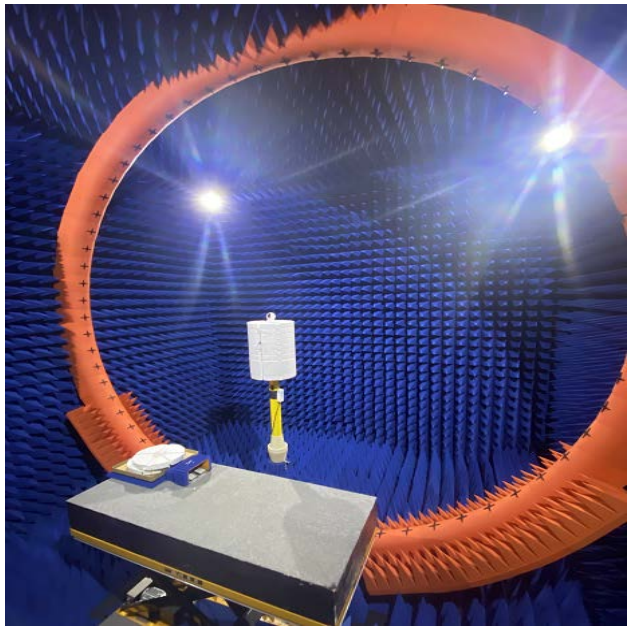
UANT® Dongguan UB Electronics Co.,Ltd

Antenna Study

- **Client Name: Boopoo Technology LLC**
- **Project Name: BC2**
- **Debugging frequency band: 2.4G+5.2G**
- **Valuation date：2023.05.19**

Internal Antenna

Testing environment

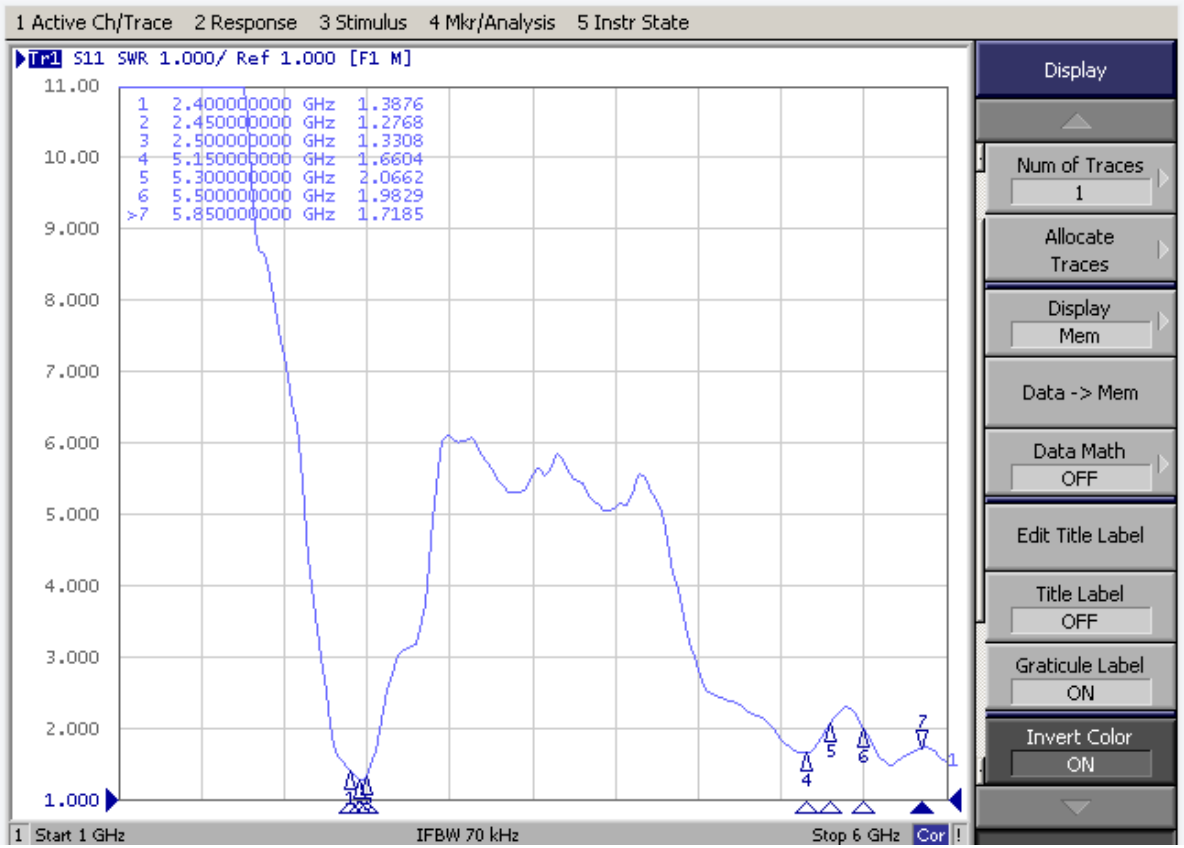


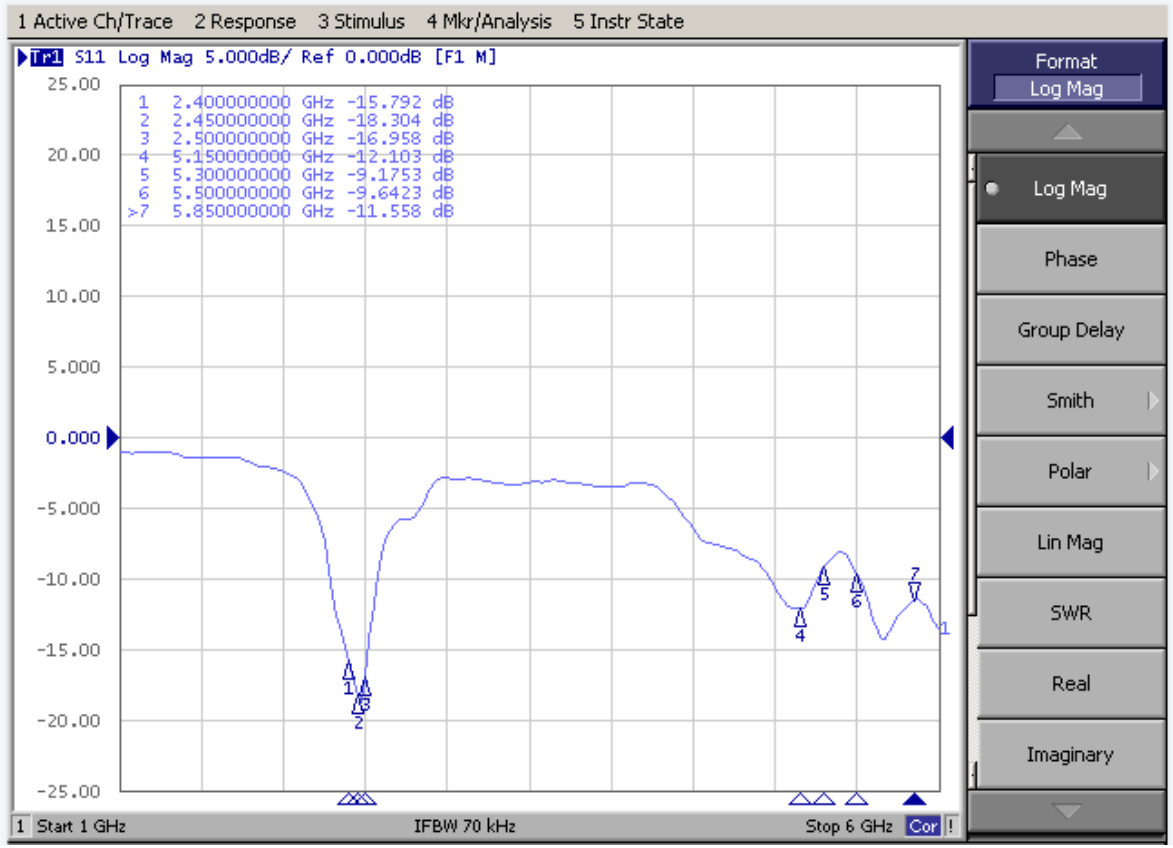
Testing 3D microwave darkroom(6m*6m*6m)

Antenna Photo

- Antenna name: WIFI
- Size: 35.2 mm*8.0mm (FPC)
- Antenna Type：FPC
- P/N：UB01C100F3D3907A
- Covers ：2.4G+5.2G
- Coaxial cable: 100mm

S Parameter_Return Loss&VSWR

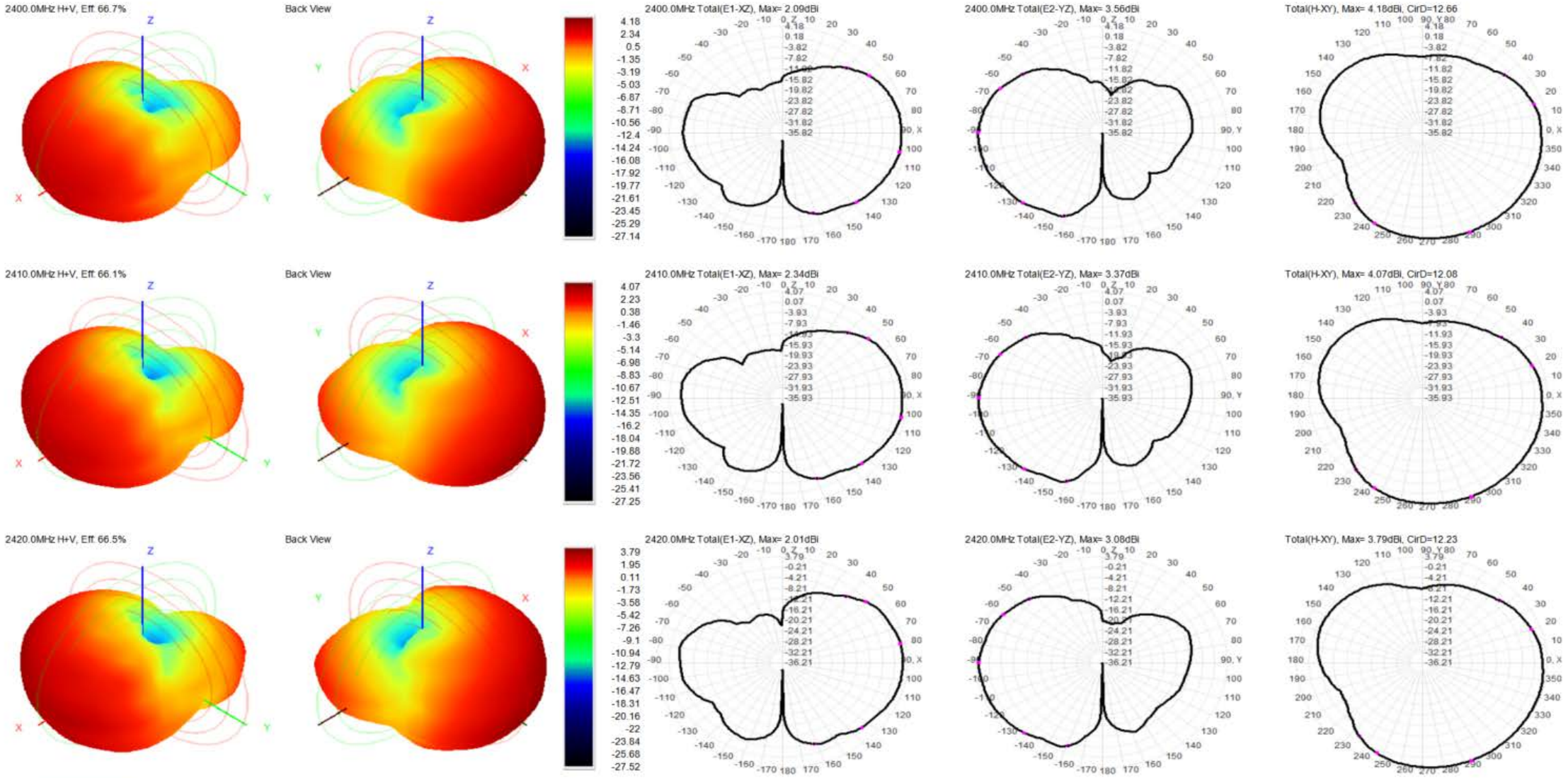


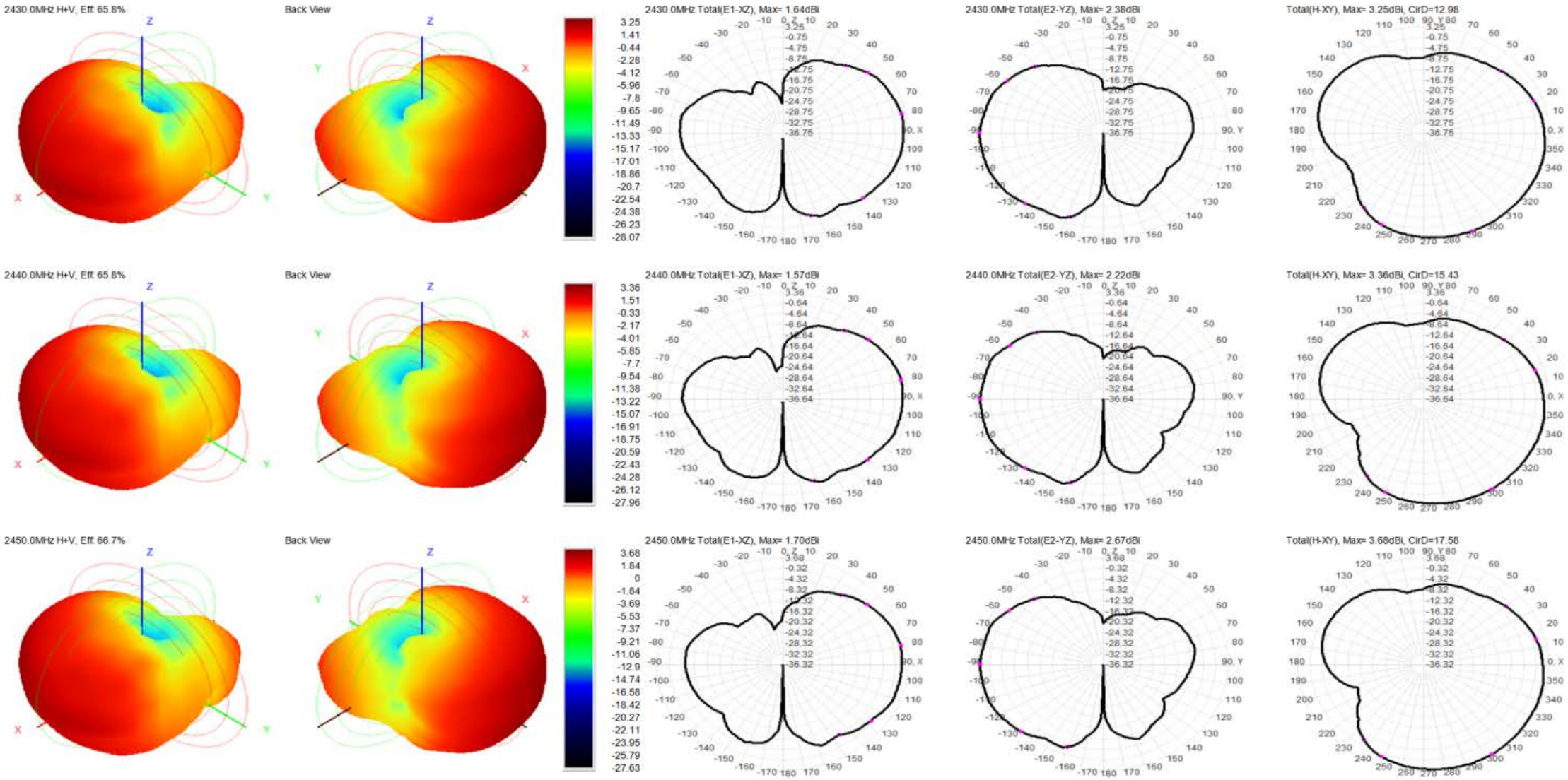


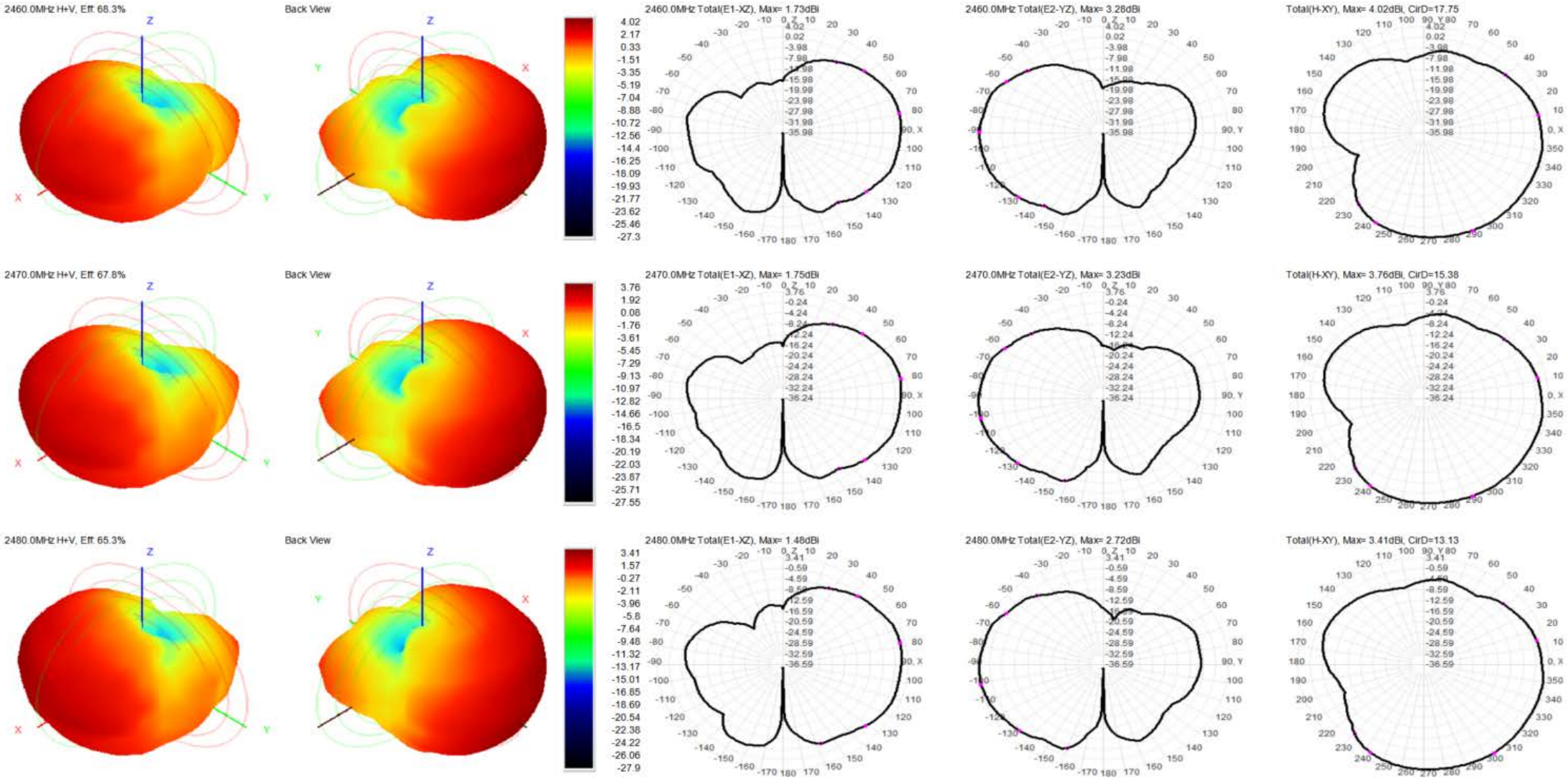
Efficiency and Gain

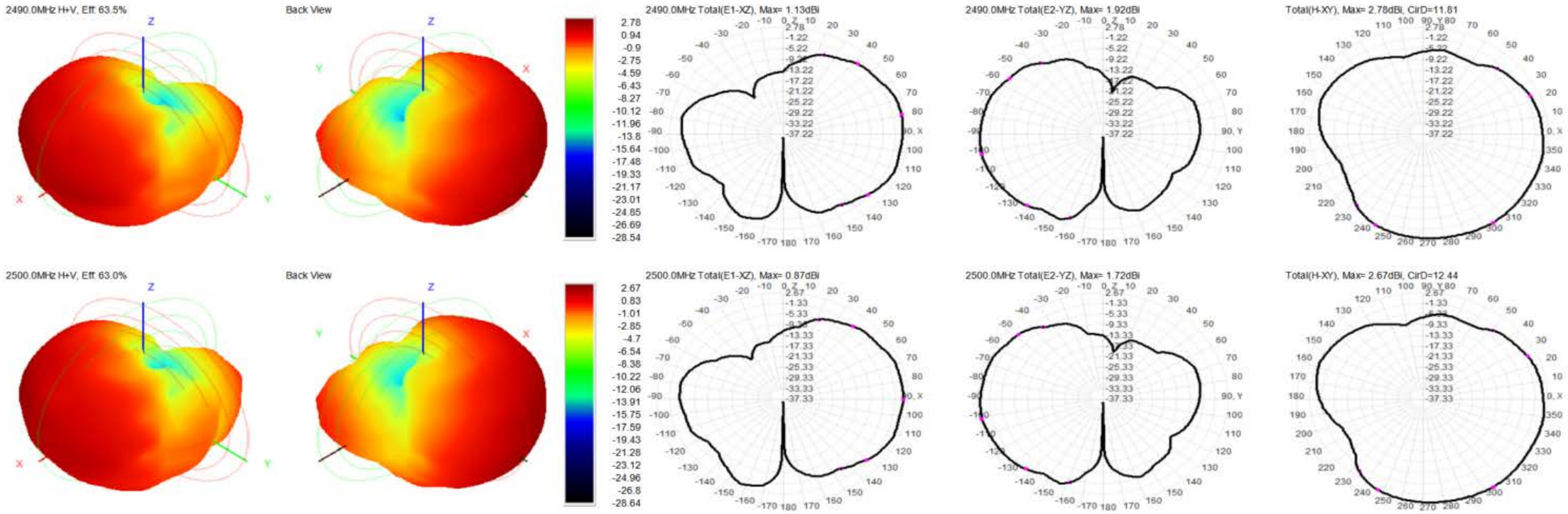
Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Gain (dBi)	4.18	4.07	3.79	3.25	3.36	3.68	4.02	3.76	3.41	2.78	2.67
Efficiency (%)	66.71	66.12	66.47	65.84	65.81	66.72	68.30	67.81	65.30	63.52	63.04

12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
5150.0	5200.0	5250.0	5300.0	5350.0	5400.0	5450.0	5500.0	5550.0	5600.0	5650.0	5700.0	5750.0	5800.0	5850.0
2.07	2.15	2.66	2.54	2.82	2.17	2.51	3.22	2.49	2.50	2.33	2.57	2.69	2.77	2.34
70.00	71.69	72.03	71.44	68.74	64.27	64.95	68.38	65.37	67.12	66.31	67.32	69.40	70.13	69.01

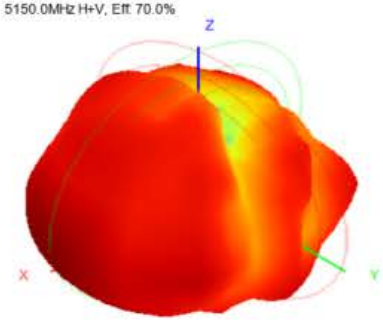

2400.0MHz H+V, Eff: 66.7%
Back View
2400.0MHz Total(E1-XZ), Max= 2.09dBi
2400.0MHz Total(E2-YZ), Max= 3.56dBi
Total(H-XY), Max= 4.18dBi, CirD=12.66
2410.0MHz H+V, Eff: 66.1%
Back View
2410.0MHz Total(E1-XZ), Max= 2.34dBi
2410.0MHz Total(E2-YZ), Max= 3.37dBi
Total(H-XY), Max= 4.07dBi, CirD=12.08
2420.0MHz H+V, Eff: 66.5%
Back View
2420.0MHz Total(E1-XZ), Max= 2.01dBi
2420.0MHz Total(E2-YZ), Max= 3.08dBi
Total(H-XY), Max= 3.79dBi, CirD=12.23


2430.0MHz H+V, Eff: 65.8%
Back View
2430.0MHz Total(E1-XZ), Max= 1.64dBi
2430.0MHz Total(E2-YZ), Max= 2.38dBi
Total(H-XY), Max= 3.25dBi, CirD=12.98
2440.0MHz H+V, Eff: 65.8%
Back View
2440.0MHz Total(E1-XZ), Max= 1.57dBi
2440.0MHz Total(E2-YZ), Max= 2.22dBi
Total(H-XY), Max= 3.36dBi, CirD=15.43
2450.0MHz H+V, Eff: 66.7%
Back View
2450.0MHz Total(E1-XZ), Max= 1.70dBi
2450.0MHz Total(E2-YZ), Max= 2.67dBi
Total(H-XY), Max= 3.68dBi, CirD=17.58

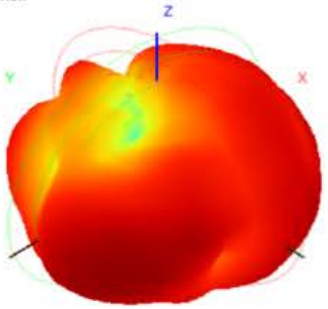

2460.0MHz H+V, Eff: 68.3%
Back View
2460.0MHz Total(E1-XZ), Max= 1.73dBi
2460.0MHz Total(E2-YZ), Max= 3.28dBi
Total(H-XY), Max= 4.02dBi, CirD=17.75
2470.0MHz H+V, Eff: 67.8%
Back View
2470.0MHz Total(E1-XZ), Max= 1.75dBi
2470.0MHz Total(E2-YZ), Max= 3.23dBi
Total(H-XY), Max= 3.76dBi, CirD=15.38
2480.0MHz H+V, Eff: 65.3%
Back View
2480.0MHz Total(E1-XZ), Max= 1.48dBi
2480.0MHz Total(E2-YZ), Max= 2.72dBi
Total(H-XY), Max= 3.41dBi, CirD=13.13


2490.0MHz H+V, Eff: 63.5%
Back View
2490.0MHz Total(E1-XZ), Max= 1.13dBi
2490.0MHz Total(E2-YZ), Max= 1.92dBi
Total(H-XY), Max= 2.78dBi, CirD=11.81
2500.0MHz H+V, Eff: 63.0%
Back View
2500.0MHz Total(E1-XZ), Max= 0.87dBi
2500.0MHz Total(E2-YZ), Max= 1.72dBi
Total(H-XY), Max= 2.67dBi, CirD=12.44

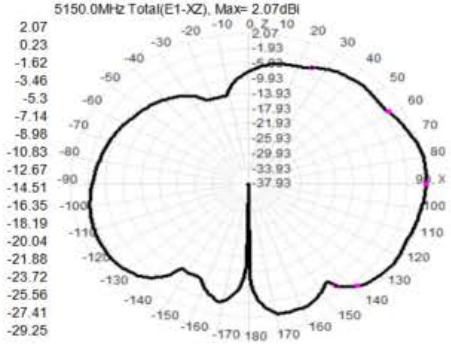
5150.0MHz H+V, Eff: 70.0%



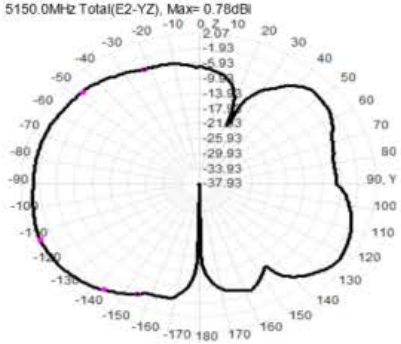
Back View



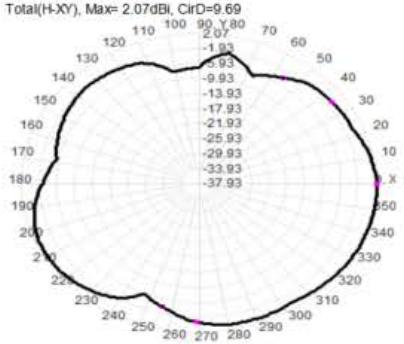
5150.0MHz Total(E1-XZ), Max= 2.07dBi



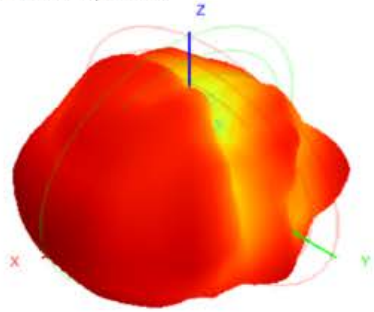
5150.0MHz Total(E2-YZ), Max= 0.78dBi



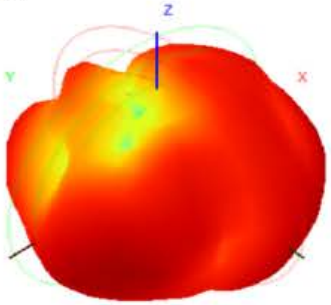
Total(H-XY), Max= 2.07dBi, CirD=9.69

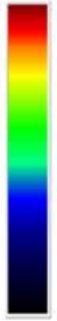


5200.0MHz H+V, Eff: 71.7%

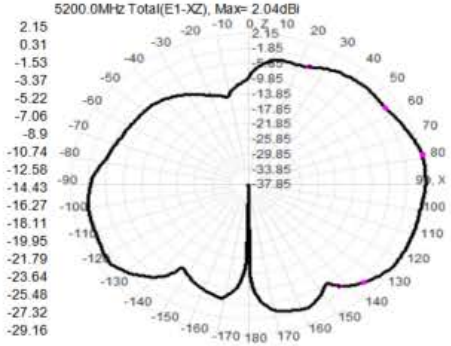


Back View

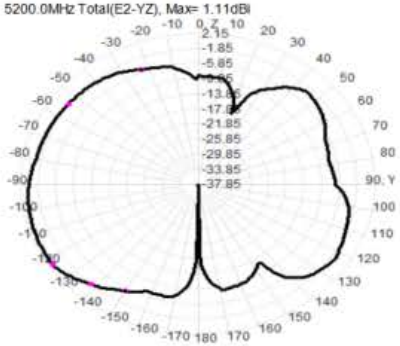




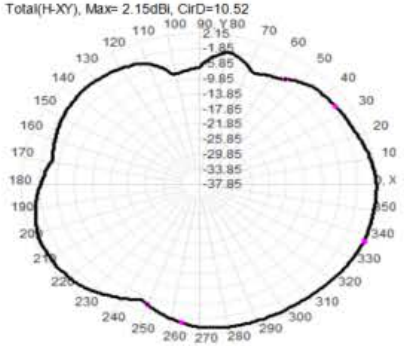
5200.0MHz Total(E1-XZ), Max= 2.04dBi



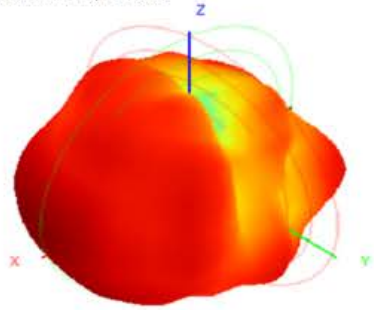
5200.0MHz Total(E2-YZ), Max= 1.11dBi



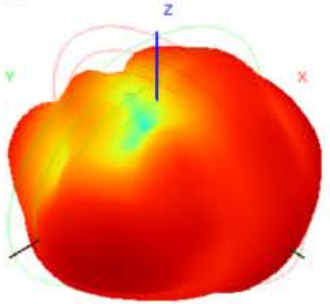
Total(H-XY), Max= 2.15dBi, CirD=10.52



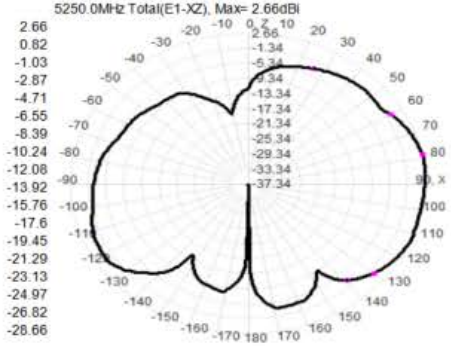
5250.0MHz H+V, Eff: 72.0%



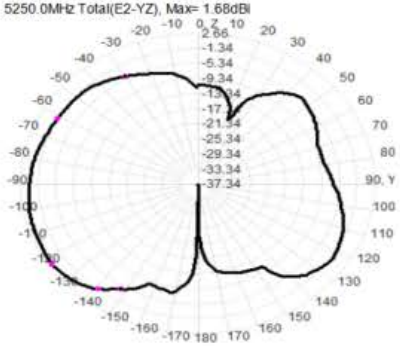
Back View



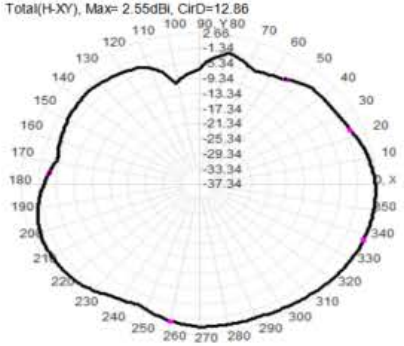
5250.0MHz Total(E1-XZ), Max= 2.66dBi



5250.0MHz Total(E2-YZ), Max= 1.68dBi



Total(H-XY), Max= 2.55dBi, CirD=12.86



Main Antenna(3D Free Space)

Item	Measurement	Total(dBm)
1	TRP	19.02
6	TRP	19.30
11	TRP	18.80
1	TIS(EIRP)	-88.06
6	TIS(EIRP)	-88.10
11	TIS(EIRP)	-88.43

11M

Item	Measurement	Total(dBm)
1	TRP	17.20
6	TRP	17.33
11	TRP	17.36
1	TIS(EIRP)	-71.26
6	TIS(EIRP)	-71.14
11	TIS(EIRP)	-71.53

54M