QRPworks

Key Log Go™

User Manual

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Overview

Thank you for your purchase of the QRPworks Key Log Go™ (KLG).

Its purpose is to enhance your portable operating experience with a variety of rigs.

In a nutshell,
- It is a keyer, containing the powerful and popular K1EL WinKeyer
- 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 the space for 1000 QSOs
- It is an ADIF export tool, allowing you to export your logged QSOs in an ADIF format.
- It is portable, with a sunlight readable display and able to operate up to 50 hours on an internal battery.
- It can operate with or without a keyboard

Rig Specific Functions

Elecraft KX3/KX2/K3/K3s
- If you use an Elecraft KX3, KX2, K3, or K3s the KLG will display the scrolling rig-decoded PSK31, RTTY, or CW text on an 80 character screen.
- It will allow you to send up to 20 macros to the rig to control just about every aspect of it.
- The KLG offers the Quick QSY™ feature, allowing you to change frequency and mode very easily.
- The log will automatically be populated with the current frequency and mode, so you don't have to enter it.

Yaesu FT-817, FT-857, FT-897

- The KLG offers the Quick QSY™ feature, allowing you to change frequency and mode very easily.
- The log will automatically be populated with the current frequency and mode, so you don't have to enter it.
- This family of rigs will be known as FT-8x7 in this manual.

Data entry for logging, creating messages, capturing "their call" can all be done with or without a keyboard!

The KLG 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

Applicability

The KLG will send CW to any rig that has a straight key input.

For the Elecraft KX3, KX2, or K3 and Yaesu FT-8x7 family of rigs, it provides additional features by using their respective serial interfaces.

This version of the manual applies to KLG versions 2.0.x.

Status LED

SAVE   TAB   BACKSP   ESC

KEY LOG GO

K
L
G

MSG
SEL

LOG

QRPWORKS
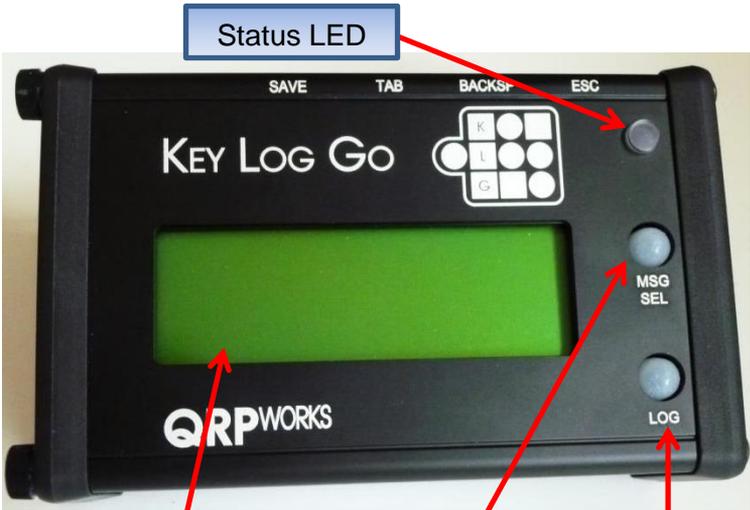
80 character screen

Message
Select

Log

PC   ON   RADIO   KEYBOARD   POWER

Serial Port
to PC

Serial Port
to Rig

8-15 VDC
(center positive)

On/Off

PS2
Keyboard

F1   F2   FN   CALL

SAVE   TAB   BACKSP   ESC
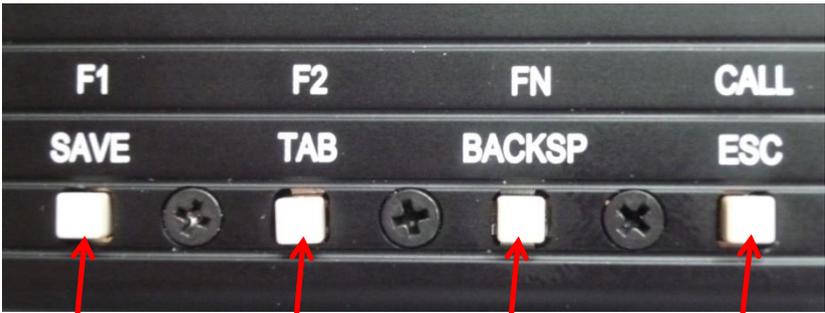
Run: F1
Edit: Save

Run: Future Fn
Edit: Backspace

Run: F2
Edit: Tab

Run: Capture Call
Edit: ESC

SPEED

Speed Pot.

KEY OUT

Key Out to Rig.

PADDLE

Paddle

Setup

Connections:

- **To Key the rig**: connect a common 3.5mm (1/8") mono or stereo cable from the KLG Radio Key Out port to the rig Key input. A right angle connector at the KLG end is highly recommended to reduce the strain on the printed circuit board. Set the rig to use a straight key instead of a paddle.

- **FT-8x7**: connect a FT-8x7 serial cable from the rig's ACC port to the KLG Radio port. A right angle connector at the KLG end is highly recommended to reduce the strain on the printed circuit boards **Do not connect the radio cable if the PC cable is in use.**

- **KX3 or KX2**: connect a common 3.5mm (1/8") stereo cable from the KLG Radio serial port to the KX3 ACC(1) connector. A right angle connector on both ends is highly recommended 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 KLG Radio 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 KLG Radio port. **Do not connect the radio cable if the PC cable is in use.**

- Connect 8-15 VDC power using a 2.1mm DC connector or use an internal 9V battery. For the DC connector, connect the DC positive voltage to the center pin. If external power is connected, the internal battery is

automatically disconnected. See [Battery Replacement](#) for battery installation instructions.

- (optional, but recommended) Connect a PS2 keyboard to the KLG. This is used for transmitting and controlling the rig.

  Note: USB to PS2 adapters do not work in this application, nor do keyboards that are not native PS2.

- The second 3.5mm jack, labeled "PC" is used for transferring log files from the KLG to the PC and for loading new software into the KLG. The Elecraft KXUSB or KXSER cables must be used between this serial port and a PC. **This port must not be connected to a PC if the Radio serial port is connected to the radio.**

<u>FT-8x7 Settings:</u>

- 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.

<u>KX3/KX2 Settings:</u>

- Menu: RS232: set to 38400. Other speeds do not work as well.
- Mode: TX Data, by tapping the Data/Text button. Using VFO B, select:
  - o PSK D for PSK31
  - o 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 KX3 or KX2 manual

<u>K3 / K3s Settings:</u>

- Menu: RS232: set to 38400 baud
- Mode: Data Mode, by holding the AFX/Data Md button. Using VFO B, select:
  - o PSK D for PSK31
  - o FSK D for RTTY.
  "TX Data" will be the mode shown on the screen
- Text: DEC ON, by holding the CWT/Text Dec button. Use VFO B to select ON. Set the Threshold as desired. A setting of 3 seems to work well.

Refer to the Data Modes section in the K3 manual

Starting Up

When the KLG is powered on, you will see a welcome screen briefly. For reference, the firmware version is displayed on this screen:
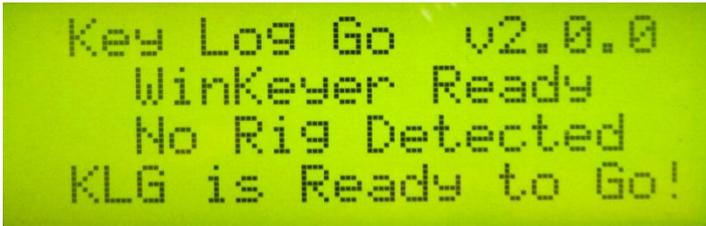
The KLG will then automatically attempt to connect with a rig (FT-8x7, KX3, KX2, K3, or K3s) via its serial port. It will try every rig baud rate possible (starting with the fastest) until it establishes a connection. And it will retry a number of times before giving up.

Note: turn the rig on first before turning the KLG on.

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

If the KX3, KX2, K3, or K3s is in the text mode and is displaying characters in the lower right of the screen, the KLG will automatically show the characters. If the rig is not decoding and displaying characters, then the KLG screen will be blank.

If the KLG does not connect to the rig *and* you expect a connection, please see the troubleshooting tips.

The Keyer Inside

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

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

The WinKeyer can run into 2 modes:

- **Host Mode**), where the KLG is controlling its functions. This is the typical mode that you will use. It does not require any WinKeyer specific knowledge.

- **Standalone Mode**, where the WinKeyer is independent from the KLG. This mode is typically used by WinKeyer aficionados, who know the WinKeyer commands and how to control them. To operate the WinKeyer in this mode, we refer you to the WinKeyer manual.

To toggle between Host and Standalone modes, hold the **Log** and **Msg Sel** buttons simultaneously.

KLG Keyer Functions

When in the Host Mode, The KLG offers the following CW features:

- **Speed Change** – use the up/down arrows on the keyboard, or press **Alt-S** and enter a speed or use the arrows, or simply turn the speed pot on the KLG.

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

- **Autospace** - When autospace is enabled, the WinKeyer will automatically insert the proper inter-letter

space between letters. Press **Alt-A** to toggle between Autospace On and Off.

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

- **Sidetone** – Press **Alt-F** to cycle through the available KLG sidetones.

- **Key Down/Tune** – Press **Alt-T** to toggle between key down and key up. This can be used to tune the rig.

Sending CW

There are a few ways to send CW:

1. Simply use the paddle connected to the KLG. As you paddle, you will key the rig, and the KLG display will show what characters have been sent.

2. Type on the keyboard. The KLG and WinKeyer will convert the character you typed into CW and key the rig. The KLG display will show what characters have been typed and sent.

3. 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.

Note: Don't forget to connect the KLG Key port to your rig and set you rig to straight key mode (not paddle).

"Typing" Characters _Without_ a Keyboard

One of the cool features of the KLG is the ability operate without a keyboard. You can enter text by using the paddles to generate characters.   We call this the "**_KEY-board_**" (because you're **Key**ing in characters).

The paddle created characters will appear on the KLG screen and you can see what you are entering, as if you were using a keyboard.

You can Key-board to:
- Enter data in the log
- Create messages
- Create KX3/KX2/K3/K3s macros
- Enter the call of the station you are working
- Enter references such as SOTA Summits, and select which is currently active

To handle some typical keyboard functions which are not found in CW, the KLG provides some options that can be used without a keyboard:

Function	What to Do	Used for…
Enter	tap **F1/SAVE** or paddle prosign KN	Editing
Tab	tap **F2/TAB**	Moving between log fields
Backspace	tap **FN/BACKSP**	Editing

Quit	tap **CALL/ESC**	Editing
Add Exclamation Point (**!)**	paddle prosign AA	"their call" in Messages
Add Colon (**:**)	paddle prosign WG	Message name
Add Pound Sign (**#)**	paddle prosign DU	"serial number" for contesting
Add Dollar Sign (**$)**	paddle prosign SX	To denote a KX3,KX2,K3.K3s macro
Add @ Symbol	paddle prosign AC	To denote a Grab & Go message

Stored Text Messages

The KLG has 20 shared memory locations for either text messages, or rig macros for the Elecraft KX3, KX2, K3 or K3s. Any of the 20 can be used for either.

If you do not use one of the above listed Elecraft rigs, then all 20 would be used for text messages. If you do use one, then you can use any or all for rig macros to control the rig configuration.

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:

- In the normal mode (Status LEDs is off), press **F12**. The Status LED will now be Green 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 message has been stored previously, you will see <no message yet….just start typing>

    o 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.

    o New in version 2.3.0 and later: When using a KX3 or KX2 and 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** key again 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 F1 SAVED
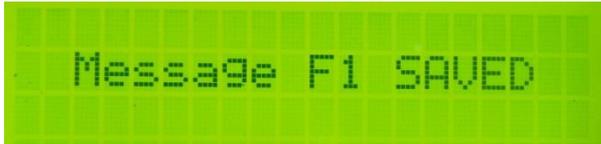
- If you want to cancel the editing of a message, press the **ESC** key at any time. The KLG will return to the normal mode. The LED will go out and you will see the following message briefly:

<Edit Cancelled>

Naming Text Messages

The KLG 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.

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

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 rig will be keyed and the message will be sent as CW. The sent message in its entirety will appear on the KLG screen at once, while the keyer is

sending the message character by character, as if you were sending CW.

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 KF0UR KF0UR KF0UR

Pressing F1 twice will result in the following message:

CQ CQ CQ CQ CQ DE KF0UR KF0UR KF0UR CQ CQ CQ CQ CQ DE KF0UR KF0UR KF0UR

Callsign Entered

The KLG gives you the ability to capture another station's callsign 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 or** by tapping **CALL/ESC**. Enter up to 10 characters with the keyboard or paddle. Backspace to make changes (keyboard or **FN/BACKSP**)
- In any of the 20 KLG messages, use the exclamation point (!) where you want the other station's call to appear. Use the keyboard, or Key-board **prosign AA** where you want the !.to appear.
- To Erase the entire call displayed, backspace a character at a time, or Key-board **prosign SK**
- To Save it, press **Enter** on the keyboard, or tap **F1/SAVE**, or Key-board **prosign KN**.

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

Press Alt-C or tap **CALL/ESC** again to see the call entered, and to edit it.

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

Grab & Go™

The KLG 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 *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

  Note: prosign AC will create a @ if Key-boarding.

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

  Example: Msg Name:@ TU 599 CO

(where Msg Name is the name of the message and is not sent)

- Then when you press F2 on the keyboard or **F2/TAB**, you will be prompted to enter a call (that's the 'grab' part):
    o Use the keyboard to type it in or use the paddle to Key-board it in.
    o The call you are typing or keying **is** sent to the rig and will go out on the air.
    o When you are finished typing the call, press Enter on the keyboard, F2 again, or **F2/TAB** again. The rest of the message in F2 will then follow (that's the 'Go' part).
- To erase a Grab & Go^{TM} call, either backspace until it is gone, or Key-board **prosign SK**.

In summary, the Grab & Go^{TM} flow is:
- Press the message F key or **F1/SAVE** or **F2/TAB** to be sent
- Type or Key-board the call (it gets sent as you enter it)
- Press the message F key or **F1/SAVE** or **F2/TAB** again for the rest of the message to be sent

Summary of <u>Message Editing</u> Operation:

Mode	Action	Result	LED
Normal			Off
Normal	Press F12	Enter Edit Message Mode	Green
Edit Message Mode	Press F1 thru F10, or Alt-F1 thru Alt-F10	Enter new or Edit existing message	Green
Edit Message Mode	Press F12	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 KLG 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 messages or macros 1-4 will be shown. Press **Page Down** to see the next page of 4.

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

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

While viewing the Text Message Summary, you can press a desired F key. So if you are viewing the Text Message Summary screen and see that you want to send the text stored in F5, you can press F5 while viewing this screen. You don't need to press ESC first.

Reserved Message Characters

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

! - used to substitute the other station's call

- used to substitute a contest serial number

@ - used to indicate it's a Grab & Go™ message.

$ - used to indicate the stored data is a KX3/KX2/K3/K3s rig macro, not a text message

Sending a Stored Text Message without a Keyboard

The KLG provides a means to send messages without using a keyboard. This is useful if you don't want to take a keyboard with you, but still want to be able to send some canned messages, such as CQ, or a contest exchange ("599 CO").

To use this feature, start by loading messages into the KLG by using a keyboard or Key-board (your paddle), as specified above (see Creating or Editing a Message).

Tap **MSG SEL** until the message you want to send is displayed. If you have named your messages, the name will be displayed. Then tap **LOG** to send it.

To abort sending a message, hold **MSG SEL.**

Also, **F1/SAVE** and **F2/TAB** are dedicated to sending text messages 1 & 2, respectively. This is the fastest way to send these 2 messages without a keyboard.

Summary of Message Summary Operation:

Mode	Action	Result	LED
Normal			Off
Normal	Press Page Down	First 16 characters of messages/macros 1-4 shown	Off
Message Summary Mode	Press Page Down again	First 16 characters of the next 4 messages/macros are shown	Off
Message Summary Mode	Press Page Up	First 16 characters of the previous 4 messages/macros are shown	Off
Message Summary Mode	Press an F key	The text stored in the F or Alt-F key will be sent, and then back to normal mode.	Off
Message Summary Mode	Press ESC	Back to normal mode	Off

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
    - o *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.

Contesting

While the KLG 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.

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** or tap **CALL/ESC** to enter the other station's call W1ABC, and press Enter or Key-board **prosign KN**.
- 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, or Key-board **prosign KN**.
- "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 KLG 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: KF0UR 599 # #   will send KF0UR 599 234 234

- To set the serial number, press **Alt-N** (number) or Key-board **prosign DU**.   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** or Key-Board **prosign KN** 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: 1

<ENTER:go   ESC:quit>
```

- The KLG will increment the serial number when you log the contact. If you are not using the KLG log, then Press **Alt-I** (increment) to increment the number by one. If you've incremented by mistake, press **Alt-N** or Keyboard **prosign DU** 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 Callsign Entered or Grab & Go in an earlier section for details.

The other station's call will be erased when the QSO is logged.

Logging

KLG Logging allows you to have some basic logging features when using the KLG. 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 an ADIF file.

Main Logging Functions

To access the KLG 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
```
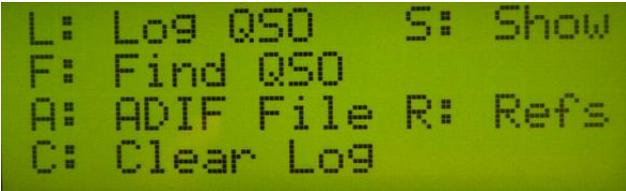
L: to log a new QSO. There is room for 1000 QSOs. Tapping **LOG** will also get you directly to this screen without seeing the log menu screen first.

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 **Alt-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

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.

**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 **Alt-Arrow Down** to go down the log QSO-by-QSO. Press **Alt-Arrow Up** to go in reverse order.

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

Logging a New QSO

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


```
Call: WB1CDT_
Exch: 599
When: 20130514 @1336
Freq: 14070   MD:PSK
```

The info here is shown as an example.

To navigate from field-to-field, press **TAB,** use the up or down arrows, or tap **F2/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 overtype modes (same as editing messages and macros).
When Key-boarding, backspace by tapping **FN/BACKSP**.

Press Enter, tap **F1/SAVE**, or Key-board **prosign KN** to save the QSO.

Call: Enter the call worked. Maximum: 10 characters. Enter either upper or lower case. The KLG 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.

When: enter the date in yyyymmdd 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 KLG is supplied with a CR2032 button battery for this purpose. If necessary, set the date and time (**Alt-D**)*

Freq: enter the frequency in Mhz. If connected to a KX3, KX2, K3, K3s, or FT-8x7, this will be automatically filled in with the frequency at the time you accessed this screen.

MD: enter the mode.   This could be 2 characters for CW or up to 4 characters for RTTY. If connected to a KX3, KX2, K3, K3s, or FT-8x7, this will be automatically filled in with the mode selected at the time you accessed this screen.

Logging Activities using References

The KLG provides features for operators in a number of activities to manage various references, such as:
- Summits on the Air (SOTA)
- 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 "outing".

This feature of the KLG allows you to

- Store up to 48 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. Or Key-board **prosign KK.**
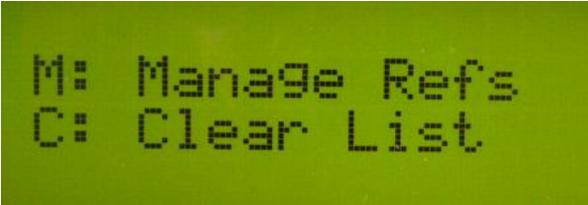
The next screen displayed will show references 1-4. Page Up and Down, or Arrow Up and Down to navigate to references 5-48. Tab or F2/TAB cab also be used to mode to the next field.

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 **CTRL-S** (for **S**elect) or Keyboard **prosign AF**. An asterisk ("*") will be displayed on the line of the active reference.

In the following screenshot example:

- 4 SOTA Summit Refs are entered, all with a short note
- Number 02 is selected as the active summit. Note the asterisk indicating so.

Active reference indicator, CTRL-S selects

01: W0/FR-001:LINCLN
02:*W0/FR-004:PIKES
03: W0/FR-012:ALICE
04: W0/FR-003:EVANS

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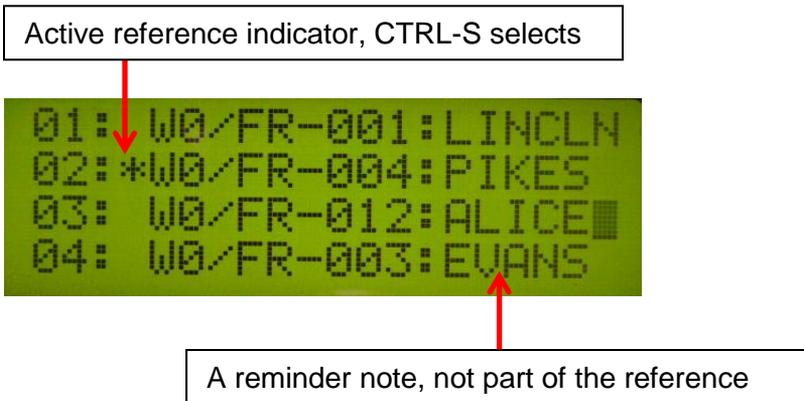
Now when you log a contact, the reference (a Summit Ref in this example) will be saved with the QSO. The optional short note you might have entered after the colon and the colon itself will not be saved in the log.

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 **CTRL-S** for the proper reference)
- 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:
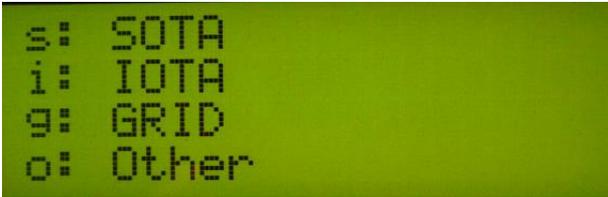
The purpose of this selection screen is to output the data with the proper ADIF field name. For example:

- 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.

LCD Backlight Brightness

The LCD backlight brightness is adjustable in 5 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 transflective, so backlighting is probably not needed at all when outdoors.

There are 2 ways to adjust the brightness:
- On the KLG control panel, in the normal mode (Status LED off), press and hold the **LOG** button. The brightness will cycle through levels from off to bright. Release the button when the desired brightness is reached.

- On the keyboard, 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 KLG, it will start at the last brightness selected.

Rig Specific Features

Quick QSY™

For Rigs: Yaesu FT-8x7, Elecraft KX3, KX2, K3, K3s

The KLG provides a Quick QSY feature to change frequency and mode very quickly.

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:

Mode	KX3/KX2/K3 Letter to add	FT-8xx Letter to add
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 **P**SK31

- 21080R - sets freq to 21.080 Mhz AND mode to FSK-D or Data for **R**TTY
- 7023C - sets freq to 7.023 Mhz AND mode to **C**W
- 28425U - sets freq to 28.425 Mhz AND mode to **U**SB

```
QSY to: 21080R
format: 14070C
last letter is mode
<ENTER:go  ESC:quit>
```

Displaying Decoded Text

For Rigs: Elecraft KX3, KX2, K3, K3s

For displaying rig decoded text, the KLG takes advantage of the innovative Elecraft 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 PSK, RTTY, or CW. It doesn't matter. The KLG 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.

Receiving Text

The KLG will display the characters decoded and received from the rig starting in the upper left of the 80 character display. Once the top 20 character line is filled, the next line is used.

Once all 4 lines of the display are filled, the lines will scroll up and the 4th line (bottom) will show the next data received.

While receiving text, the Status LED to the right of the display will be off, indicating the KLG 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.

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

Transmitting Text

For Rigs: Elecraft KX3, KX2, K3, K3s

You can send text to the rig by either plugging a PS2 keyboard into the KLG and simply by typing on the keyboard or Key-boarding the characters using the KLG keyer. The rig will transmit the text in whatever mode it is set to. In other words,

- if the rig is set to PSK-D, it will send PSK31.
- 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 KLG and the rig will take care of the rest.

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

- **Immediate Mode** – characters are sent to the rig as they are typed or Key-boarded.

- **Buffered Mode** – *For KX3, KX2, K3, or K3s Data and CW Modes only* (CW available in v2.1.3 and later)-

characters appear on the bottom line of the KLG display and are not sent to the rig unless the Enter key is pressed, the number of characters set by the user is reached (via Ctrl-C), or you Key-board **prosign KN**. In this mode, you may Backspace to correct text. When characters are buffered (not sent to the rig yet), the Status LED will be orange.

Note that if in a CW mode, then the keyer in the rig is used and not the WinKeyer. Therefore, the keyer speed is set by the KX3, KX2 front panel Keyer control or the Speed control on the K3 / K3s.

In summary, if the number of characters set by Ctrl-C is greater than 1, then
- o The Xmit Buffer feature is on
- o Characters are sent when the number set is reached.
- o The rig's keyer is used
- o The rig's keyer controls the speed

If the number of characters set by Ctrl-C is set to 1, then
- o The Xmit Buffer feature is off
- o Each character is sent to the rig as it is typed or Key-boarded.
- o The WinKeyer in the KLG is used.
- o The KLG speed control is used

Immediate Mode

To set the transmitting mode to Immediate:
- Press Ctrl-C (for Configure)
- Enter a 1 for the number of characters

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.

Buffered Mode

To set the transmitting mode to Buffered:
- Press **Ctrl-C** (for Configure)
- Enter a number between 2 and 20 for the number of characters. Press Enter when done. When the number of characters you type hits this number, the text will automatically be sent to the rig.

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 KLG offers this for RTTY, PSK31 and CW…without the need of a computer.

To transmit text, type on the keyboard or Key-board. The characters will appear on the bottom line of the KLG display, and be sent to the rig when:
1. The number of characters typed reaches the number set using **CTRL-C**…or…
2. The Enter key is pressed…or…
3. **Prosign KN** is paddled.

If you see something on the bottom line to change, just Backspace or tap **FN/BACKSP** to correct it.

When characters are buffered and not yet sent to the rig, the orange Status LED will be on, indicating so. So, if you are typing and finish your sentence and the orange LED is on, don't forget to press Enter or Key-board **prosign KN** so the last characters are sent to the rig.

Note: When using a data mode, unplug the cable from the KX3/KX2/K3/K3s Key jack. Issues have been noted when it is plugged in while using the ACC1 port on the rig at the same time.

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

1. 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.

2. Hit the ESC key. 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.

*Note: 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, RTTY, CW). As such, there is no way to differentiate upper and lower case letters.   All letters are sent using lower case. The KLG 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.*

Storing and Sending Rig Macros

For Rigs: Elecraft KX3, KX2, K3, K3s

Using the Elecraft 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 K3/K3s, the macros can be written in the K3 Utility, then sent to the rig and then assigned to a front panel button.

For the KX3 / KX2, the macros can be written in their respective KXn Utility, and two of the macros can be assigned to the PF1 or PF2 buttons. The KLG expands that by allowing you to create and store 20 macros, 80 characters each in the KLG, 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 dollar sign (**$**) as the very first character. Note these 20 locations are shared with Text Messages.

Creating or Editing a Rig Macro:

- In the normal mode (Status LED is off), press **F12**. The LED will now be Green 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 <no message yet….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 dollar sign (**$**) as the very first character. This tells the KLG 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 14012 Mhz in this example)

    If you leave out the $, 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 $:
    $FA00014012000;

When finished, press the **F12** 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 F1 SAVED
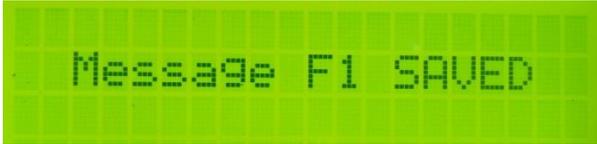
o If you want to cancel the editing of a macro, press the **ESC** key at any time. The KLG will return to the real-time receiving mode. The Status LED will go out and you will see the following message briefly:

<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, KLG allows you to name each macro. The name will then be shown in the message summary screen, including the $, 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 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 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 dollar sign, name and the colon are not sent to the rig.

$PSK:FA00014070000;MD6;DT3;SWH17;PC005;
$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.

Stored Rig Macro Summary

Similar to stored text messages, if you don't recall which rig macro is stored where, the KLG can help.

Press **Page Down** or **Page Up** on the keyboard, and the first 16 characters of the first 4 messages and macros will be shown. Press **Page Down** to see more.   Note that macros always start with a **$**.

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

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

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

Voltage Check

To display the power supply voltage of the KLG whether from
an external source or an internal 9V battery, press **Alt-V**. The
current voltage will display for a few seconds and the KLG will
automatically return to the real-time receiving mode.

The KLG will automatically check the voltage periodically, and if
at or below the low voltage threshold (~6.5 volts), will display a
low voltage warning screen.

*Note: remember that if an external power source is plugged in,
the internal battery is disconnected.*

Setting the Date and Time

With the KLG on in the normal receiving mode , press Alt-D.
- o Enter the Date in yyyymmdd format
- o Enter the 24 hour time in hhmm format
- o Switch between date and time using the Tab key.

Battery Replacement

To replace the 9V Battery:

- Turn off the KLG
- Remove the 4 thumb screws in the left side end panel (as viewed from the front)
- Remove the plastic bezel and metal end panel
- Slide out the bottom panel of the enclosure, exposing the battery in its holder (and have a look at the guts of your KLG too)
- Carefully replace the 9V battery, paying attention to the polarity
- Replace the bottom panel by sliding it back on
- Replace the bezel and end plate
- Replace the 4 thumbscrews

9V Battery Compartment

(Lithium Batteries are a tight fit, but they do fit.)

System Reset

If you want to reset the KLG, 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.

Help

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

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.

Page Down to see the next page(s):

Updating the Firmware

The KLG firmware is able to be upgraded via the "PC" serial port connector.

Please see the Ham Central Terminal Utility manual on the www.qrpworks.com Support Page.

Technology

The KLG 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 KLG.   There's a lot of stuff going on!

Support

If for any reason you have questions or issues regarding the KLG, 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 KX3, KX2, K3, K3s,

   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 KLG via the on/off switch
   c. Turn the rig on first.
   d. Wait a few seconds
   e. Turn on the KLG

2. The KLG is connected, but no 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 / KX2, the setup is as follows:
   - For PSK31:
     - Mode: TX Data (tap Data/Text button)
     - Data MD: PSK D (select with VFO B)
     - Text Decode: ON (hold Data/Text button)

   - 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 **LOG** button)
     - Data MD: not applicable

- Text Decode: ON (hold Data/Text button)

For the K3 / K3s, the setup is as follows:
- o For PSK31:
  - Mode: TX Data
  - Data MD: PSK D
  - Text Decode: ON
  - Threshold: at your discretion

- o For RTTY:
  - Mode: TX Data
  - Data MD: FSK D
  - Text Decode: ON
  - Threshold: at your discretion

- o For CW:
  - Mode: CW
  - Data MD: not applicable
  - Text Decode: ON
  - Threshold: Auto , CW 5-40

3. I'm using a USB keyboard with a PS2 adapter, but it does not work.

   USB keyboards with PS2 adapters will not work. You must use a native PS2 keyboard. Some keyboards appear to be PS2, but in reality they are USB with an adapter built in.   If you have intermittent results using a keyboard, try another PS model.

Summary of Keyboard Commands

Keyboard	Alternative	Function
Alt-B	Hold MSG SEL	Change LCD background **B**rightness
Alt-C	Prosign AC	Enter other station's **C**all
Alt-D		Set **D**ate and Time
Alt-I		**I**ncrement the contest serial number
Alt-L (or tap MSG SEL)		Go to **L**og functions
Alt-N		Display / Set the contest serial **N**umber
Alt-P		References (ex. SOTA **P**eaks)
Alt-Q		Quick **Q**SY
Alt-R	Power off/on	**R**eset the KLG
Alt-V		Display **V**oltage
Ctrl-C		**C**onfigure Text Buffering (for Elecraft rigs)
F12, then F1-F10	Tap MSG SEL 2, then hold LOG	Edit text messages/macros
F1-F10	Tap MSG SEL, then tap MSG SEL or **F1/SAVE** & **F2/TAB**	Send text messages/macros
F11		Help
F12	Prosign KN	in Edit mode, save message or macro
Page Up / Down		Display text message/macro summary

Summary of Keyer Commands & Prosigns

Alt-A	Autospace On/Off
Alt-F	Change Sidetone
Alt-M	Change Key Mode
Alt-S (or up/down arrows, or turn pot.)	Change Keyer Speed
Alt-T	Tune/Key the rig
Alt-W	Swap Paddle
Prosign KN	Enter
Prosign AC	Insert character **@**
Prosign AA	Insert character **!**
Prosign WG	Insert character **:**
Prosign WI	Insert character **#**
Prosign SK	Erase call
Prosign DU	Set contest serial number (same as Alt-N)
Prosign KK	Manage Peaks (same as Alt-P, then M)
Prosign AF	Make selected reference active (same as Ctrl-S)

Summary of Pushbutton Functions

	When Sending	**When Editing**
F1/SAVE	Send F1	Enter
F2/TAB	Send F2	Tab
FN/BACKSP	Backspace (Elecraft rig Text Buffering)	Backspace
CALL/ESC	Enter Call (same as Alt-C)	Quit

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 versions history

2.6.1	Improved the ADIF export
2.6.0	Added the ability to turn the Sidetone off via Alt-F
2.5.0	- Introduced the KX2 - fixed bug in Quick QSY (Alt-Q)
2.4.0	- fixed a bug related to max. number of QSOs in the log
2.3.0	- added the ability to end PSK and RTTY immediately by adding a | at the end of a message - enter sends CR-LF when not text buffering
2.2.0	- added Field Day logging
2.1.6	- various bug fixes
2.1.5	- fix for the WinKeyer speed
2.1.4	- various fixes for rig init and the log - fix for intermittent lost cw chars when connected to a KX3/K3.
2.1.3	- added the transmit buffer
2.1.2	- various bug fixes

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