

# Report for Broadcom

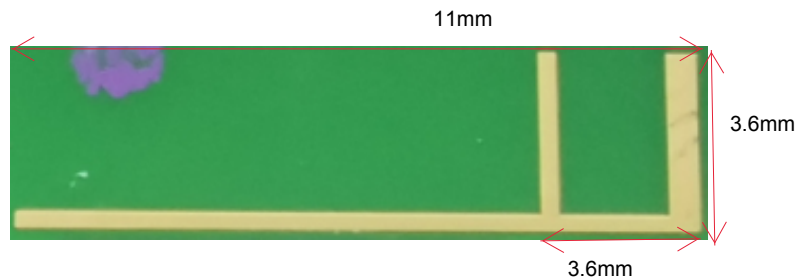
*By Alfred Grau*

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UCI CENTER FOR RF DESIGN AND CHARACTERIZATION

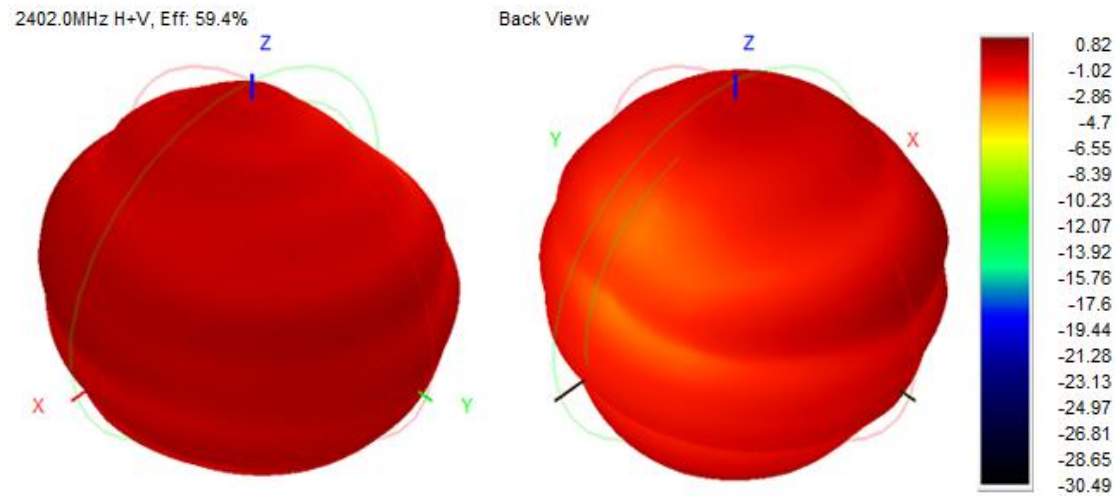
## Tested Products.

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

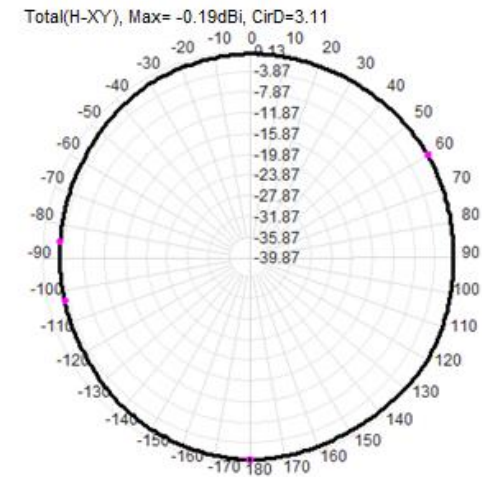
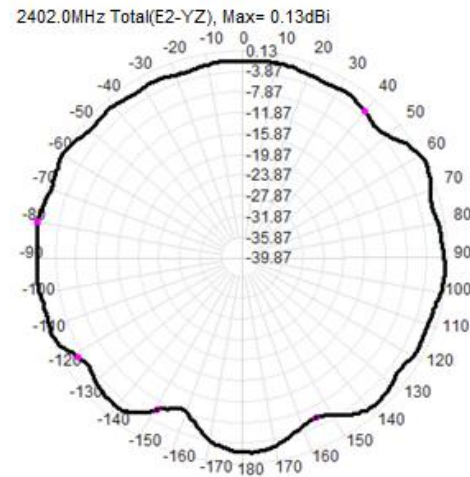
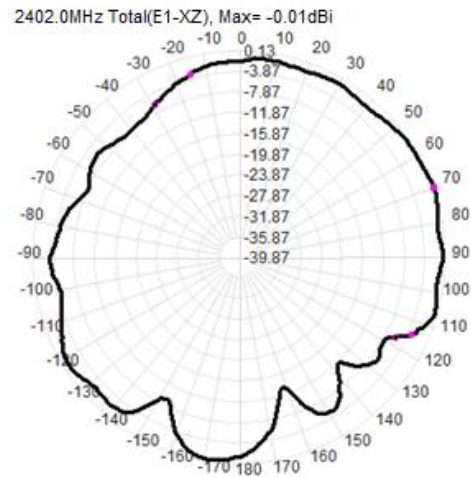


# Radiation pattern: Antenna-TX 3D Pattern at $f = 2402\text{MHz}$

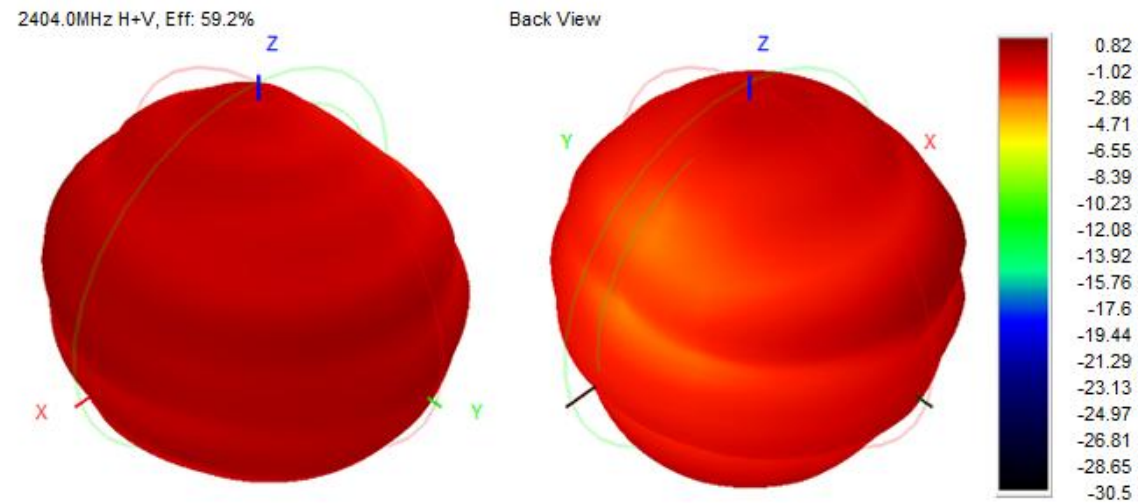
Coordinate System Reference: Antenna



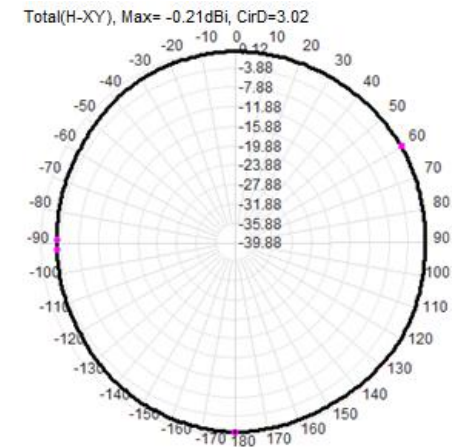
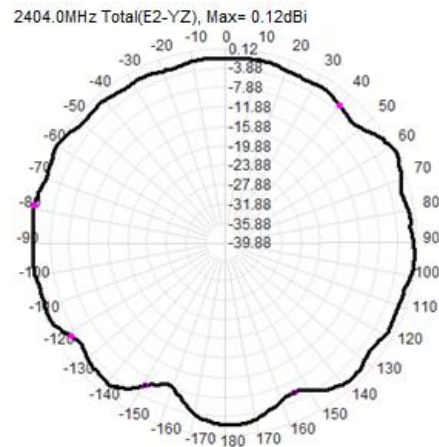
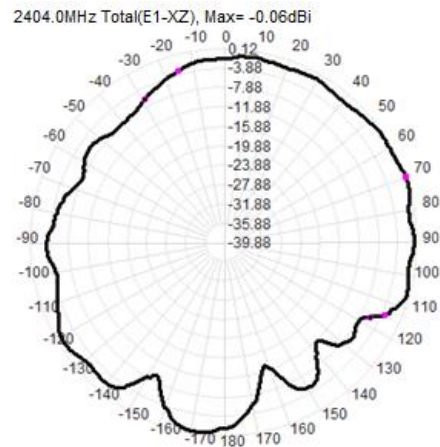
# Radiation pattern: Antenna-TX 2D Pattern at $f = 2402\text{MHz}$



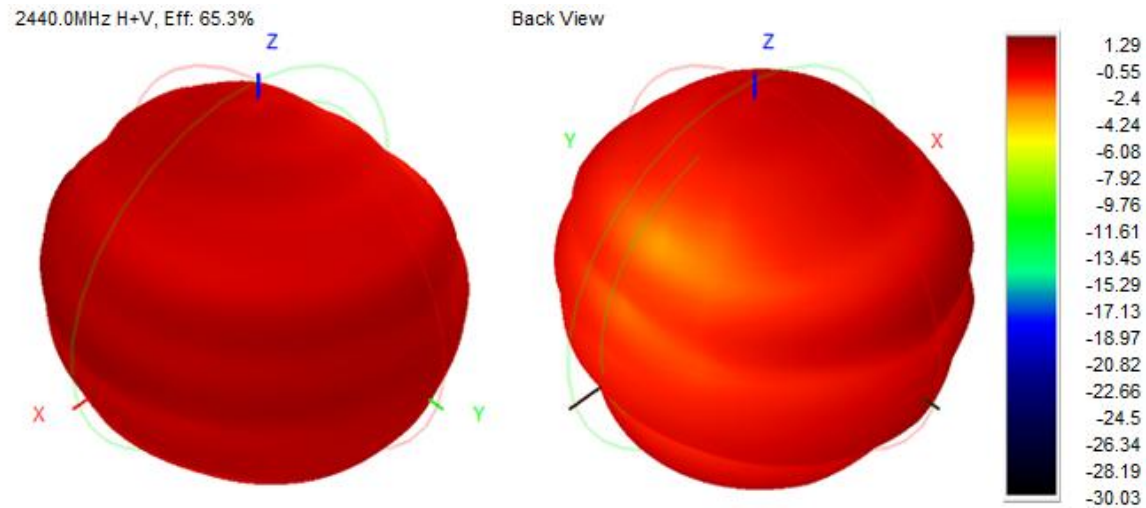
# Radiation pattern: Antenna-TX 3D Pattern at $f = 2404\text{MHz}$



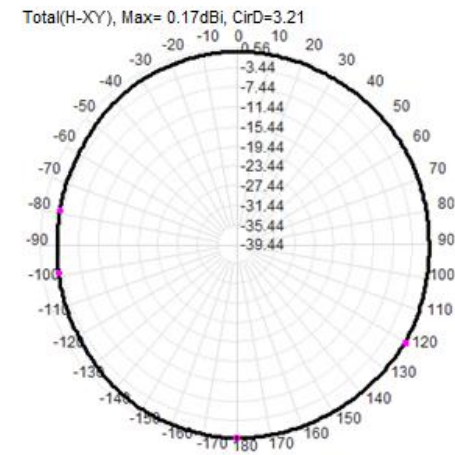
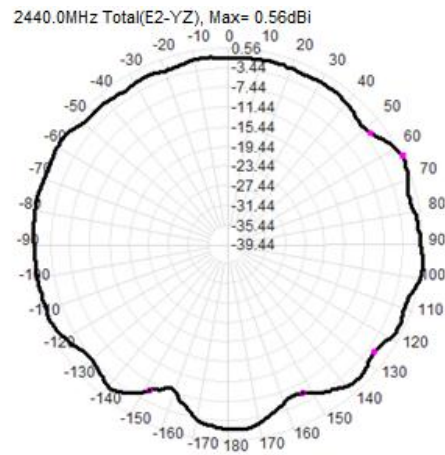
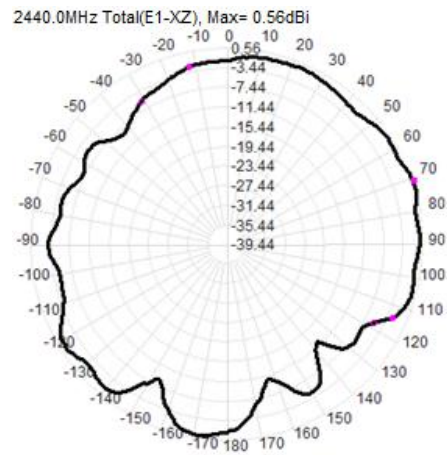
# Radiation pattern: Antenna-TX 2D Pattern at $f = 2404\text{MHz}$



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

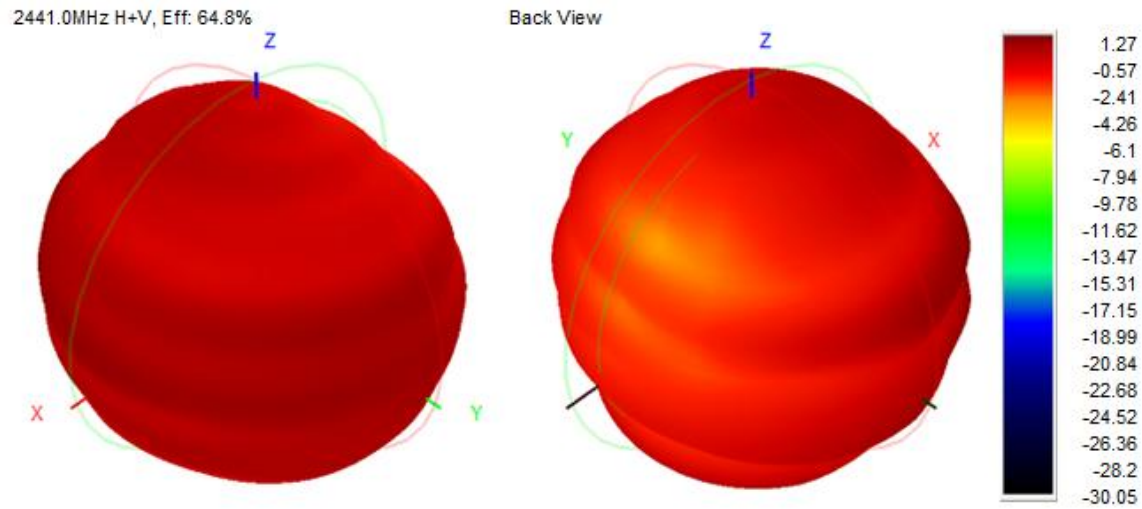


# Radiation pattern: Antenna-TX 2D Pattern at $f = 2440\text{MHz}$

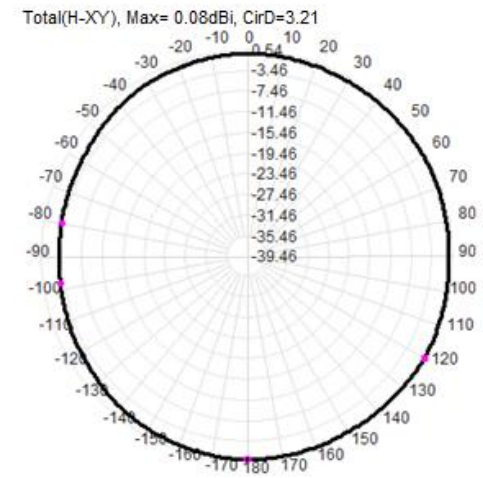
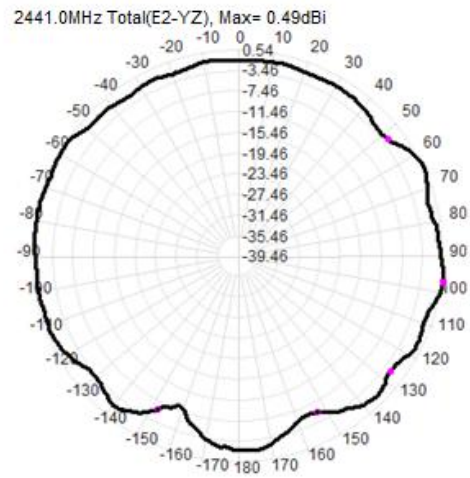
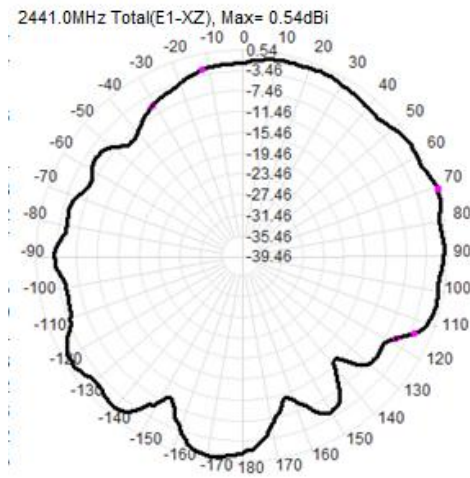




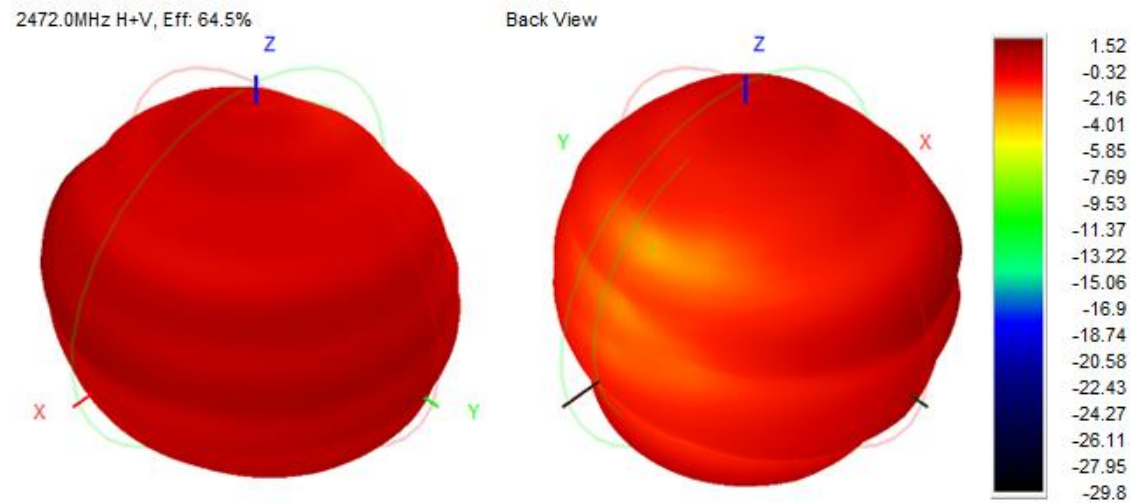
# Radiation pattern: Antenna-TX 3D Pattern at $f = 2441\text{MHz}$



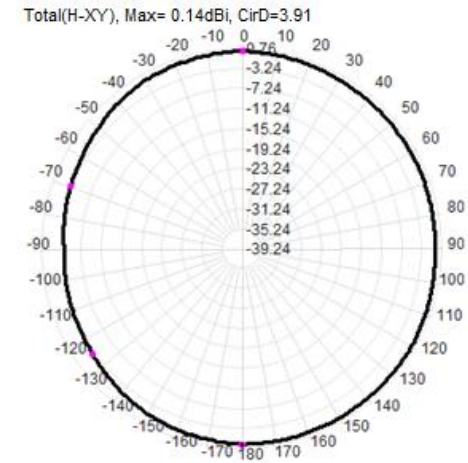
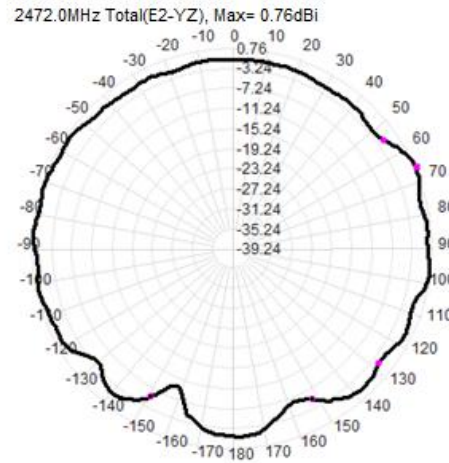
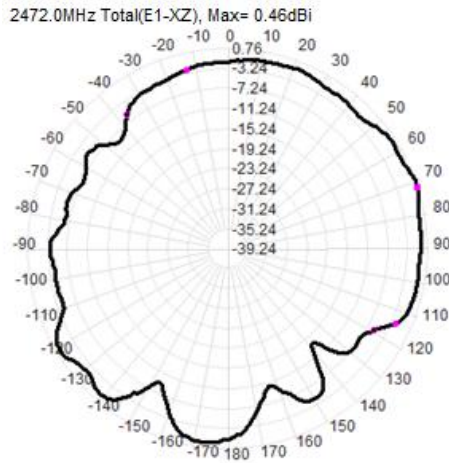
# Radiation pattern: Antenna-TX 2D Pattern at $f = 2441\text{MHz}$



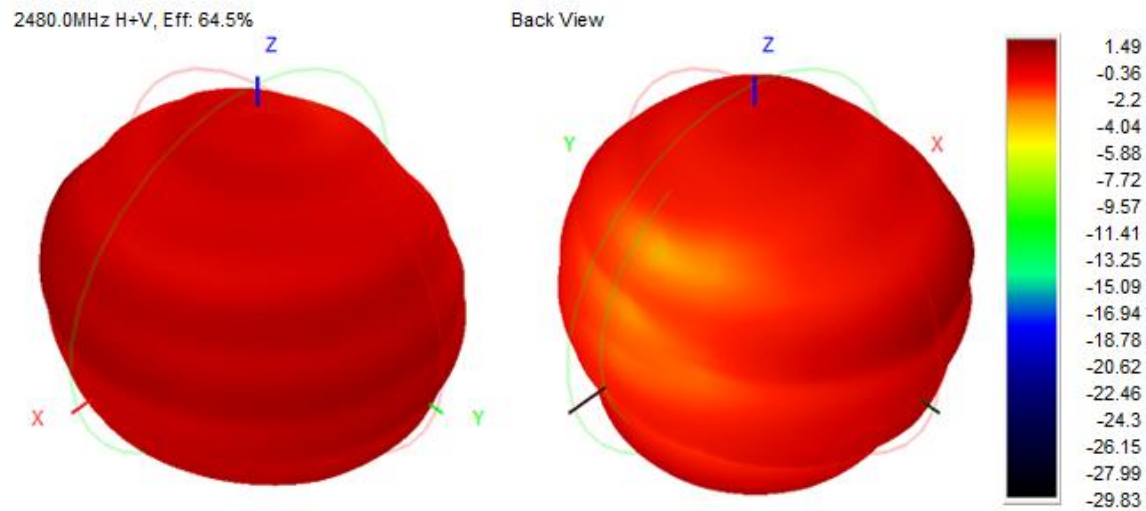
# Radiation pattern: Antenna-TX 3D Pattern at $f = 2472\text{MHz}$



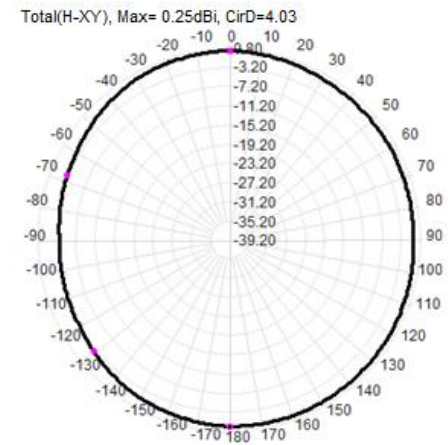
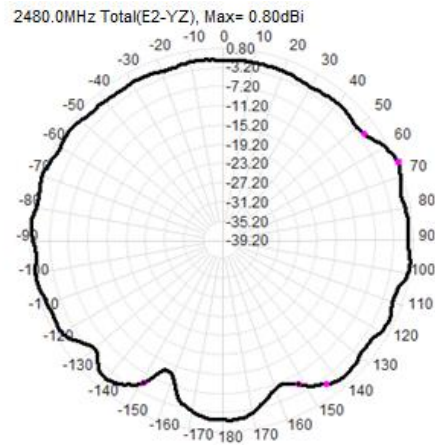
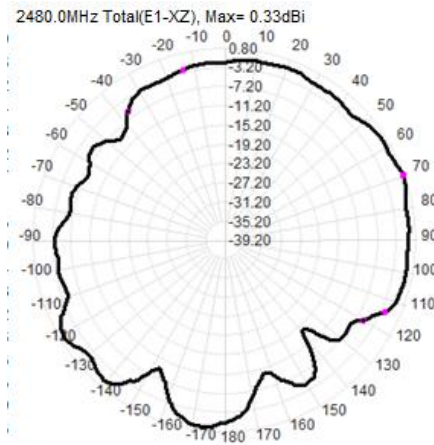
# Radiation pattern: Antenna-TX 2D Pattern at $f = 2472\text{MHz}$



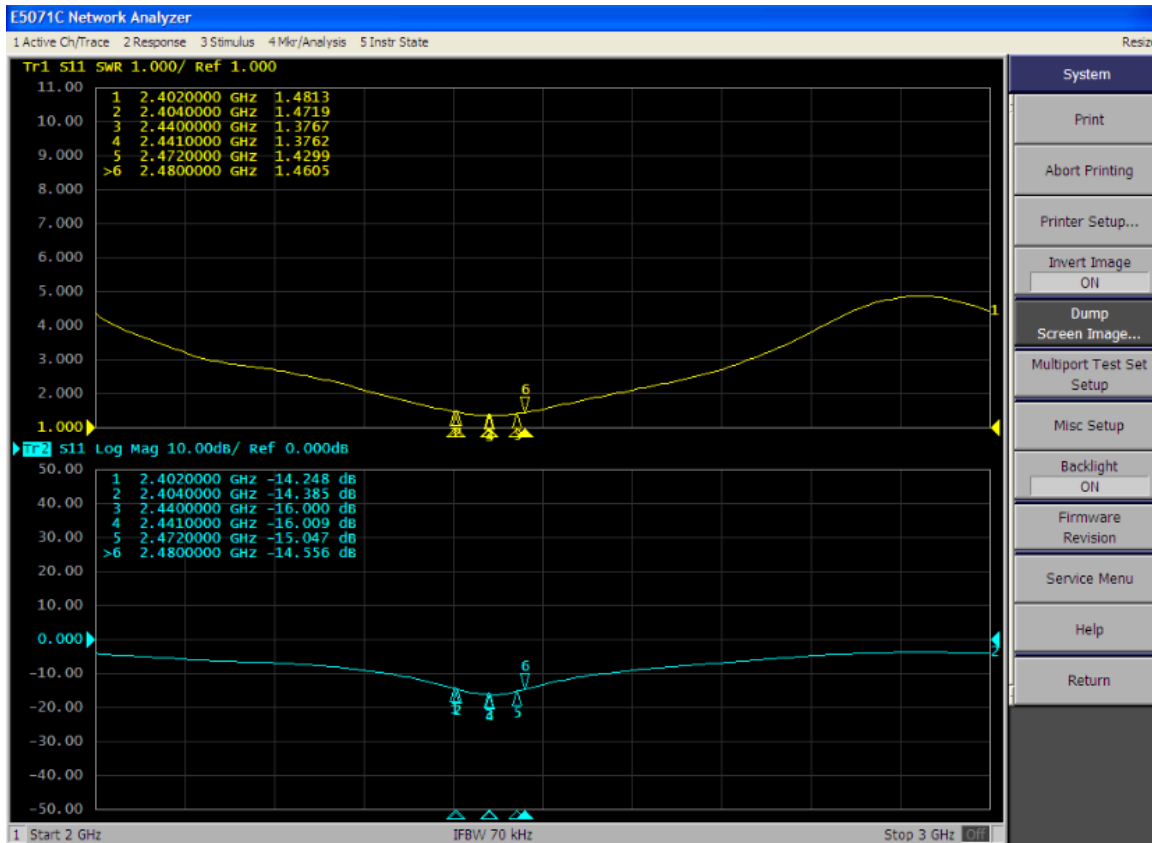
# Radiation pattern: Antenna-TX 3D Pattern at $f = 2480\text{MHz}$



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



# Return 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
Gain (dBi)	0.82	0.82	1.29	1.27	1.52	1.49
Efficiency (%)	59.42	59.17	65.27	64.76	64.54	64.51
Directivity (dB)	3.08	3.10	3.14	3.16	3.42	3.39
Peak Gain Position (Theta)	115.00	115.00	115.00	115.00	114.00	114.00
Peak Gain Position (Phi)	60.00	60.00	60.00	60.00	60.00	60.00
Efficiency ThetaPol (%)	41.41	41.16	44.73	44.47	43.49	43.17
Efficiency PhiPol (%)	18.01	18.02	20.53	20.29	21.05	21.34
Upper Hem. Efficiency (%)	32.20	32.03	35.76	35.48	35.31	35.13
Lower Hem. Efficiency (%)	27.21	27.14	29.51	29.28	29.23	29.38