Microgrid Youlian Technology (Chengdu) Co., LTD

Sample Acknowledgment

catalog：	☑Drawing □Packaging method ☑Function Test Report ☐Reliability Test Report ☐RoHs		
Reason for sample submission：	☑The first sample submission □Change the sample □Supplementary sample □Copy the sample		
Supplier Name：	Dongguan Renfeng Electronic Technology Co., LTD		
Supplier material number：	U00T03S000N04516	Name and Model：	External antenna
Customer material number:	51010274	Cavity number：	

Supplier formulation/date	Supplier Audit/Date	Customer R&D confirmation/date	Customer quality confirmation/date

Remarks：

Microgrid Youlian Technology (Chengdu) Co., LTD

SPECIFICATION FOR APPROVAL

CUSTOMER NAME: Wei Wang

PRODUCT NAME: Hardware antenna

CUSTOMER P/N: 51010274

Ren Feng P/N: U00T03S000N04516 REV: A

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
CHECKED BY:	Yang Zhen	
AUDITOR BY:	Xiao Yupeng	
APPROVED BY:	Yao Dingjun	
DATE:	2023-11-08	

Address: Room 502, Building 5, No. 528, Yuefei Road, Shibantan Sub-district, Xindu District, Chengdu City, Sichuan Province

Contents

一、 Change resume

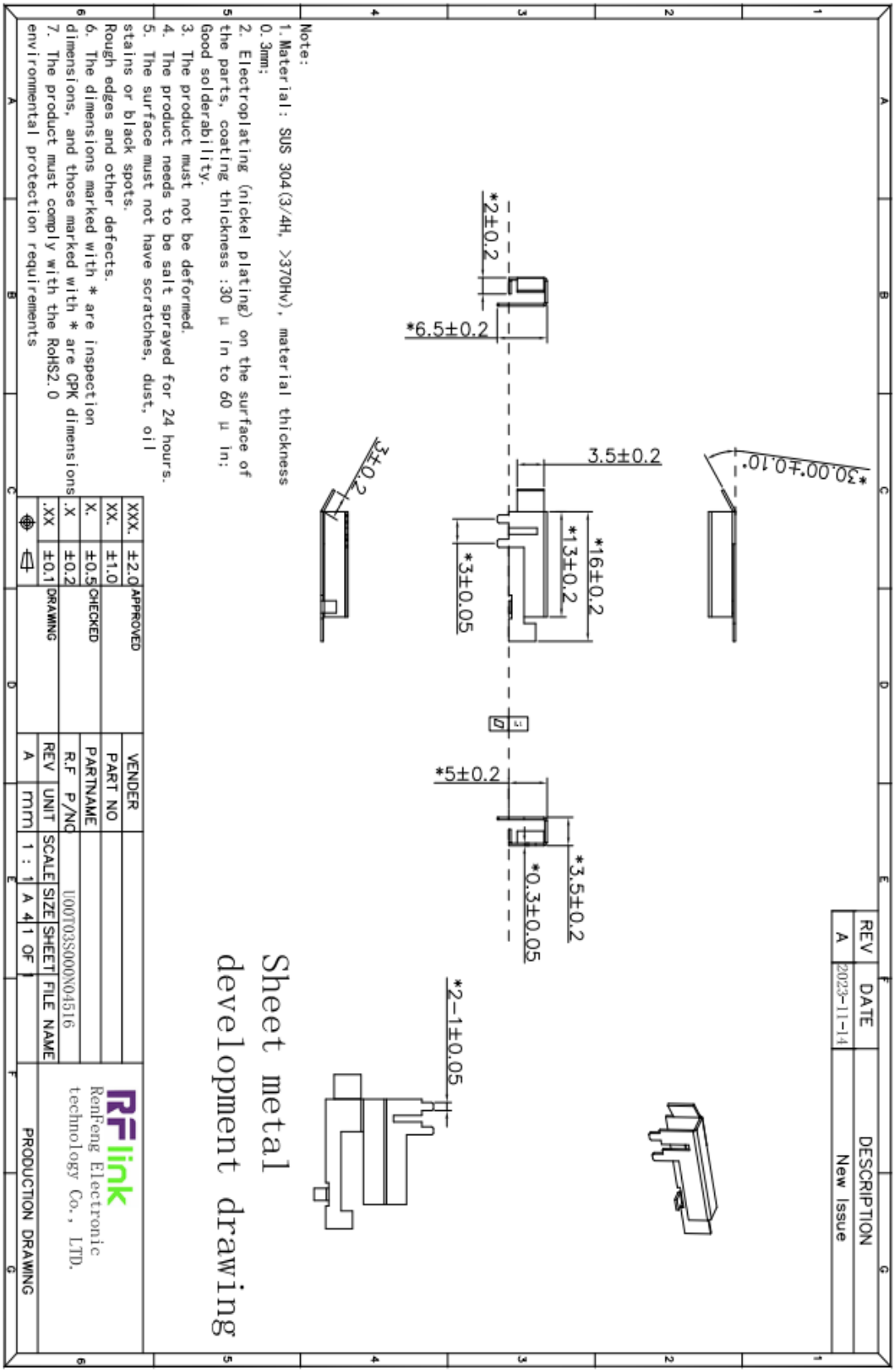
Version	Date	Change record
A	2023-11-08	First edition release

二、Specification sheet:

Main technical parameters of the product

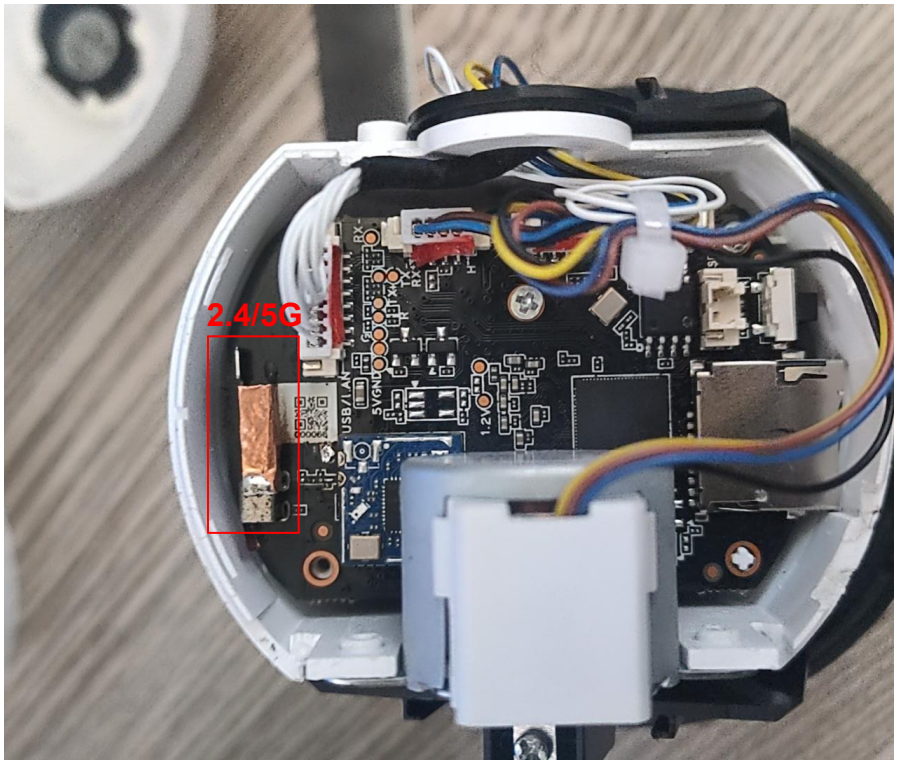
Main technical specifications	
Frequency Range (MHZ)	2400-2500 5150-5850
Impedance(Ω)	50
Peak Gain(dBi)	2.4G:4.13 5G:4.78
VSWR	≦2.0
Radiation	Omni-directional
Connector Type	/
Physical Properties	
Antenna cover	SUS 304
Operating Temp	-20℃~+70℃
Storage Temp	-20℃~+70℃

三、Finished product drawing:



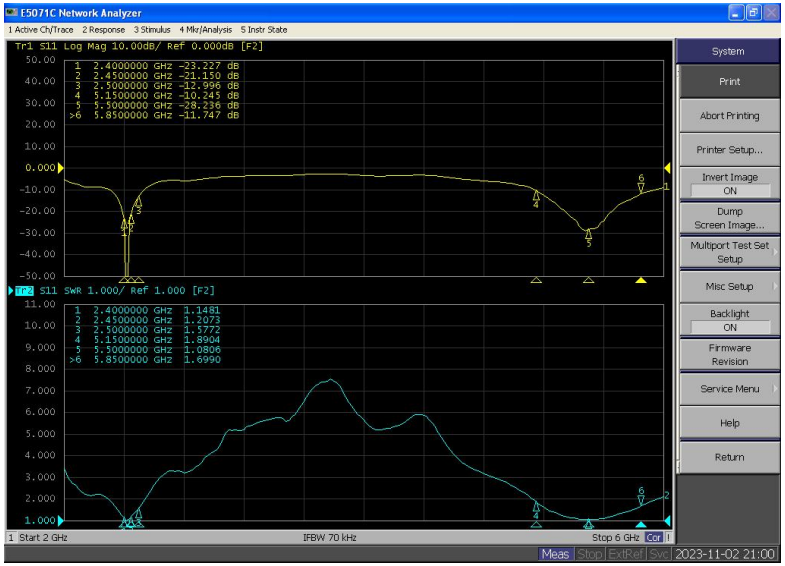
LC2310 Project

Antenna position and routing



Return loss and standing wave ratio

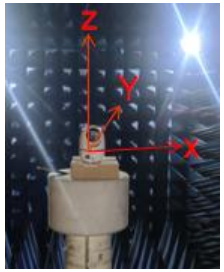
RL-VSWR



Frequency (MHz)	2400	2450	2500	5150	5500	5850
return loss	-23.23	-21.15	-12.99	-10.25	-28.24	-11.75
VSWR	1.15	1.21	1.58	1.89	1.08	1.70

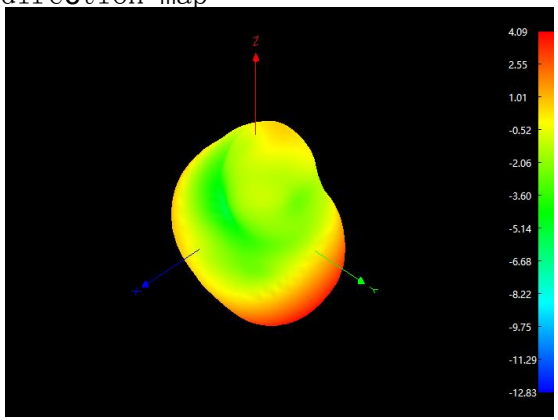
Gain and far-field pattern

2D/3D Pattern



H：XY（Horizontal plane）
E1：XZ
E2：YZ

Far-field direction map



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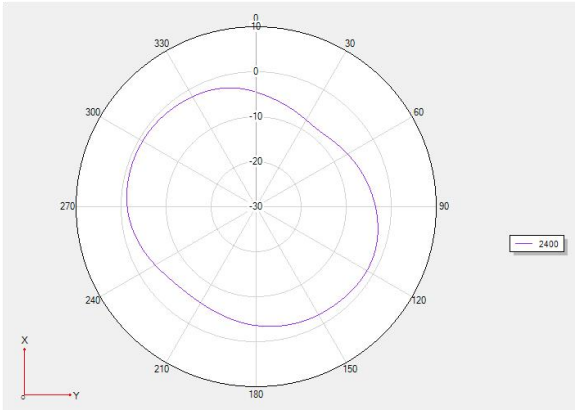
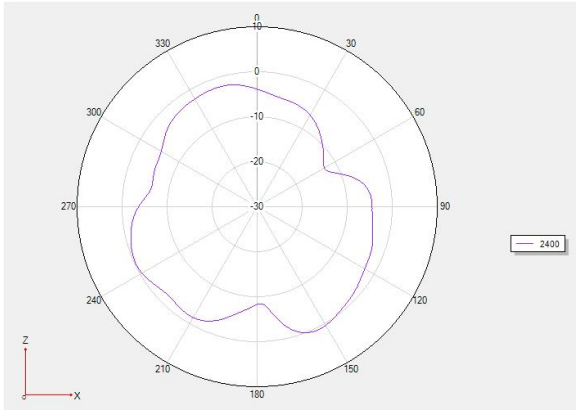
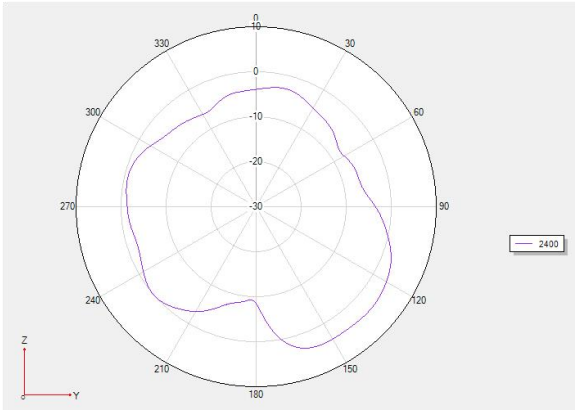


2400MHz

E1

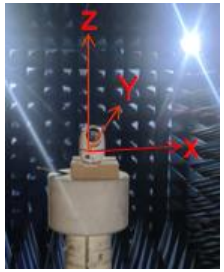


E2



Gain and far-field pattern

2D/3D Pattern

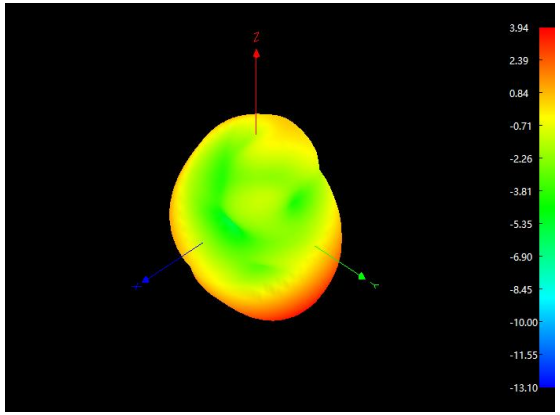


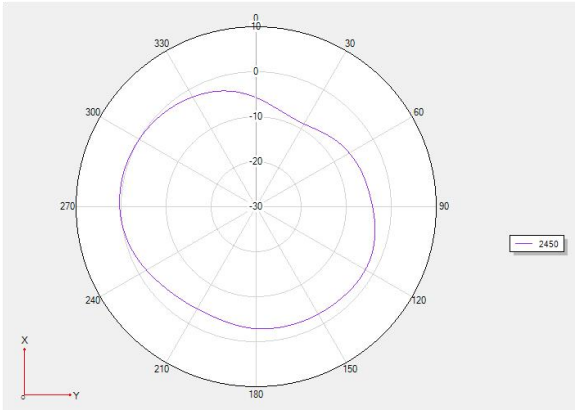
H：XY（Horizontal plane）
E1：XZ
E2：YZ

Far-field direction map

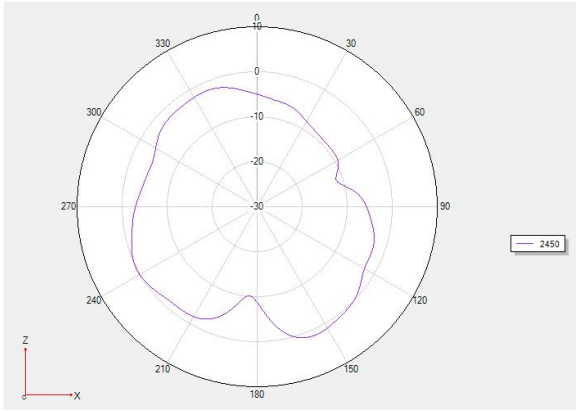
H

2450MHz





E1



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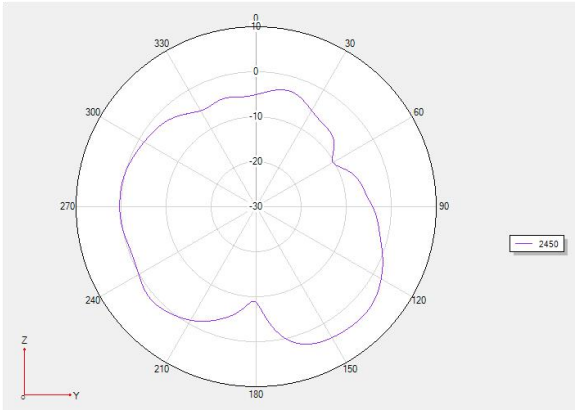
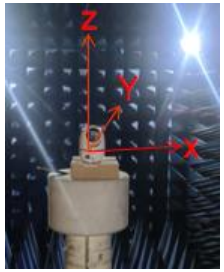


Gain and far-field pattern

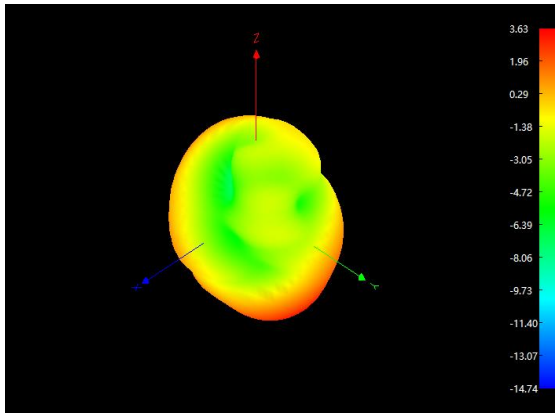
2D/3D Pattern



H：XY（Horizontal plane）
E1：XZ
E2：YZ

Far-field direction map

2500MHz



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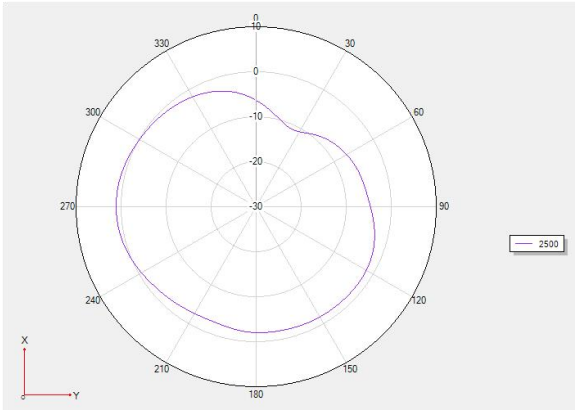
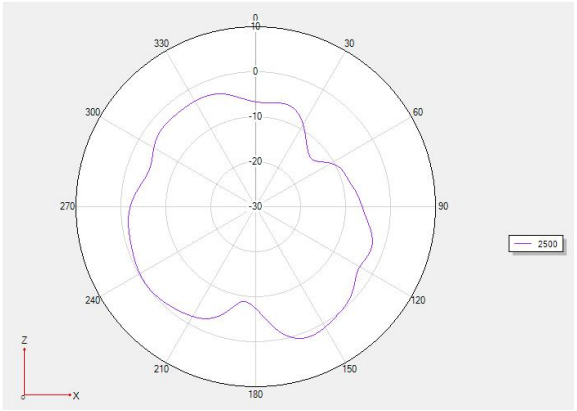
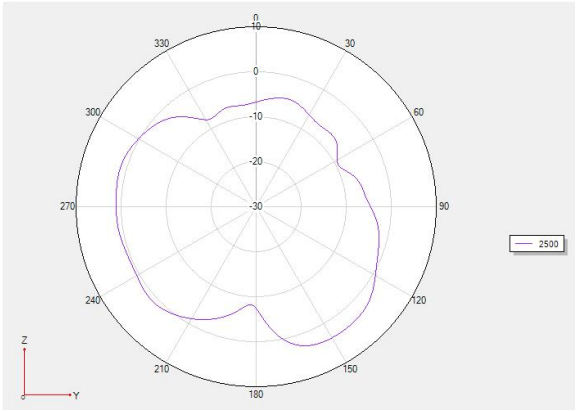


E1

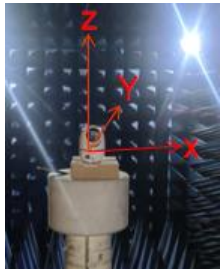


E2



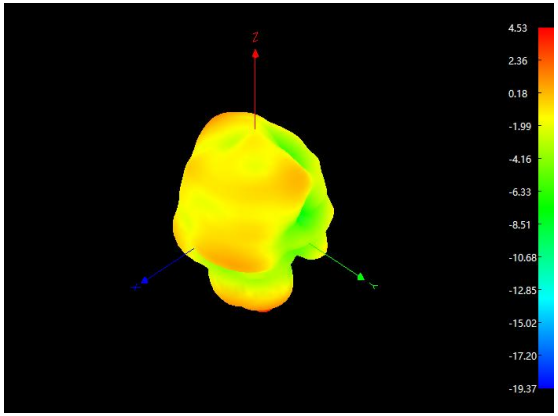
Gain and far-field pattern

2D/3D Pattern



H：XY（Horizontal plane）
E1：XZ
E2：YZ

Far-field direction map



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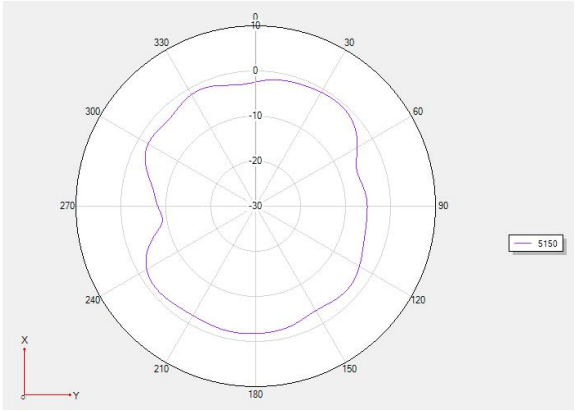
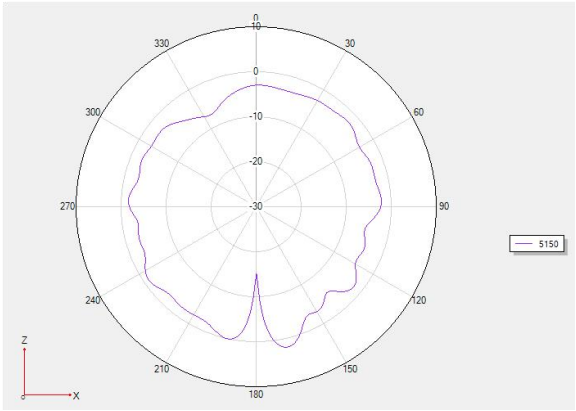
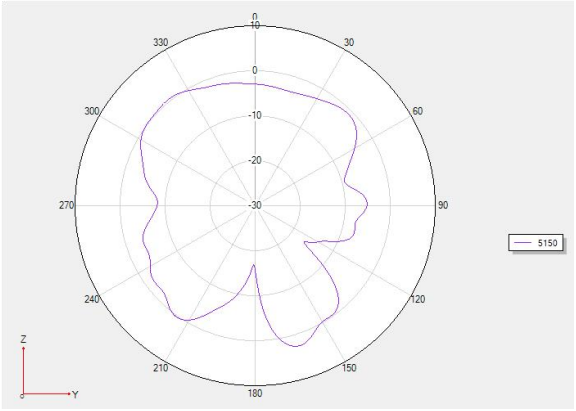


5150MHz

E1

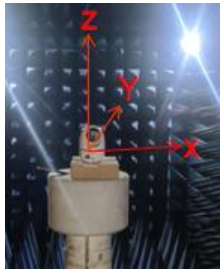


E2



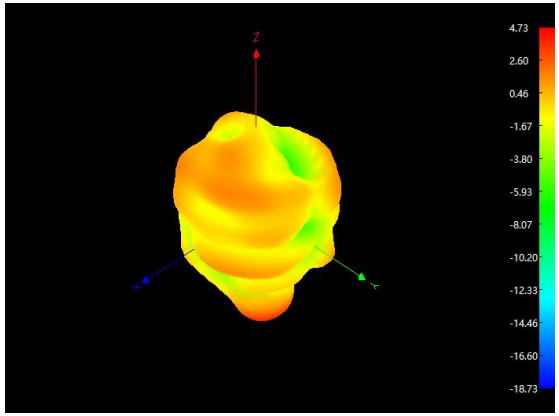
Gain and far-field pattern

2D/3D Pattern



H：XY（Horizontal plane）
E1：XZ
E2：YZ

Far-field direction map



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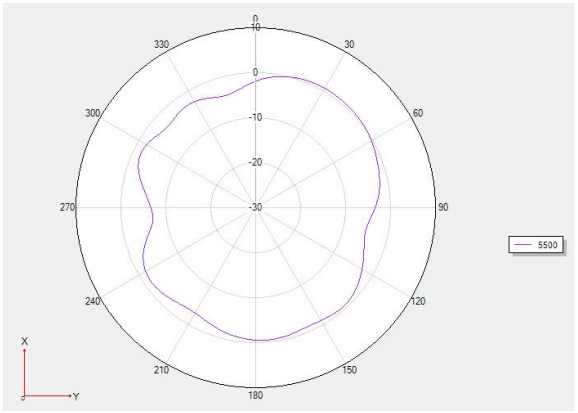
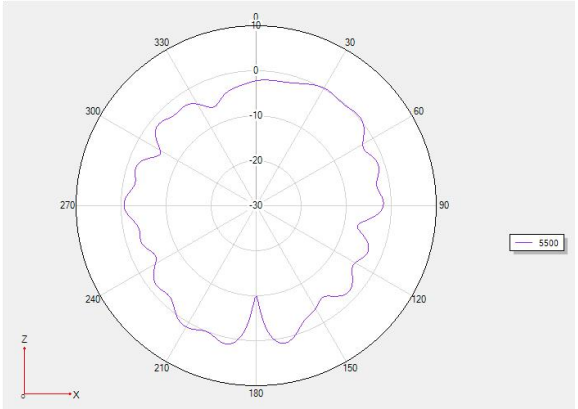
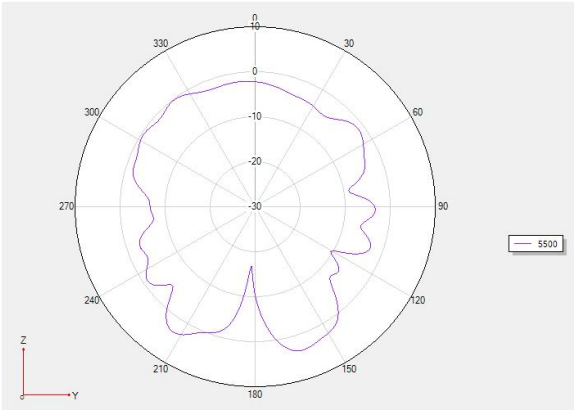


5500MHz

E1

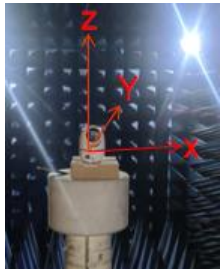


E2



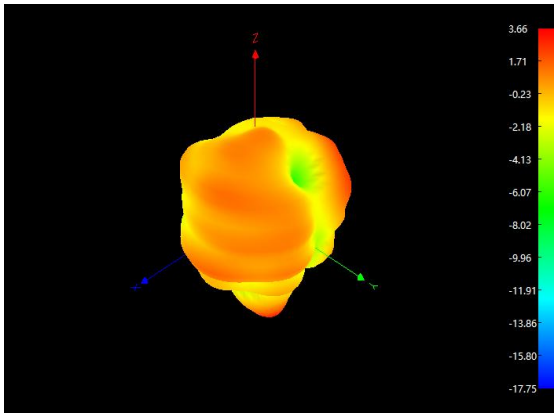
Gain and far-field pattern

2D/3D Pattern



H面：XY（Horizontal plane）
E1面：XZ
E2面：YZ

Far-field direction map



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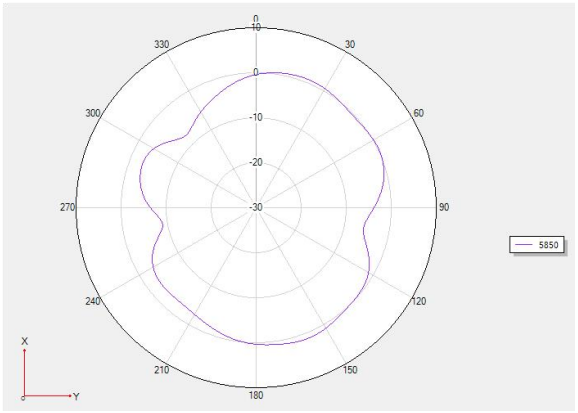
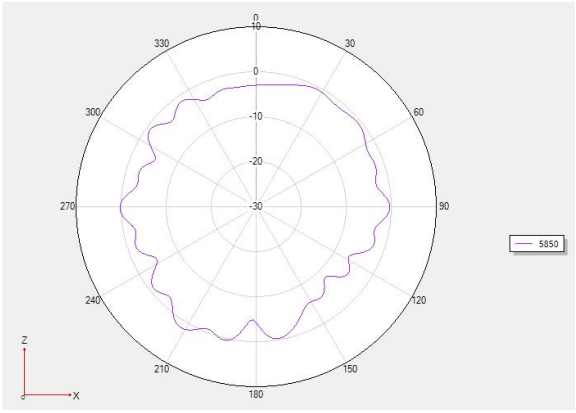
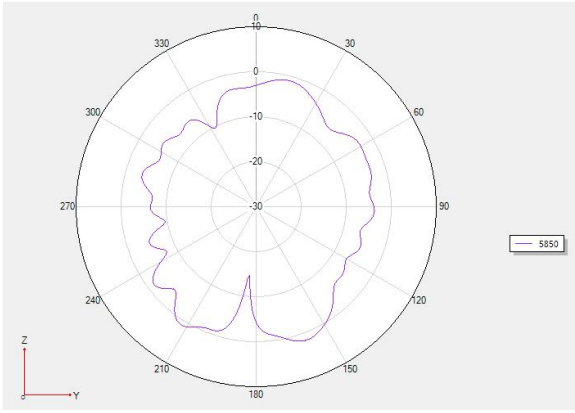


5850MHz

E1



E2



Antenna efficiency and gain

Peak Gain

	2.4G	
Freq (MHz)	Effi (%)	Gain (dBi)
2400	60.12	4.09
2410	61.80	4.13
2420	61.38	4.05
2430	61.80	3.94
2440	63.83	3.97
2450	65.01	3.94
2460	62.66	3.79
2470	69.70	3.73
2480	60.53	3.85
2490	69.02	3.84
2500	67.15	3.63

	5G	
Freq (MHz)	Effi (%)	Gain (dBi)
5150	65.21	4.53
5200	69.43	3.92
5250	67.68	3.71
5300	62.66	4.11
5350	64.71	4.20
5400	63.39	4.03
5450	69.82	3.87
5500	69.34	4.73
5550	72.11	4.04
5600	68.71	4.48
5650	67.30	4.02
5700	69.82	4.65
5750	65.31	4.78
5800	64.12	4.45
5850	67.45	3.66

OTA Test result

2.4G			
Mode	Channel	Data Rate, Mbps	TRP
IEEE 802.11b	1	1	14.73
	6	1	14.28
	11	1	15.16

5G			
Mode	Channel	Data Rate, Mbps	TRP
IEEE 802.11a	36	6	12.93
	100	6	11.16
	161	6	11.43

2.4G			
Mode	Channel	Data Rate, Mbps	TIS
IEEE 802.11b	1	11	-81.61
	6	11	-81.99
	11	11	-82.25

5G			
Mode	Channel	Data Rate, Mbps	TIS
IEEE 802.11a	36	54	-71.65
	100	54	-71.32
	161	54	-71.24