

## Reflected W Beam

model of a reflected W beam for 40/30/20/17m  
 feeding from the bottom via low impedance line  
 lengths for elements and isolators:

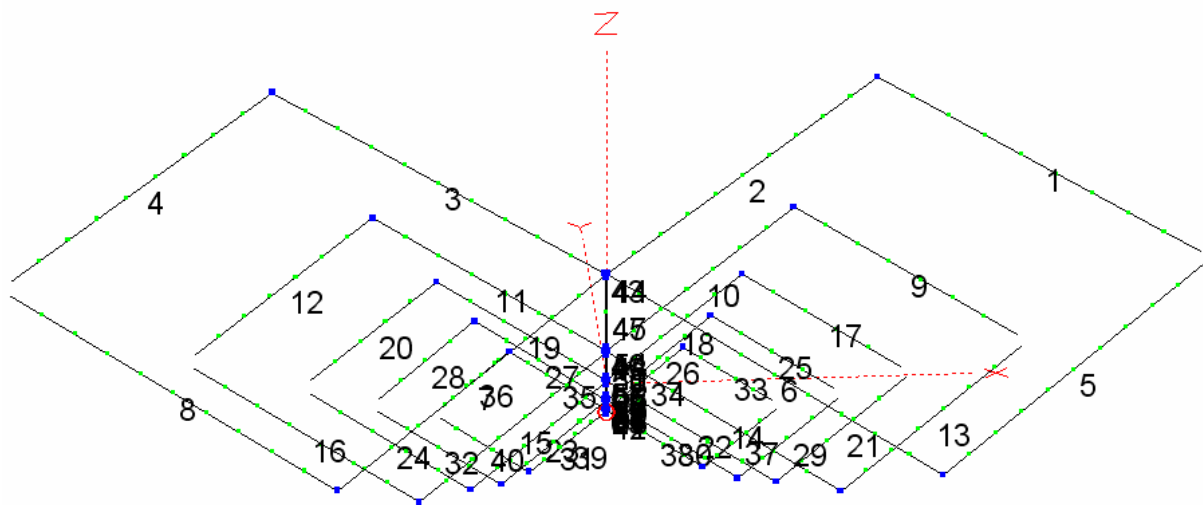
band	half driven elem. (m)	half reflector (m)	isolator dr.ele. (cm)	isol. refl. (cm)
40	10,50	11,34	20	15
30	7,54	7,85	19	14
20	5,48	5,65	19	14
17	4,33	4,36	16	12
12	3,15	3,19	16	12

distances between the wire elements:

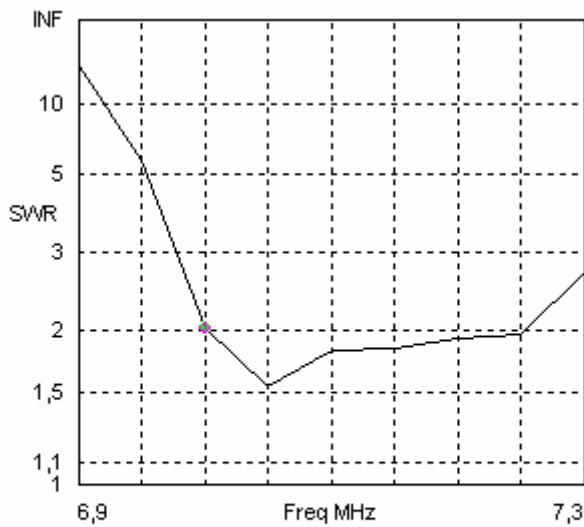
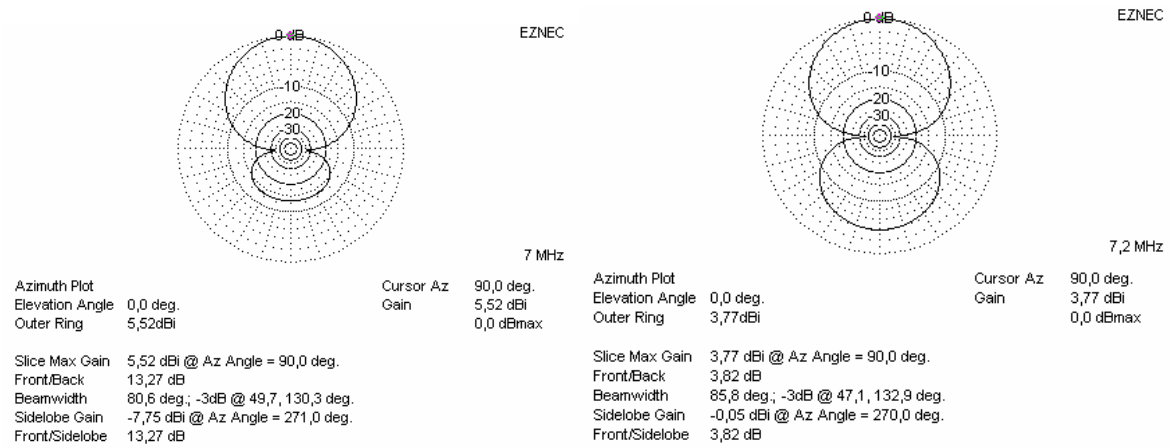
40/30m	100cm
30/20m	30cm
20/17m	20cm
17/12m	10cm

wires noninsulated copper 1,5 cm<sup>2</sup> diameter  
 all results in free space, no losses

EZNEC

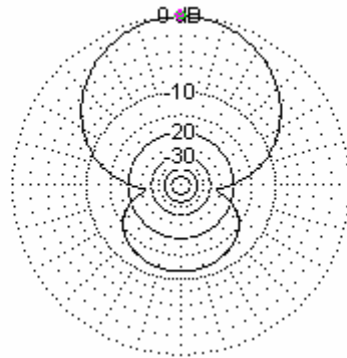


# 7 MHz



Freq 7 MHz                      Source # 1  
 SWR 2,02                         Z0 50 ohms  
 Z 25,59 + j 7,922 ohms  
 Refl Coeff 0,3377 at 156,04 deg.

10,1 MHz



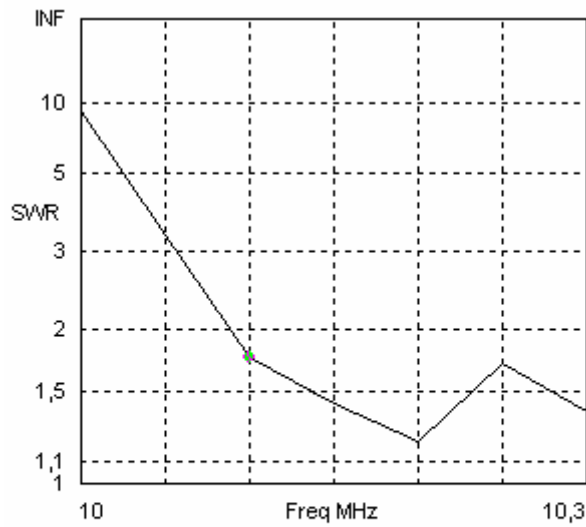
EZNEC

10,1 MHz

Azimuth Plot  
 Elevation Angle 0,0 deg.  
 Outer Ring 5,05dBi

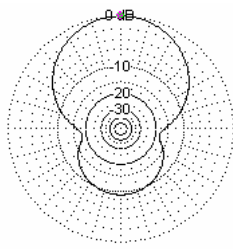
Cursor Az 90,0 deg.  
 Gain 5,05 dBi  
 0,0 dBmax

Slice Max Gain 5,05 dBi @ Az Angle = 90,0 deg.  
 Front/Back 11,56 dB  
 Beamwidth 82,4 deg.; -3dB @ 48,8, 131,2 deg.  
 Sidelobe Gain -6,52 dBi @ Az Angle = 270,0 deg.  
 Front/Sidelobe 11,56 dB

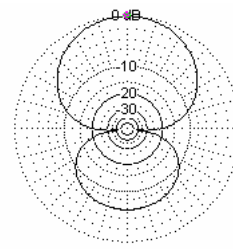


Freq 10,1 MHz Source # 1  
 SWR 1,74 Z0 50 ohms  
 Z 31,79 + j 12,88 ohms  
 Refl Coeff 0,2693 at 135,78 deg.

14 MHz



EZNEC



EZNEC

14 MHz

14,3 MHz

Azimuth Plot  
Elevation Angle 0,0 deg.  
Outer Ring 4,77dBi

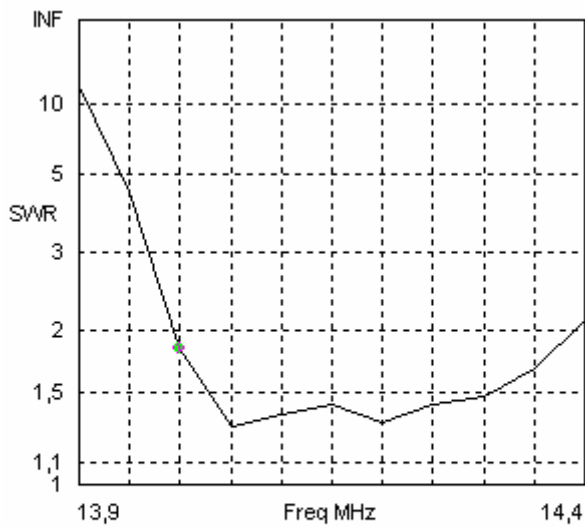
Cursor Az 90,0 deg.  
Gain 4,77 dBi  
0,0 dBmax

Azimuth Plot  
Elevation Angle 0,0 deg.  
Outer Ring 3,83dBi

Cursor Az 90,0 deg.  
Gain 3,83 dBi  
0,0 dBmax

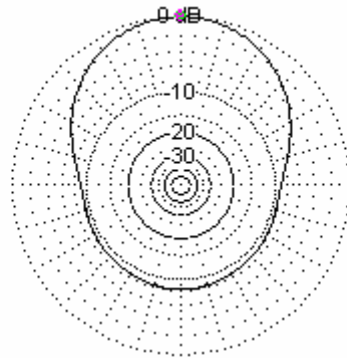
Slice Max Gain 4,77 dBi @ Az Angle = 90,0 deg.  
Front/Back 9,24 dB  
Beamwidth 84,6 deg.; -3dB @ 47,7, 132,3 deg.  
Sidelobe Gain -4,47 dBi @ Az Angle = 270,0 deg.  
Front/Sidelobe 9,24 dB

Slice Max Gain 3,83 dBi @ Az Angle = 90,0 deg.  
Front/Back 5,69 dB  
Beamwidth 90,4 deg.; -3dB @ 44,8, 135,2 deg.  
Sidelobe Gain -1,86 dBi @ Az Angle = 270,0 deg.  
Front/Sidelobe 5,69 dB



Freq 14 MHz Source # 1  
SWR 1,82 Z0 50 ohms  
Z 27,46 + j 1,395 ohms  
Refl Coeff 0,2915 at 175,43 deg.

18,1 MHz



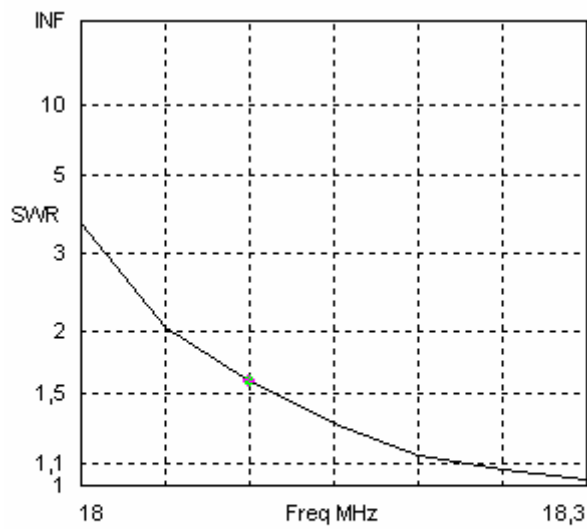
EZNEC

18,1 MHz

Azimuth Plot  
 Elevation Angle 0,0 deg.  
 Outer Ring 5,69dBi

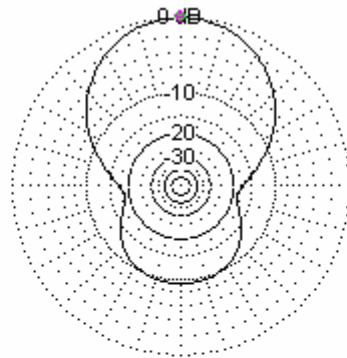
Cursor Az 90,0 deg.  
 Gain 5,69 dBi  
 0,0 dBmax

Slice Max Gain 5,69 dBi @ Az Angle = 90,0 deg.  
 Front/Back 8,28 dB  
 Beamwidth 92,8 deg.; -3dB @ 43,6, 136,4 deg.  
 Sidelobe Gain -2,59 dBi @ Az Angle = 270,0 deg.  
 Front/Sidelobe 8,28 dB



Freq 18,1 MHz Source # 1  
 SWR 1,57 Z0 50 ohms  
 Z 51,94 + j 23,12 ohms  
 Refl Coeff 0,222 at 72,42 deg.

24,9 MHz



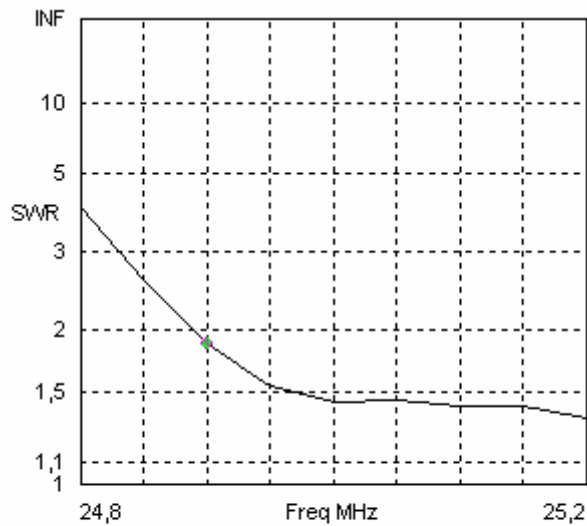
EZNEC

24,9 MHz

Azimuth Plot  
 Elevation Angle 0,0 deg.  
 Outer Ring 6,46dBi

Cursor Az 90,0 deg.  
 Gain 6,46 dBi  
 0,0 dBmax

Slice Max Gain 6,46 dBi @ Az Angle = 90,0 deg.  
 Front/Back 9,44 dB  
 Beamwidth 75,6 deg.; -3dB @ 52,2, 127,8 deg.  
 Sidelobe Gain -2,99 dBi @ Az Angle = 270,0 deg.  
 Front/Sidelobe 9,44 dB



Freq 24,9 MHz Source # 1  
 SWR 1,86 Z0 50 ohms  
 Z 35,36 + j 22,11 ohms  
 Refl Coeff 0,3007 at 108,99 deg.