Antenna Information

Item	Contents
Antenna Type	PCB pattern Antenna
Antenna peak gain	-0.47 dBi
Manufacturer / Model name	Remote Solution Co., Ltd. / EE30
Address of manufacturer	326-14, Apo-daero, Nam-myeon, Gimcheon-si, Gyeongsangbuk-do, 39662, South Korea
Test Laboratory	ONETECH
Antenna Length	0.6 cm
Antenna Width	1.4 cm
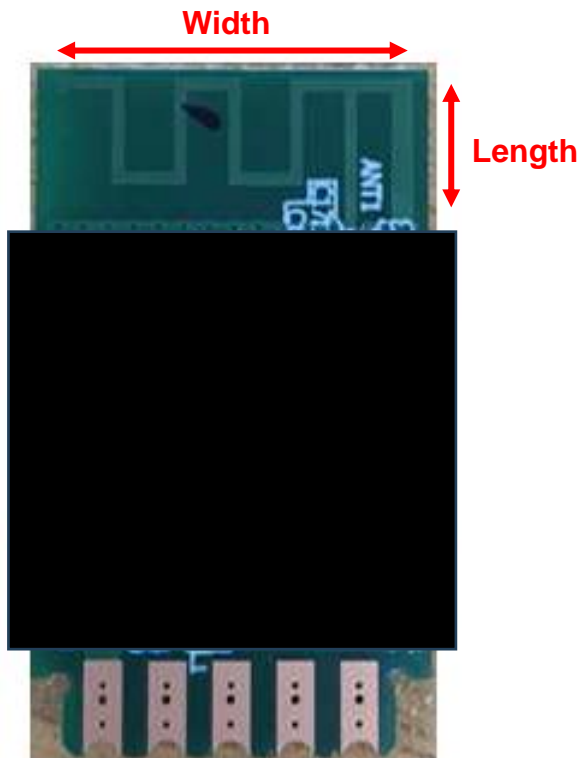
Model name: GEN2.0 S2 Plus

EE30A - 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. 17, 2024	Ji.kwon	• Release

R@mote Solution PS

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

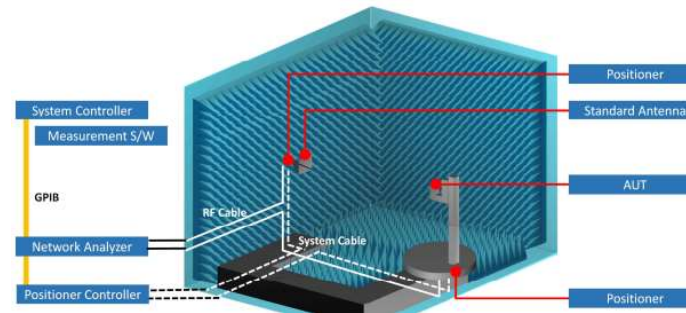**R@mote** Solution

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

Re**mote** Solution RS

Electrical Characteristics

This specification covers the dielectric pattern antenna EE30A INUS Module used in RF4CE

ITEM		SPECIFICATION				
Frequency Range		2402 ~ 2480 MHz				
VSWR		3:1 Max				
Polarization		Linear				
Frequency [MHz]		2400	2430	2450	2470	2480
Gain [dBi]	Peak	1.39	-0.47	-1.48	-2.43	-1.83
	Average	-2.61	-4.49	-5.61	-6.65	-6.15
Efficiency [%]		54.87	35.58	27.46	21.63	24.26

R(e)mote Solution RS
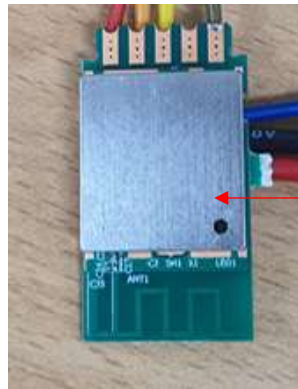
PCB Overview & Matching Value

PCB Pattern Antenna

50ohm matching

2.4GHz LPF

Shield CAN

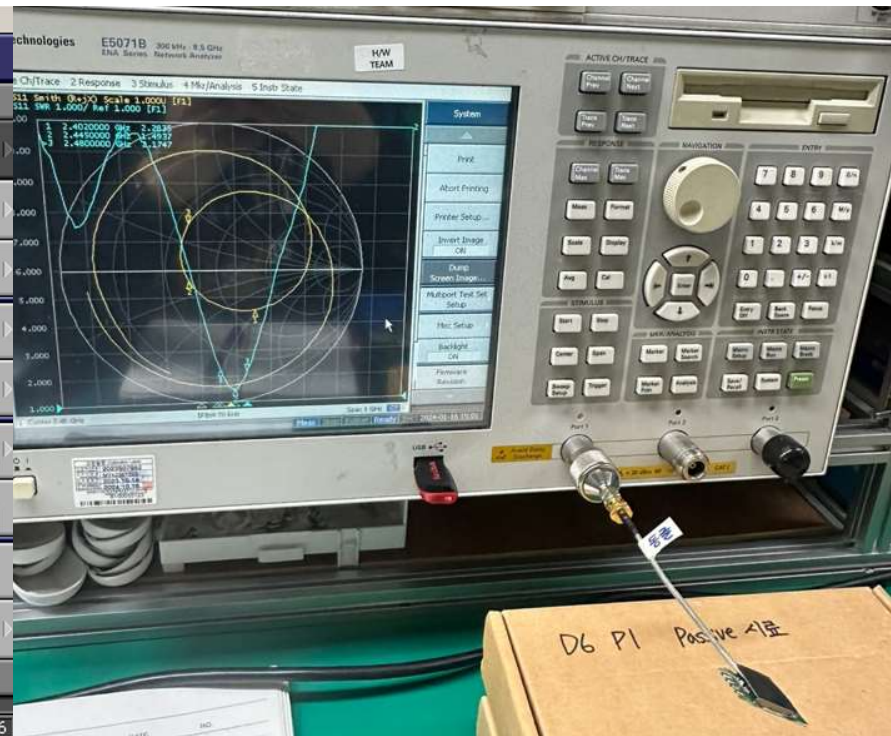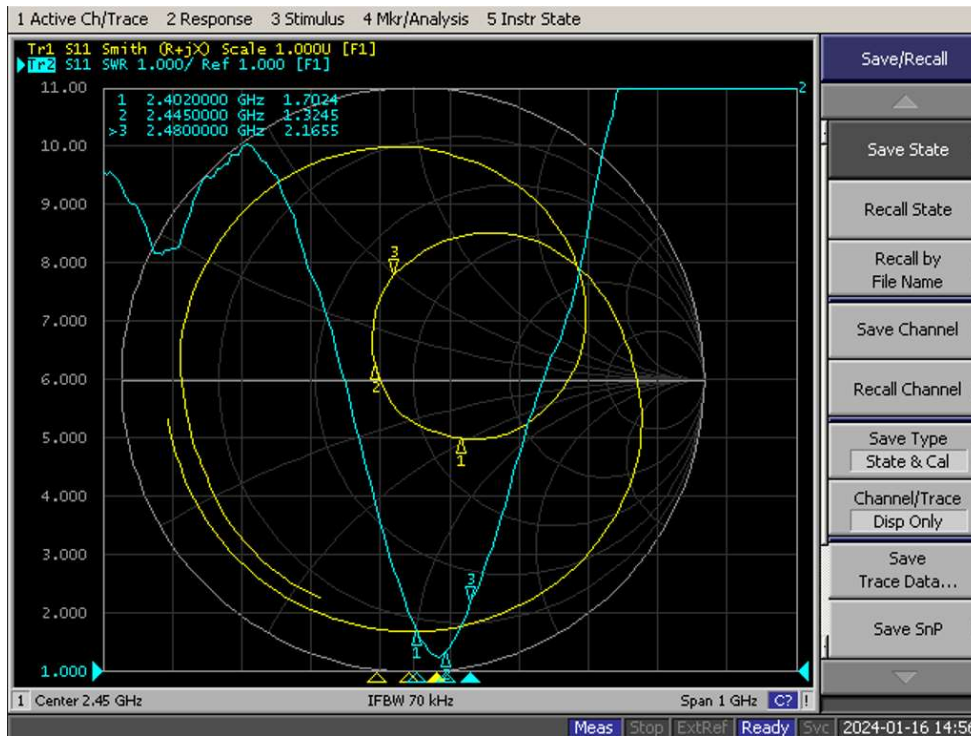**R(e)mote** *Solution*
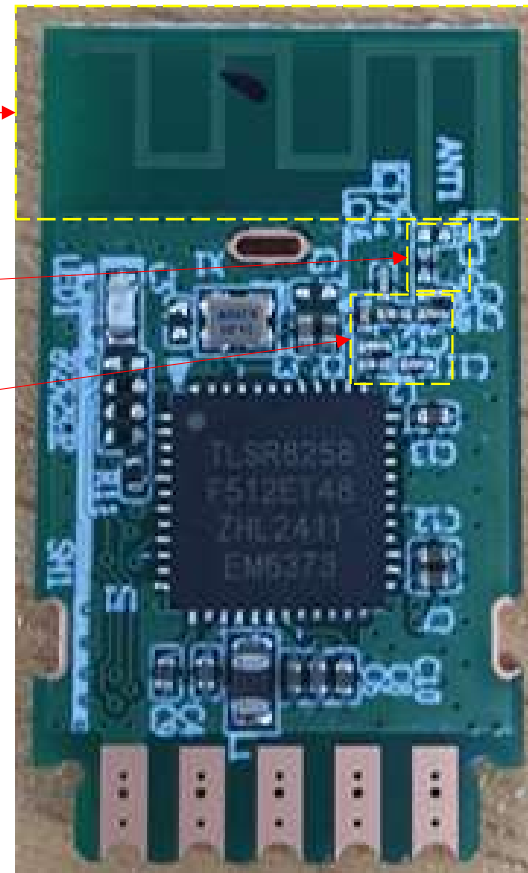
PCB Overview & Matching Value
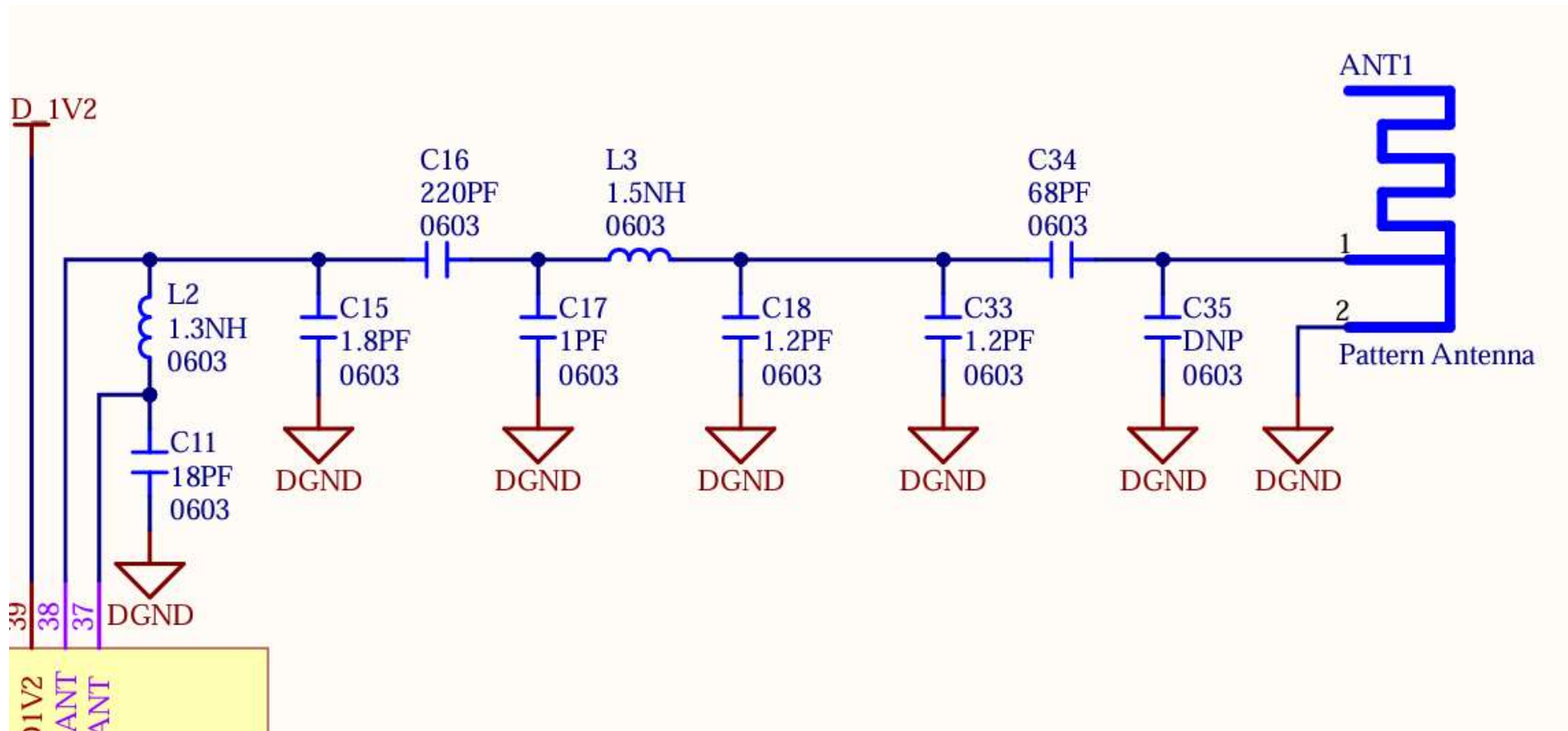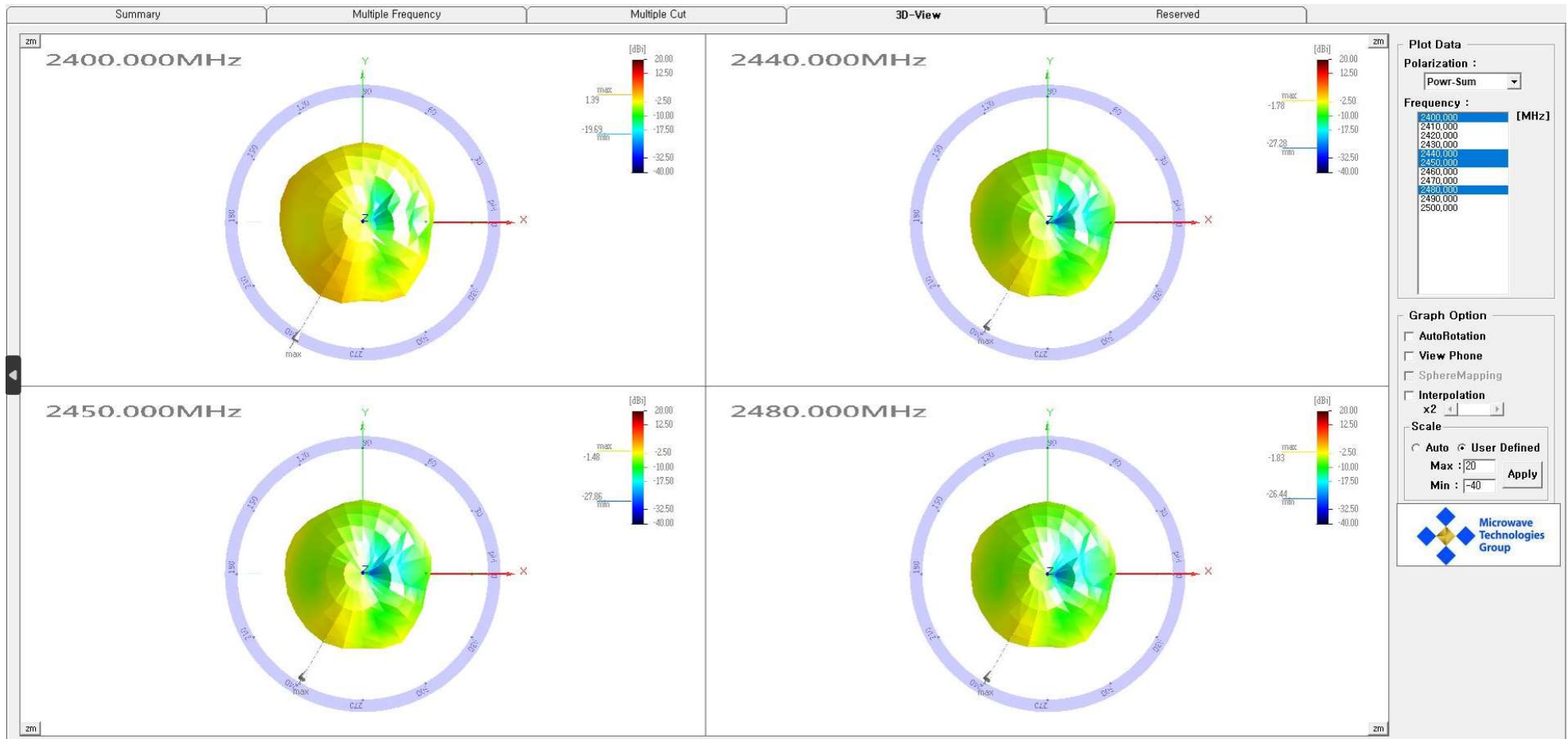
VSWR & Smith Chart / 3D Gain data

2D Radiation Pattern & Gain (ANT1)

3D Result Summary :

No	Freq.[MHz]	Theta-Po Eff.[%]	Avg.[dBi]	Peak[dBi]	Theta	Phi[de	Phi-Pol(\ Eff.[%]	Avg.[dBi]	Peak[dBi]	Theta	Phi[de	PwrSum Eff.[%]	Avg.[dBi]	Peak[dBi]	Theta	Phi[de
1	2400.000	35.62	-4.48	-0.27	105.00	195.00	19.26	-7.15	-1.24	90.00	255.00	54.87	-2.61	1.39	75.00	240.00
2	2410.000	28.90	-5.39	-1.19	105.00	195.00	15.37	-8.13	-2.33	90.00	255.00	44.27	-3.54	0.50	75.00	240.00
3	2420.000	27.62	-5.59	-1.30	90.00	195.00	14.23	-8.47	-2.72	90.00	255.00	41.85	-3.78	0.28	60.00	240.00
4	2430.000	23.69	-6.25	-1.74	90.00	195.00	11.89	-9.25	-3.52	75.00	255.00	35.58	-4.49	-0.47	75.00	240.00
5	2440.000	17.51	-7.57	-3.06	90.00	195.00	8.51	-10.70	-4.96	75.00	255.00	26.02	-5.85	-1.78	60.00	240.00
6	2450.000	18.50	-7.33	-2.87	90.00	195.00	8.96	-10.48	-4.71	75.00	255.00	27.46	-5.61	-1.48	60.00	240.00
7	2460.000	16.50	-7.83	-3.26	90.00	165.00	7.97	-10.98	-5.22	180.00	285.00	24.47	-6.11	-1.98	60.00	240.00
8	2470.000	14.65	-8.34	-3.67	90.00	195.00	6.98	-11.56	-5.63	180.00	285.00	21.63	-6.65	-2.43	60.00	240.00
9	2480.000	16.58	-7.80	-3.16	90.00	165.00	7.67	-11.15	-5.10	180.00	285.00	24.26	-6.15	-1.83	60.00	240.00
10	2490.000	14.01	-8.54	-3.97	90.00	165.00	6.49	-11.88	-5.88	180.00	285.00	20.50	-6.88	-2.43	60.00	240.00
11	2500.000	16.52	-7.82	-3.35	90.00	165.00	7.48	-11.26	-5.19	180.00	120.00	24.00	-6.20	-1.72	60.00	240.00

Re**mote** Solution

3D Radiation pattern

Thank you

R@mote Solution