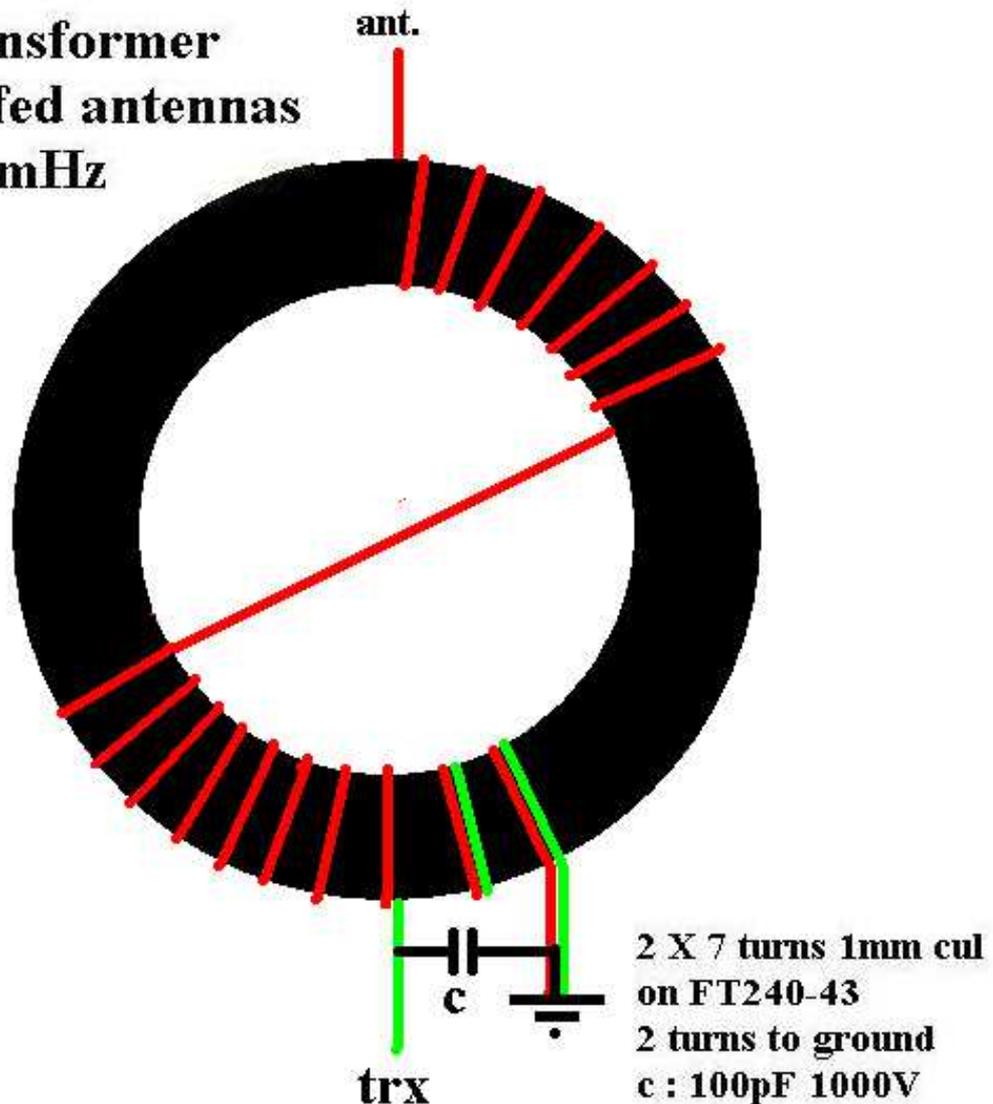


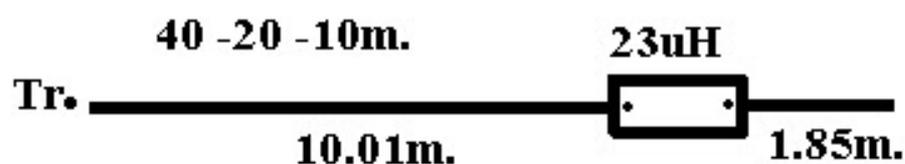
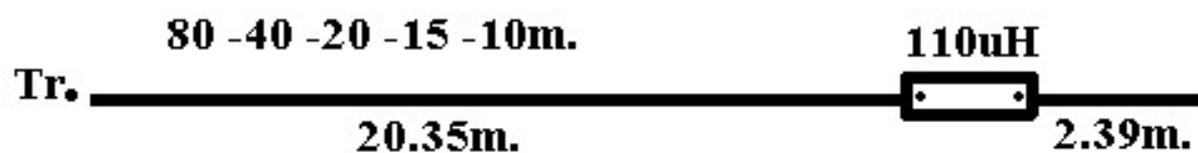
Multiband end fed antennas 3.5 - 30mHz

**1:49 transformer
for end fed antennas
3.5 - 30 mHz**



This is a transformer for end fed full and half wave antennas without radials, designed by PA0EJH. . For max. performance the 2 turns to ground should be twisted firmly. The capacitor gives a better match on 10m.and both windings start at the ground side of the coil .The 3 band antenna has a length of 10.01m. followed by a coil of about 23 uH (80 turns 1mm enamel wire on a 19mm pvc tube) and a endpiece of 1.85m , offering you a perfect vertical or horizontal antenna for fieldwork at 40 -20 and 10m. There is also a 5 band version with 20.35m wire followed by a 110uH coil (about 260 turns 1 mm cul on a 19mm pvc tube) and a 2.39m. endpiece. This antenna works on 80 - 40 - 20 -15 and 10m.without radials and a verry low swr.

This is in fact a 100 Watt version of the Par Electronics HF endfedz multiband end fed.



**110uH coil : 260 turns 1mm. cul. 23uH coil : 80 turns
1mm. cul close wound on a 19mm pvc tube.
start tuning the long wire on the high bands.**

20m. end fed halfwave antenna

Working portable demands an easy setup of your antenna. The antenna also has to give enough punch at a low radiation angle without the need of radials.

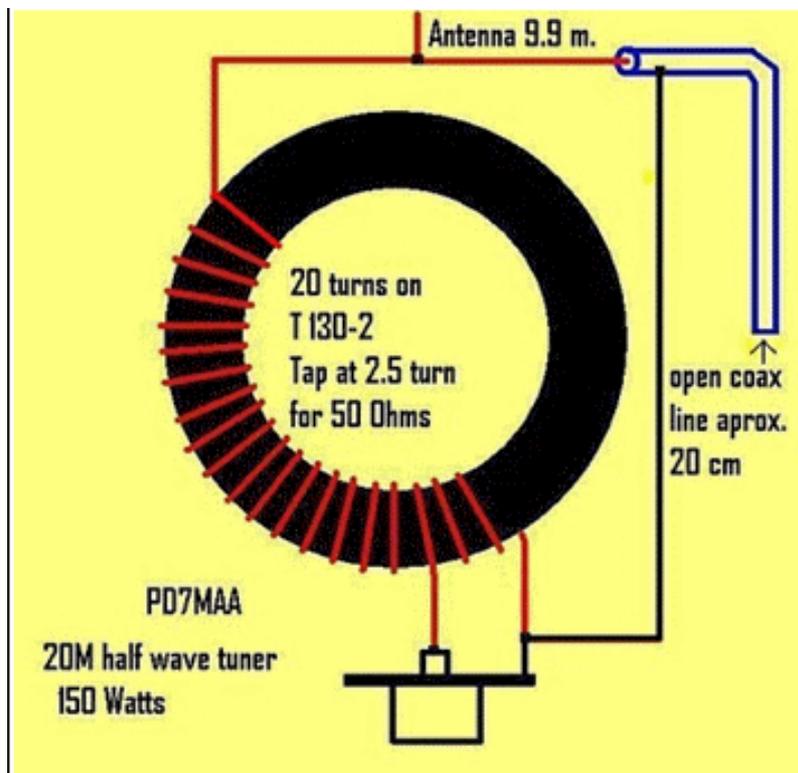
The vertical end fed half wave antenna is my choice for it's easy to employ and it's a perfect DX antenna . This antenna is grounded thus giving less static noise to your receiver.

A 20m. version is about 10 m. long and has approx. 3000 Ohms at the feedpoint. So we need a simple tuner to reduce this to 50 Ohm .

Put 20 turns (covers half of the toroid) of 1 - 1.2 mm enamel wire on a T130-2 toroid with a tap at 3 turns from the ground .The first picture shows the first test setup with a 2.5 turn tap.

You also need about 25 cm of thin Teflon coax (RG 178 b/u) that will act after tuning as a high voltage capacitor of about 22 pF.

The pictures explain the simple construction. The cabinet is a PVC type G302 made by Velleman.





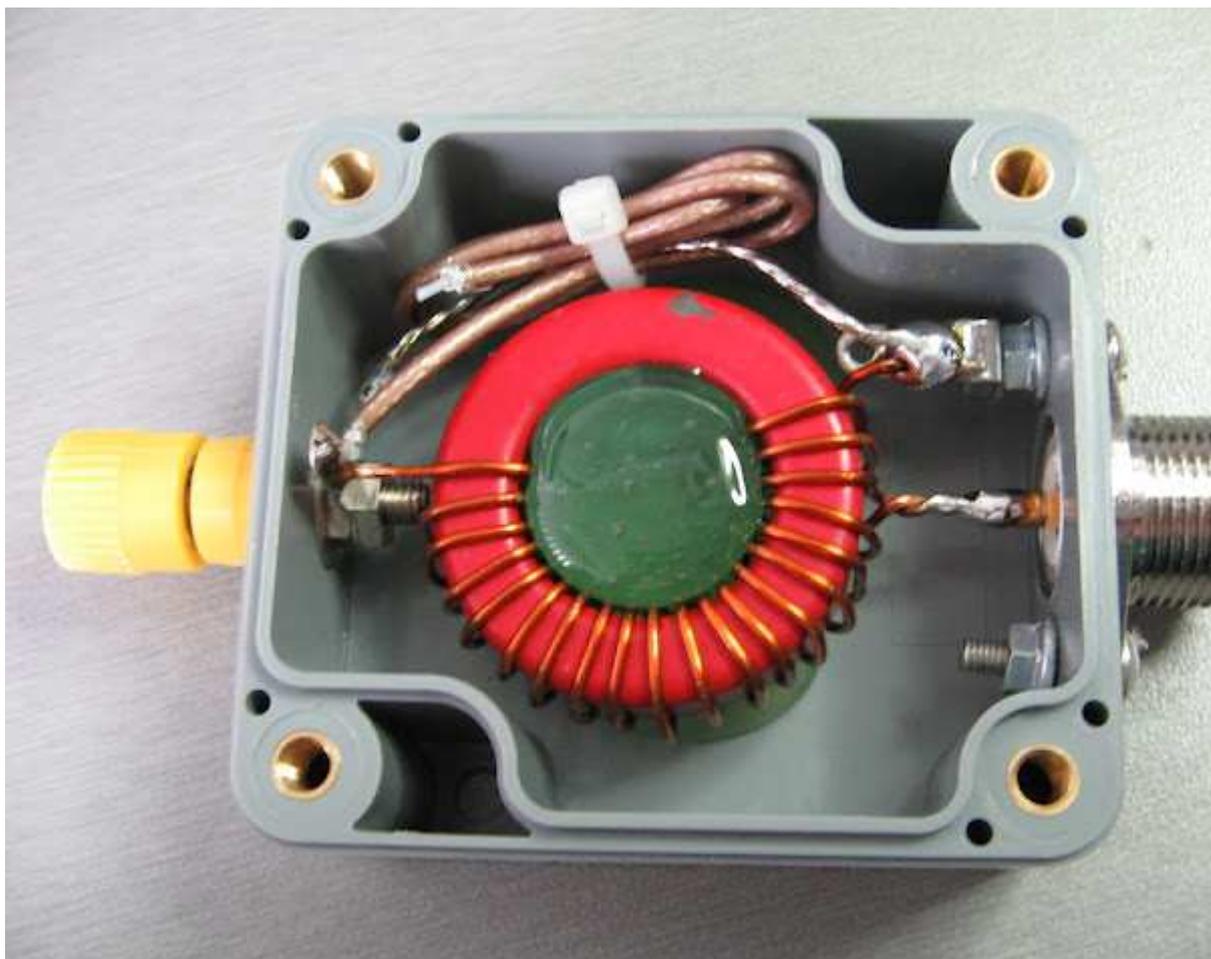
TWISTED TAP FOR MORE STABILLETY



NOTE THE GROUNDSTRIP



ADDING THE CAPACITOR/COAX



HOT GLUE FIXATION

Tuning : The trick to tune this transformer is to find the working frequency first by tuning the capacitor. Then we look for the the 50 Ohm point on the coil . Connect a 3300 Ohm resistor from the top of the coil to the ground of the antenna plug.

Adjust the length of the open coax line until you reach the lowest VSWR in the centre of the band with an analyser. The coax will be about 23 cm in total resulting in 22pF .

Now remove the resistor and connect the antenna wire of aprox. 10 m. PVC coated copper wire. Tune the antenna for best VSWR by reducing it's length carefully. My antenna is 9.9m. long and is mounted on a 12.5 m. [fishing pole](#). A near 1:1 VSWR on 14.200 MHz can always be achieved ! Before tuning , fix the toroid with some hot glue and wait fore it to cool off. Beware of the high voltage at the antenna feedpoint , this can rise up to almost 500V at 100 Watts.

My first DX contact with a vertical half wave end fed antenna was with VK6MV in SSB using the long path, over the north and south pole, with a 5-5 report.

I was also able to work Japan, Taiwan, Thailand, India, Indonesia, South-Africa, The Falklands ands. in SSB with good reports.