

DIPOLE NADENENKO

Soviet radio amateurs well know the broadband dipole named in Russia "dipole Nadednenko." The antenna is widely used at serve radio centers of Russia. Russian radio amateurs also are used the dipole. Below we take up a design of the antenna.

Dipole struts can be both as metal as wooden. As usual, struts has the shape as a circle, wooden struts has the s polygon. Wires are attached to struts any possible way. ' ends of shoulders carefully are welded. As usual, a 300-wire line is used for feeding of the antenna. Antenna rad with horizon polarization.

The dipole contains several wires at each shoulders shaped as a cylinder. Figure 1 shows the dipole Nadenenko. For working at 40- 10 meters the sizes are: L= 8 meters, L1= 3 meters, L2= 1 meter, 2R= 1 meter. Diameter of wires is 1.5- 3 millimeters.

By Radio 1959

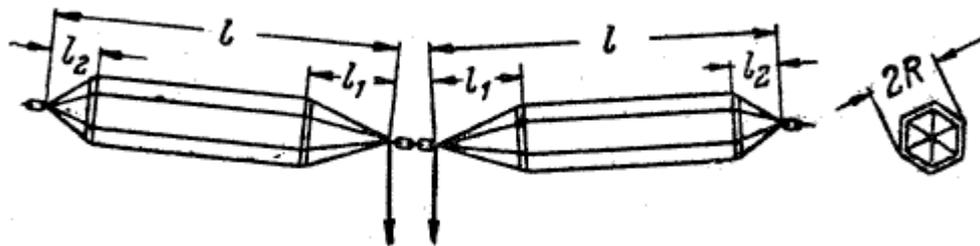
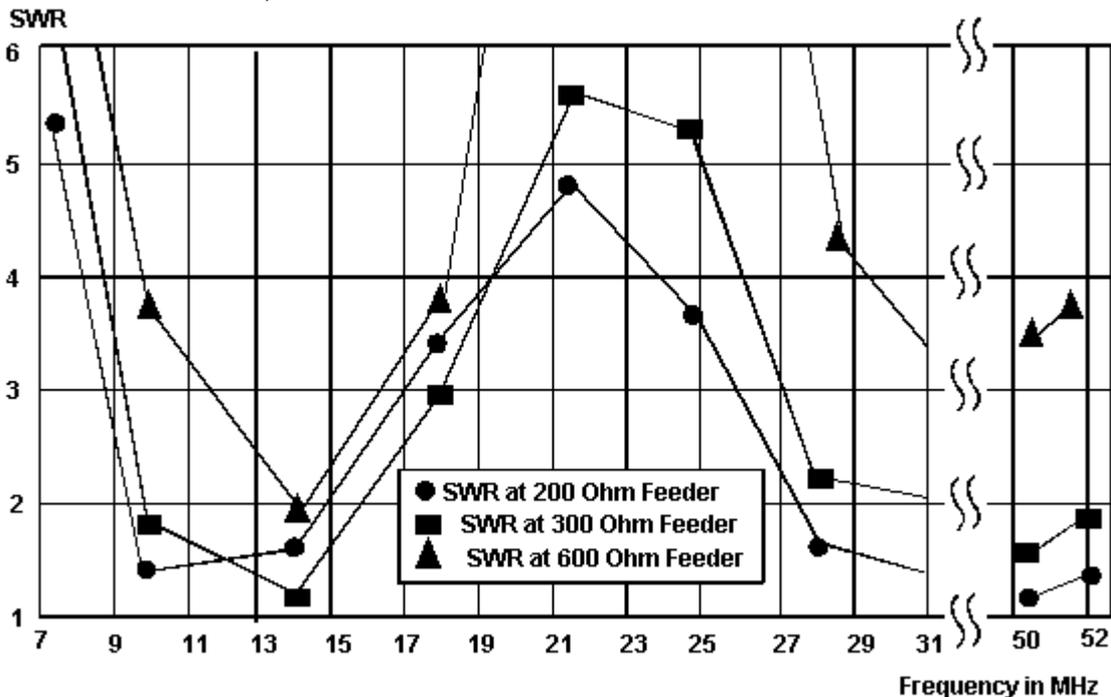
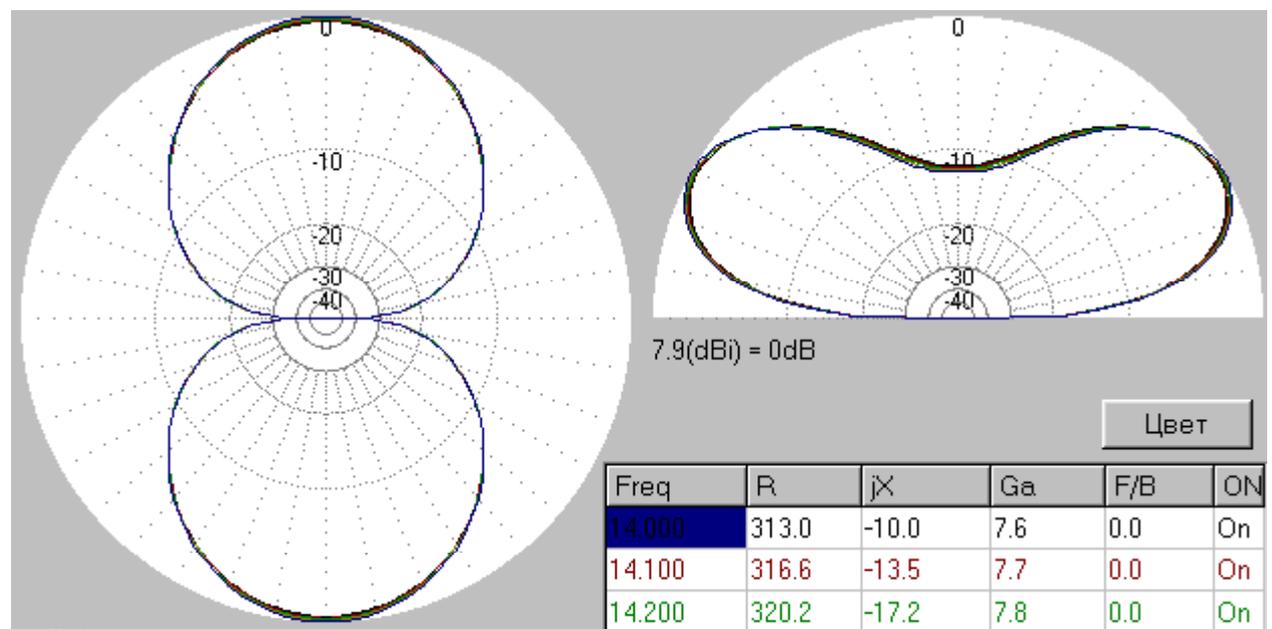
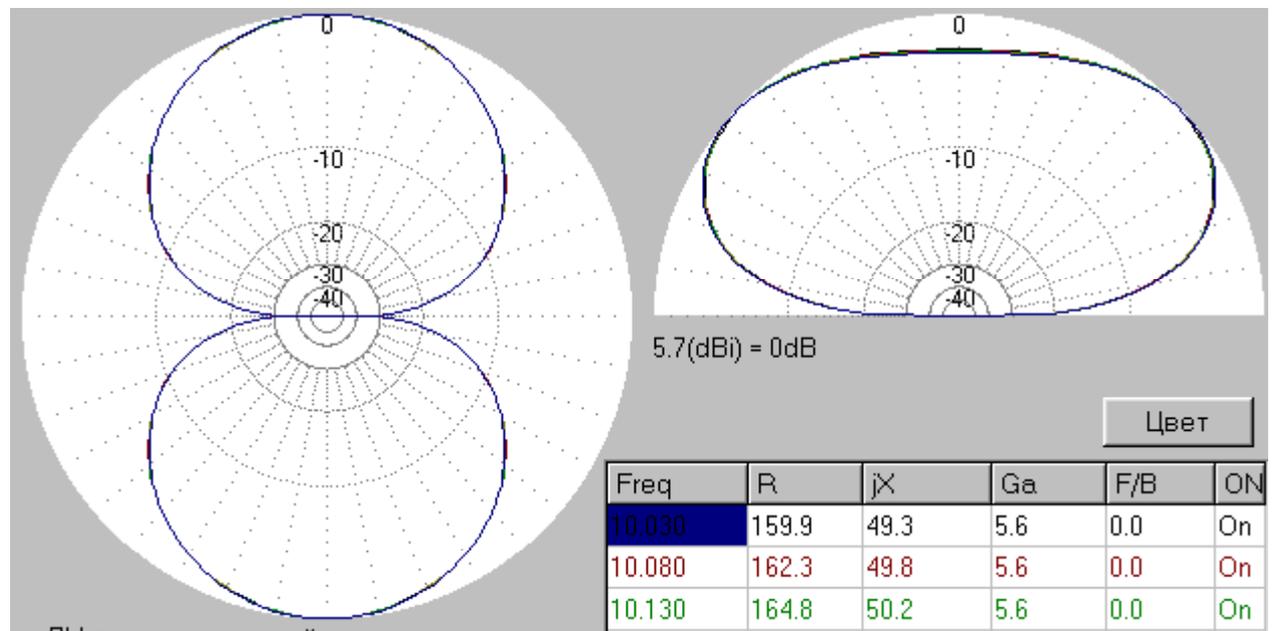
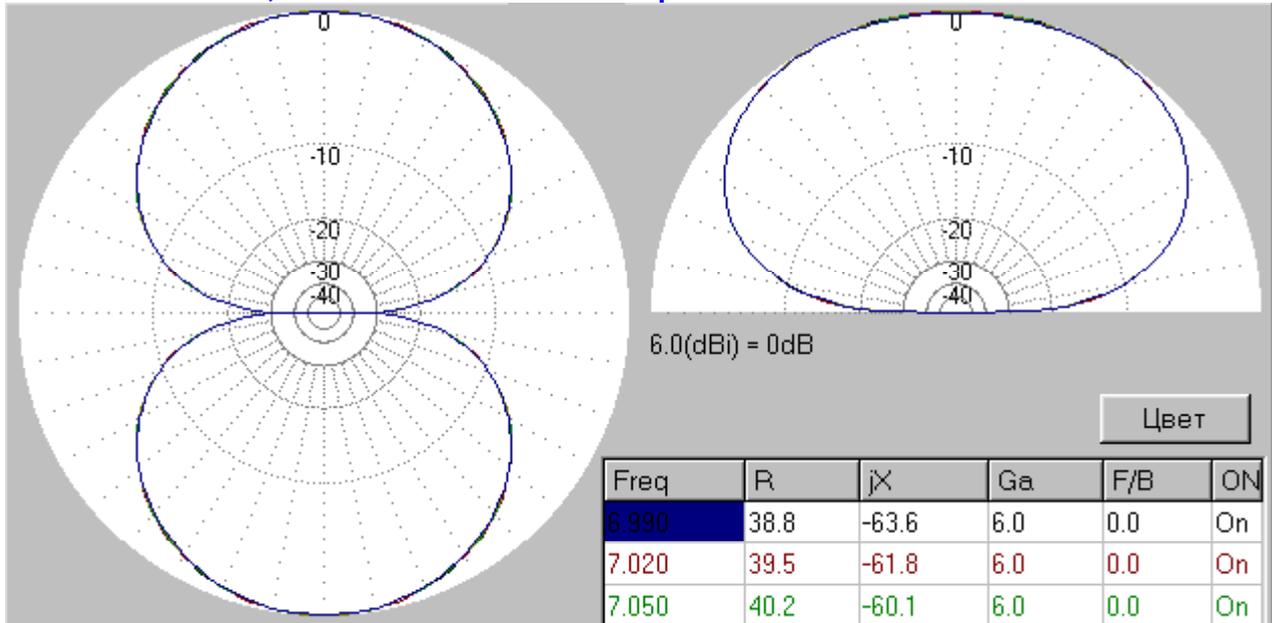


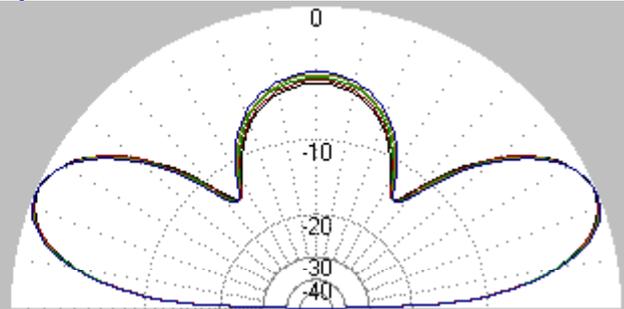
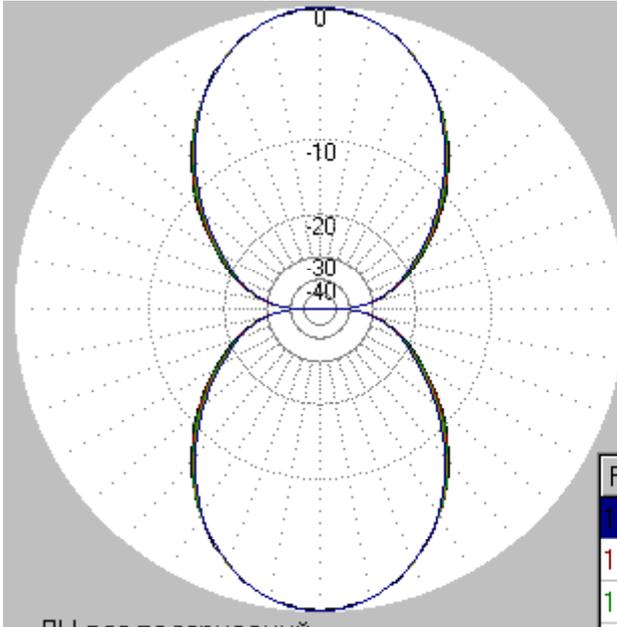
Figure 1

Calculations of input impedance and DD (for horizon radiation) of the dipole Nadenenko located at 10 meters above real ground with above mention dimensions (L= 8 meters, L1= 3 meters, L2= 1 meter, 2R= 1 meter, diameter of wires is 2 millimeters) are shown below. You can see, it is possible to use a 50-Ohm coaxial cable with a 1:4 transformer if restricted bands (30, 20, 10 and 6 meters) are used.

The data is obtained with help of a free antenna program MMANA (MININEC based). Left diagram is a section of the volumetric diagram directivity of plane X-Y at a zenith corner of the maximum radiation. The right diagram is section of the volumetric diagram directivity of plane X- Z. Also at the right down corner of the pictures is a table with antenna impedance.



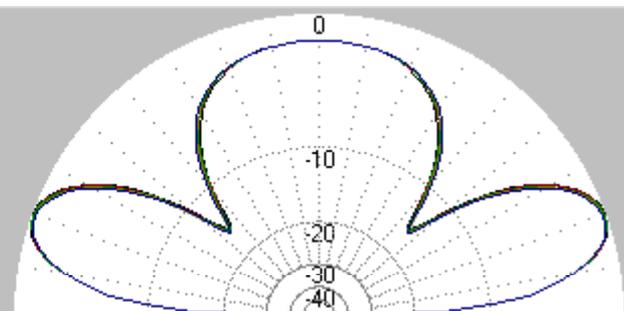
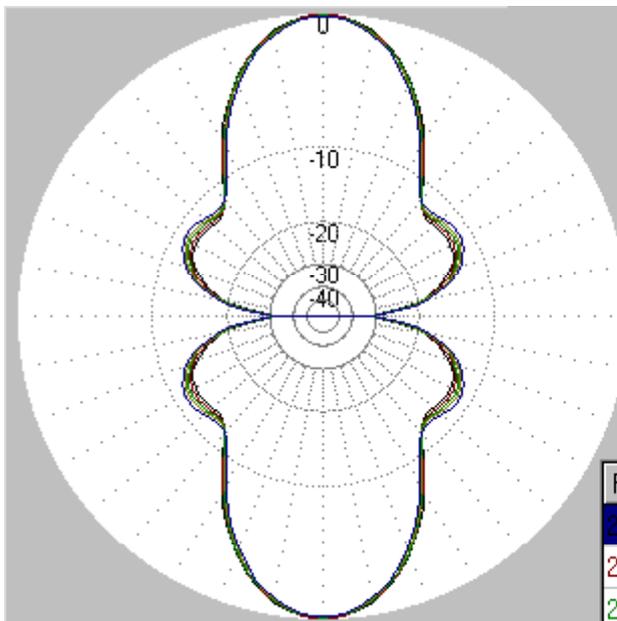




10.2(dBi) = 0dB

Цвет

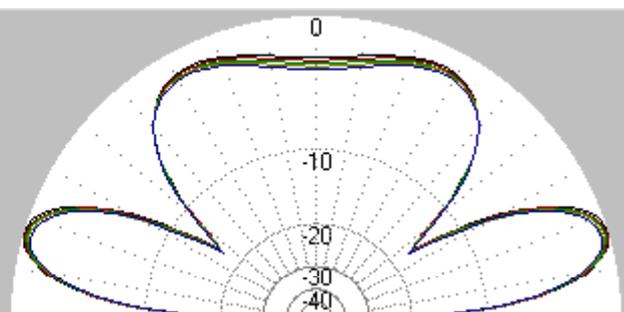
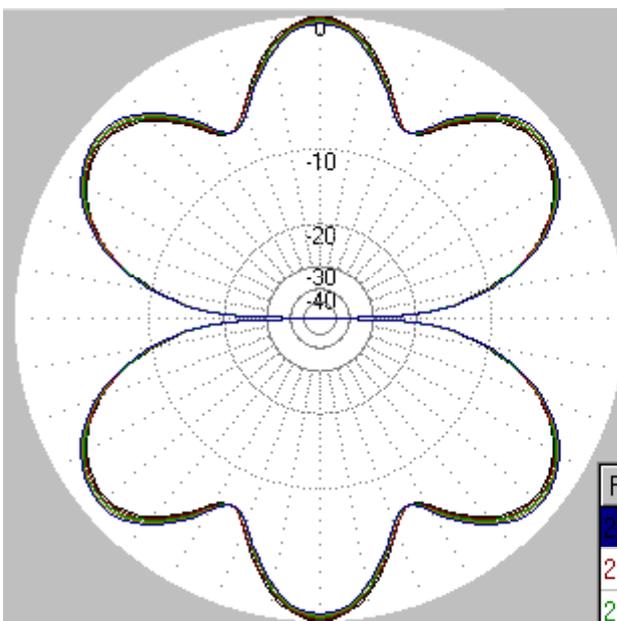
Freq	R	jX	Ga	F/B	ON
17.920	207.0	-260.7	10.1	0.0	On
18.020	197.5	-259.6	10.2	0.0	On
18.120	188.3	-257.9	10.2	0.0	On



9.9(dBi) = 0dB

Цвет

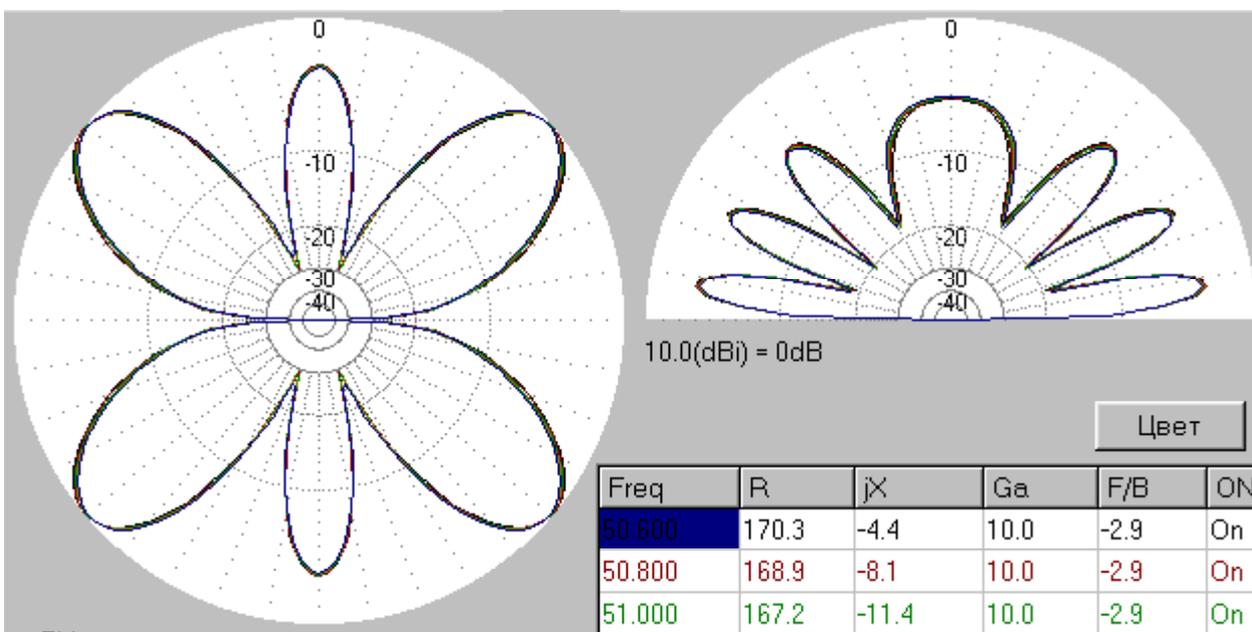
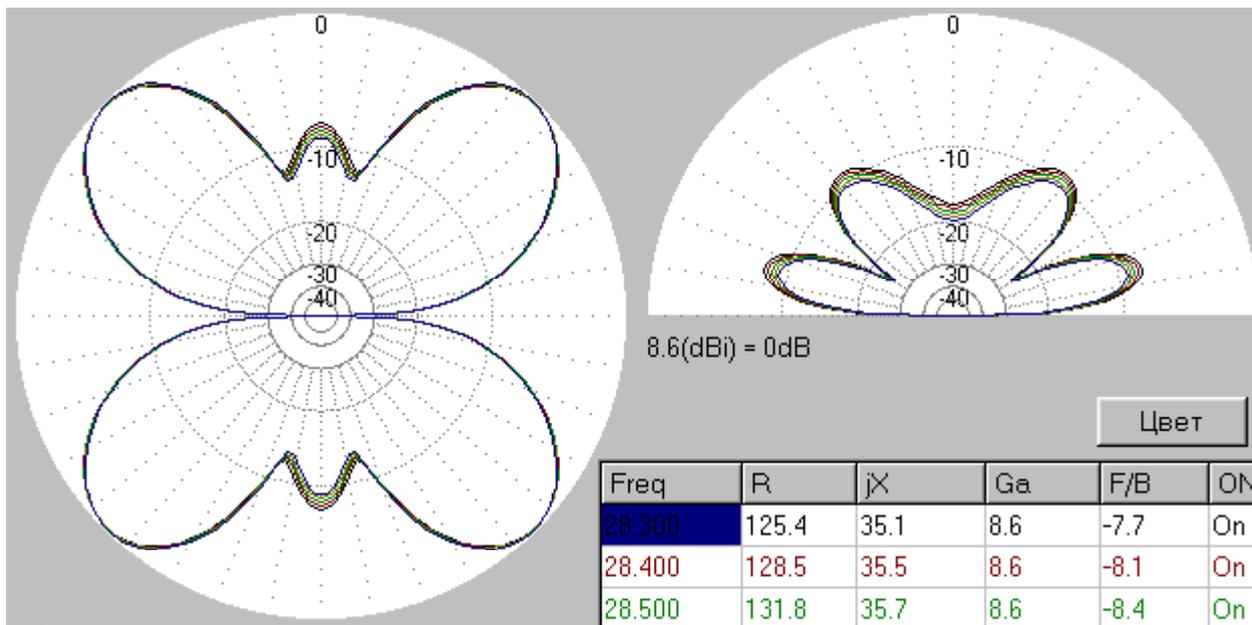
Freq	R	jX	Ga	F/B	ON
21.000	65.6	-147.5	9.9	0.0	On
21.100	64.2	-143.9	9.8	0.0	On
21.200	63.0	-140.4	9.8	0.0	On



7.5(dBi) = 0dB

Цвет

Freq	R	jX	Ga	F/B	ON
24.740	56.0	-37.3	7.5	0.0	On
24.840	56.7	-34.7	7.4	0.0	On
24.940	57.4	-32.1	7.3	0.0	On



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