Simple All- Band HF- Antenna

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Dream of each of amateurs working from a hard for antenna installation conditions to have a small invisible antenna for all bands. I have tried to solve the dream. My all band antenna is something middle between T2FD and loaded Loop. It is possible to find lots about those antennas in the internet. **Figure 1** shows the design of my antenna.
Antenna load is 16 two- watts resistors on 72-k connected to bridge. The combine resistor has 32 – watts in dissipative power, it was enough to work with my 100-watts ICOM-756 transceiver. Transformer 1:9 was made accordingly to recommendation of G5IJ (**References 1,2**). Perimeter of the loop is 24 meters of wire in 1-mm (18-AWG). Top side of the loop was fixed at end of a fishing rod in length 8- meters. Low side was at 1.5-meters above the ground. The antenna has SWR low 1.2:1 and high 2.0:1 at 1.8- 50-MHz (without tuner).

The practice has confirmed the theory: that the antenna has good amplification only if the perimeter more the used wavelength. So, the antenna could work at 10- 50- MHz with good efficiency. However, the antenna has amplification – 12 dBi at 7-MHz, - 20 dBi at 3.5- MHz and – 40-dBi at 1.8-MHz. At those bands the antenna, however, very good works for receiving. For example, at 1.8-MHz it was noise at level 2-3 S-points with the antenna (and two switch on preamplifiers) but with good receiving of amateurs' stations.

Conclusion: The antenna could be used for receiving at 1.8- 7-MHz and for receiving/transmitting at 10-50-MHz. Antenna with perimeter 30-40 meters could be used atall amateurs HF-Bands.

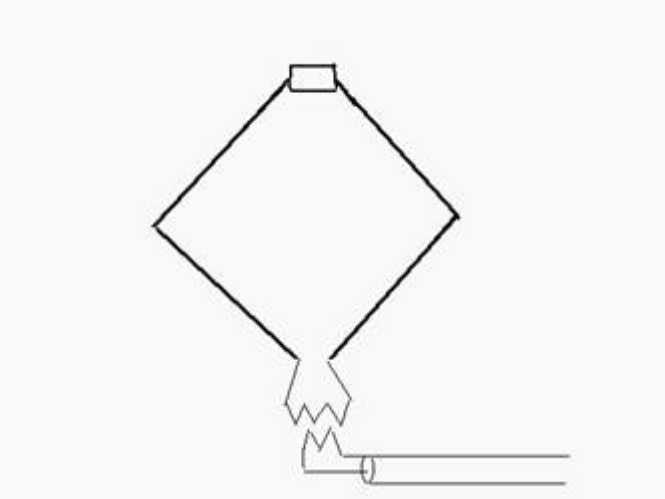

Figure 1 Design of the Simple All-Band HF-Antenna

For the load of the antenna a usual Dummy Load on 50-Ohm that is switched to the antenna through HF-transformer 9:1 may be used. The load transformer may have ferrite ring in twice less sizes compare to antenna feeding transformer.

Reference 1: http://www.qsl.net/gw6hmj/antenna.htm
Reference 2:
http://www.gairney.plus.com/Radio/G5IJ_aerial.htm

More about loaded Loop Antenna:
1: Antennas for Radio Amateurs: by Igor Grigorov, RK3ZK:
http://www.antentop.org/library/shelf_hamant.htm