

承 认 书

SPECIFICATION APPROVAL SHEET

客 户 户 名 :

CUSTOMER

客 户 料 号 :

CUS PART NO

版次:

REV

X1

品 名 / 规格 :

SPECIFICATION

2.4~2.5/5.15~7.15/1.57542GHz

WIFI+GPS Antenna

单重:

weight

供 方 料 号 :

SUP PART NO

SLEingE100090414

日 期 :

DATE

2024.06.22

厂 商 核 准 :

SUP APPROVED

核准 APPROVED	结构审核 Structure audit	RF审核 RF CHECKED	品保审核 QA CHECKED	承办 DESIGNED
Jouym	H2u	7DM	LSK	X2ny

客 户 核 准 :

CUS APPROVED

核准 APPROVED	审核 CHECKED	品保审核 QA CHECKED	承办 DESIGNED

东莞市森岭智能科技有限公司

DONGGUAN CITY SLEing INTEL-TECH CO., LTD

中国广东省东莞市松山湖工业东路24号现代企业加速器6栋402

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www.sleing.com

正本由承办单位保存

[illegible]



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承认书项目表 (Spec Item)

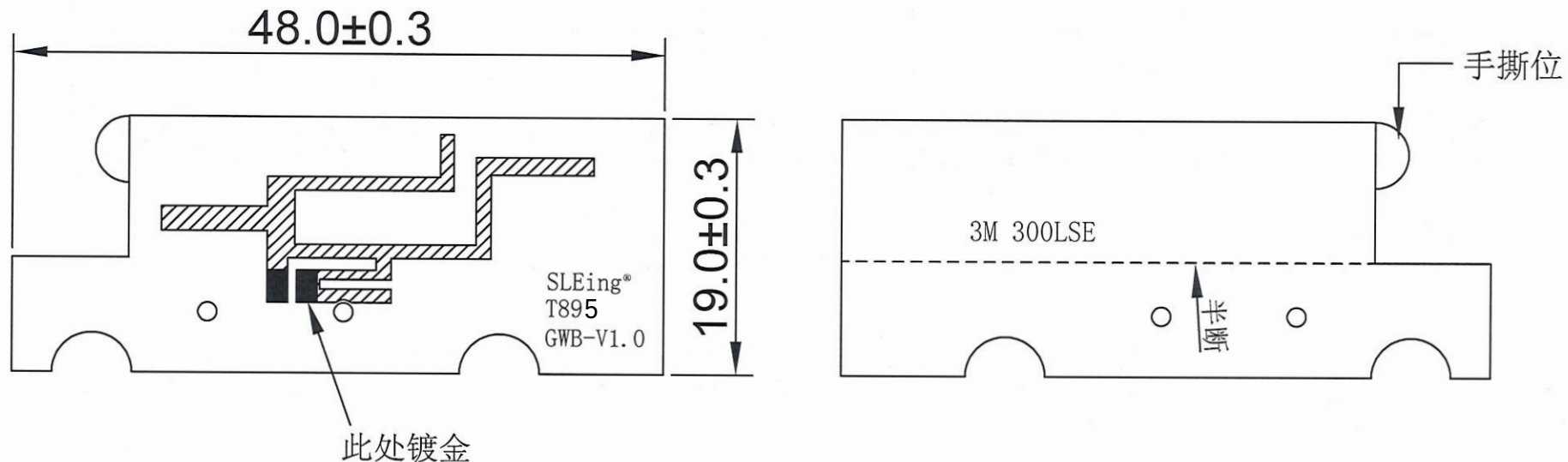
序号 (NO.)	项目 (Project)	备注 (Remark)	页码 (Page)
1	承认书封面 (Spec Cover)		1
2	变更记录 (MODIFICATION RECORD SHEET)		2
3	承认书项目表 (Spec Item)		3
4	工程成品图 (Drawing)		4
5	电性测试报告 (Test Reports)		5
6	天线组装图 (Antenna assembly diagram)		6
7	S参数测试 (S Parameter Test)		7-8
8	测试设备 (Test Setup)		9
9	OTA		10

Give clear indication of:

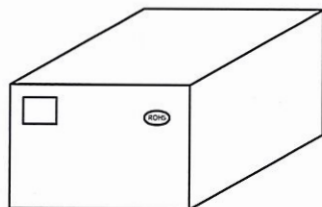
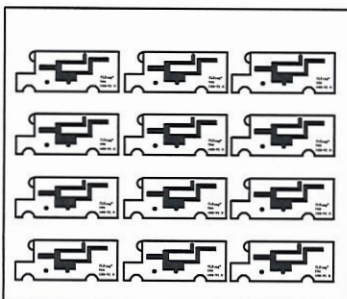
1. The contents of the acknowledgement shall be arranged in order according to the items in the check sheet.
2. The number of copies of the acceptance letter shall be printed according to the customer's requirements, and the SGS report shall be stamped with the engineering seal.
3. All materials shall be confirmed by the customer. Any material/process/changes that may affect product quality and environmental quality must be re-sent to the customer for confirmation before import.
4. SGS report is valid for one year.
5. According to the contents attached to the actual acknowledgement, check the check form: "Yes" is provided, "no" is provided according to customer requirements.

REV.	CONTENT	DATE
X1	First Sample	2024.06.22

符合ROHS认证标准



Specification:
Frequency Rang:2.4~2.5/5.15~7.15/1.57542GHz(带机测试)
Return Loss:-10 dB Max
VSWR:1.92 Max



外箱须贴ROHS标签与物料标签各1PCS

NO	PART NAME	DESCRIPTION	REMARK	Q'TY
1	FPCB	FPC,L48.0*W19.0*T0.2mm,Black		1

SLEing® 森岭 东莞市森岭智能科技有限公司 DONGGUAN SLEing INTEL-TECH CO.,LTD	CUSTOMER	
	PART NO	
	TITLE	
	S.L P/NO	
	TOLERANCE UNLESS OTHERWISE SPECIFIED	
	UNIT:mm	ANGLES $\pm 0.5^\circ$ X. ± 0.3
	SHEET: 1/1	.XX ± 0.05 XX. ± 0.5
SCALE: 1/1	XXX. ± 2.0	
SIZE		DRAWN
A4		CHECKED
		APPROVED



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电性测试报告

Test Reports

Electrical Properties	
Frequency	2.4~2.5/5.15~5.85/1.57542GHz (带机测试)
Impedance	50 Ohm Nominal
V.S.W.R	≤ 1.92
Return Loss	-10 dB Max
Radiation	Omni-directional
Gain (Peak)	2400-2500MHz:-0.38 dBi;5150-5850:2.88dBi
Polarization	Linear, Vertical
Admitted Power	2 W
Connector	
Physical Properties	
Antenna Material	FPCB
Cable Type	
Operating Temp.	-40~+85 °C
Storage Temp.	-5~+30 °C

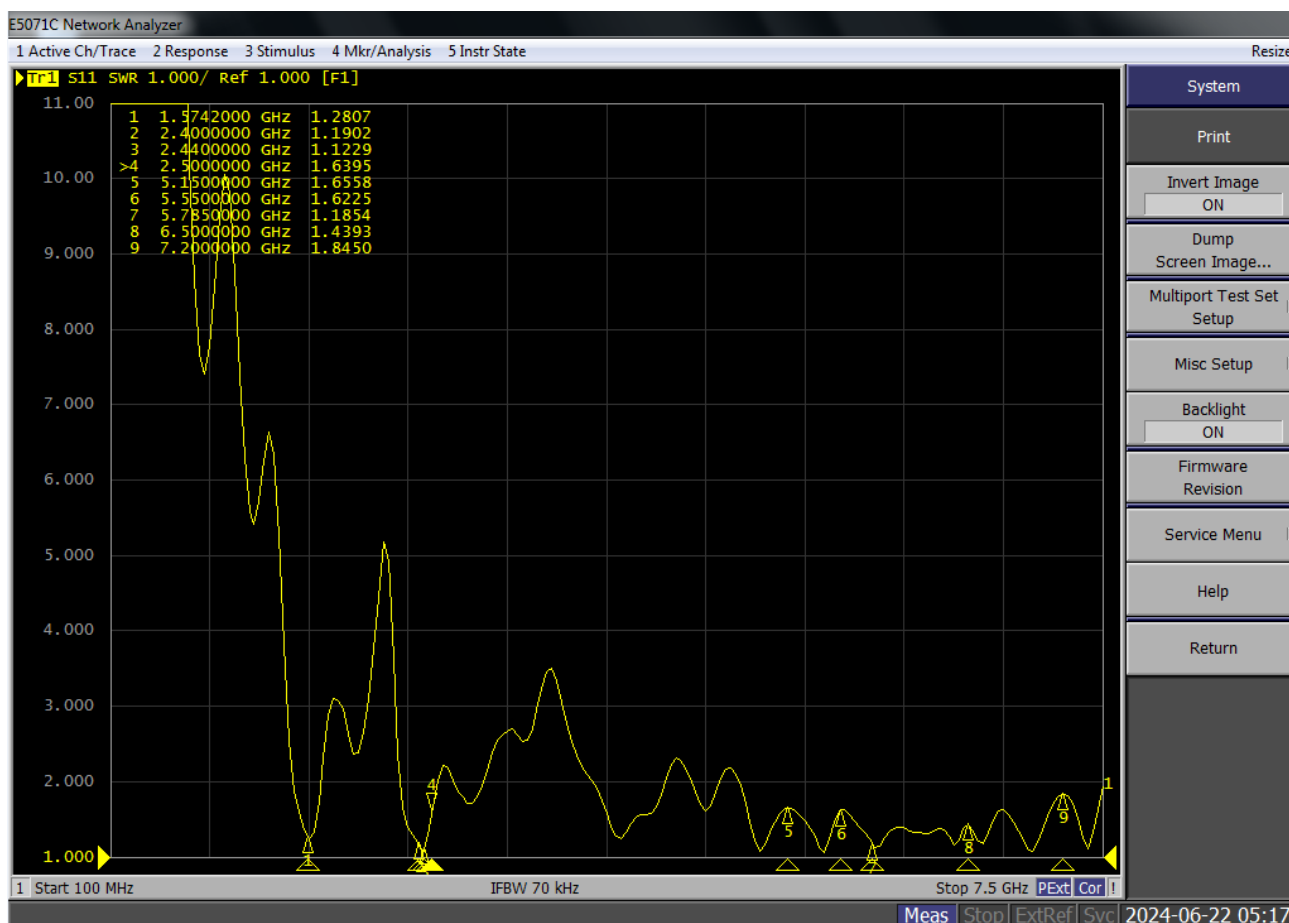
S 参数测试

S Parameter Test

Agilent E5071C Network Analyzer



WiFi+GPS 驻波 Antenna (NO.1)



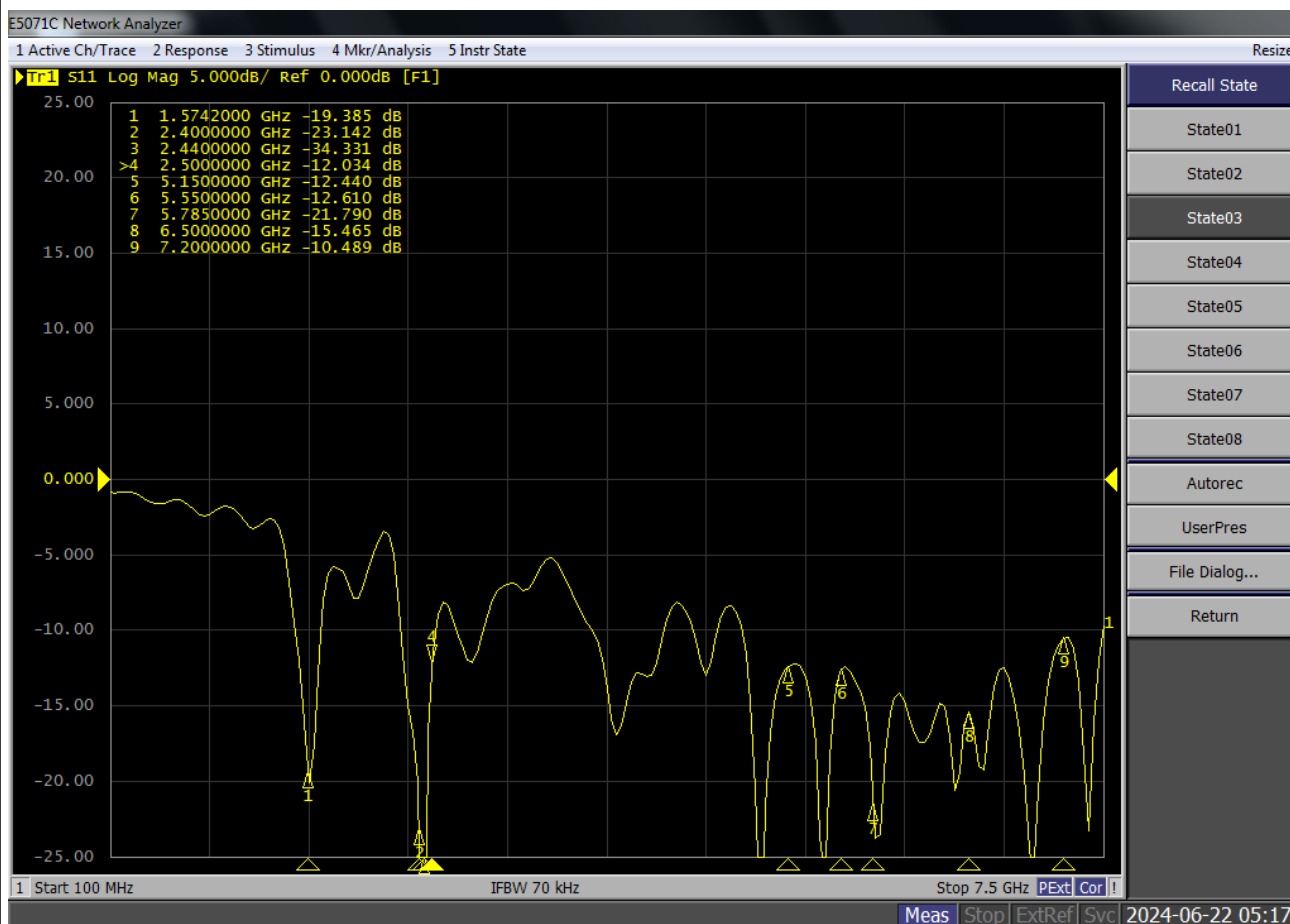
S 参数测试

S Parameter Test

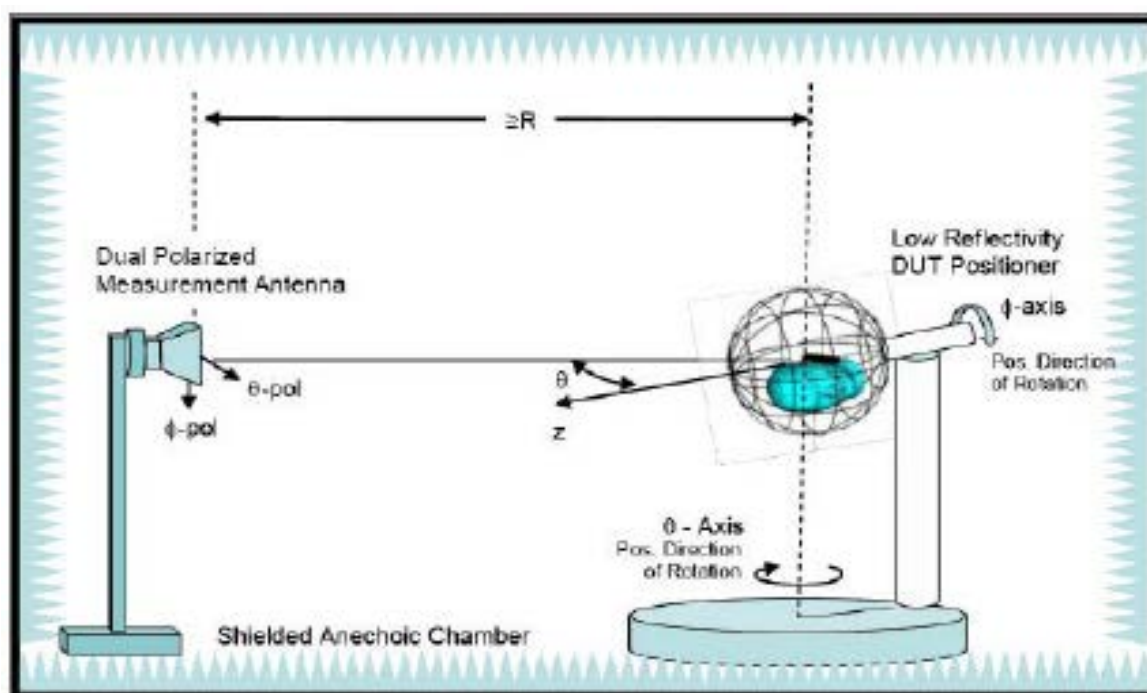
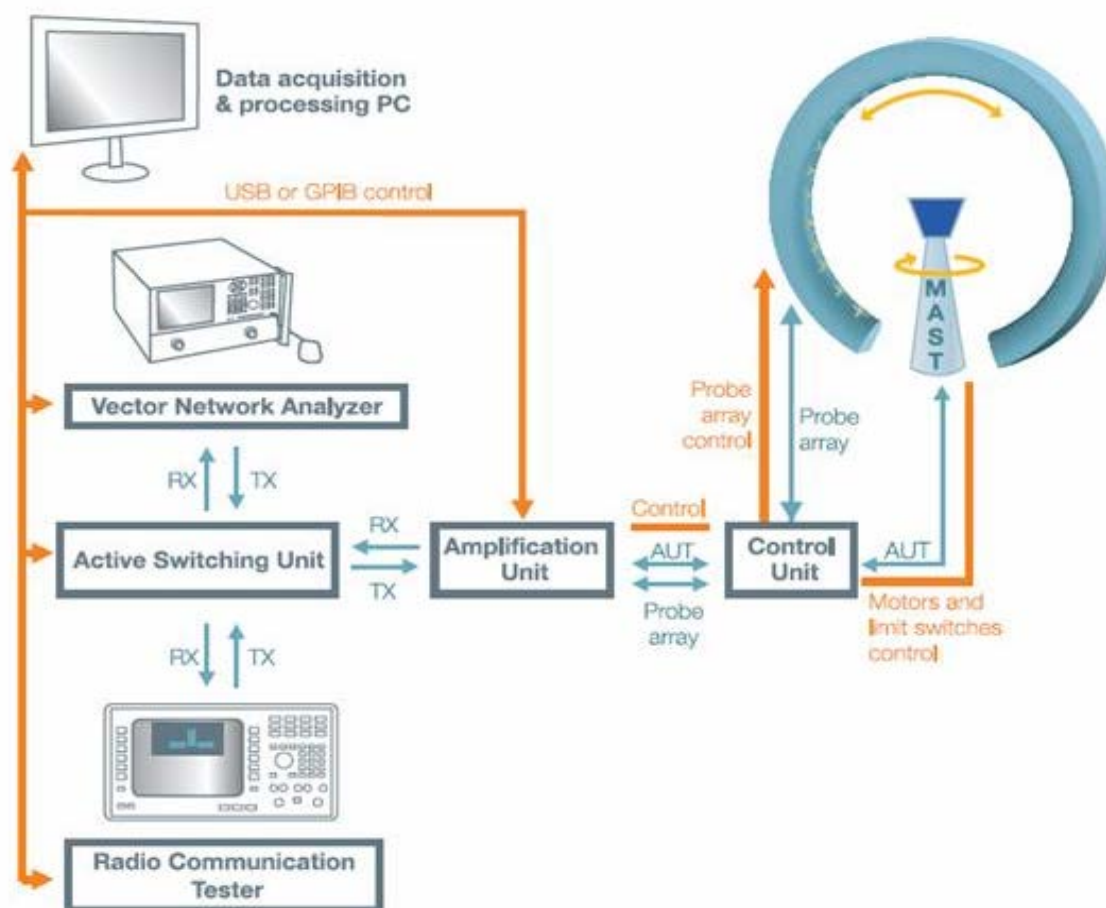
Agilent E5071C Network Analyzer



WiFi+GPS 回波损耗 Antenna (NO.1)



测试设备 Test Setup





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OTA

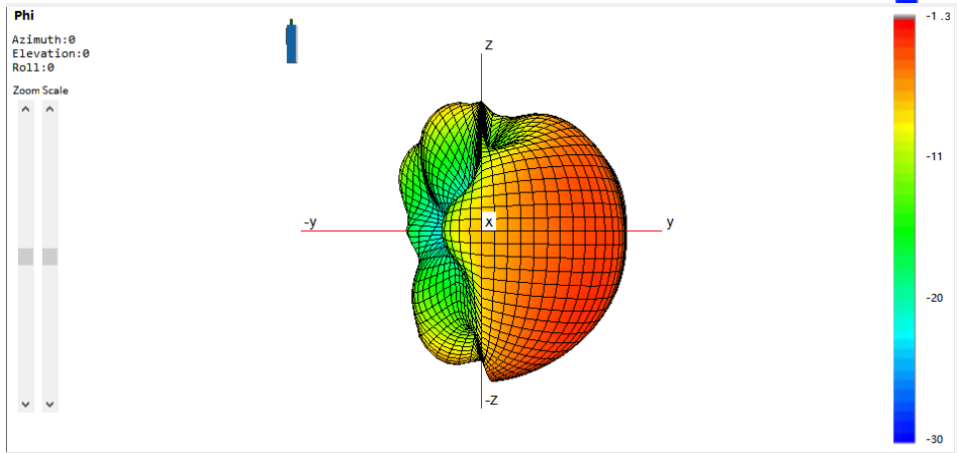
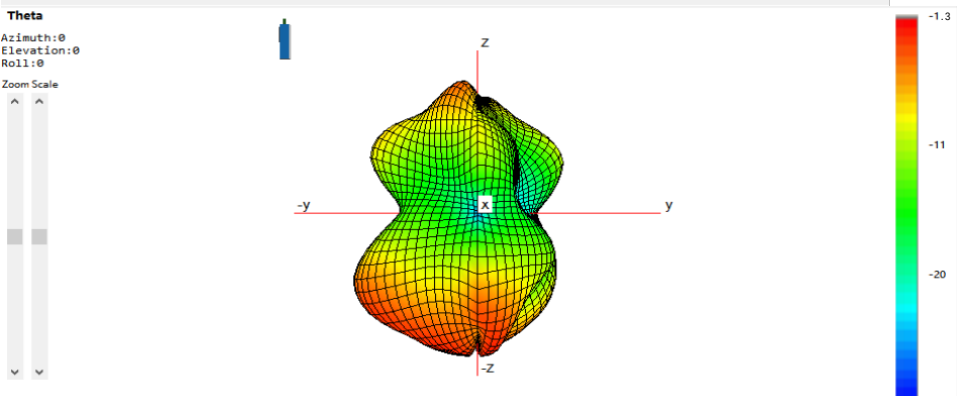
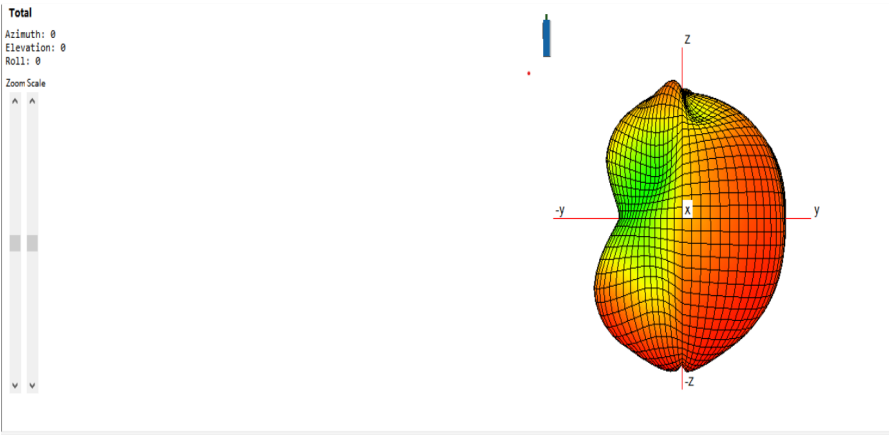
项目：主+副天线		Performance request (性能要求)	信道	结果	判定	备注
2.4G WiFi_11b_CCK_11M	TRP	≥10dbm	1	10.73	PASS	
			7	10.68		
			13	11.02		
	TIS	≤-80dbm	1	-79.27	PASS	
			7	-78.85		
			13	-80.69		
5G WiFi_11a_54M	TRP	≥9dbm	36	8.94	PASS	
			64	9.4		
			157	10.11		
	TIS	≤-64dbm	36	-72.50	PASS	
			64	-72.29		
			157	-72.11		
WiFi漫游	测试环境：EM-public3F；频率：5GHz；协议：802.11ac；信道：AP随机 测试方法：在多个AP之间穿梭，利用软件查看热点的信号值					
	断开当前AP时信号值：		/			
	当前AP信号到达临界值后到切换至下个AP的时间		/			
	断开当前AP后丢包数		/			

项目：副天线		Performance request (性能要求)	结果	判定	备注
2.4G WiFi_11b_CCK_11M	TRP	$\geq 11 \pm 1\text{dbm}$	\		
	TIS	$\geq -80\text{dbm}$	\		
2.4G WiFi_11g_OFDM_54M	TRP	$\geq 10 \pm 1\text{dbm}$	\		
	-62.78	$\geq -67\text{dbm}$	\		
2.4G WiFi_11n_20M_MCS7	TRP	$\geq 9 \pm 1\text{dbm}$	\		
	TIS	$\geq -63\text{dbm}$	\		
5G WiFi_11a_54M	TRP	$\geq 10 \pm 1\text{dbm}$	\		
	TIS	$\geq -65 \pm 1\text{dbm}$	\		
5G WiFi_11n_20M_MCS7	TRP	$\geq 9 \pm 1\text{dbm}$	\		
	TIS	$\geq -65 \pm 1\text{dbm}$	\		

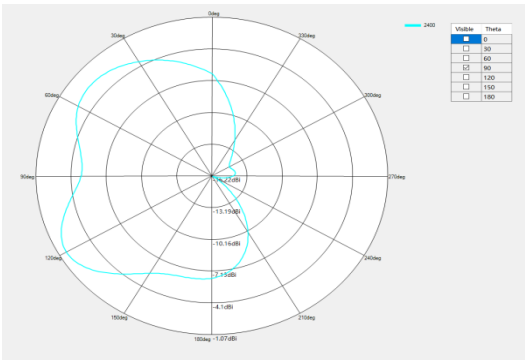


Antenna -Radiation Pattern Test Data

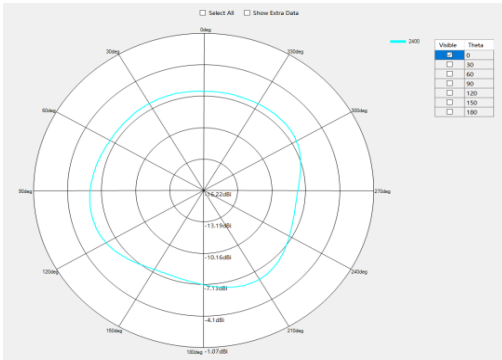
2400MHz



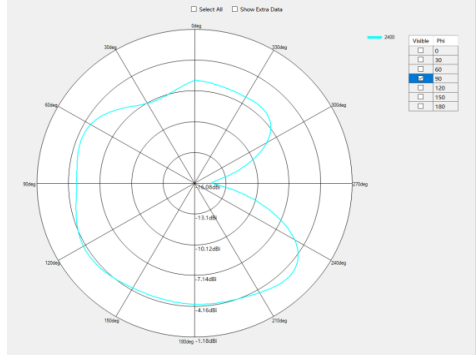
XOY



XOZ



YOZ

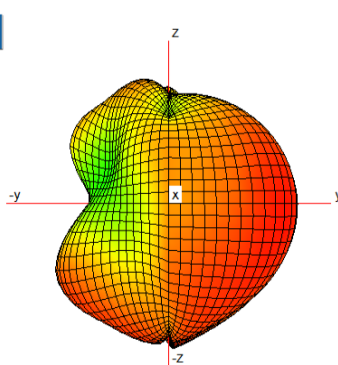


2440MHz

Total

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Elevation: 0
Roll: 0

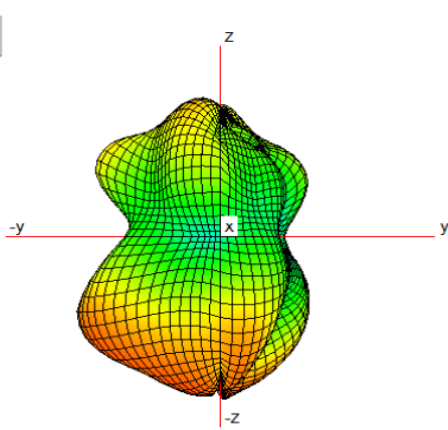
Zoom Scale



Theta

Azimuth: 0
Elevation: 0
Roll: 0

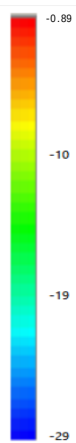
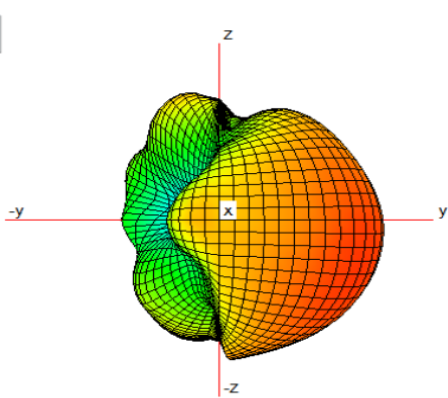
Zoom Scale



Phi

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Elevation: 0
Roll: 0

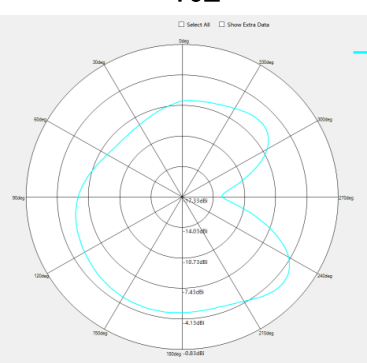
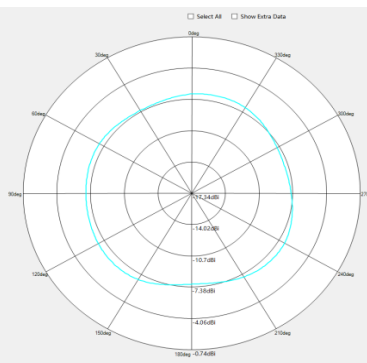
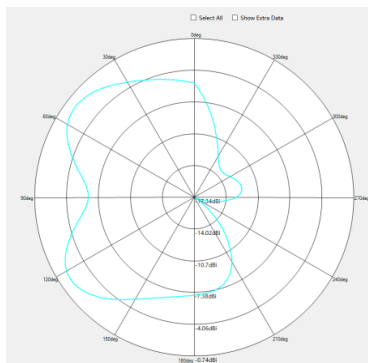
Zoom Scale



XOY

XOZ

YOZ





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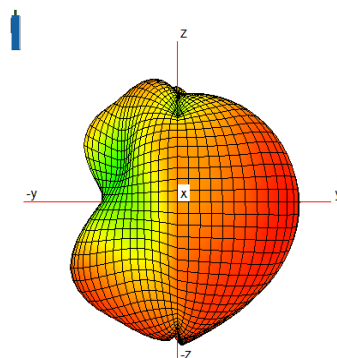
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2480MHz

Total

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Elevation: 0
Roll: 0

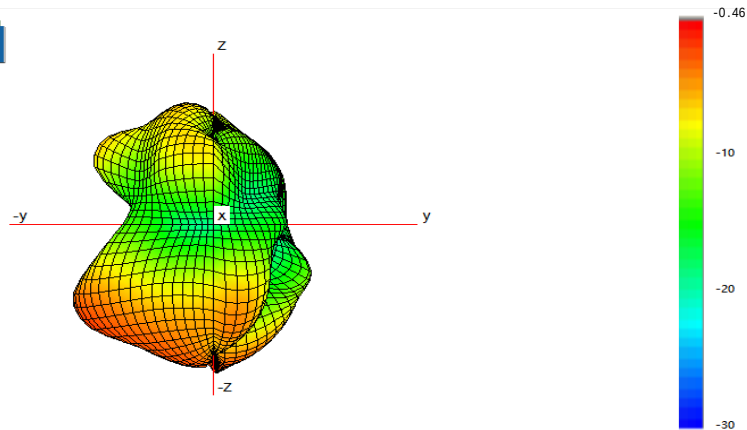
Zoom Scale



Theta

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Elevation: 0
Roll: 0

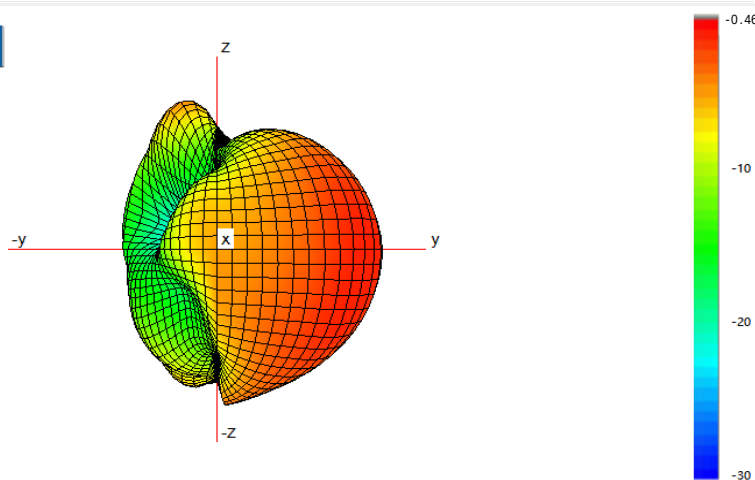
Zoom Scale



Phi

Azimuth: 0
Elevation: 0
Roll: 0

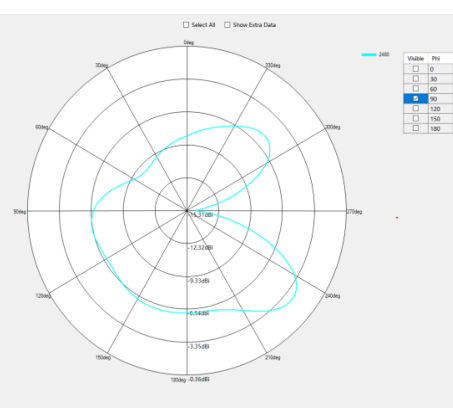
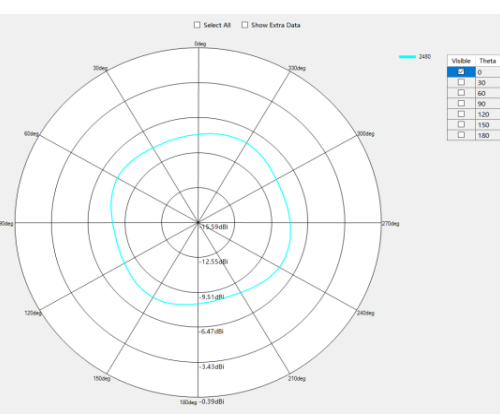
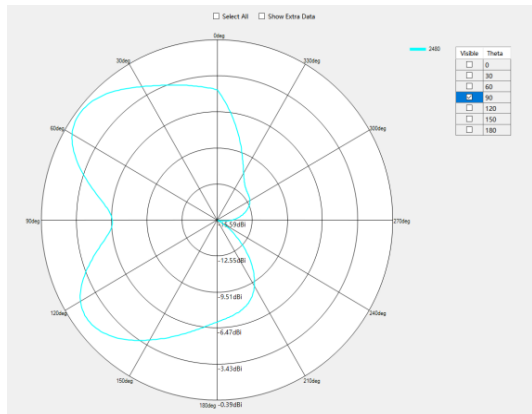
Zoom Scale



XOY

XOZ

YOZ



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电话：0769-89208968 传真：0769-89208969

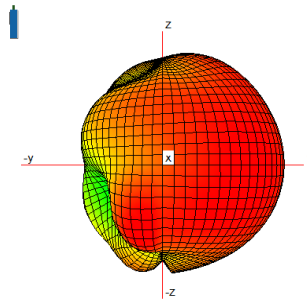


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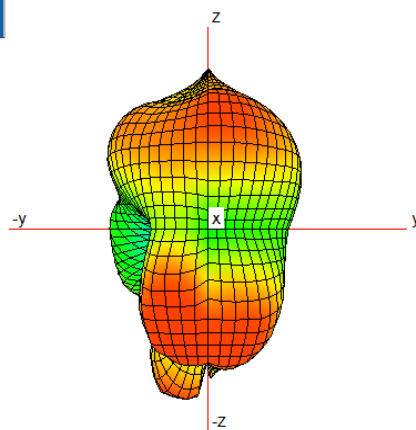
DONGGUAN SLEing INTEL-TECH CO.,LTD

5150MHz

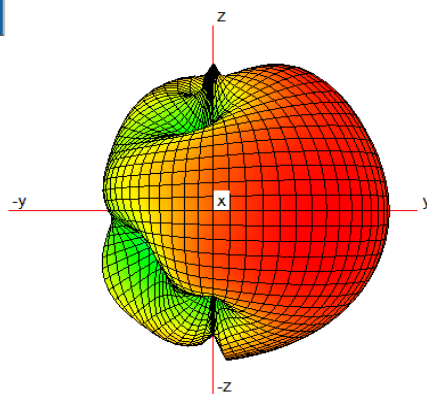
Total
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Elevation: 0
Roll: 0
Zoom Scale



Theta
Azimuth: 0
Elevation: 0
Roll: 0
Zoom Scale



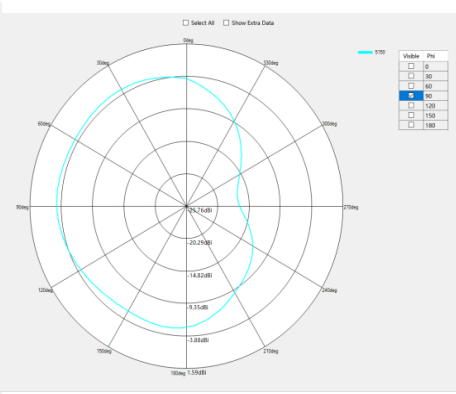
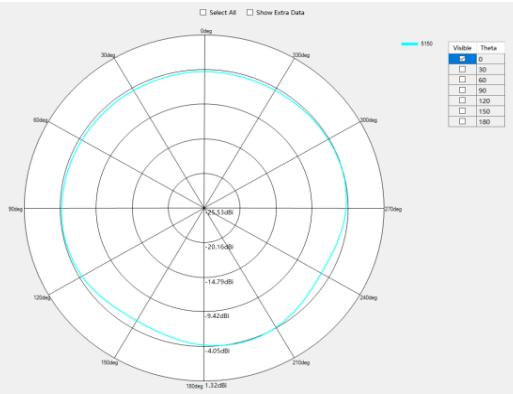
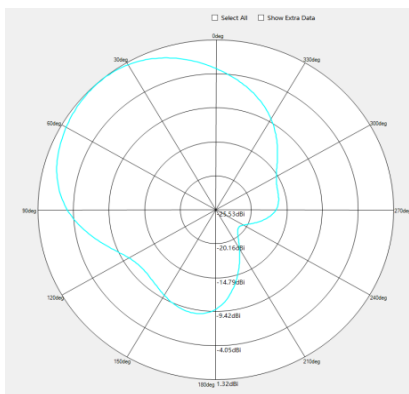
Phi
Azimuth: 0
Elevation: 0
Roll: 0
Zoom Scale



XOY

XOZ

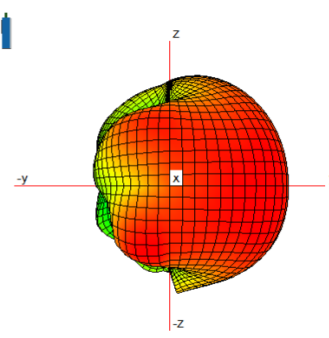
YOZ



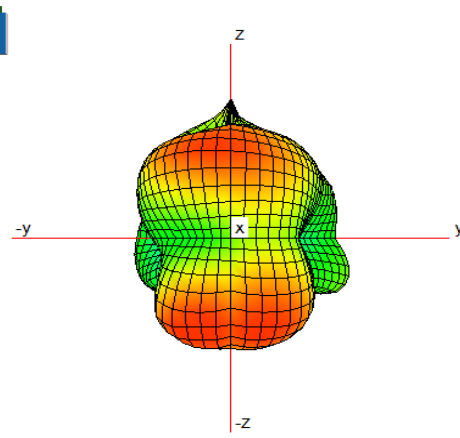
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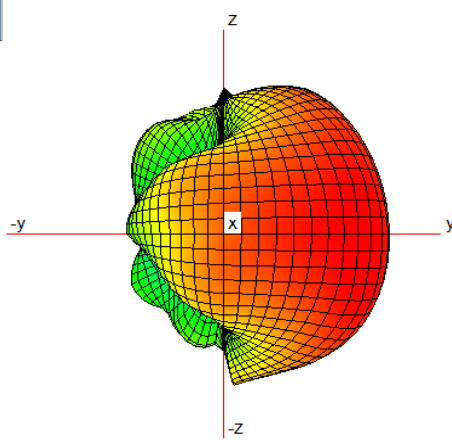
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Zoom Scale



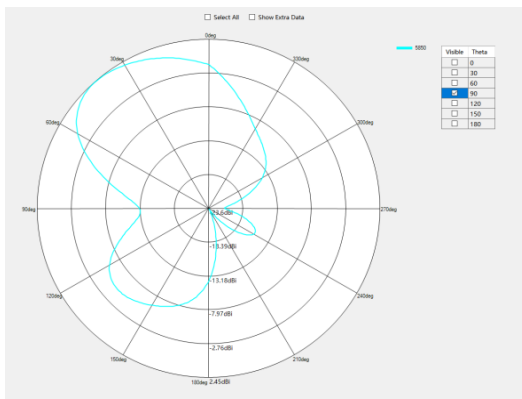
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Zoom Scale



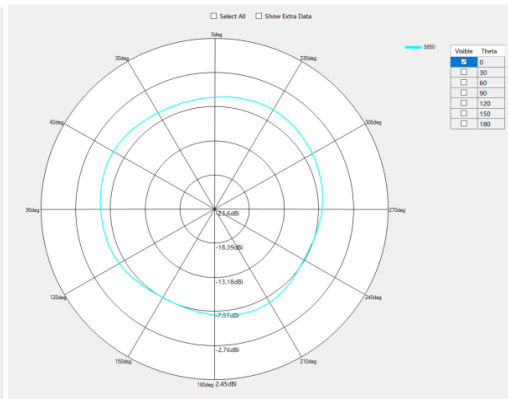
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Roll: 0
Zoom Scale



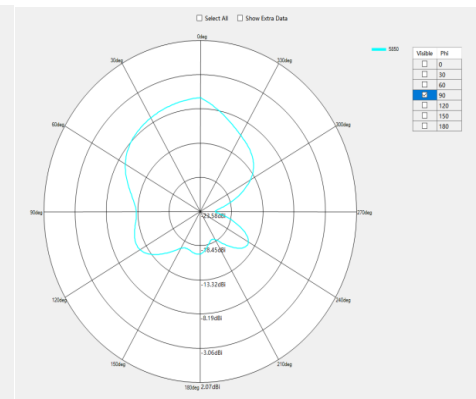
XOY



XOZ



YOZ



Freq(MHz)	UHEfficiency(%)	Gain(dBi)
2400	10.88	-1.30
2410	10.86	-1.21
2420	10.82	-1.10
2430	10.61	-1.03
2440	10.75	-0.89
2450	10.75	-0.82
2460	10.78	-0.68
2470	11.23	-0.60
2480	11.59	-0.46
2490	11.76	-0.39
2500	12.06	-0.38
5150	14.9	0.99
5200	17.00	2.04
5250	17.83	2.32
5700	18.61	2.88
5750	17.46	2.72
5800	16.51	2.48
5850	14.6	1.92