



## K2 General Coverage RX Use

There has been some discussion of the potential use of the K2 out-of-band to serve as a SWL radio as well. During the assembly of my K2, I chose to map the VCO ranges from the lower PLL lock limit to the upper lock limit. While I was doing this I checked the receive sensitivity as well.

The adjustment of L30 in the VCO Calibration sets the lock range of the VCO for every band. The Elecraft choice of 6.0v as the adjustment point allows the VCO ranges to overlap judiciously to cover other frequencies.

The results of my measurements are shown in the first table below. Note that in some cases a valid lock is obtainable while the receiver is not useable because of noise introduced by the PLL near the lock limit. So the first row of a given band is the measured lock limits, while the second row is the usable bandwidth for my K2. The columns are the band selected on the K2, the frequency when the VCO tune voltage is 1.1v, the minimum discernable signal (MDS), the frequency when the VCO voltage is 7.9v, and the MDS.

| Band | Freq (1.1v) | MDS (dBm) | Freq (7.9v) | MDS (dBm) |
|------|-------------|-----------|-------------|-----------|
| 80m  | 2460        |           | 4167        |           |
|      | 3380        | -125      | 4150        | -112      |
|      |             |           |             |           |
| 40m  | 6658        |           | 7490        |           |
|      | 6660        | -121      | 7450        | -118      |
|      |             |           |             |           |
| 30m  | 9146        |           | 10749       |           |
|      | 9150        | -118      | 10750       | -114      |
|      |             |           |             |           |
| 20m  | 12458       |           | 15771       |           |
|      | 12750       | -100      | 15750       | -112      |



|     |        |      |       |      |
|-----|--------|------|-------|------|
|     |        |      |       |      |
| 18m | 15434  |      | 20501 |      |
|     | (oops) |      |       |      |
|     |        |      |       |      |
| 15m | 20246  |      | 22378 |      |
|     | 20300  | -110 | 22350 | -112 |
|     |        |      |       |      |
| 12m | 22237  |      | 25600 |      |
|     | 22300  | -104 | 25600 | -112 |
|     |        |      |       |      |
| 10m | 25353  |      | 30315 |      |
|     | 25500  | -110 | 30300 | -102 |

NOTE: -107 dBm = 1uv into 50ohms, Freq is in kHz, meas w/ IFR1500

Note these are all 'casual' MDS numbers in dBm, casual in that I guessed at about 6-10dB SNR audio but did not get out the scope or the FFT. Preamp is on. My curiosity was SWL on the trail, not contesting here \*8-) numbers should be very conservative.

The next table maps my K2ís band coverage against the standard SWL bands. Of note is that all but 3 SWL bands are covered (60m, 4.7-5.1mhz; 49m, 5.9-6.2; 25m, 11.6-12.1) which is plenty good for me.

The Receive performance data was also impressive to me. For my purposes of casual SWL the K2 is very usable out of band - even though it loses as much as 20dB rx performance in many cases...



| SW Band | Freq          | K2 VCO        | K2 Band      | Notes |
|---------|---------------|---------------|--------------|-------|
| 120m    | 2250 - 2550   | ***           | 160m         |       |
| 90m     | 3150 - 3450   | 3380 - 4150   | 80m          |       |
| 75m     | 3850 - 4050   | 3380 - 4150   | 80m          |       |
| 60m     | 4700 - 5100   |               |              |       |
| 49m     | 5900 - 6250   |               |              |       |
| 41m     | 7100 - 7400   | 6660 - 7450   | 40m          |       |
| 31m     | 9400 - 10000  | 9150 - 10750  | 30m          |       |
| 25m     | 11500 - 12150 |               | 30m          |       |
| 22m     | 13500 - 13900 | 12750 - 15750 | 20m          |       |
| 19m     | 15000 - 15700 | 12750 - 15750 | 20m          | **    |
| 16m     | 17450 - 18000 | (oops)        | 18m          | **    |
| 13m     | 21450 - 21950 | 20300 - 22350 | 15m<br>(12m) | **    |
| 11m     | 25600 - 26100 | 25500 - 30300 | 10m          | **    |

NOTE: \*\* indicated bands overlap