

# *Why I like a K4 a little better than a K3 for CW contesting*

*~20 minutes of presentation  
~20 minutes of Q&A*

K3S Transceiver is no longer available.



# Quick Elecraft History

Started as QRP portable rig specialist with the K1 in various band combinations from 2-4 bands with plug-in modules. Later followed by the KX2 and KX3



K1



KX2



KX3

# K2 was their first all band SSB/CW rig. Late 90s?

- Through hole component kit. 60-90 hours of construction (I built TWO!)
- 80-10m, fixed crystal filters, optional SSB board





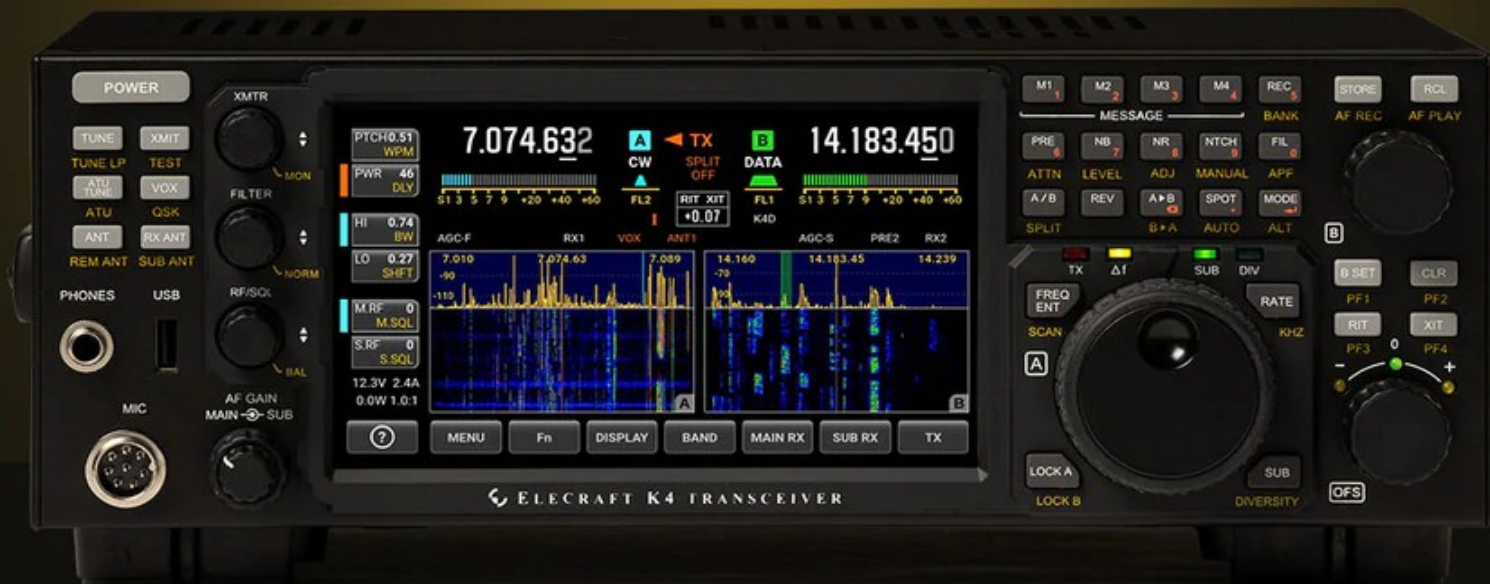
# K3/K3S was their first 160-6m competition grade rig.

- 10 year firmware growth path. 2007 – 2017?
- Added upgraded SYNTH boards which improved close-in filtering greatly. Added “S” to the name (2014?)
- External P3 needed for PAN feature
- No longer produced.



# ***K4 Next Generation 100% SDR***

Announced 2019, Started shipping 2021 after COVID,  
California forest fires and global supply chain issues  
We Elecraft Cool-Aide drinkers were ecstatic!





# K4 Added to Sherwood List 5/21

Device Under Test	Noise Floor (dBm)	AGC Threshold (uV)	dB	100kHz Blocking (dB)	Sensitivity (uV)	LO Noise (dBc/Hz)	Spacing kHz	Front End Selectivity	Filter Ultimate (dB)	Dynamic Range Wide Spaced (dB)	kHz	Dynamic Range Narrow Spaced (dB)	kHz
<i>LO Noise Corrected</i> 05/20/19 Yaesu FTdx-101D	-127 -136 <sup>b</sup> -141 <sup>a</sup>	4.5 1.6 <sup>b</sup> 0.58 <sup>bl</sup>	3	>147	0.60 0.20 <sup>b</sup> 0.12 <sup>bl</sup>	154 155	10 50	A Trk Presel	>115	110	20	110	2
<i>Added 9/29/14</i> FlexRadio Systems 6700 Hardware Updated	-118 -135 <sup>bl</sup>	3.0 1.0 <sup>bl</sup>	Var	130 preamp Off	2.0 0.25 <sup>bl</sup>	145 155	10 50	B Band Pass	115	99	20&2	108 <sup>g</sup>	20&2
<i>Added 12/30/20</i> Yaesu FTdx10	-126 -135 <sup>b</sup> -140 <sup>a</sup>	4.2 1.46 <sup>b</sup> 0.54 <sup>bl</sup>	3	141	0.63 0.21 <sup>b</sup> 0.15 <sup>bl</sup>	152 153	10 50	B Half Octave	105	107	20	107	2
<i>Added 02/11/18</i> Icom IC-R3600 Second sample S/N 02001177	-131 -142 <sup>b</sup> -130 <sup>ab</sup>	2.40 0.67 <sup>b</sup>	3	125	0.40 0.12 <sup>b</sup> 0.49 <sup>ab</sup>	144 148	10 50	B Half Octave	>100	109 <sup>ab</sup> 88 <sup>ac</sup>	20	107 <sup>ab</sup> 88 <sup>ac</sup>	2
<i>Added 11/10/15</i> Elecraft K3S	-135 -138 <sup>b</sup> -145 <sup>10</sup>	1.5 0.45 <sup>b</sup>	3	150	0.27 0.20 <sup>b</sup> 0.08 <sup>10</sup>	144 146	10 50	B Band Pass	110	107 <sup>q</sup>	20	106 <sup>P</sup> 106 <sup>q</sup>	2
<i>Added 3/17/17</i> Elecraft K3S 2nd Sample 10 meter data	-135 -138 <sup>b</sup> -145 <sup>10</sup>	1.5 0.45 <sup>b</sup>	3	150	0.27 0.20 <sup>b</sup> 0.08 <sup>10</sup>	144 146	10 50	B Band Pass	110	106 <sup>ab</sup>	20	105 <sup>ab</sup>	2
<i>Added 02/23/15</i> Elecraft K3 (RX Gain Recal) New Synthesizer	-136 -139 <sup>bl</sup>	1.0 0.3 <sup>b</sup>	3	141	0.27 0.20 <sup>b</sup>	145 147	10 50	B Band Pass	108	105 <sup>q</sup>	20	107 <sup>P</sup> 104 <sup>q</sup>	2
<i>Added 04/25/16</i> Icom IC-7851	-123 -135 <sup>b</sup> -141 <sup>bl</sup>	8.5 1.85 <sup>b</sup> 1.16 <sup>bl</sup>	3	149	0.65 0.36 <sup>b</sup> 0.11 <sup>bl</sup>	148 153	10 50	A Trk Presel	100	110 <sup>aa</sup>	20	105 <sup>aa</sup>	2
<i>Added 10/15/18</i> Kenwood TS-890S	-131 -140 <sup>b</sup> -141 <sup>a</sup>	2.1 0.55 <sup>b</sup> 0.14 <sup>bl</sup>	3	>151	0.39 0.13 <sup>b</sup> 0.10 <sup>bl</sup>	155 156	10 50	B Half Octave	>118	106	20	105	2
<i>Added 10/02/12</i> Hilberling PT-8000A Hardware Rev 2.00	-128 -141 <sup>b</sup>	5.4 1.0 <sup>b</sup>	3	142	0.45 0.11 <sup>b</sup>	144 149	10 50	A Trk Presel	100	105	20	105 <sup>w</sup>	2
<i>Added 08/10/12</i> Elecraft KN3	-123 -138 <sup>bl</sup>	12 1.3 <sup>bl</sup>	3	138	0.9 0.09 <sup>bl</sup>	144	10	B Band Pass	110	105	20	104 <sup>t</sup> 96 <sup>u</sup> 65 <sup>v</sup>	2
<i>Added 02/22/18</i> Apache ANAN-7000DLE	-131 -131 <sup>ad</sup> -140 <sup>a</sup>	1.0 adjustable 2.2 <sup>ac</sup>	3	126	0.43 0.43 <sup>ad</sup> 0.36 <sup>d</sup>	140 143	10 50	B Band Pass	110	103 <sup>ad</sup>	20	103 <sup>ad</sup>	2
<i>Added 05/26/21</i> Elecraft K4D S/N 00122	-121 -132 <sup>b</sup> -137 <sup>bl</sup>	11 3.0 <sup>b</sup> 1.4 <sup>bl</sup>	3	128	1.5 0.44 <sup>b</sup> 0.24 <sup>bl</sup>	148 155	10 50	B Band Pass	110	101 <sup>ad</sup>	20	101 <sup>ad</sup>	2
<i>Added 12/01/10</i> Yaesu FTdx-5000D	-123 -135 <sup>b</sup> -141 <sup>bl</sup>	4.6 1.3 <sup>b</sup> 0.33 <sup>bl</sup>	3	127 <sup>g</sup>	1.1 0.27 <sup>b</sup> 0.13 <sup>bl</sup>	135	10	B Band Pass	90 <sup>f</sup>	104	20	101 <sup>f</sup>	2

# ***Down to business***

4 independent ways to connect to the K4

- IP (good for remote if you use a VPN)
- COM via DB9
- Two virtual COMs via USB

Built-in PAN

- Highly configurable
- External PAN via HDMI connection
- Touch screen VFO movements

Filters

- 50 Hz to 4500 Hz continuously variable or 3 presets
- No ringing!
- Steeper skirts coming in a couple of weeks (R29)

## Excellent I/O connectivity

- Beverage antennas (one per RX)
- Audio CODEC or analog
- Outboard transverters
- Up to 4 transmit antenna connectors (assignable)
- Save rig settings per operator to thumb drive

## Excellent RX audio (and TX audio for that matter)

- Clean sounding audio amp, no hiss
- Deep “full” sound even with 50Hz filter
- APF with 30 or 50 Hz (30 Hz rings currently)
- AFX gives spatial offset of signals

## Functionality

- Keyboard and mouse plug into K4
- No external firmware update software needed



# Functionality

- Internal DVK (partially implement so far)
- “Remote-Rig” equivalent capabilities (about a year away when the K4/0 comes out)
- Superhet module “coming in 6 months” which makes it a K4HD

# The “ONE BIG THING” list

- It just sounds quieter and signals pop out a little better.
- Full bodied sound like I remember from a Collins 75-A4
- Contest accuracy has gone up.
- Contest fatigue has gone down (Is that because of the new toy syndrome or better rig sound?)
- Weaker signals seem to make it through when I wouldn't expect them to.

Here are a couple of SO2R stereo samples.  
(Mind your volume controls!)

2-3 minutes each

## K3 in 2020 NAQP



- My side tone was set very low for my Bose headset.
- Mini pileup hard to distinguish at times
- Guys are sending their calls twice because I'm not copying well even though band is pretty clear. (or I haven't learned all the Morse letters yet)

## K4 in 2021 SSCW

- Signals seem to have more punch. Not as many repeats needed.
- Mini pileups easier to distinguish
- Even with nearby thumping CQ'ers, most calls came through well.



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- The difference between the two recordings is subtle.
- I tried to find reasonably equal samples even though different years.
- The K4 VOX delay was probably too fast.
- The K4 AGC settings could have been better.
- The K3 sounded pretty good.

## *Why I'm sticking with the K4*

- K4 CPU speed is ~2X and RAM ~8X Flex. Room for growth!
- Made in U.S.
- I lived through the K3's firmware evolution and have confidence the K4 will mature the same way.
- I really like the PAN and other bells/whistles along with the new tech.
- Remoting “should” be a dream when it is fully implemented.
- Can't wait to see if the “H” (heterodyne) module moves the K4 up Sherwood's list.
- All the rigs in Sherwood's Top 15 are REALLY good but none of them are going to make me a better tester but I keep hoping!
- I want to be K5GN when I grow up. ;-)



***Questions and Comments?***