

Report for Broadcom

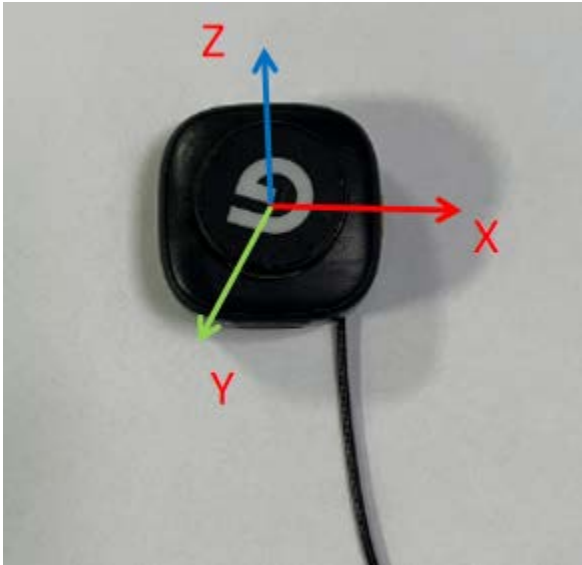
By Alfred Grau

Tested Products.

- Antenna 1: **PIFA** antenna.
 - Frequency =2402MHz
 - Frequency =2404MHz
 - Frequency =2440MHz
 - Frequency =2441MHz
 - Frequency =2472MHz
 - Frequency =2480MHz

Radiation pattern: Antenna 3D Pattern at $f = 2402\text{MHz}$

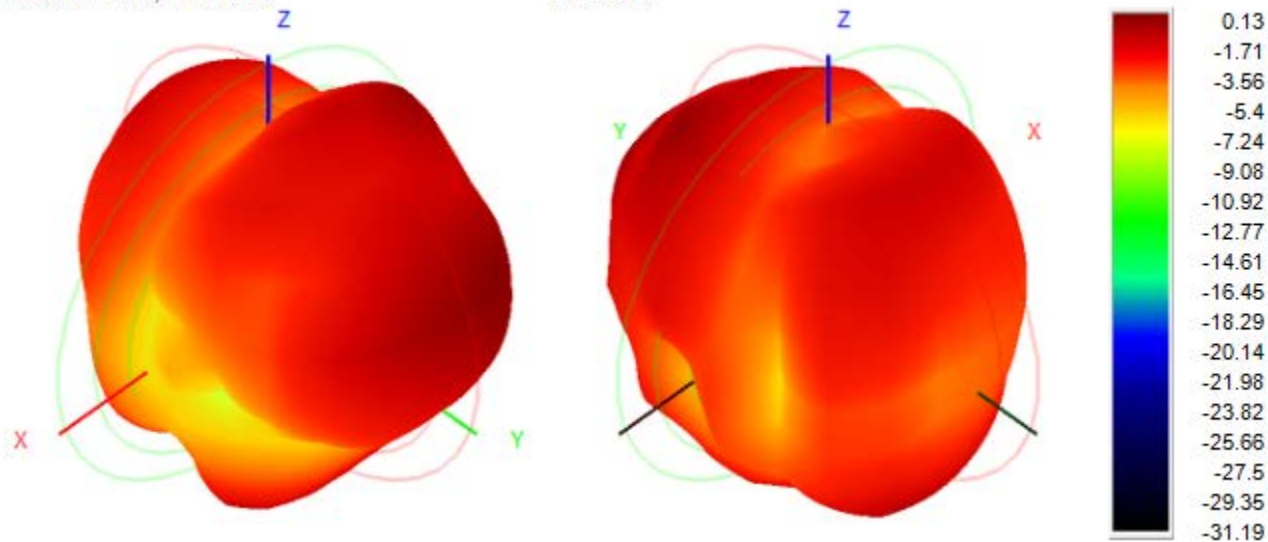
Coordinate System Reference: Antenna-RX



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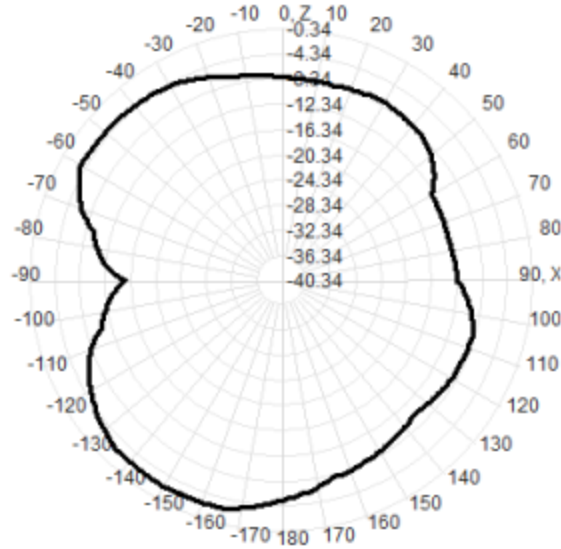
2402.0MHz Total, Eff: 33.4%

Back View

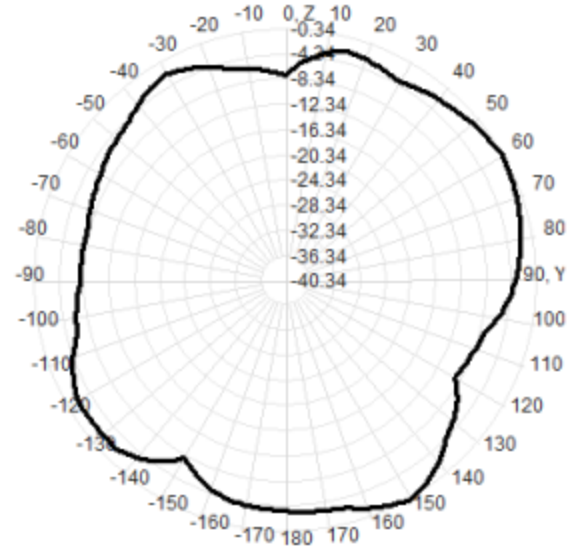


Radiation pattern: Antenna 2D Pattern at $f = 2402\text{MHz}$

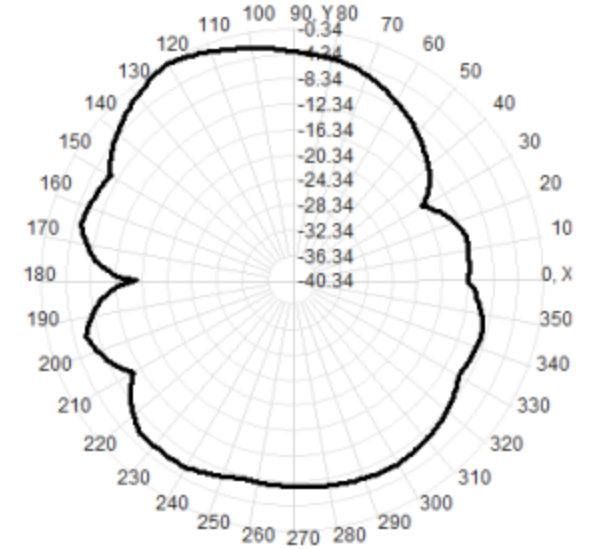
2402.0MHz Total(E1-XZ), Max=-2.80dBi



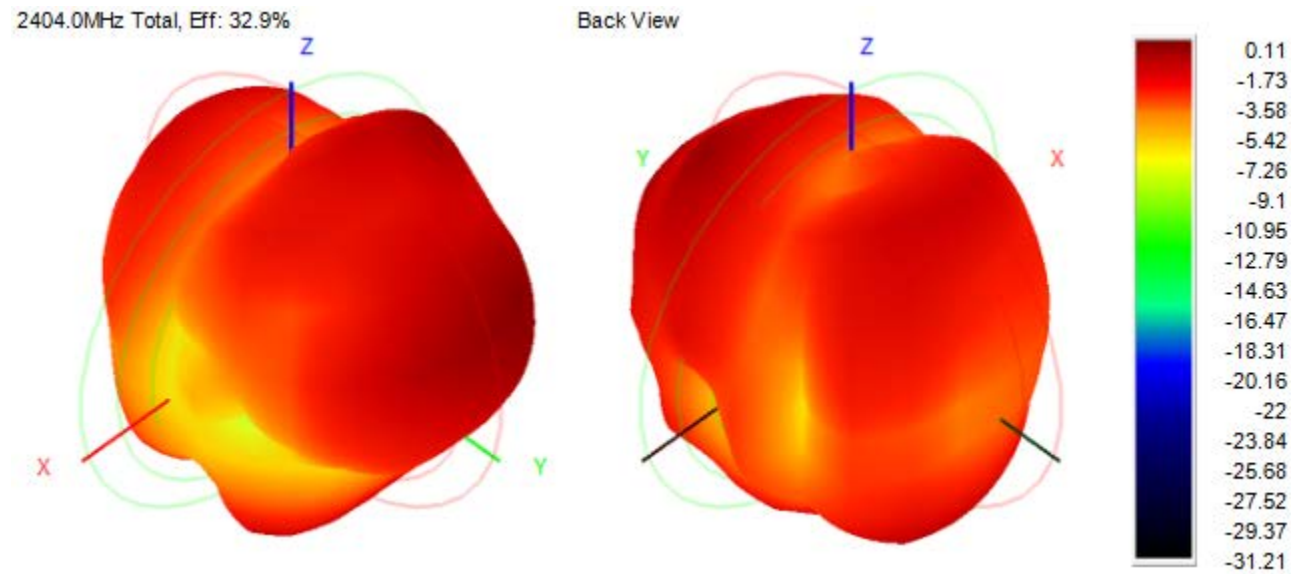
2402.0MHz Total(E2-YZ), Max=-0.34dBi



Total(H-XY), Max=-0.63dBi, CirD=16.17

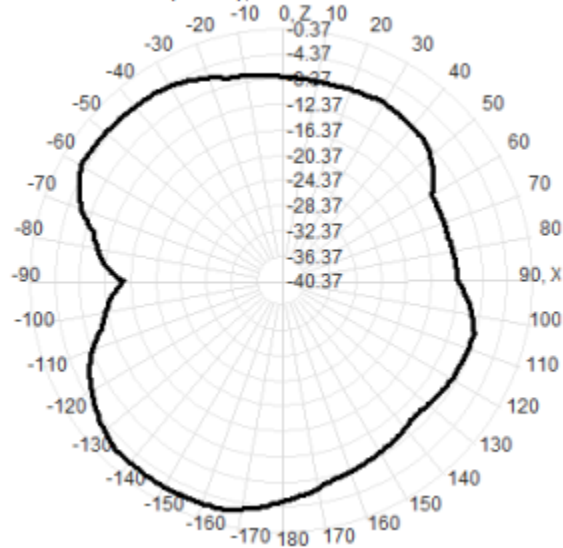


Radiation pattern: Antenna 3D Pattern at $f = 2404\text{MHz}$

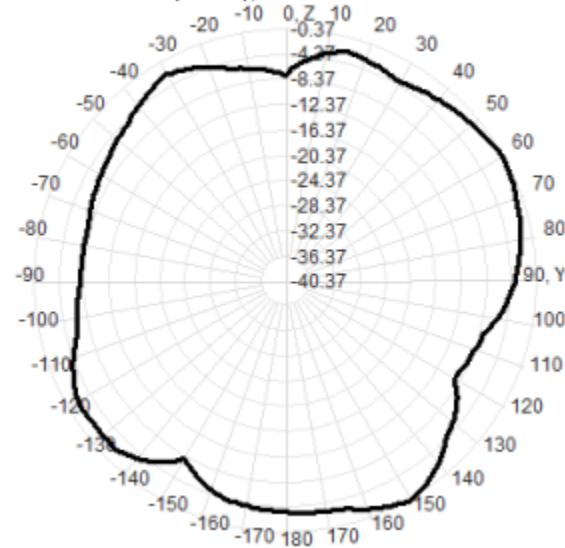


Radiation pattern: Antenna 2D Pattern at $f = 2404\text{MHz}$

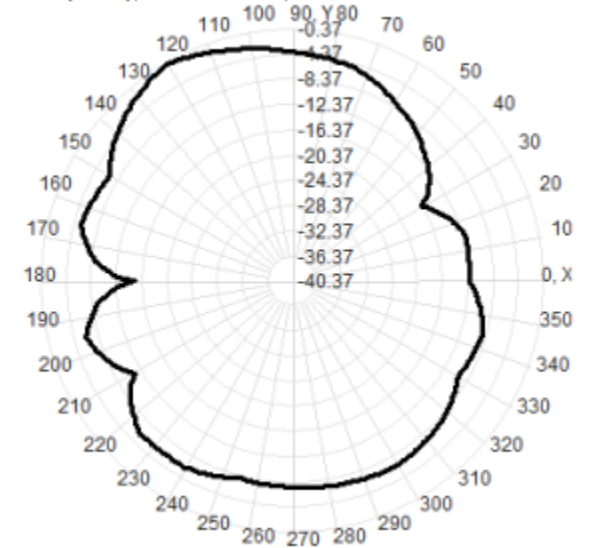
2404.0MHz Total(E1-XZ), Max=-2.86dBi



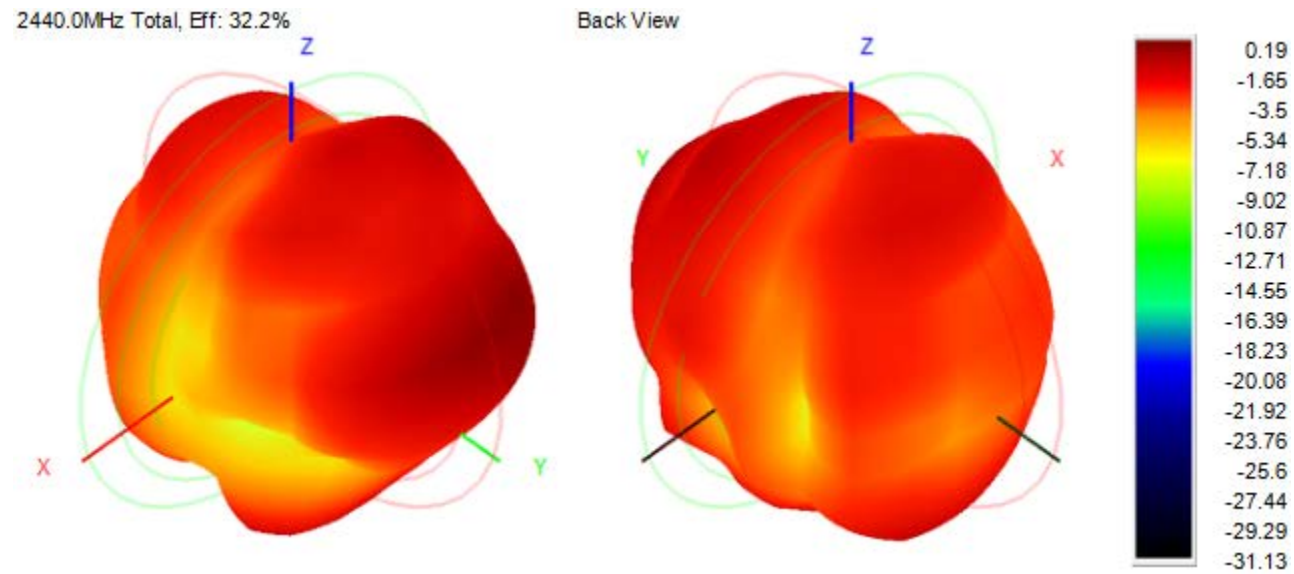
2404.0MHz Total(E2-YZ), Max=-0.37dBi



Total(H-XY), Max=-0.69dBi, CirD=16.13

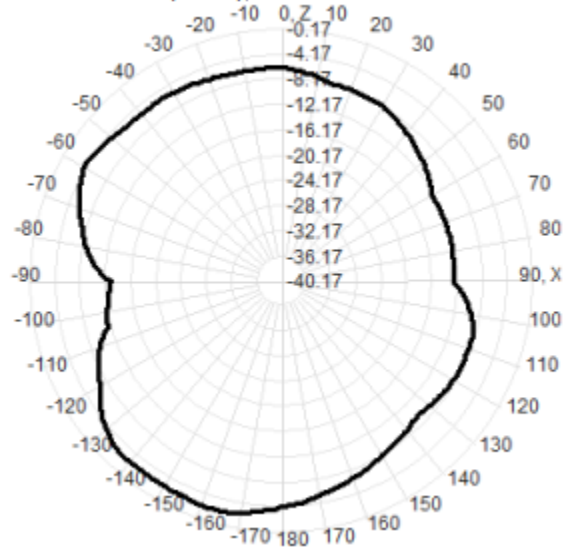


Radiation pattern: Antenna 3D Pattern at $f = 2440\text{MHz}$

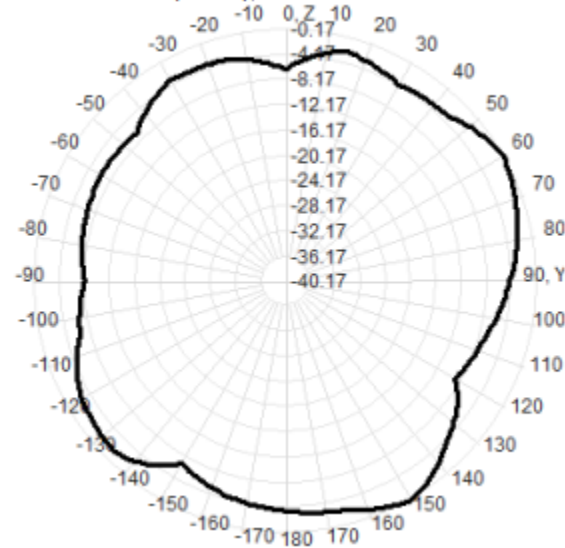


Radiation pattern: Antenna 2D Pattern at $f = 2440\text{MHz}$

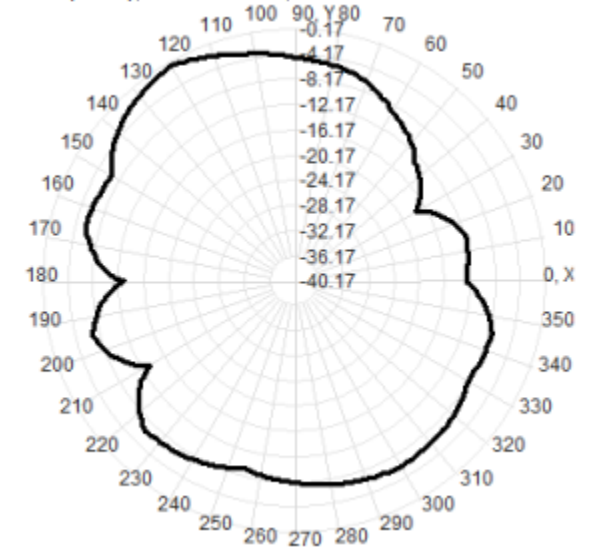
2440.0MHz Total(E1-XZ), Max=-2.47dBi



2440.0MHz Total(E2-YZ), Max=-0.17dBi

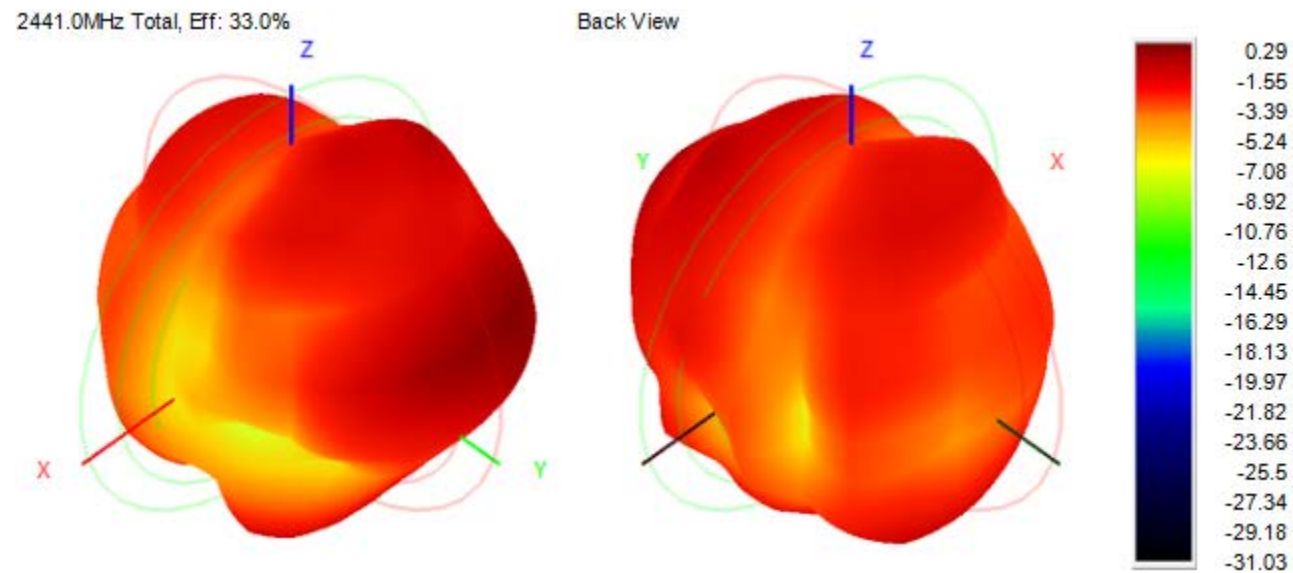


Total(H-XY), Max=-0.86dBi, CirD=17.28

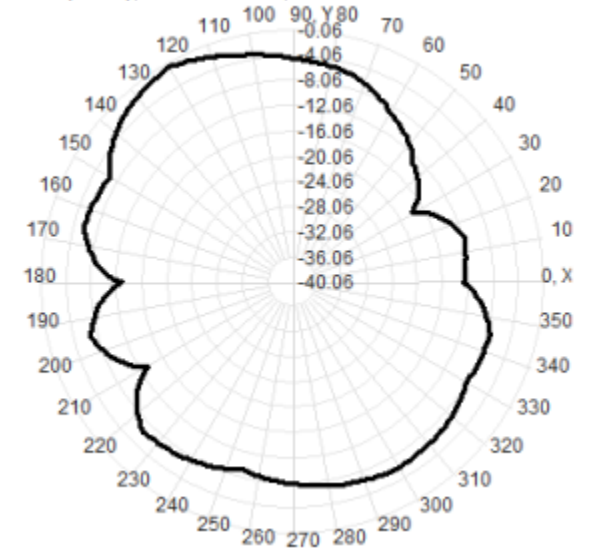
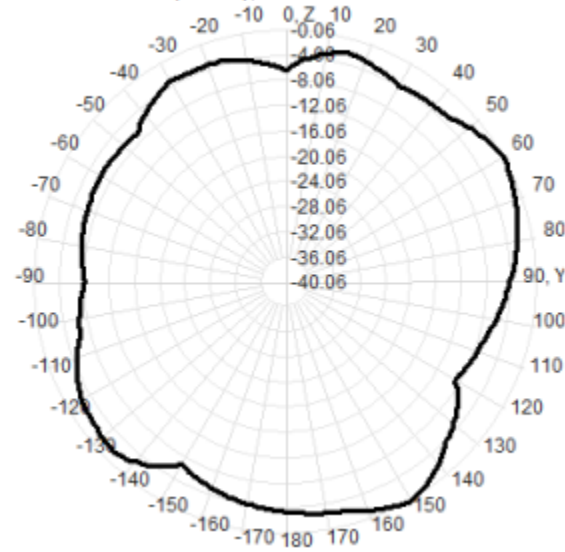
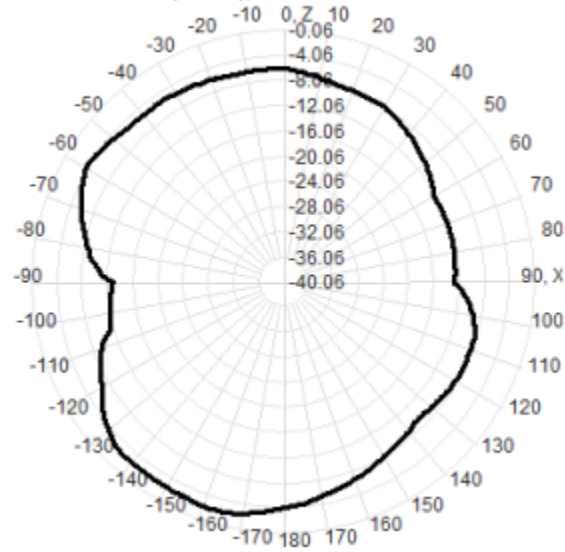


UCI CENTER FOR RF DESIGN AND CHARACTERIZATION

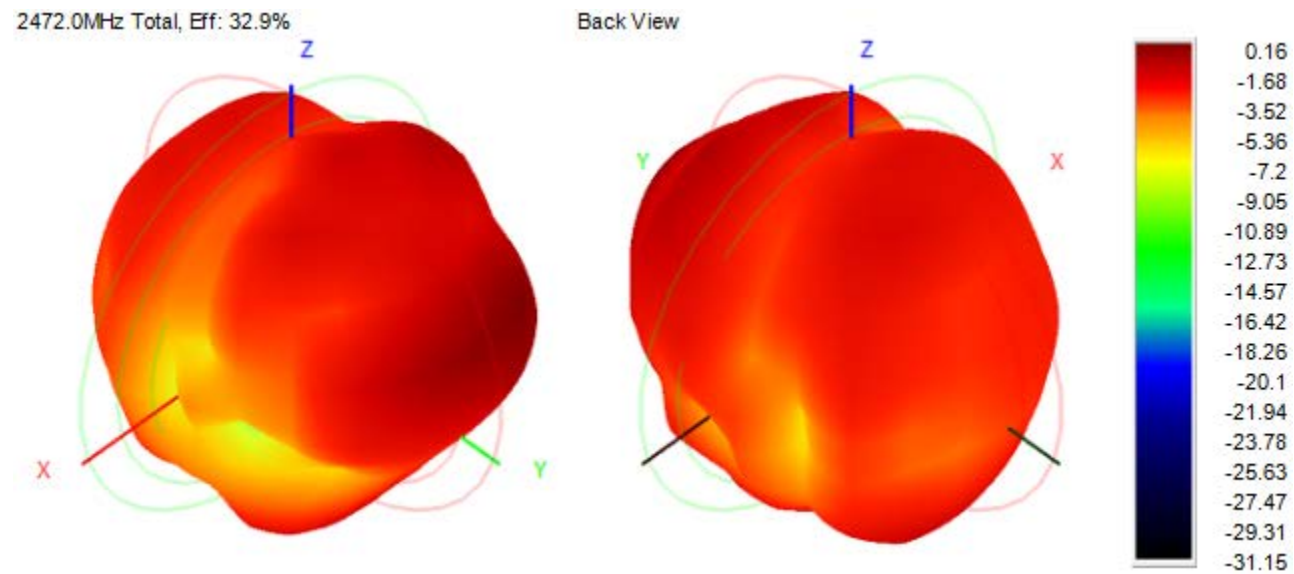
Radiation pattern: Antenna 3D Pattern at $f = 2441\text{MHz}$



Radiation pattern: Antenna 2D Pattern at $f = 2441\text{MHz}$

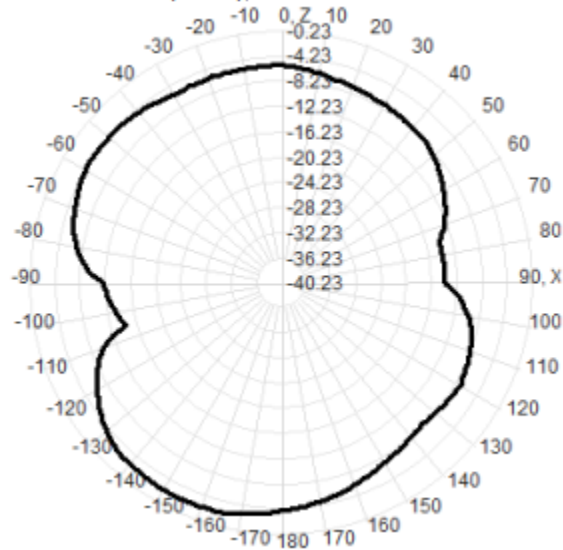


Radiation pattern: Antenna 3D Pattern at $f = 2472\text{MHz}$

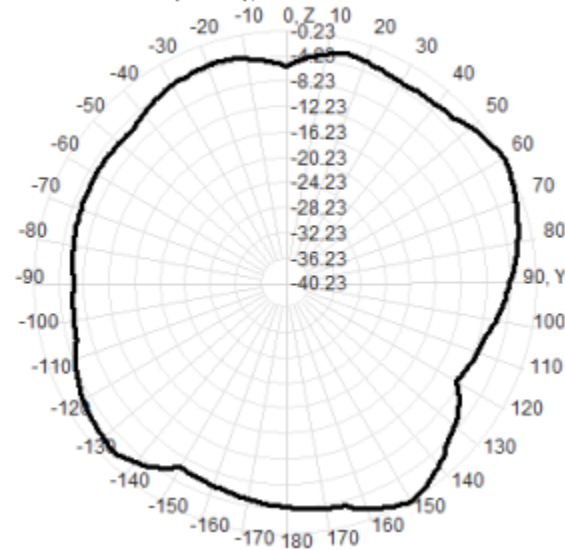


Radiation pattern: Antenna 2D Pattern at $f = 2472\text{MHz}$

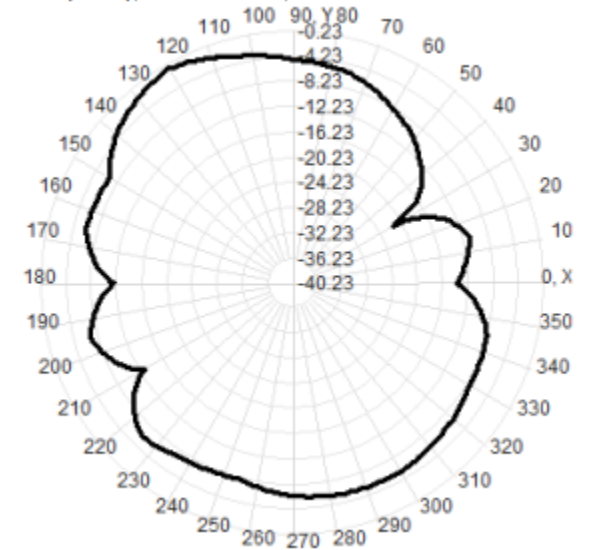
2472.0MHz Total(E1-XZ), Max=-2.55dBi



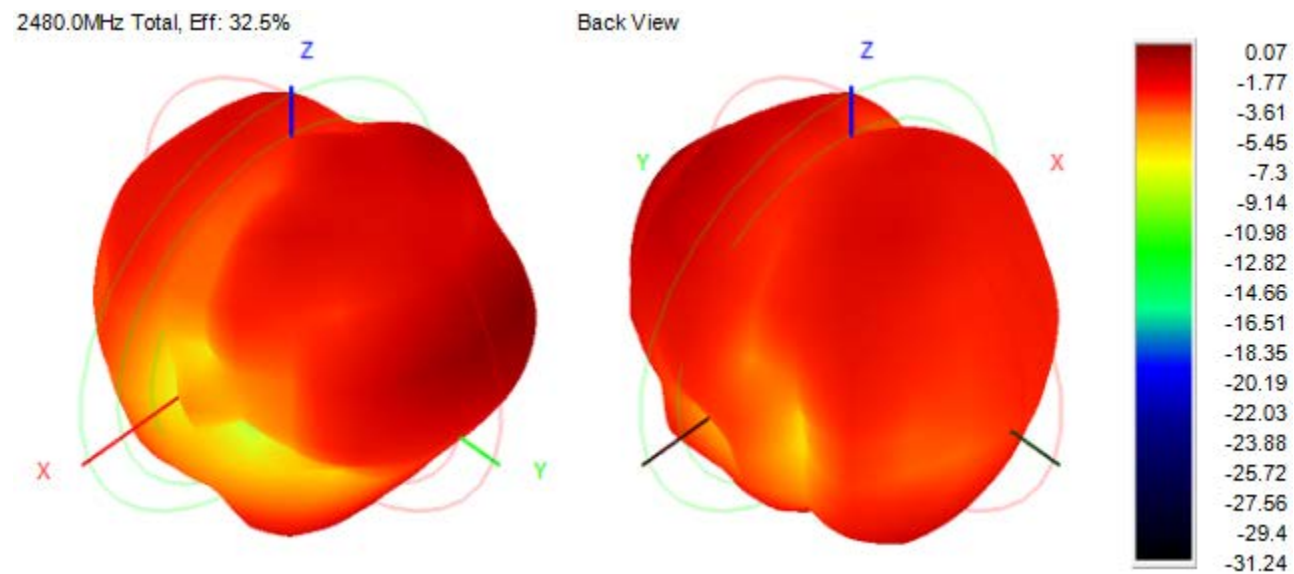
2472.0MHz Total(E2-YZ), Max=-0.23dBi



Total(H-XY), Max=-0.98dBi, CirD=21.08

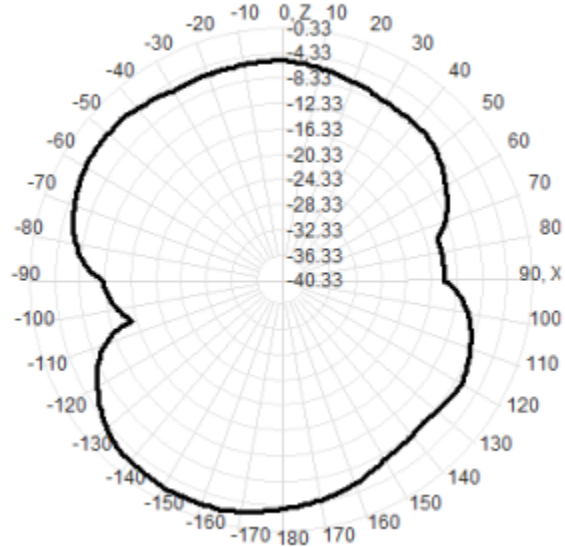


Radiation pattern: Antenna 3D Pattern at $f = 2480\text{MHz}$

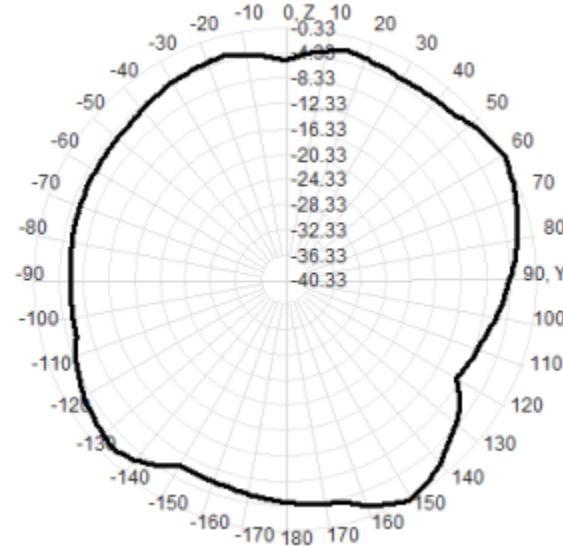


Radiation pattern: Antenna 2D Pattern at $f = 2480\text{MHz}$

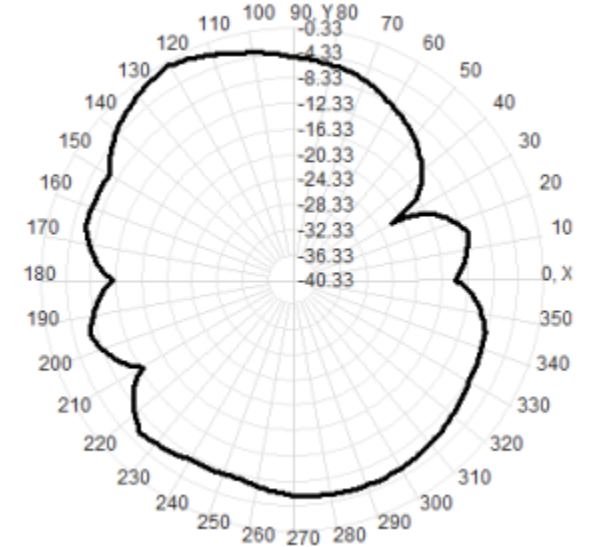
2480.0MHz Total(E1-XZ), Max=-2.58dBi



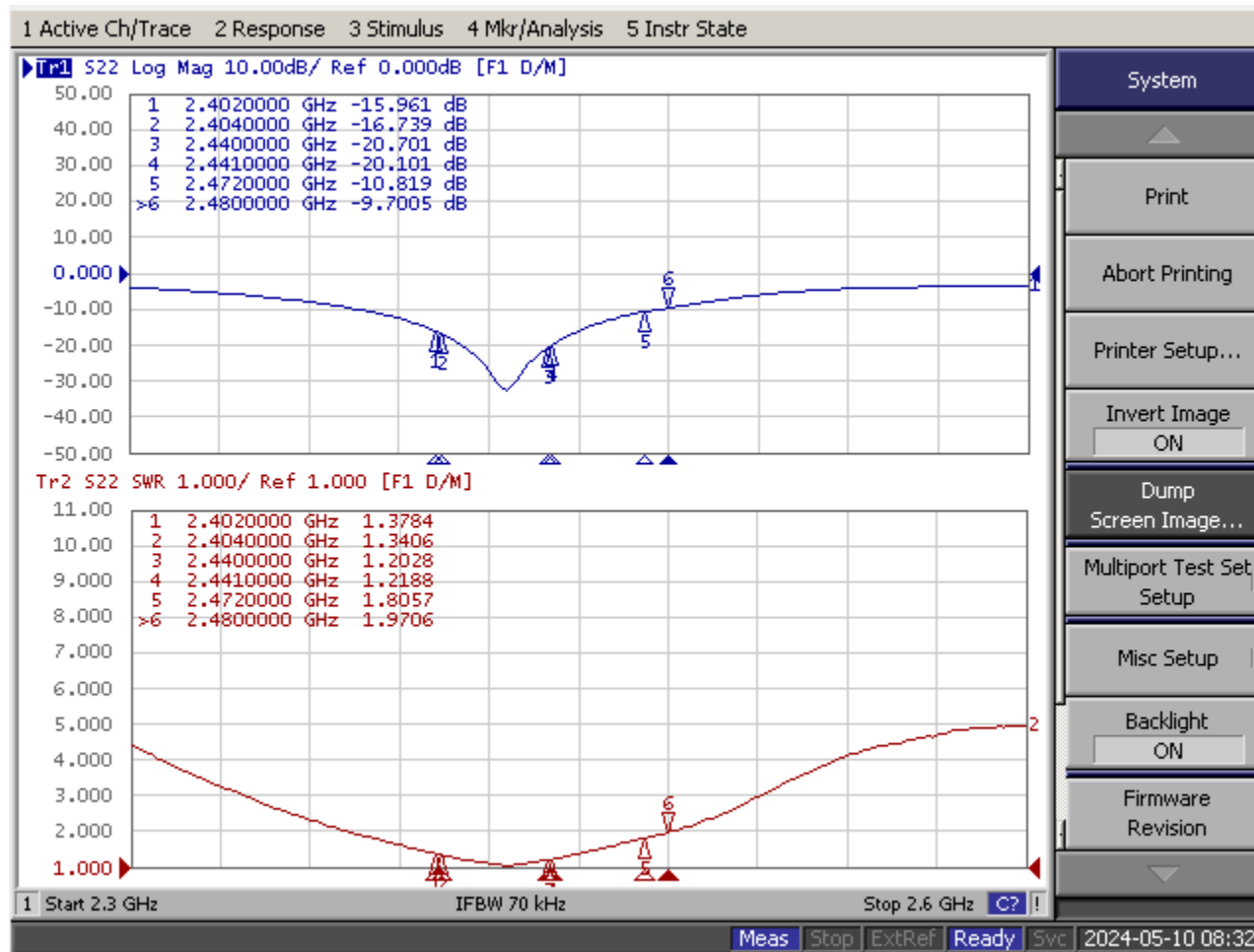
2480.0MHz Total(E2-YZ), Max=-0.33dBi



Total(H-XY), Max=-1.08dBi, CirD=21.17



Rturn Loss: Antenna1



Measurements summary

Frequency ID	1	2	3	4	5	6
Frequency (MHz)	2402.0	2404.0	2440.0	2441.0	2472.0	2480.0
Efficiency (dBi)	-4.76	-4.83	-4.92	-4.81	-4.82	-4.89
Gain (dBi)	0.13	0.11	0.19	0.29	0.16	0.07
Efficiency (%)	33.42	32.89	32.19	33.05	32.94	32.46
Directivity (dB)	4.89	4.94	5.11	5.10	4.99	4.96
Peak Gain Position (Theta)	150.00	150.00	150.00	150.00	60.00	150.00
Peak Gain Position (Phi)	60.00	60.00	60.00	60.00	105.00	60.00
Efficiency ThetaPol (%)	12.52	12.28	11.37	11.66	11.45	11.33
Efficiency PhiPol (%)	20.90	20.61	20.82	21.39	21.48	21.12
Upper Hem. Efficiency (%)	16.41	16.10	15.15	15.61	16.59	16.53
Lower Hem. Efficiency (%)	17.01	16.79	17.04	17.43	16.35	15.93

- PIFA antenna Stainless Steel SUS301-H/ Gold/Nickel plated - Gold plated contact area/stamping/Thickness 0.1mm

