



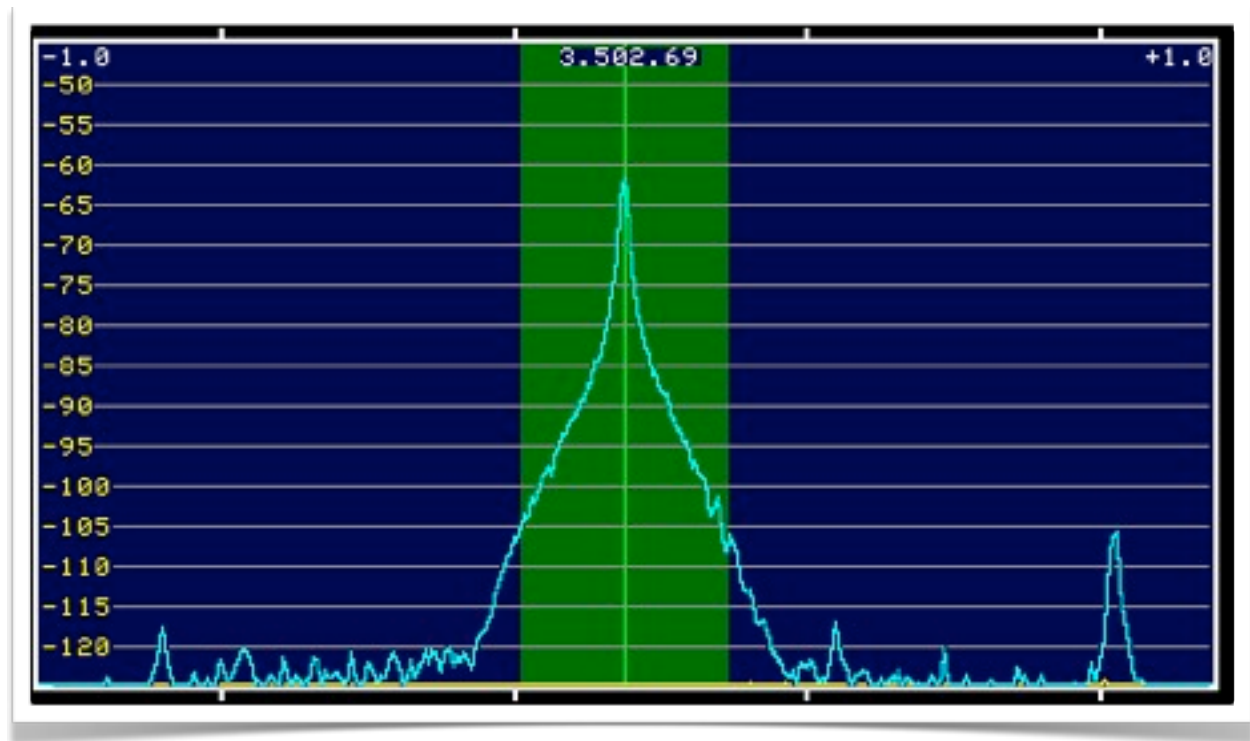
PICTURES FROM 2011 CQWW CW

Perhaps not the pictures you expected: I captured high-resolution spectrum analyzer data (as images) of several well-known USA stations during the contest, on 80 and 40 Meters. I've used that data to estimate offset from carrier to spectral envelope, Δf , at 60 dB below the carrier amplitude. The source images are presented below, grouped by band.

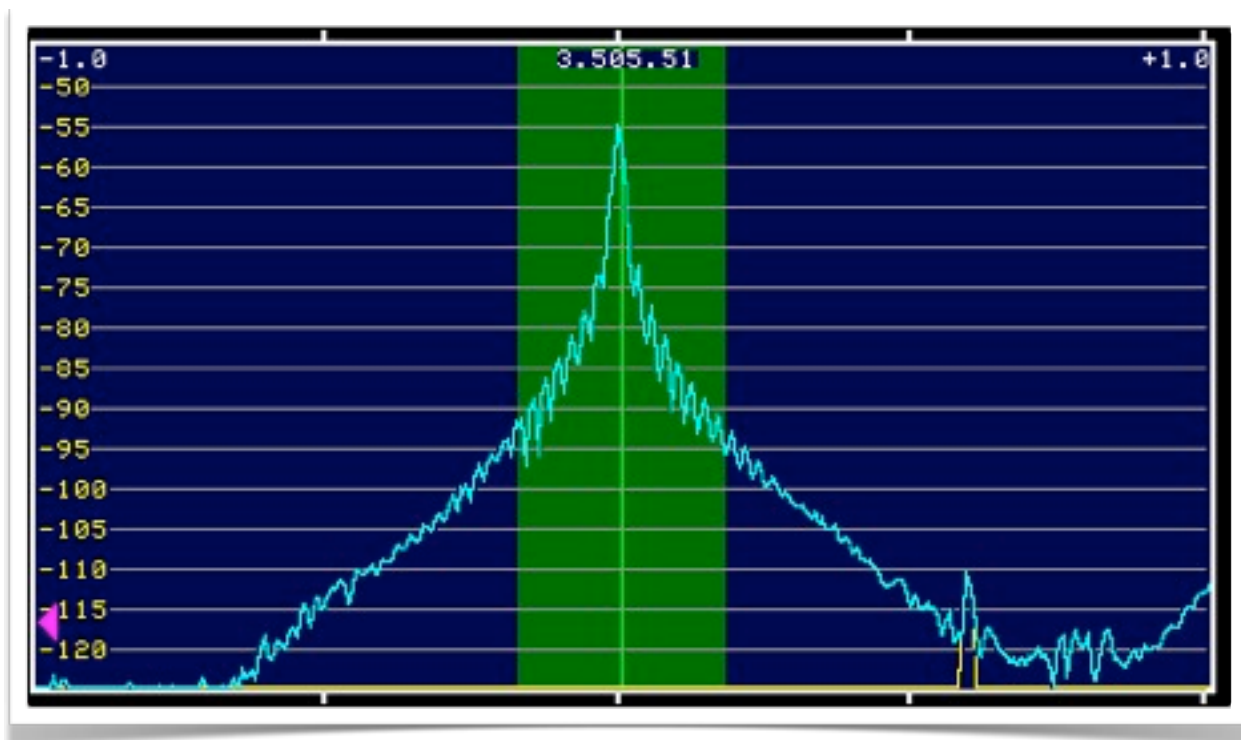
<i>Band</i>	<i>Call</i>	<i>Δf (Hz)</i>
80	KC1XX	235
80	W2RU	250
80	W3LPL	425
80	W2PV (@K1TTT)	480
80	K3LR	655
40	K3WW	235
40	K1RX	245
40	N2NT	250
40	W2BC	260
40	VE3EJ	260
40	N3RS	275
40	KC1XX	360
40	W3LPL	370
40	WE3C	420
40	W1WEF	450
40	K4ZW (@N3HBX)	495
40	K3LR	580
40	K1LZ	830



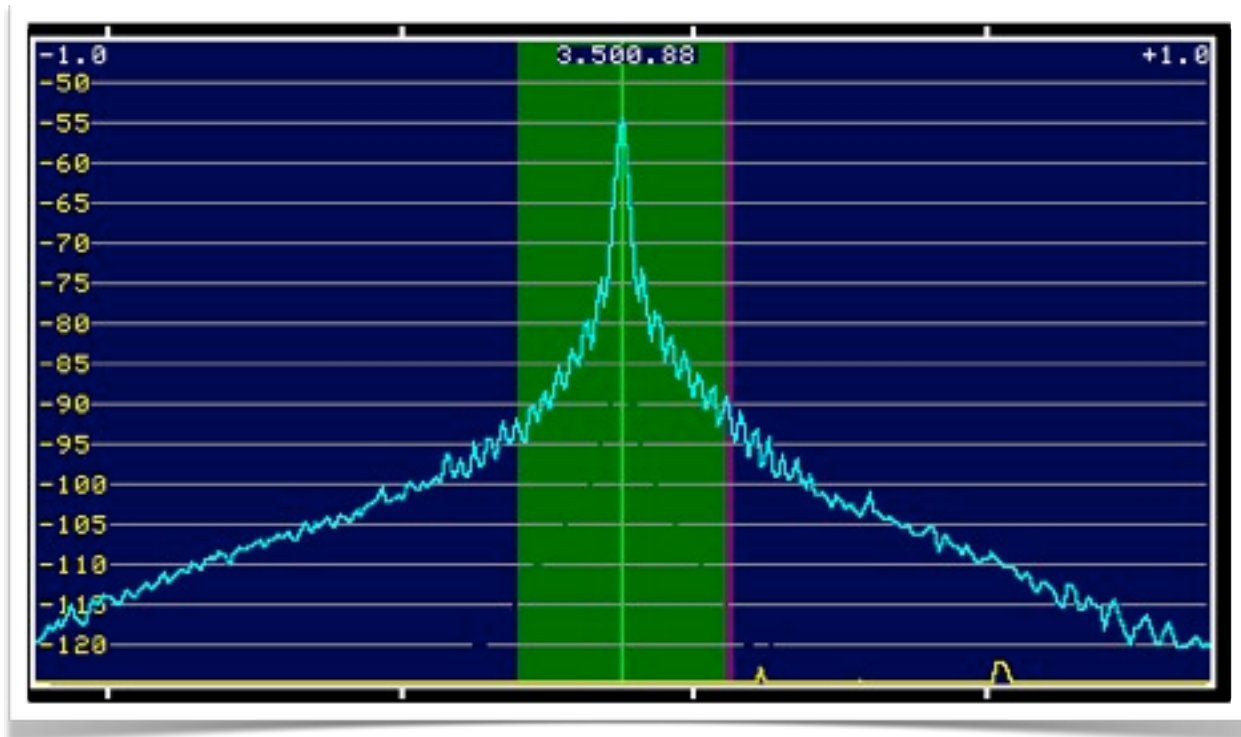
80 METERS



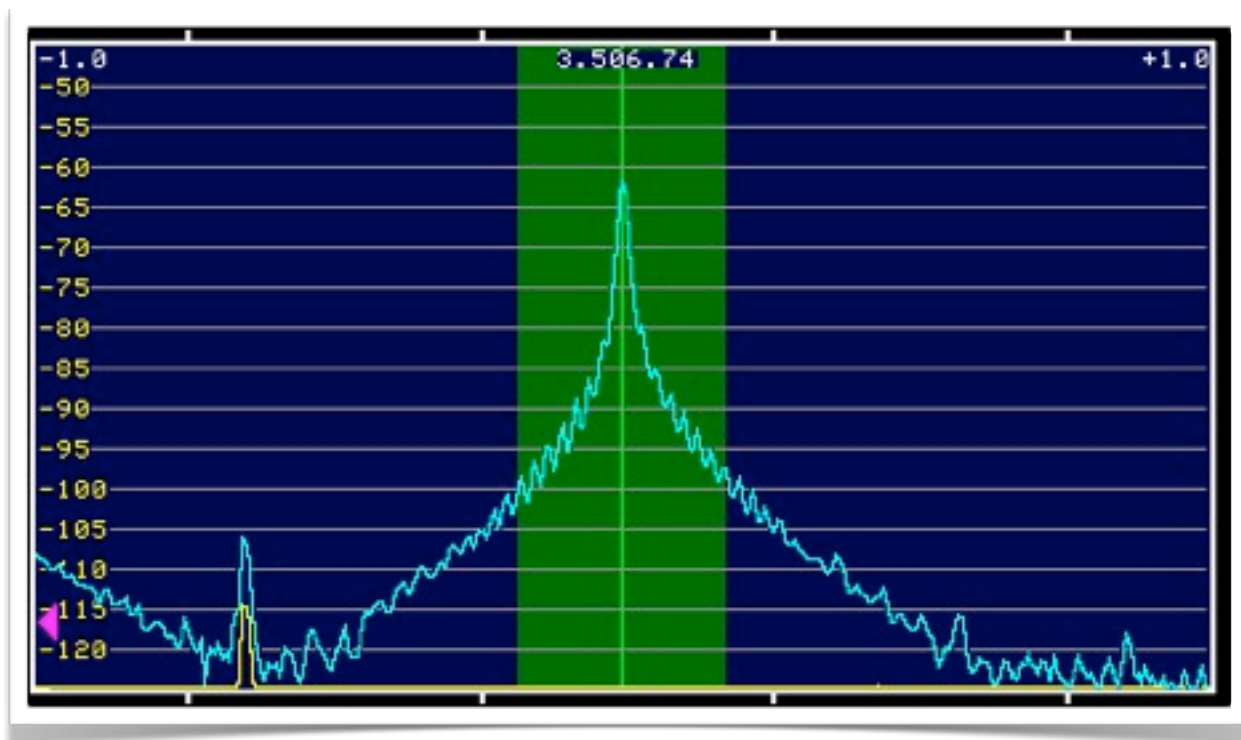
KC1XX 2011.11.26 2130Z



W3LPL 2011.11.26 2131Z



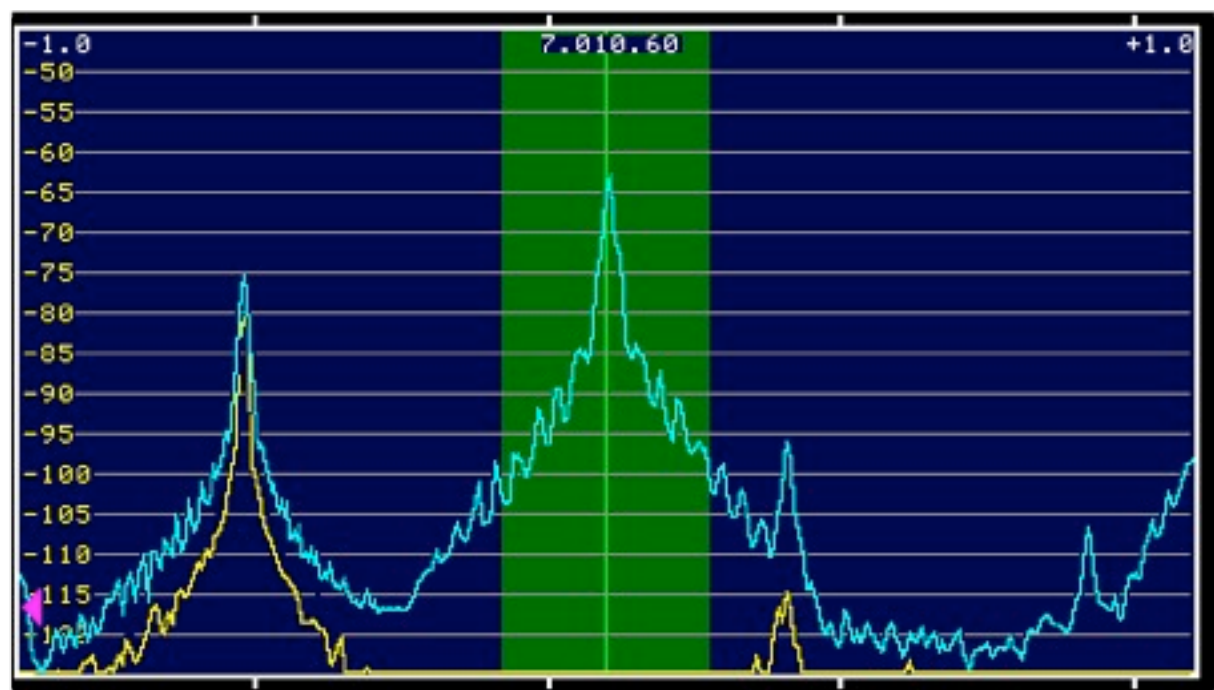
K3LR 2011.11.26 2152Z



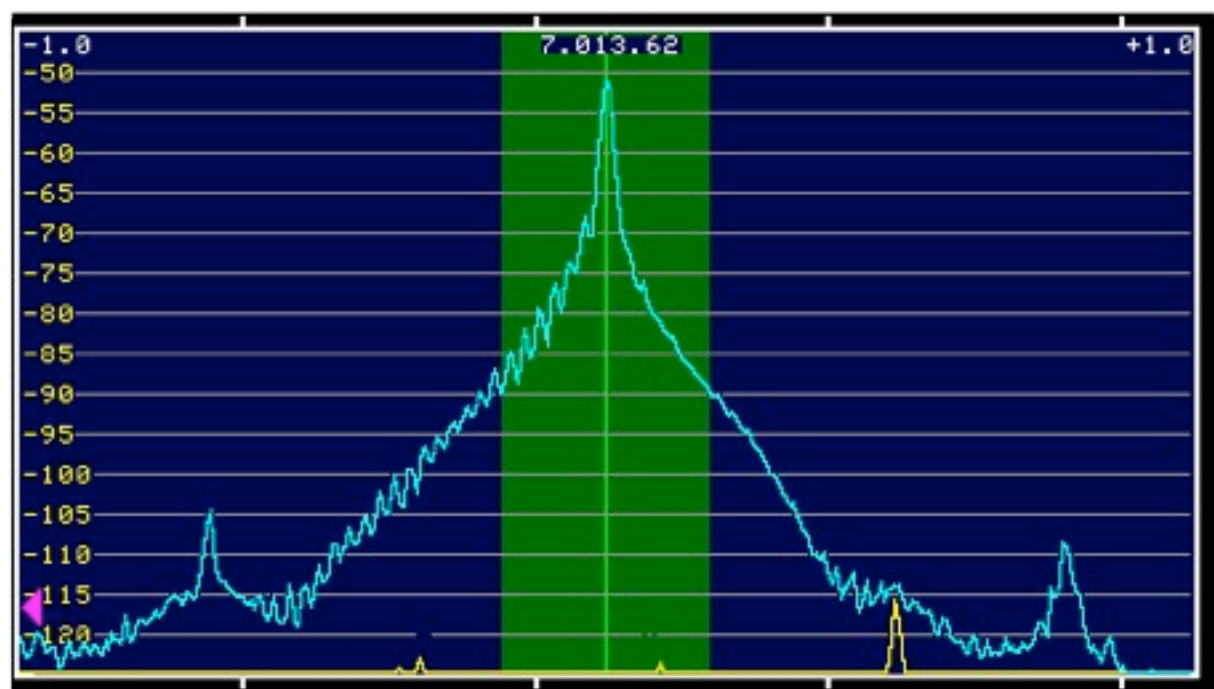
W2PV (@K1TTT) 2011.11.26 2137Z

40 METERS

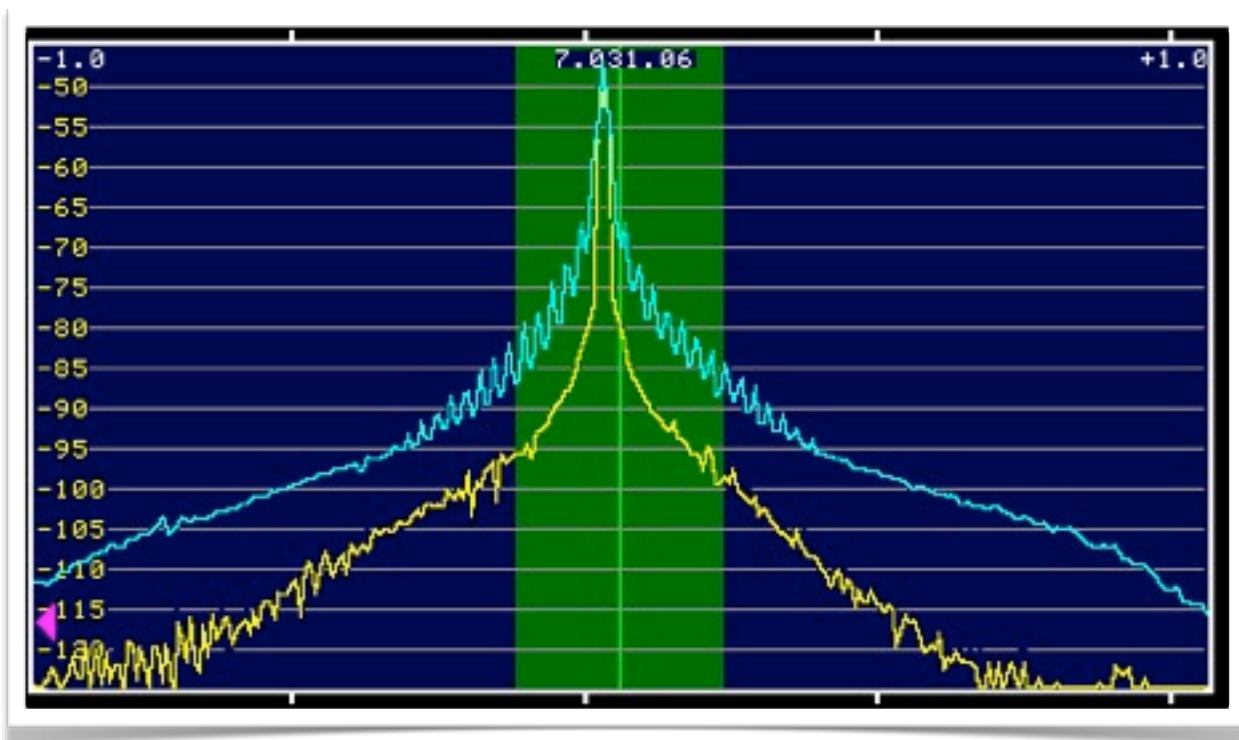
Calls for images with multiple overlays are listed left-to-right.



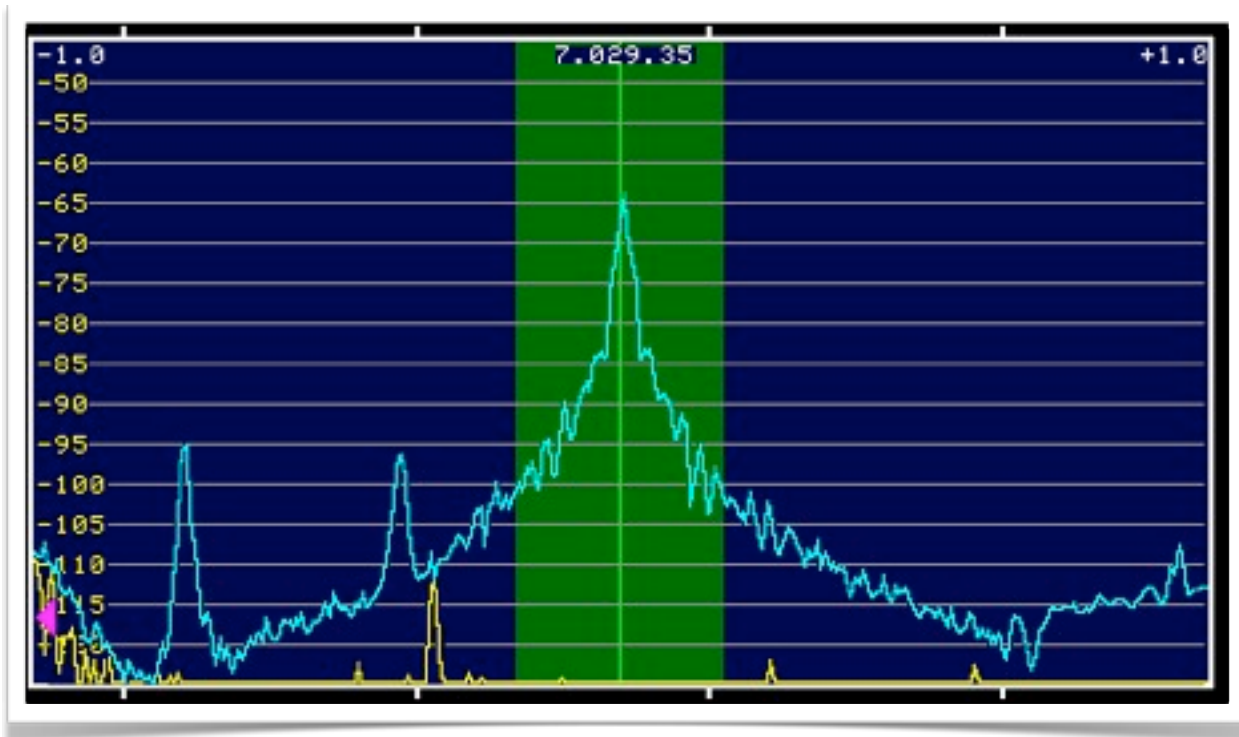
KC1XX 2011.11.26 2051Z



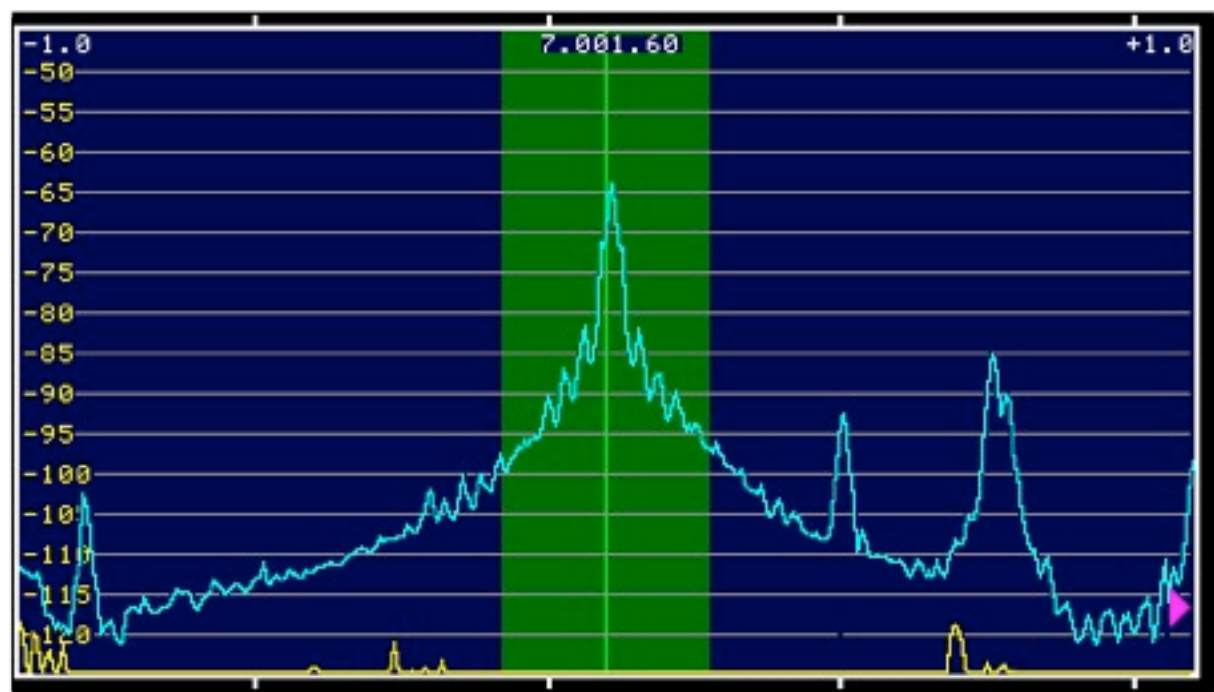
W3LPL 2011.11.26 2053Z



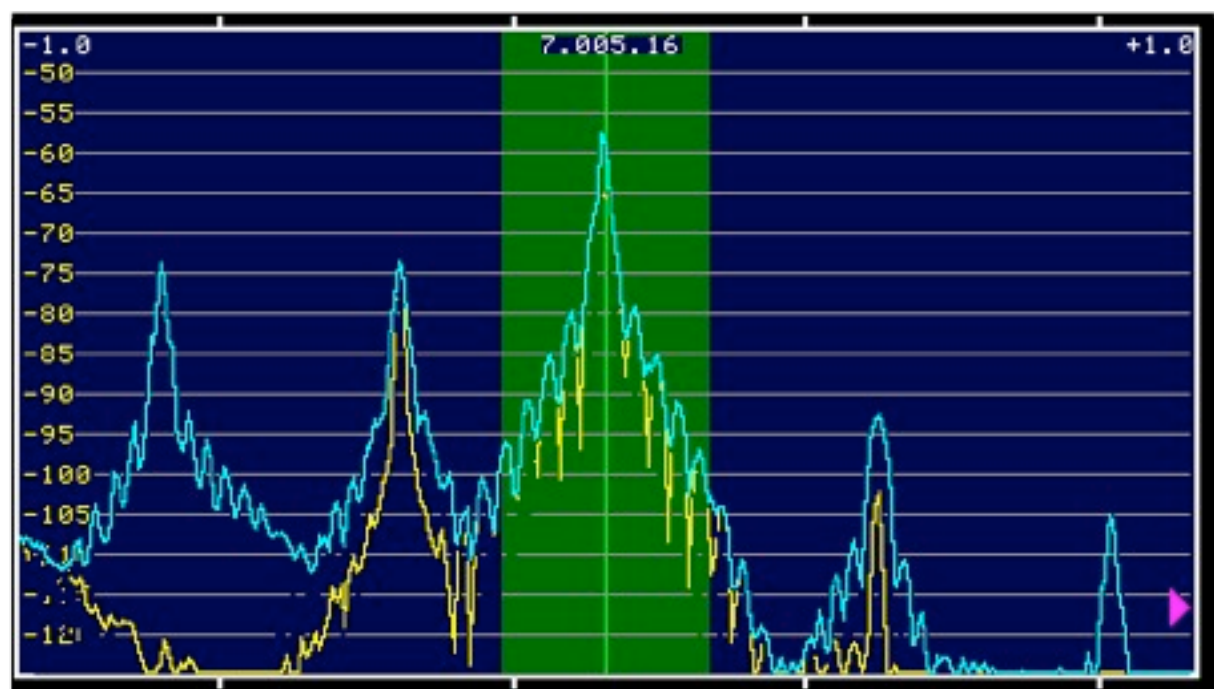
K3LR 2011.11.26 2103Z



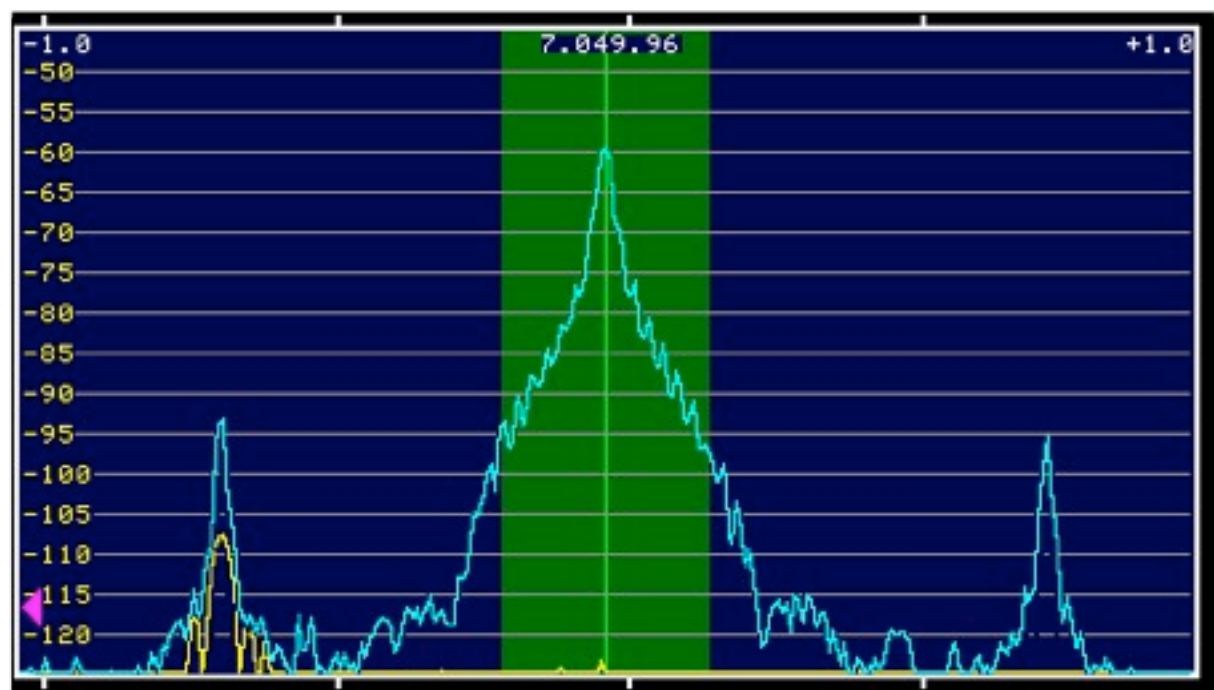
K1AR 2011.11.26 2101Z



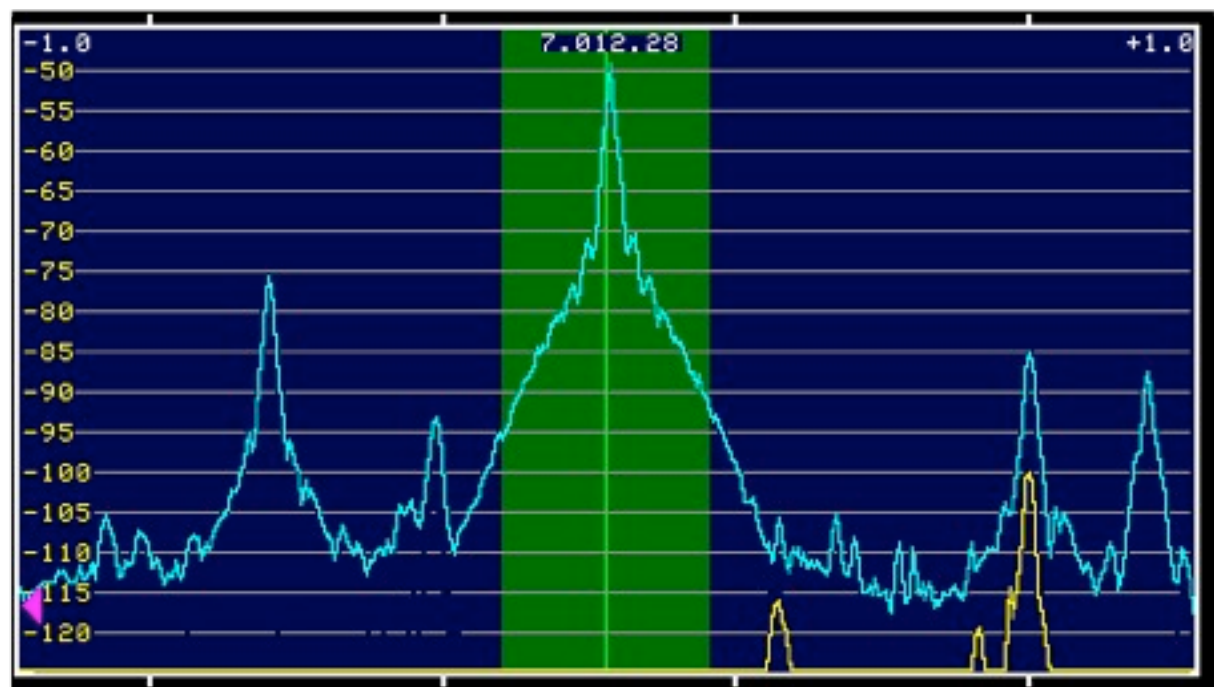
K1LZ 2011.11.26 2041Z



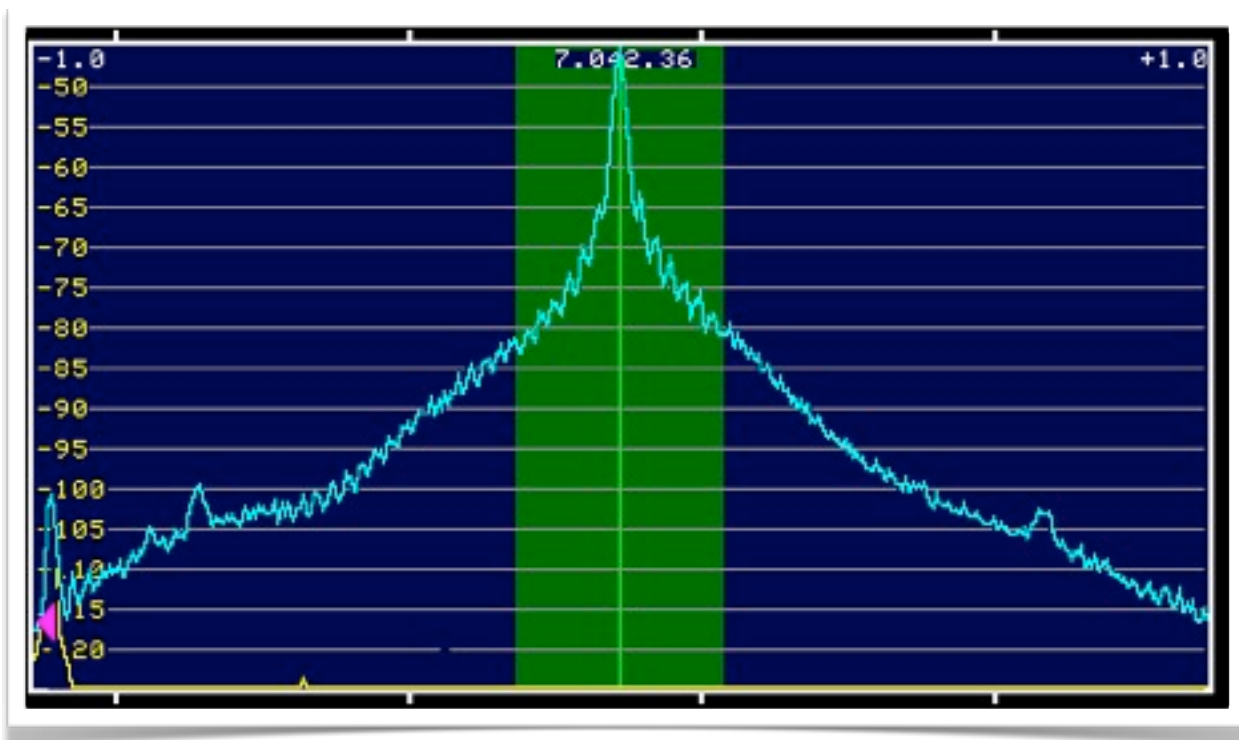
K1RX 2011.11.26 2056Z



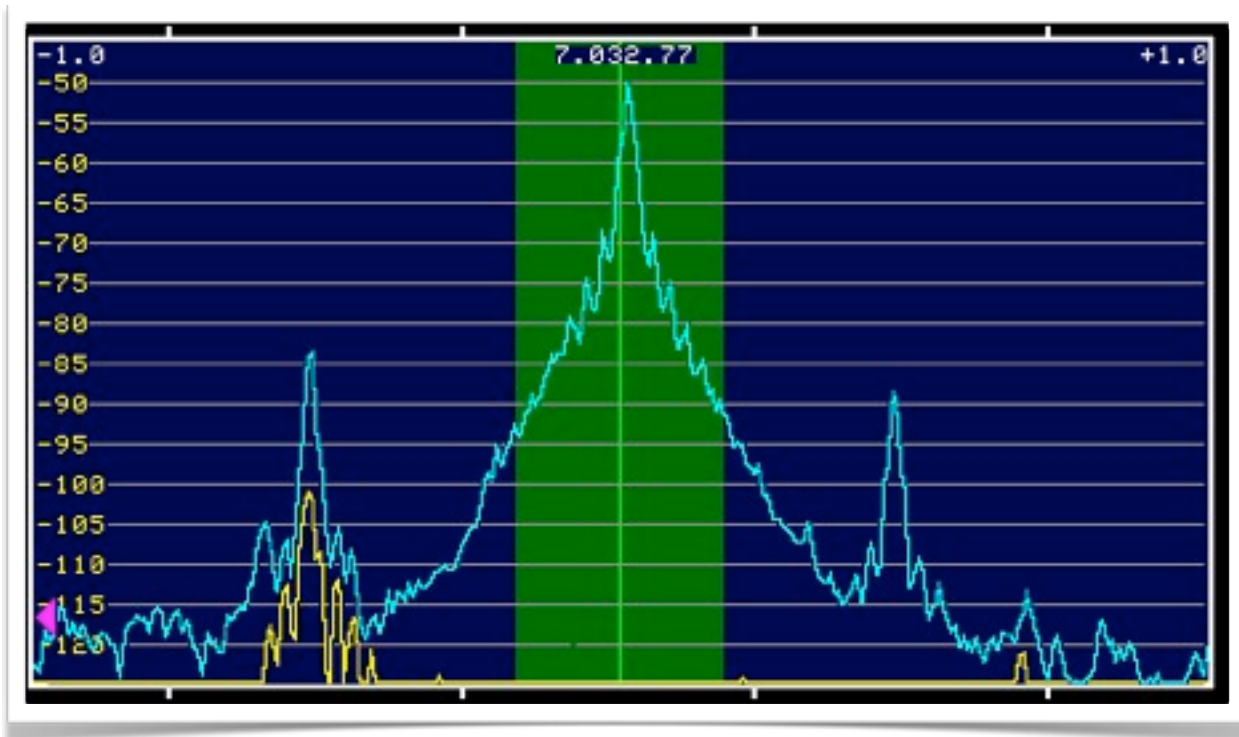
W2BC 2011.11.26 2108Z



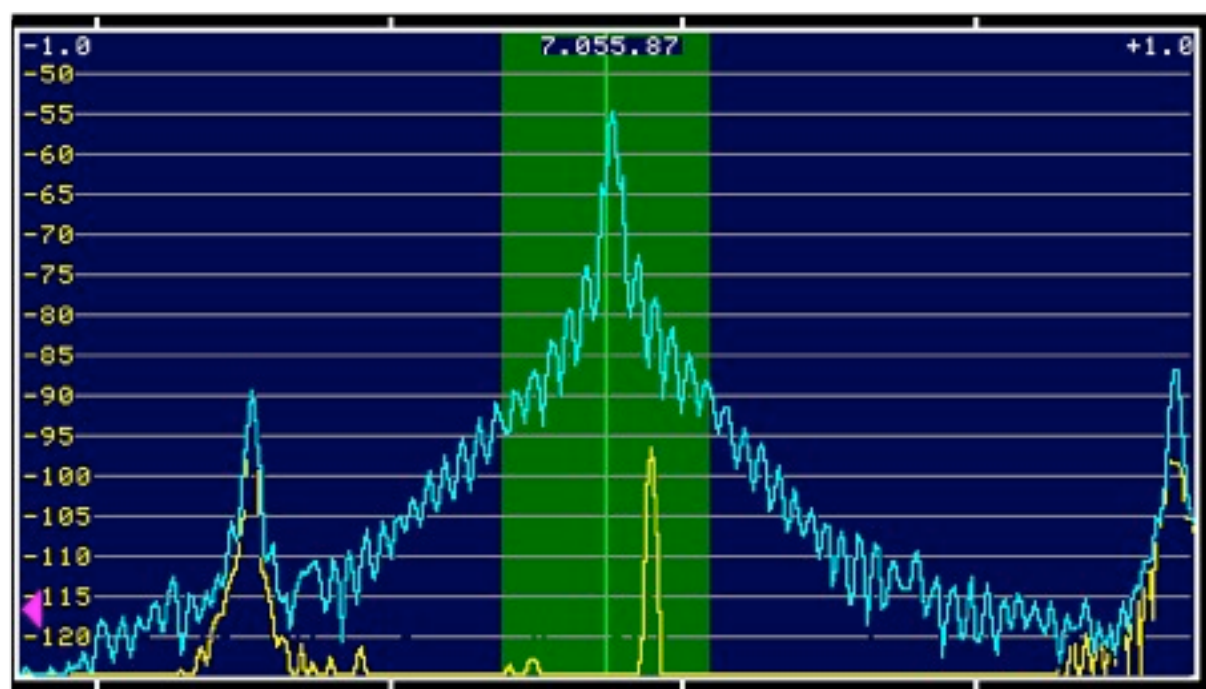
K3WW 2011.11.26 2124Z



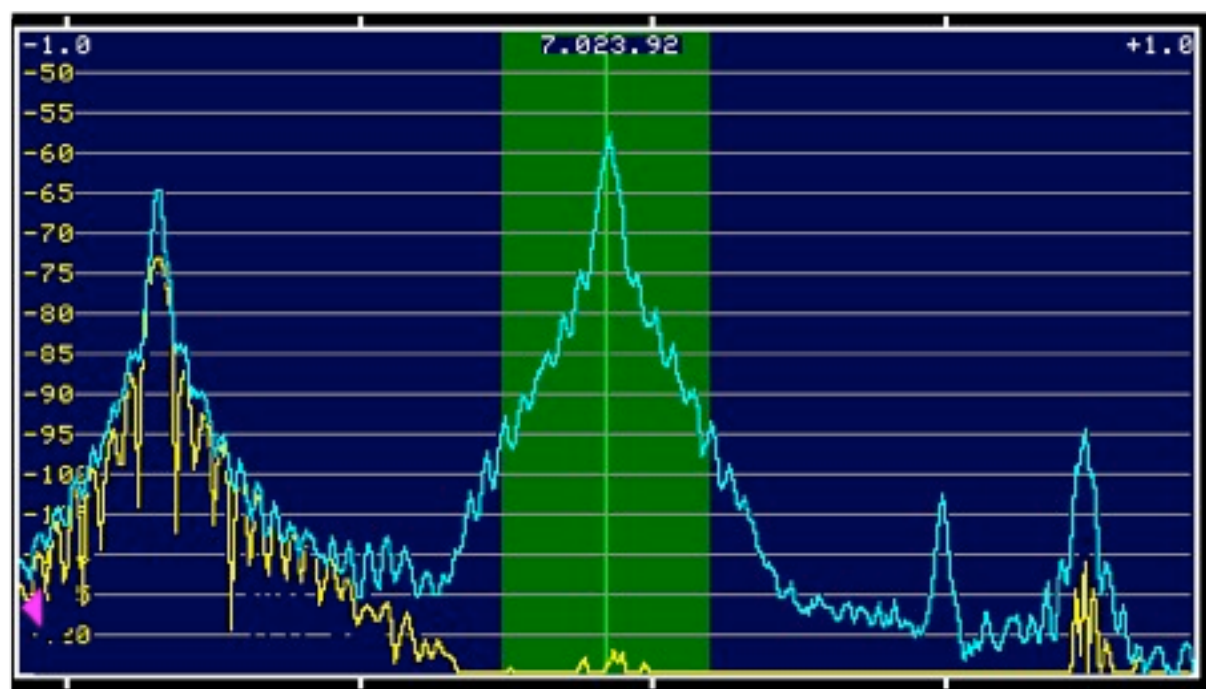
K4ZW (@N3HBX) 2011.11.26 2106Z



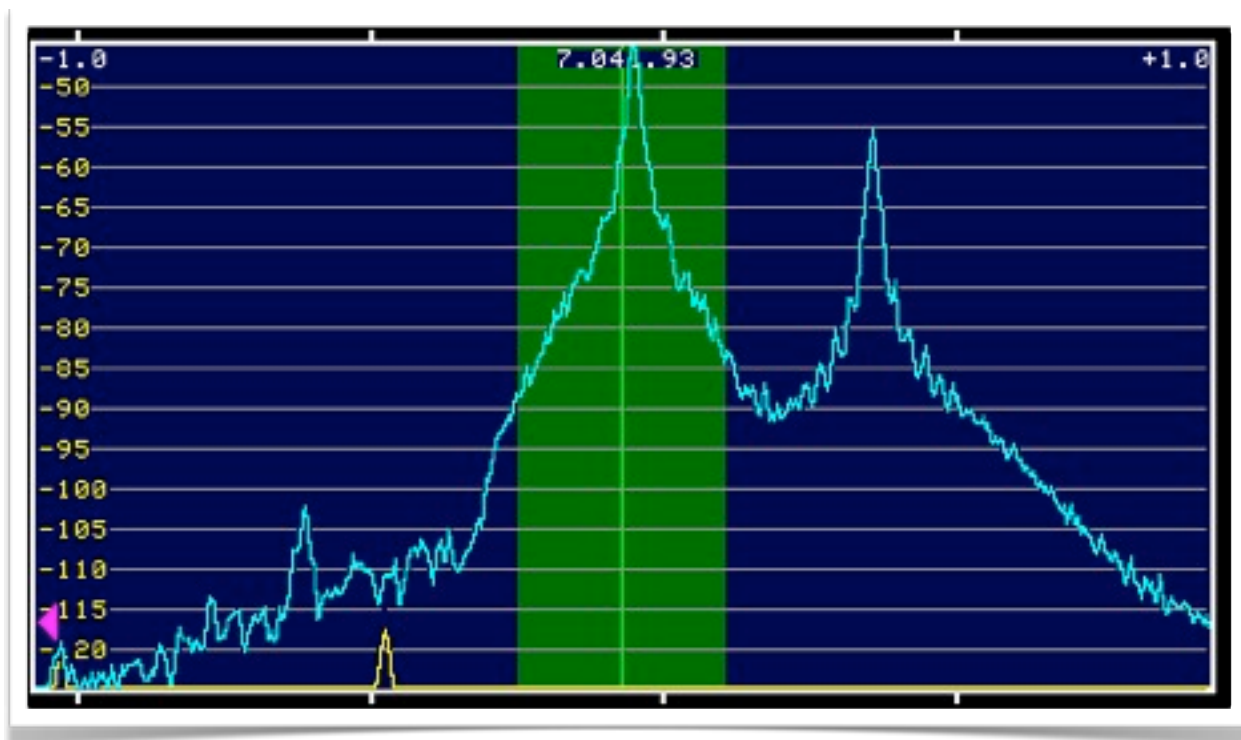
VE3EJ 2011.11.26 2104Z



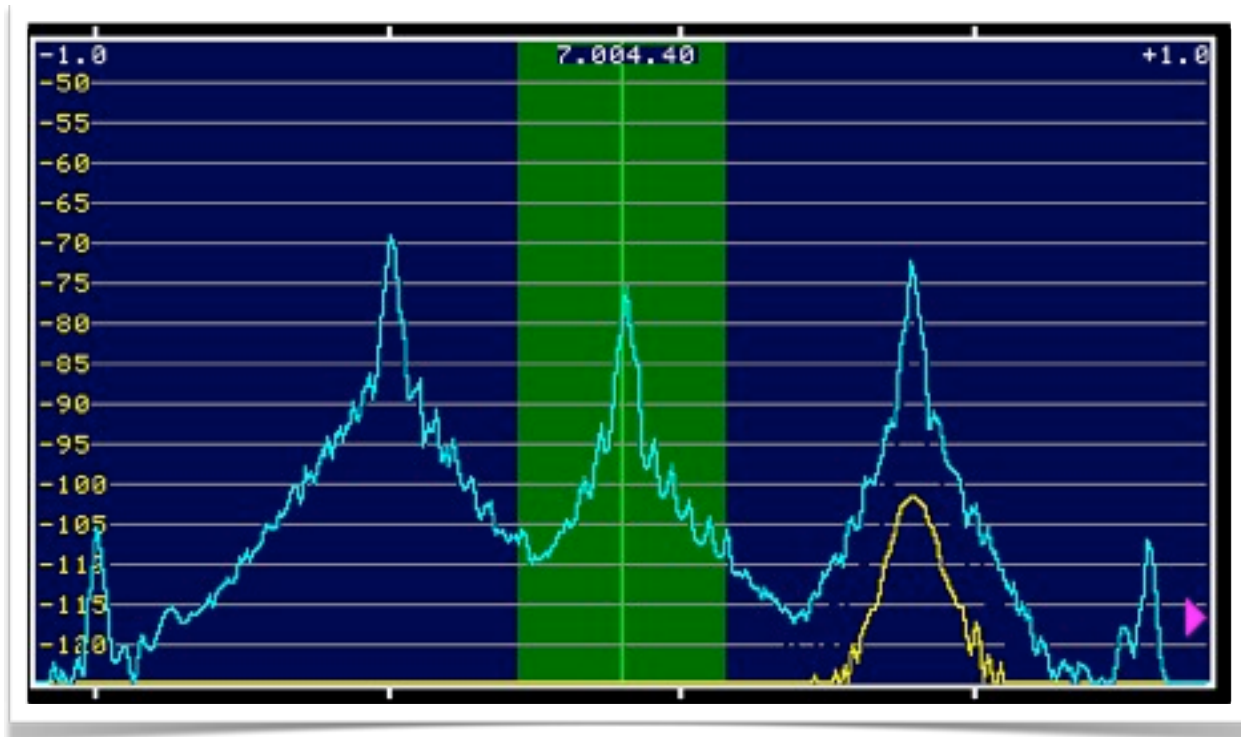
W1WEF 2011.11.26 2119Z



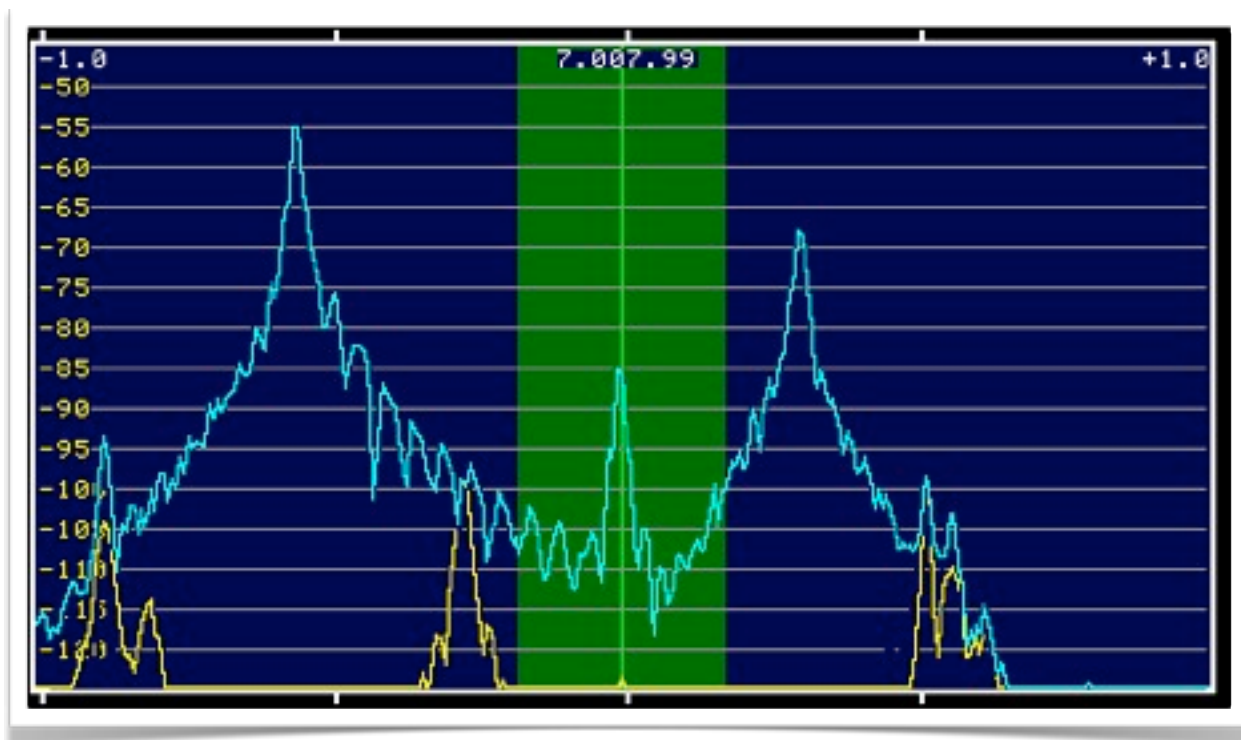
K1DG N3RS 2011.11.26 2059Z



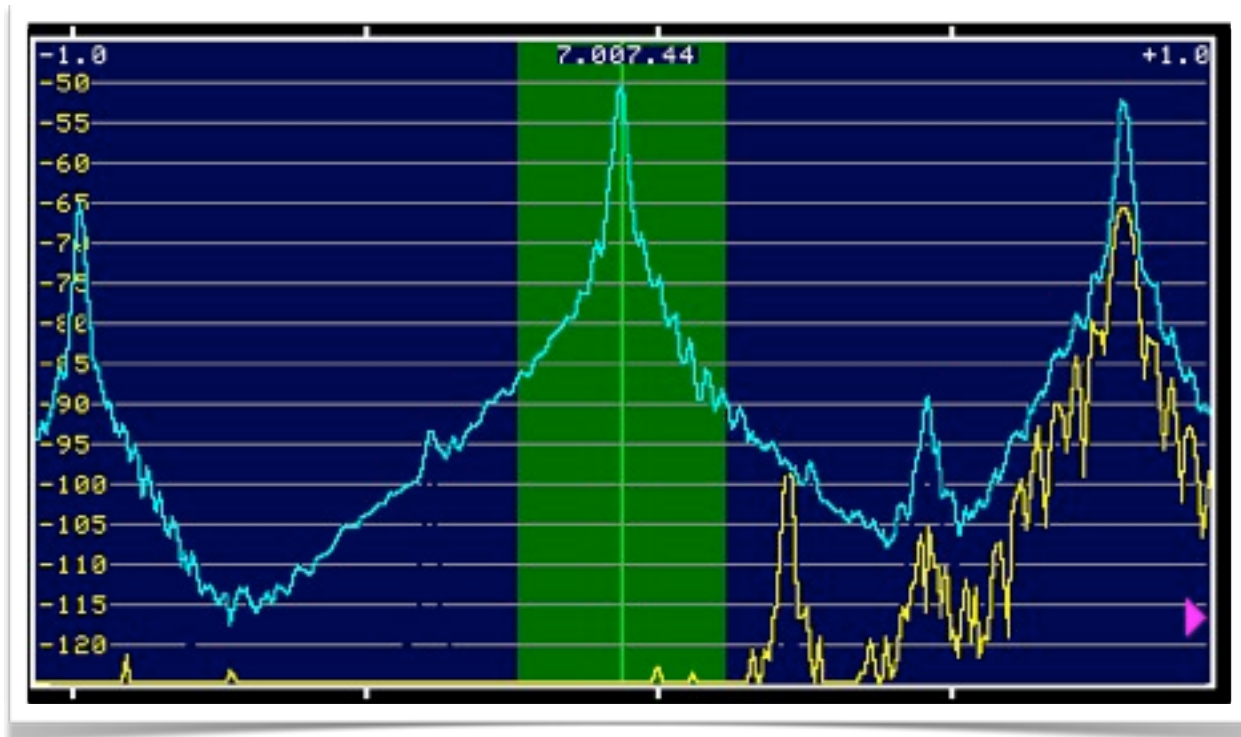
N2NT K4ZW (@N3HBX) 2011.11.26 2121Z



W3UA KØDQ (@WW1WW) W1KM 2011.11.26 2045Z



WE3C OM8M NR4M 2011.11.26 2049Z



W1MU WE3C NR4M 2011.11.26 2047Z

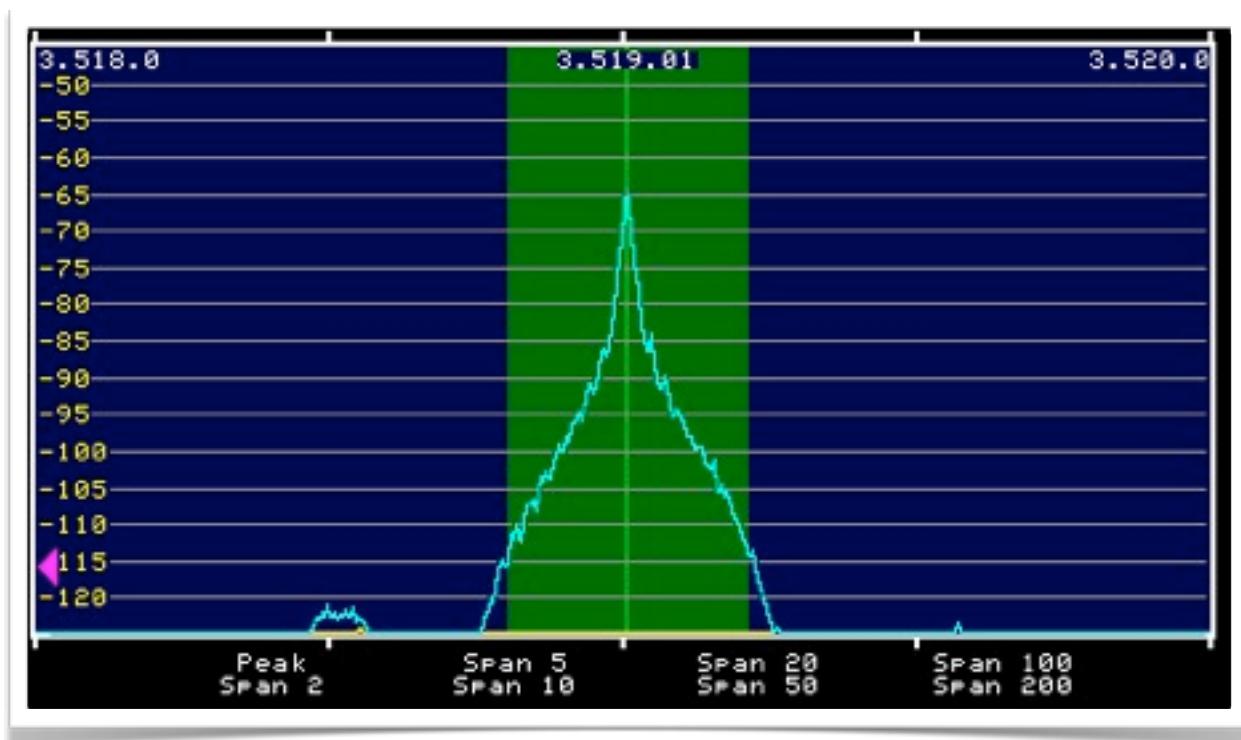


ABOUT SPECTRAL DATA

A spectrum analyzer measures signal amplitude versus signal frequency. This information is displayed in a 2-dimensional plot with amplitude on the vertical axis and frequency on the horizontal axis. The images in this report are screen grabs of these plots.

The vertical axis unit dBm. S9 corresponds to -73 dBm. All plots span 80 dB, with the maximum amplitude at -45 dBm.

The horizontal axis spans 2 kHz. With the signal centered in that span, we can see signal components up to 1 kHz on either side of the carrier frequency. Sending morse code modulates the single-frequency carrier, resulting in components like those shown in the spectral image for W2RU below. These data were collected when there were no nearby signals other than a local digital warbler about 500 Hz below Bud's frequency. The blue trace in the image is the peak signal level over a several-second measurement period. The translucent green vertical bar indicates a nominal receiver bandwidth of 400 Hz.



W2RU on 80m 2011.11.27 1915Z

[App Note: How to Set Up and Interpret the P3 Display](#) provides additional information.