

BALUN 4:1

The page describes a Windom antenna with a 4:1 homebrew transformer. The feed-point of this type of antennas (off center) has an impedance of about 300 Ohms. With a 4:1 Balun transformer is possible to feed easily by using a coaxial cable of 75 Ohms ($300/4=75$), like RG59 or RG11. In practice, under this condition we have an SWR ratio of 1:1,5, but that is no problem if your transceiver has an internal Antenna Tuner. The SWR 1:1,5 it can be easily minimized by using the antenna tuner.

The antenna works on all bands between 3.5 - 28 MHz including WARC bands other than 10.1 MHz. The accepted power with this balun is 300 W and the SWR is quite low, not more than 2:1 at the band edges. FIG. 2 shows the Balun transformer.

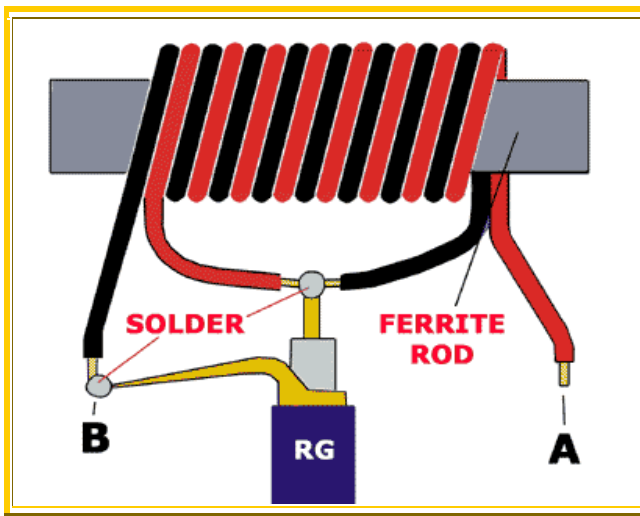


FIG.2

One or two ferrite rods is necessary for the Balun, depending on output Power of your transmitter. The wire is a simple electrical-wire 1 - 1,5 mm². (Double "Red-Black" wire for LoudSpeakers)

9-10 turns on ferrite rod is enough but keep in mind before winding: "cut" the two cables (red & black on my picture above) with an equal length.

The "B" point of balun is being connected with "L1" part of antenna and the "A" point with "L2" (see FIG.1).

This aerial can be manufactured in two versions:

1) Full size with an overall length (L) of 41 m. In this case the "L1" is 27.5 m and the "L2" is 13.5 m.

2) Half size with an overall length of 20.5 meters. L1= 13.75 & L2 = 6.75 m

ATTENTION: the small version works only for 10, 20 & 40 meter Bands.

Actually, this antenna is compromise but in practice works very well ! On the other hand is a simple-wire multiband antenna, it can be manufactured very easily from anyone and that is a great advantage. I have on my QTH the small version for a couple of years and the results are very good. On 40 m band the antenna is about -6 Db (1 S) lower of a full size dipole but in practice it has the same behavior on locals and DX stations. On 20 meter Band the antenna is excellent. The multi lobe radiation pattern of antennas giving excellent results and its much - much better than a dipole. I have thousands of QSOs on 20 m band by using this antenna and almost 4.000 QSOs with State-side stations on CW, just by using an output power of about 150 Watts. The behavior of this antenna on 10 m. Band is a "mystery" for me! Some times is excellent with DX stations but some other times its like a "Dummy load"! Probably, because the antenna is two-lambda has a very complicated radiation pattern on this band, with several "shadows" on transmission lobes.