

Antenna dimensions are depended on the placement and inductance of the inductor. However the inductance of the inductor is not critical for antenna operation. Most important thing is that the inductors have the same inductance. In my case the inductors (measured by me) have inductance 31.4- micro Henry. The inductance is influenced to the parameters of the antenna. The more it is inductance of the inductor the less length of the parts of the antenna and the less passband of the antenna.

Antenna was placed at the mast in 7- meters height. The mast was made from a fiberglass plastic. Antenna was made from stranded wire in plastic insulation. Antenna was fed through 50- Ohm coaxial cable. the antenna.

I have used RG 313 type. This cable was going along the mast and then going underground to my shack. Length of the cable was near 20- meter. Weather practically did not influence to the antenna.

Antenna was easy tuned to SWR 1:1 at both Bands. Antenna had bandpass near 200- kHz (at SWR 1.5:1) at the 20 meter Band and bandpass near 75- kHz (at SWR 1.5:1) at the 40 meter Band. At first step the antenna should be tuned at the 20- meter Band by symmetrical changing lengths of the parts A. Then antenna should be tuned at the 40- meter Band by symmetrical changing parts B. Changing the length of the parts B practically did not influenced to the operation at the 20- meter Band.

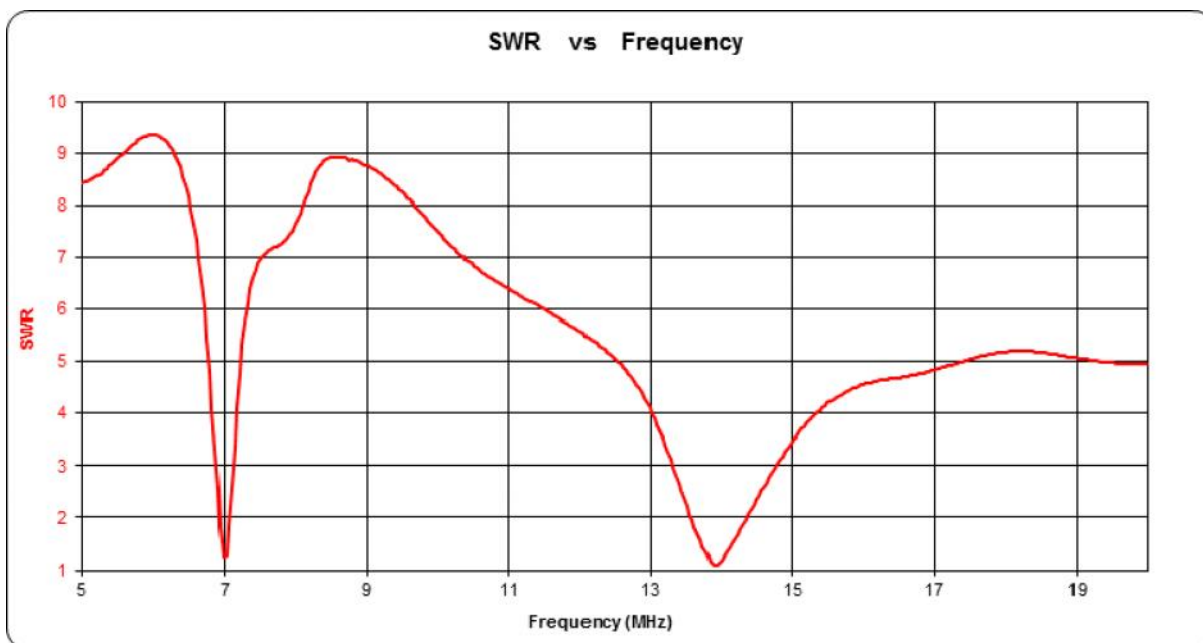


Figure 2 SWR of the Dipole Antenna for 40- and 20- meter Bands from 5 to 19.5- MHz

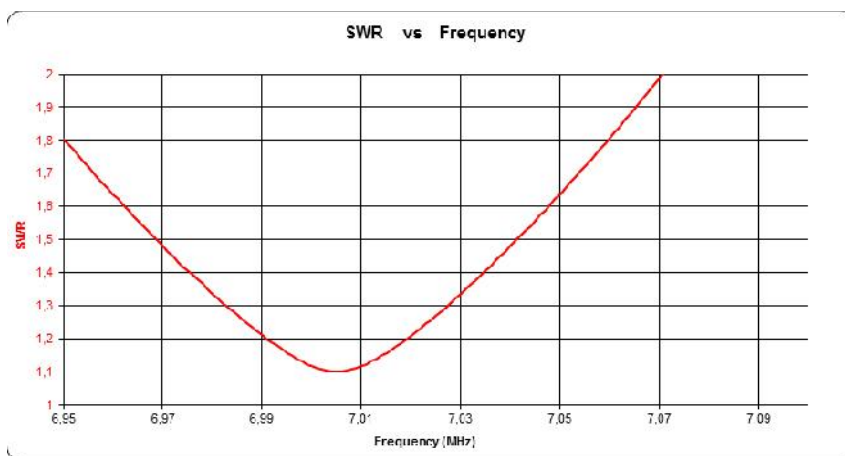


Figure 3 SWR of the Dipole Antenna for 40- and 20- meter Bands at the 40- meter Band

In my case changing length B on to 1- cm caused changing resonance frequency of the antenna up to 100- kHz at the 40- meter Band. **Figure 2** shows SWR of the antenna from 5 to 19.5- MHz. The plot was taken with VNA N2PK.

Figure 3 shows SWR of the antenna at the 40- meter Band. **Figure 4** shows SWR of the antenna at the 20- meter Band. SWR was taken at the end of the coaxial cable going from antenna. The program Zplots where the VNA is working has function to remove length of cable (going to antenna) from the antenna measurements.

Figure 5 shows SWR of the antenna from 5 to 19.5- MHz with turned on function “remove coaxial cable length.” As you can see the plot at the bands of the interest is practically identical to plot shown at **Figure 2**.

The MMANA file of the Dipole Antenna for 40- and 20- meter Bands may be loaded: http://www.antentop.org/019/dl1ba_dipole_019.htm The file was prepared by RW4HFN. Simulation the Dipole Antenna for 40- and 20- meter Bands in MMANA shows very close theoretical parameters of the antenna to practical obtained ones.

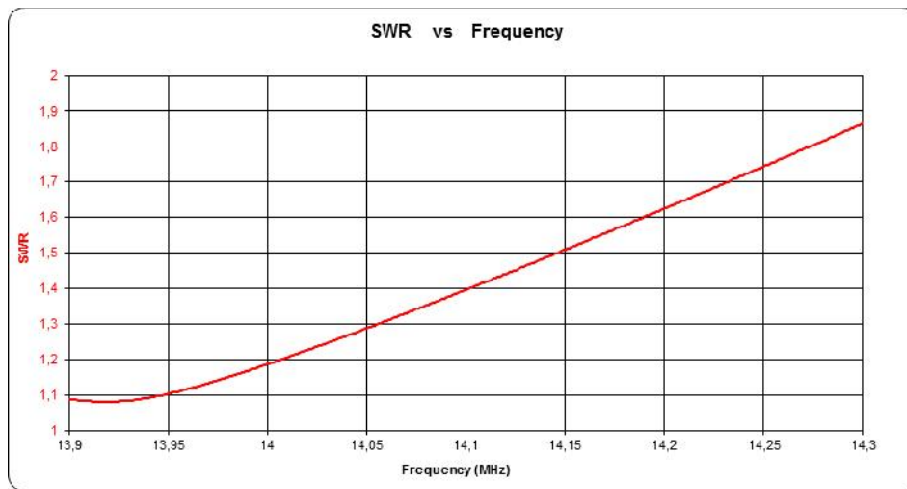


Figure 4 SWR of the Dipole Antenna for 40- and 20- meter Bands at the 20- meter Band

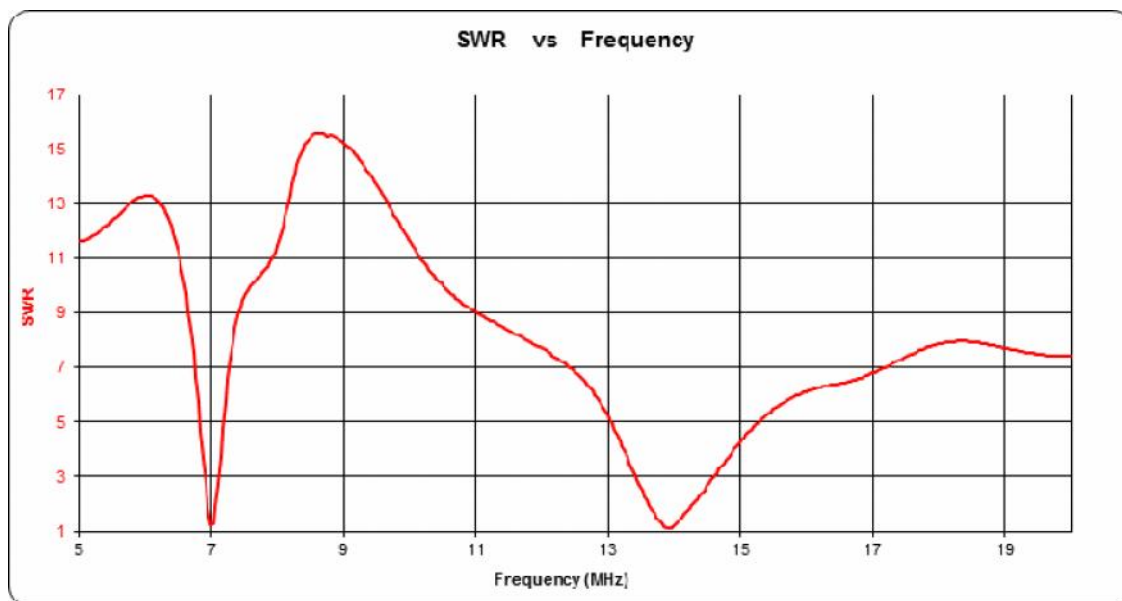


Figure 5 SWR of the Dipole Antenna for 40- and 20- meter Bands from 5 to 19.5- MHz with turned on function “remove coaxial cable length”