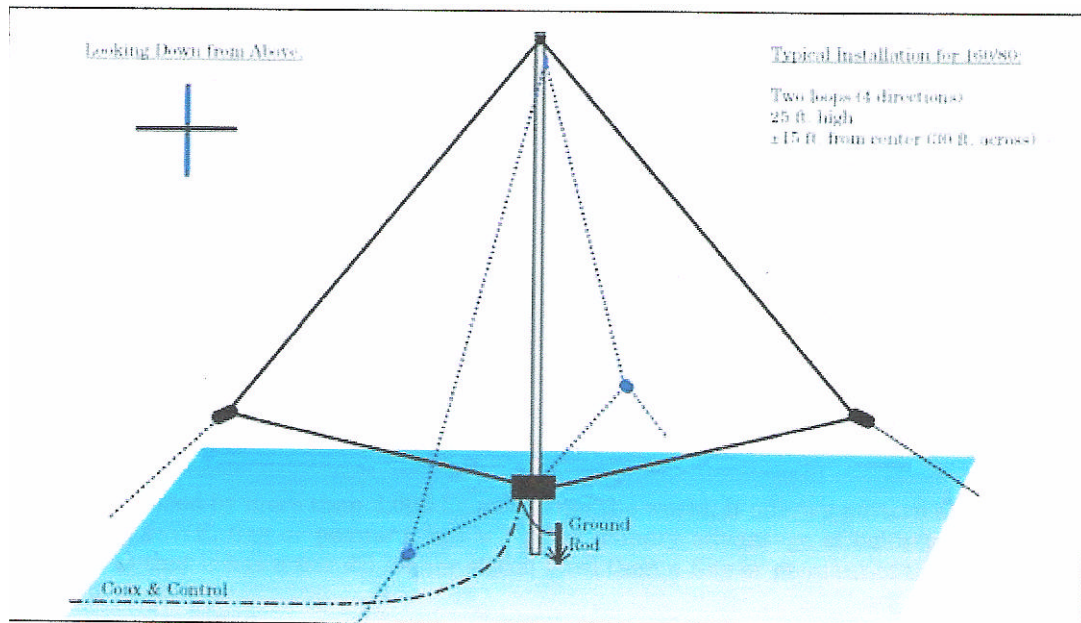


RX antennas at IV3PRK: the K9AY Loop

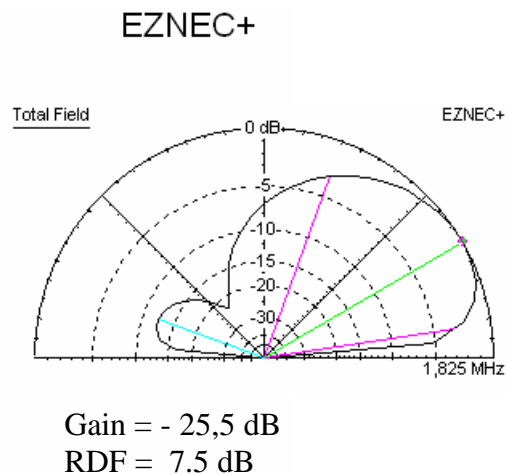
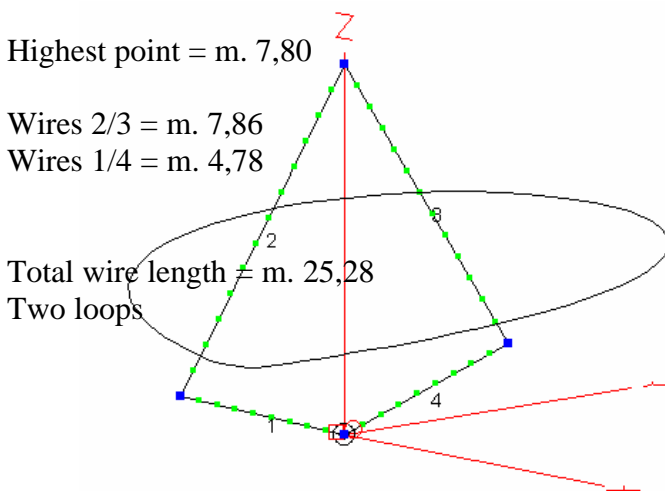
Useless in my noisy environment

By Pierluigi "Luis" Mansutti IV3PRK

The K9AY Loop is one of the most popular receiving antennas which can fit in a small lot, and I built it in the summer 2006, exactly as designed by Gary Breed and sold by "AY Technologies" as the AYL-4 model.



It belongs to the family of the small loops, like Flags and Pennants, but it needs a ground connection. EZNEC modelling shows almost the same performance, but it is more compact and can be easily switched in four directions.



The commercial AYL-4 model has a terminal load resistance adjustable from 340 to 680 ohms. In my case, for a single band operation, I choose to switch between 410 and 460 ohms, but it should be better to go on the lower side.

My transformer is wound on a binocular BN73-202 with 8 turns on primary and 3 turns on secondary, for a perfect match on the 50 ohm coax cable (SWR = 1.02).

At first I provided also an ICE preamplifier in the switching box, but it confirmed once again to be too noisy and I threw it in the junk!



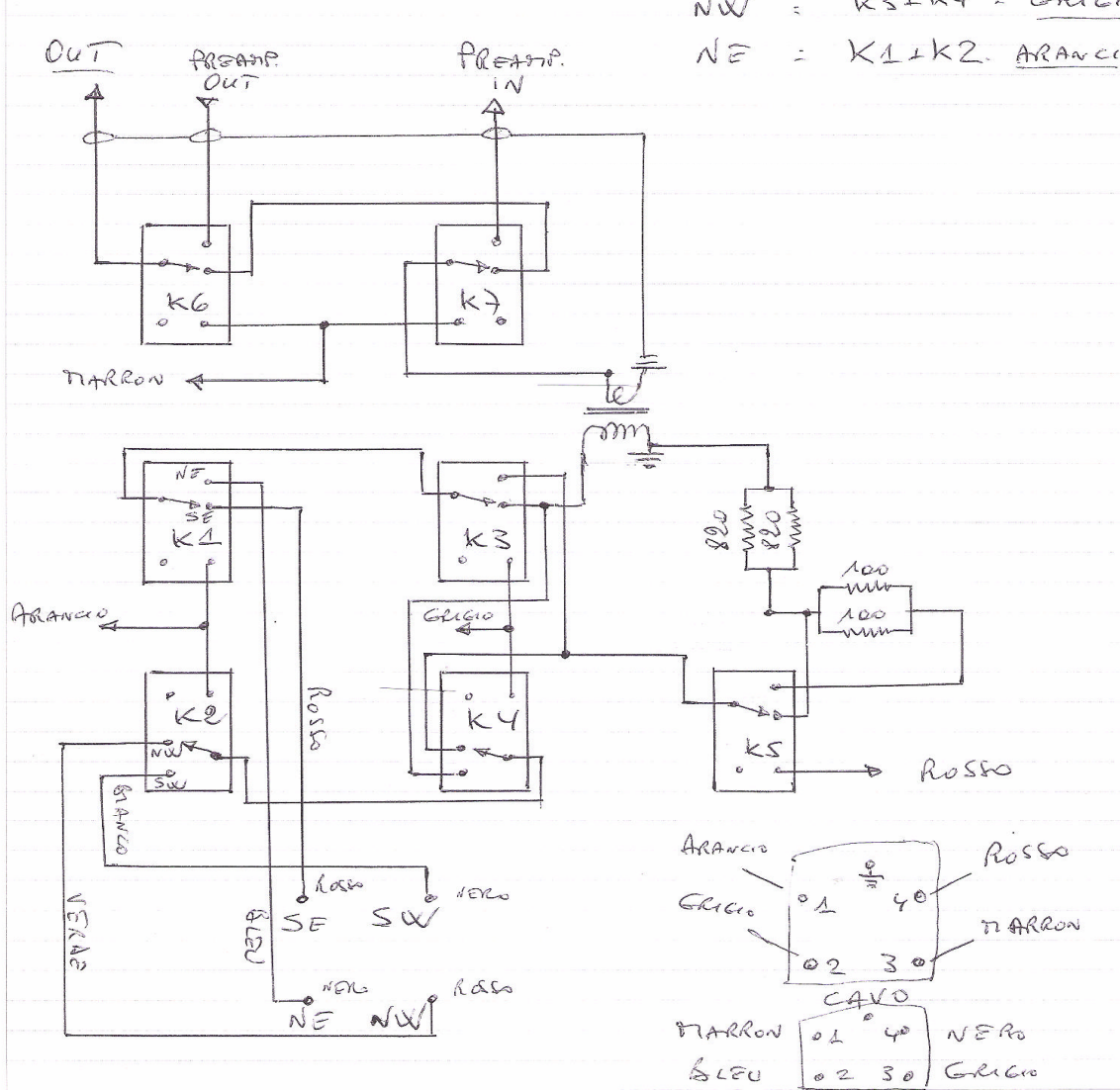
In front: the K9AY loop in summer 2005.

$$SE = \cancel{\text{ARANCIO}} \cdot \text{AFF.}$$

$$SW = \frac{(K1+K2)}{\text{ARANCIO}} + \frac{(K3+K4)}{\text{GRIGIO}}$$

$$NW = K3+K4 - \text{GRIGIO}$$

$$NE = K1+K2 \cdot \text{ARANCIO}$$



Another picture with the switching box opened.



The results are quite disappointing ! The K9ASY loop, in my environment, is very NOISY and it has been always worse than all my other Rx antennas.

The following is an S-meter reading of the noise during the day on Icom 756-ProII on the 160 meters band: we see that the lower load termination is better.



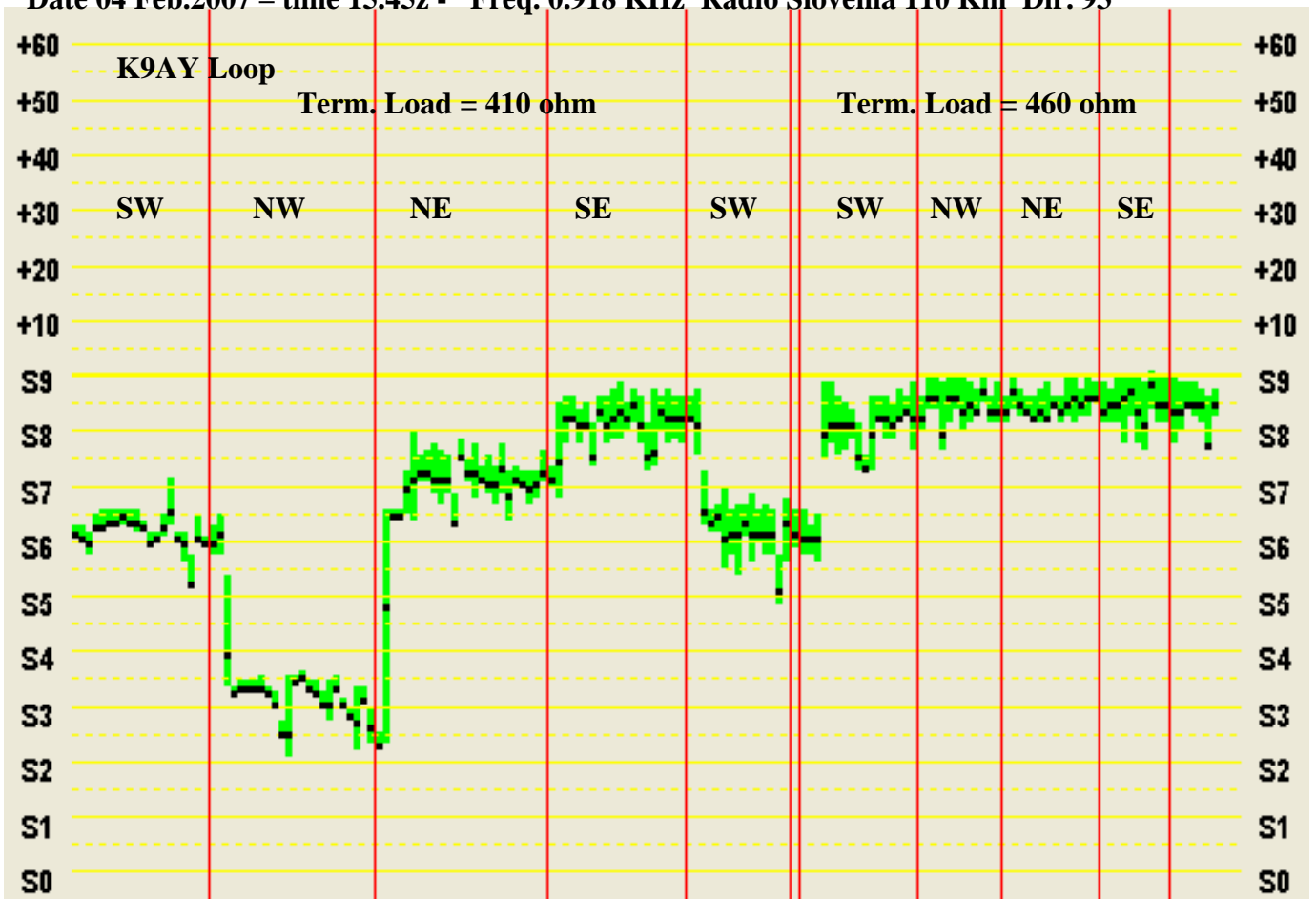
With such a noise level, also during the night, it was always impossible to get any meaningful s-meter reading on 1.8 MHz, but on the AM Broadcasting band the antenna seems to work as it should, with a correct F/B report (on the low resistance load).

Date 04 Feb 2007 – time 15.30 z

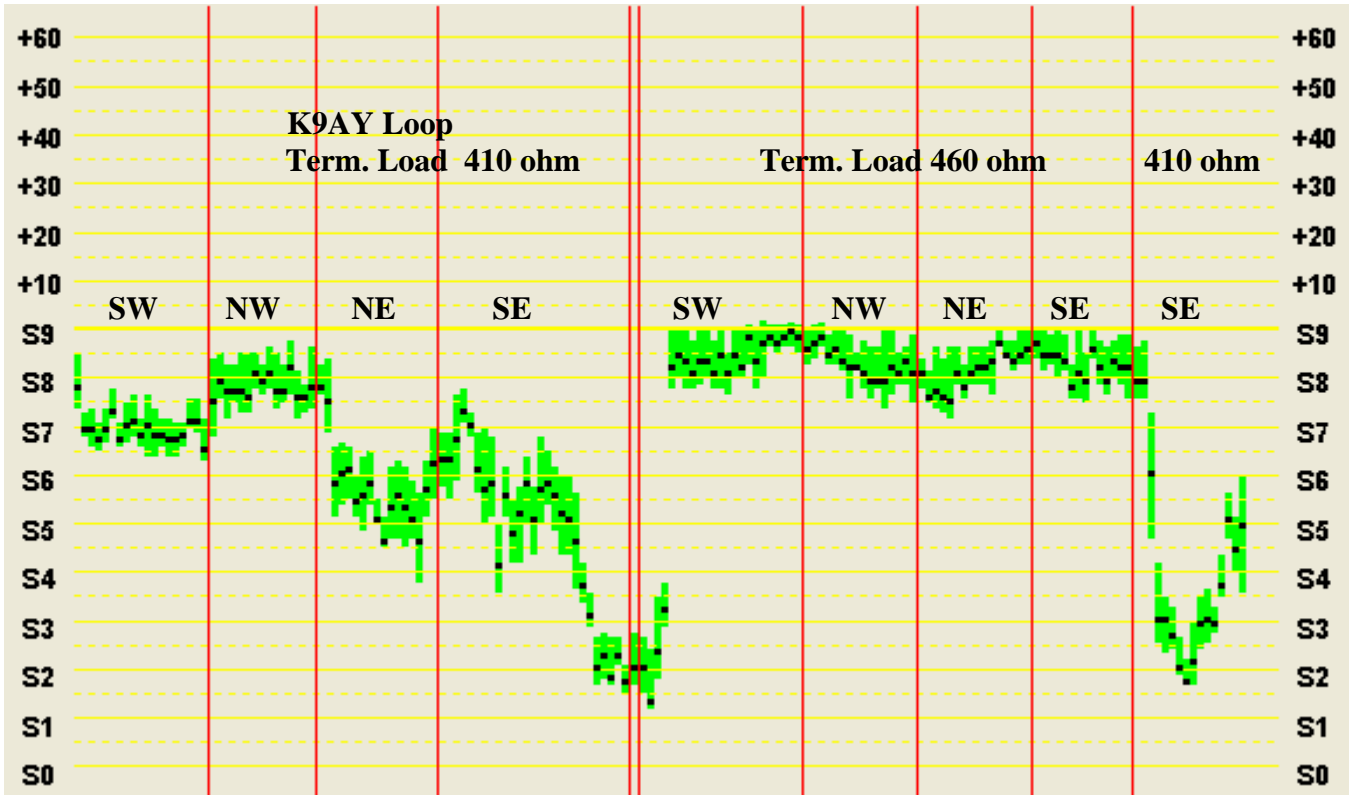
Freq. 0.912 KHz Romania – dir. East



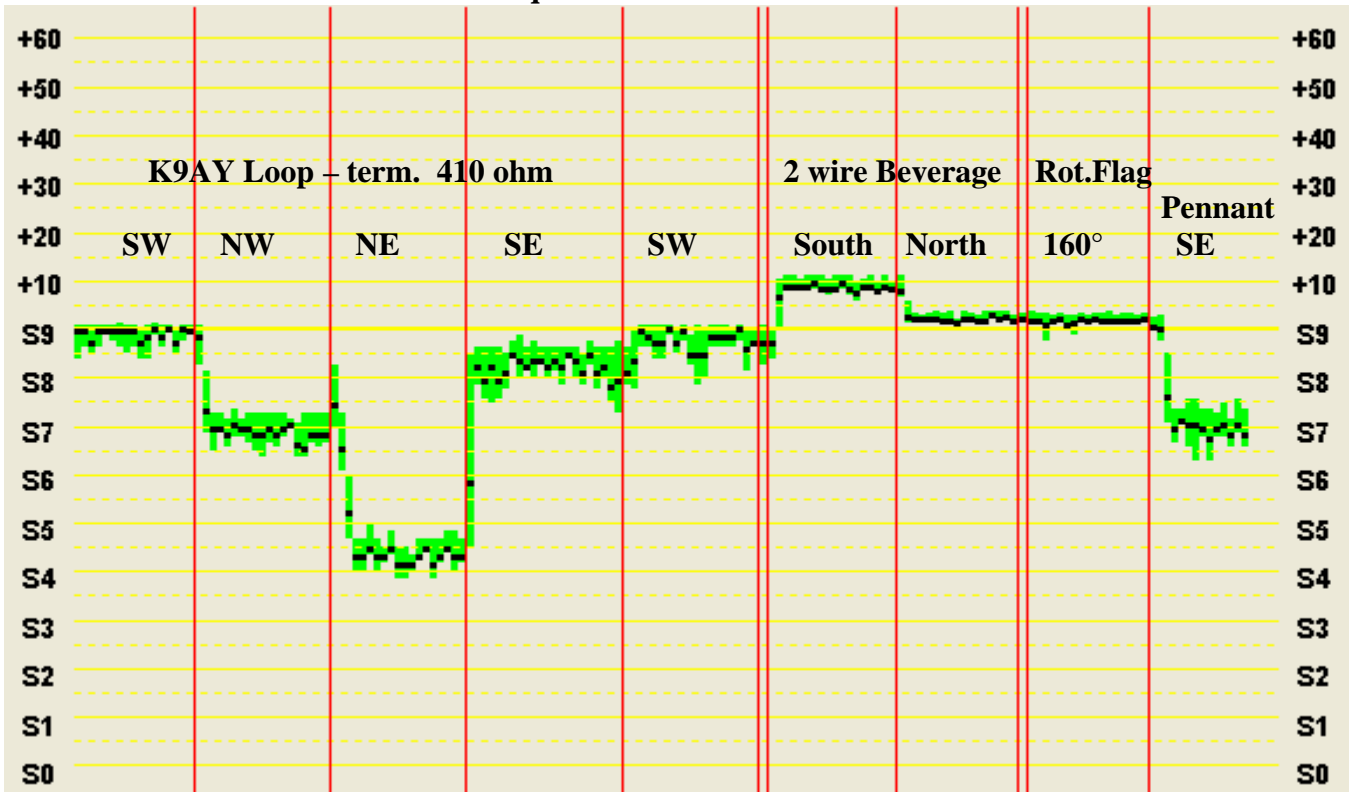
Date 04 Feb.2007 – time 15.45z - Freq. 0.918 KHz Radio Slovenia 110 Km Dir. 93°



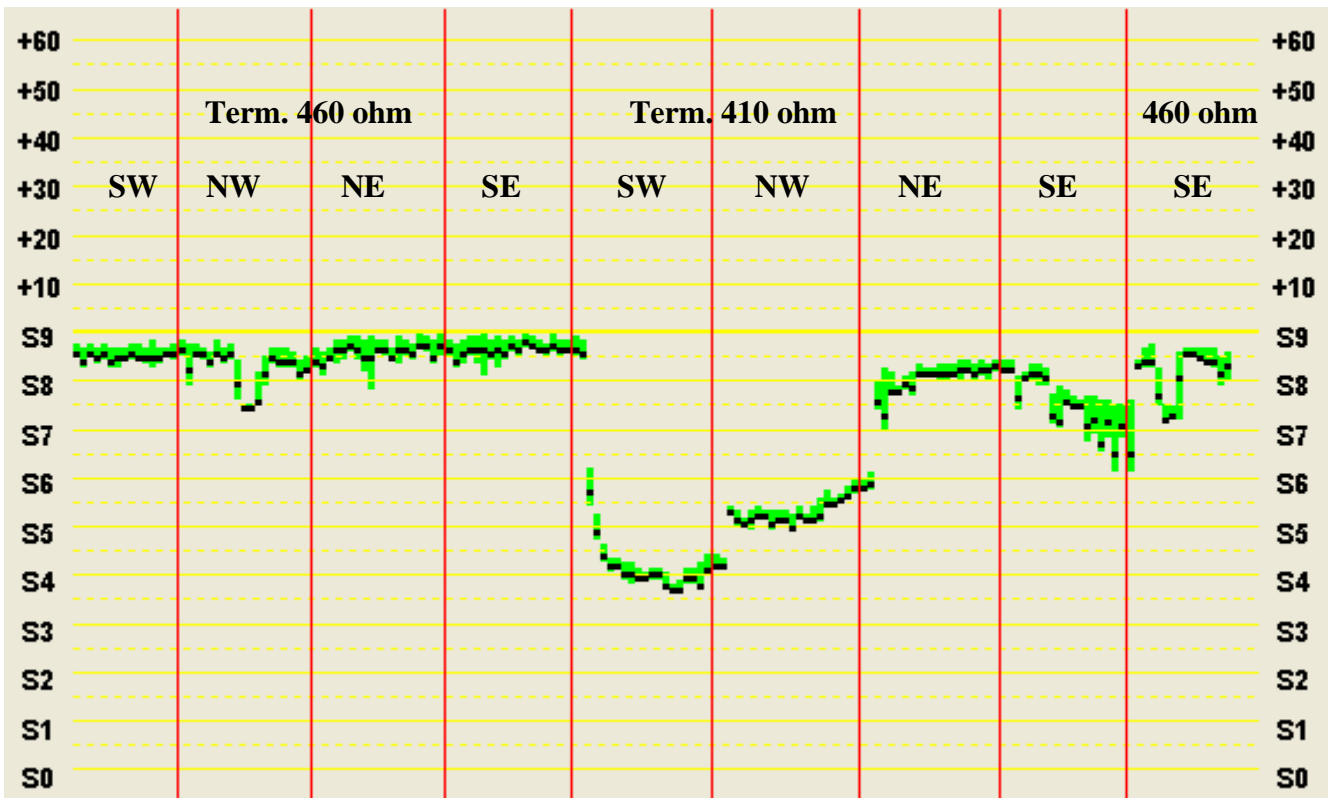
Date 04 Feb.2007 – time 16.00z - Freq. 0.600 KHz Radio France info



Date 05 Feb. 2008 time 14.45 z – Freq. 0.999 KHz RAI Rimini – dir. 192° Km. 240



Date 17 Apr. 2008 time 15.30 z – Freq. 1.575 KHz RAI Gorizia – dir. 125° Km. 50



K9AY – switched to SE : NOISE s-meter readings from 300 KHz to 7.8 MHz



Again, as on all other antennas, the noise level is worst right on the 160 meters band..... and I give up.

April 2008

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