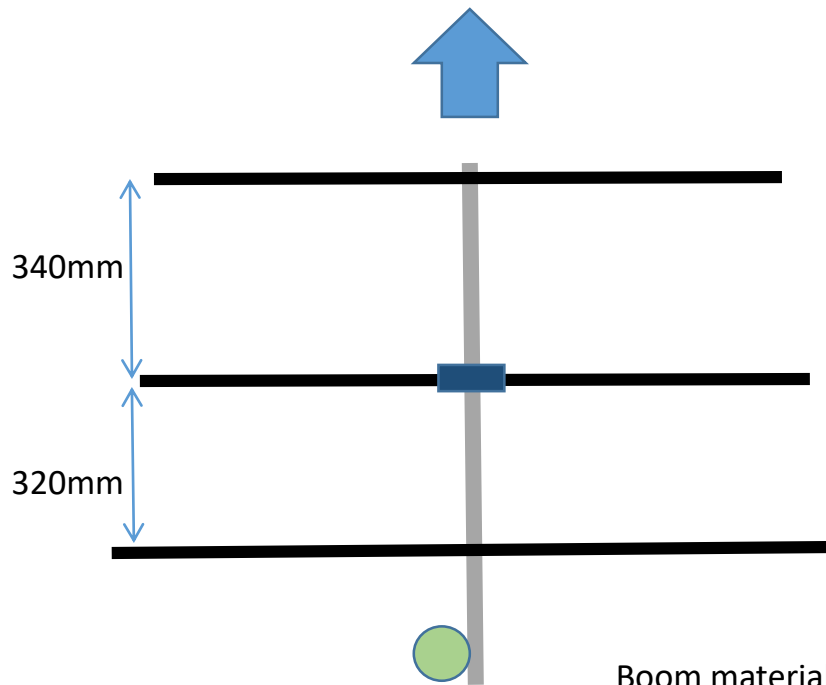


3-el Yagi for 2m band

This antenna is good for portable use.
It can also be used to extend the range of hand held radios.
For a new ham this can be an introduction to Yagi antennas.

V1.2

Dimensions



All elements are isolated from the boom with Stauff clamps.
Element material is dia 8mm alu tube.
The lengths are:

908 mm director

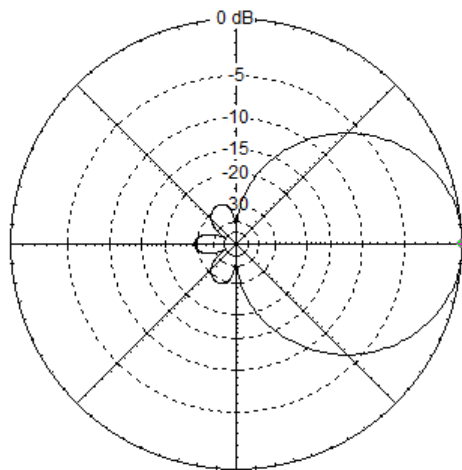
944 mm driven element

1024 mm reflector

Boom material is 15x15mm alu tube, 1000mm long

Horizontal pattern and SWR

Total Field



EZNEC+

145 MHz

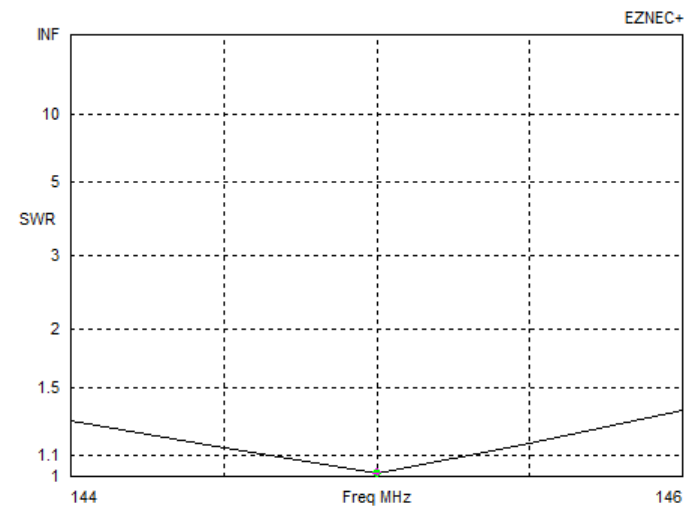
Azimuth Plot

Elevation Angle 0.0 deg.
Outer Ring 8.16 dBi

Cursor Az

Gain 0.0 deg.
8.16 dBi
0.0 dBmax

Slice Max Gain 8.16 dBi @ Az Angle = 0.0 deg.
Front/Back 29.02 dB
Beamwidth 63.0 deg.; -3dB @ 328.5, 31.5 deg.
Sidelobe Gain -20.37 dBi @ Az Angle = 115.0 deg.
Front/Sidelobe 28.53 dB



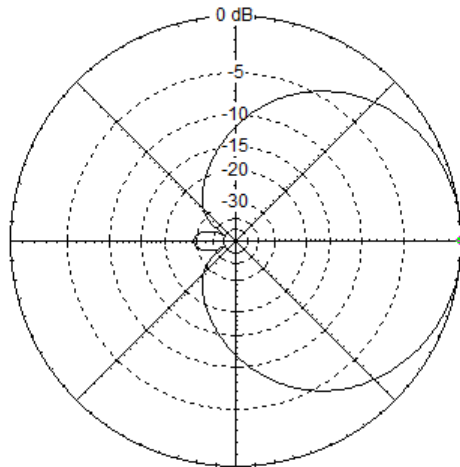
Freq 145 MHz
SWR 1.013
Z 49.65 at 0.65 deg.
= 49.64 + j 0.5624 ohms
Ref Coeff 0.006679 at 122.0 deg.
= -0.00354 + j 0.005664
Ret Loss 43.5 dB

Source # 1
Z0 50 ohms

Vertical pattern

Total Field

EZNEC+



145 MHz

Elevation Plot
Azimuth Angle 0.0 deg.
Outer Ring 8.16 dBi

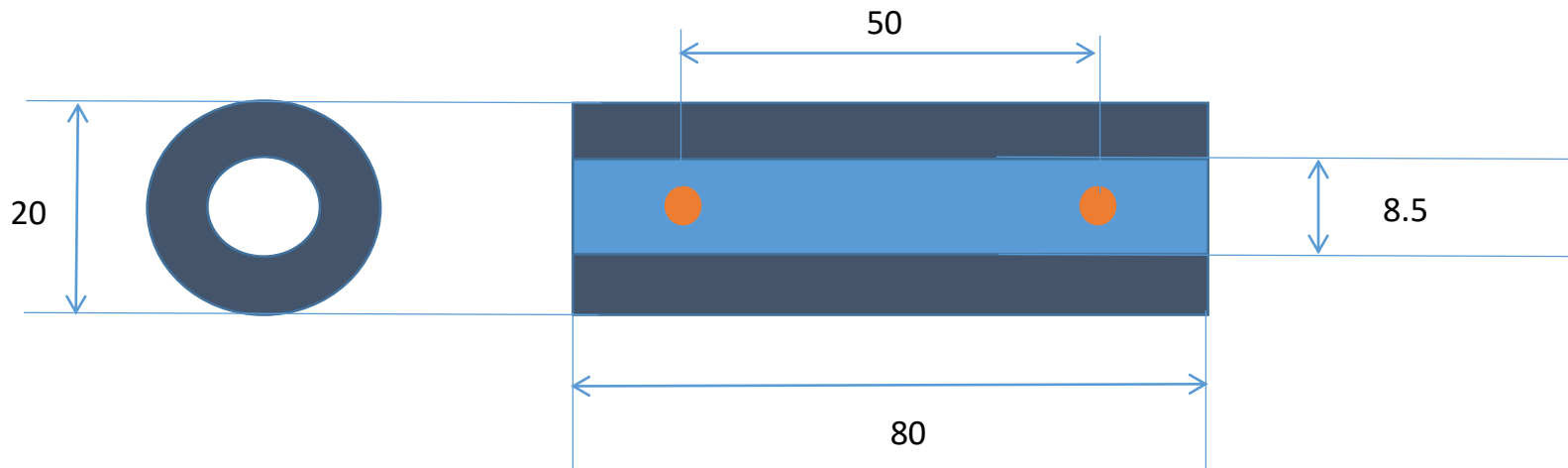
Cursor Elev 0.0 deg.
Gain 8.16 dBi
0.0 dBmax

Slice Max Gain 8.16 dBi @ Elev Angle = 0.0 deg.
Front/Back 29.02 dB
Beamwidth 99.2 deg.; -3dB @ 310.4, 49.6 deg.
Sidelobe Gain -20.86 dBi @ Elev Angle = 180.0 deg.
Front/Sidelobe 29.02 dB

Part list

- Reflector: dia 8mm alu tube 1024mm long
- Director: dia 8mm alu tube 908mm long
- Driven: 2 pcs dia 8mm alu tube 462mm long
- Boom: Square alu tube 15x15x1mm 1000mm long
- POM plastic dia 20mm 80mm long
- 2 pcs Stauff clamp for dia 8mm
- 1 pc Stauff clamp for dia 20mm
- Allen screws: 4pcs M6x 40, 2pcs M6x 50 for Stauff clamps
- Sheet metal crews: 2pcs 3.5x16mm for cable connection
- Ferrite for current balun: $|Z| > 250$ ohm
- Mast to boom clamp: as needed, installed behind the reflector

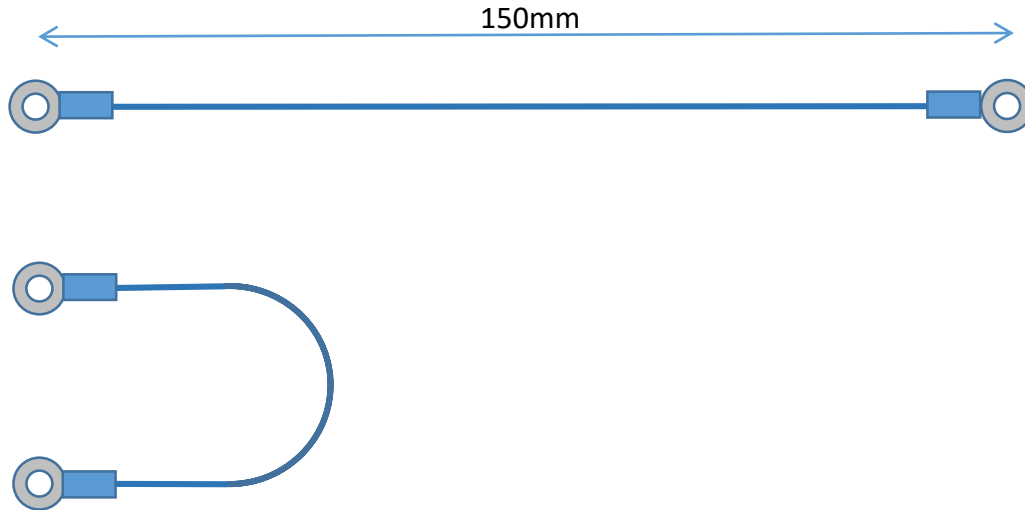
Center isolator of the driven element



Material is dia 20mm POM, 80mm long
Drill dia 8.5mm hole through it, best done on a lathe
3.5mm holes 15mm from each end for cable screws

Drill dia 2mm holes to both driven element parts, 447 mm from the tip, for the cable screws

Hairpin



- Hairpin is made as follows:
 - Copper terminal lugs are soldered to both ends of dia 2mm copper wire.
 - Distance from terminal hole center to center is 150mm
 - The wire is rounded to U-form where distance between terminal centers is 50mm
 - Inductance of the hairpin is 67nH

3-el in vertical position



Director and Driven Element



Hairpin towards director, the front

