



深圳市英佳创电子科技有限公司

<http://www.szsyjc.com>

APPROVAL SHEET

承认书

CUSTOMER NAME 客户名称		
CUSTOMER P/N 客户料号	360100462	
PART NAME 品 名	BT 黑色内置天线 (L=70mm) BT built-in antenna (L=70mm) 天線型態: FPC (适用机型: SMRF5L)	
P/ N 料 号	YJC-6N070-R02	
APPROVAL REV. 版 次	A0	
DELIVERY DATE 送样日期	2024 年 11 月 18 日 November 18, 2024	
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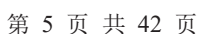


履历表(Resumer):

版本 Version	变更内容及更改原因 Changes and reasons	发行 publish	发行 publish
A/0	初版发行 (Issued)	2024 年 11 月 18 日 November 18, 2024	



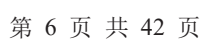
产品平面图 (Product plan):





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PE 袋标签 (PE bag label) :





产品规格 Product Type		RF1.13 低损线 RF1.13 Low loss line		
结构图 Structure Drawing				
结构特性 Structure Characteristics				
结构 Structure	项目 Item	标准值 Standard Value		
内导体 Inner Conductor	材质 Material	镀银铜线 Silverplated Copper Wire		
	结构 Construction(mm)	7/0.083		
	标称外径 Nom.Dia(mm)	0.249±0.02		
绝缘层 Insulation	材质 Material	聚全氟乙丙烯 FEP Polyperfluorinated ethylene-propylene FEP		
	标称外径 Nom.Dia(mm)	0.735±0.02		
外导体 Outer Conductor	材质 Material	铜塑箔 Cu-Plastic Composite Tape		
	标称外径 Nom.Dia(mm)	0.759±0.02		
	材质 Material	镀银铜线 TC Wire 16*4/0.05		
	标称外径 Nom.Dia(mm)	0.96±0.05		
	编织覆盖率 Coverage Ratio(%)	90±5		
护套 Jacket	材质 Material	聚全氟乙丙烯 FEP Polyperfluorinated ethylene-propylene FEP		
	标称外径 Nom.Dia(mm)	1.15±0.05		
电气性能 Electrical Characteristics				
项目 Item	标准值 Standard Value	项目 Item	频率 Frequency	标准值 Standard Value
阻抗 Impedanc (Ω)	50±2	衰减 Attenuation@20℃ (dB/m)	1GHz	1.88
电容 Capacitance(pF/m)	98		2GHz	2.55
速率 Velocity(%)	70		3GHz	3.05
驻波比 VSWR	≤1.30@DC-6GHz		4GHz	3.52
最大工作电压 Max.Operating Voltage(V)	1000		5GHz	4.05
最大工作频率 Max.Operating Frequency(GHz)	8		6GHz	4.40
可靠性 Dependability				
最小弯曲半径(单次)Min.Bending Radius/Single	mm	5		
最小弯曲半径 (重复) Min.Bending Radius/Repeated	mm	10		
工作温度范围 Operating Temperature	℃	-55-+200		
包装 Packing				
包装方式 Packing Mode	纸盘 Papery Reel			
包装长度 The Length of Each Reel(m)	1000			
每盘段数 The Joints of Each Reel	≤5			
最小段长 Min. Segment Length(m)	≥10			
使用提示 Trips for Use				
存储环境 Storage Environment	温度：30℃以下，湿度：20-65% Temperature: below 30℃, humidity: 20-65%			
最佳保存周期 The Best Save Cycle	2个月，2个月以上上锡效果变差，但电性能不受影响，夏季高温高湿环境开封后需尽快流转 After 2 months, the tinning effect becomes worse after 2 months, but the electrical properties are not affected, and it is necessary to transfer as soon as possible after opening and stripping in high temperature and humidity environment in summer			
加工温度 Processing Temperature	可短时承受 260℃的高温，300℃以上易发生分解，400℃以上发生显著的热分解 It can withstand high temperature of 260℃ for a short time, decomposition is easy to occur above 300℃, and significant thermal decomposition occurs above 400℃			
铁氟龙收缩 Teflon Shrink	材料的固有属性 绝缘 0.2mm 以下 护套 0.3mm 以下 Inherent properties of the material, insulation below 0.2mm, sheath below 0.3mm			



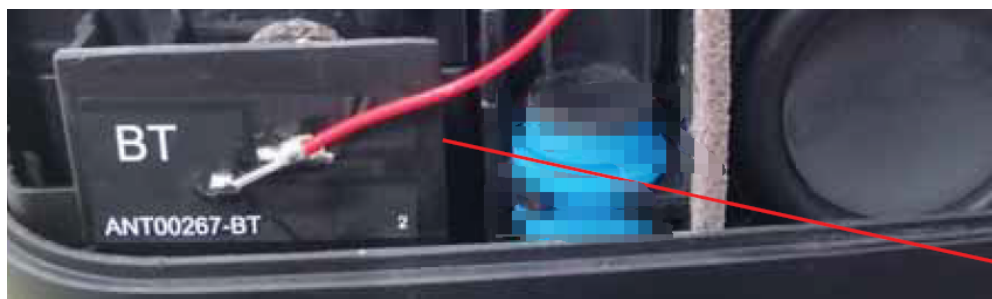
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ROHS 物料控制报告 (ROHS Material control report)											
兹证明向贵司交货的零组件、辅助材料所使用的原材料、以及生产工程中的添加剂等均符合 <u>RoHS</u> 限制使用有害物质指令的环保要求 (<u>RoHS</u> 指令 2011/65/EC) This is to certify that the components delivered to your company, the raw materials used for auxiliary materials, and the additives used in the production project all meet the environmental requirements of the <u>RoHS</u> directive on limiting the use of hazardous substances. (<u>RoHS</u> 指令 2011/65/EC) 关于零组件、辅助材料所使用的原材料、包装材料以及和产过程中使用的添加剂等的构成成份报告如下： The report on the composition of raw materials, packaging materials, and additives used in the manufacturing process for component auxiliary materials is as follows											
组成物料名称 Component /Part Name	组成材料 Material Composition	ICP 报告编号 ICP report #	测试机构 Test Org.	测试时间 Test Date	有 害 物 质 含 量(ppm)						是否合格? PASS?
					Cd	Pb	Hg	Cr ⁶⁺	PBB	PBDE	
线材(wire rod)	同轴线缆 coaxial cable	CANEC24002746206	SGS	24/02/23	ND	ND	ND	ND	ND	ND	PASS
锡条(tin rod)	环保锡丝 Green solder wire	SHAEC24006459102	SGS	24/04/10	ND	78	ND	ND	ND	ND	PASS
端子 (terminal)	磷青铜 Phosphor bronze	CANEC24000977302	SGS	24/01/22	ND	6	ND	ND	ND	ND	PASS
	金镀层 Gold coating	A2240410234101001E	CTI	24/07/16	ND	ND	ND	ND	ND	ND	PASS
	胶芯 Rubber core	A2240126395101003E	CTI	24/03/16	ND	ND	ND	ND	ND	ND	PASS
FPC	油墨 Printing	ETR24902229M01	SGS	24/09/23	ND	ND	ND	ND	ND	ND	PASS
	3M9471LE	SHAEC23021627701	SGS	23/12/27	ND	ND	ND	ND	ND	ND	PASS
	铜箔 Copper foil	A2240082746101006E	CTI	24/03/01	ND	ND	ND	ND	ND	ND	PASS

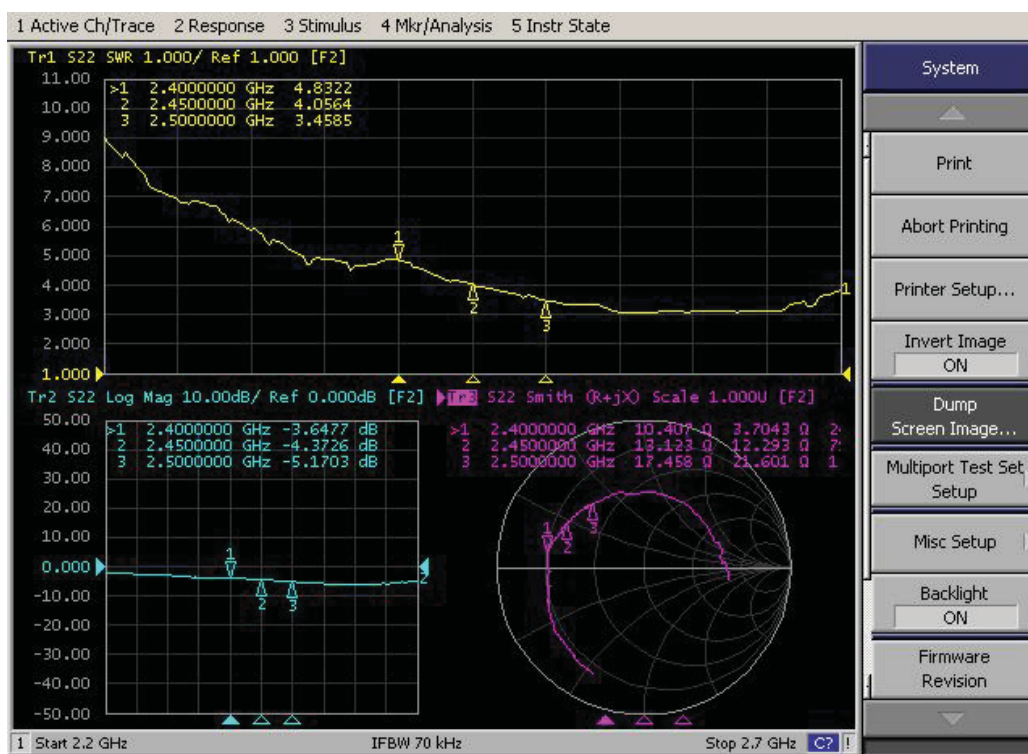


天线实物图与位置图: Antenna physical diagram and location diagram



天线实物及
位置图

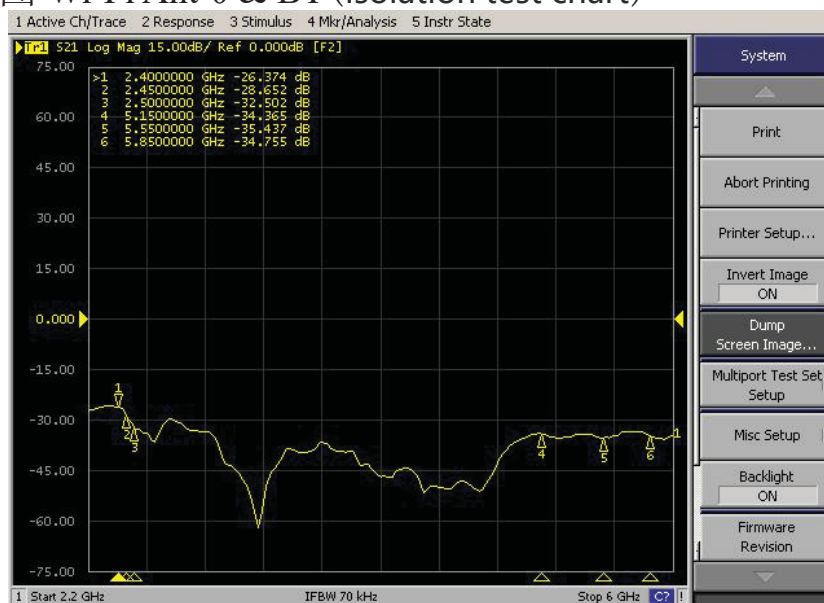
天线性能测试图:Antenna performance test diagram



Freq/GHz	2.4	2.45	2.5
VSWR	4.8	4.0	3.4

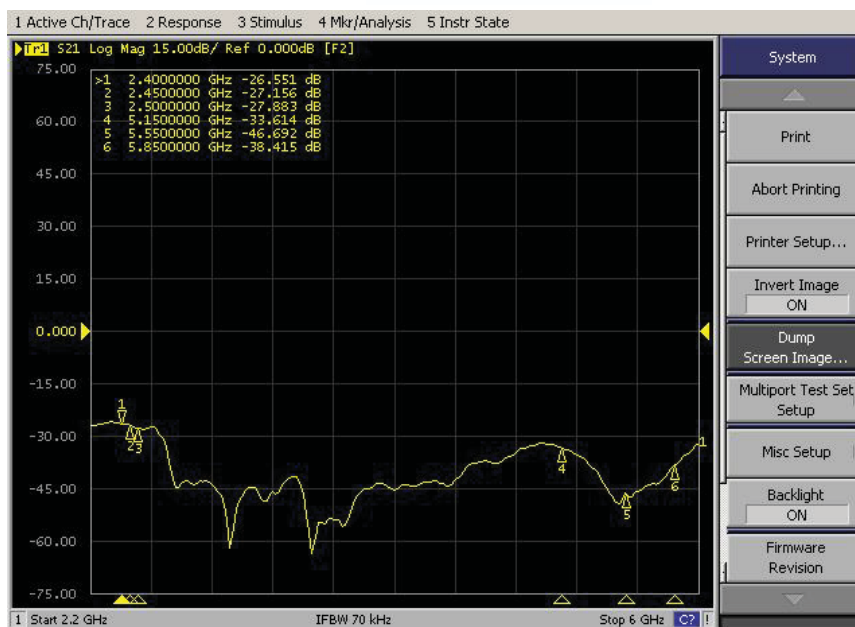


隔离度测试图 Wi-Fi Ant-0 & BT (Isolation test chart)



Freq/GHz	2.4	2.45	2.5	5.15	5.5	5.85
S21/ dB	-26	-28	-32	-34	-35	-34

隔离度测试图 Wi-Fi Ant-1 & BT (Isolation test chart)



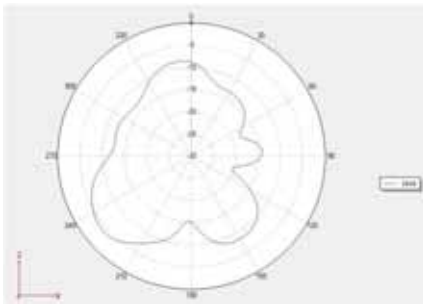
Freq/GHz	2.4	2.45	2.5	5.15	5.5	5.85
S21/ dB	-26	-27	-27	-33	-46	-38



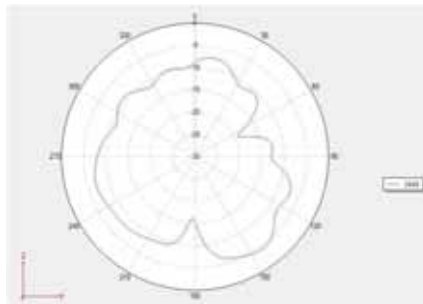
2D、3D 测试数据(2.4G): 2D and 3D test data (2.4G) :

Frequency	Efficiency (%)	Gain. (dBi)
2400MHz	13.71	-3.9
2410MHz	14.69	-3.48
2420MHz	15.31	-2.62
2430MHz	16.71	-2.24
2440MHz	16.6	-2.15
2450MHz	17.22	-1.73
2460MHz	17.14	-1.8
2470MHz	19.1	-1.33
2480MHz	18.11	-1.46
2490MHz	18.79	-1.46
2500MHz	18.41	-1.22

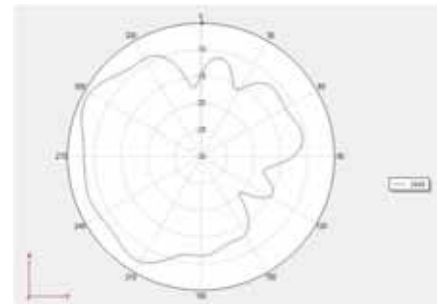
Phi =0 freq=2400MHz



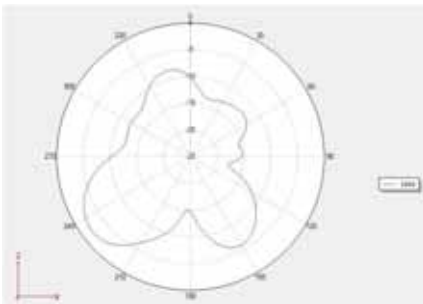
Phi =90 freq=2400MHz



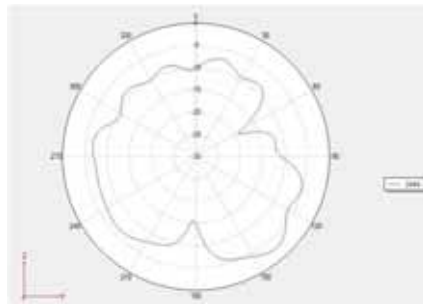
Theta =90 freq=2400MHz



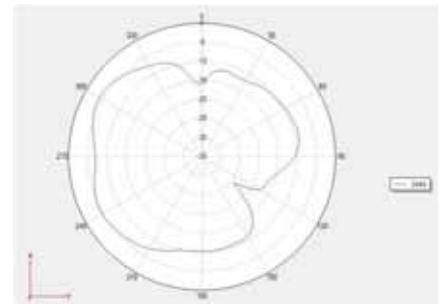
Phi =0 freq=2450MHz



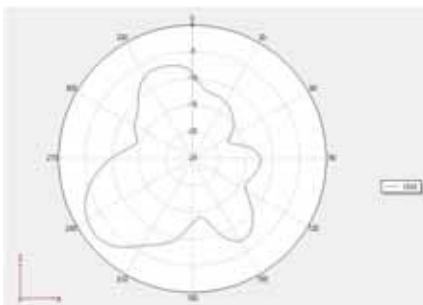
Phi =90 freq=2450MHz



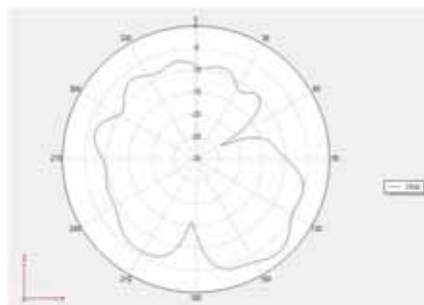
Theta =90 freq=2450MHz



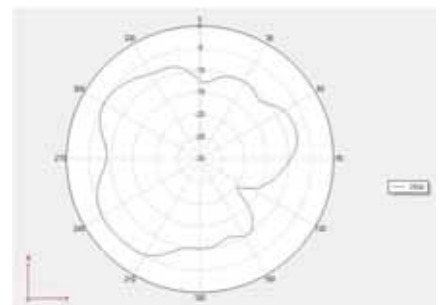
Phi =0 freq=2500MHz



Phi =90 freq=2500MHz

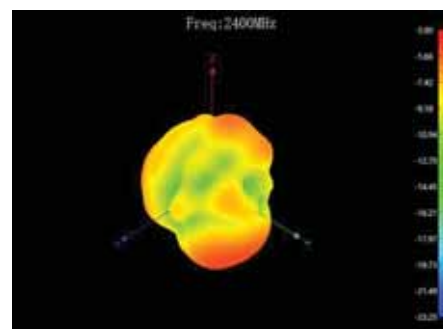
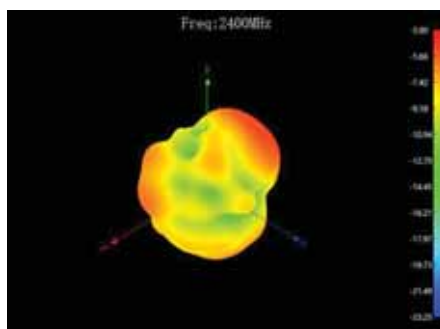
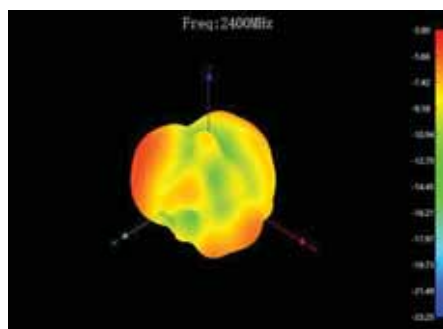


Theta =90 freq=2500MHz

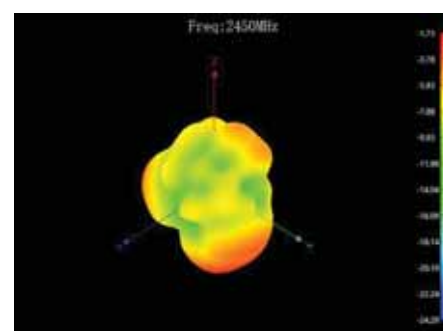
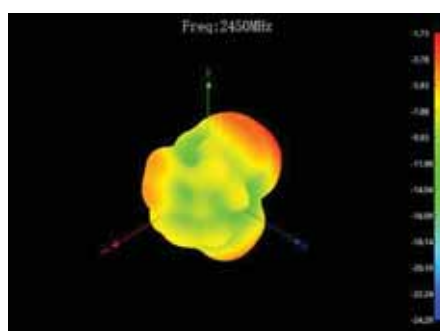
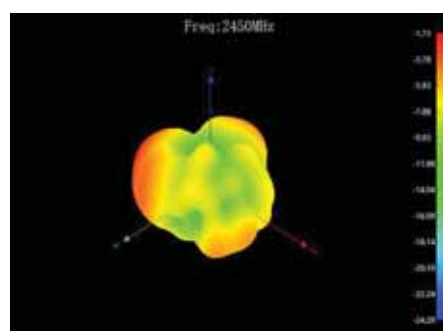




3D 2400:



3D 2450:



3D 2500:

