"5 Bands, No Tuner" - The "G0FAH"
Some Analysis, by N4KIT

Reading the plots below:

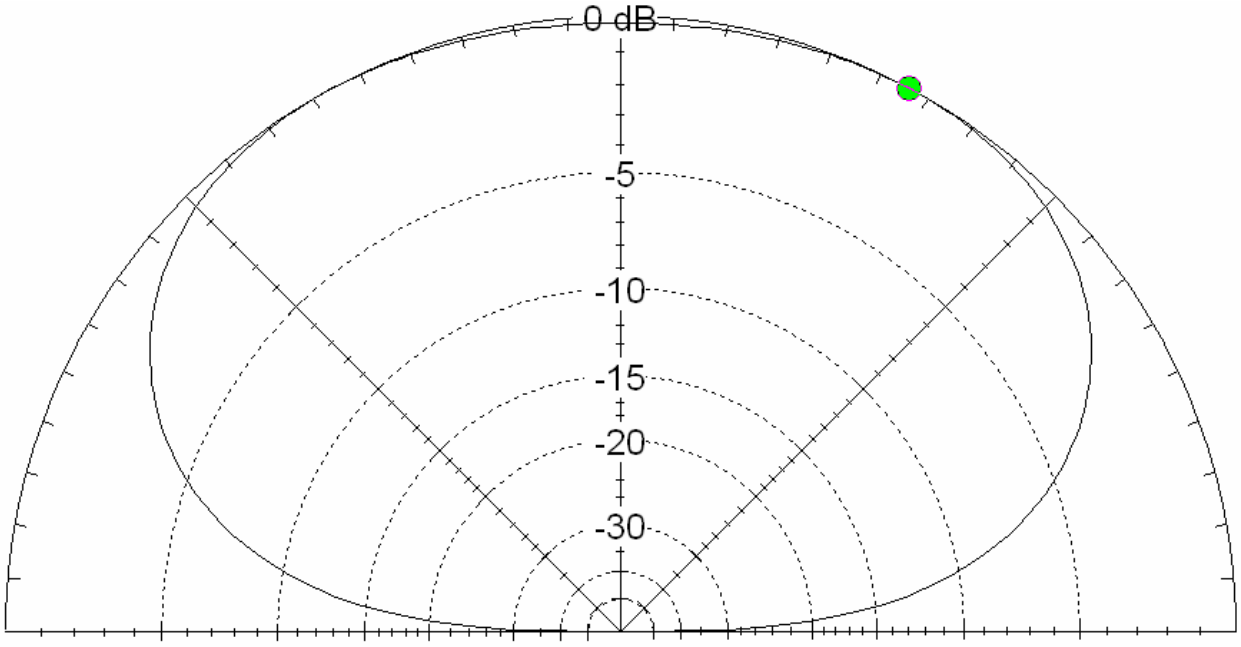
- ✓ In the elevation plots, you are looking down the length of the antenna wire elements
- ✓ In the azimuth plots, the antenna lies along the vertical axis of the plot.
- ✓ 3 dimensional plots are not all from the same perspective point in space. They have been rotated as needed to give the best visualization of the 3D pattern.

Some technical data derived from the EZNEC model and TL Details feedline modeling:

	Feedpoint				
F_0	R	X	Z	Power	Input SWR
4.000	37.87	145.20	656.95	60	7.9:1
3.700	16.25	54.82	247.95	80	5.6:1
7.125	72.78	-27.90	90.05	86	1.6:1
7.300	70.06	6.01	70.10	87	1.4:1
14.150	50.29	-55.18	143.05	74	2.3:1
14.350	56.31	1.76	56.55	83	1.1:1
21.200	253.6	731.10	2370.00	15	7.2:1
21.450	368.1	904.30	51.91	14	7.3:1
28.300	125.3	-265.60	745.25	34	4.8:1
28.500	108.3	-218.30	566.90	38	4.5:1
28.700	96.14	-175.70	437.45	44	4.0:1

- ✓ In this table, R and X represent the complex impedance of the feedpoint based on a model of the antenna at 70' elevation over average ground. Z is the computed impedance given in ohms.
- ✓ It was assumed that the antenna is fed with 75' of RG-8X coax. Other feedline types and lengths WILL affect the values in the Power and Input SWR columns.
- ✓ The Power column represents the amount of power delivered to the radiating elements under the given installation conditions and assuming 100 watts input power to the feedline.
- ✓ The Input SWR column is indicative of the SWR which might be seen at the input end of the feedline (75' of RG-8X.
- ✓ Note the significant reduction of power at the antenna on the 15 meter band. This is due to extremely high feedpoint impedance which causes significant loss in the feedline due to SWR. This is not to say the antenna will not work in 15 meters, it will, the signal strength will be down.

G0FAH – 80 meters

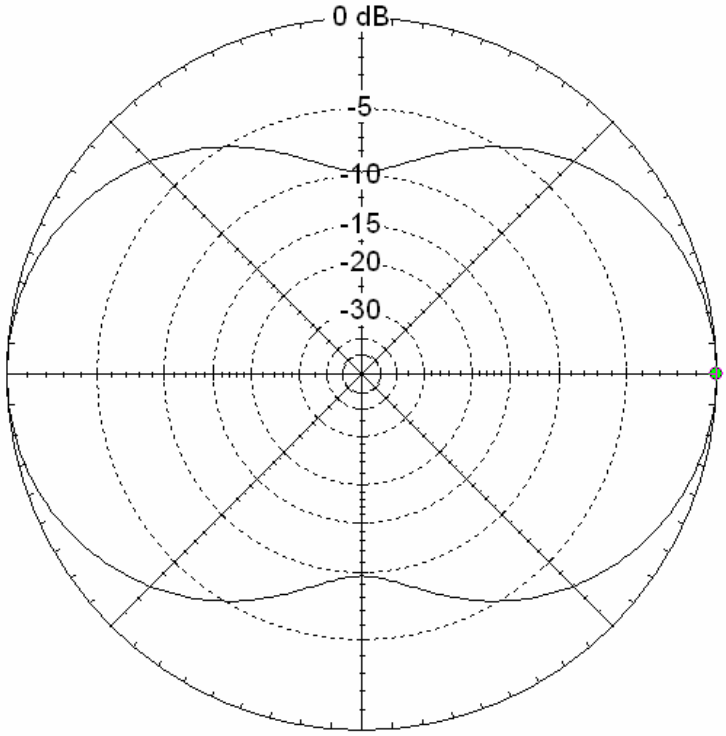


3.775 MHz

Elevation Plot
Azimuth Angle 0.0 deg.
Outer Ring 5.13 dBi

Cursor Elev 62.0 deg.
Gain 5.14 dBi
0.0 dBmax

Slice Max Gain 5.14 dBi @ Elev Angle = 62.0 deg.
Beamwidth 128.4 deg.; -3dB @ 25.8, 154.2 deg.
Sidelobe Gain 5.14 dBi @ Elev Angle = 118.0 deg.
Front/Sidelobe 0.0 dB

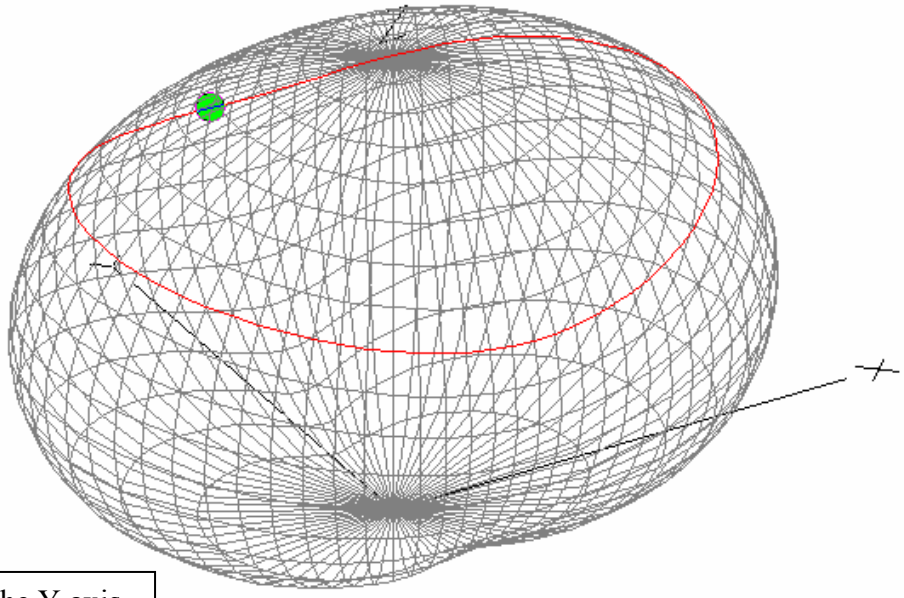


3.775 MHz

Azimuth Plot
Elevation Angle 20.0 deg.
Outer Ring 0.41 dBi

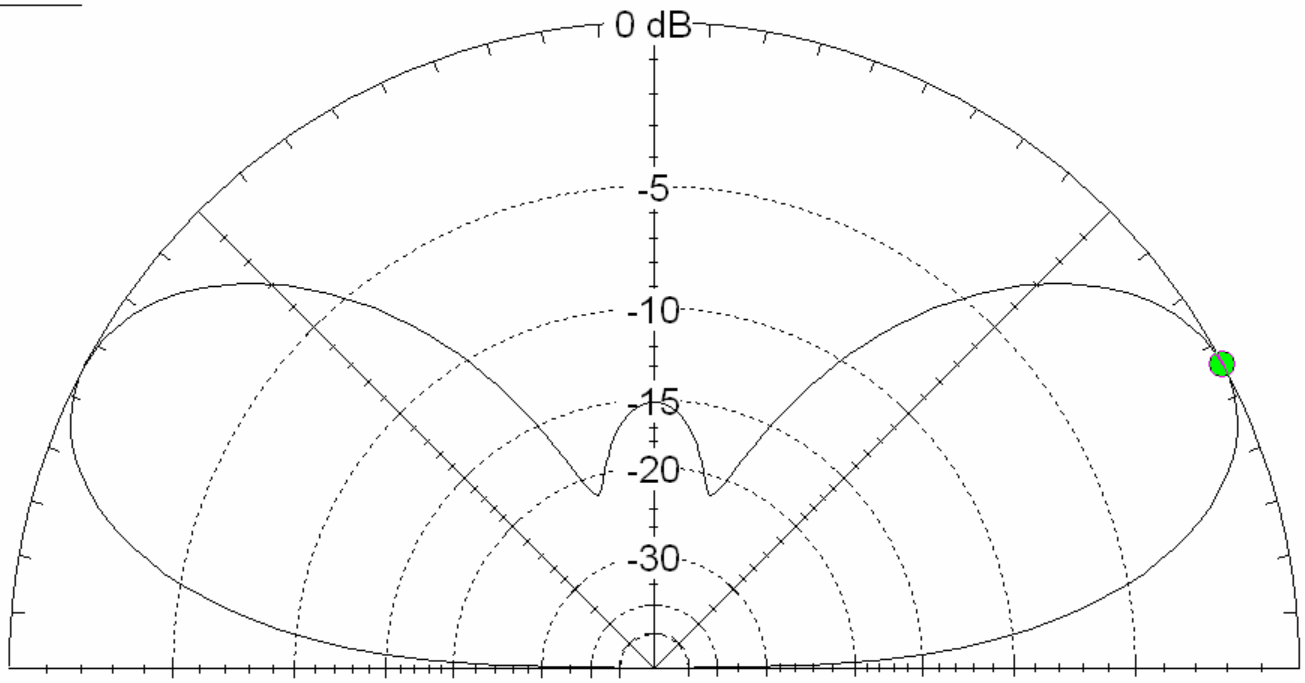
Cursor Az 0.0 deg.
Gain 0.41 dBi
0.0 dBmax

Slice Max Gain 0.41 dBi @ Az Angle = 0.0 deg.
Front/Side 9.73 dB
Beamwidth 91.0 deg.; -3dB @ 314.5, 45.5 deg.
Sidelobe Gain 0.41 dBi @ Az Angle = 180.0 deg.
Front/Sidelobe 0.0 dB



Antenna lies along the Y axis

G0FAH 40 METERS

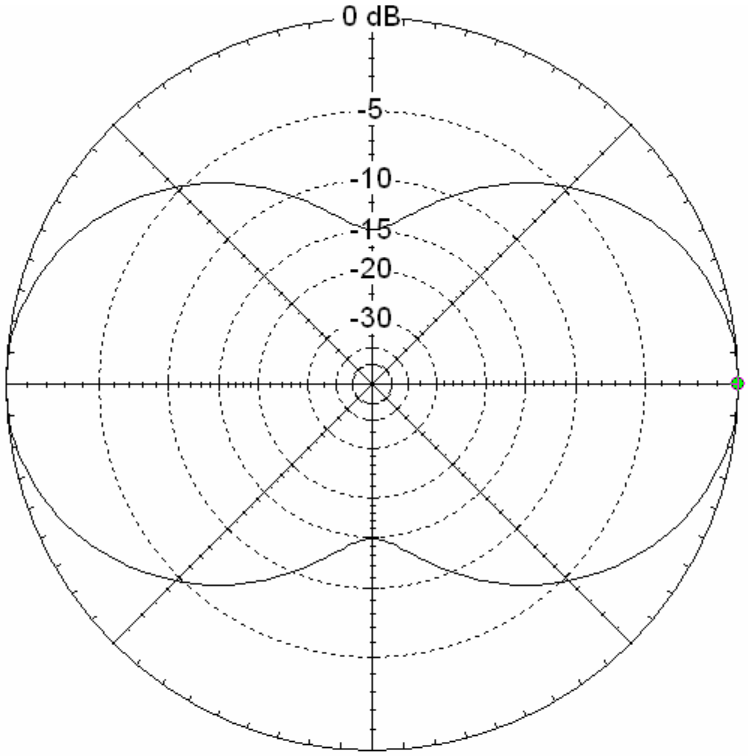


7.225 MHz

Elevation Plot
Azimuth Angle 0.0 deg.
Outer Ring 8.39 dBi

Slice Max Gain 8.39 dBi @ Elev Angle = 28.0 deg.
Beamwidth 31.7 deg.; -3dB @ 13.4, 45.1 deg.
Sidelobe Gain 8.39 dBi @ Elev Angle = 152.0 deg.
Front/Sidelobe 0.0 dB

Cursor Elev 28.0 deg.
Gain 8.39 dBi
0.0 dBmax

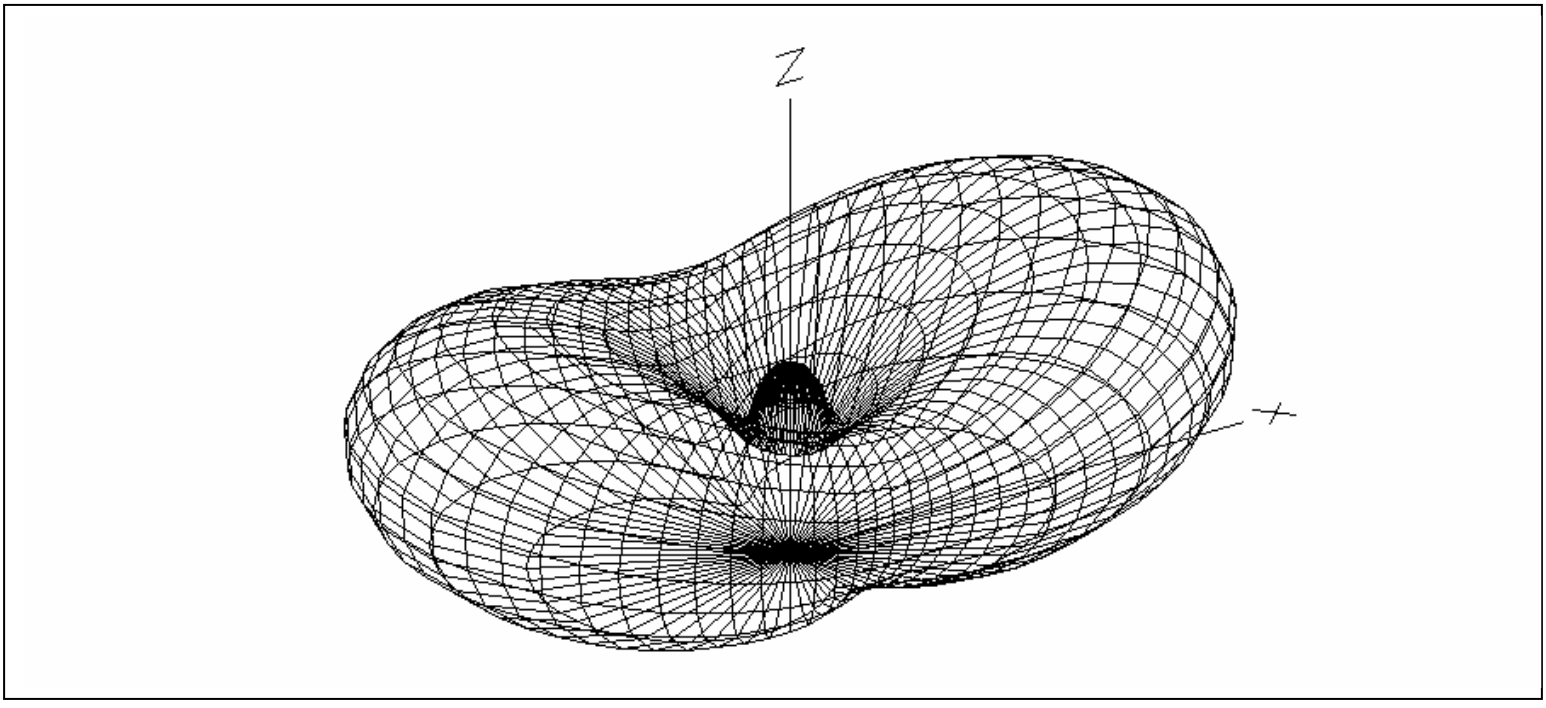


7.225 MHz

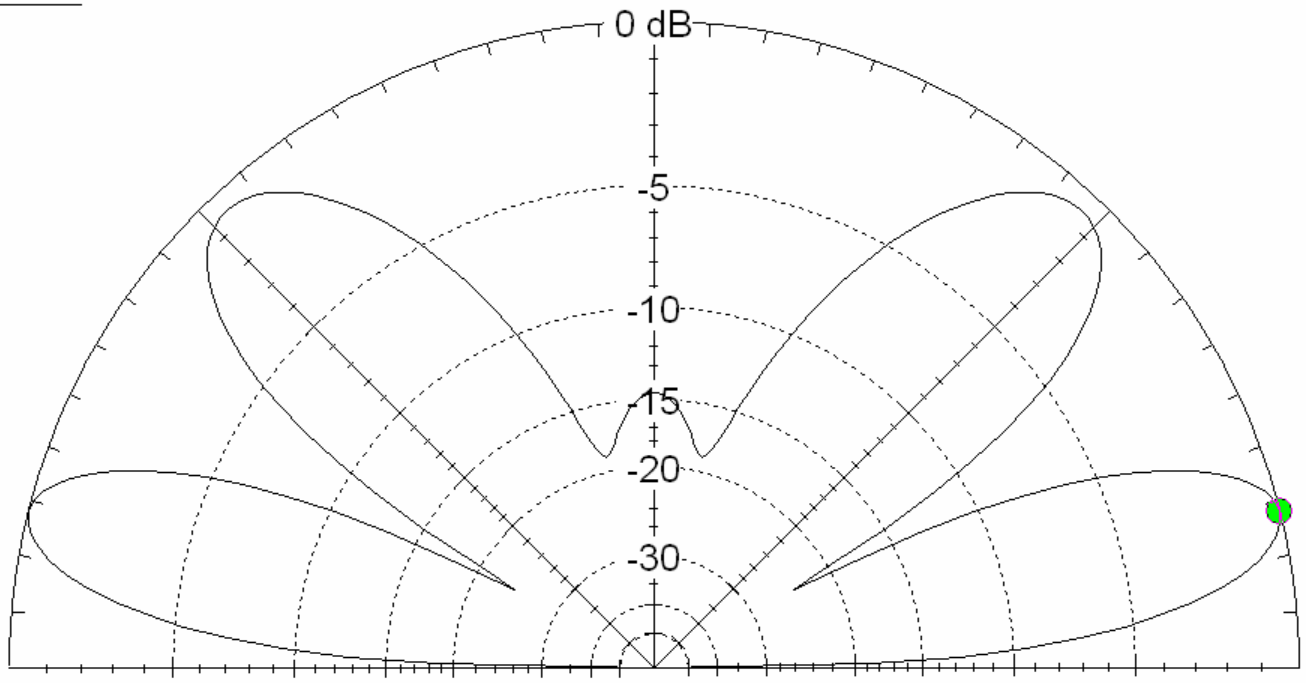
Azimuth Plot
Elevation Angle 20.0 deg.
Outer Ring 7.61 dBi

Slice Max Gain 7.61 dBi @ Az Angle = 0.0 deg.
Front/Side 14.78 dB
Beamwidth 71.2 deg.; -3dB @ 324.4, 35.6 deg.
Sidelobe Gain 7.61 dBi @ Az Angle = 180.0 deg.
Front/Sidelobe 0.0 dB

Cursor Az 0.0 deg.
Gain 7.61 dBi
0.0 dBmax



G0FAH - 20 METERS

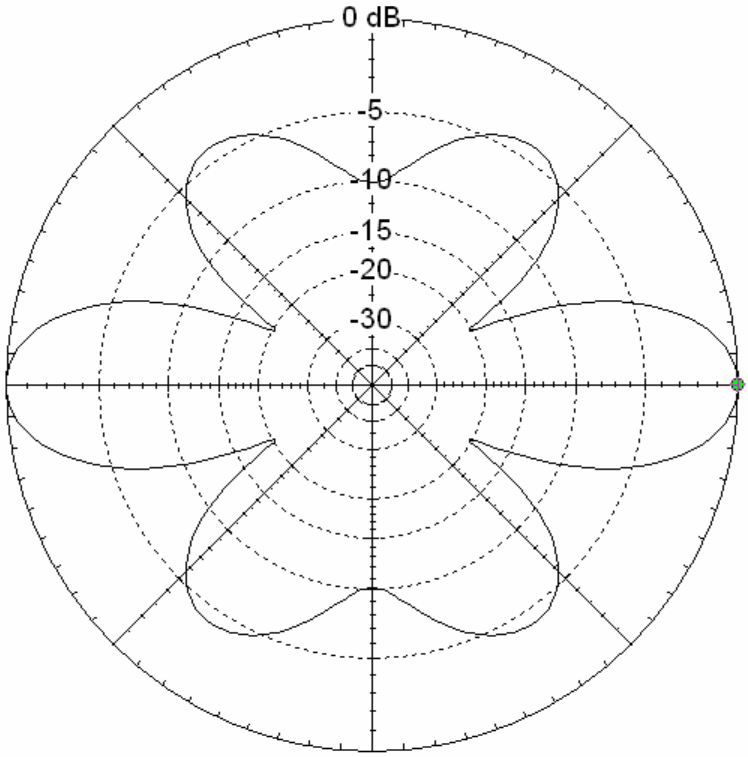


14.225 MHz

Elevation Plot
Azimuth Angle 0.0 deg.
Outer Ring 9.77 dBi

Slice Max Gain 9.77 dBi @ Elev Angle = 14.0 deg.
Beamwidth 14.4 deg.; -3dB @ 6.9, 21.3 deg.
Sidelobe Gain 9.77 dBi @ Elev Angle = 166.0 deg.
Front/Sidelobe 0.0 dB

Cursor Elev 14.0 deg.
Gain 9.77 dBi
0.0 dBmax

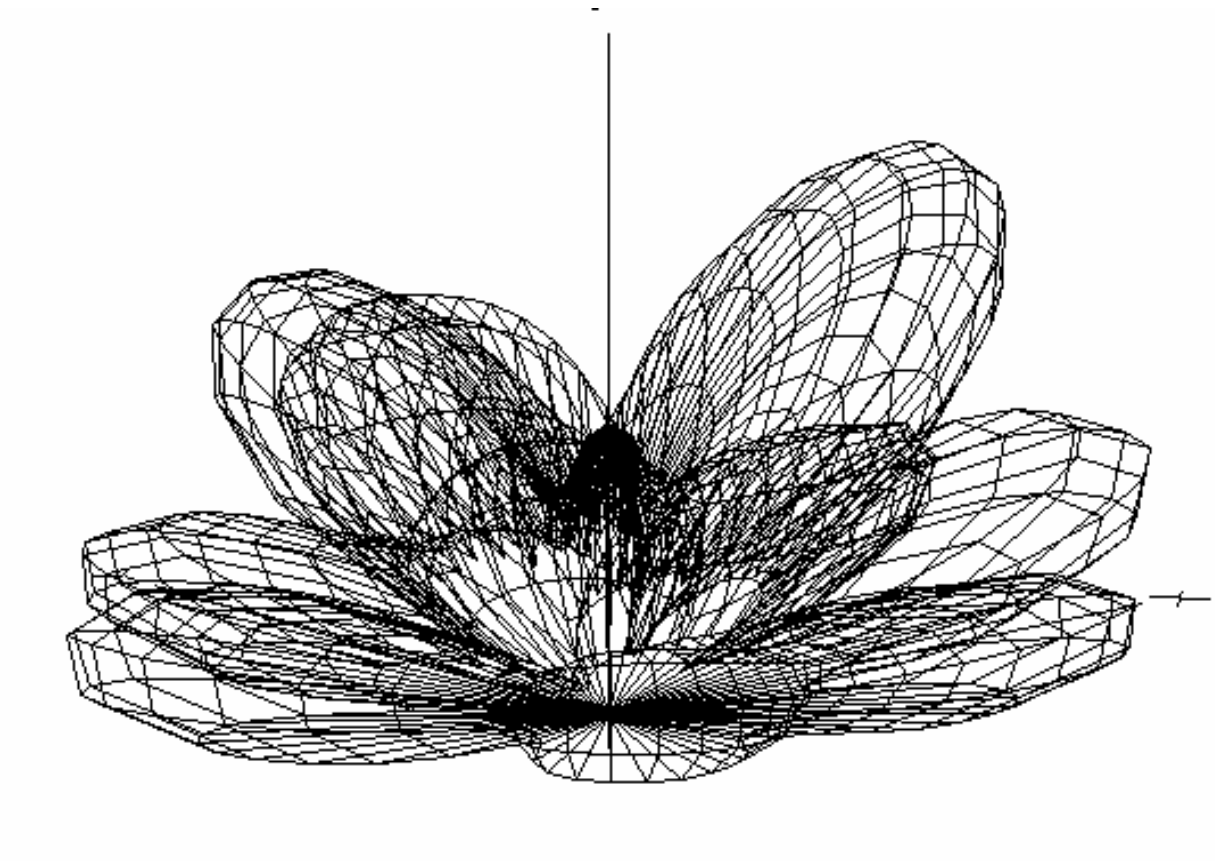


14.225 MHz

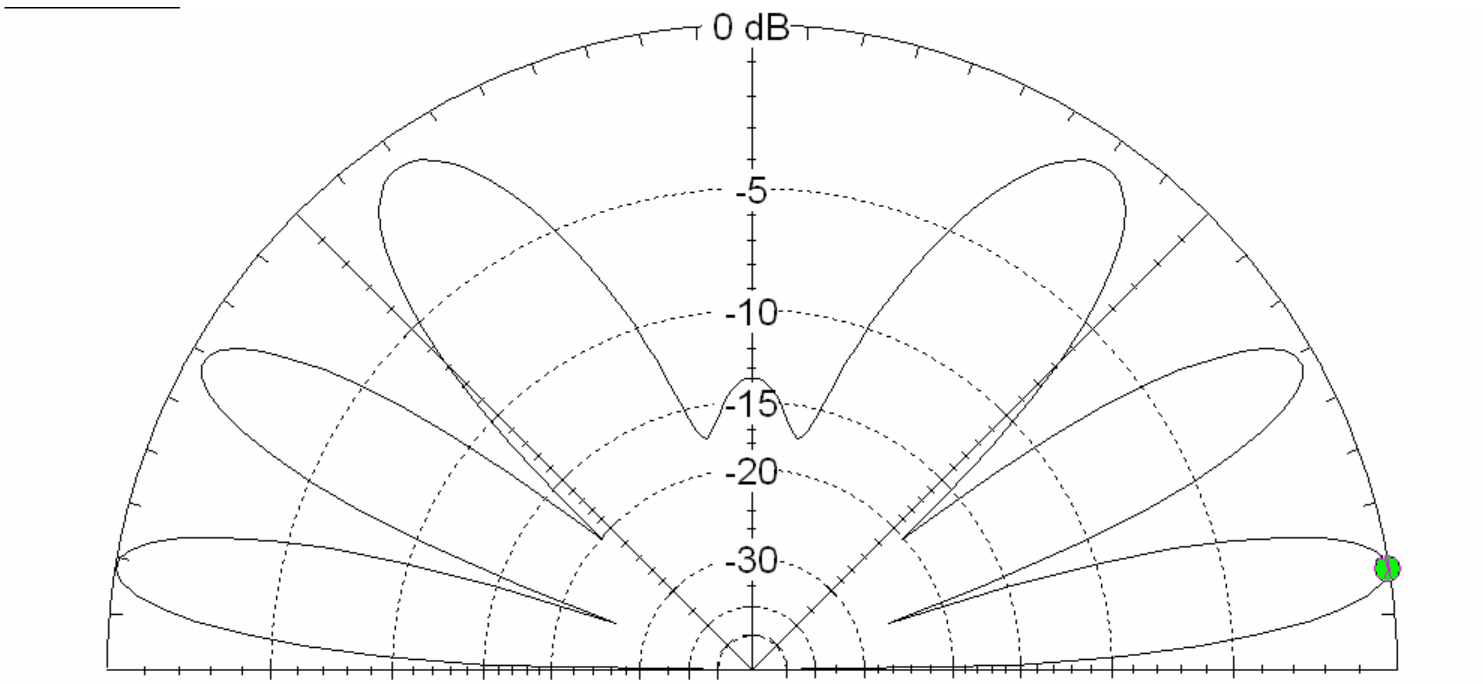
Azimuth Plot
Elevation Angle 20.0 deg.
Outer Ring 7.8 dBi

Slice Max Gain 7.8 dBi @ Az Angle = 0.0 deg.
Front/Side 10.17 dB
Beamwidth 27.8 deg.; -3dB @ 346.1, 13.9 deg.
Sidelobe Gain 7.8 dBi @ Az Angle = 180.0 deg.
Front/Sidelobe 0.0 dB

Cursor Az 0.0 deg.
Gain 7.8 dBi
0.0 dBmax



G0FAH – 15 METERS

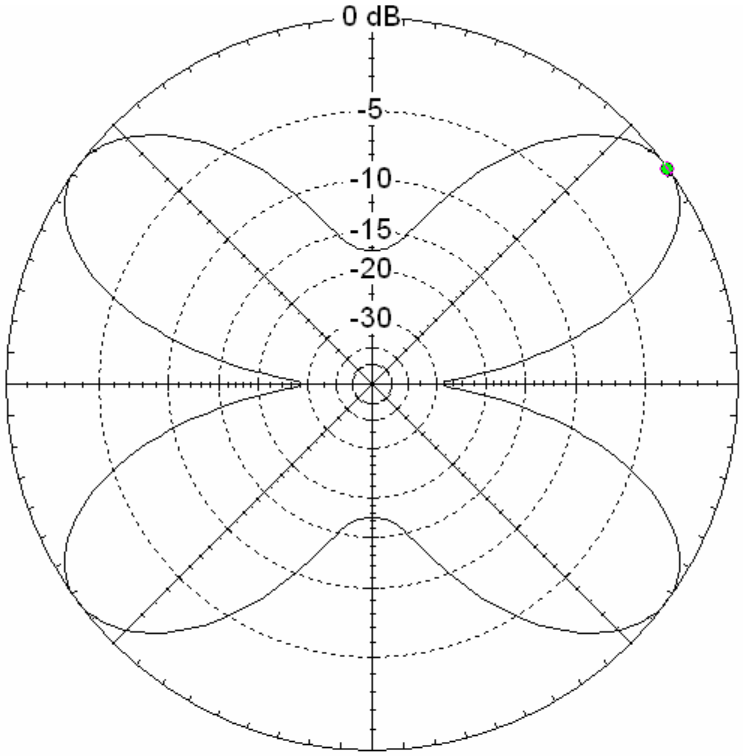


21.3 MHz

Elevation Plot
Azimuth Angle 0.0 deg.
Outer Ring -18.48 dBi

Cursor Elev 9.0 deg.
Gain -18.48 dBi
0.0 dBmax

Slice Max Gain -18.48 dBi @ Elev Angle = 9.0 deg.
Beamwidth 9.4 deg.; -3dB @ 4.7, 14.1 deg.
Sidelobe Gain -18.48 dBi @ Elev Angle = 171.0 deg.
Front/Sidelobe 0.0 dB

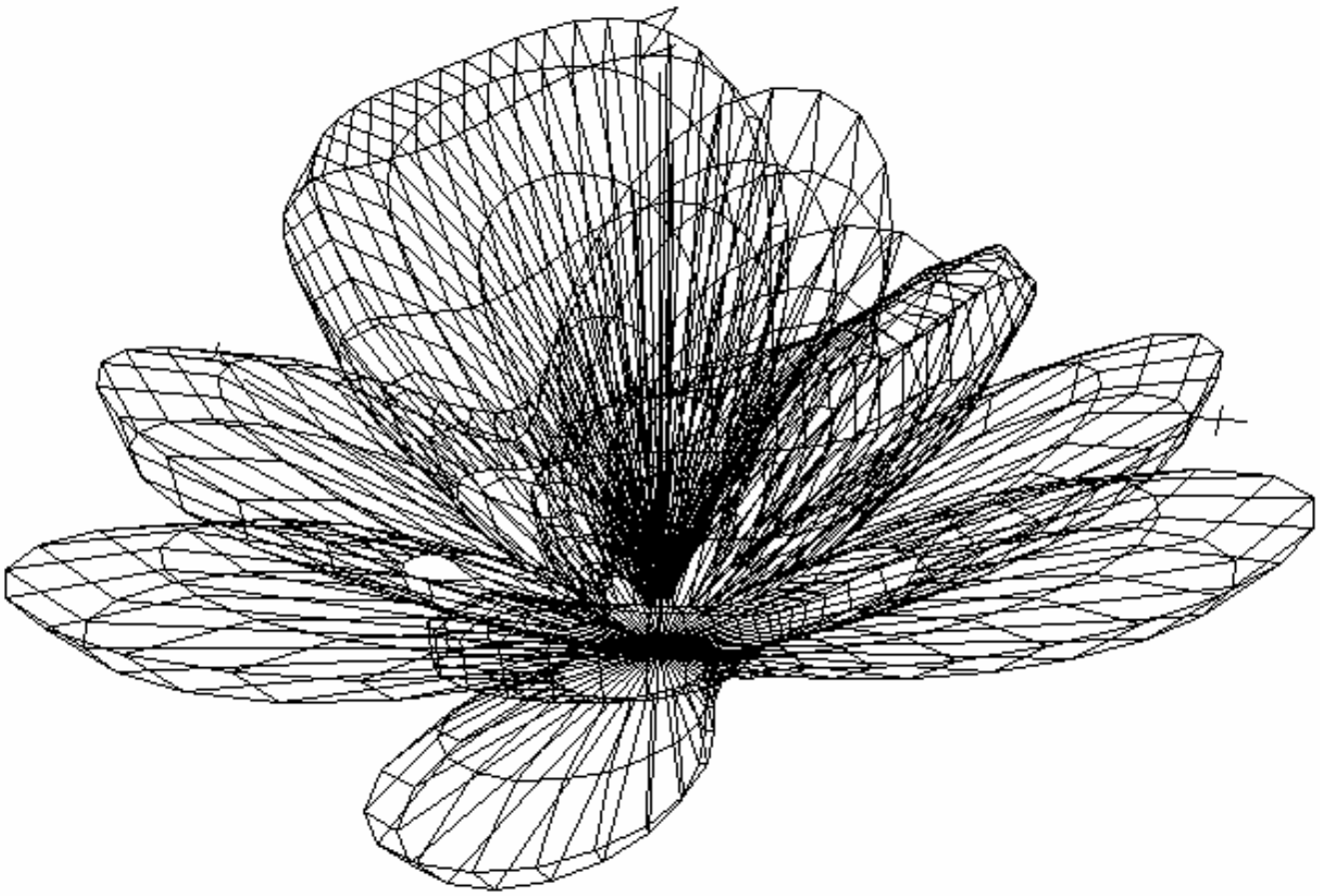


21.3 MHz

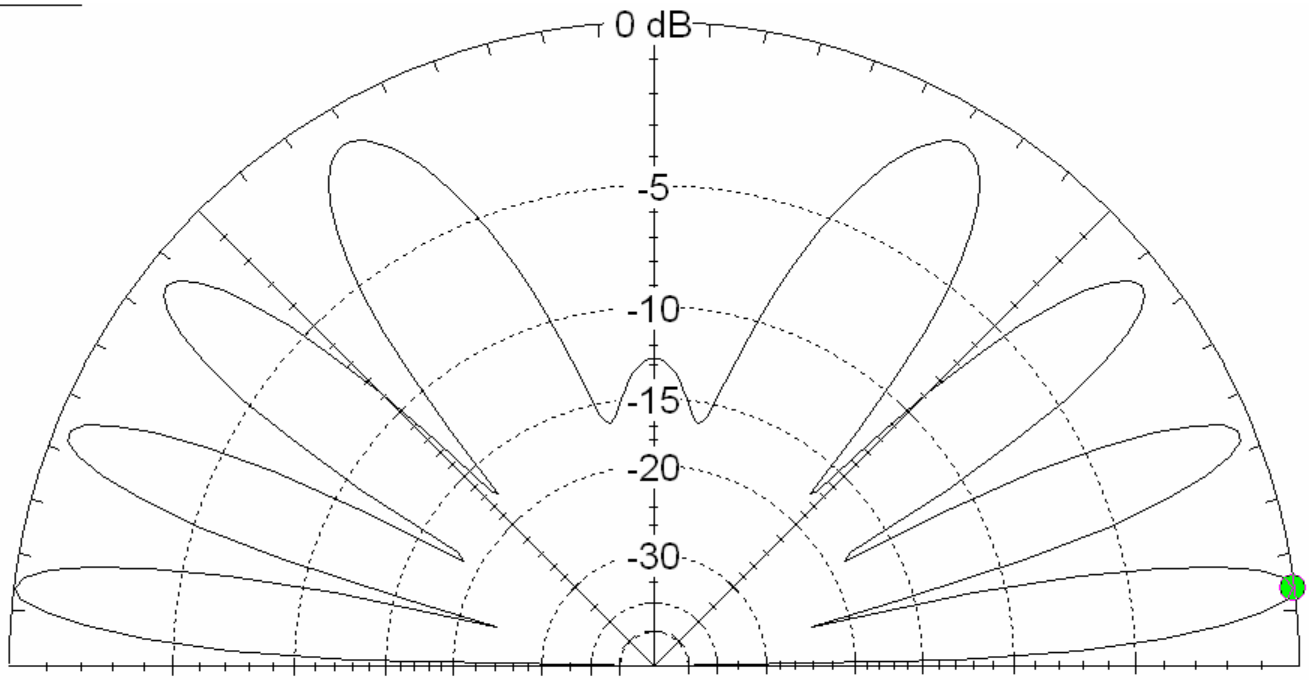
Azimuth Plot
Elevation Angle 20.0 deg.
Outer Ring -6.69 dBi

Cursor Az 36.0 deg.
Gain -6.69 dBi
0.0 dBmax

Slice Max Gain -6.69 dBi @ Az Angle = 36.0 deg.
Front/Side 3.4 dB
Beamwidth 30.8 deg.; -3dB @ 22.1, 52.9 deg.
Sidelobe Gain -6.69 dBi @ Az Angle = 324.0 deg.
Front/Sidelobe 0.0 dB



G0FAH – 10 METERS

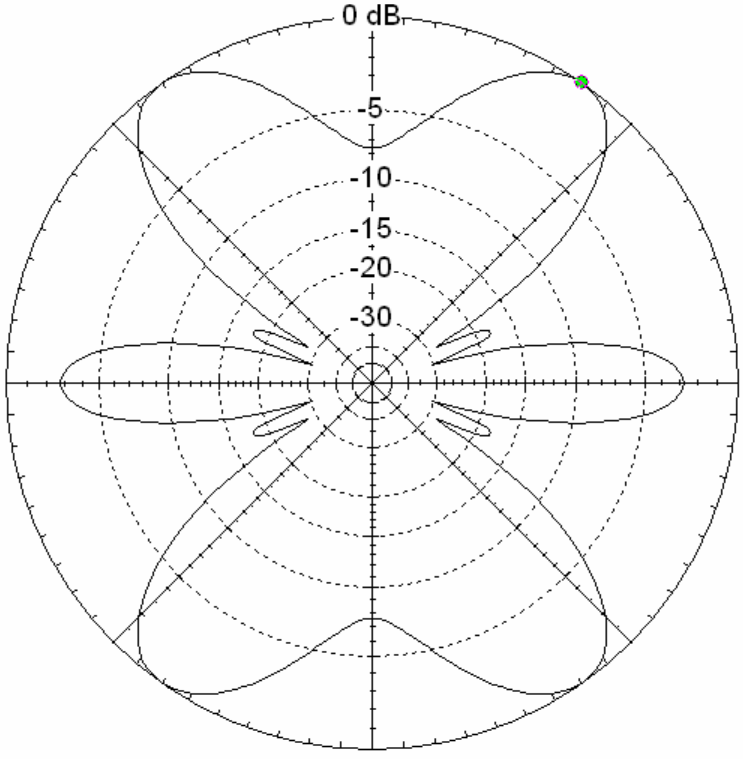


28.4 MHz

Elevation Plot
Azimuth Angle 0.0 deg.
Outer Ring 6.97 dBi

Slice Max Gain 6.97 dBi @ Elev Angle = 7.0 deg.
Beamwidth 7.0 deg.; -3dB @ 3.5, 10.5 deg.
Sidelobe Gain 6.97 dBi @ Elev Angle = 173.0 deg.
Front/Sidelobe 0.0 dB

Cursor Elev 7.0 deg.
Gain 6.97 dBi
0.0 dBmax



28.4 MHz

Azimuth Plot
Elevation Angle 20.0 deg.
Outer Ring 8.87 dBi

Slice Max Gain 8.87 dBi @ Az Angle = 55.0 deg.
Front/Side 10.63 dB
Beamwidth 28.6 deg.; -3dB @ 42.6, 71.2 deg.
Sidelobe Gain 8.87 dBi @ Az Angle = 125.0 deg.
Front/Sidelobe 0.0 dB

Cursor Az 55.0 deg.
Gain 8.87 dBi
0.0 dBmax