

深圳拓邦股份有限公司  
Shenzhen Topband Co.,Ltd.TBAP6212 Antenna  
product Specification

版本 Version	修订内容 Change Description	核准 Approval By	日期 Date
V01	N/A	Zhangxiaoxiao	2023/06/02

地址：深圳市宝安区石岩街道塘头社区科技二路拓邦工业园 TEL: 0755-27651888

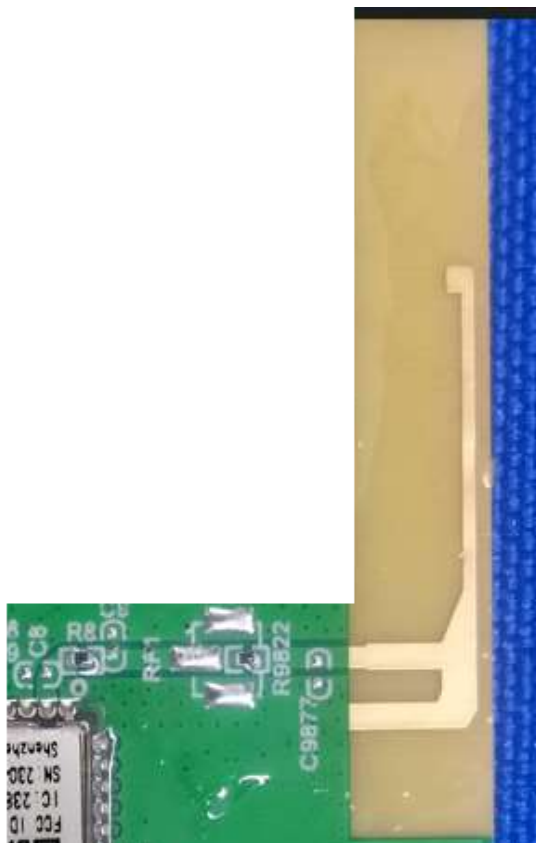
Topband Industrial Park, Liyuan Industrial Zone, Tangtou, Shiyan, Baoan, Shenzhen, Guangdong, China

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一. 产品图纸或实物图片/Drawing or Product Image



## 二. Technical Parameter /技术参数

1. Antenna/天线		
No/序号	Part Name/项目	SPEC/规格
1	Frequency Range/ 频率范围	2400-2500 MHz
2	Impedence/阻抗	50 ohm nominal
3	Gain/增益	-1.32dBi
4	Polarization/极化	LINE
5	VSWR/驻波比	$\leq 2.0$
6	Efficiency/效率	$\geq 35\%$
7	RF Connector/连接器	板载
2. Environmental Characteristics/环境特性		
No/序号	Part Name/项目	SPEC/规格
1	Operation Humidity /工作湿度	5~95%不冷凝
2	Operating Temperature/ 工作温度	-40~+85℃
3	Store Temperatuer/ 储存温度	-55~+85℃

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## 射频性能测量报告

## RF Performance Test Report

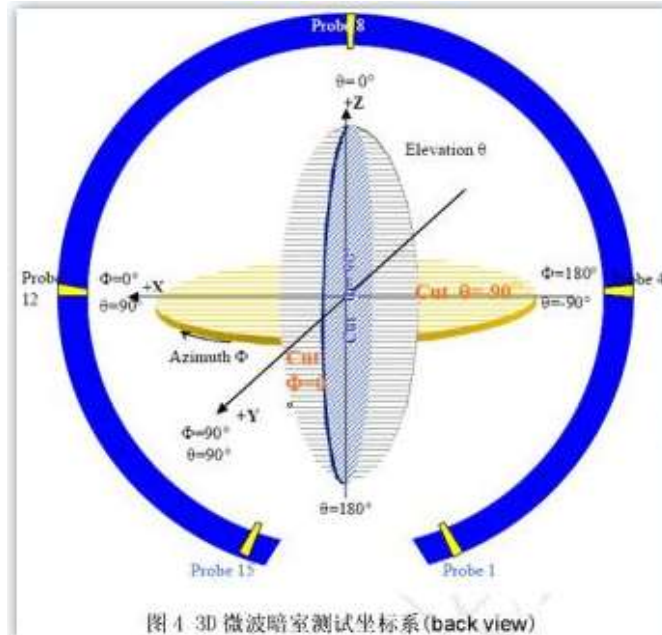
客户名称 Customer Name	拓邦	项目名称 Project Name	TM01	料号 Surbaner P/N	
频段 Band	2400-2500MHz	测试日期 Test Date	2023/3/25	测试人 Inspector	张小小

## 天线测试设备简介

## Antenna Test Equipment Introduction

测试天线输入特性使用 Agilent E5071C and Agilent 5062A 矢量网络分析仪；辐射特性利用 Satimo 三维近场暗室进行测试，并分别使用 8960 E5515 和 Agilent E4438C 进行了分析。暗房的测试坐标如下：

Test of antenna input characteristics using Agilent E5071C and Agilent 5062A vector network analyzer; The radiation pattern of the antenna are tested using the Satimo starlab 3D near field Anechoic Chamber, and the instrument is used to agilent8960 E5515 and Agilent E4438C. The test coordinates of the darkroom are as follows:

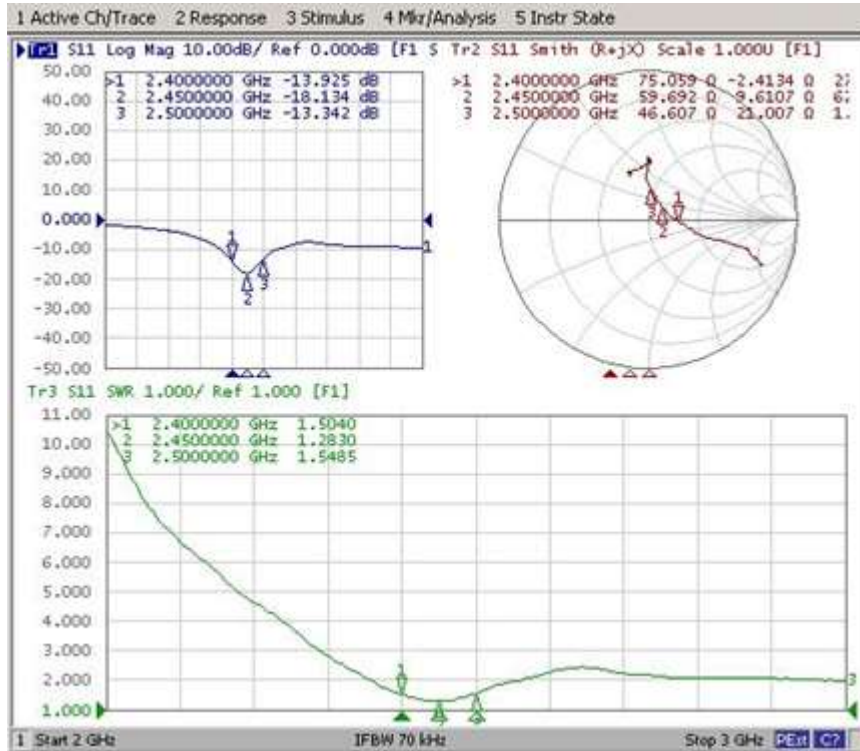


## 1. S11 参数测量/S11 Parameter-VSWR

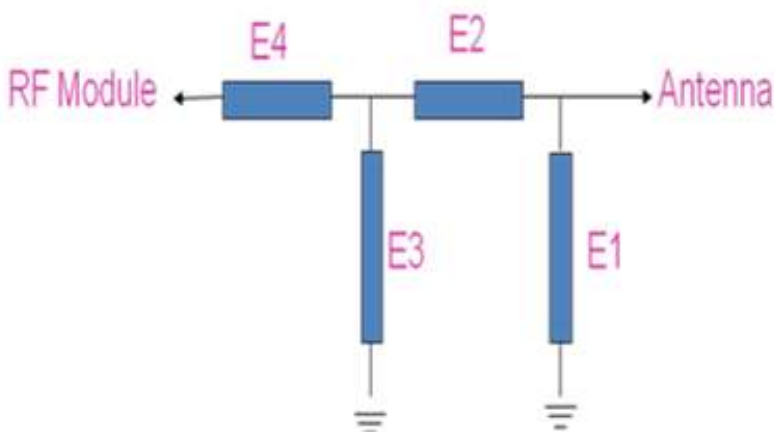
使用一根 50  $\Omega$  同轴电缆连接到天线，然后该电缆连接到网络分析仪测量 S11 参数，被测量产品远离金属至少 20 厘米。

Measuring Method is a 50Ω coaxial cable is connected to the antenna. Then this cable is connected to a network analyzer to measure the S11 parameter, Keeping this fixture away from metal at least 20cm.

**S11 Parameter**



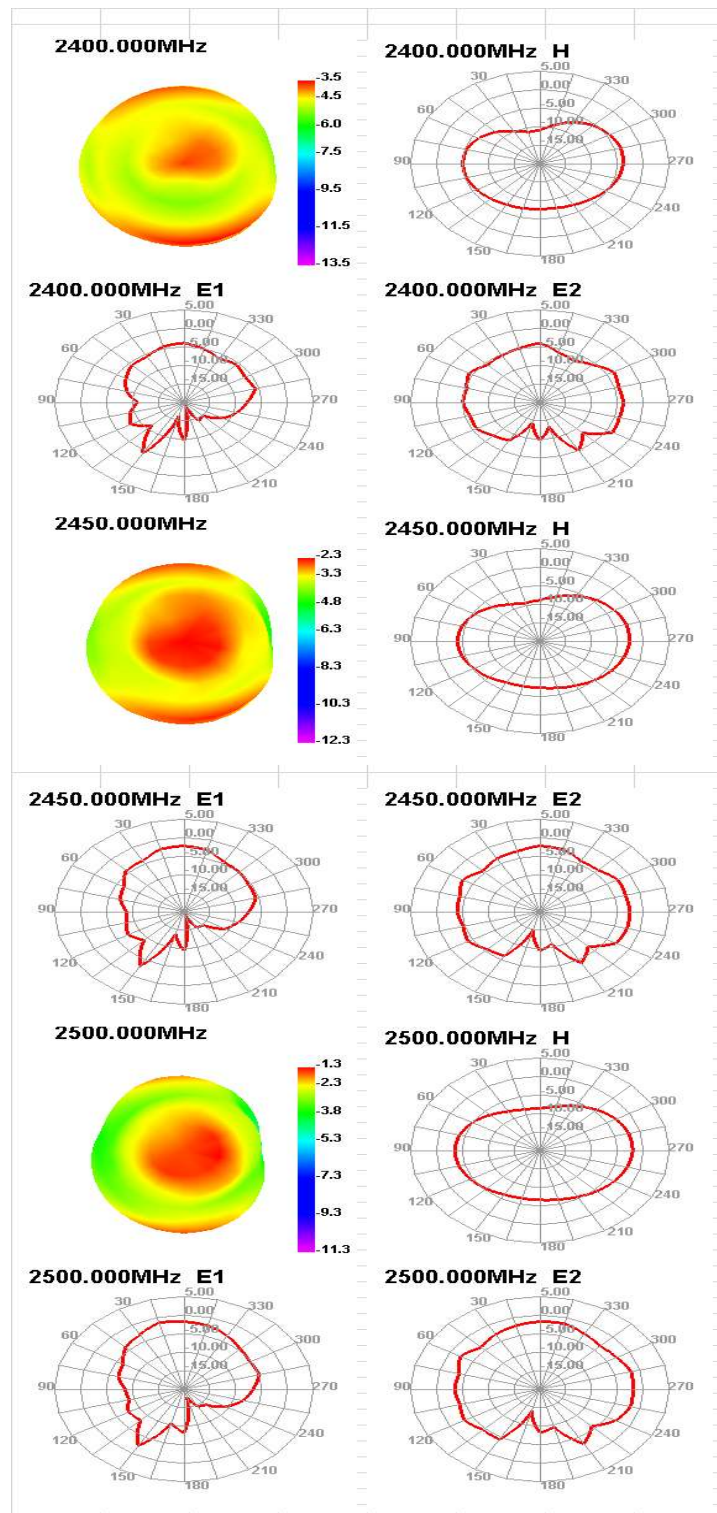
**2. 天线匹配网络/Antenna Matching Network**



Element	Value
E1	N/A
E2	N/A
E3	N/A
E4	N/A

PCB板端匹配电路未改动

2D Pattern



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**3. Gain & Efficiency**

Passive Test For WIFI2.4												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dEd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Directivity (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
2400	22.53	-6.47	-3.47	-5.62	13.442	9.088	-3.47	-23.93	3	120	52.68	51.96
2410	23.77	-6.24	-3.34	-5.49	14.174	9.591	-3.34	-24.16	2.9	120	52.74	51.98
2420	24.83	-6.05	-3.26	-5.41	14.816	10.014	-3.26	-23.93	2.79	120	52.85	52.03
2430	25.83	-5.88	-3.1	-5.25	15.498	10.336	-3.1	-23.99	2.78	120	52.73	52.13
2440	26.8	-5.72	-2.8	-4.95	16.249	10.553	-2.8	-23.29	2.92	90	52.77	52.18
2450	30.07	-5.22	-2.28	-4.43	18.165	11.909	-2.28	-21.71	2.94	90	52.86	52.42
2460	30.46	-5.16	-2.06	-4.21	18.368	12.087	-2.06	-21.45	3.1	90	52.87	52.3
2470	31.56	-5.01	-1.88	-4.03	19.064	12.498	-1.88	-20.62	3.13	75	52.94	52.33
2480	32.28	-4.91	-1.66	-3.81	19.518	12.759	-1.66	-19.5	3.25	75	52.94	52.19
2490	33.83	-4.71	-1.41	-3.56	20.297	13.535	-1.41	-18.31	3.29	75	52.94	52.28
2500	34.51	-4.62	-1.32	-3.47	20.657	13.856	-1.32	-17.72	3.3	75	52.92	52.25

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