



Shenzhen Yimingyuan Technology Co., Ltd

One stop communication RF antenna solution manufacturer

Antenna test report

Shenzhen Yimingyuan Technology Co., Ltd

Address: 2nd Floor, Building 5, Yifenghua Innovation
Industrial Park, Dalang Street, Longhua District, Shenzhen

Operator: Song Bingwei

tester: Huang He

TEL: 134 2435 5302

Report edition: 2025.03.18

Information of Antenna

Customer Information:

Customer: Dongguan Thermal Electronic Technology Co., Ltd

Customer Address: No. 28 Jinyuling Road, Dongcheng Street,
Dongguan City, Guangdong Province, China

Project Name: BenQ patch

Antenna manufacturing information:

Antenna manufacturing: ALLSTAR TECH (ZHONGSHAN) CO. LTD

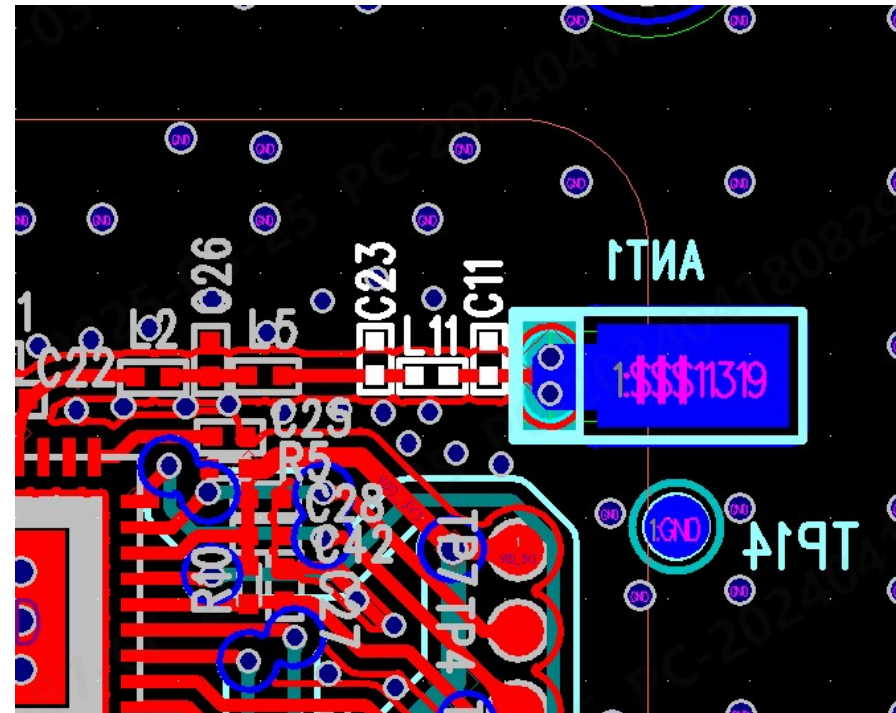
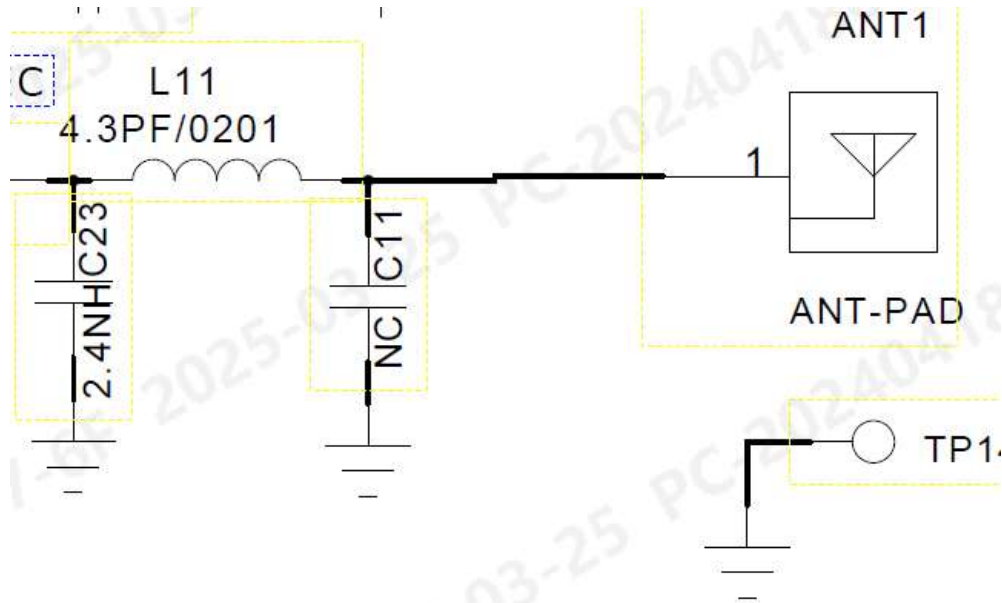
Antenna model: F1S01478A

Antenna type: microstrip antenna

Antenna gain: 5.78dBi

Antenna manufacturing address: Room 301C, 3C1, 3rd Floor,
Tianji Building, Tianan Digital City, No. 10, Taian 5th
Road, Tian'an Community, Shatou Sub-district, Futian
District, Shenzhen City

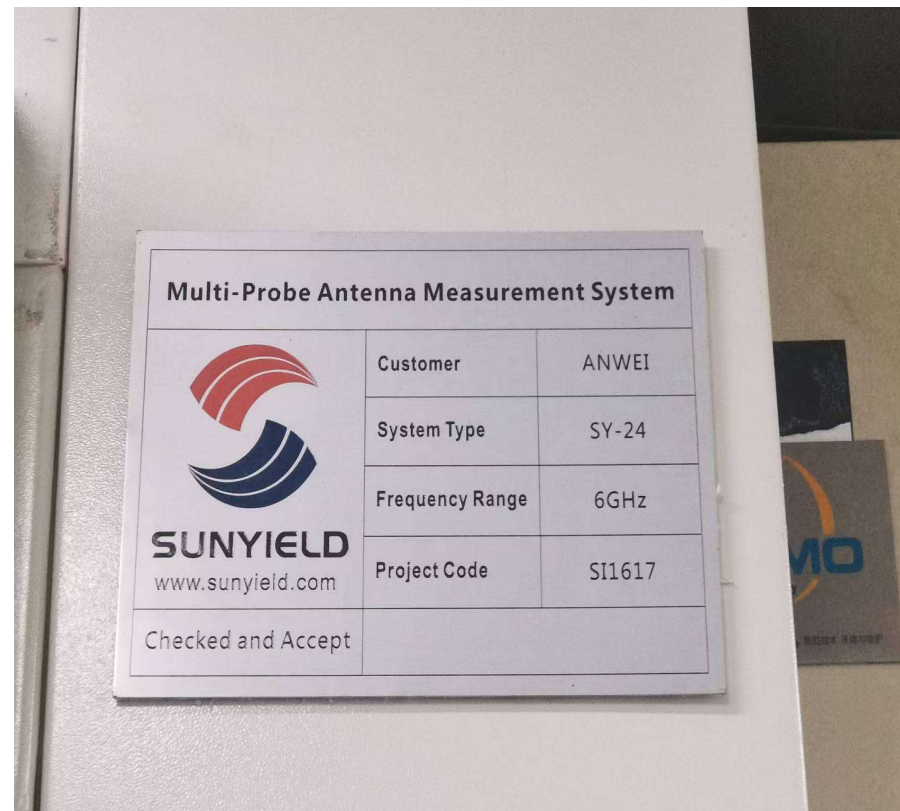
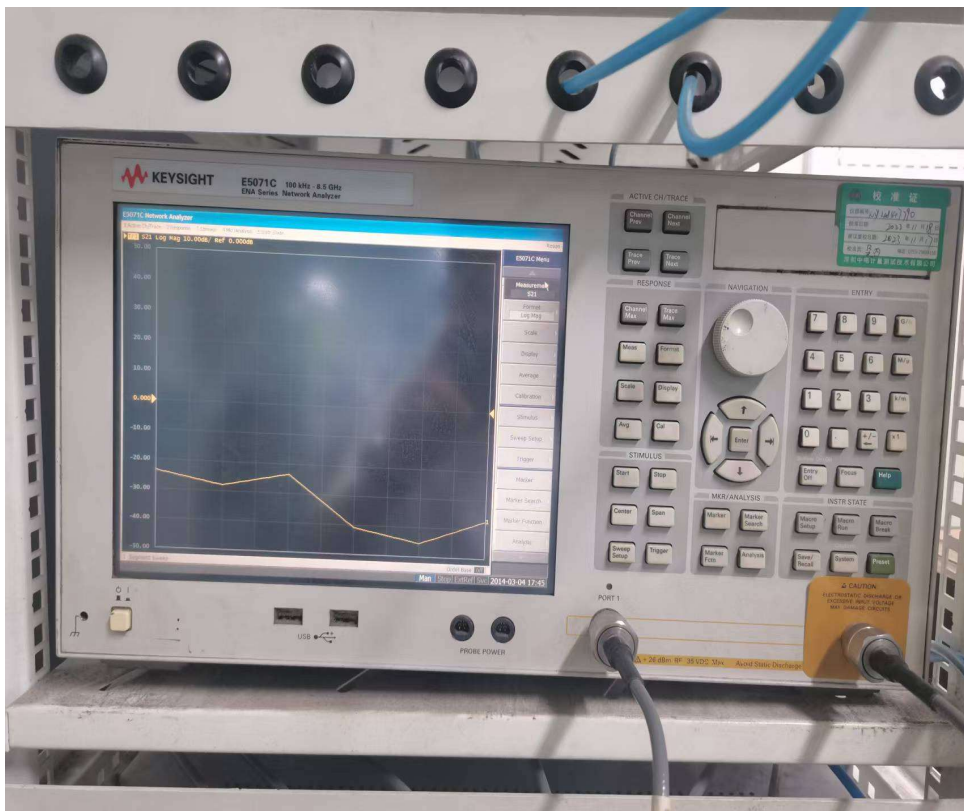
Main antenna matching circuit



Antenna smith circle chart and S11 parameters

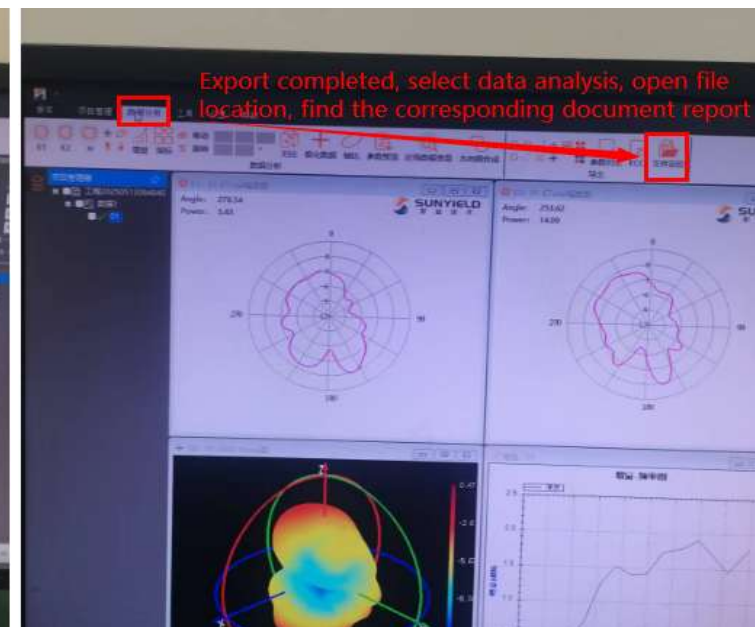
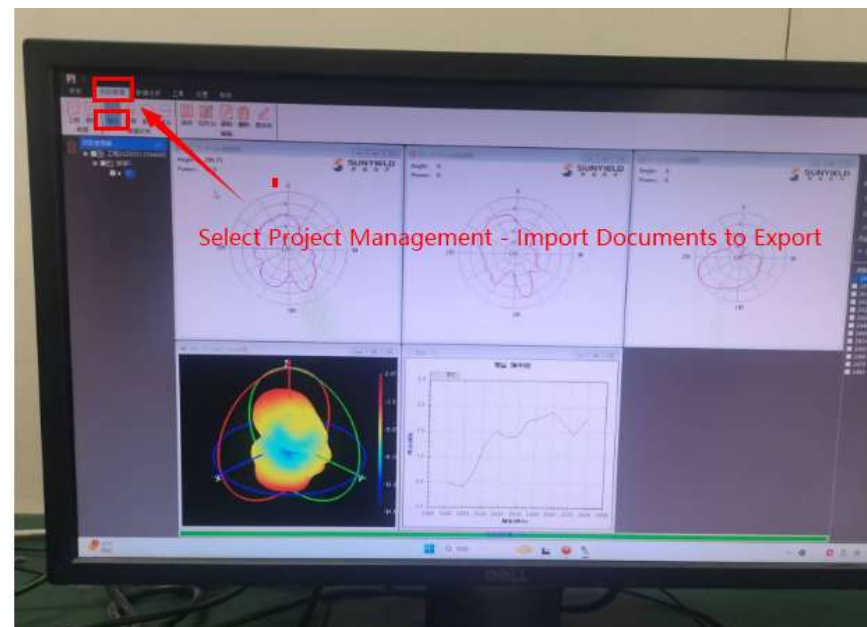
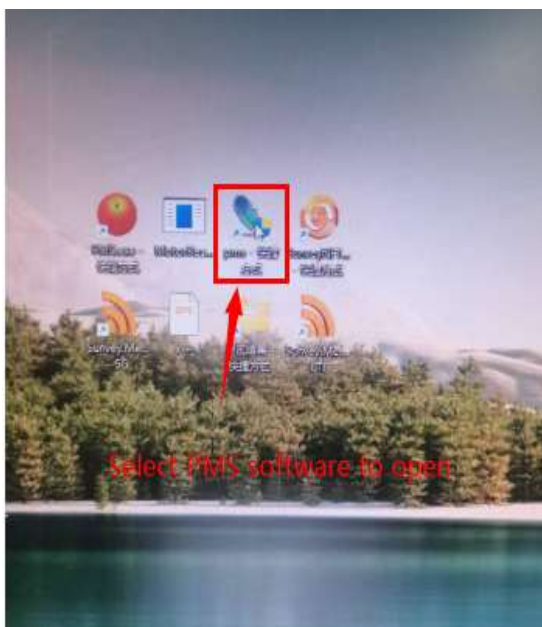
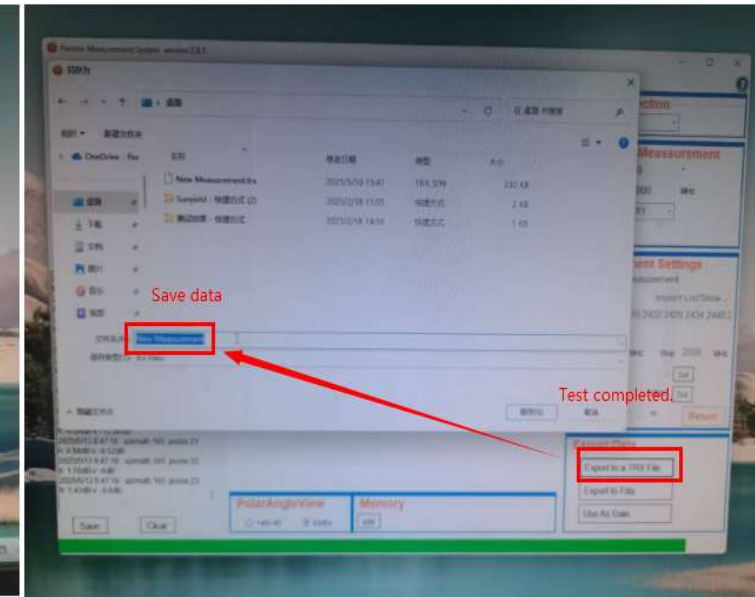
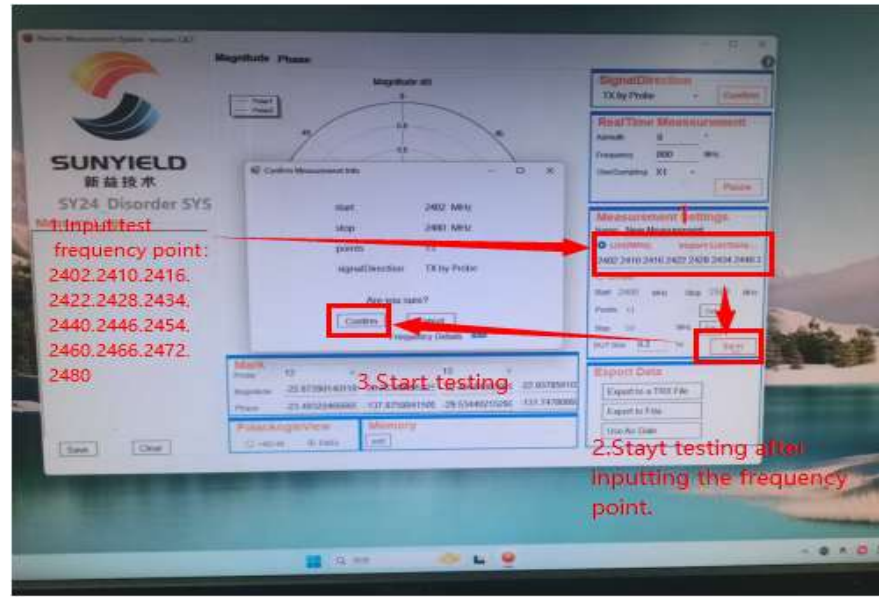


Testing instruments and software



name	network analyzer
brand	Agilent Technologies
model	E5071C
serial number	MY46104453
calibration time	2024/8/25
Next calibration time	2025/8/24

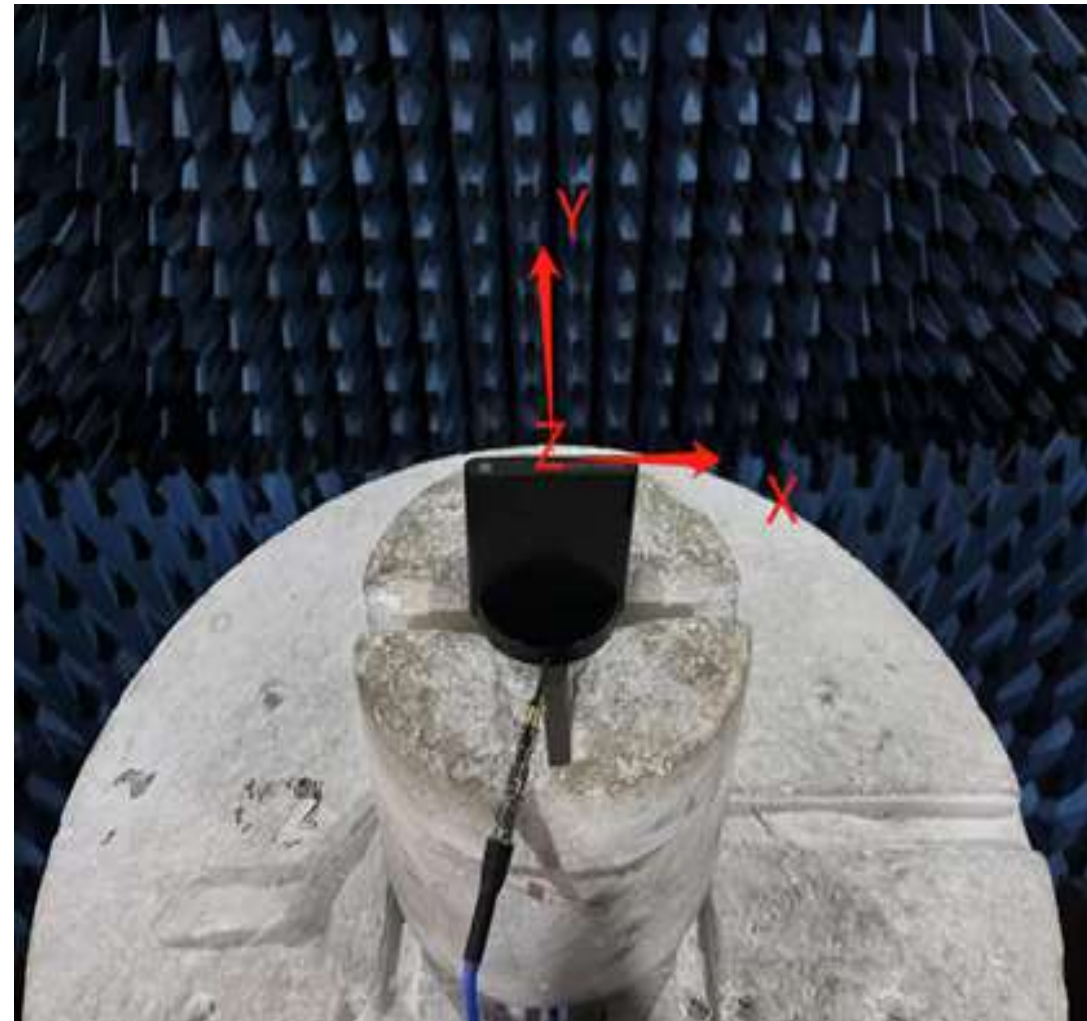
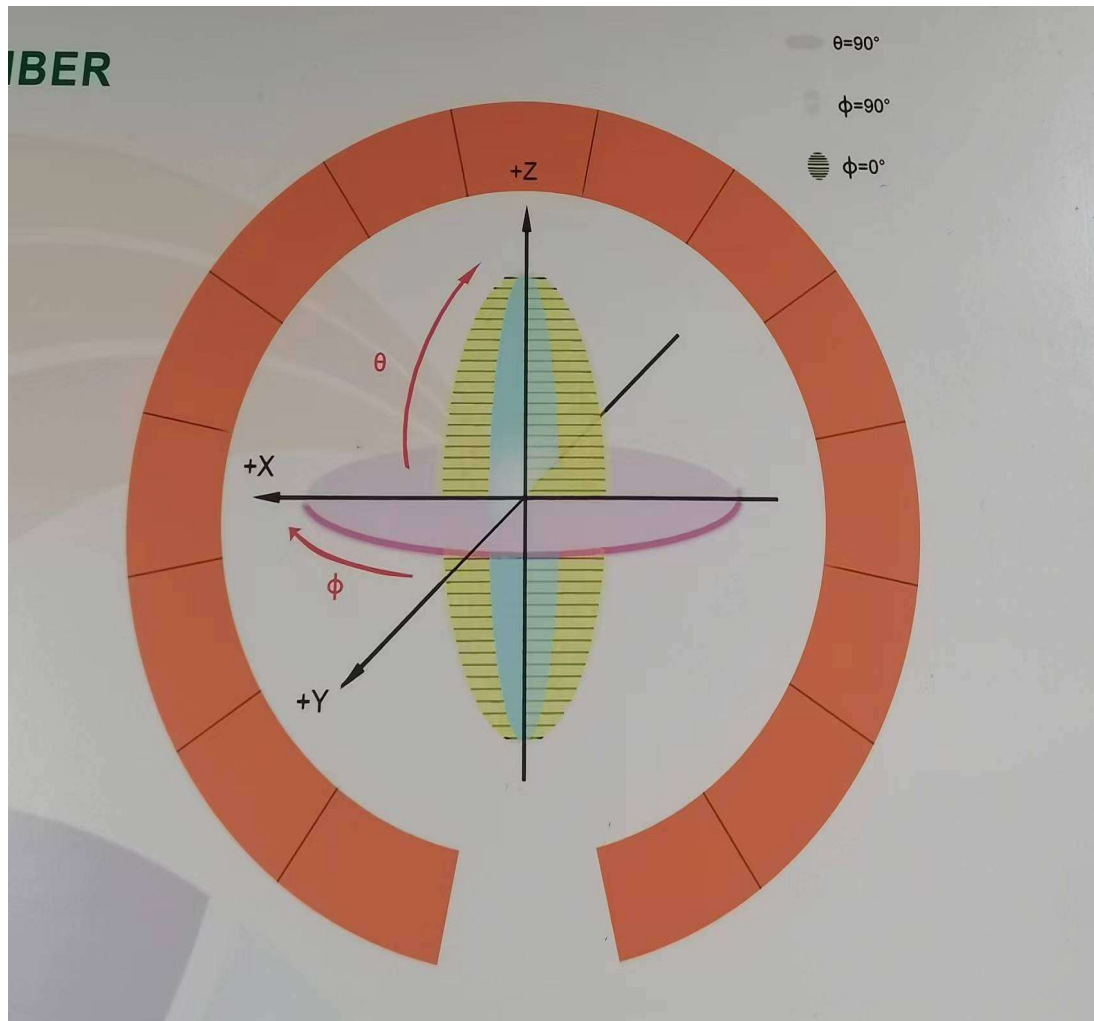
Test steps and data export



Antenna efficiency

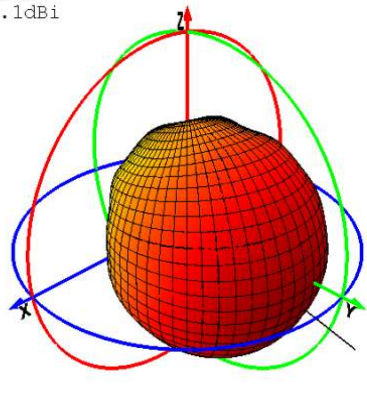
Shenzhen Yimingyuan Technology Co., Ltd									make:ALLSTAR TECH(ZHONGS HAN)CO.,LTD model:F1S01478A AntennaType: microstrip antenna Antenna Gain: 5.78 dBi address: Room 301C, 3C1, 3rd Floor, Tianji Building, Tianan Digital City, No. 10, Taian 5th Road, Tian'an Community, Shatou Sub- district, Futian District, Shenzhen City					
Test data report	Address: 2nd Floor, Building 5, Yifenghua Innovation Industrial Park, Dalang Street, Longhua District, Shenzhen													
Software Version: SNF V2.4.3 Export time: 2025/3/18 14:36:26														
Frequency ID	1	2	3	4	5	6	7	8	9	10	11	12	13	
Frequency (MHz)	2402	2410	2416	2422	2428	2434	2440	2446	2454	2460	2466	2472	2480	PEAK
Gain (dBi)	5.08	5.38	5.51	5.47	5.21	5.15	5.27	5.44	5.74	5.70	4.97	4.94	5.78	5.78
Efficiency (dB)	-2.37	-2.09	-2.06	-2.25	-2.61	-2.68	-2.62	-2.59	-2.39	-2.41	-3.00	-3.05	-2.27	-2.06
Efficiency (%)	57.96	61.82	62.21	59.53	54.88	53.99	54.75	55.08	57.62	57.36	50.14	49.57	59.29	62.21
Plane: Phi=0	2402	2410	2416	2422	2428	2434	2440	2446	2454	2460	2466	2472	2480	
Plane: Phi=90	2402	2410	2416	2422	2428	2434	2440	2446	2454	2460	2466	2472	2480	
Plane: Theta=90	2402	2410	2416	2422	2428	2434	2440	2446	2454	2460	2466	2472	2480	

Z、X、Y Physical drawing

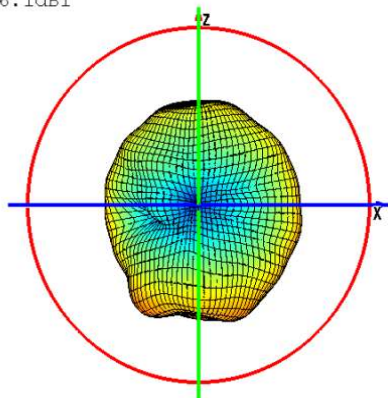


Antenna apple diagram and pattern

MAX: 5.08dBi
MIN: -26.1dBi

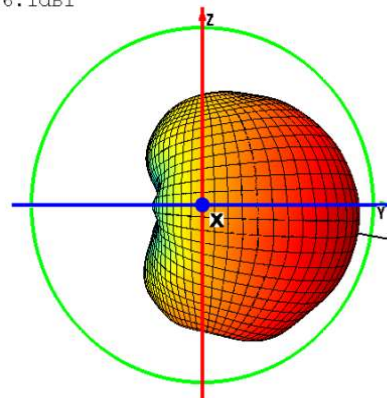


MAX: 5.08dBi
MIN: -26.1dBi

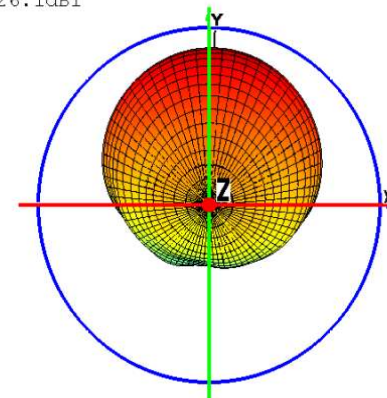


2402MHz

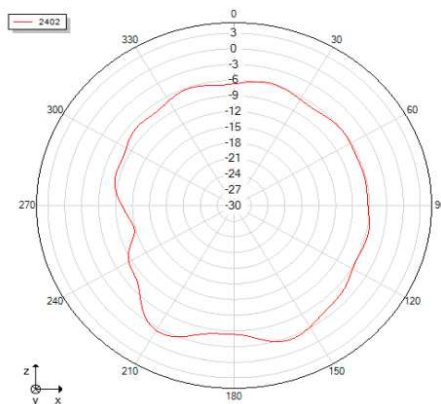
MAX: 5.08dBi
MIN: -26.1dBi



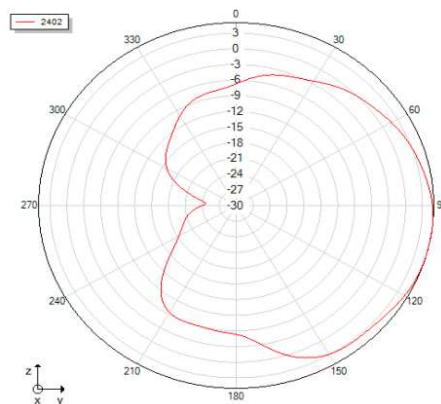
MAX: 5.08dBi
MIN: -26.1dBi



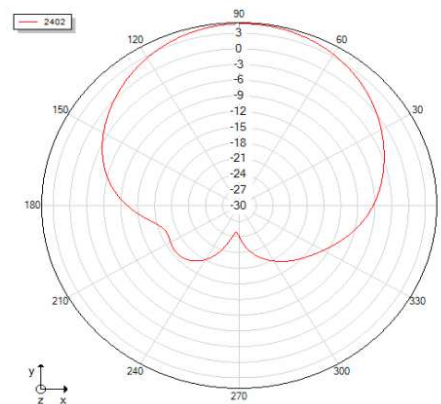
Phi=0 freq=2402MHz



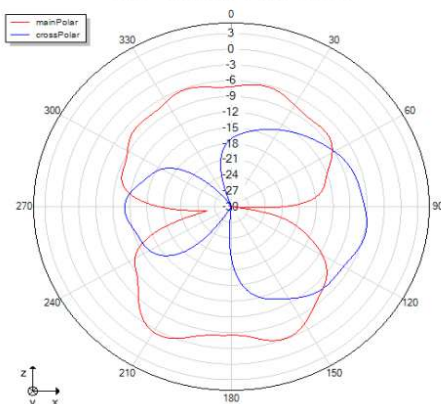
Phi=90 freq=2402MHz



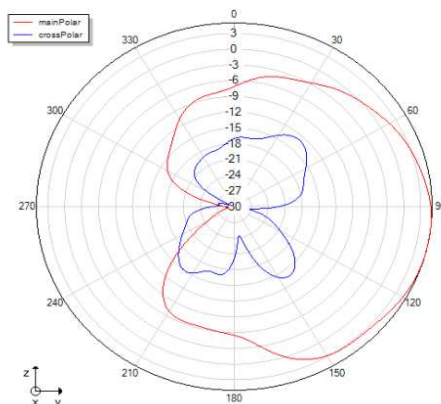
Theta=90 freq=2402MHz



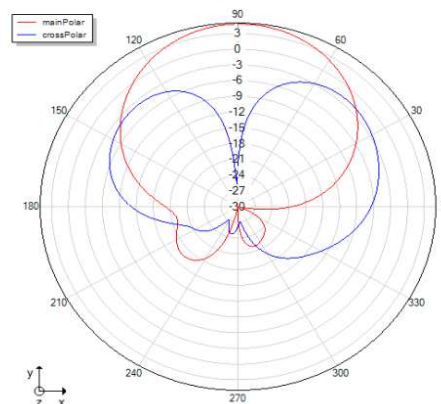
Phi=0 freq=2402MHz



Phi=90 freq=2402MHz

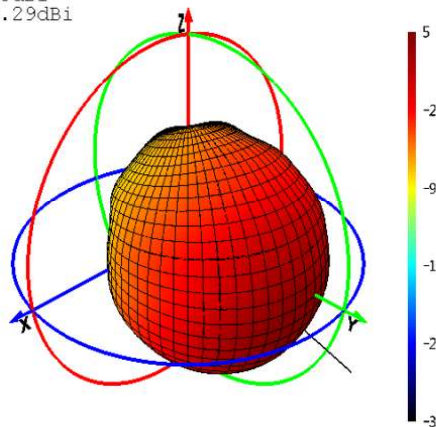


Theta=90 freq=2402MHz

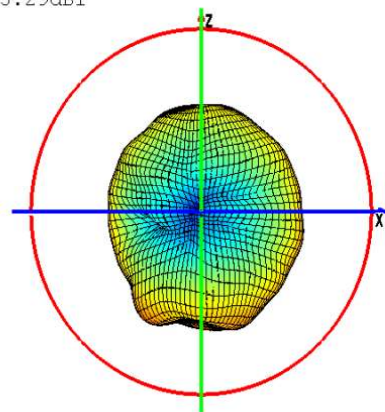


Antenna apple diagram and pattern

MAX:5.38dBi
MIN:-25.29dBi

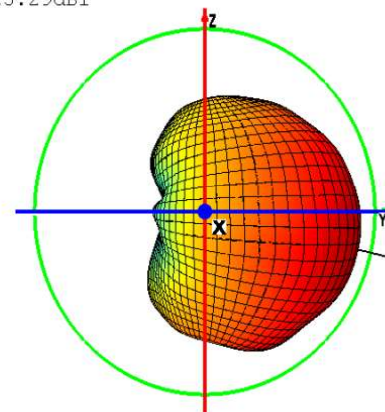


MAX:5.38dBi
MIN:-25.29dBi

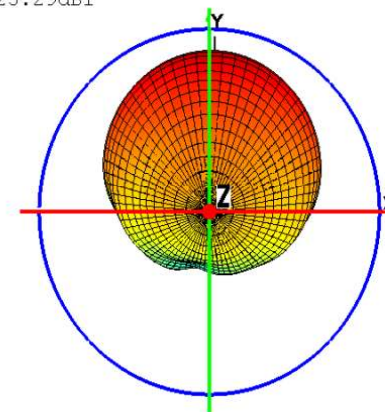


2410MHz

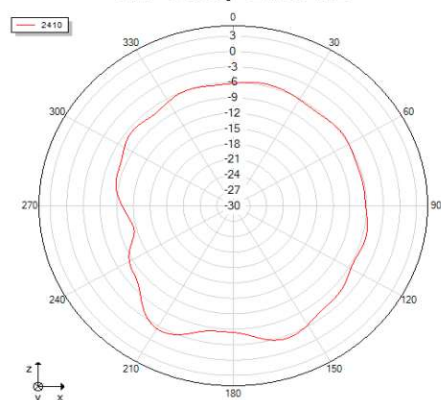
MAX:5.38dBi
MIN:-25.29dBi



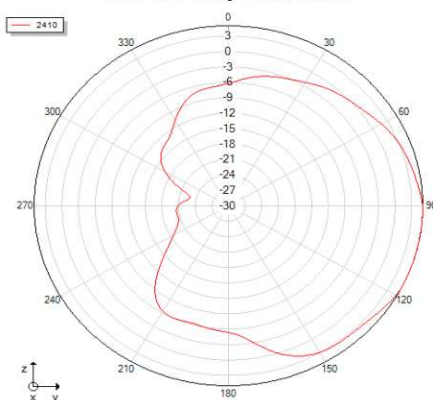
MAX:5.38dBi
MIN:-25.29dBi



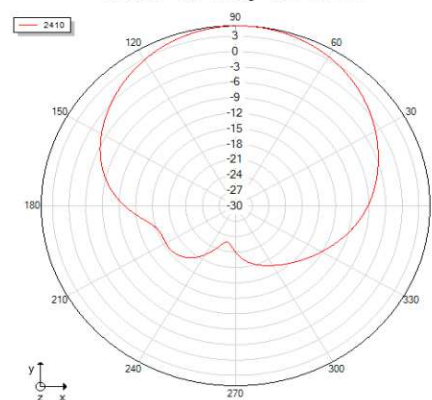
Phi=0 freq=2410MHz



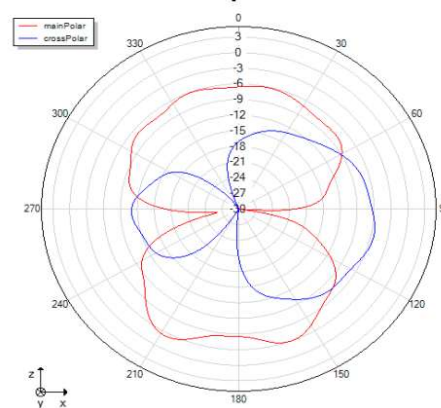
Phi=90 freq=2410MHz



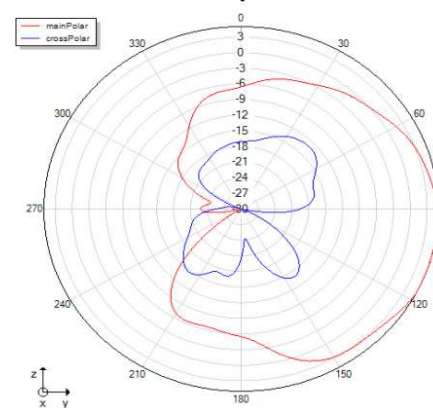
Theta=90 freq=2410MHz



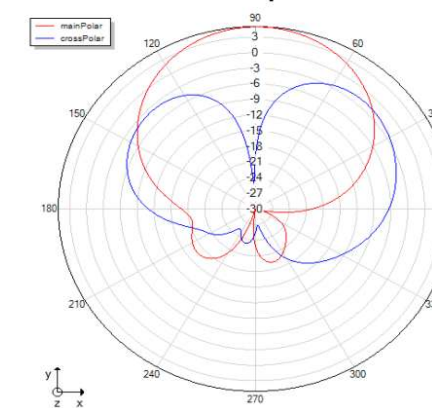
Phi=0 freq=2410MHz



Phi=90 freq=2410MHz

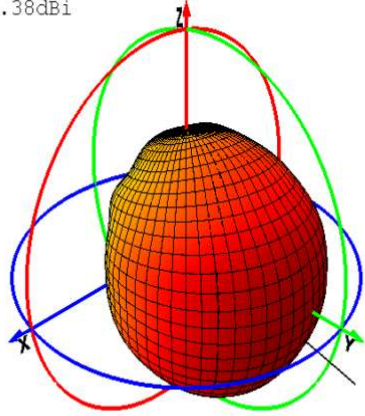


Theta=90 freq=2410MHz

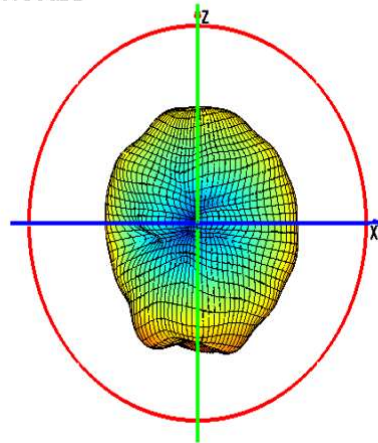


Antenna apple diagram and pattern

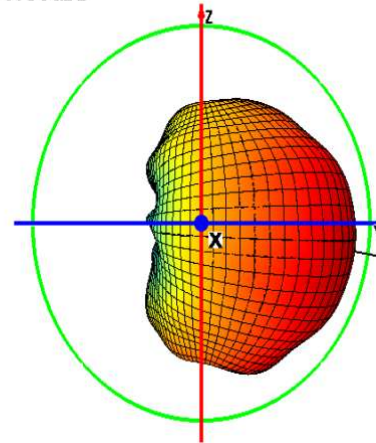
MAX:5.51dBi
MIN:-24.38dBi



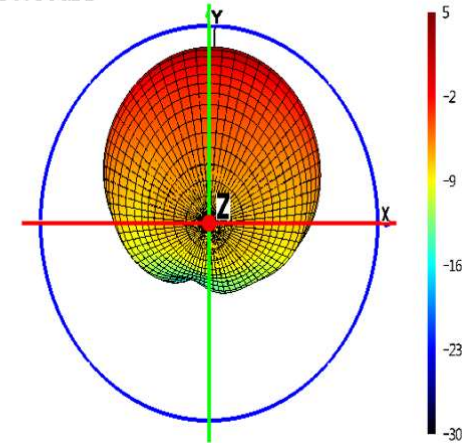
MAX:5.51dBi
MIN:-24.38dBi



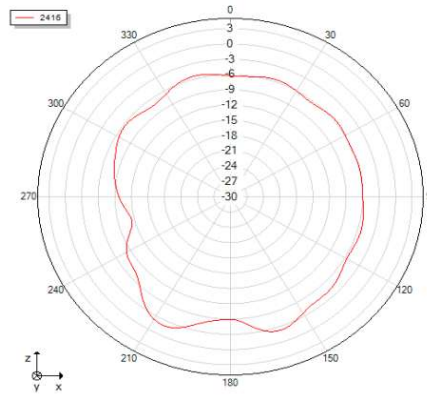
MAX:5.51dBi
MIN:-24.38dBi



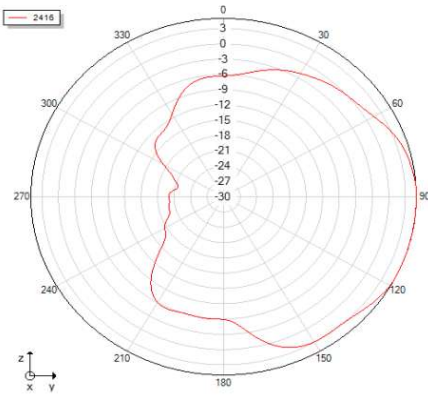
MAX:5.51dBi
MIN:-24.38dBi



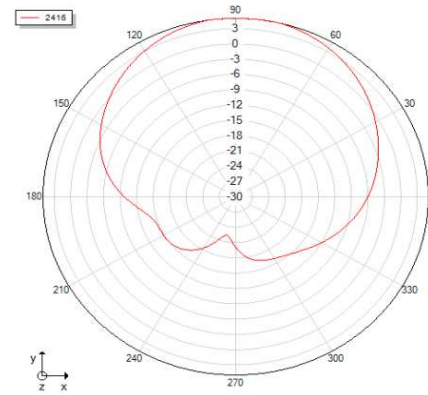
Phi=0 freq=2416MHz



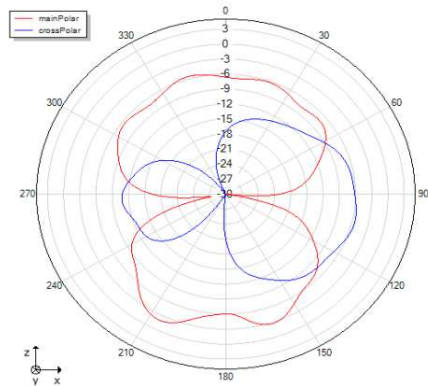
Phi=90 freq=2416MHz



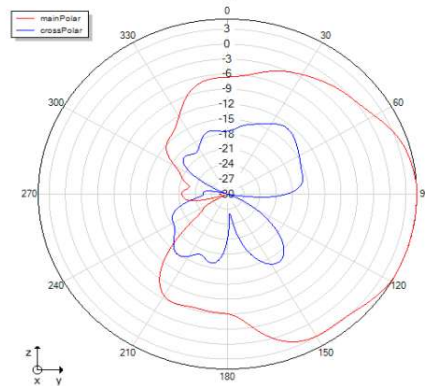
Theta=90 freq=2416MHz



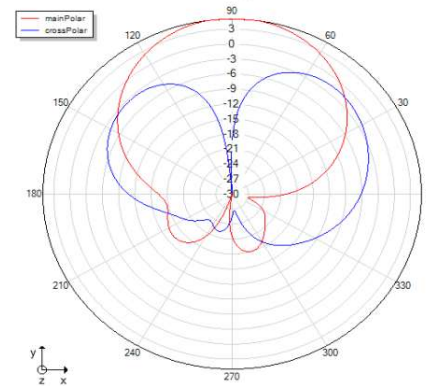
Phi=0 freq=2416MHz



Phi=90 freq=2416MHz

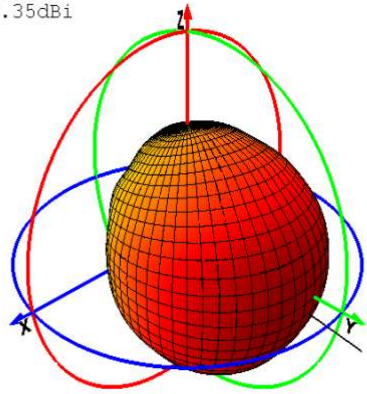


Theta=90 freq=2416MHz

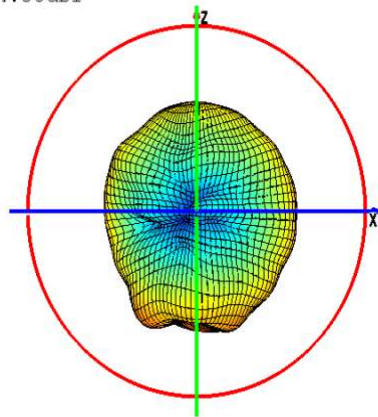


Antenna apple diagram and pattern

MAX: 5.47dBi
MIN: -24.35dBi

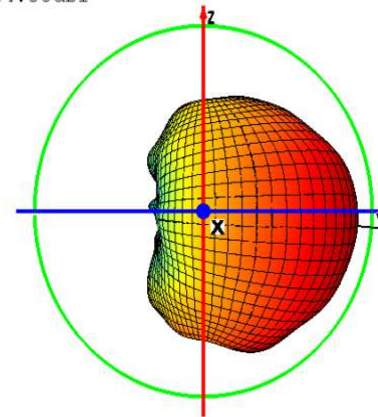


MAX: 5.47dBi
MIN: -24.35dBi

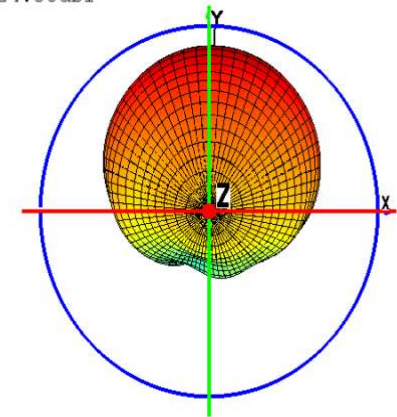


2422MHz

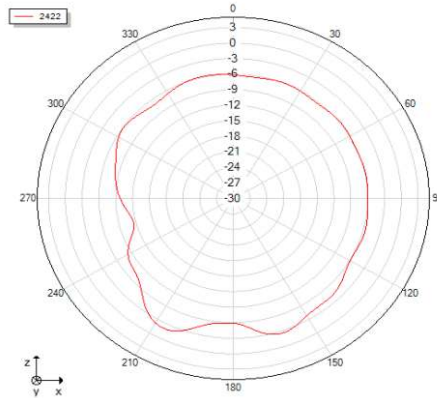
MAX: 5.47dBi
MIN: -24.35dBi



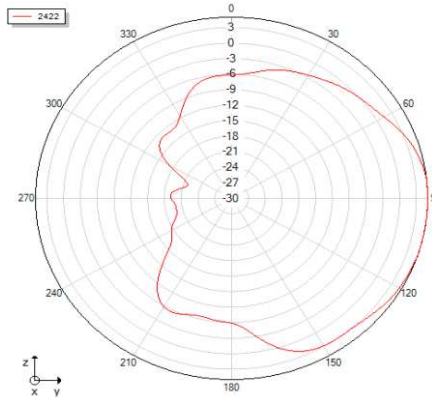
MAX: 5.47dBi
MIN: -24.35dBi



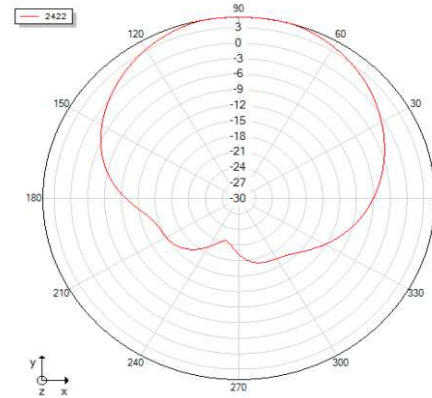
Phi=0 freq=2422MHz



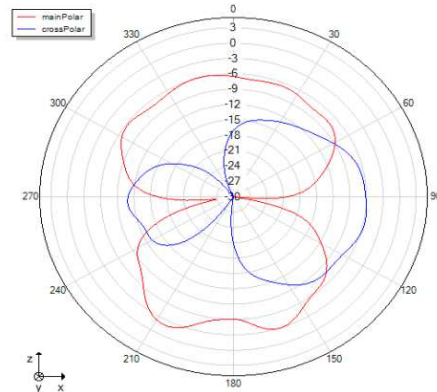
Phi=90 freq=2422MHz



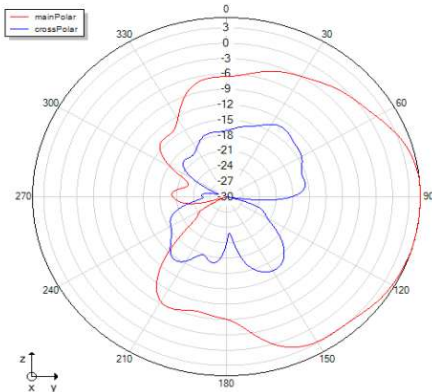
Theta=90 freq=2422MHz



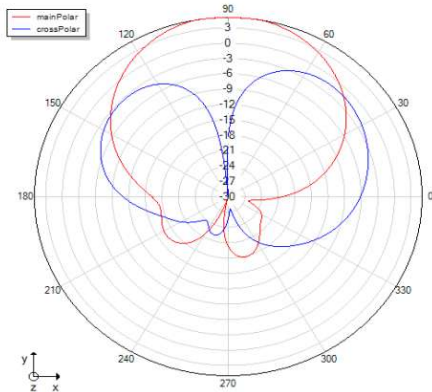
Phi=0 freq=2422MHz



Phi=90 freq=2422MHz

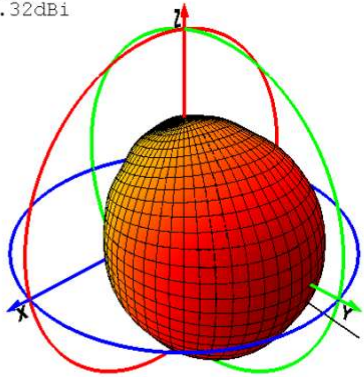


Theta=90 freq=2422MHz

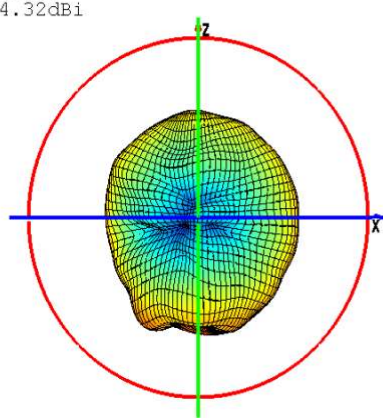


Antenna apple diagram and pattern

MAX: 5.21dBi
MIN: -24.32dBi

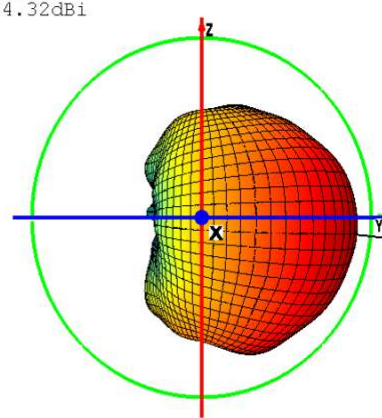


MAX: 5.21dBi
MIN: -24.32dBi

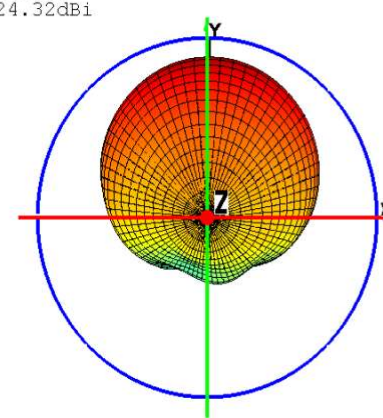


2428MHz

MAX: 5.21dBi
MIN: -24.32dBi



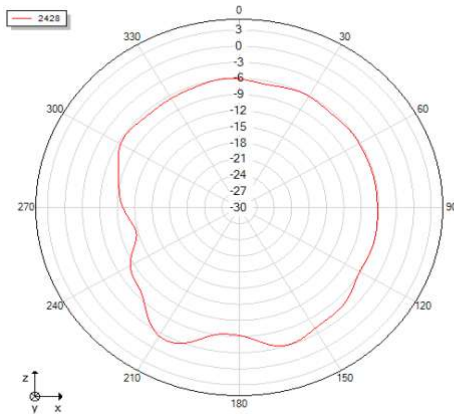
MAX: 5.21dBi
MIN: -24.32dBi



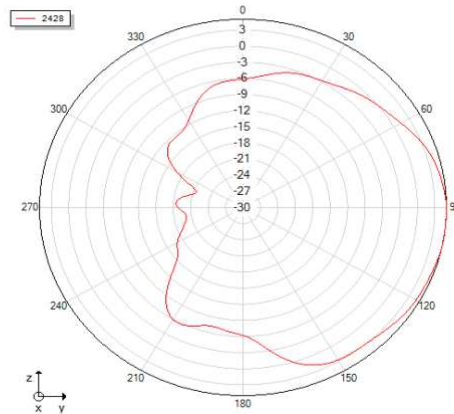
Phi=0 freq=2428MHz

Phi=90 freq=2428MHz

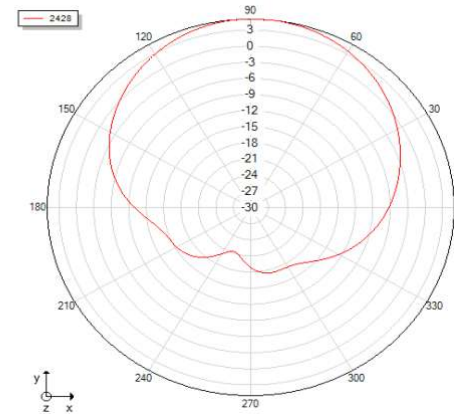
Theta=90 freq=2428MHz



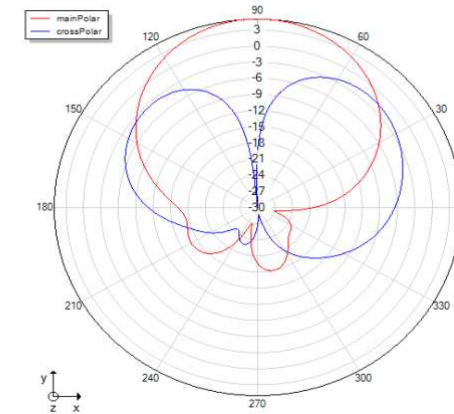
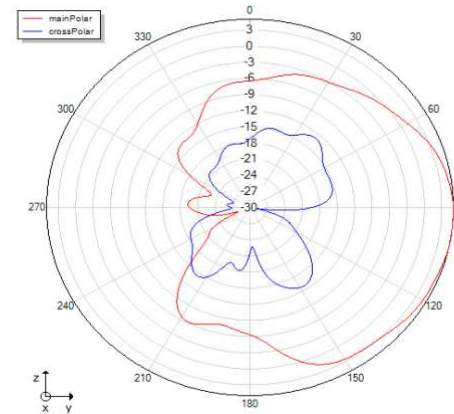
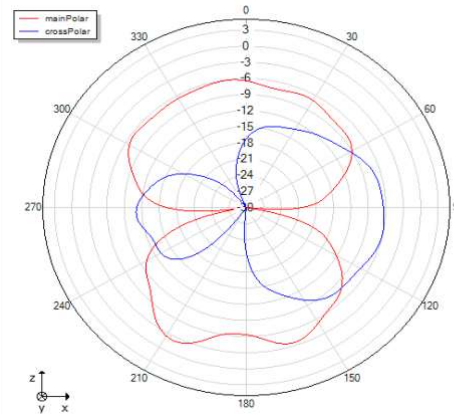
Phi=0 freq=2428MHz



Phi=90 freq=2428MHz

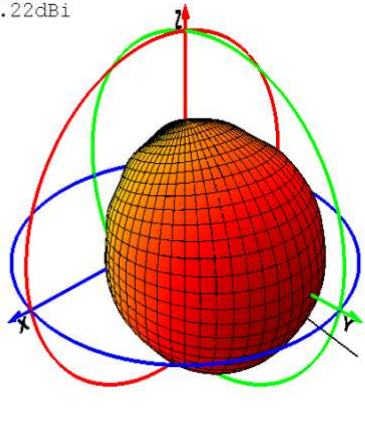


Theta=90 freq=2428MHz

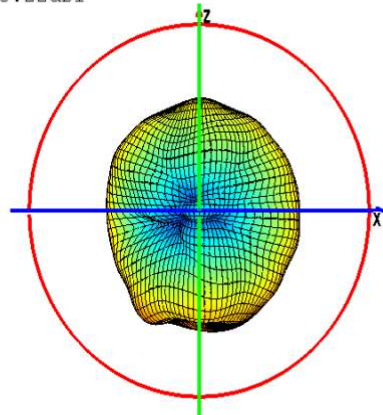


Antenna apple diagram and pattern

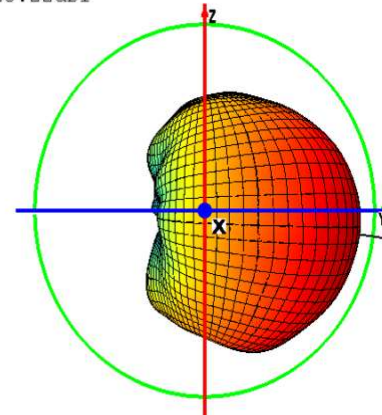
MAX:5.15dBi
MIN:-23.22dBi



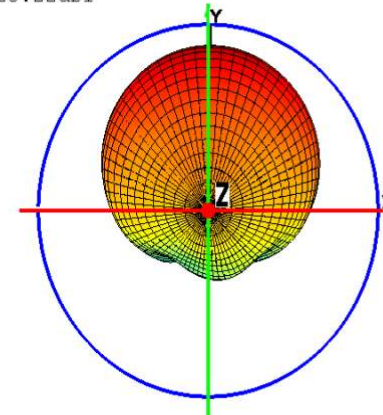
MAX:5.15dBi
MIN:-23.22dBi



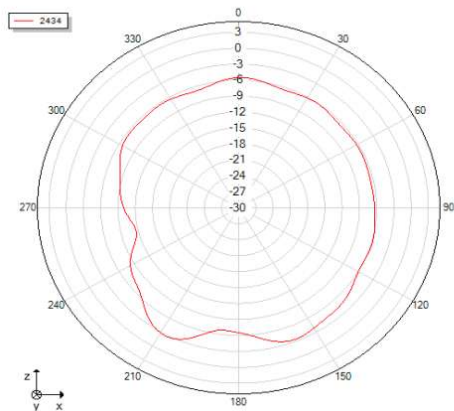
MAX:5.15dBi
MIN:-23.22dBi



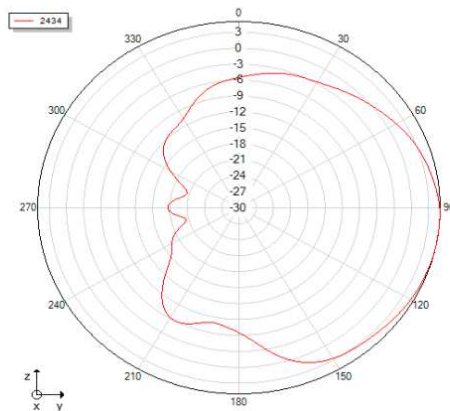
MAX:5.15dBi
MIN:-23.22dBi



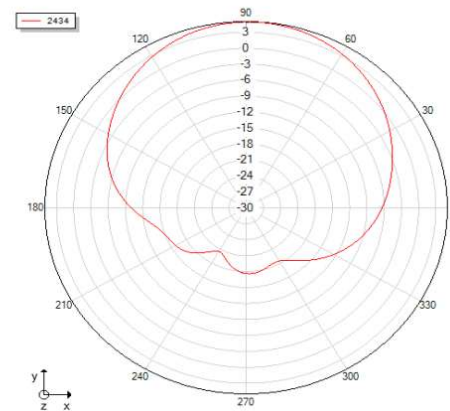
Phi=0 freq=2434MHz



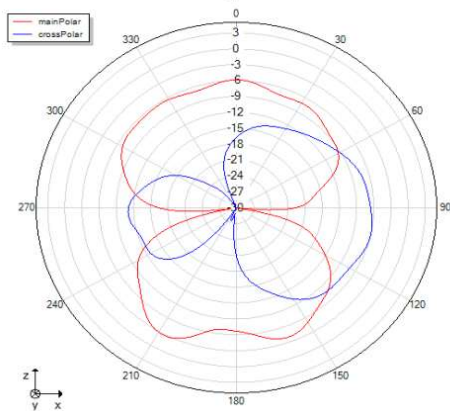
Phi=90 freq=2434MHz



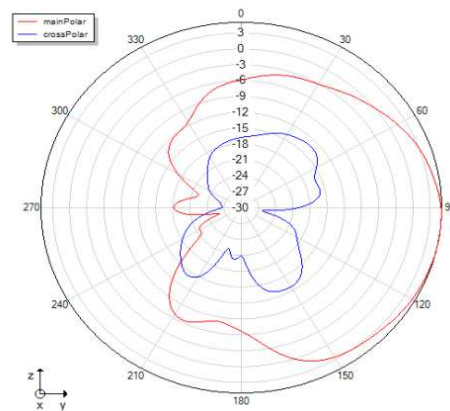
Theta=90 freq=2434MHz



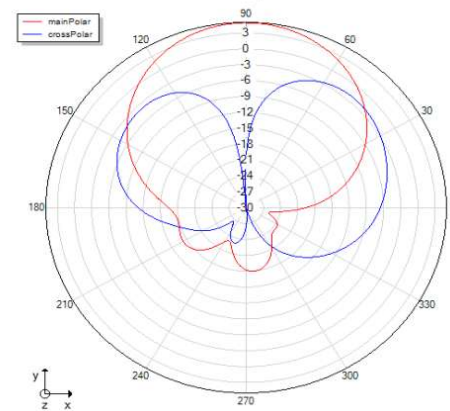
Phi=0 freq=2434MHz



Phi=90 freq=2434MHz

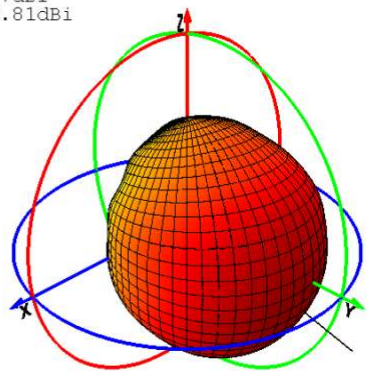


Theta=90 freq=2434MHz

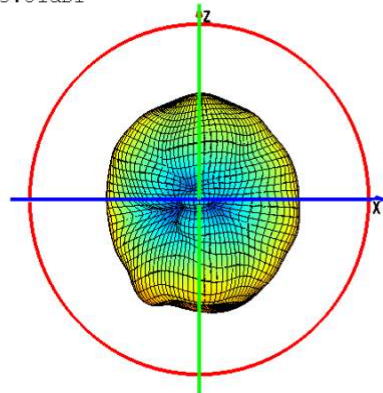


Antenna apple diagram and pattern

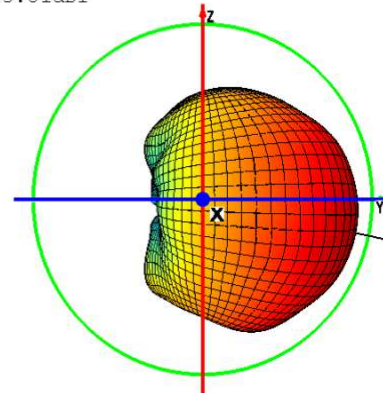
MAX:5.27dBi
MIN:-23.81dBi



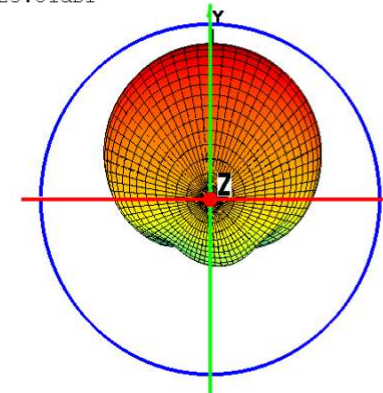
MAX:5.27dBi
MIN:-23.81dBi



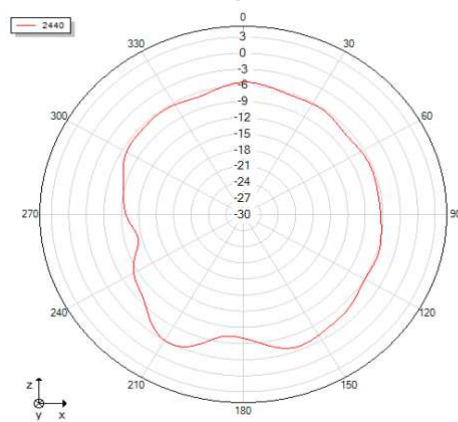
MAX:5.27dBi
MIN:-23.81dBi



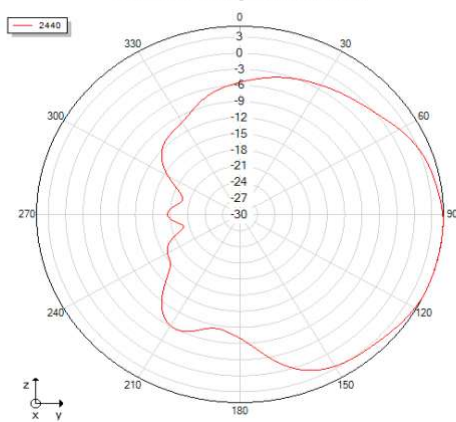
MAX:5.27dBi
MIN:-23.81dBi



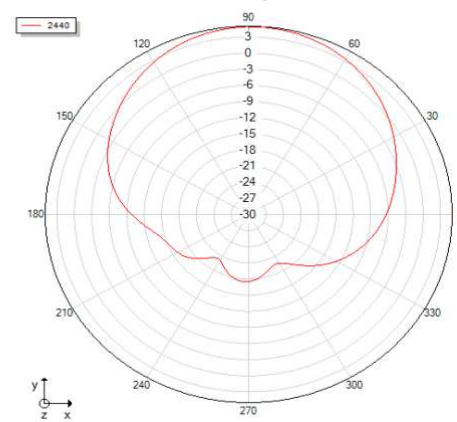
Phi=0 freq=2440MHz



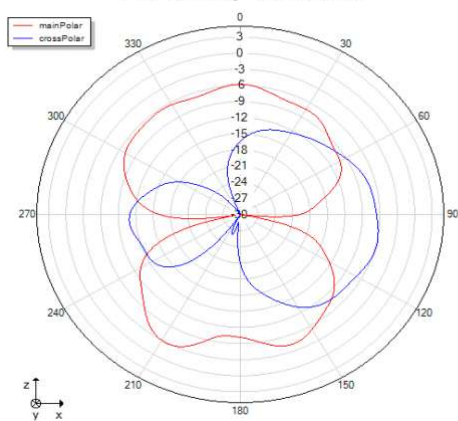
Phi=90 freq=2440MHz



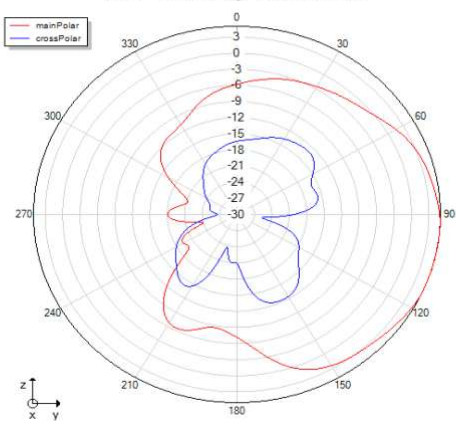
Theta=90 freq=2440MHz



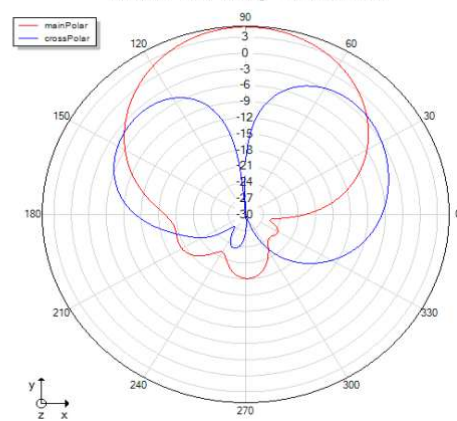
Phi=0 freq=2440MHz



Phi=90 freq=2440MHz

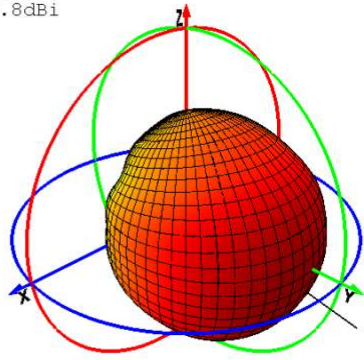


Theta=90 freq=2440MHz

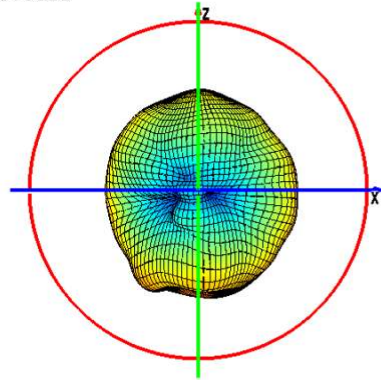


Antenna apple diagram and pattern

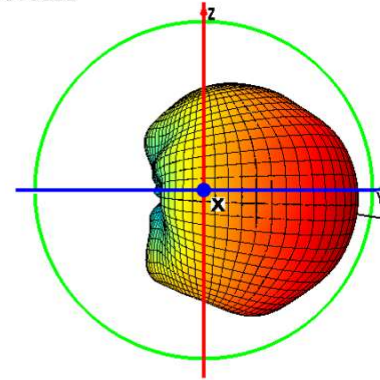
MAX: 5.44dBi
MIN: -25.8dBi



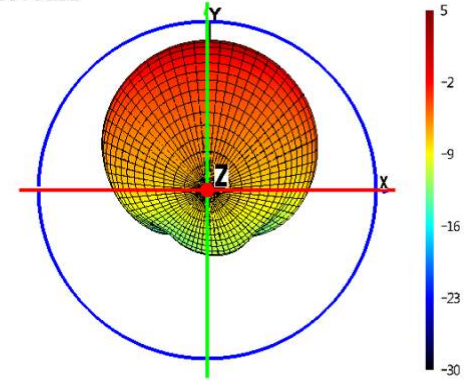
MAX: 5.44dBi
MIN: -25.8dBi



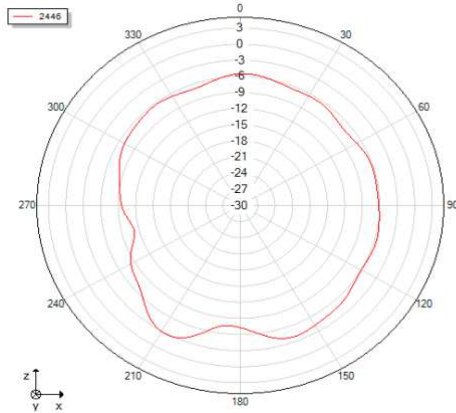
MAX: 5.44dBi
MIN: -25.8dBi



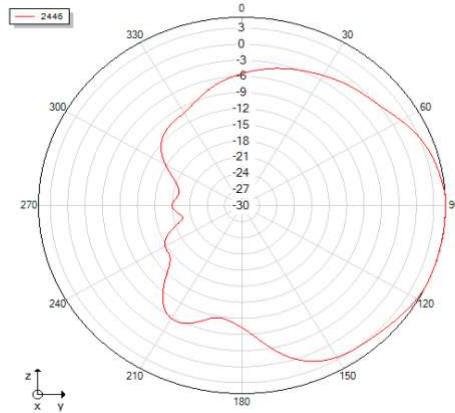
MAX: 5.44dBi
MIN: -25.8dBi



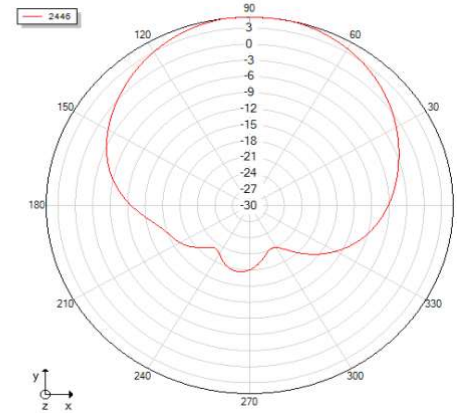
Phi=0 freq=2446MHz



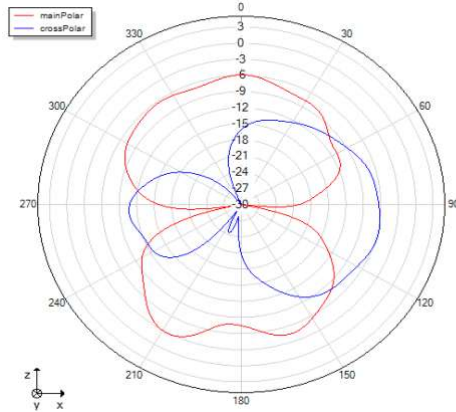
Phi=90 freq=2446MHz



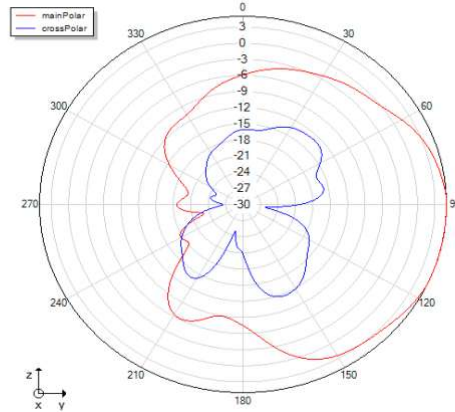
Theta=90 freq=2446MHz



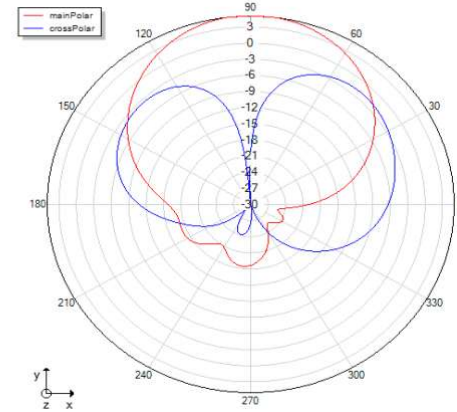
Phi=0 freq=2446MHz



Phi=90 freq=2446MHz



Theta=90 freq=2446MHz



Antenna apple diagram and pattern

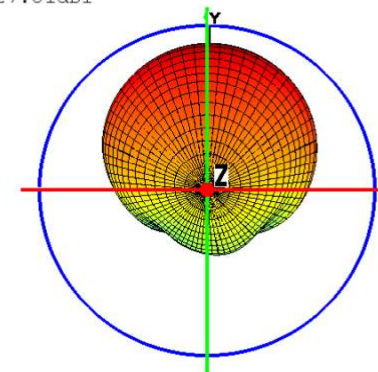
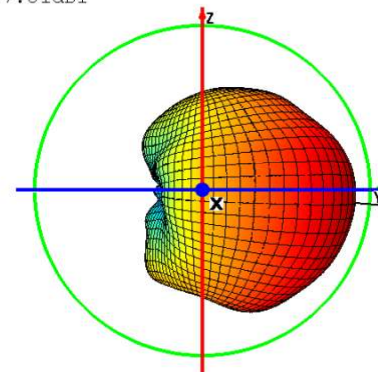
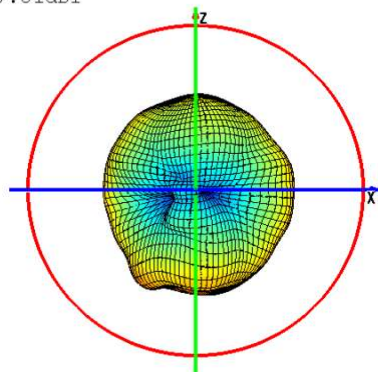
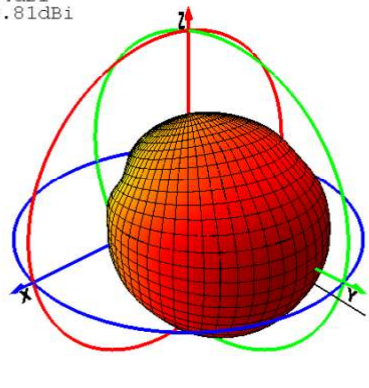
2454MHz

MAX:5.74dBi
MIN:-27.81dBi

MAX:5.74dBi
MIN:-27.81dBi

MAX:5.74dBi
MIN:-27.81dBi

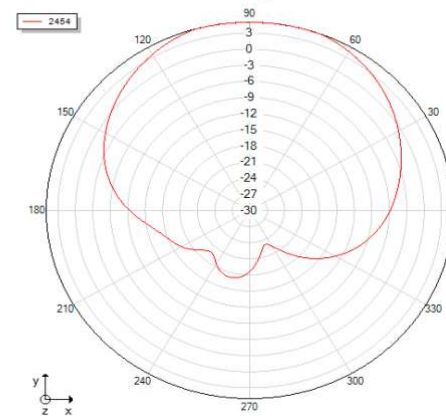
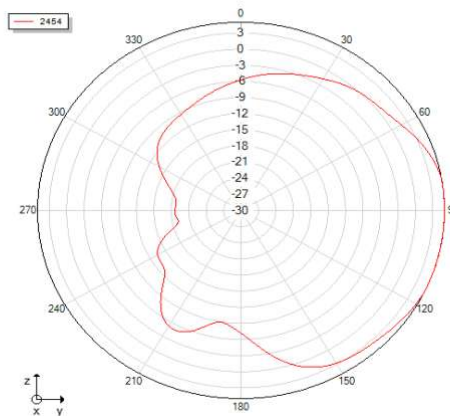
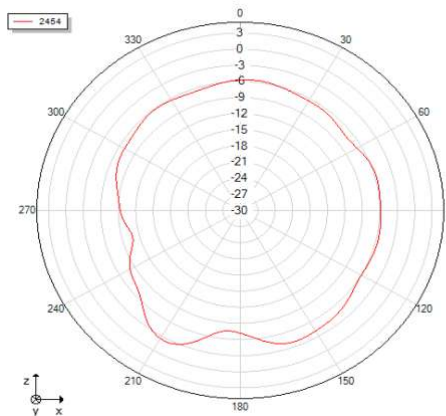
MAX:5.74dBi
MIN:-27.81dBi



$\Phi=0$ freq=2454MHz

$\Phi=90$ freq=2454MHz

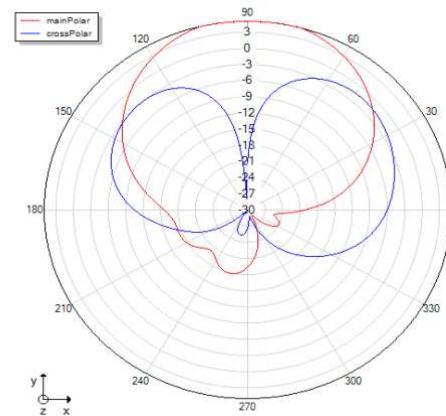
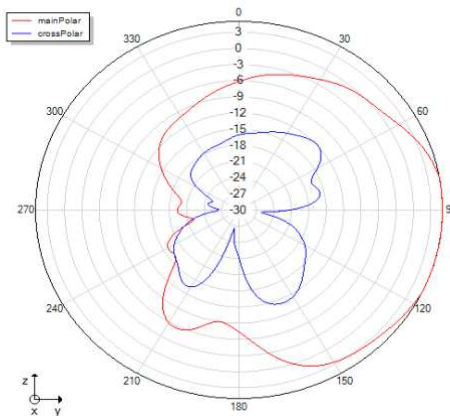
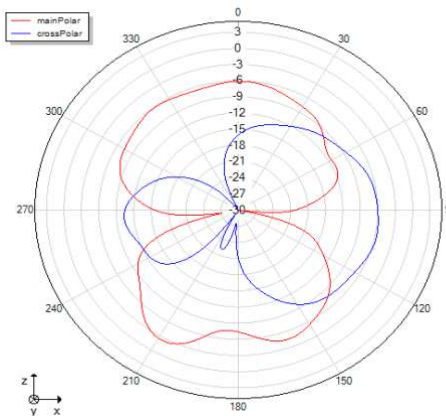
$\Theta=90$ freq=2454MHz



$\Phi=0$ freq=2454MHz

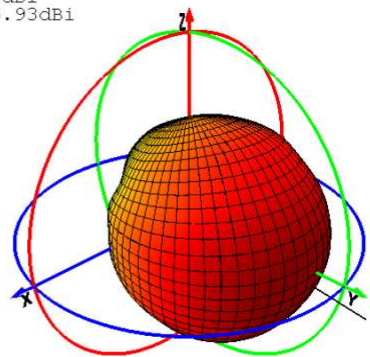
$\Phi=90$ freq=2454MHz

$\Theta=90$ freq=2454MHz

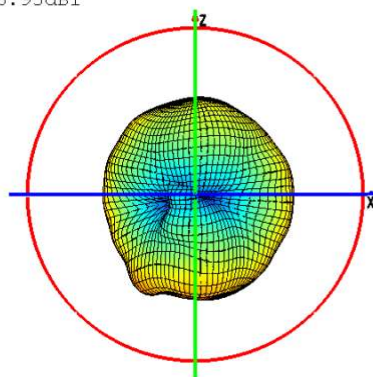


Antenna apple diagram and pattern

MAX: 5.7dBi
MIN: -26.93dBi

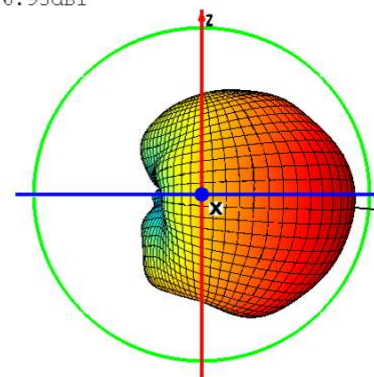


MAX: 5.7dBi
MIN: -26.93dBi

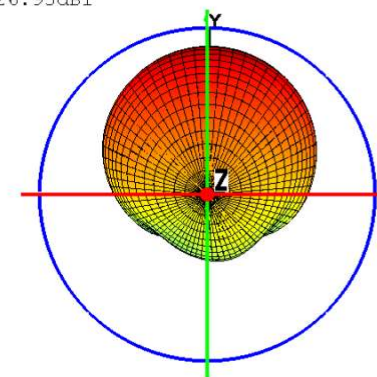


2460MHz

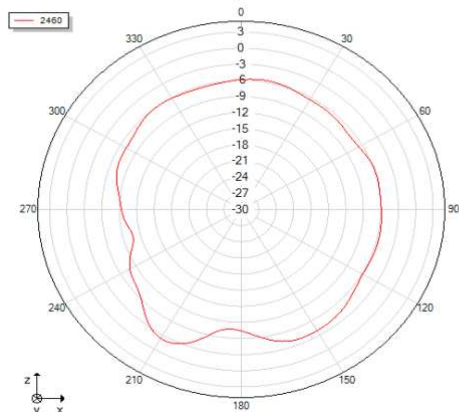
MAX: 5.7dBi
MIN: -26.93dBi



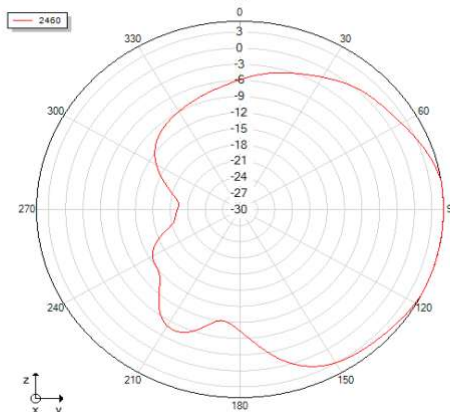
MAX: 5.7dBi
MIN: -26.93dBi



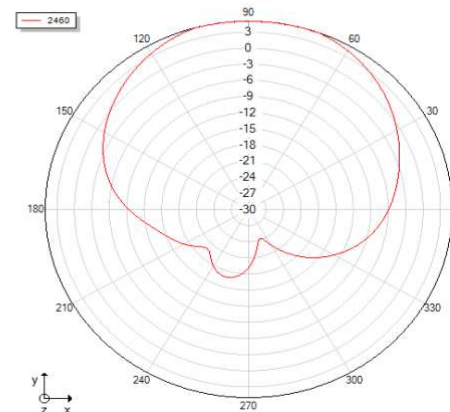
Phi=0 freq=2460MHz



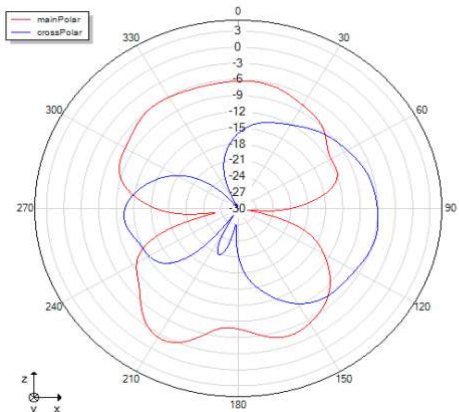
Phi=90 freq=2460MHz



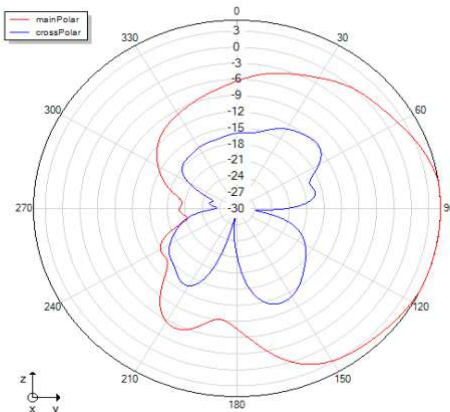
Theta=90 freq=2460MHz



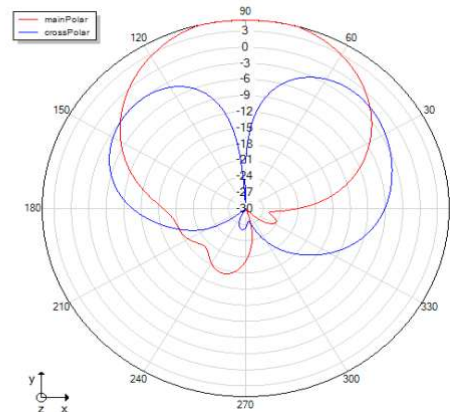
Phi=0 freq=2460MHz



Phi=90 freq=2460MHz



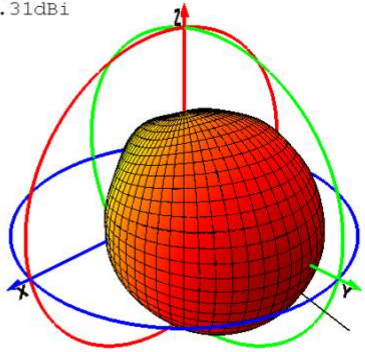
Theta=90 freq=2460MHz



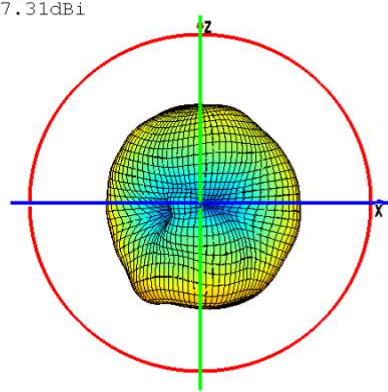
Antenna apple diagram and pattern

2466MHz

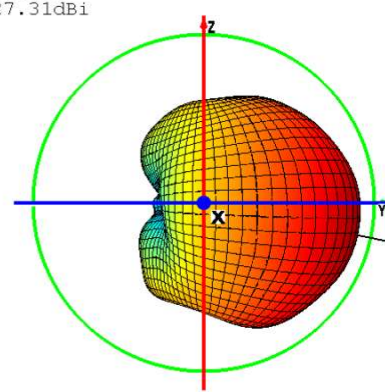
MAX: 4.97dBi
MIN: -27.31dBi



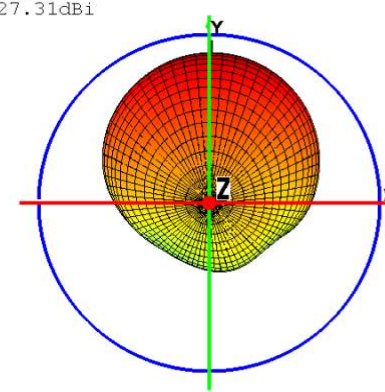
MAX: 4.97dBi
MIN: -27.31dBi



MAX: 4.97dBi
MIN: -27.31dBi



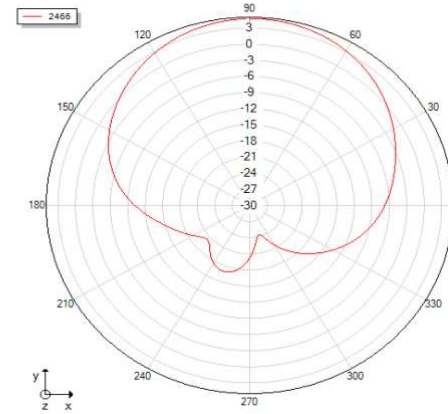
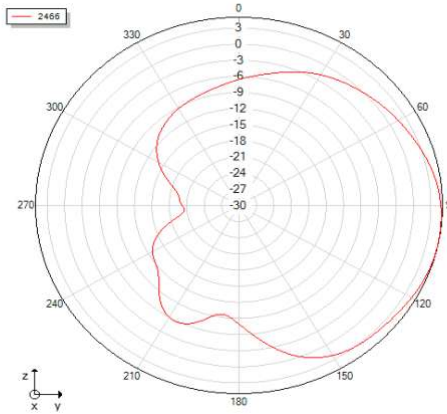
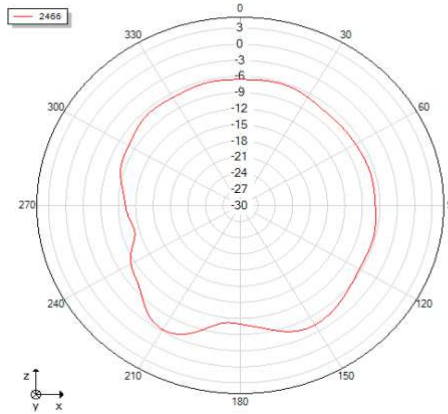
MAX: 4.97dBi
MIN: -27.31dBi



$\Phi=0$ freq=2466MHz

$\Phi=90$ freq=2466MHz

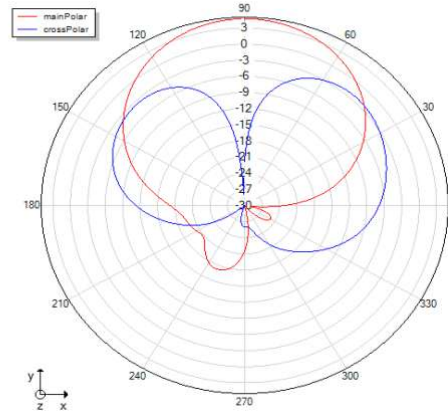
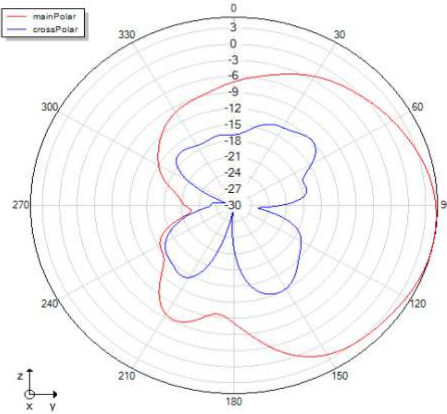
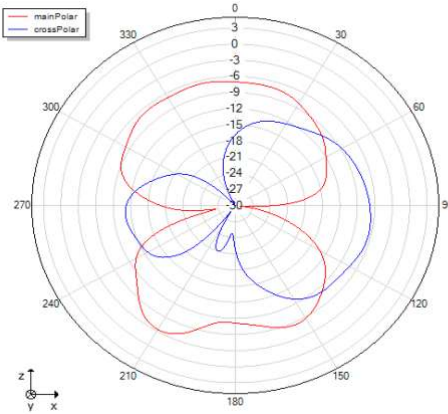
$\Theta=90$ freq=2466MHz



$\Phi=0$ freq=2466MHz

$\Phi=90$ freq=2466MHz

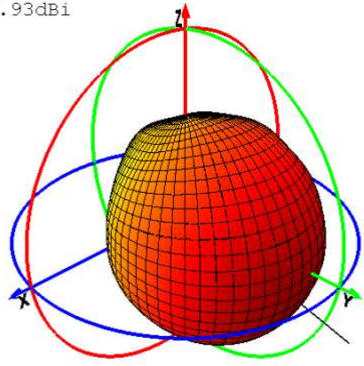
$\Theta=90$ freq=2466MHz



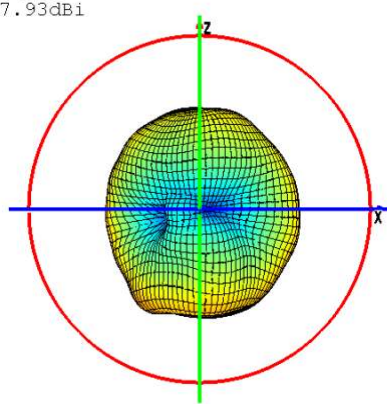
Antenna apple diagram and pattern

2472MHz

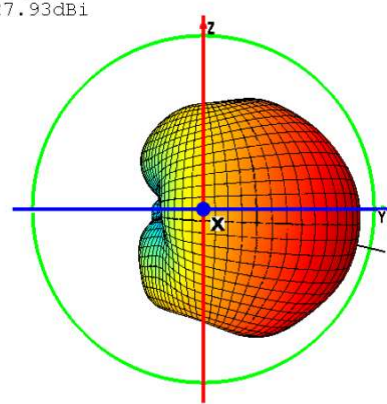
MAX: 4.94dBi
MIN: -27.93dBi



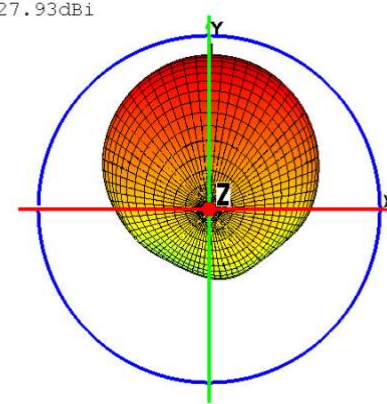
MAX: 4.94dBi
MIN: -27.93dBi



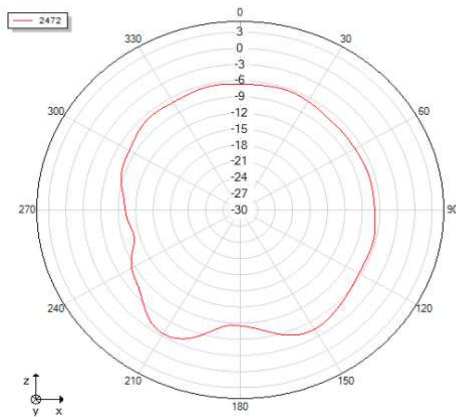
MAX: 4.94dBi
MIN: -27.93dBi



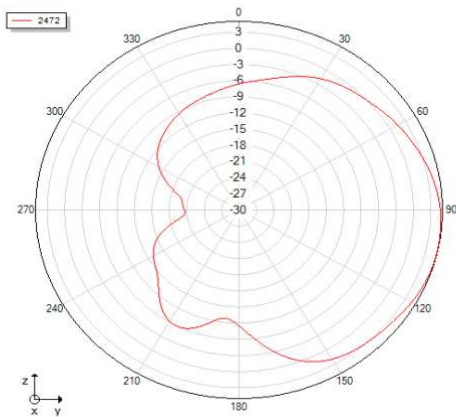
MAX: 4.94dBi
MIN: -27.93dBi



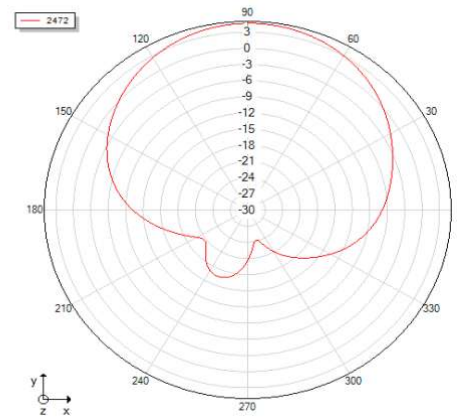
Phi=0 freq=2472MHz



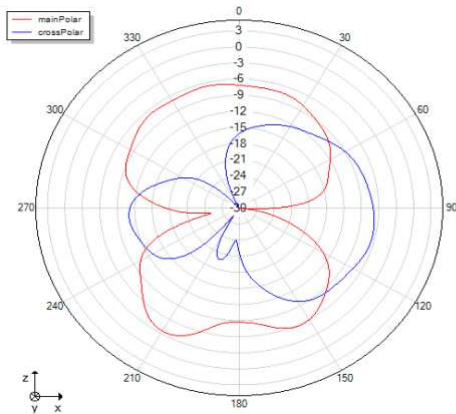
Phi=90 freq=2472MHz



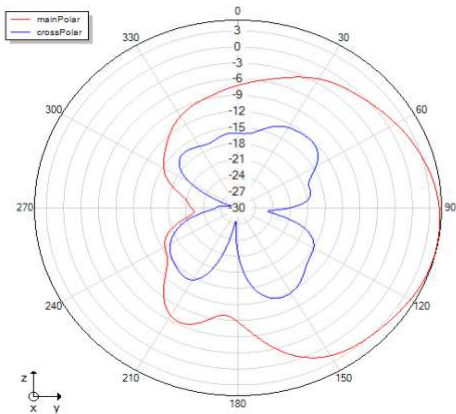
Theta=90 freq=2472MHz



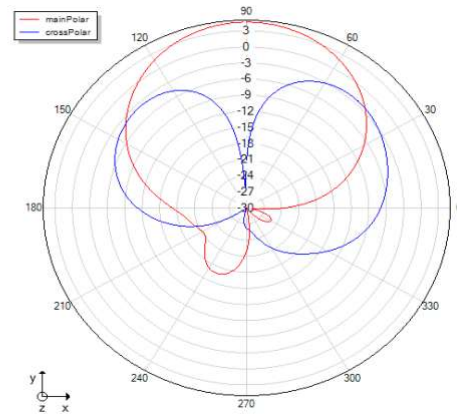
Phi=0 freq=2472MHz



Phi=90 freq=2472MHz



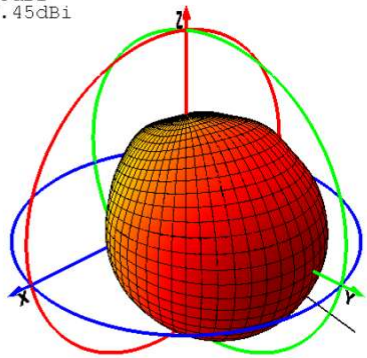
Theta=90 freq=2472MHz



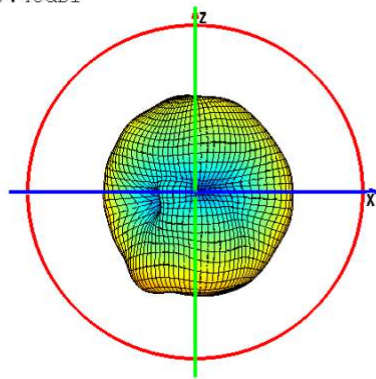
Antenna apple diagram and pattern

2480MHz

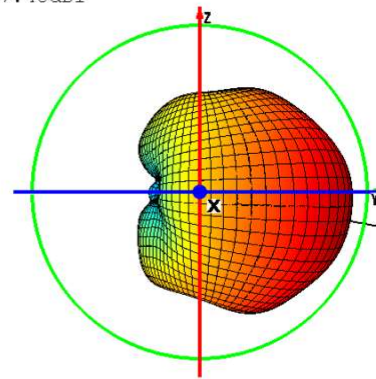
MAX: 5.78dBi
MIN: -27.45dBi



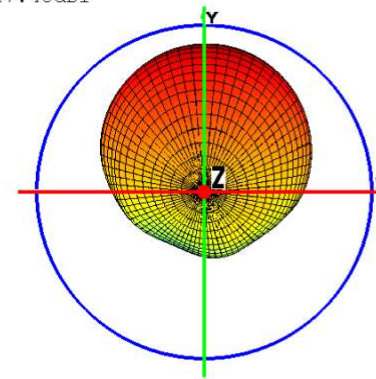
MAX: 5.78dBi
MIN: -27.45dBi



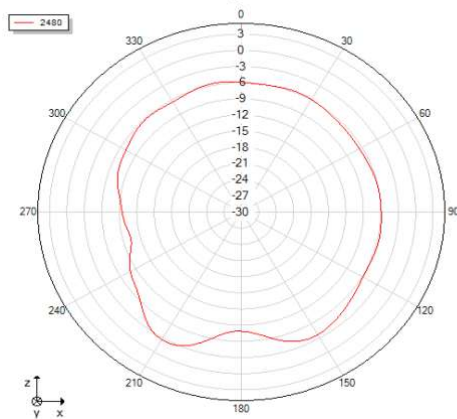
MAX: 5.78dBi
MIN: -27.45dBi



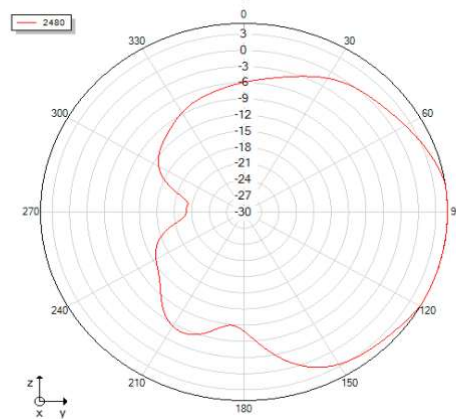
MAX: 5.78dBi
MIN: -27.45dBi



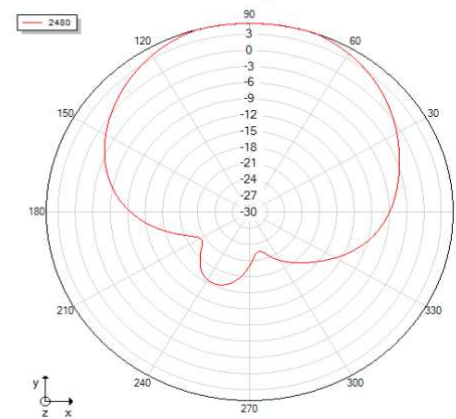
Phi=0 freq=2480MHz



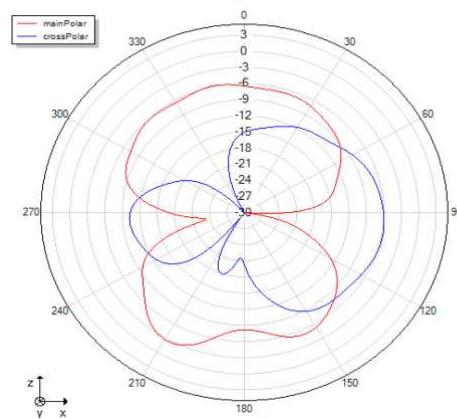
Phi=90 freq=2480MHz



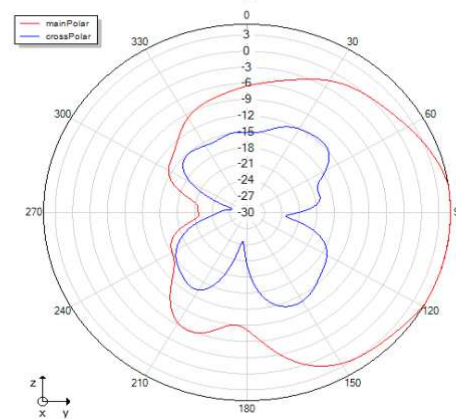
Theta=90 freq=2480MHz



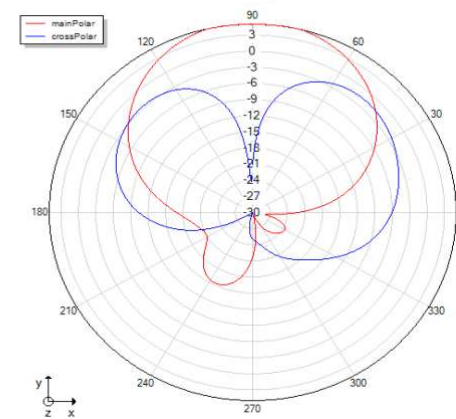
Phi=0 freq=2480MHz



Phi=90 freq=2480MHz



Theta=90 freq=2480MHz



Antenna sticking position and positioning



Additional notes

- 📶 Please double-check whether the matching circuitry mentioned in the report has been modified and whether environmental treatment has been introduced, which will directly affect the antenna performance.
- 📶 The parameters provided in this report are only the parameters given by the customer to our company's commissioning prototype, and do not represent the final mass production status of your company's final project.
- 📶 If your company has the latest trial production, or updated status (replacement of materials, update software, change of environmental treatment, etc.) of the prototype, please submit it to our company for verification as soon as possible to confirm whether the antenna performance is affected.
- 📶 If your company needs to send it to a third party for re-testing or to the customer for testing, please be sure to hand over the machine to our company for testing and confirmation, because the consistency of the motherboard, the consistency of the assembly, and the difference in antenna assembly and other factors may lead to the deviation of antenna parameters.