

OM3RKP

<http://www.om3rkp.cq.sk/>

WI-FI antenna (Constructions)



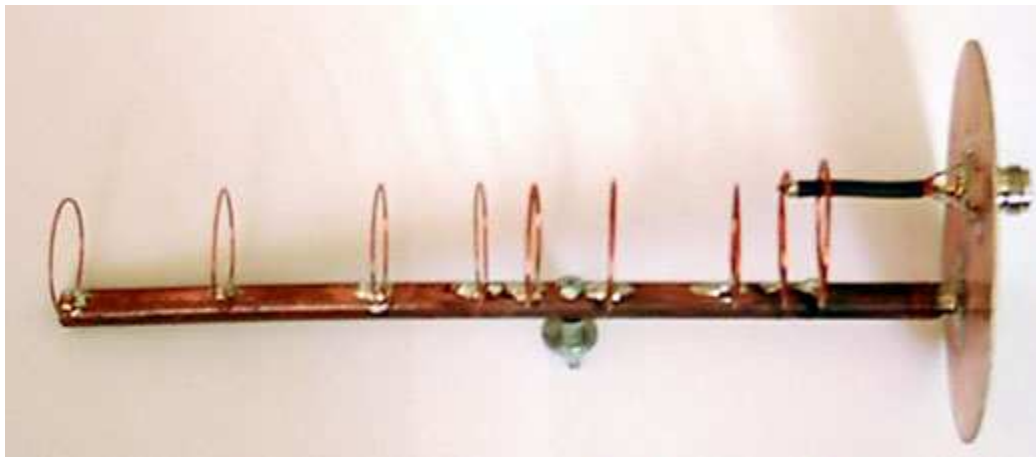
WI-FI band (2.45 GHz) is not so far from 2.3 GHz what is a radioamateur band 13 cm. An idea of G6KSN was the base how to build own WI-FI antenna.

I have compared three WI-FI antennas: original from AP, home made DL7KM (twin quad) and 10-element yagi loop. The last is the best. It's not a problem to copy signal from AP in distance 4.5 km!

The building is relative easy (easier than it looks). Things needed: PCB, N-type connector, piece of thin 50 ohm coax, some Cu wire with 1,5 mm diameter, Cu tube 8 – 12 mm, knife, soldering iron, etc.

An inspiration for building this antenna is an article

http://www.paramowifix.net/antenas/loop_uda_yagi/. This looks a little bit too long. I choose smaller version with 10 elements. Total length of mine antenna does not exceed 30 cm.



Here is an output from programm:

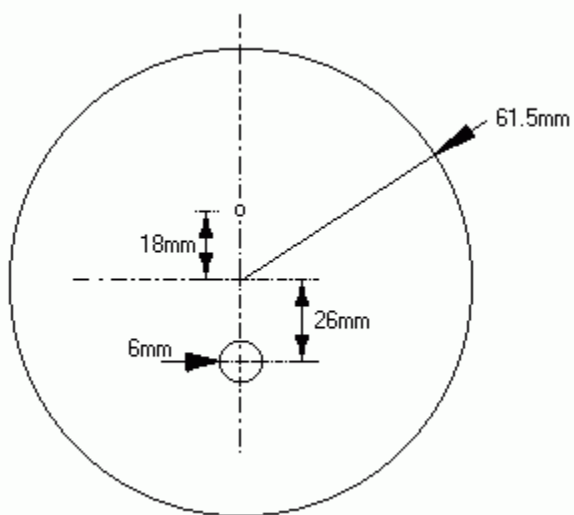
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c:\Zaloha\CB_Ham\LOOP_Y~1.EXE
Loop Yagi Design Program By G6KSN.

Label.           Circumference.      Cumulative Spacing.
Reflector 1      74 by 61 mm.       0 mm.
Reflector 2      135 mm.            42 mm.
Driven          123 mm.            55 mm.
Director 1       114 mm.            69 mm.
Director 2       114 mm.            81 mm.
Director 3       114 mm.            105 mm.
Director 4       114 mm.            129 mm.
Director 5       114 mm.            146 mm.
Director 6       114 mm.            177 mm.
Director 7       114 mm.            225 mm.
Director 8       114 mm.            272 mm.

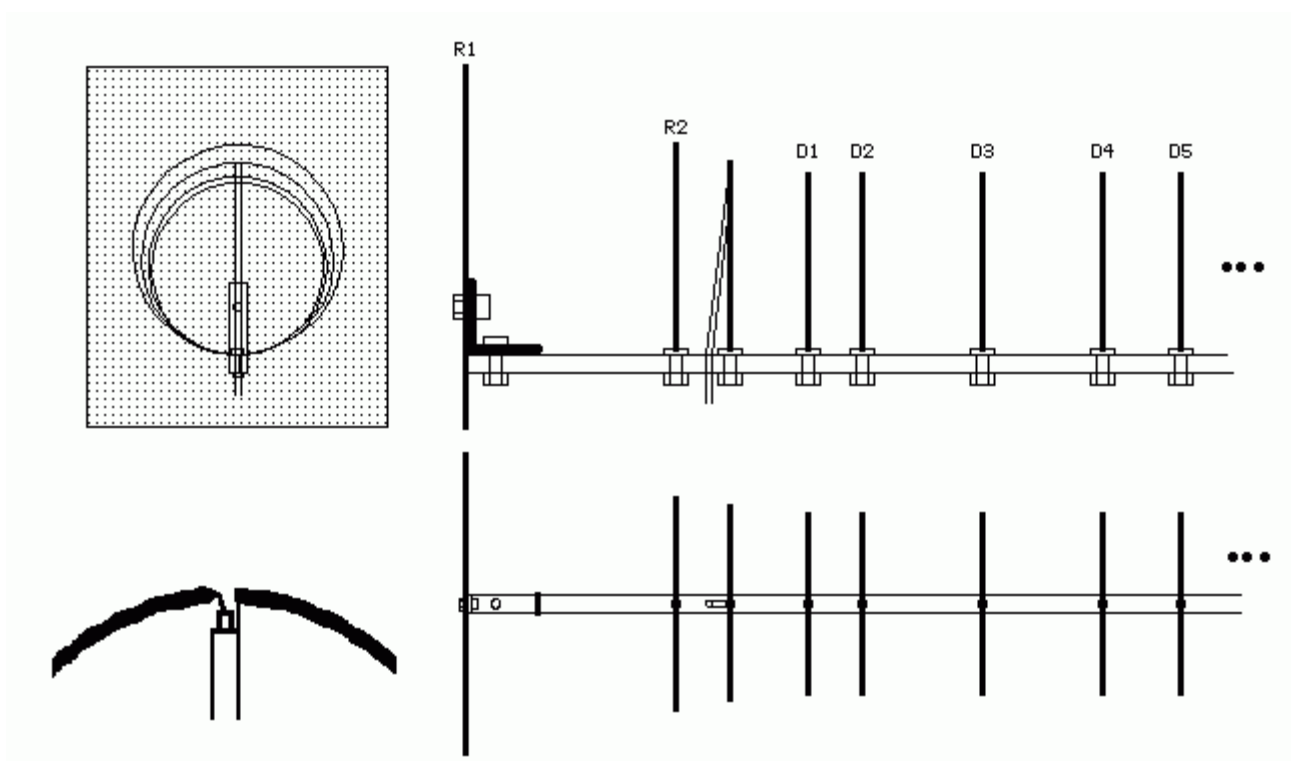
Do you require hard copy of these values (Y/N)      Frequency = 2445 MHz

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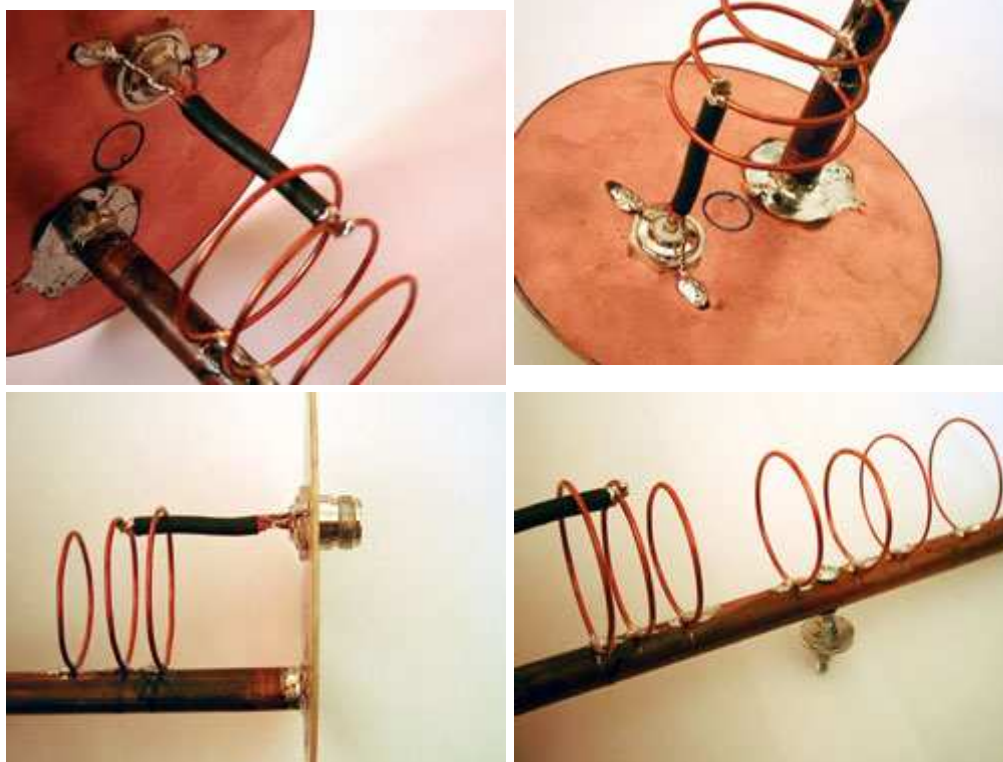
Reflector was made from a piece of PCB. Diameter of the ring is near the same like diameter of CD. Drill a hole for N-type connector. With a soldering iron connect to the reflector boom (Cu tube).

Make the marks on tube in the element positions. Elements are made from Cu wire. Each ring was made so: cut an exact length of Cu wire for element (for example 135 mm). Wind it on a tube with a little bit smaller diameter how the ring should have.



Hold the elements in a position and connect them to the boom with a soldering iron. The driven element is cutted in the half. There is connected a piece of coaxial cable (RG-58, semirigit, etc.). The other end is going to the N-type connector. Leads should be short as possible!

Mechanical construction:



A program Loop Yagi CALC You could obtain [.: HERE :.](#) Antenna was sucesfully tested and used on WI-FI band. But there is a premise that it should work good also on radioamateur bands. Be careful with a polarizations of signal, especially on WI-FI (horizontal, vertical, mix). Setting-up for best signal needs few minutes.