

Comparing Wideband Active Small Magnetic Loop with 60m Long Wire

Loop: 0.9 m diam. Conductor double foil PCB FR-4 20mm width. Inductance 3.2uH

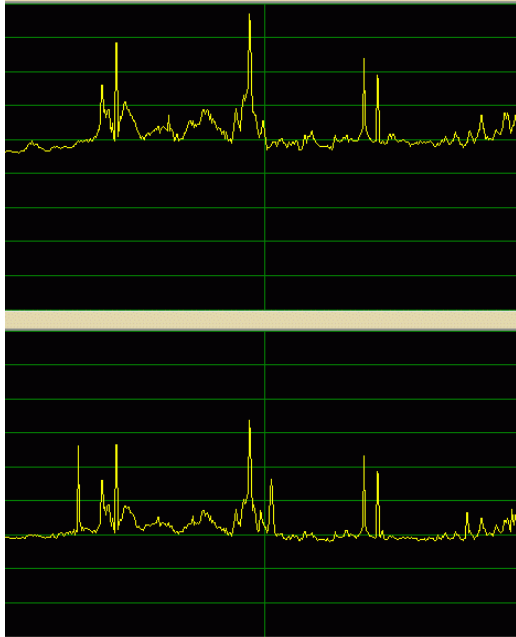
Place and time: Vaksevo (rural) 13 Mar 2010. 18:30 local time

Upper trace is signal from LW 60m long at 12 m height matched with antenna tuner.

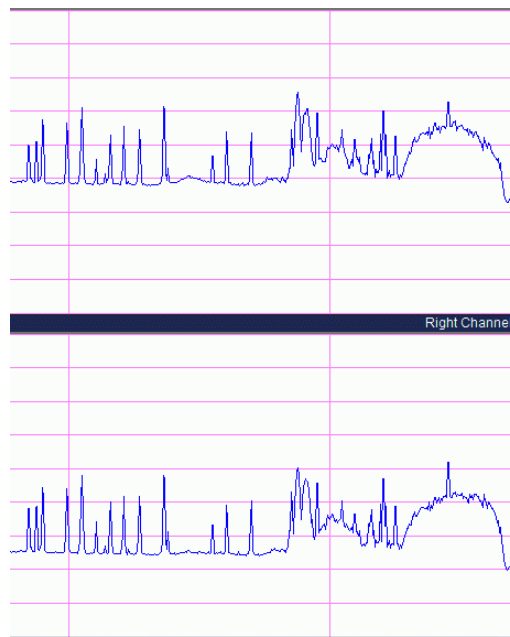
Lower trace - Wideband active SML, 10 dB/div. The outputs of 2 synchronized direct conversion RX are fed to PC sound card and 2-channel spectrum analyzer program is used.

D is difference in dB of average S/N ratio between large antenna and active SML.

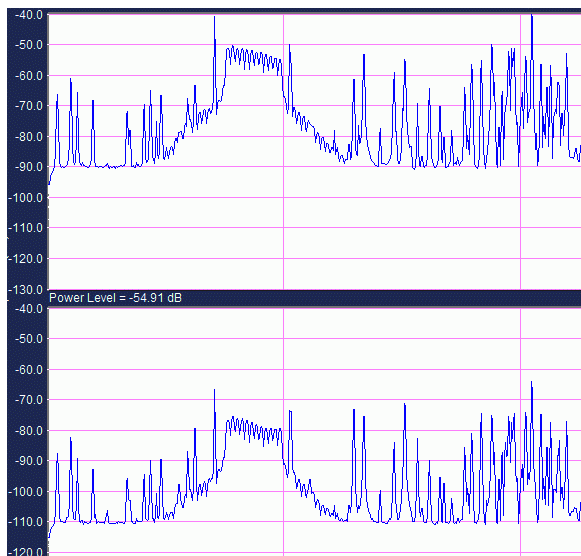
NR is the ratio in dB between band noise and noise floor of the active SML which is measured with equivalent inductance method. All spectral plots are averaged 10 sec.



1.8 MHz D = 2 to 3dB NR = 11dB



3.5 MHz D = 0 dB NR = 11dB



7 MHz D = 0 to 3 dB NR = 6dB



14MHz D = 5 to 10 dB NR = 0dB

The measurements are performed in CW portions of the amateur bands. The narrow peaks are CW signals. Wider patterns are from digital transmissions or unidentified sources.

LZ1AQ, March 2010