press of the left arrow decreases the speed 2 wpm, and a press of the right arrow increases the speed 2 wpm. The left/right arrows can be used while the **Alt-Y** screen is displayed.



A screenshot of the WinKeyer speed screen. The text 'Keyer Speed: 22_' is displayed in a green, monospaced font on a black background. The '22' is followed by a blank space and an underscore.

- **Paddle Swap** – changes the paddle from dits on the left and dahs on the right to the opposite. Press **Alt-X** to toggle between the 2 options.



A screenshot of the WinKeyer paddle swap screen. The text 'Paddle Dit on Left' is displayed in a green, monospaced font on a black background.

- **Key Mode** – 4 key modes are available. Press **Alt-M** to cycle through these modes:
 - Iambic A
 - Iambic B
 - Ultimatic
 - Bug Mode



Mode is now Iambic A

Keying Options

For Elecraft rigs, there are two options:

1. **(Recommended) Connect from the SideKar Extreme RIG RS232 port to the rig via the ACC port**

Plug your paddle into the rig and control the speed, mode and paddle configuration using the rig's controls. The rig will do the keying using the ACC port and the WinKeyer is not used. Rig control and displaying decoded characters will be available. This is the recommended setup as rig control and displaying decoded characters will be available.

In this mode, the WinKeyer functions from the keyboard are NOT available. Use the rig's controls instead.

2. **No Connection from the SideKar Extreme to the rig via the ACC port**

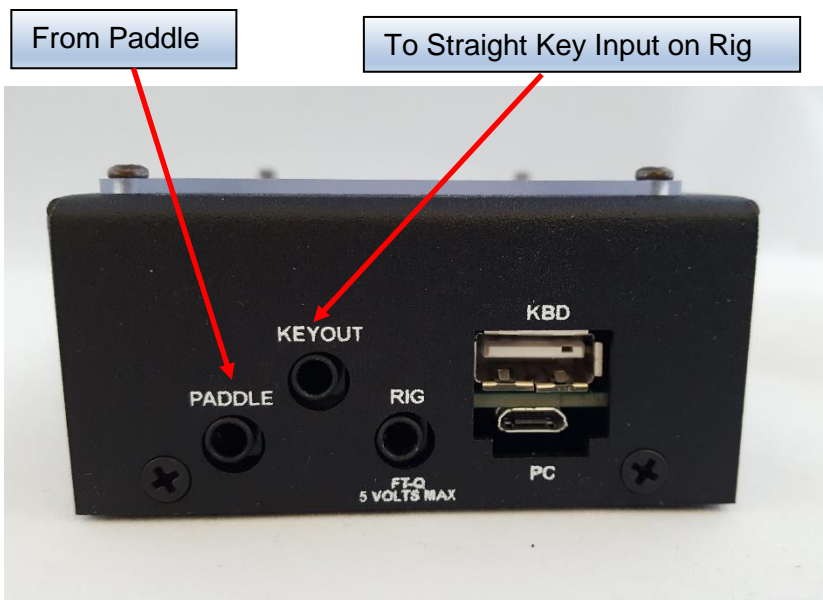
Plug your paddle into the PADDLE port on the right side of the SideKar Extreme and connect a mono or stereo cable with 3.5mm connectors (right-angle is best) from the KEYOUT port to your rig's key input. Set the rig to straight key for the paddle keying mode.

In this manner the keying is done by the WinKeyer and the functions above (speed, mode, paddle swap) are accessible from the keyboard.

Since the Elecraft ACC port is not in use, control of the rig and display of decoded characters are not possible, which is why this method is not recommended.

For Non-Elecraft rigs, plug your paddle into the PADDLE port on the right side of the SideKar Extreme and connect a mono or stereo cable with 3.5mm connectors (right-angle is best) from the KEYOUT port to your rig's key input. Set the rig to straight key for the paddle keying mode.

In this manner the keying is done by the WinKeyer and the functions above (speed, mode, paddle swap) are all accessible from the keyboard.



Transmitting

There are a few ways to transmit:

1. Simply use a straight key or paddle connected to the rig. If using a paddle for the KX2/KX3, the SideKar Extreme display will show what characters have been sent. The **ALT-E** command toggles whether you see transmitted characters or not. The keyer speed and all other keyer functions will be determined by the rig.
2. Use the SideKar Extreme's WinKeyer to send CW. Connect your paddle to the Paddle input on the right side of the SideKar Extreme and connect the KeyOut to your rig's key input. Set the rig to have a straight key input, and not a paddle input. The keyer functions (speed, dit/dah orientation & mode) will now be controlled by the SideKar Extreme.
3. Type on the keyboard. The SideKar Extreme will send the character you typed to the rig. As you type, you will key the rig, and the SideKar Extreme display will show what characters have been sent. The **ALT-E** command toggles whether you see transmitted characters or not. Connect the KeyOut to your rig's key input. Set the rig to have a straight key input, and not a paddle input.

Reminder: With the KX3, for the SideKar Extreme to display transmitted text by paddle or keyboard, the KX3 firmware must be at MCU version 2.19 or later. And the rig's Text Decode must be turned on.

Note: the Alt-E command has no effect if connected to a K3 or K3S. Transmitted characters are always displayed.

4. Send a message. You can send one of 20 pre-defined (by you) messages by pressing F1 through F10 for the first bank of 10 messages, and Alt-F1 though Alt-F10 for

the second bank of 10 messages. Each message can be up to 80 characters.

There are 2 SideKar Extreme modes offered to send text using the keyboard.

- **Immediate Mode** – characters are sent to the rig as they are typed on the keyboard.
- **Buffered Mode** – characters appear on the bottom line of the SideKar Extreme display and are not sent to the rig unless the Enter key is pressed or the number of buffered characters set by the user is reached (via **ALT-O**). In this mode, you may Backspace to correct text. When characters are buffered (not sent to the rig yet), the Status LED will be flashing.

Immediate Mode

To set the transmitting mode to Immediate:

- Press **Alt-O**
- Enter a 1 for the number of characters



```
Xmit bufr (1-20):1_
```

To transmit text, simply type on the keyboard. Sending has priority, so any time a key is pressed on the keyboard, the rig will be put into the transmit mode and the character typed will be sent.

- Pressing Enter on the keyboard will send a Carriage Return – Line Feed (CR-LF), which will cause the cursor to move down a line on the receiver's screen.

Buffered Mode

The benefit of this mode is the ability to backspace to correct text before it is sent to the rig. While this is standard using PSK31 and a computer, the SideKar Extreme offers this for RTTY, PSK31 and CW...without the need of a computer.

To set the transmitting mode to Buffered:

- Press **ALT-O**
- Enter a number between 2 and 20 for the number of buffered characters. Press Enter when done. Then, when the number of characters you type hits this number, the text will automatically be sent to the rig.

To transmit text, type on the keyboard. The characters will appear on the bottom line of the SideKar Extreme display, and be sent to the rig when:

1. The number of buffered characters typed reaches the number set using **ALT-O...or...**
2. Or the Enter key is pressed

If you see something on the bottom line to change, just Backspace to correct it.

When characters are buffered and not yet sent to the rig, the Status LED will be flashing, indicating so. So, if you are typing and finish your sentence and the LED is flashing, don't forget to press Enter so the last characters are sent to the rig.

In either mode, to stop transmitting, there are two options:

1. Hit the ESC key or hold the ESC pushbutton. By hitting the ESC key, the rig will go back into the receive mode right away. This is useful if you send by mistake or just want to go back to receive faster than the built-in 4 second wait in the rig. Especially useful when contesting.
2. [For Elecraft RTTY sending]

Simply stop typing. The rig will go back into the receive mode approximately 4 seconds after the last character was received by the rig. This allows you to take a breath between words and still stay in the transmit mode on the rig. Note that this is an Elecraft feature built into the rig.

*Note: For Elecraft RTTY and PSK sending...When sending text from the rig directly, you send CW with paddles. The rig does the translation from CW to the mode you are in (PSK31, PSK63, RTTY, CW). As such, there is no way to differentiate upper and lower case letters. All letters are sent using lower case. The SideKar Extreme uses the same features in the rig, and the result, as you might have guessed, is the same. **All characters are sent lower case**, regardless of whether you type upper or lower case on the keyboard.*

Note: While buffering the characters, they are not being sent and the person on the receiving side of your QSO will not receive anything. So, you may want to choose the number of buffered characters to balance the ability to fix things vs making the other person wait and wonder what's going on.

Viewing Characters Sent

You have the option of seeing characters you are sending on the SideKar Extreme screen or not. On the keyboard, press **ALT-E** to toggle between seeing the characters sent and not seeing them.

Note: the Alt-E command has no effect if connected to a K3 or K3S. Transmitted characters are always displayed.

Creating and Editing Text Messages

The SideKar Extreme has 20 memory locations for either text messages or rig macros. Any of the 20 can be used for either.

Each of the 20 text messages or rig macros can be 80 characters each. As a text message, they can be used for “canned” text, such as calling CQ, “my name is...”, contest exchanges (599 CO), etc.

The first 10 messages (1-10) are stored and sent using the function keys, **F1** to **F10**. The second 10 messages (11-20) are stored and sent using the function keys, **Alt-F1** to **Alt-F10**.

Creating or Editing a Message:

You can create and edit messages and rig macros from your PC or Mac by using the QRPworks Message Management Utility program, available free on the QRPworks.com website (click on Support).

It allows you to define 200 messages/macros in 10 named sets, with each set containing 20 messages/macros. You can save the sets on your PC or Mac and download a selected set of 20 messages to the SideKar Extreme all at once. Using the Message Management Utility is the fastest way to create and save a number of messages.

Alternatively, you can use the SideKar Extreme keyboard as follows:

- In the normal mode (Status LED is off), press **F12** or **ALT-Z**. The Status LED will now be flashing slowly indicating you are in the Edit mode. The screen will prompt you to press a key **F1** through **F10** or **Alt-F1** through **Alt-F10**.



Press F or Alt-F key
to edit MSG/MACRO

- If no message has been stored previously, you will see <empty...just start typing>
- If a message has been previously stored, it will be displayed. Edit or add any additional text. See the [“Editing a Stored Text Message or Macro”](#) section in this manual for a list of editing options.
- When in RTTY or PSK31, the rig will remain in transmit mode for approx. 4 seconds after the last character has been sent. To have the rig go back to receive immediately after the last character has been sent, add a vertical bar “|” at the end of the message (without the quotes). It’s especially useful when contesting.

Example: 5NN CO|

When finished, press the **F12** or **ALT-Z** key again or Enter to save the changes and return to the normal mode. The Status LED will go out and you will see the following sample message briefly:



Message 1 Saved_

If you want to cancel the editing of a message, press the **ESC** key at any time. The SideKar Extreme will return to the normal mode. The LED will go out and you will see the following message briefly:

<Edit Cancelled>

Naming Text Messages

The SideKar Extreme provides a way to name a message. The name will then be shown in the message summary screen as a handy reminder.

To name a message, simply enter the name as the first characters followed by a colon “:”. Everything to the left of the colon is the message name and is not sent to the rig. Everything to the right of the colon will be sent to the rig as text and transmitted.

It’s recommended to keep the names short, as the space for the characters used are shared with the 80 characters used for the message. The longer the name, the less room you will have for the message.

Example: Call CQ: CQ CQ CQ de KF0UR

Note: If naming a Grab & Go message, the @ symbol to indicate it is a Grab & Go message, must be placed immediately after the colon (:).

Correct: GG Macro: @ 599 CO

Incorrect: GG Macro: @ 599 CO

Sending a Stored Text Message

To send a stored text message, just press the F or Alt-F key of the message to be sent. The sent message will appear on the SideKar Extreme screen as it is being sent by the rig. If you press an F key more than once, or multiple F keys in sequence, the messages will be sent in sequence (chained). This is useful, for instance, if you want to send a longer CQ. If the message stored in F1 is:

CQ CQ CQ CQ CQ DE KFOUR KFOUR KFOUR

Pressing F1 twice will result in the following message:

*CQ CQ CQ CQ CQ DE KFOUR KFOUR KFOUR CQ CQ
CQ CQ CQ DE KFOUR KFOUR KFOUR*

Creating and Sending Rig Macros

Using the Elecraft “KX2 Programmers Reference”, or “K3 and KX3 Programmers Reference” (download-able from the Manuals and Downloads section of the Elecraft website), you can write and store one or more commands to the rig.

These sets of commands, or “rig macros” as they are called, can be used to command the rig to do just about anything and are very handy.

For instance, you could set up a macro to:

- Go to a frequency, mode, set the power level, turn off RIT and XIT, say for PSK31 or RTTY
- Put the rig into Split mode, with VFO B 1 kHz above VFO A

For the KX3, the macros can be written in the KX3 Utility, and two of the macros can be assigned to the PF1 or PF2 buttons on the KX3. The SideKar Extreme expands that by allowing you to create and store 20 macros, 80 characters each in the SideKar Extreme, and executing them with a simple keystroke.

Rig Macros are stored and sent using the function keys, **F1** to **F10** and **Alt-F1** to **Alt-F10**. Rig macros **MUST** start with a period (.) as the very first character. Note these 20 locations are shared with Text Messages.

Rig Macros always start with a period (.) as the very first character. Messages do not.

Creating or Editing a Rig Macro:

You can create and edit messages and rig macros from your PC or Mac has been added by using the QRPworks Message Management Utility program, available free on the QRPworks.com website (click on Support).

It allows you to define 200 messages/macros in 10 named sets, with each set containing 20 messages/macros. You can save the sets on your PC or Mac and download a selected set of 20 messages to the SideKar Extreme all at once.

Alternatively, you can use the SideKar Extreme keyboard as follows:

- In the normal mode (Status LED is off), press **F12** or **ALT-Z**. The LED will now be flashing slowly indicating you are in the Edit mode. The screen will prompt you to press a key **F1** through **F10** or **Alt-F1** through **Alt-F10**.
 - o If no macro has been stored previously, you will see <empty....just start typing>
 - o If a message or macro has been previously stored, it will be displayed. Edit or add any additional text. See the "[Editing a Stored Text Message or Macro](#)" section in this manual for a list of editing options.

Macros must start with a period (.) as the very first character. This tells the SideKar Extreme it is a rig macro and not a text message.

Example:

```
.20M:FA00014012000;
```

Where:

. - indicates it is a macro

20M - is the name of this macro. The colon separates the name from the macro.

FA00014012000; – is a rig command (go to 14.012 MHz in this example)

If you leave out the period, then the text FA00014012000 would be sent to the rig as a message to be transmitted.

To create a rig macro without a name, just preface the very first Elecraft command with a period:

.FA00014012000;

Note: The semi-colon (;) at the end of the Elecraft command is part of the command. All Elecraft macros commands end with a semi-colon(;).

When finished, press the **F12** or **ALT-Z** key again to save the changes and return to the real-time mode. The Status LED will go out and you will see the following message briefly:



Message 1 Saved_

- If you want to cancel the editing of a macro, press the **ESC** key at any time. The SideKar Extreme will return to the real-time receiving mode. The Status LED will go out and you will see the following message briefly:



<Edit Cancelled>

Naming Rig Macros

The commands used in rig macros are cryptic, and when you look at a list of commands in a rig macro, it may not be obvious what the macro does. To help you remember, the SideKar Extreme allows you to name each macro. The name will then be shown in the message summary screen, including the leading period, so you can differentiate messages from macros.

To name a macro, simply enter the name as the first characters followed by a colon ":". Everything to the left of the colon is the rig macro name and is not sent to the rig. Everything to the right of the colon will be sent to the rig as commands. This is the same as naming Text Messages.

It's advised to keep the names short, as the space for the characters used are shared with the 80 characters used for commands. The longer the name, the less room you will have for commands.

For more information on macros and a complete list of commands, please see the Elecraft Programmers Reference manuals in the Manuals and Downloads section of the Elecraft website.

Macro Examples: Note the colon. The name is to the left, the commands are to the right. The period, name and the colon are not sent to the rig.

```
.PSK:FA00014070000;MD6;DT3;SWH17;PC005;  
.RTTY:FA00014080000;MD6;DT2;SWH17;PC005;
```

Note: If naming a macro, do not put a space between the colon(:) and the first character. Or a space in front of any command, for that matter.

*Correct: .RTTY:FA00014080000;MD6;DT2;SWH17;PC005;
Incorrect: .RTTY: FA00014080000;MD6;DT2;SWH17;PC005;*

Sending a Rig Macro

To send a stored rig macro, just press the Fx or Alt-Fx key of the macro to be sent, where x is from 1-10 (i.e. Alt-F5). The sequence of commands will then be sent to the rig.

Editing Stored Text Messages/Macros

The editing features apply to editing text messages and rig macros. Here are the commands available:

- *Backspace*: moves the cursor one character to the left and erases the character
- *Home*: moves the cursor to the first character.
- *End*: moves the cursor to the right of the last character
 - *If at maximum characters, the cursor will move to the last character*
- *Arrow Left*: moves the cursor one character to the left.
- *Arrow Right*: moves the cursor one character to the right
 - *If at maximum characters, the cursor will not move past the last character*
- *Arrow Up*: moves the cursor one line up
- *Arrow Down*: moves the cursor one line down, but not past the last character.

Editing has two modes of operation, which are typical of many editors. The Insert key is used to toggle between these two modes:

- **Insert**, where a new character is *inserted* to the left of the cursor. The cursor will be a blinking box.
- **Replace**, where a new character *replaces* the character at the cursor. The cursor will be an underline.

In the Insert mode, if there are more characters than allowed for the message or macro, the character at the end will be truncated as new characters are added.

Messages and macros can be 80 characters.

Note: the Win key can be used instead of the Ins key. This is to accommodate small keyboards without Ins key.

Summary of Message Editing Operation:

Mode	Action	Result	LED
Normal			Off
Normal	Press F12 or ALT-Z	Enter Edit Message Mode	Flashing Slowly
Edit Message Mode	Press F1 thru F10, or Alt-F1 thru Alt-F10	Enter new or Edit existing message	Flashing Slowly
Edit Message Mode	Press F12 or Enter	Message saved, then back to normal mode	Off
Edit Message Mode	Press ESC	Cancel Edit message. Back to normal mode	Off

Stored Text Message/Macro Summary

If you don't recall which text message or macro is stored where, the SideKar Extreme can help.

While in the normal mode (Status LED off), press **Page Down** or **Page Up** on the keyboard, and the first 16 characters of the first 4 messages or macros will be shown. Press **Page Down** to see the next page of 4. Macros will be indicated with a period (.) as the first character.

If a macro has been named (first characters preceding a colon (“:.”), then the macro name will be displayed instead of the macro commands.

Press **Page Up** to go in the opposite direction.

Press **ESC** to go back to the normal mode.

Note: the Up and Down arrow keys can be used for the Page Up and Page Down functions here, respectively. This is to accommodate small keyboards without Page Up / Down keys.

Reserved Message / Macro Characters

The following characters are reserved for special purposes, and cannot be used as normal characters in text messages or rig macros:

- ! - (exclamation point) used to substitute the other station's call
- # - (pound sign) used to substitute a contest serial number
- @ - (at symbol) used to indicate it's a Grab & Go™ message.
- . - (period as the first character) used to indicate the stored data is a rig macro, not a text message. It's OK to use a period elsewhere in a message.
- | - (vertical bar) used at the end of a RTTY or PSK31 message to immediately stop transmitting after the last character is sent.
- :- (colon) used to separate the name of the message or macro from the actual message text or macro command.

Summary of Message Summary Operation:

Mode	Action	Result	LED
Normal			Off
Normal	Press Page Down or Arrow Down	First 16 characters of messages/macros 1-2 shown	Off
Message Summary Mode	Press Page Down or Arrow Down again	First 16 characters of the next 2 messages/macros are shown	Off
Message Summary Mode	Press Page Up or Arrow up	First 16 characters of the previous 2 messages/macros are shown	Off
Message Summary Mode	Press ESC	Back to normal mode	Off

Sending a Stored Text Message without a Keyboard

You can assign functions “Send Msg 1” and “Send Msg 2” to the PB1 or PB2 buttons to immediately send message 1 or 2.

See [Using the SideKar Extreme Buttons](#) to learn how to configure the buttons to do this.

Call Sign Entered

The SideKar Extreme gives you the ability to capture another station's call sign and have it sent out automatically in messages and automatically populate the log. You may be familiar with this feature in most contest loggers and PSK31 or RTTY programs.

To use it,

- Enter the call by pressing **Alt-C**. Enter up to 10 characters with the keyboard or paddle. Backspace to make changes.
- In any of the 20 SideKar Extreme messages, use the exclamation point (!) where you want the other station's call to appear.
- To Save it, press **Enter** on the keyboard.
- To Erase it, press **Alt-W** (wipe).



```
Call: (10 chars.)
```

Example:

- Press Alt-C and enter KB3SII.
- In message 1, enter: ! de KF0UR. The SideKar Extreme will then send "KB3SII de KF0UR".

Press Alt-C again to see the call entered, and backspace as needed to edit it. Press Enter when finished.

The entered call will be there until the QSO is logged.

Grab & Go™

The SideKar Extreme has a unique feature call Grab & Go™ which helps you to maintain the flow in contests or regular QSOs.

Grab & Go allows you capture (grab) a station's call at the same time you are responding on the air. This is instead of typing the other stations call in the Enter Call screen (**Alt-C**) *and then* sending it subsequently.

Here's how it works. Shown is an example for a contest where someone answers your CQ and you want to respond with the contest exchange stored in message F2:

- To define any message as a Grab & Go message, place a "@" as the first character of the message.

Example: @ TU 599 CO

- If you name you message, put the @ after the colon, as the first character of the message to be sent.

Example: Exchange:@ TU 599 CO
(where Exchange is the name of the message and is not sent)

- Then when you press F2, you will be prompted to enter a call (that's the 'grab' part):
 - Use the keyboard to type it in or use the paddle to Key-board it in.
 - The call you are typing or keying **is** sent to the rig and **will** go out on the air.
 - When you are finished sending the call, press F2 again. The rest of the message in F2 will then follow (that's the 'Go' part).

In summary, the Grab & Go™ flow is:

- Press the message F key to be sent
- Type or Key-board the call (it gets sent as you enter it)
- Press the message F key again for the rest of the message to be sent

Contesting

While the SideKar Extreme is not a substitute for a full contest logging program, it can help with sending your contest exchange and the general flow of many contests.

There are some contest specific features built in. The target contests are those that are typically used in the field, starting with the ARRL Field Day.

There are many aspects to contest logging. The new features focus on Duplicate (Dupe) Checking. Here's why: When operating QRP, a contester is more likely to be in the Search & Pounce (S&P) mode, looking for QSOs, as opposed to the Run mode on one frequency, waiting for others to answer your CQ.

In the S&P mode, when you hear a call, you want to know if you've worked the station already. The new feature will tell you that. If a station has already been worked and counts as a duplicate for the contest selected, the SideKar Extreme will alert you. You can still work and log the station again, if you like.

Here are the features in detail:

1. In the normal screen mode, **Alt-A** selects the contest. Each press of **Alt-A** will go to the next contest in a round robin fashion. Stop at the contest you want. The initial values you'll see are:
 - a. Log: Field Day
 - b. Log: Normal (not in a contest)

c. DXpedition (for running stations)

2. In the Log screen, when you enter a call and press **TAB**, the SideKar Extreme will check for duplicates in the log. Remember a dupe is defined differently for each contest. For example, for Field Day, it is the same call on the same band and same mode. A different contest may allow you to work a call only once per band, regardless of the mode. SideKar Extreme knows the rules per contest.

Note: It's a good idea to clear the log before starting a contest, as all entries in the log are checked for Dupes.

3. If a duplicate is found, "DUPE" will be displayed for a few seconds.
4. You can still log the duplicate QSO if you like.
5. Once you enter a call and hit TAB, the call is saved internally (not logged yet) and can be used in messages (same as using Alt-C or Grab & Go). Remember to hit TAB and not ENTER. ENTER will save the QSO in the log, as always.
6. You can press an F key to send a message right from the log.
7. You can clear the call and exchange by hitting Alt-W (Wipe). Alt-W also clears the call stored using Alt-C or Grab & Go at the same time.

A typical sequence might be:

Setup:

- Hit **Alt-A** to select Field Day
- Set up a message to send your call
- Set up a second message to send the other person's call and an exchange (i.e. ! 599 CO)

-

Operating:

- Go to the log screen and enter the call.
- Hit TAB to perform dupe checking.
- Hit the F key message you set up to send your call.
- If the station comes back to you, hit the second F key to send the exchange.
- Go to the log again, enter the exchange received and hit ENTER to log the QSO.

Here are the original contest features:

Use the exclamation point (!) in a message to substitute the other stations call.

Example:

- Let's say F2 is used to send an exchange
 - First enter "! 599 CO" without the quotes in message F2
- W1ABC calls you. Use **ALT-C** to enter the other station's call W1ABC, and press Enter. Then, pressing F2 will send "W1ABC 599 CO"

OR...by using Grab & Go,

- W1ABC calls you. Press F2 and type or Key-board W1ABC. W1ABC **is** sent on the air as you type or Key-board it.
- Press Enter, F2 again.
- "599 CO" is then sent to complete the message.

If the contest exchange is static text, like RST and section ("599 SFL") or name and state ("Steve NY"), the exchange can simply be put in one of the 20 text message locations (F1:F10, Alt-F1:Alt-F10) and sent with a single keystroke.

If the contest exchange contains a QSO serial number, the SideKar Extreme has a feature to help. To use the serial number feature,

- Use the “#” (without the quotes) in a text message where you want to send the serial number. For the following examples, assume the next serial number is 234.
 - Example: KFOUR 599 # # will send KFOUR 599 234 234
- To set the serial number, press **Alt-N** (number). You can then see the next serial number that will be sent, or can change it by backspacing and typing a new numbers. Press **Enter** to save the change or **ESC** to exit without saving. This should be used at the beginning of a contest or if you need to set the number at any time. The maximum QSO number is 32000. If you get close to that number in a contest, you’re doing very well!



```
Next nbr sent: 10
```

- The SideKar Extreme will increment the serial number when you log the contact. If you are not using the SideKar Extreme log, then Press **Alt-I** (increment) to increment the number by one. If you’ve incremented by mistake, press **Alt-N** to change it to the desired number. This might happen if you thought you worked someone, but really didn’t (busted QSO).

In addition to the # for the serial number you may also enter the other station’s call and have it sent out automatically as part of a message. See [Call Sign Entered](#) or Grab & Go in an earlier section for details.

The other station’s call will be cleared when the QSO is logged.

DXpedition mode

When running an event such as a SOTA or POTA activation, activating a national park, or any other time where you are calling CQ and having stations answer you, it is sometimes desirable to keep things moving along quickly and maximize the QSO rate.

The SideKar Extreme offers the DXpedition mode of operating, which reduces 2 specific time delays:

1. When entering the call of another station using **Alt-C**, the “Back to Real Time” message on the screen is eliminated. This allows you to enter the call and immediately press a function key to send a message, such as “KF0UR TU ur 599 CO”, to respond to someone quickly.
2. When saving a log entry, there is a screen to inform you the save was successful. The time “Saving QSO xx” is reduced, so after logging you can very quickly send the next message, such as “TU de KF0UR QRZ”.

To access the DXpedition mode, press **Alt-A** until you see “Log: DXpedition”.

Logging

Some basic logging features are available when using the SideKar Extreme. While it does not try to replicate a full blown log or contest logging program, it does allow you to capture the basic QSO information easily and export it to a standard ADIF file.

Main Logging Functions

To access the SideKar Extreme log, press **Alt-L**. You will then see the following logging functions screen:

```
L: Log QSO      S: Show
F: Find QSO
A: ADIF File  R: Refs
C: Clear Log
```

L: to log a new QSO. There is room for 1000 QSOs.

F: to find an existing QSO in the log. Enter all or part of a call. The most recent QSO with the text string entered will be displayed. Press **Arrow Down** to find the next earlier QSO.

A wildcard character (*) can be used as well.

Example:

Finding "W1AB" will find all log entries for W1AB

Finding "W1AB*" will find W1AB, and also W1ABC

```
Find Call: _
<ENTER: go   ESC: quit>
```

Once a QSO is found, it can be edited and saved by Pressing Enter.

The QSO may be deleted by pressing **Alt-X**. Note that deleting the QSO does not remove it from the log. Instead, the call is changed to *Deleted* and will not be output when creating the ADIF export. As a result, deleting a QSO should not be used to make more room in the log. Clearing the log will do that.

A: to create an ADIF file for export to a PC, so it can be imported to your main log. All QSOs (not deleted) will be exported.

R: to create an ADIF file for export to a PC, but only include QSOs tagged with the currently active Reference (SOTA, IOTA, Lighthouse, etc.)

If you select this option, then you will be asked to select what type of reference it is on this following screen:



The purpose of this selection screen is to output the data with the proper ADIF field name. For example:

- SOTA Refs need to use the ADIF tag “MY_SOTA_REF”
- IOTA needs to use the ADIF tag “MY_IOTA”

Selecting the reference type selects the proper ADIF tag for output.

See the QRPworks ADIF Utility manual on the QRPworks website (under Support, Utilities) for more information on creating an ADIF file.

C: to erase the entire log. You will be prompted with a Y/N to be sure.

S: to show QSOs in the log. The most recent QSO will be shown. Press **Page Down** to go down the log QSO-by-QSO. Press **Page Up** to go in reverse order.

ESC: press **ESC** any time to go back to real time receiving.

Note: The Up and Down arrow keys can be used for the Page Up and Page Down functions here, respectively. This is to accommodate small keyboards without Page Up / Down keys.

Logging a New QSO

To log a new QSO, enter the SideKar Extreme Log by pressing **Alt-L**, and then **L** to Log a QSO. The QSO log screen will then be shown



```
Call: KB3SII
Exch: Steve ME
When: 20200429 @1447
Freq: 14045 MD: CW_
```

To navigate from field-to-field, press **TAB**.

To navigate within a field, use the left right arrows, home or end, or backspace. Press **Insert** to toggle between the insert (flashing cursor) or overwrite modes (same as editing messages and macros).

Press Enter to save the QSO.

Call: Enter the call worked. Maximum: 10 characters. Enter either upper or lower case. The SideKar Extreme will convert it to upper case. This is a required field.

Exch: Enter the exchange. Maximum 10 characters. Any characters can be entered, so this can be used for regular QSOs ("599") or contest exchanges ("2A CO", "Steve NY"). This is not a required field.

If you use the QRPworks ADIF Utility v1.9 or later, a new feature is available.

In ADIF Utility v1.7 and previous, the Exchange field is always interpreted as RST_RCVD in the ADIF file.

With ADIF Utility v1.9, you have the opportunity to populate the RST RCVD and RST SENT fields.

In version 1.9 of the Utility,

- RST RCVD is now added as an ADIF field. The format of the 10 character **Exch** field in the QRPworks log is now Rcvd / Sent
- If a / character is found, the characters to the left of the / is the RECEIVED and the characters after the / is the SENT
- If no / character is found, the Exchange is RST_RCVD.
- As shown in the table of examples, the Exchange does not have to be a traditional “599” signal report.

Examples

“Exch” data in the log	ADIF RST_RCVD	ADIF RST_SENT
579	579	(blank)
579/459	579	459
/589	(blank)	589
001 NY/022 CO	001 NY	022 CO

Also new in ADIF Utility v1.9 are 2 new ADIF fields:

- Call Sign, if entered in the Utility
- Band

When: enter the date in yyyyymmdd format. Tab to the time field after the “@” sign and enter the time in hhmm format.

*Note: if using the internal real time clock, the date and time will be filled in with the date and time the screen was accessed. The SideKar Extreme is supplied with a CR2032 button battery for this purpose. If necessary, set the date and time (**Alt-D**)*

Freq: enter the frequency in KHz. This will be automatically filled in with the frequency at the time you accessed this screen.(Example: 14123 for 14.123 Mhz)

MD: enter the mode. This could be 2 characters for CW or up to 4 characters for RTTY. This will be automatically filled in with the mode selected at the time you accessed this screen.

Logging Activities using References

The SideKar Extreme provides features for operators in a number of activities to manage various references, such as:

- Summits on the Air (SOTA)
- Worldwide Flora and Fauna (WWFF)
- Islands on the Air (IOTA)
- Lighthouses
- Grids
- And any other activity that uses any kind of reference or you simply want to designate as a separate activity.

By reference, we mean a published identifier used within the activity to report activations, collect points, etc. Example: SOTA uses Summit References (i.e. “W0/FR-001”), IOTA uses island reference numbers (i.e. “AF-041”), plus there are Grids, Lighthouses, and other special outings. But it doesn’t have to be an official reference. It could be something simple as “vacation” or “Field Day”.

This feature of the SideKar Extreme allows you to

- Store up to 12 References (maximum 16 characters each)
- Select which Reference is currently active
- Automatically include the Reference as part of the log entry
- Export an ADIF log file of QSOs for the active reference only.

To use the Reference feature, press **Alt-P** . On the next screen, press **M** to Manage Refs.



The next screen displayed will show references 1-4. Page Up and Down, or Arrow Up and Down to navigate to references 5-12. Tab can also be used to move to the next field.

Storing and Selecting a Reference

Enter up to 16 characters per line (1 line = 1 Reference). Since most references are less than 16 characters, there's usually room to enter an optional short note for each reference. Use a colon (":") to separate the reference from your note. This can be used as a handy reminder when looking at a list of references and trying to recall what they are.

Example for Pikes Peak: W0/FR-004:Pikes

Where W0/FR-004 is the official SOTA reference and will be stored in the log, and Pikes (after the colon) is just a reminder for you and will not be stored in the log.

To select which reference is active, Arrow or Page Up/Down to the reference desired and press **ALT-S**. An asterisk ("*") will be displayed on the line of the active reference.

In the following screenshot example:

- 2 SOTA Summit Refs are entered, both with a short note
- Number 02, Pikes Peak, is selected as the active reference. Note the asterisk indicating so.

Active reference indicator, Alt-S selects it

```
01: W0/FR-001:Lincoln  
02: *W0/FR-004:Pikes_  
03:  
04:
```

A reminder note, not part of the reference

Now when you log a contact, the reference (a Summit Ref in this example) will be saved with the QSO. The optional short note you might have entered after the colon and the colon itself will not be saved in the log.

Exporting an ADIF File

To export an ADIF file with only the QSOs of the reference activated.

- Go to the Logging Screen (**Alt-L**)
- Press R for Reference

Note that the difference between pressing **R** (reference) vs. **A** (ADIF File) is that **A** will export *all* QSOs, while **R** will export only those QSOs for the active reference.

If a QSO was logged with the wrong reference selected, the correction is easy. Just:

- selected the proper reference (**Alt-P**, then **M**, then arrow up/down or tab to the proper reference, then **Alt-S** to select it)
- Now go to the log, find the QSO, and hit Enter to re-save it. The currently active reference will now be saved with that QSO.

As mentioned in the Logging section, if you select this option, then you will be asked to select what type of reference it is on this following screen:



The purpose of this selection screen is to output the data with the proper ADIF field name. For example:

- SOTA Refs need to use the ADIF tag “MY_SOTA_REF”
- IOTA needs to use the ADIF tag “MY_IOTA”

Selecting the reference type selects the proper ADIF tag for output.

Note: Once an ADIF export is done, you'll need to reset the rig and SideKar Extreme to resume normal operations. The easiest way to do this is to power both off, then power on the rig first.

Rig Specific Features

Quick QSY™

Applicable to:

- Elecraft KX2, KX3, K3, K3S
- Yaesu FT-817, FT-818, FT-857, FT-897
- QRP Labs QCX, QSX (planned)

For rigs interfaced with the SideKar Extreme you can use the Quick QSY feature to change frequency and mode very quickly. (The QCX mode is always CW as it is a CW only rig).

To use it, press **Alt-Q**. The screen will then prompt you for the frequency, and the format required is also displayed.

Optionally, you can change modes as well by adding a single letter on the end of the frequency. The modes available are as follows:

<u>Mode</u>	<u>KX3/KX2/K3/K3S Letter to add</u>	<u>FT-8xx Letter to add</u>
CW	C	C
USB	U	U
LSB	L	L
PSK31	P	P
RTTY	R	D
AM	A	A
FM	F	F
CW REV	W	W
Data Rev	V	-

Examples:

- 14070 - sets freq to 14.070 MHz. Mode does not change.
- 14070P - sets freq to 14.070 MHz AND mode to PSK

for PSK31

- 21080R - sets freq to 21.080 MHz AND mode to FSK-D or Data for RTTY
- 7023C - sets freq to 7.023 MHz AND mode to CW
- 28425U - sets freq to 28.425 MHz AND mode to USB



```
QSY to: 7023C   kHz
format: 14070C
letter is opt. mode
<ENTER: go   ESC: quit>
```

Displaying Decoded Text

Applicable to:

- Elecraft KX2, KX3, K3, K3S
- QRP Labs QCX, QSX (planned)

For displaying rig decoded text, the SideKar Extreme takes advantage of the innovative rig feature whereby the rig decodes incoming data and displays the decoded text on a scrolling 8-character display at the bottom right of the rig's screen. The data could be PSK31, PSK63, RTTY, or CW. It doesn't matter.

The SideKar Extreme captures these characters as they are decoded and displays them on an 80-character screen for easier reading.

By displaying 80 characters at a time, you can read words and sentences, and not worry about missing characters if you take your eyes off of the rig's screen for a short time. Plus you can freeze and scroll back the text, if you need to.

The SideKar Extreme will display the characters decoded and received from the rig. Once the 20-character line is filled, the next line is used.

Once all of the lines of the display are filled, the lines will scroll up and the bottom will show the next data received.

While receiving text, the Status LED above the display will be off, indicating the SideKar Extreme is in the normal, real-time receiving mode.

Note: You may find it easier to tune in a specific signal by placing the rig in the FINE TUNE Mode rather than COARSE Mode.

If you like, you can disable receiving decoded text from the rig. This may be useful when using the PX3 panadapter and viewing the decoded text on it instead. Some users prefer to see the decoded text on the PX3, but use the messaging, macros and log on the SideKar Extreme. Press **Alt-T** to toggle between receiving decoded text or not. The default is to receive text, and is set to receiving the text each time the SideKar Extreme is powered up.

Also, the SideKar Extreme removes extra spaces between characters, so more useful text is seen on the screen.

*Note: Pressing **Alt-T** to disable received text and again to re-enable it will clear the screen and scroll back memory.*

Scrolling Back

Once the top line of the display is scrolled off of the screen, it is saved. Actually, 8 of the most recent lines are saved.

1. To be able to view this saved text, you must first enter the Freeze/Scroll mode. To do so, while in the real-time

receiving mode (LED is off), press Alt-F (Freeze) or tap a button if it is set for the Freeze mode. When shipped the SideKar Extreme left button is set to Freeze when tapped. Two things will then happen:

- a. The amber LED will turn on, indicating the SideKar Extreme is in the Freeze/Scroll mode
- b. The text on the screen is now frozen, not changing.

Note: even though the screen is frozen, behind the scenes the SideKar Extreme is still collecting text from the rig. So when you go back to normal, real-time receiving, you'll see the most recent text received.

To scroll back to view the previously saved lines (up to 8), while in the Freeze/Scroll mode (amber LED is on), HOLD the button assigned to Freeze. The SideKar Extreme will scroll back line by line, at approximately 1 line per second, until you get to the end of the scrolling (8 lines). Release the Hold button to stop scrolling. Hold it again to resume scrolling.

To use the keyboard instead to Scroll:

- Alt-F to enter the Freeze / Scroll mode
- Arrow Up or Down to scroll one line at a time
- Page Up or Down to scroll a page (4 lines) at a time

If less than 8 lines have been saved, you will see <END of DATA> at the end of the received text.



When you scroll 8 lines back, you will see <END OF SCROLL>



Resuming Real-time Receiving

To resume real-time receiving, while in the Freeze/Scroll mode, TAP the Freeze button again. Or if using a keyboard, press **Alt-F** or **ESC**. You will briefly see the following message:



```
<Back to Real Time>
```

Summary of Scrolling Operation:

Mode	Action	Result	LED
Real-time receiving			Off
Real-time receiving	Tap button or Alt-F	Freeze/Scroll mode.	On
Freeze/Scroll	Hold button	Scroll back, ~1 line per second	On
Freeze/Scroll	Release button	Scrolling stops where it is	On
Freeze/Scroll	Hold button again	Scrolling resumes from where it was stopped	On
Freeze/Scroll	Arrow up/down	Scroll up/down 1 line per press	On
Freeze/Scroll	Page up/down	Scroll up/down 1 page per press	On
Freeze/Scroll	Tap button or Alt-F or ESC	Back to real-time receiving	Off

Transmitting

Applicable to:

- Elecraft KX2, KX3, K3, K3S
- Yaesu FT-817, FT-818, FT-857, FT[^]-897
- QRP Labs QCX, QSX (planned)

You can send text to the rig by either plugging a USB keyboard into the SideKar Extreme and simply typing on the keyboard or by plugging in your paddle to the rig and using the keyer in the rig.

For Elecraft rigs, assuming the SideKar Extreme is interfaced with the rig (cable plugged in between ACC port and RIG-RS232 port), the rig will transmit the text in whatever mode the rig is set to. In other words,

- if the rig is set to PSK-D, it will send PSK31 or PSK63, depending on the VFO A setting on the rig.
- if it is set to FSK-D, it will send RTTY.
- If it is set to CW, it will send CW

You just type and the SideKar Extreme and the rig will take care of the rest.

LCD Backlight Brightness

The SideKar Extreme LCD backlight brightness is adjustable in 7 levels. When operating using a battery, it is wise to minimize the current usage (but you already knew that), and this feature helps you do so. The display is transfective, so backlighting is probably not needed at all when outdoors, even on a cloudy day.

In the SideKar Extreme, the first 4 levels are a group that are lower brightness levels, and more appropriate for running on a battery. The remaining 3 higher levels are more suitable when not running on a battery.

To adjust the brightness, press **Alt-B**. Each press of **Alt-B** will go to the next level of brightness, from off to bright.

The brightness selected is remembered in EEPROM, so the next time you turn on the SideKar Extreme, it will start at the last brightness selected.

Voltage Check

To display the power supply voltage of the SideKar Extreme, press **Alt-V**. The current approximate voltage and the SideKar Extreme serial number will display. Press Esc on the keyboard to quit and return to the real-time receiving mode.

The SideKar Extreme will automatically check the voltage periodically, and if at or below the low voltage threshold (~7 volts), will display a low voltage warning screen.

```
SK-X Voltage= 13.80V
Serial Number: 011
```

Setting the Date and Time

The date and time are automatically used by the logging function to record the date and time of each QSO.

With the SideKar Extreme on in the normal receiving mode, press **Alt-D**.

- Enter the Date in `yyyymmdd` format
- Enter the 24 hour time in `hhmm` format
- Switch between date and time using the Tab key.
- Backspace to erase existing data

```
DT: 20200429 yyyymmdd
Time: 1618 hhmm
```

Battery Replacement

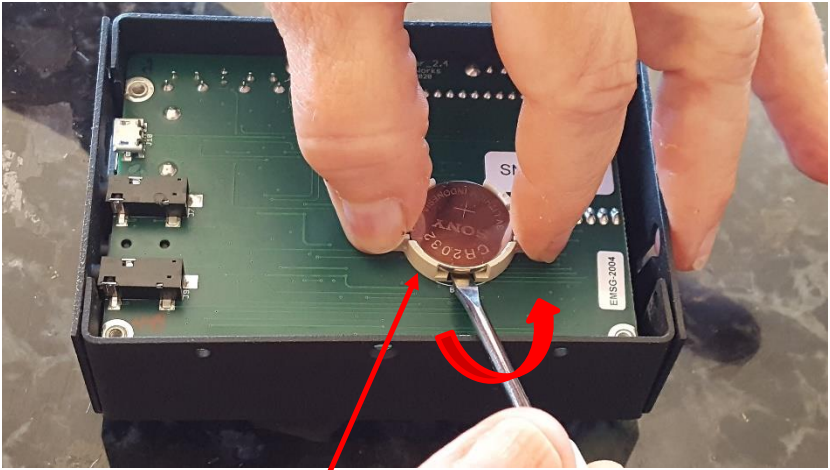
The CR2032 button battery is used to maintain the time and date when power is removed from the SideKar Extreme. It typically lasts for 5 years.

To replace it:

- **IMPORTANT:** DO NOT REMOVE THE BATTERY OUT OF THE HOLDER BY LIFTING OR PRYING THE BATTERY UP. THIS CAN PULL THE BATTERY HOLDER UP FROM THE PRINTED CIRCUIT BOARD. ALWAYS SUPPORT THE BATTERY HOLDER BY HOLDING IT DOWN **ON BOTH SIDES** OF THE BATTERY HOLDER AND PRYING THE BATTERY UP BY TWISTING A SMALL SCREWDRIVER **BETWEEN** THE BATTERY AND THE BATTERY HOLDER.

Twist so the right side as shown in the picture below comes out first. This is the side that does not have the connection on top.

- Turn off the SideKar Extreme
- Remove the bottom cover screws
- Carefully pry out the battery, being careful not to put any upward force on the battery holder. Remember to hold it down on both sides!
- Replace the battery...positive side up
- Replace the cover and screws.



Remove the battery by inserting a small flat blade screwdriver between the bottom of the battery and the battery holder as shown. Twist the screwdriver between the battery and the holder to pop the battery out. Do **NOT** lift or pull the battery up. It might pull the battery holder off of the PC board. Hold the battery holder down while twisting the screwdriver to be sure. Twist so the right side which doesn't have contact on top of the battery comes up first.

Important reminder: DO NOT put any upward force on the battery holder!

System Reset

If you want to reset the SideKar Extreme, press **Alt-R**. Then press “**Y**” to confirm the reset or “**N**” or **ESC** to cancel the reset. The reset is similar to turning the unit off and then on again.

One reason for doing a reset is to re-initiate the communications to the rig, in case it is not connected.



```
Reset SK-X? (Y/N)
```

Help

For help in remembering SideKar Extreme commands, press **F11** or **ALT-H**. A summary of the features and commands will be shown. Press **Page Up** or **Page Down** to scroll through the list.

Note: the Up and Down arrow keys can be used for the Page Up and Page Down functions here, respectively. This is to accommodate small keyboards without Page Up / Down keys.

A [summary of commands](#) can be found at the end of this manual. But since help is built in, you may not need to take any paper with you.



```
freeze:           Alt-F
scroll:  UP/Dn   arrow
backlight:       Alt-B
capture call:    Alt-C
```

Page Down or Up to see the next or previous page(s)

Compatibility with Other Products

Here's how to use the SideKar Extreme with other products.

For the Elecraft products, in general, it is connected as the last device in the serial (ACC) connection chain.

- PX3 – connect the SideKar Extreme to the ACC1 (PC) port on the PX3. For the SideKar Extreme to display decoded text from the KX3, the text decode function on the PX3 must be turned off.
- SideKX End Panels – SideKar Extreme is compatible with SideKX end panels. There is no need to remove them.
- KXPA100

The KXPA100 works a little differently than the PX3 with regards to other devices in the serial port (ACC) chain. Here's how to use the SideKar Extreme with a KXPA100. Tnx to Tim KD8KYK.

- **For the KX3 with KXPA100 amplifier**, start with the KX3 connected to the amplifier as described in the Elecraft manual.
 - Then, unplug the KX3-to-KXPA100 adapter's 3.5mm serial data plug from the KX3's ACC1 port.
 - Plug in the 3.5mm cable supplied with one end going into the Rig port on the SideKar Extreme and the other end going to the ACC1 port on the KX3.

- **Note:** You must leave the ACC2 port plugged in with the KX3-to-KXPA100 adapter's keying cable (the smaller 2.5mm TRS plug).
 - Turn on KX3
 - Turn on SideKar Extreme and let it connect
 - Turn on KXPA100 amplifier manually using the "On/Off" switch on the front of the KXPA100. You will no longer be controlling the amplifier using the PA mode On/Off from the KX3 menu.
 - **Note:** Pressing the ATU button on the KX3 will still tune the KXPA100 amplifier as before.
- **For the KX2 with KXPA100 amplifier,** start with the KX2 connected to the amplifier as described in the Elecraft manual using the additional KX2ACBL adapter connected to the same KX3-to-KXPA100 adapter cable setup used as described in the aforementioned KX3 amplifier set up section. The KX2ACBL adapter is needed because the KX2 has only one ACC port.
- Start with the KX2 connected to the KXPA100 amplifier using the KX2ACBL adapter connected to the KX3-to-KXPA100 adapter at one end and the other end plugged into the ACC port of the KX2.
 - Unplug the 3.5mm serial data from the KX2ACBL adapter. Then, plug one end of the cable for the SideKar Extreme into the Rig port of the SideKar Extreme and the other end into the KX2ACBL adapter port you had just disconnected.
 - Be sure to leave the keying cable from the KX3-to-KXPA100 adapter plugged into the 2nd port (the 2.5mm TRS) of the KX2ACBL adapter.
 - Turn on the KX2
 - Turn on the SideKar Extreme and let it connect.
 - Turn on the KXPA100 amplifier by manually using the "On/Off" switch on the front of the KXPA100.

You will no longer be controlling the amplifier using the PA mode On/Off from the KX2 menu.

- **Note:** Pressing the ATU button on the KX2 will still tune the KXPA100 amplifier as before.

Updating the Firmware

The SideKar Extreme firmware is able to be upgraded via the “PC” Micro USB port. Please contact us via the www.QRPworks.com Contact page if an update is needed.

Technology

The SideKar Extreme is not just a larger screen. Inside is a PIC microcontroller. It is a computer on a chip, complete with CPU, memory, and EEPROM. Firmware running on the microcontroller controls the presentation and all functions of the SideKar Extreme. There’s a lot of stuff going on!

Support

If for any reason you have questions or issues regarding the SideKar Extreme, please contact us via the www.QRPworks.com Contact page.

Acknowledgements

We would like to acknowledge and thank Sierra Radio Systems for the use and support of their Hamstack C library.

Troubleshooting Tips

1. Issues connecting with the rig

If you experience issues connecting to the rig, the following procedure is recommended. Verify the rig baud rate is set to 38400.

- a. Turn off the rig
- b. Turn off the SideKar Extreme via the on/off switch
- c. Turn the rig on first.
- d. Wait a few seconds
- e. Turn on the SideKar Extreme

2. I'm using a USB wireless keyboard, but it does not work.

Make sure it is a 2.4 GHz wireless keyboard and not a Bluetooth keyboard.

3. (Elecraft) The SideKar Extreme is connected, but no received text is appearing

Ensure that the rig's Text Decoding feature is turned on and you see characters scrolling on the rig's display (in the lower right hand corner).

See the rig's Owner's Manual for more details on setting up the rigs.

In a nutshell,

For the KX3, the setup is as follows:

- For PSK:
 - Mode: TX Data (tap Data/Text button)
 - Data MD: PSK D (select with VFO B)

- Text Decode: ON (hold Data/Text button)
 - 31 bPS or 63 bPS (select with VFO A)
 - For RTTY:
 - Mode: TX Data (tap Data/Text button)
 - Data MD: FSK D (select with VFO B)
 - Text Decode: ON (hold Data/Text button)
 - For CW:
 - Mode: CW (tap Mode 1 button)
 - Data MD: not applicable
 - Text Decode: ON (hold Data/Text button)
4. (Elecraft) When I send using a keyboard or a paddle, the rig is sending the characters, but I don't see the sent characters on the SideKar Extreme screen, regardless of the Alt-E (echo characters) setting.

Make sure the KX3 firmware is at MCU version 2.19 or later.

Appendix A: QRP Labs Classic QCX CAT Port

Here's the schematic for the QCX CAT port required for QCX Classic revs 1-5.

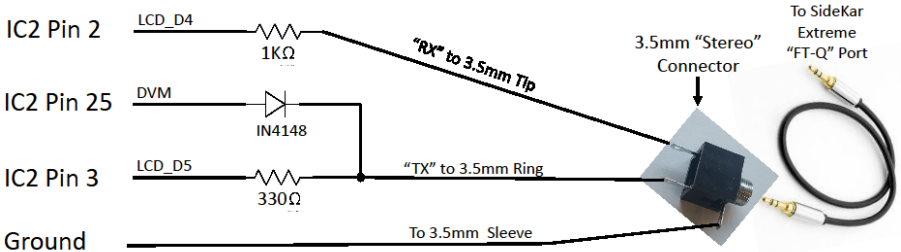
- Revs 1-4 need all of the components
- Rev 5 has the resistors and diode already installed. You just need to add the 3.5mm connector
- QCX+ and QCX Mini have the CAT port installed already. Nothing further is needed.

NOTE: The QCX and QSX must always be connected to the FT-Q port on the SideKar Extreme NOT the RS-232 port on the top. QRPworks is not responsible for any damage to the SideKar Extreme or the QCX if the wrong serial port is used.

This schematic can also be found on our website at www.QRPworks.com. Click Support / Manuals and look under the SideKar Extreme section.

QRP Labs QCX CAT Port Schematic for the QRPworks SideKar Extreme

QCX Classic revs 1-4



Note: QCX Classic rev 5 has the components already installed. All you need to add is the 3.5mm connector

This schematic can also be found on our website:

Summary of Keyboard Commands

Keyboard	Function
Alt-A	Select logging mode (normal, a contest or DXpedition)
Alt-B	Change LCD background B rightness
Alt-C	Enter other station's C all
Alt-D	Set D ate and Time
Alt-E	Toggle between E choing (seeing) sent characters or not
Alt-F	F reeze display
Alt-H	Display H elp
Alt-I	I ncrement the contest serial number
Alt-K	Toggle between US and UK K eyboards
Alt-L	Go to L og functions
Alt-M	Select the Keyer Mode (Iambic A, B, etc.)
Alt-N	Display / Set the contest serial N umber
Alt-O	Set transmit buffer O ption
Alt-P	References (ex. SOTA P eaks)
Alt-Q	Quick Q SY
Alt-R	R eset the SideKar Extreme
Alt-S	Show the KX3, KX2, K3, K3S S tatus (voltage, current, temp)
Alt-T	Toggle between receiving decoded text from the rig or not

Alt-V	Display <u>V</u> oltage
Alt-W	Wipe the call entered for Enter Call, Grab & Go or Logging
Alt-X	Swap the paddles dits and dahs
Alt-Y	Change keyer speed
Alt-Z	Same as F12 edit message or macro
F12, then F1 to F10	Edit text messages/macros 1-10
F12, then Alt-F1 to AltF10	Edit text messages/macros 11-20
F1 to F10	Send text messages/macros 1-10
Alt-F1 to Alt-F10	Send text messages/macros 11-20
F11 or Alt-H	Help
F12 or Alt-Z	Enter Edit Mode. While in Edit mode, save message or macro
Page Up / Down or Arrow Up/Down	Display text message/macro summary

Summary of Keyboard Editor Commands

Home	Go to first character
End	Go to last character
Up Arrow	Go up one row
Down Arrow	Go down one row
Left Arrow	Go left one character
Right Arrow	Go right one character
Insert	Toggle mode (insert or replace)

Summary of Logging Commands

TAB or up/down arrows	Move from field to field
Enter	Save the QSO
Alt-Arrow Down	Find Next QSO (after first is found)
Alt-X	Delete the QSO displayed

Firmware Revision History

Version	Changes
2.0.1	Initial production release
2.0.2	Minor screen fix when Checking for Dupes for Field Day and no dupe is found
2.0.3	Minor fix when logging, then wiping the call (Alt-W) and then backspacing
2.1.6	Add an interface to the QRP Labs QCX family of rigs, plus a minor display bug fix.
2.2.0	Add an interface to the Xiegu G90

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