

# Build a W3DZZ Antenna by IW5EDI

The purpose of this construction is to enable the realization of an HF antenna called W3DZZ with minimal equipment and low cost.

It allows traffic on the bands 3.5 / 7/14/21 and 28MHz.  
the diagram

Constitution of the antenna

- A central dipole cut to operate on the tape 7Mhz.
- 2 “traps” or oscillating circuits tuned 7.050Mhz.
- 2 strands terminals for multiband operation.

This antenna has at its center an impedance around 75 ohms.

## Equipment

- Two insulators (for ends)
- A waterproof plastic box (square, Legrand or otherwise) for connection to the coax.
- 2 capacitors according 68pF/3000v 56pF/3000v or supply. (Tht old TV)
- The enamelled copper wire (single strand of electric 2.5 mm <sup>2</sup> cross section) for radiating wires.
- The enamelled copper wire (1.5 mm <sup>2</sup> electrical) for the design of the coils.
- 75ohm coaxial cable (cable TV) for the descent to the issuer.

## The role of traps

The role of circuits called “Traps” is as follows:

- on 7Mhz, the core behaves as a classical dipole.
- on 3.5 MHz, the traps are far from their resonance frequency and artificially increases the length of the antenna, which still resonates half wave ..
- on 14, 21 and 28MHz, the entire antenna vibrates respectively 3, 5, and 7 half-waves.

## Traps

It will carry two traps centered 7.050Mhz with rigid wire 1.5 mm <sup>2</sup>,  
Using the 56pF/3000v capacity value of the inductor is 9.10 uH  
For against this value increases to 7.495 uH for a capacity of 68PF.

You can find capacitors from 56 or 68pF/3000v from old TVs.

So I made the tables below for you to avoid repeating all the calculations.

	value	Coil diameter	Turns
9,10μH	56pF	2,0cms	25,59
	56pF	2,5cms	22,89
	56pF	3,0cms	20,89
	56pF	4,0cms	18,09
	56pF	5,0cms	16,18
	56pF	6,0cms	14,77
	value	Coil diameter	Turns
7,495μH	68pF	2,0cms	23,22
	68pF	2,5cms	20,77
	68pF	3,0cms	18,96
	68pF	4,0cms	16,42
	68pF	5,0cms	14,69
	68pF	6,0cms	13,41

\* The outer diameter of the coil (PVC tubing) is the inner diameter of the self

I gave several coil diameters, as it is possible to make them, are:

- On the tube electrician PVC gray color
- Or pipe plastic water pipe. (thicker and heavier)

Do not forget to set / / of the coil and the capacitor to overdo it in a resin.

The wire may be wound with adjacent turns or very slightly apart. Take the capacitor advantageously placed inside the PVC tubing.

The tube length can vary depending on the number of turns.

example:

You have to make a choke 22.89 turns with wire 1,5 mm <sup>2</sup>

The coil will be at least of a length:

$$22.89 \times 1.5 = 34.33 \text{ mms}$$

but nothing prevents you to spread out on the wire 40 or 50mms

Make sure that once made your TRAP rings, using the Grid-Dip around 7.050Mhz.