RE43 - Antenna Approval sheet

- PCB Overview & Matching Value
- VSWR & Smith Chart / 3D Gain data
- 2D Radiation Pattern & Gain
- 3D Radiation pattern

By designed	By checked	By approved
Kim.j.s	-	 JI Kwon
2024.12.23		2024.12.23

Rev 1.0

December. 23 , 2024

Revision History

Version	Date	Editor	Notes
R1.0	December. 24, 2024	Ji.kwon	• Release

Measurement Process

SWR / Return Loss
Use Network Analyzer when measuring SWR/Return loss and selecting standard SPL.

E5071B Agilent Network Analyzer

Additional Features:

300 kHz to 8.5 GHz

125 dB dynamic range at test port (typical)

9.6 us/point sweep speed

0.001 dB RMS trace noise

Integrated 2-, 3- and 4-ports with balanced measurements

Fixture embedding/de-embedding and port characteristic impedance conversion

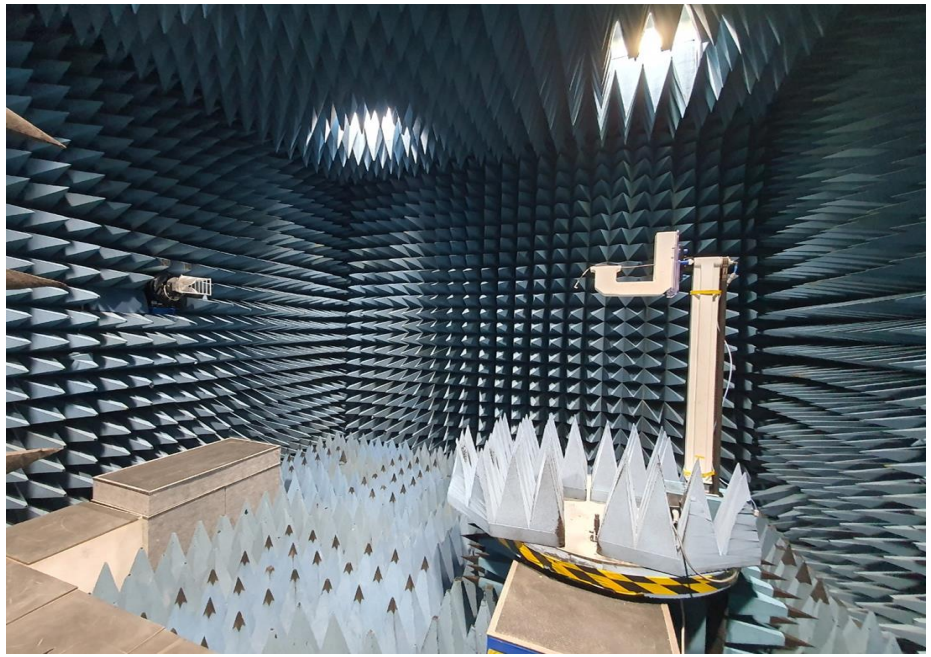
Frequency-offset mode for frequency translated devices.

Built-in Visual Basic for Applications (VBA)

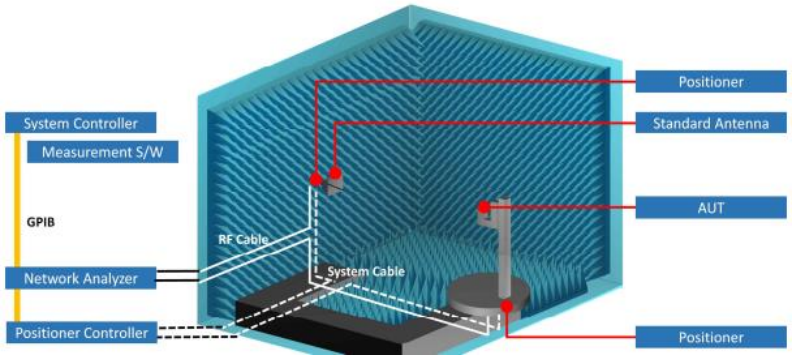
Measurement Wizard Assistant (MWA) software

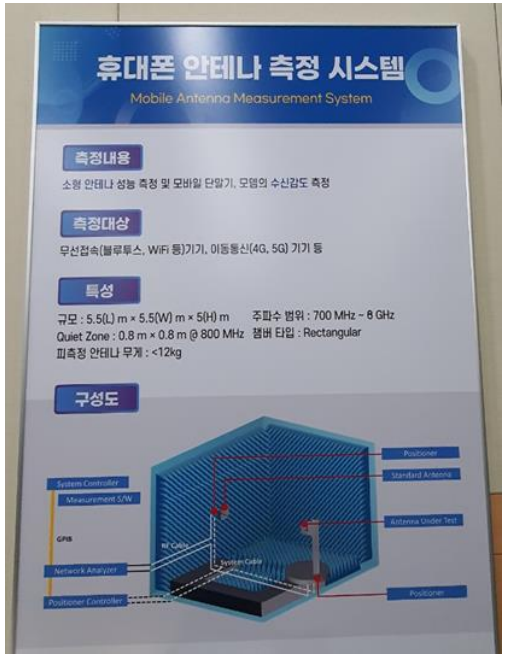
Measurement Process

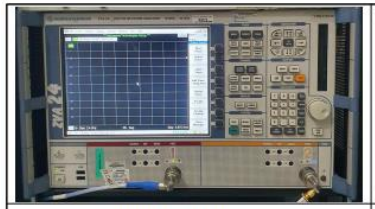
Gain
Antenna gain is measured in the Anechoic Chamber



o Size: 5.5(L) m × 5.5(W) m × 5.0(H) m
o Frequency range: 700 MHz to 8.0 GHz (Far Field)





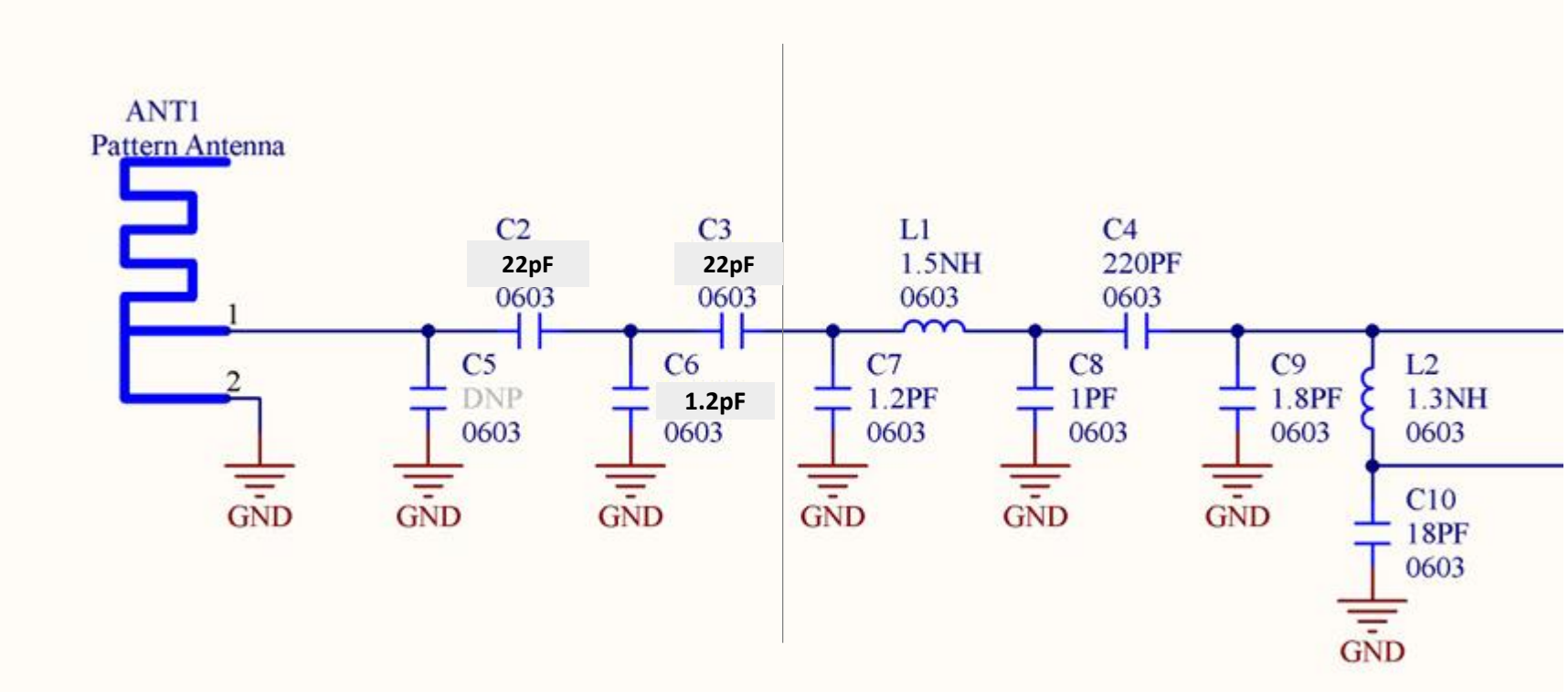
	
Network Analyzer : R&C ZVA24 (10MHz ~ 24GHz)	GSM, CDMA, WCDMA : Agilent 5515C
	
4G, LTE Cat.M, NB-Iot : Anritsu MT8821C	
	
5G (Sub6G, mmWave) : Anritsu MT8000A	WLAN (802.11 a,b,g,n,ac) : Anritsu MT8862A

Electrical Characteristics

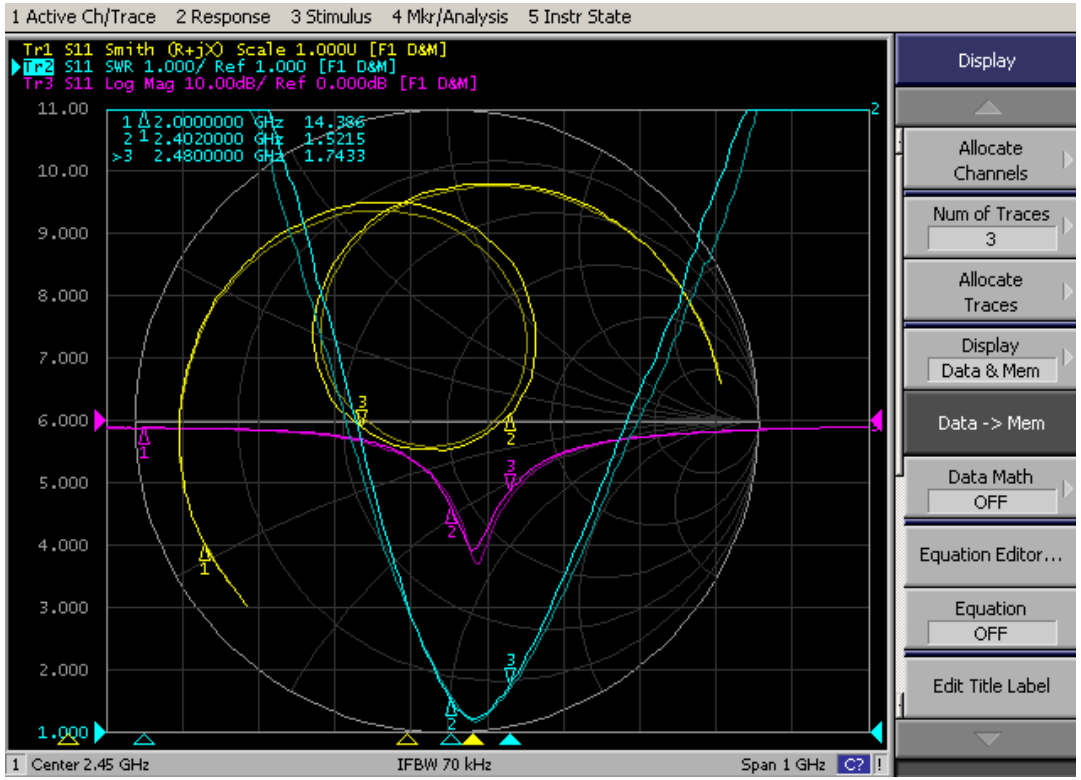
This specification covers the dielectric pattern antenna RE43A INUS RCU used in RF4CE

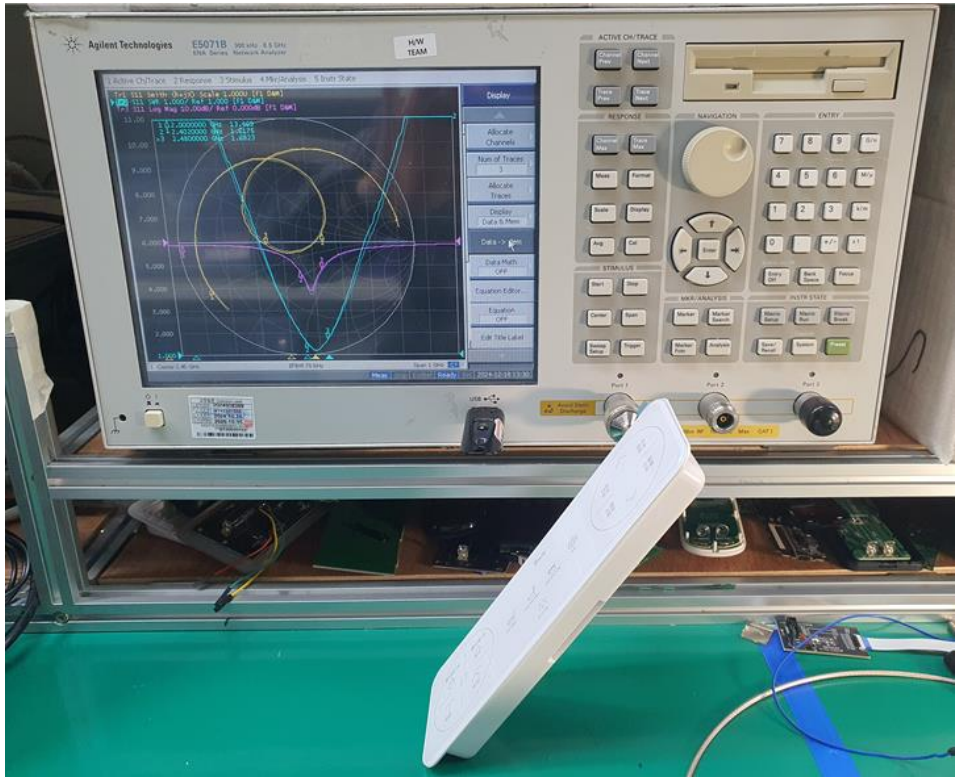
ITEM		SPECIFICATION				
Frequency Range		2402 ~ 2480 MHz				
VSWR		3:1 Max				
Polarization		Linear				
Frequency [MHz]		2402	2440	2450	2470	2480
Gain [dBi]	Peak	3.12	3.29	3.17	3.59	3.50
	Average	-1.75	-1.58	-1.50	-1.61	-1.68
Efficiency [%]		66.78	69.52	70.81	68.95	67.68

PCB Overview & Matching Value



VSWR & Smith Chart / 3D Gain data



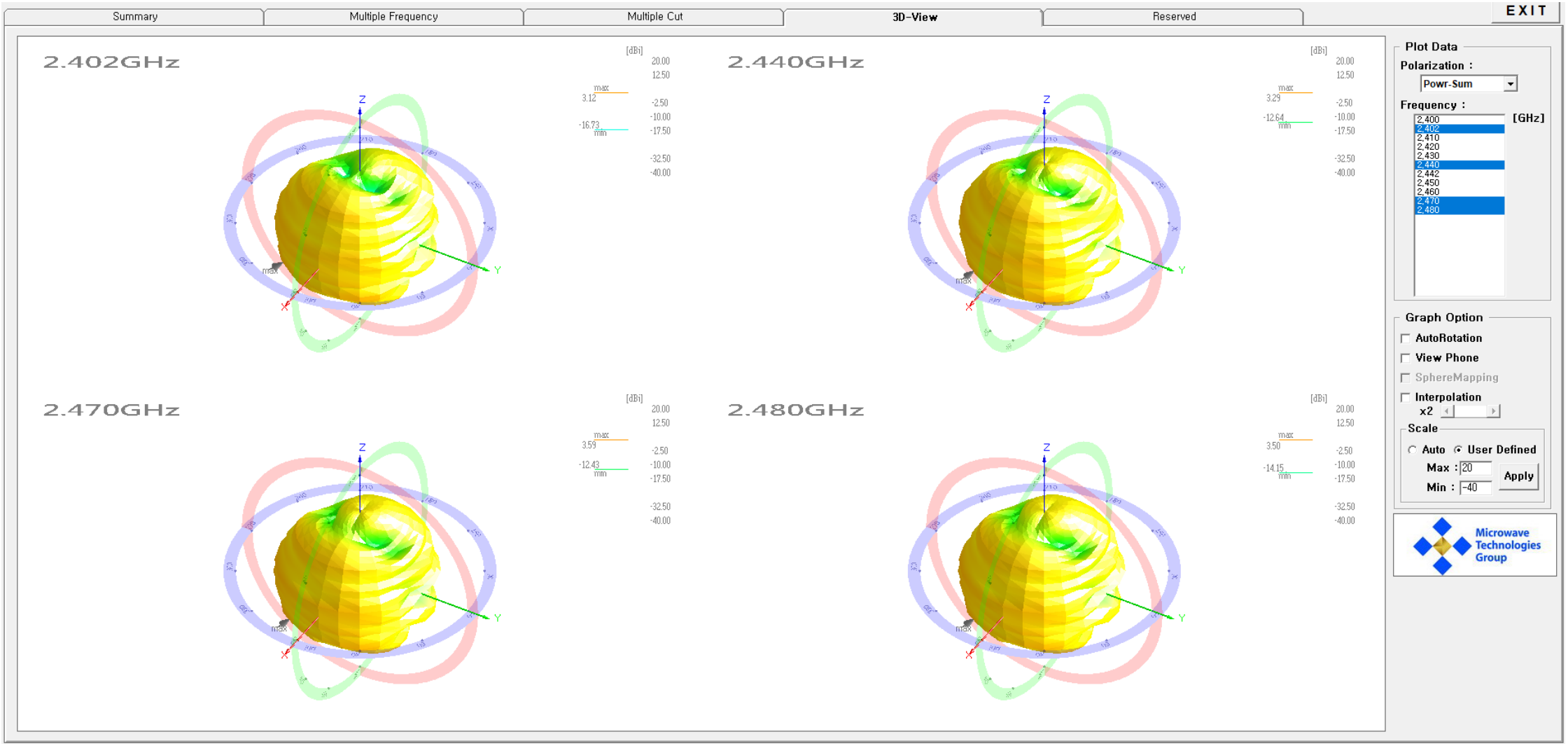


2D Radiation Pattern & Gain (ANT1)

3D Result Summary :

		Theta-Pc					Phi-Pol(\					PwrSum				
No	Freq.[MHz]	Eff.[%]	Avg.[dBi]	Peak[dBi]	Theta[	Phi[de	Eff.[%]	Avg.[dBi]	Peak[dBi]	Theta[	Phi[de	Eff.[%]	Avg.[dBi]	Peak[dBi]	Theta[	Phi[de
1	2400.000	32.16	-4.93	1.10	-80.00	165.00	35.85	-4.46	3.12	-135.00	90.00	68.01	-1.67	3.22	-135.00	90.00
2	2402.000	31.56	-5.01	1.04	-80.00	165.00	35.21	-4.53	3.01	-135.00	90.00	66.78	-1.75	3.12	-135.00	90.00
3	2410.000	32.55	-4.87	1.18	-80.00	165.00	36.22	-4.41	3.05	-135.00	90.00	68.77	-1.63	3.17	-135.00	90.00
4	2420.000	32.54	-4.88	1.18	-80.00	165.00	35.86	-4.45	2.94	-135.00	90.00	68.40	-1.65	3.08	-135.00	90.00
5	2430.000	31.93	-4.96	1.02	-80.00	165.00	35.14	-4.54	2.82	-140.00	90.00	67.07	-1.73	2.93	-135.00	90.00
6	2440.000	32.53	-4.88	1.07	-80.00	165.00	36.98	-4.32	3.20	-140.00	90.00	69.52	-1.58	3.29	-140.00	90.00
7	2442.000	33.37	-4.77	1.19	-80.00	165.00	38.11	-4.19	3.37	-140.00	90.00	71.48	-1.46	3.46	-140.00	90.00
8	2450.000	32.70	-4.86	1.14	80.00	0.00	38.11	-4.19	3.43	-140.00	90.00	70.81	-1.50	3.51	-140.00	90.00
9	2460.000	32.51	-4.88	1.06	80.00	0.00	37.77	-4.23	3.50	-140.00	90.00	70.27	-1.53	3.58	-140.00	90.00
10	2470.000	31.79	-4.98	0.87	80.00	0.00	37.16	-4.30	3.48	-140.00	90.00	68.95	-1.61	3.59	-140.00	90.00
11	2480.000	30.99	-5.09	0.97	-85.00	165.00	36.86	-4.33	3.40	-140.00	90.00	67.86	-1.68	3.50	-140.00	90.00

3D Radiation pattern



Thank you