

MT110H

Antenna Report

MODEL : MT110H PATTERN ANTENNA



MT110H PATTERN ANTENNA

DESIGN	INTERNAL ANTENNA
MODEL / TYPE	MT110H ANTENNA / PCB PATTERN ANTENNA
SEERS Technology P/N	MT110H PATTERN ANTENNA REV 1.0
DIMMENSION	25.5 x 5.4 mm
Frequency Band(MHz)	2,402 ~ 2,480 MHz
CUSTOMER	Seers Technology Co., Ltd.
SUPPLIER	Seers Technology Co., Ltd.
TEST DATA	2021. 07. 27

Table of Contents

1. Abbreviations and Definitions	3
2. Electrical Specification For MT110H Antenna.....	3
2.1. Frequency Band.....	3
2.2. Electrical Characteristics	4
2.3. VSWR.....	4
2.4. MT110H ANTENNA Measurement.....	4
2.4.1 Multiple Frequency.....	4
2.4.2 H-Cut(Polar/Rectangular)	4
2.4.3 E1-Cut(Polar/Rectangular)	5
2.4.4 E2-Cut(Polar/Rectangular)	5
2.5. 3D-View	6
2.5.1 2.400GHz	6
2.5.2 2.410GHz	6
2.5.3 2.420GHz	7
2.5.4 2.430GHz	7
2.5.5 2.440GHz	8
2.5.6 2.450GHz	8
2.5.7 2.460GHz	9
2.5.8 2.470GHz	9
2.5.9 2.480GHz	10
2.5.10 2.490GHz.....	10
2.5.11 2.500GHz.....	11
2.6. 3D-View(Multi).....	12
2.6.1 2.400 GHz ~ 2.430 GHz.....	12
2.6.2 2.440 GHz ~ 2.470 GHz.....	12
2.6.3 2.480 GHz ~ 2.500 GHz.....	13
3. EST METHOD.....	13
3.1. Measurement information.....	14



The purpose of this document is to establish the design and design specifications of an antenna developed by Seers Technology for infrared skin thermometry. Any changes or additions to the current final specifications may affect schedule and cost and design. No changes should be made to the specifications or shape of the antenna without prior approval from Seers Technology. If you change the antenna without prior permission, performance may be limited or operation may not be possible.

1. Abbreviations and Definitions

AVG	Average
°	Degree
°C	Celsius (degrees Centigrade)
±	Centimeter
G	Gravitational Force
G	Grams
Hz	Hertz
In	Inches
IQC	Incoming Quality Control
MHz	Megahertz
M	Meter
Mm	Millimeter
N	Newton
PCB	Printed Circuit Board
TX	Transmit Band
RH	Relative Humidity
RX	Receive Band
VSWR	Voltage Standing Wave Ratio
W	Watt

Design specification: A target specification to guide design process.

DESIGN Specification: A final specification for the qualified DESIGN.

2. ELECTRICAL SPECIFICATION FOR MT110H ANTENNA

2.1. Frequency Band

Mode	Frequency Band(MHz)
BLE	2,402 ~ 2,480 MHz

2.2. Electrical Characteristics

2.2.1. VSWR

Frequency Range	2,400 MHz	2,500 MHz
V.S.W.R	1.5 0.5:1	1.4 0.5:1

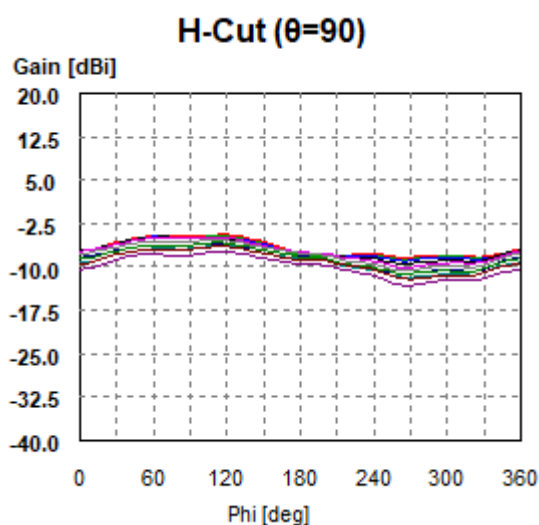
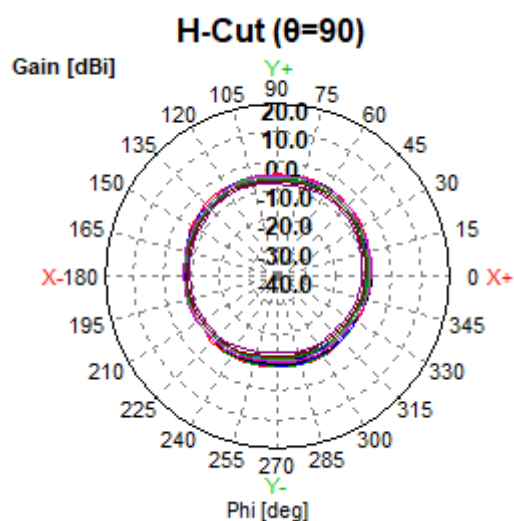
Matching is evaluated in free space and at the call location to ensure the best performance of the antenna. The antenna complies with the electrical specification requirements outlined below while mounted on a device with a PCB. Changes to the device and PCB may affect antenna performance and you should determine the impact of these changes on antenna performance and transmission requirements.

2.3. MT110H ANTENNA Measurements

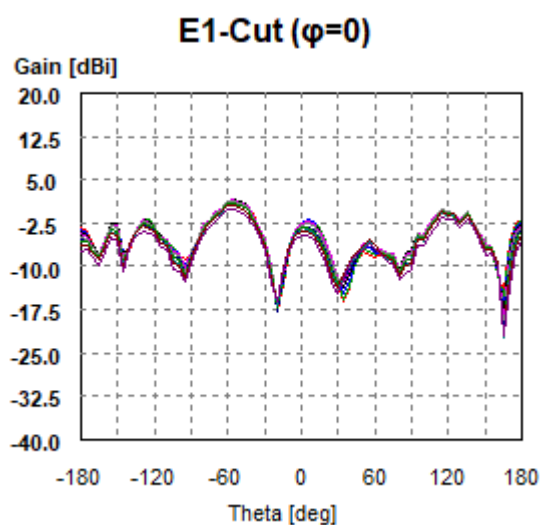
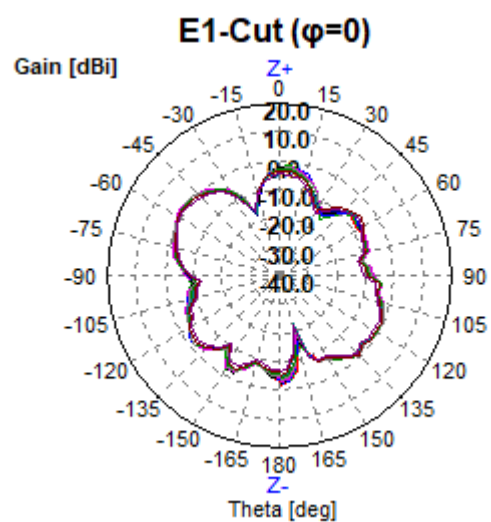
2.3.1. Multiple Frequency

		θ-Pol(H)					H(θ=90)				E1(φ=0)				E2(φ=90)			
No.	Freq.	Eff.[%]	Avg.[dBi]	Peak[dBi]	θ[deg]	φ[deg]	Avg.[dBi]	Peak[dBi]	φ[deg]	BW[deg]	Avg.[dBi]	Peak[dBi]	θ[deg]	BW[deg]	Avg.[dBi]	Peak[dBi]	θ[deg]	BW[deg]
1	2.400	24.69	-6.08	1.53	55.00	185.00	-6.45	-4.38	115.00	999.00	-3.98	1.52	-55.00	33.83	-9.16	-4.34	110.00	65.6
2	2.410	24.56	-6.10	1.54	55.00	185.00	-6.67	-4.69	115.00	999.00	-3.95	1.52	-55.00	33.55	-9.29	-4.54	110.00	65.6
3	2.420	25.15	-5.99	1.63	55.00	185.00	-6.74	-4.78	65.00	999.00	-3.82	1.62	-55.00	33.42	-9.29	-4.60	110.00	65.5
4	2.430	25.04	-6.01	1.59	55.00	185.00	-6.84	-4.78	65.00	999.00	-3.83	1.59	-55.00	33.36	-9.38	-4.63	110.00	65.6
5	2.440	24.86	-6.04	1.56	55.00	185.00	-6.97	-4.82	110.00	999.00	-3.83	1.55	-55.00	33.59	-9.52	-4.85	110.00	66.2
6	2.450	23.35	-6.32	1.30	55.00	180.00	-7.44	-5.34	110.00	999.00	-4.04	1.30	-55.00	33.74	-9.99	-5.42	110.00	66.3
7	2.460	21.07	-6.76	0.84	55.00	180.00	-8.05	-5.90	110.00	999.00	-4.47	0.84	-55.00	34.04	-10.57	-6.08	110.00	66.5
8	2.470	21.54	-6.67	0.97	60.00	180.00	-8.05	-5.79	110.00	999.00	-4.36	0.97	-60.00	33.97	-10.56	-5.79	95.00	65.4
9	2.480	19.44	-7.11	0.63	60.00	180.00	-8.58	-6.31	110.00	999.00	-4.77	0.63	-60.00	33.76	-11.15	-6.05	95.00	63.7
10	2.490	19.56	-7.09	0.71	60.00	180.00	-8.68	-6.40	115.00	208.93	-4.71	0.71	-60.00	33.81	-11.29	-5.94	95.00	61.8
11	2.500	16.36	-7.86	0.03	60.00	180.00	-9.57	-7.26	115.00	206.67	-5.47	0.03	-60.00	34.10	-12.23	-6.65	95.00	58.5

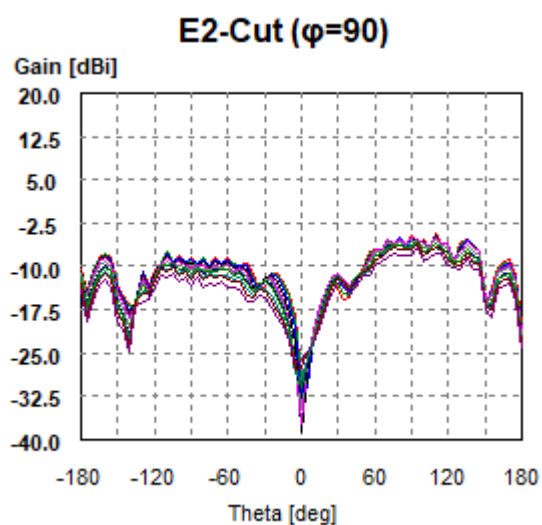
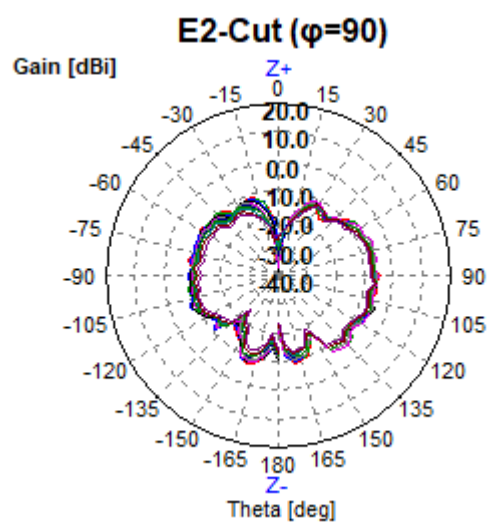
2.3.2. H-Cut(Polar/Rectangular)



2.3.3. E1-Cut(Polar/Rectangular)

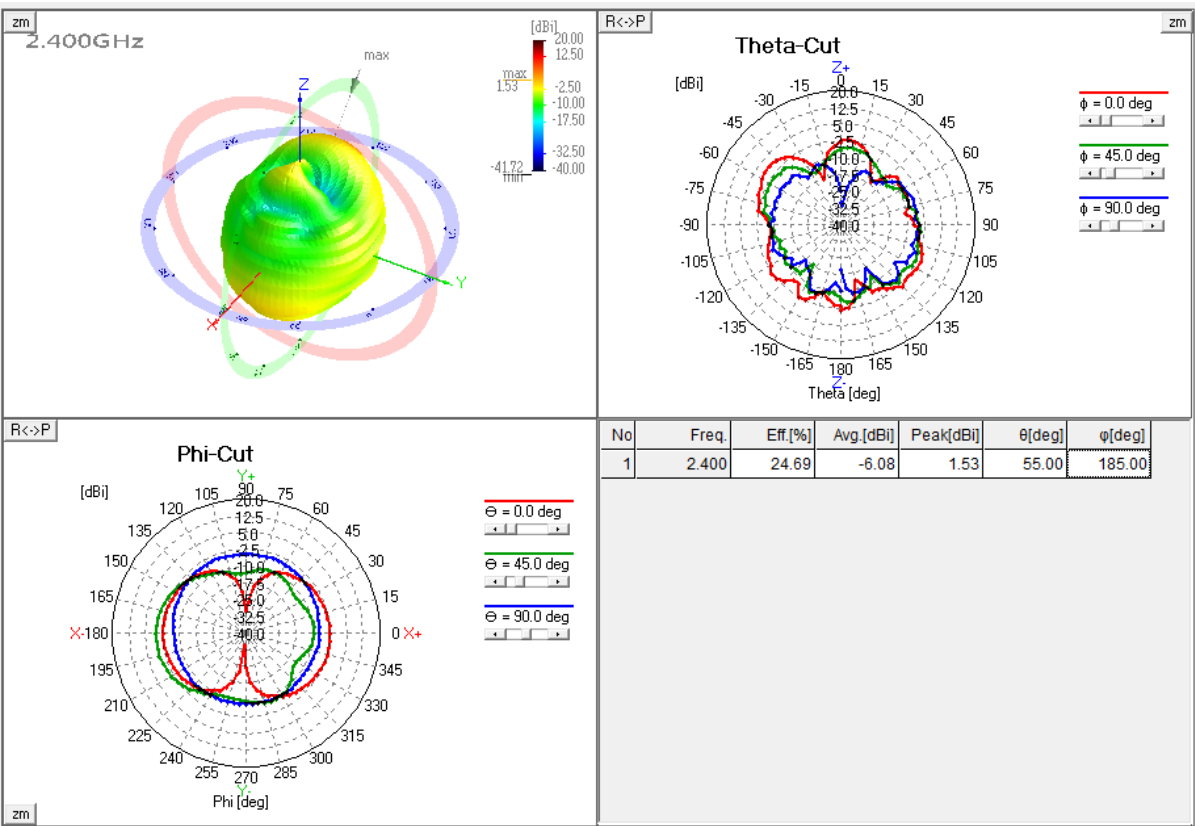


2.3.4. E2-Cut(Polar/Rectangular)

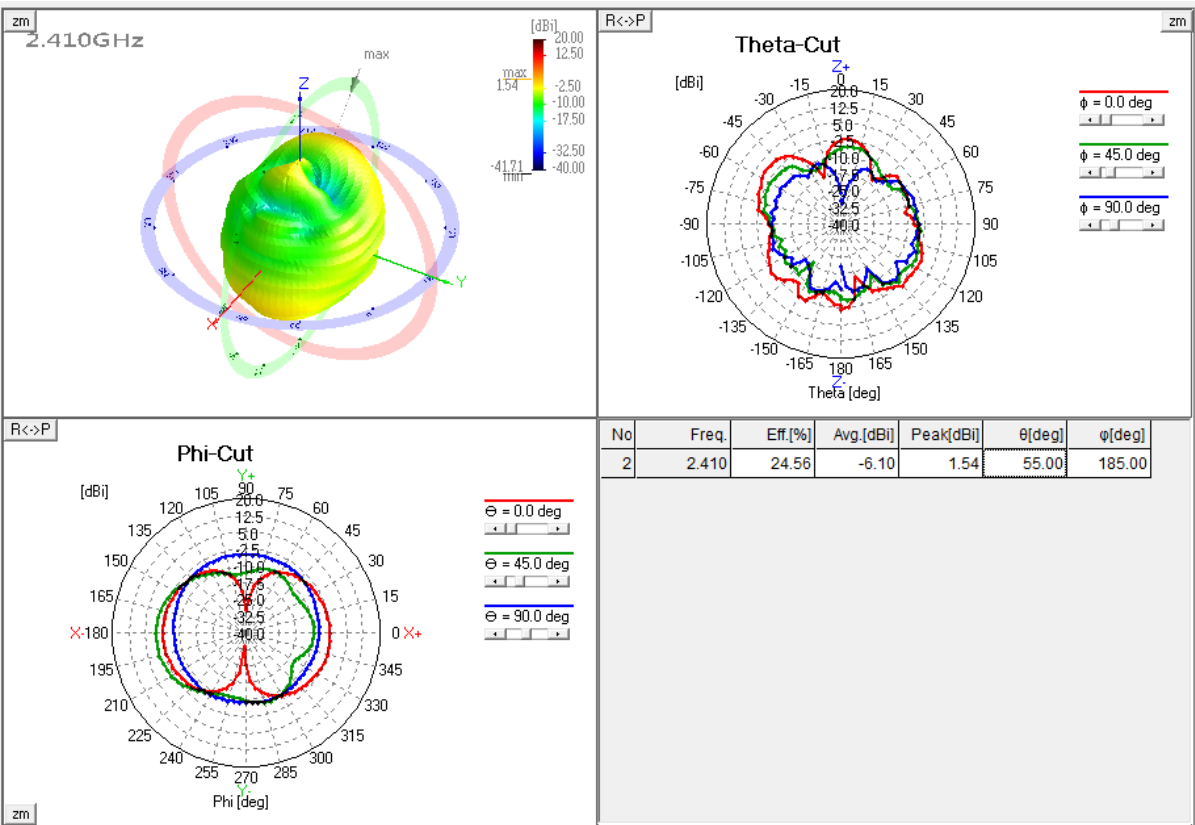


2.3.5. 3D-View

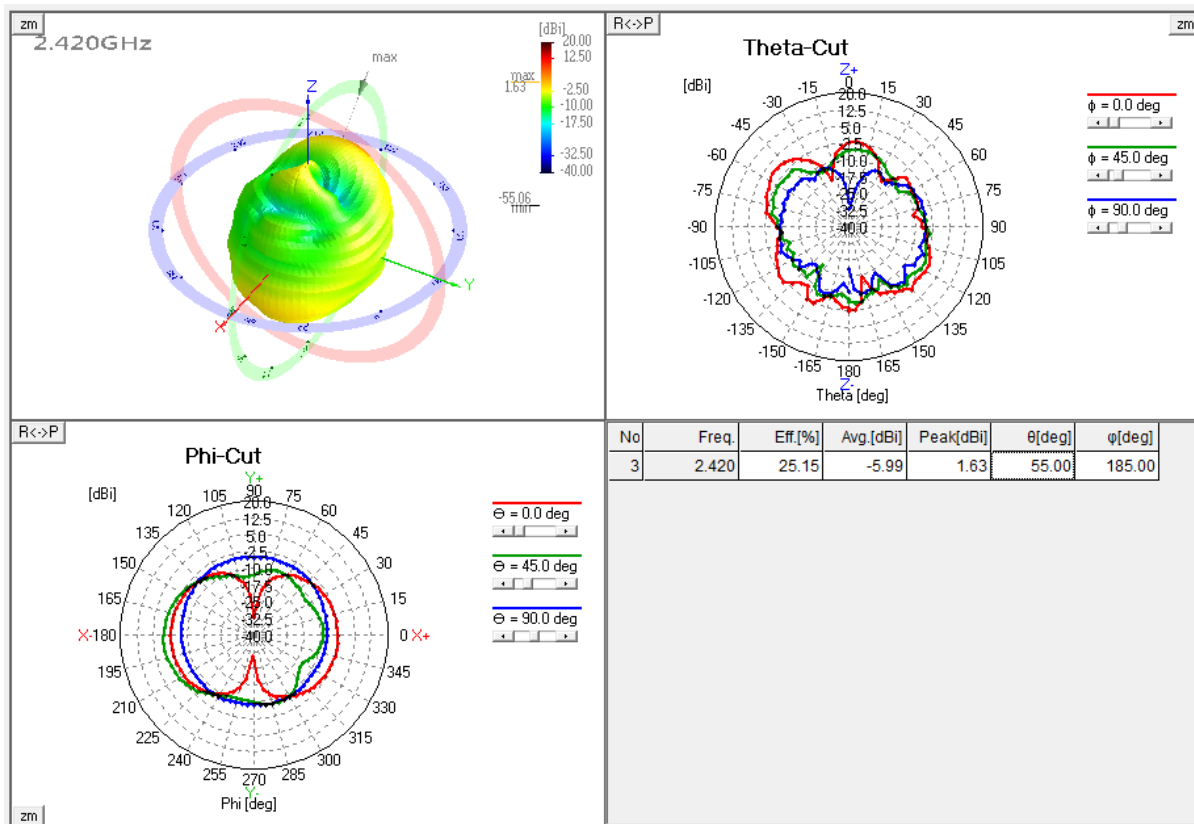
2.3.5.1. 2.400GHz



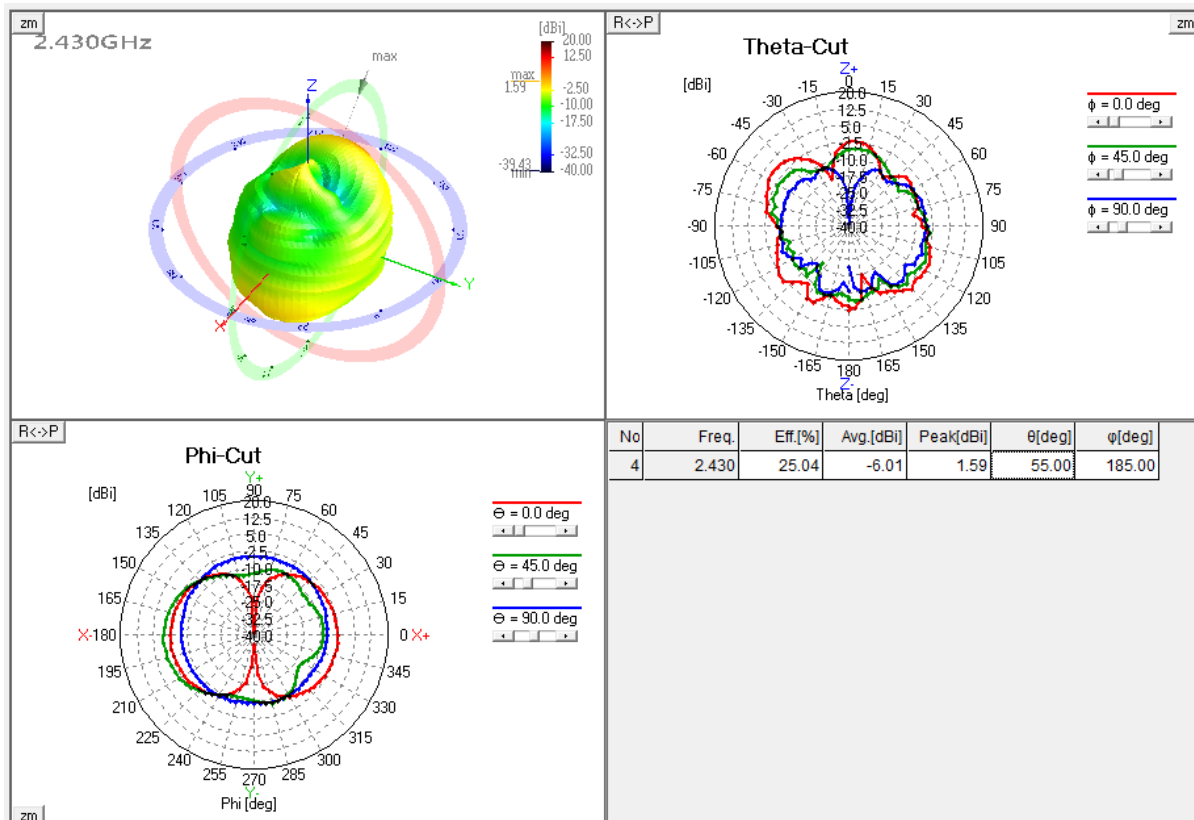
2.3.5.2. 2.410GHz



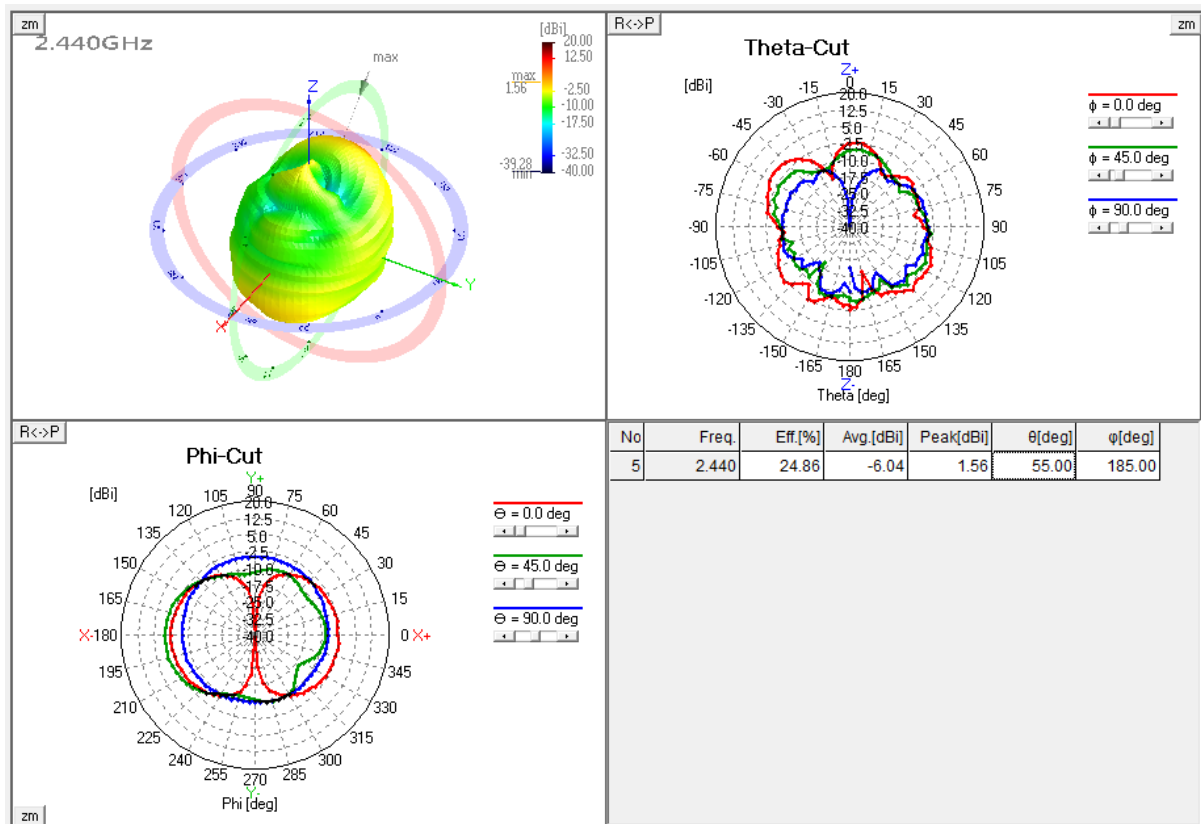
2.3.5.3. 2.420GHz



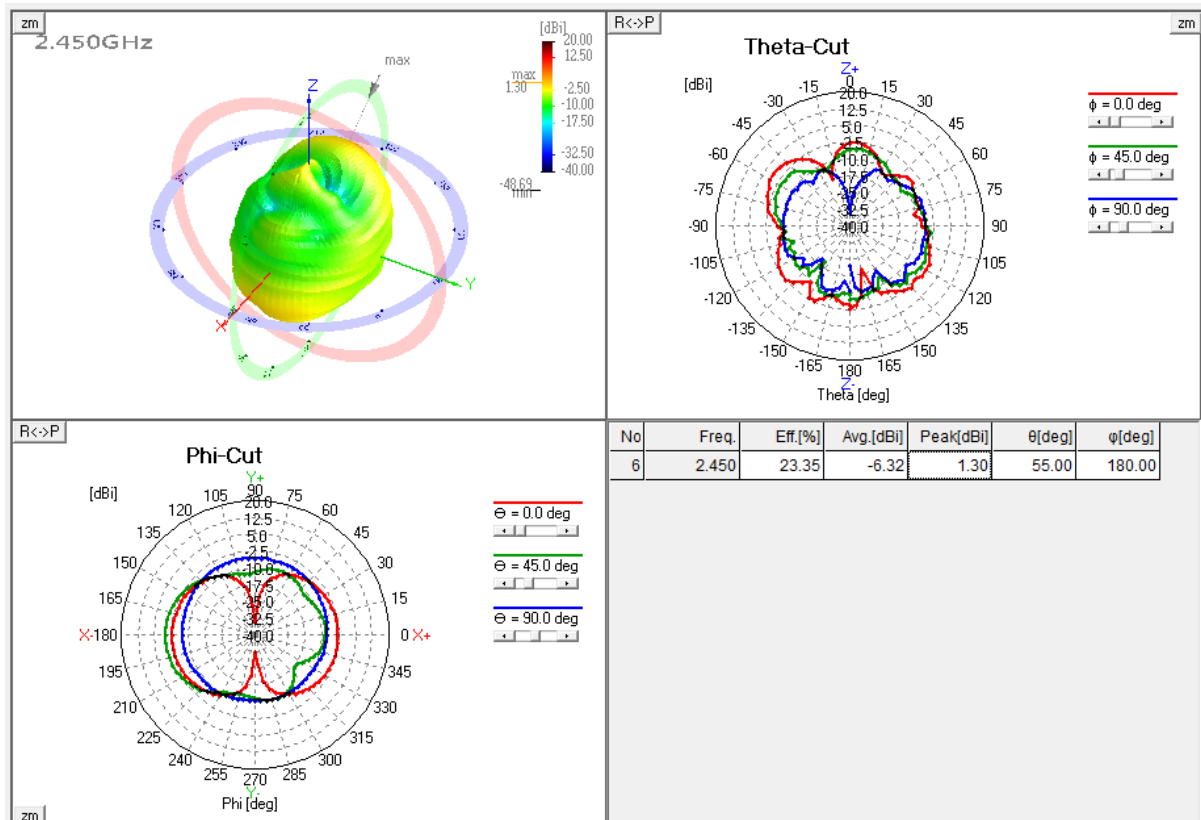
2.3.5.4. 2.430GHz



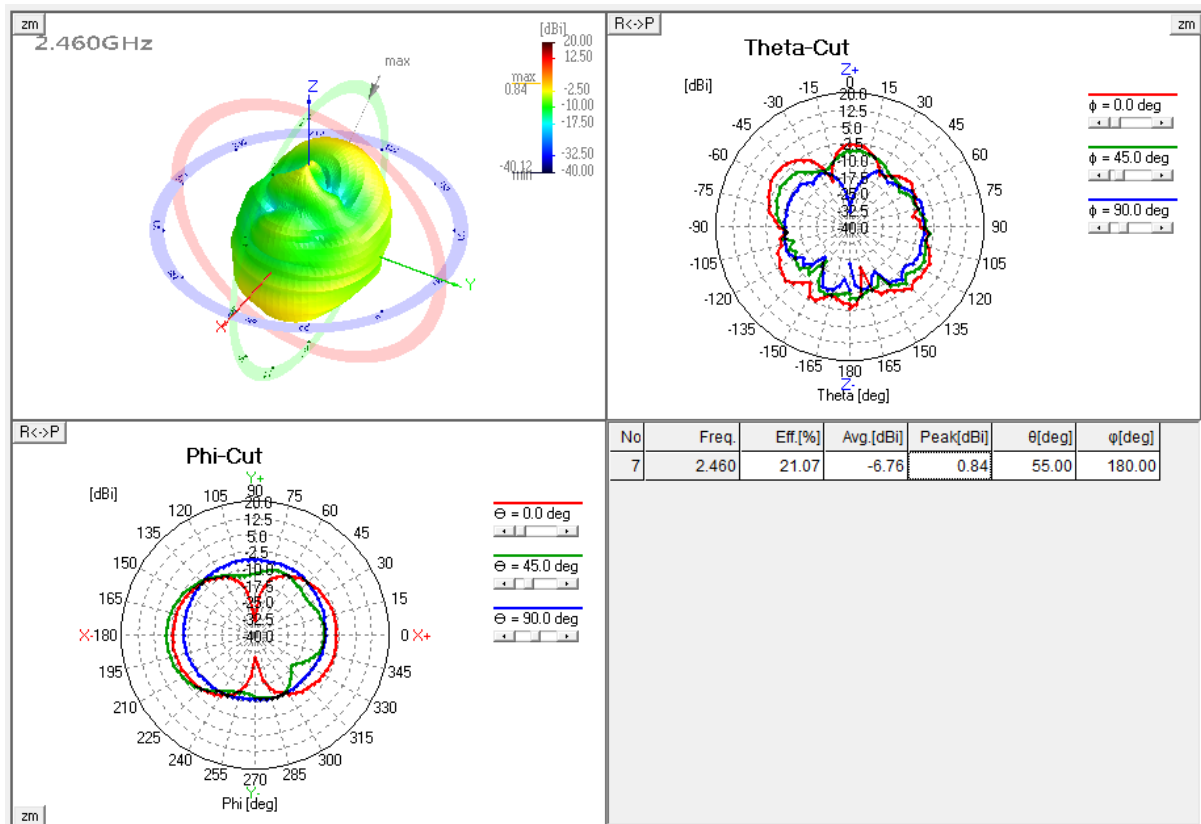
2.3.5.5. 2.440GHz



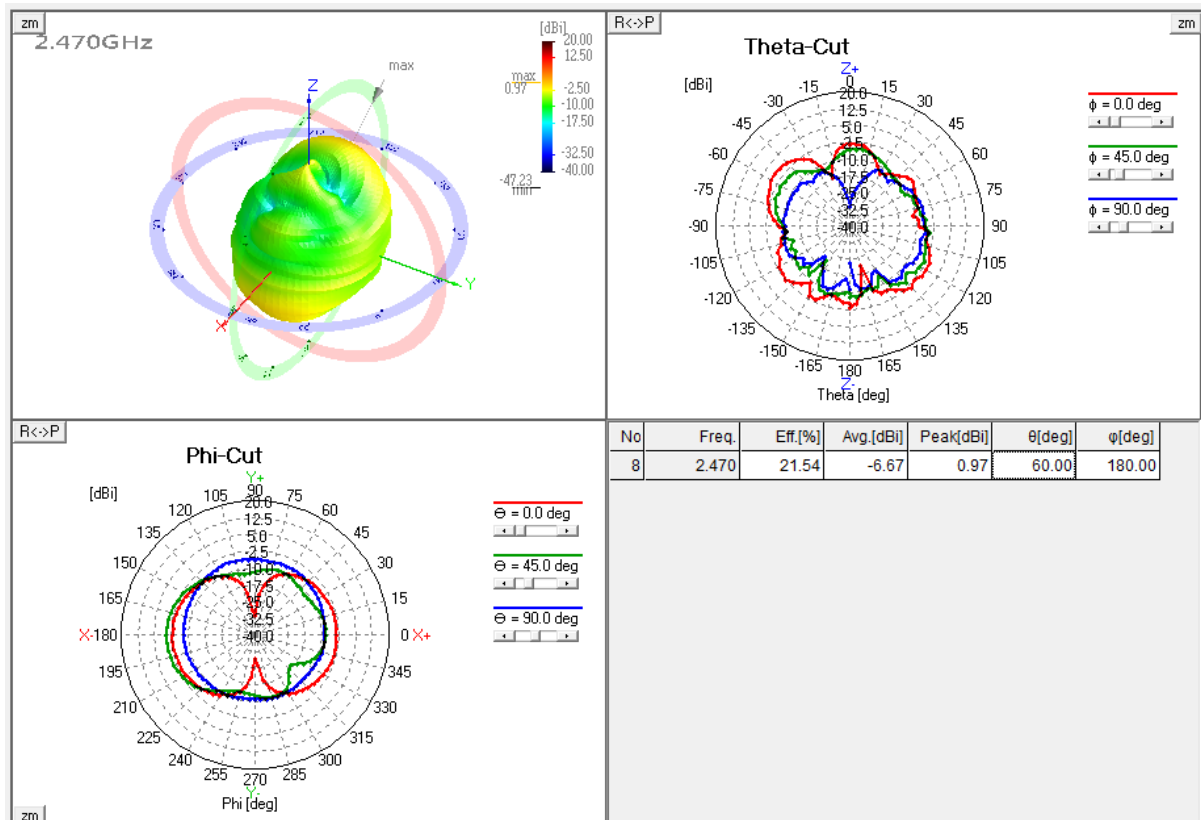
2.3.5.6. 2.450GHz



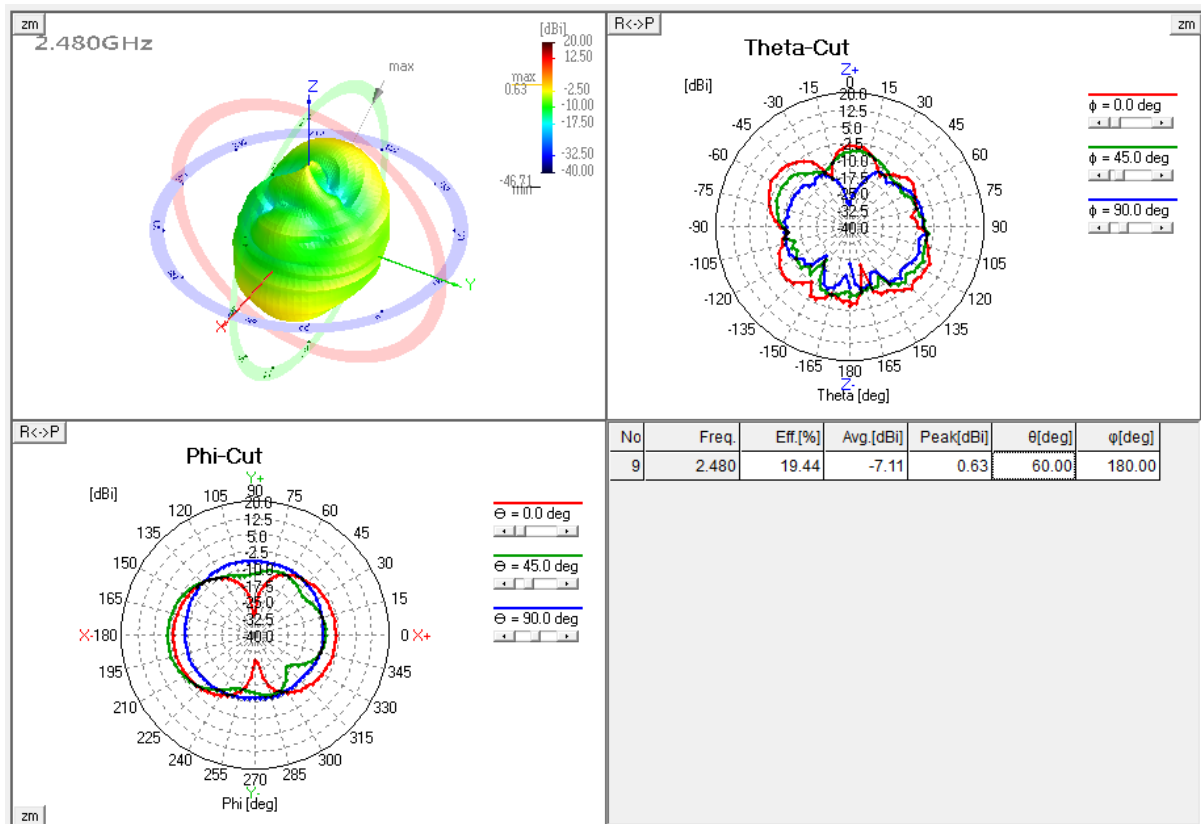
2.3.5.7. 2.460GHz



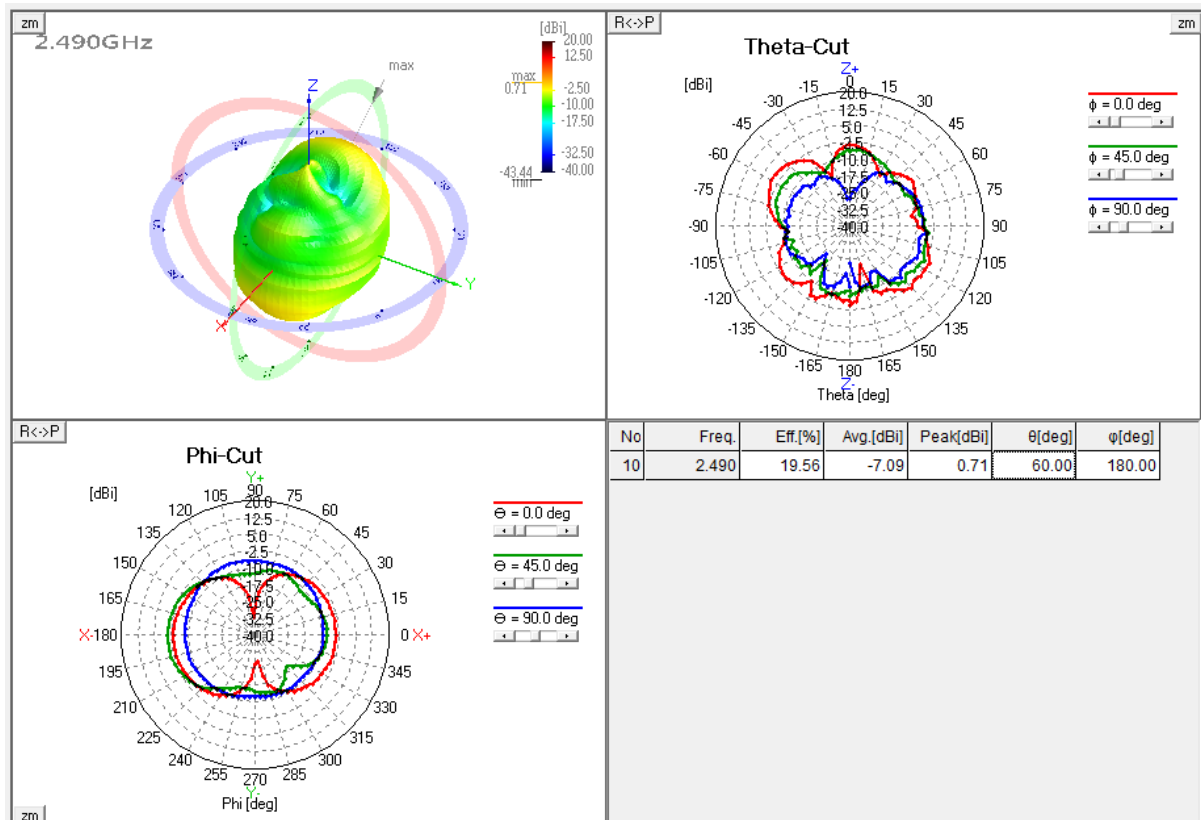
2.3.5.8. 2.470GHz



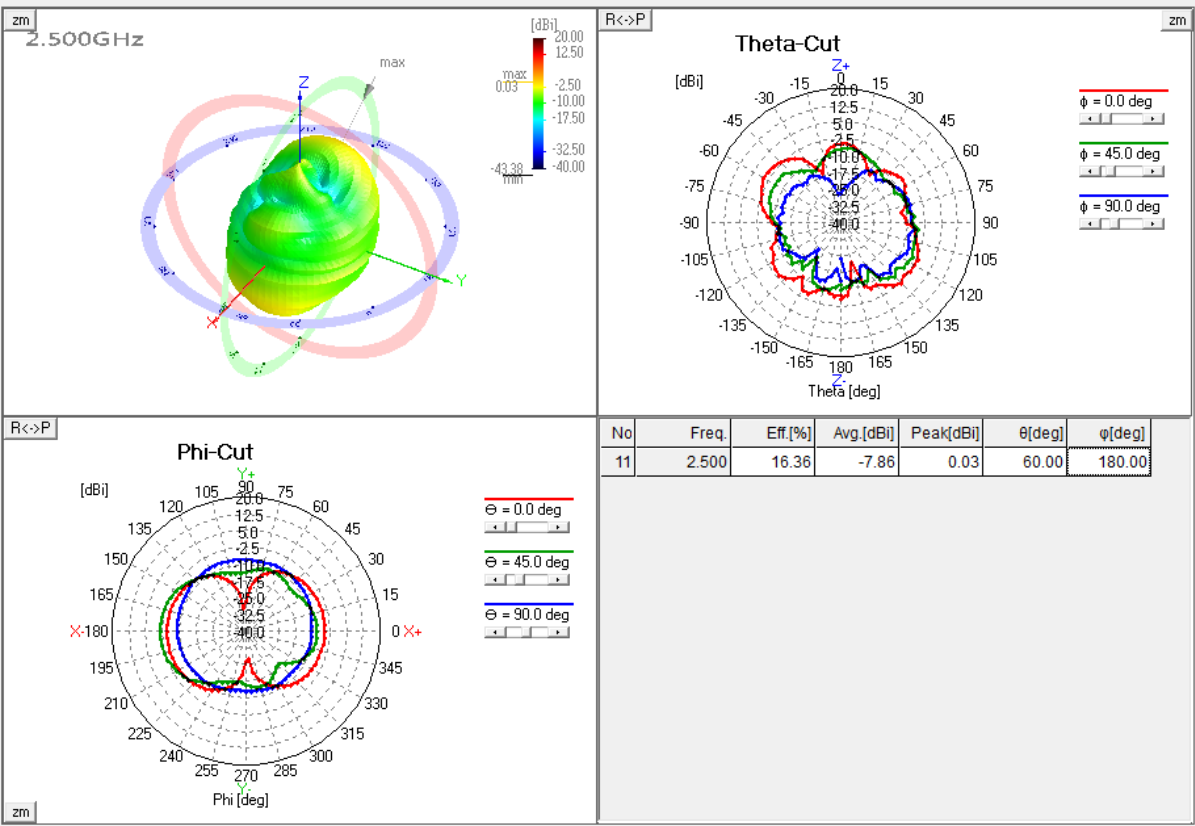
2.3.5.9. 2.480GHz



2.3.5.10. 2.490GHz

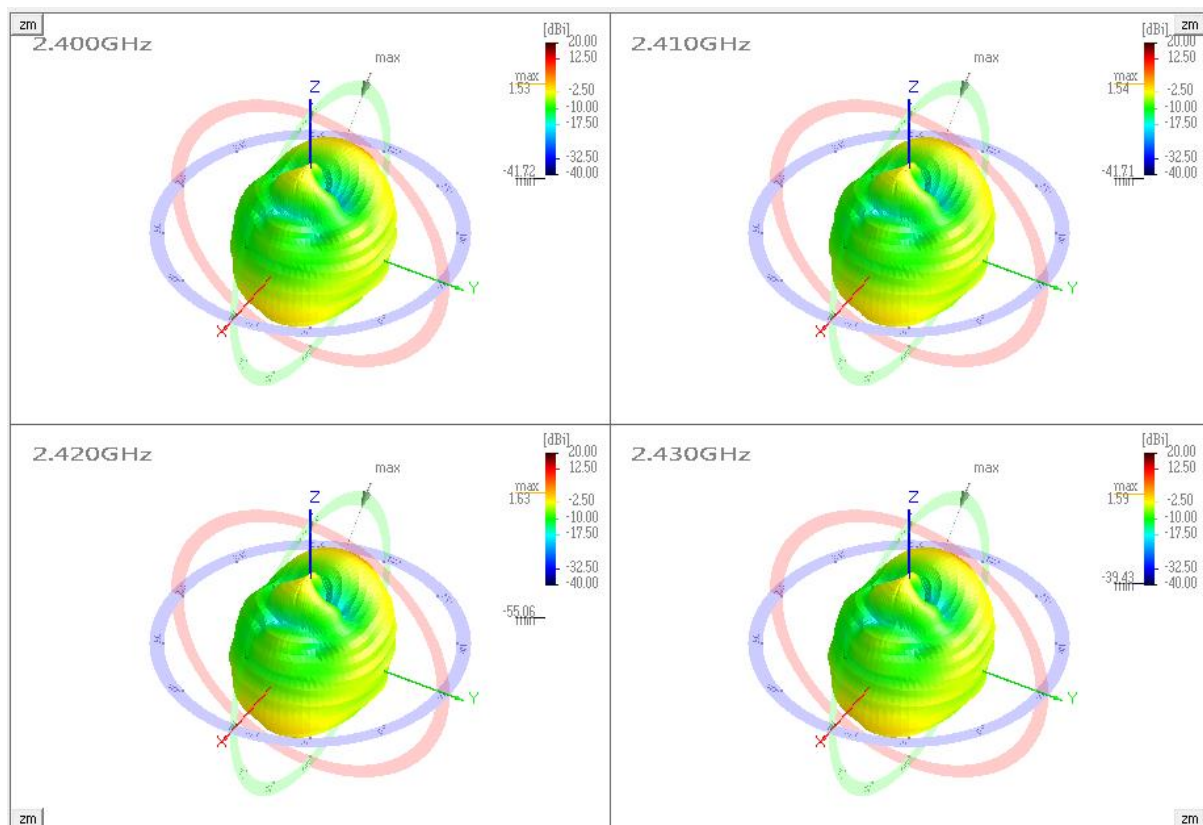


2.3.5.11. 2.500GHz

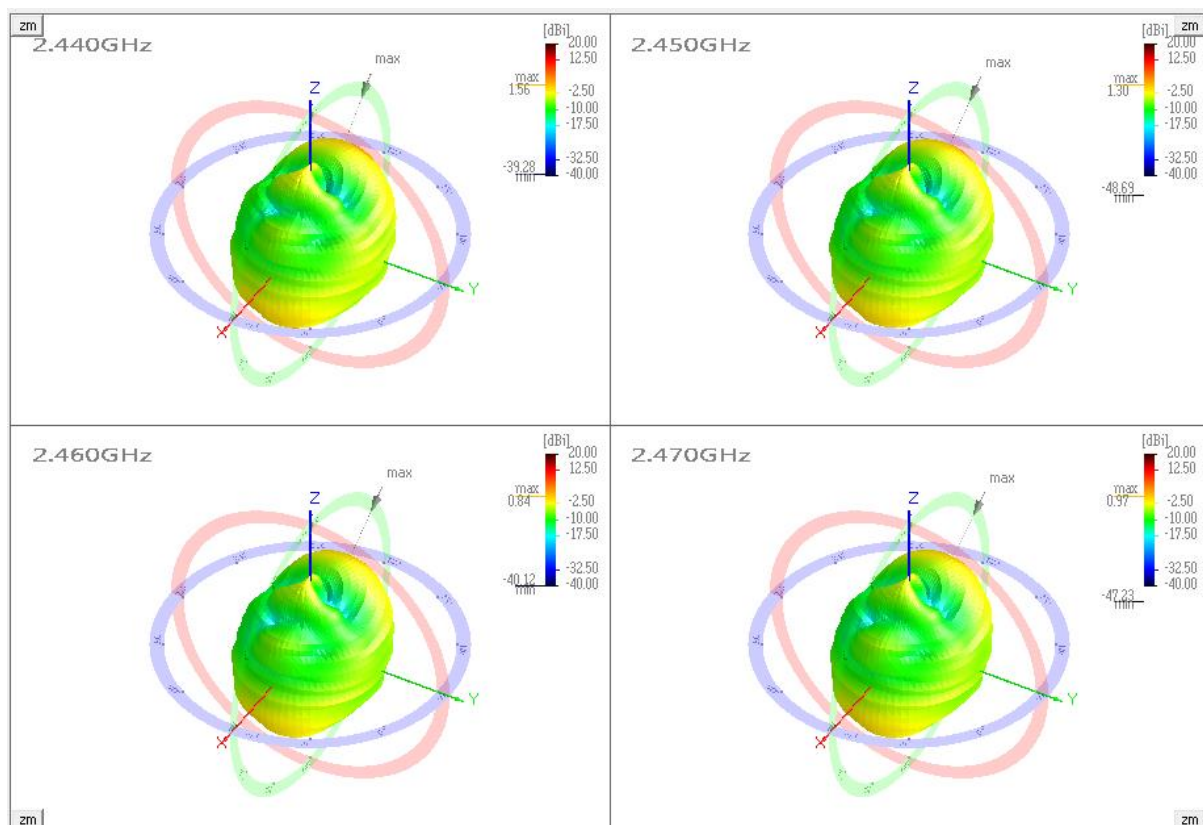


2.3.6. 3D-View(Multi)

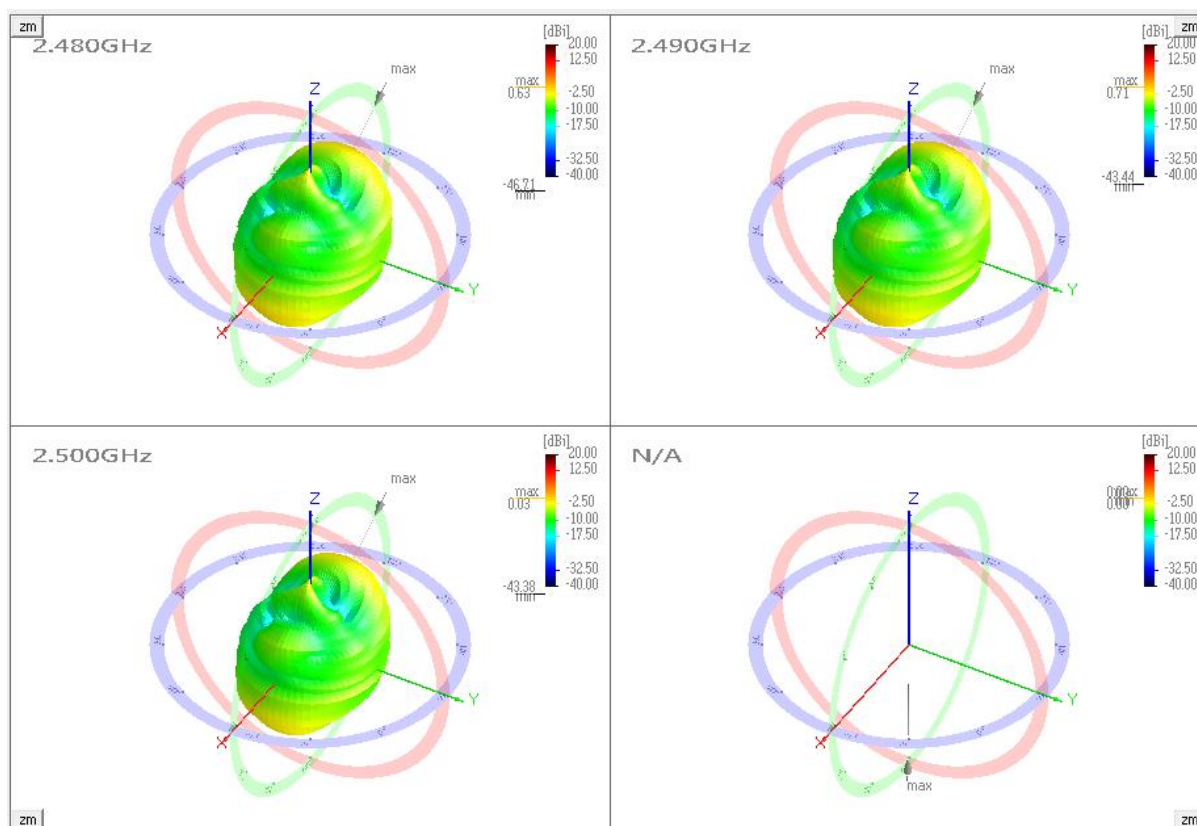
2.3.6.1. 2.400 GHz ~ 2.430 GHz



2.3.6.2. 2.440 GHz ~ 2.470 GHz



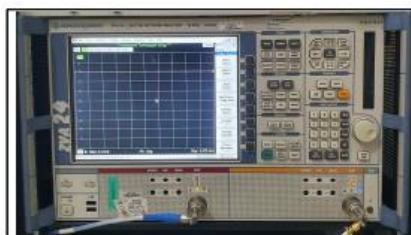
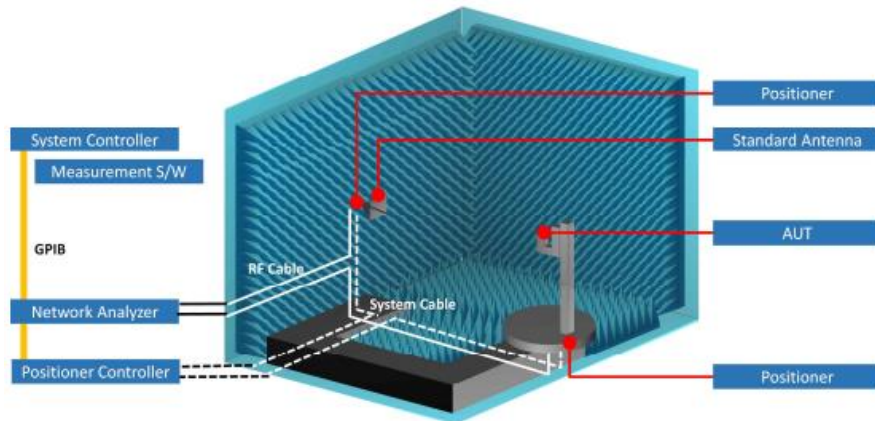
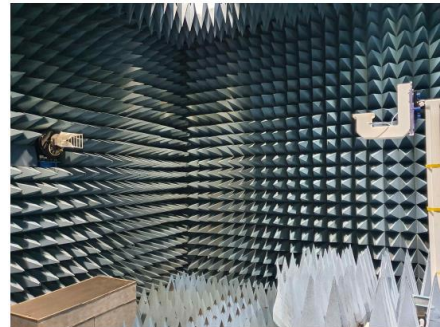
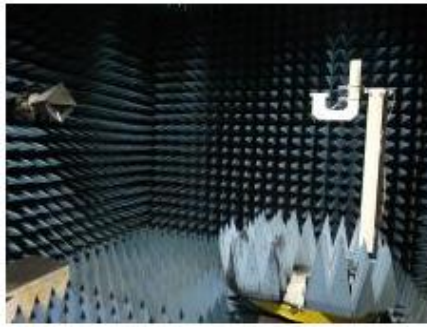
2.3.6.3. 2.480 GHz ~ 2.500 GHz



3. TEST METHOD

3.1. Measurement information

- **Measurement :** RAPA Ant Lab.
- **Equipment :** mobile Chamber, R&C ZVA24 Network Analyzer
- **Measurement target:** Small antenna (mobile communication, wireless access, etc.),
mobile terminal and modem (GSM, CDMA, WCDMA, 4G/5G,
LTE Cat.M, NB-Iot, WLAN (802.11 a,b,g,n,ac)))
- **Anechoic room specifications:** 5.5(L)mX5.5(W)mX5(H)m
- **Measurement Frequency:** 700MHz ~ 8GHz at Far Field
- **Main measurement items:** Beam peak gain, beamwidth, circular polarization, etc.



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

Seers Technology



MANUFACTURER

Seers Technology Co., Ltd.
291-13, Dongbu-daero, Jinwi-myeon, Pyeongtaek-
si, Gyeonggi-do, South of Korea