

NEC 2 - Inverted L 2450MHz antenna simulation

Geometry description:

CM

CM Inverted L antenna 2450MHz

CM

CM Ground plane: wire mesh 100x100mm

CM

CE

GW	1	20	-0.05	0	0	0.05	0	0	0.4e-3
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GM	2	20	0	0	0	0	0.005	0	1
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GW	100	20	-0.05	0	0	-0.05	0.1	0	0.5e-3
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GM	2	20	0	0	0	0.005	0	0	100
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GW	200	2	0.05	0.09	0	0.05	0.09	0.009	0.6e-3
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GW	201	9	0.05	0.1	0.011	-0.05	0.1	0.011	0.6e-3
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GW	203	2	0.05	0.09	0.009	0.05	0.1	0.011	0.6e-3
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GE 0

LD	5	0	0	0	58000000				
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LD	7	200	0	0	4.5	0.8e-3			
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LD	7	201	0	0	4.5	0.8e-3			
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LD	7	203	0	0	4.5	0.8e-3			
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GN -1

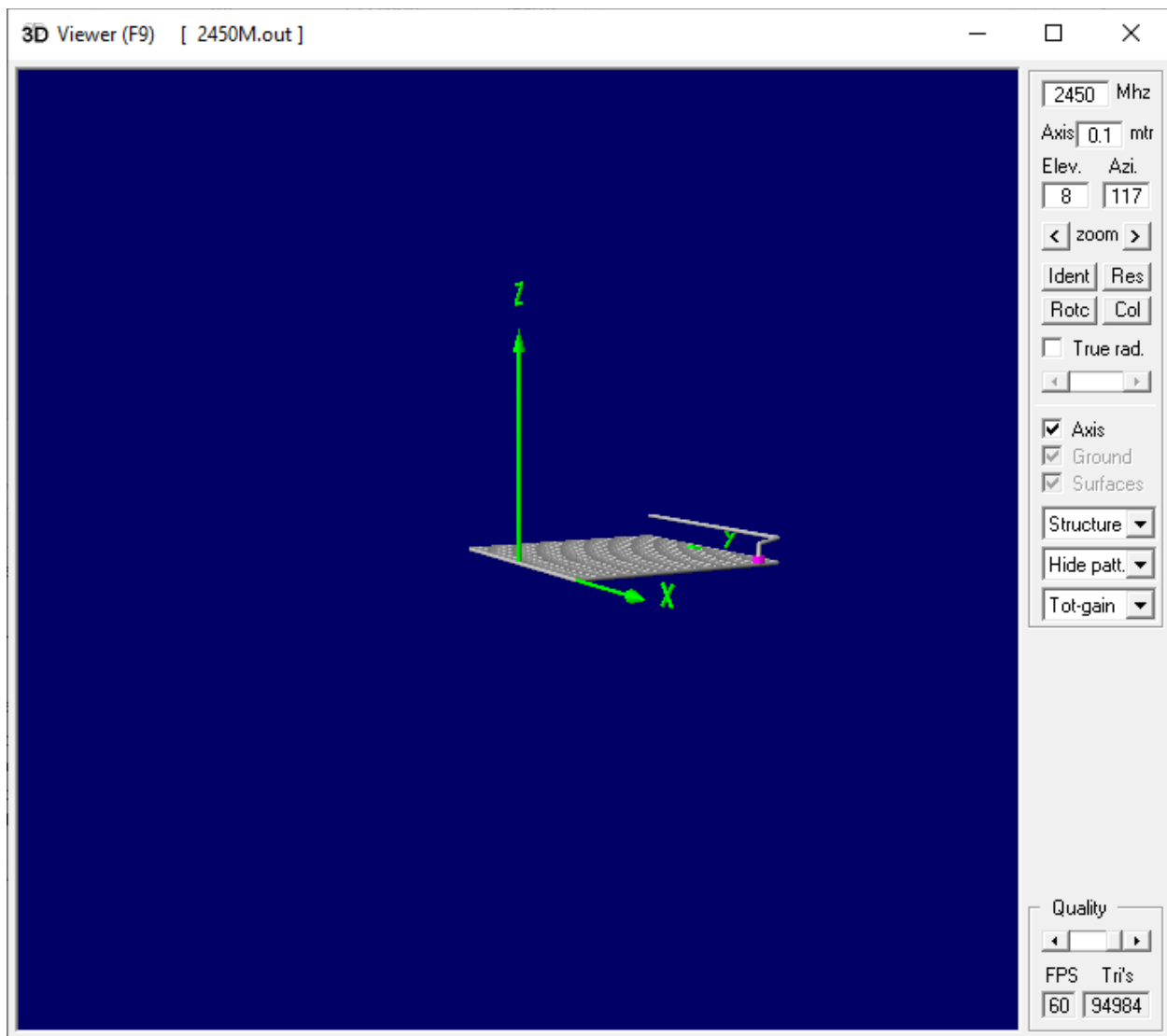
EK

EX	0	200	1	0	1	0	0		
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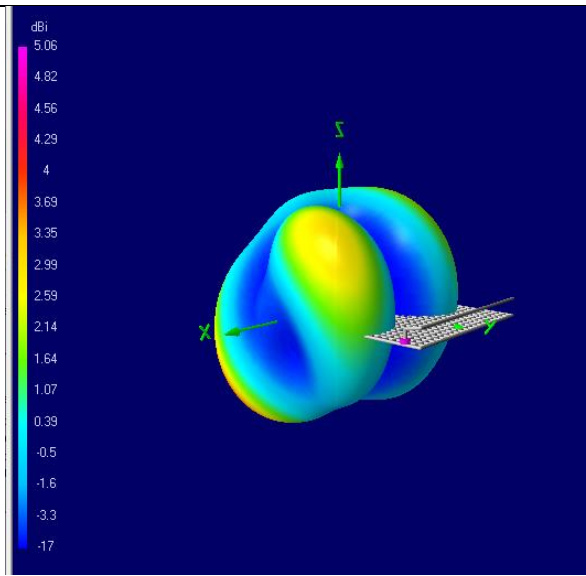
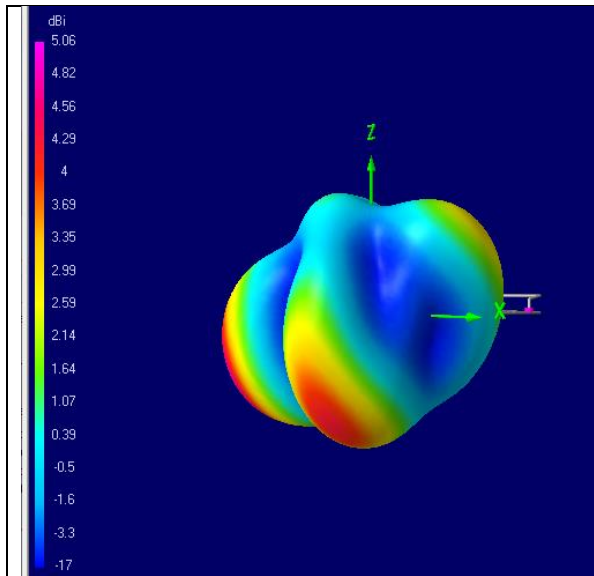
FR	0	0	0	0	2450	0			
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EN

Radiating wire coated with soft PVC 0.8mm thick.



Impedance @2450MHz = 2036-j670



Main [V5.9.3] (F2)

File Edit Settings Calculate Window Show Run Help

Filename: 2450M.out Frequency: 2450 Mhz
 Wavelength: 0.122 mtr

Voltage: 47.5 + j 0 V Current: 21 + j 6.99 mA

Impedance: 2036 - j 676 Series comp.: 0.044 uH
 Parallel form: 2261 // - j 6806 Parallel comp.: 0.442 uH

S.W.R.50: 45.2 Input power: 1 W
 Efficiency: 98.99 % Structure loss: 10.09 mW
 Radiat-eff.: 94.02 % Network loss: 0 uW
 RDF [dB]: 5.28 Radiat-power: 989.9 mW

Environment: Loads Polar

FREE SPACE

Comment: Inverted L antenna 2450MHz
 Ground plane: wire mesh 100x100mm

Seg's/patches: 853 start stop count step
 Pattern lines: 32761 Theta: -180 180 181 2
 Freq/Eval steps: 1 Phi: 0 360 181 2
 Calculation time: 1.176 s

Main [V5.9.3] (F2)

File Edit Settings Calculate Window Show Run Help

Filename: 2450M.out Frequency: 2450 Mhz
 Wavelength: 0.122 mtr

Voltage: 47.8 + j 0 V Current: 20.9 + j 6.81 mA

Impedance: 2066 - j 672 Series comp.: 0.044 uH
 Parallel form: 2285 // - j 7018 Parallel comp.: 0.456 uH

S.W.R.50: 45.7 Input power: 1 W
 Efficiency: 100 % Structure loss: 0 uW
 AGT results: 0.950 (-0.2 dB) Network loss: 0 uW
 RDF [dB]: 5.28 Radiat-power: 1 W

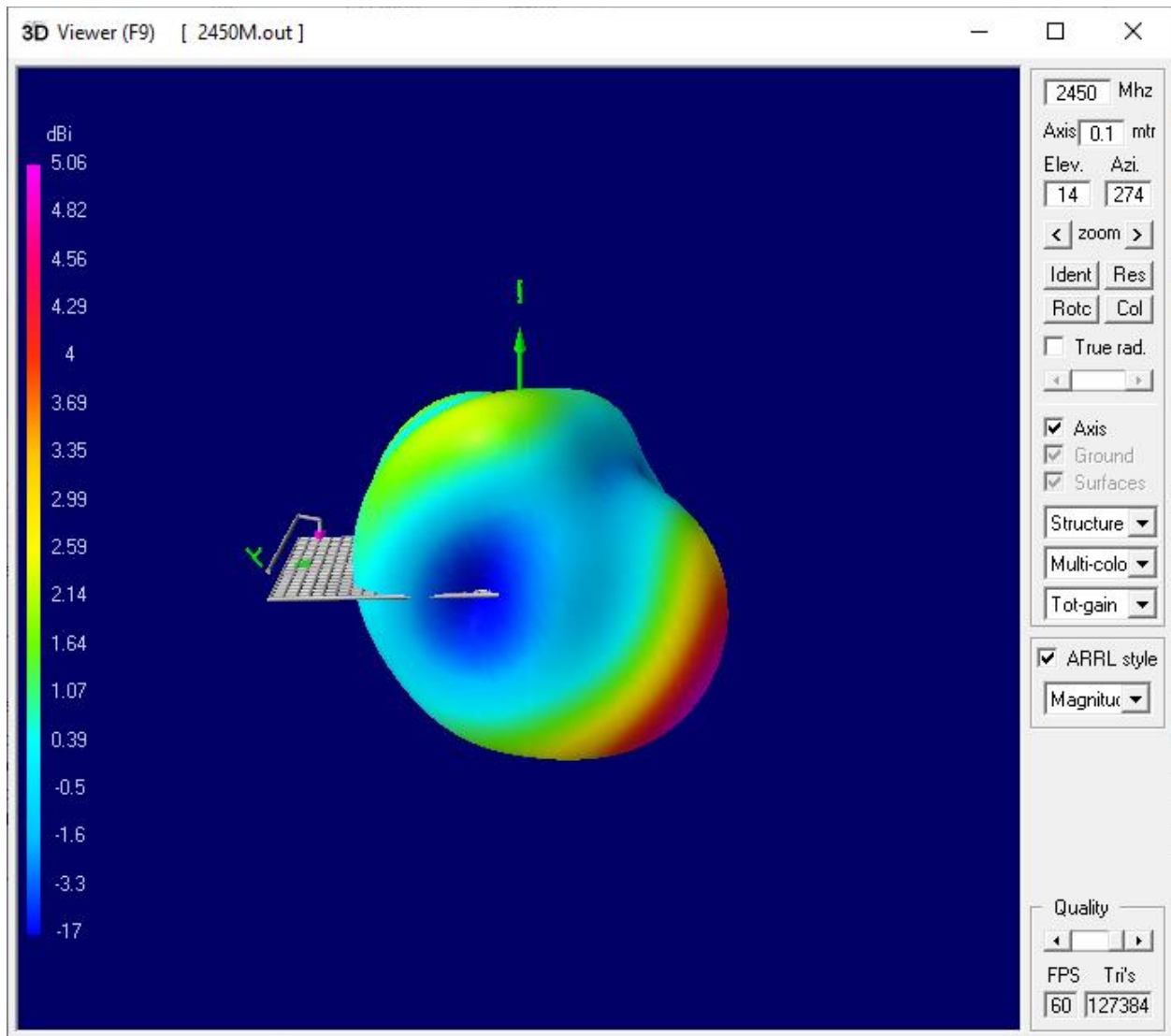
Environment: Loads Polar

FREE SPACE

Comment: Inverted L antenna 2450MHz
 Ground plane: wire mesh 100x100mm

Seg's/patches: 853 start stop count step
 Pattern lines: 32761 Theta: -180 180 181 2
 Freq/Eval steps: 1 Phi: 0 360 181 2
 Calculation time: 1.145 s

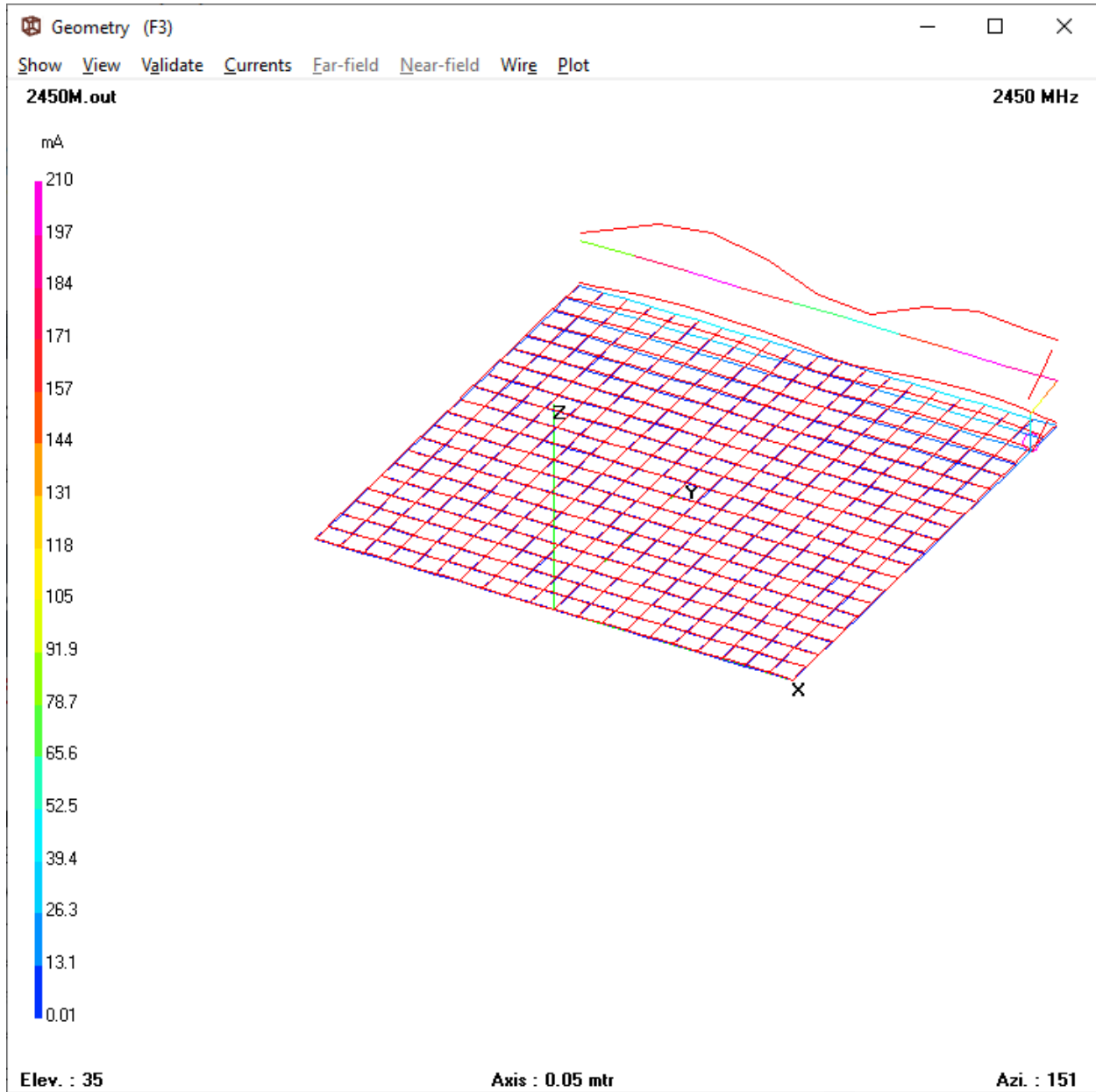
Average Gain Test



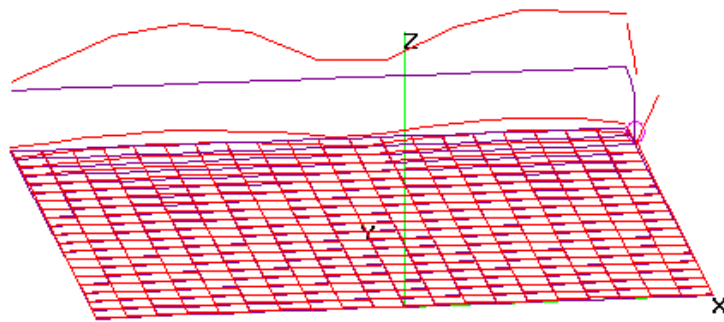
Max Gain= 5.06dBi. (Average Gain Test error result=+/-0.2dB)

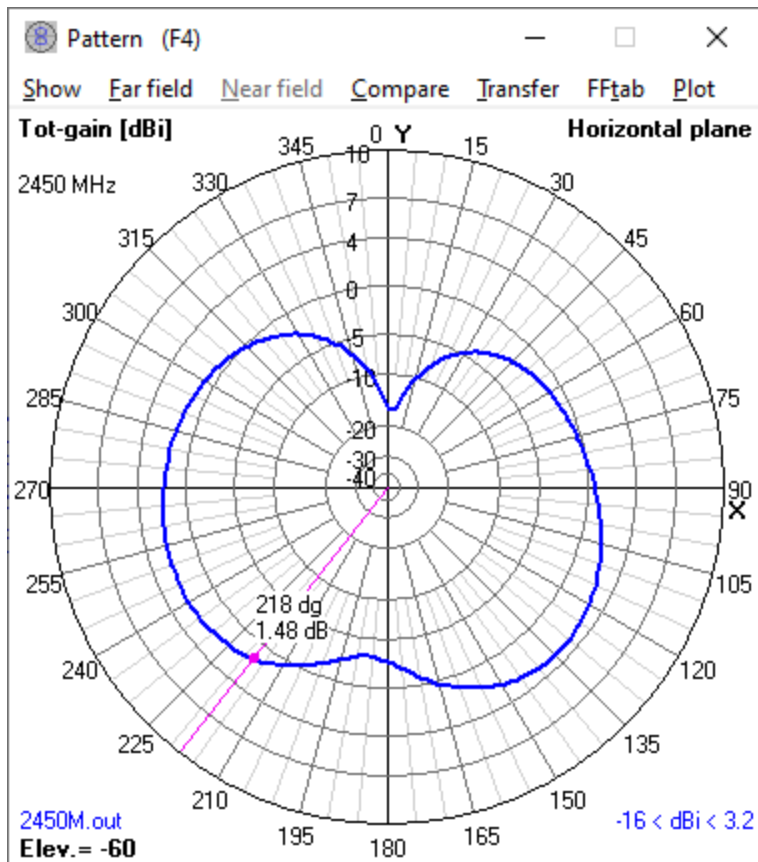
Power=1W

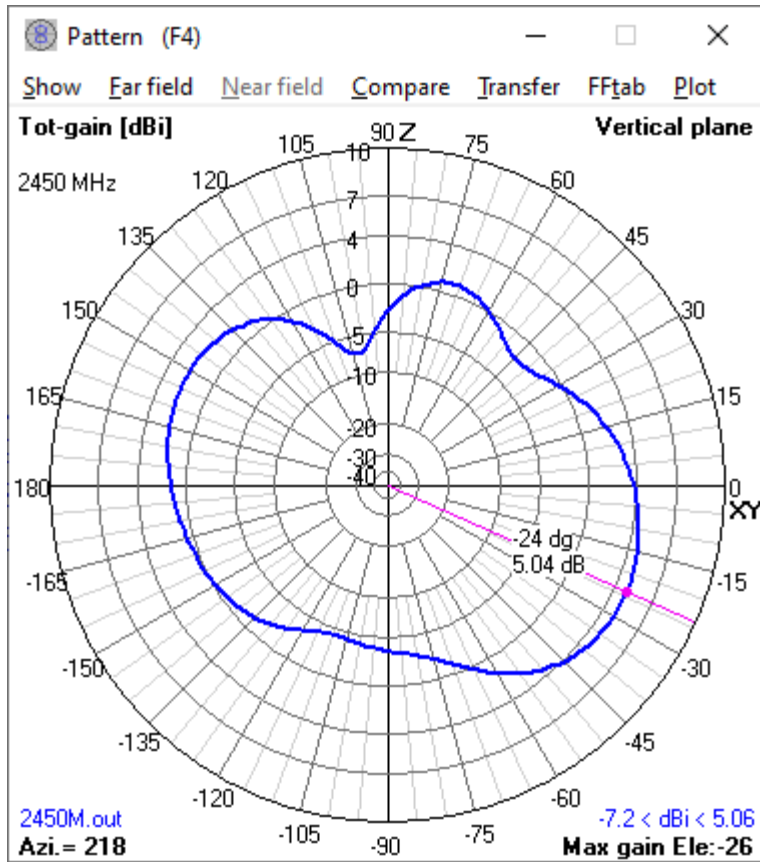
Antenna and GP current distribution:



Current magnitude:







H and V Radiation Pattern Cross Sections