SLEing® 东莞市森岭智能科技有限公司
DONGGUAN SLEing INTEL-TECH CO.,LTD

承 认 书

SPECIFICATION APPROVAL SHEET

客 户 :
CUSTOMER

客 户 料 号 :
CUS PART NO

版次:
REV X3

品名 / 规格 : 2.4~2.5/5.15~7.15GHz
SPECIFICATION WIFI-1 Antenna L=450mm(Ø1.13+MHF)

单重:
weight

供 方 料 号 : SLEingB247530345
SUP PART NO

日 期 : 2024.11.20
DATE

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

东莞市森岭智能科技有限公司 2024.11.20 工程部

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
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正本由承办单位保存

东莞市森岭智能科技有限公司

DONGGUAN SLEing INTEL-TECH CO.,LTD

变更记录

MODIFICATION RECORD SHEET

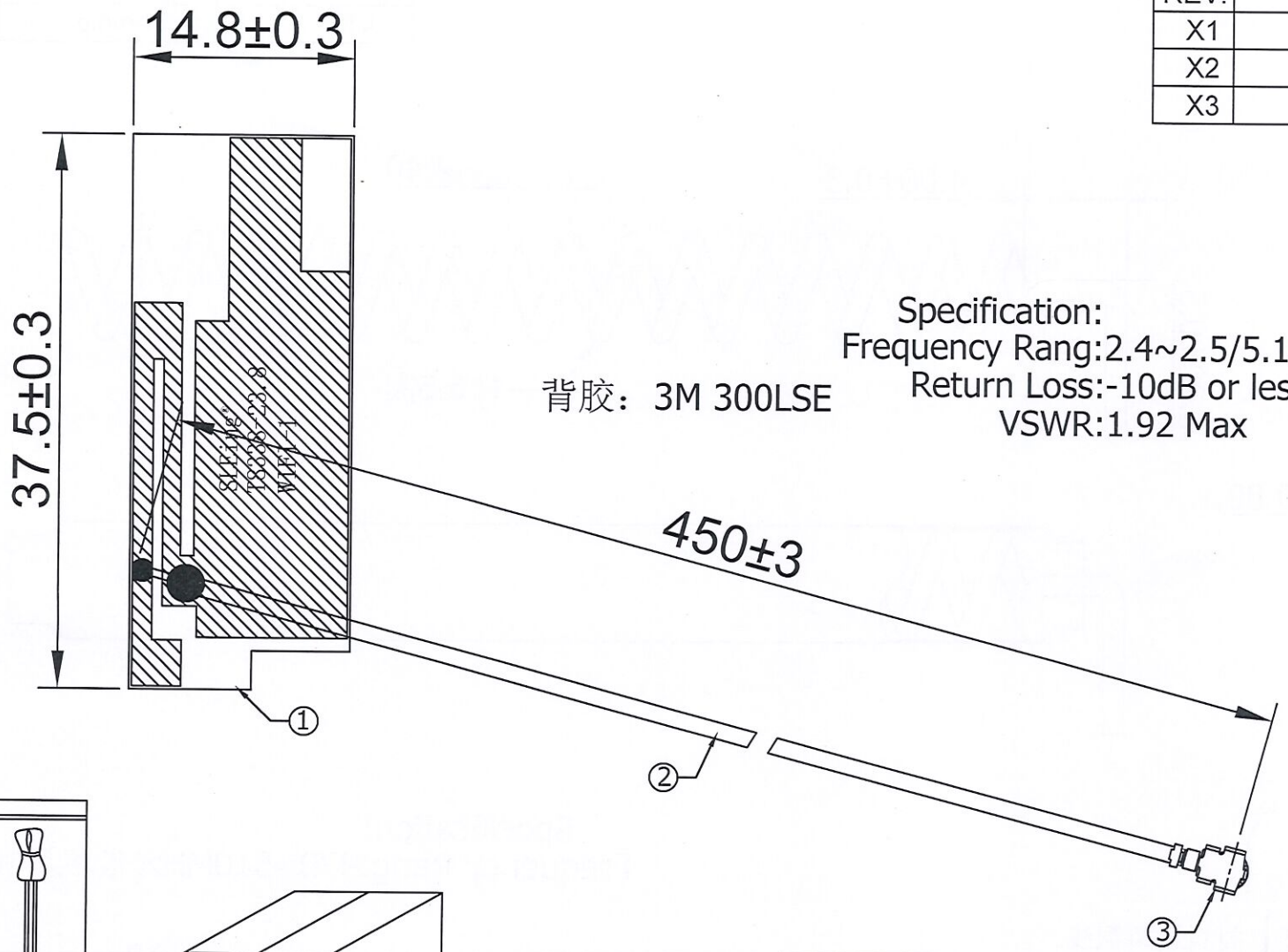
版本（REV.）	更改日期（Modification date）	更改内容描述（Summary of modification content）	拟制（Signature）	批准（Approval）
X1	2024.07.23	初版发行（First Issue）	胡赵海（Jerry）	朱正锐(Jongrei)
X2	2024.08.02	修改FPC	胡赵海（Jerry）	朱正锐(Jongrei)
X3	2024.11.20	修改线长	胡赵海（Jerry）	朱正锐(Jongrei)

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	测试效率(Test Efficiency)		10
10	OTA		11

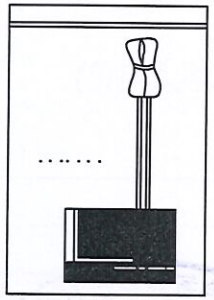
Give clear indication of:
1. The contents of the acknowledgement shall be arranged in order according to the items in the check sheet.
2. The number of copies of the acceptance letter shall be printed according to the customer's requirements, and the SGS report shall be stamped with the engineering seal.
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	2024.07.23
X2	修改FPC	2024.08.02
X3	修改线长	2024.11.20

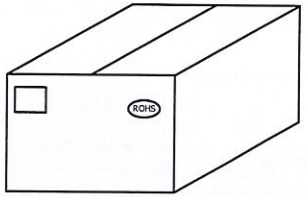


背胶：3M 300LSE

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



50pcs/Bundle
Packing:100pcs/bag



外箱须贴ROHS标签与物料标签各1PCS

NO	PART NAME	DESCRIPTION	REMARK	Q'TY
3	Connector	MHF Plug for Φ1.13 Cable	第一代端子	1
2	Cable	Φ1.13mm Coaxial Cable Dark Grey,50Ω	低损耗线	1
1	FPCB	FPC,L31.7*W14.8*T0.2mm,Color:Black	300LSE Adhesive	1

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CUSTOMER		
PART NO		
TITLE	WIFI-1 ANTENNA	
S.L P/NO	SLEingB247530345	

	TOLERANCE UNLESS OTHERWISE SPECIFIED	
UNIT:mm	ANGLES ±0.5°	X. ±0.3
SHEET: 1/1	.XX ±0.05	XX. ±0.5
SCALE: 1/1		XXX. ±2.0

SIZE	DRAWED	CHECKED	APPROVED
A4	Xicay	HZU	[signature]

东莞市森岭智能科技有限公司 2024.11.20 工程部

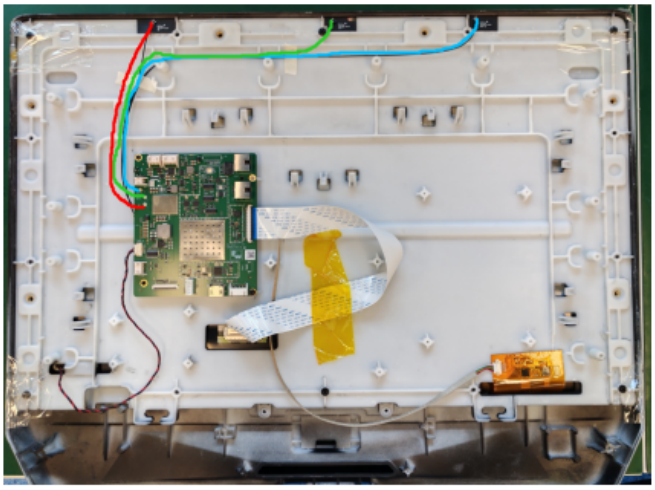
电性测试报告

Test Reports

Electrical Properties	
Frequency	2.4~2.5/5.15~7.15GHz(带机测试)
Impedance	50 0hm Nominal
V.S.W.R	≤1.92
Return Loss	-10 dB Max
Radiation	Omni-directional
Gain (Peak)	2±0.5 dBi
Polarization	Linear, Vertical
Admitted Power	2 W
Connector	MHF
Physical Properties	
Antenna Material	FPCB
Cable Type	Φ1.13mm Dark Grey
Operating Temp.	-40~+85 °C
Storage Temp.	-5~+30 °C

天线组装图

Antenna Profile

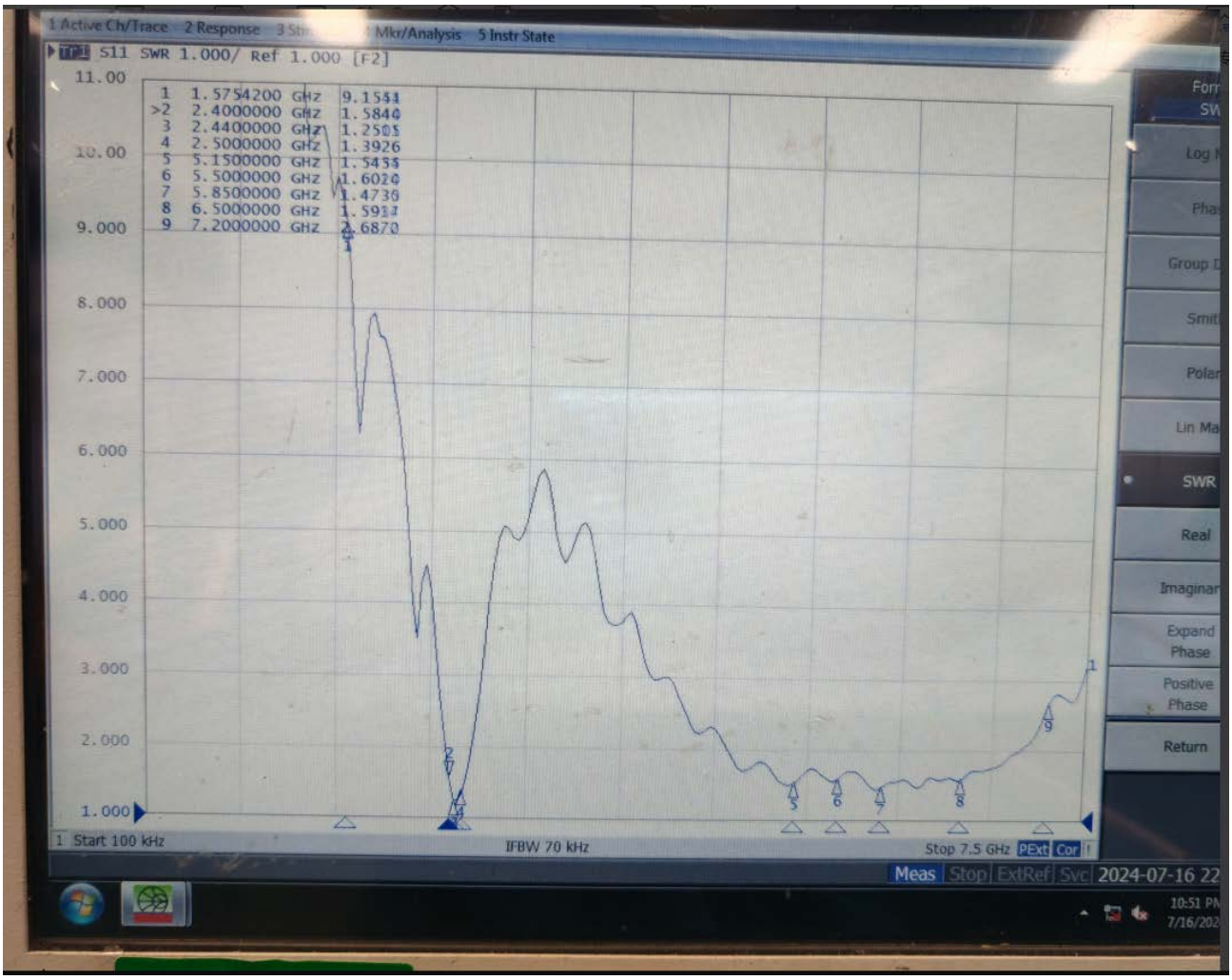
Device	天线走线具体如图所示。将天线固定好，装上主板，将天线端子扣在端口上（蓝色绿色红色方框） WiFi_0 天线如图中蓝线所示，天线线长 600mm，直径 1.13mm，1 代端子（黑色同轴线）。 WiFi_1 天线如图中绿线所示，天线线长 450mm，直径 1.13mm，1 代端子（灰色同轴线）。 BT 天线如图中红线所示，天线线长 250mm，直径 1.13mm，1 代端子（白色同轴线）。 
Antenna	3、粘贴 WiFi_1 天线 粘贴 WiFi_1 天线细节如下图所示。将 WiFi_1 天线顶部及左侧分别与壳体的顶部及左侧定位枝节对齐（红线所示），最后将天线由上往下依次粘贴即可。注意：天线粘贴时，天线不能粘偏、歪斜、起翘。

S 参数测试

S ParameterTest

Agilent E5071C Network Analyzer	

WiFi 驻波 Antenna (NO.1)

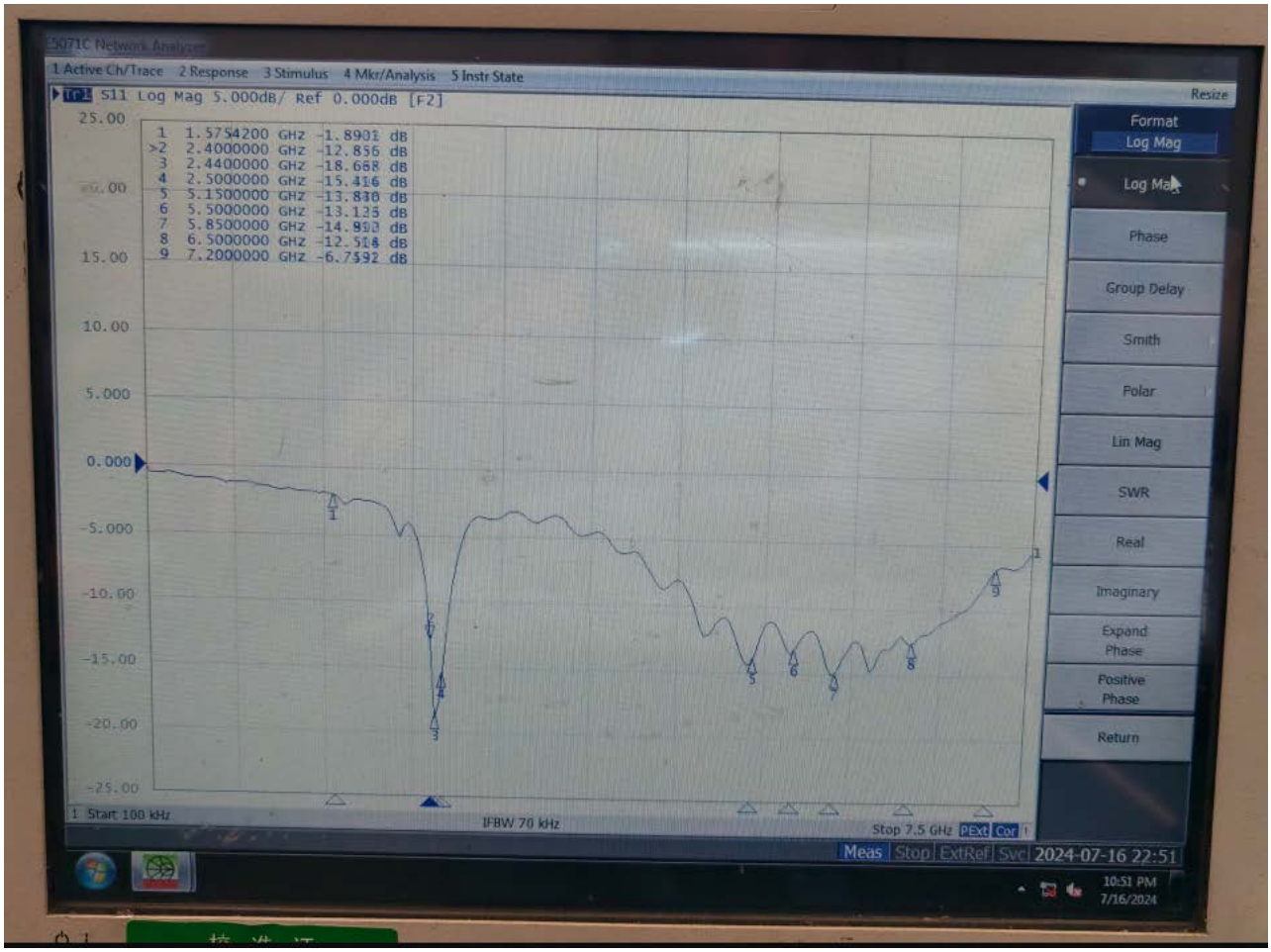


S 参数测试

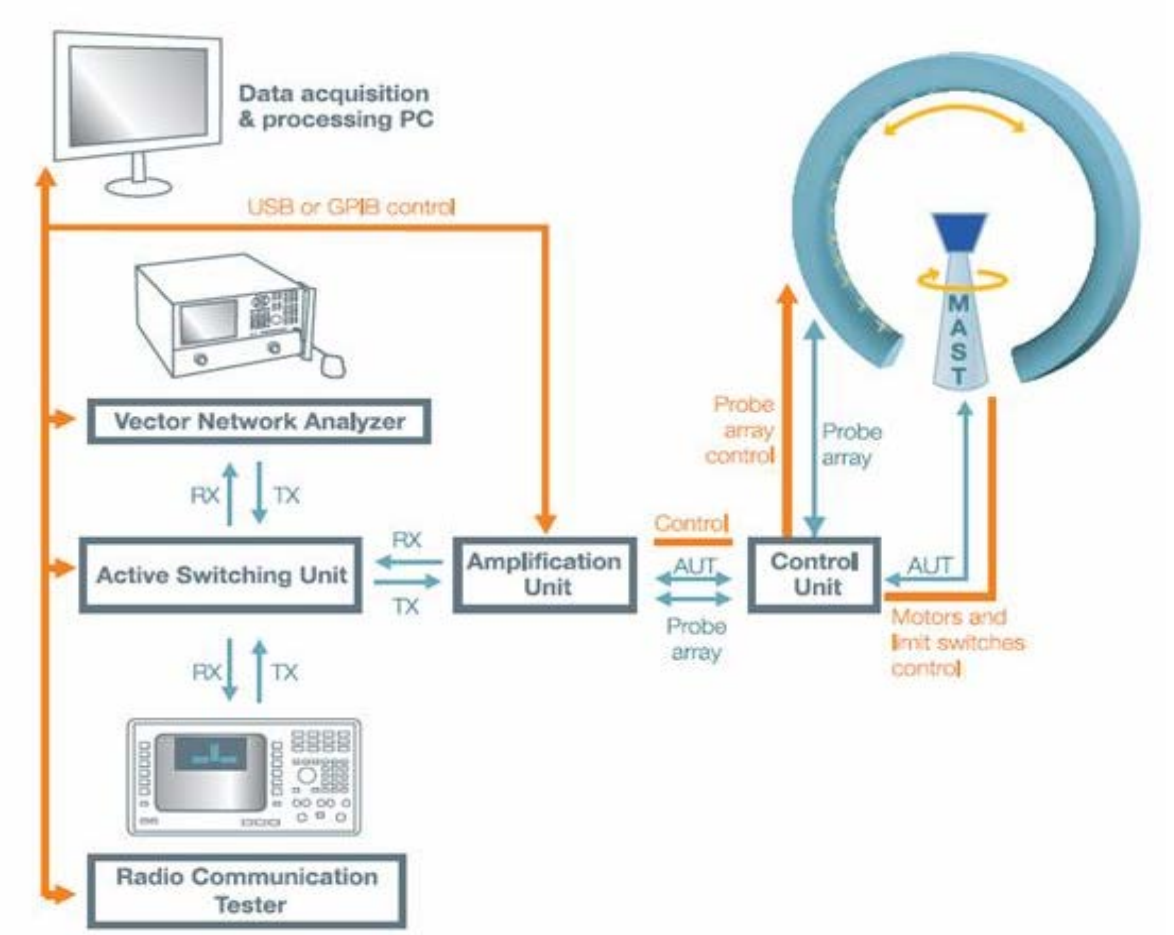
S ParameterTest

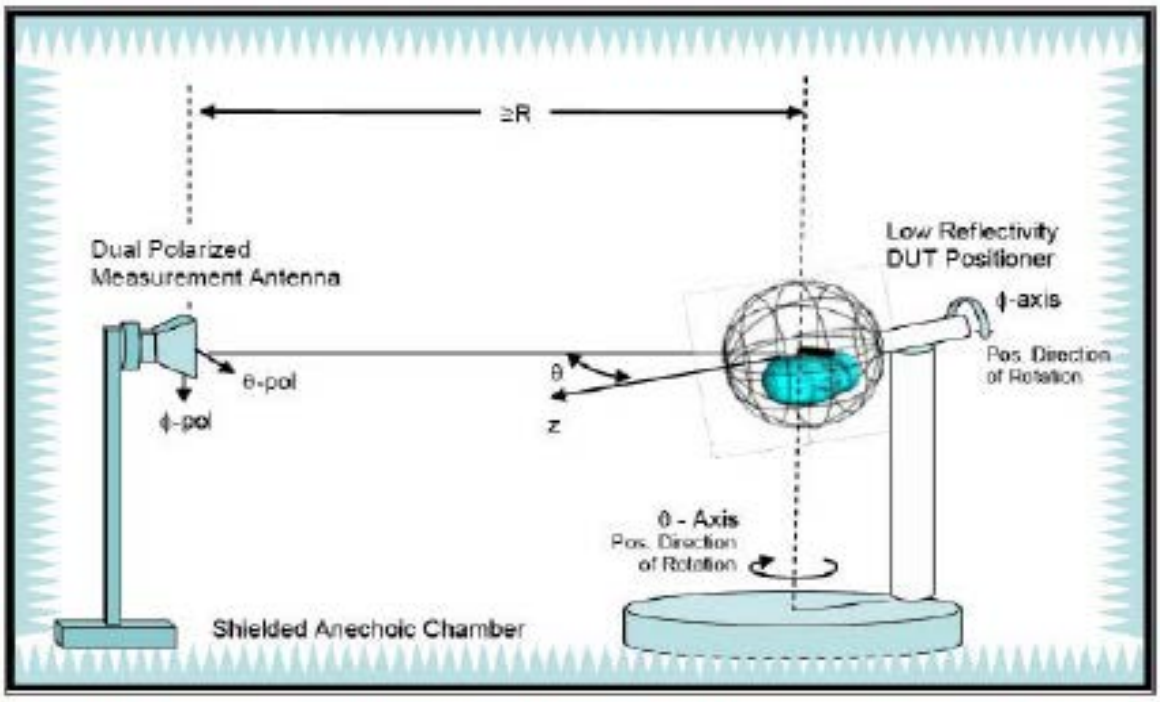
Agilent E5071C Network Analyzer	

WiFi 回波损耗 Antenna (NO.1)



测试设备
Test Setup



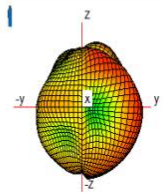


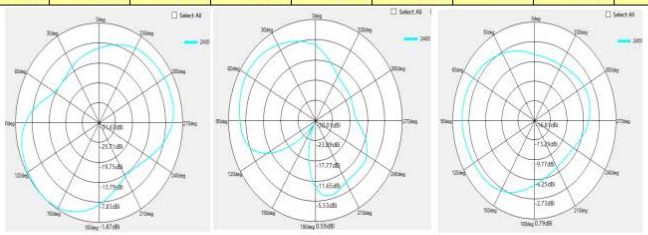
测试效率

Test Efficency

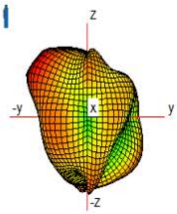
WIFI-1天线无源效率测试报告

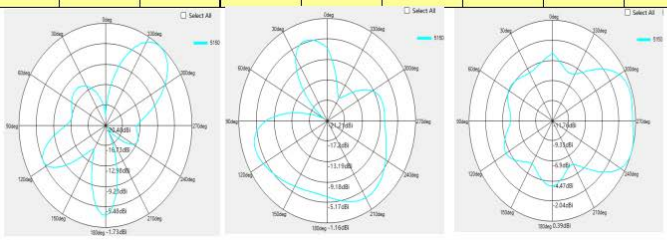
2.4G WiFi	Frequency ID	1	2	3	4	5	6	7	8	9	10	11
	equency (MH	2400.0	2410.0	2420.0	4	5	6	7	8	9	10	11
	Gain (dBi)	0.55	0.70	0.78	0.95	1.07	1.22	1.46	1.57	1.80	1.83	1.89
	fficiency (%	44.54	44.62	43.80	43.59	44.47	43.70	43.21	41.99	41.51	41.31	41.10





5G WiFi	Frequency ID	1	2	3	4	5	6	7	8	9	10	11
	equency (MH	5150.0	5200.0	5250.0	5300.0	5350.0	5400.0	5450.0	5500.0	5550.0	5600.0	5650.0
	Gain (dBi)	-0.03	0.45	0.53	0.02	-0.11	-1.00	-0.74	-0.66	-0.44	0.05	-0.32
	fficiency (%	35.14	35.58	35.10	34.74	35.10	36.43	35.59	35.99	36.27	36.27	36.27
	Frequency ID	12	13	14	15	16	17	18	19	20	21	22
	equency (MH	5700.0	5750.0	5800.0	5850.0							
	Gain (dBi)	0.07	-0.43	-0.46	-0.94							
	fficiency (%	36.50	37.48	35.91	35.37							





OTA

Operating Band	Bandwidth	Free Space Requirements		Channal	Testing Results		Gap	
		TRP	TIS		TRP	TIS (LCD ON)	TRP	TIS (LCD ON)
WIFI2-2.4G	11b 11Mbps	11	-80	1	11.7	-82.1	0.7	2.1
		11	-80	7	11.5	-81.5	0.5	1.5
		11	-80	13	12.3	-82.3	1.3	2.3
		11	-80	Avg	11.8	-82.0	0.8	2.0
WIFI2-5G	11a 6Mbps	9	-86	36	9.6	-86.2	0.6	0.2
		9	-86	100	10.5	-86.8	1.5	0.8
		9	-86	157	10.2	-86.7	1.2	0.7
		9.0	-86.0	Avg	10.1	-86.6	1.1	0.6