

ZKT_{ECO}

样品承认书

SAMPLE APPROVED SHEET

供应商 (Supplier) : 深圳市盛邦电子科技有限公司 (1009047)
名称 (Product Name) : WiFi 天线
规格 (Specification) : 3160 180 00715
料号 (Material Code) : 100028143

复核 (Rechecker By)			承认担当 (Signed By)
		廖金亮	文保华
		2010.08.10	



深圳市盛邦尔科技有限公司
Shenzhen Surbaner Technology CO.,LTD.

承 认 书

SPECIFICATION FOR APPROVAL

客户名称 Customer Name	熵基		
客户项目名 Customer Project Name	Zface13000	盛邦尔料号 Surbaner P/N	3160-180-00715
客户编码 Customer P/N	*****	工作频段 Working Band	2400-2500MHz
产品描述 Description	2.4G天线:丝印白色 Zface13000-WIFI FPC V1.2 /尺寸: 34.50*9.00*0.12MM/ 1.13 黑色线 220mm 1代端子		
版本号 Version	V01		

设计人信息/Designer Information

射频工程师 RF Engineer	林德友	研发主管 R&D Director	朱浩彦
结构工程师 ME Engineer	蔡杰		

盛邦尔审批/Surbaner Approval			客户批准/Customer Approval	
	制作 Prepared By	审核 Checked By	批准 Approval By	批准 Approval By
签章 Signature	曾心荣	林德友	朱浩彦	陈金泉
日期 Date	2023.12.1	2023.12.1	2023.12.1	2023.12.1

修订履历/Change Log

版本 Version	修订内容 Change Description	责任人 Person in Charge	核准 Approval By	日期 Date

地址: 深圳市宝安区西乡街道鹤洲社区恒丰工业城B25栋2楼 TEL: 0755-82790675 FAX: 0755-82809726
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版本号 Version	V01		
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射频工程师 RF Engineer	林德友	研发主管 R&D Director	朱浩奎
结构工程师 ME Engineer	蔡杰		

盛邦尔审批/Surbaner Approval			客户批准/Customer Approval	
	制作 Prepared By	审核 Checked By	批准 Approval By	审核 Checked By
签章 Signature	曾心荣	林德友	朱浩奎	
日期 Date	2023.12.1	2023.12.1	2023.12.1	

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目录/Catalogue

序号 No.	项目 Item	页码 Page No.
1	图纸或实物图片 Drawing or Product Image	3
2	技术参数 Technical Parameter	4
3	射频性能测试报告 RF Performance Test Report	5-9
4	包装文件 Package Document	10
5	尺寸测量报告 Dimensions Test Report	11
6	可靠性测试报告 Reliability Test Report1	12
7	环境有害物质管控一览表 RoHS Control list for Sample	13

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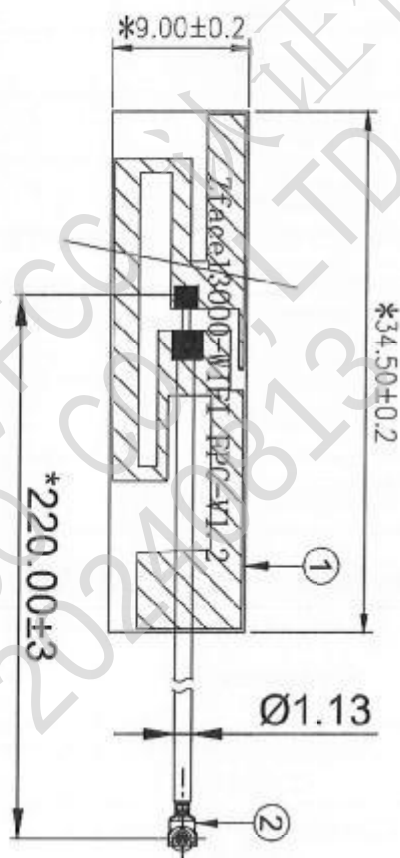
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技术要求:

1. 焊接牢固, 无假焊 虚焊 拉尖 等焊接不良;
2. 标**尺寸为重点管控尺寸;
3. 所有部件需符合RoHS 2.0 要求;
4. 成品需全检性能。



2	同轴波	1. 已取波度 黑色=1代种子	1	
1	PC	电解铜-对半 黑色	1	
序号	零件名称	规格描述	数量	备注

[illegible]

Sho-46-17-25 Rev. 40

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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	2400-2500MHz
2	Impedence/阻抗	50 ohm nominal
3	Gain/增益	≤3dBi
4	Polarization/极化	LINE
5	VSWR/驻波比	<2.0
6	Efficiency/效率	≥50% AVG
7	RF Cable/射频连接线	1.13 黑色线 220mm
8	RF Connector/连接器	1 代端子
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	-20~+60℃
3	Store Temperatuer/工作 储存温度	-30~+70℃
4	Salt Spray Test/ 盐雾试验	24H

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射频性能测量报告

RF Performance Test Report

客户名称 Customer Name	熵基	项目名称 Project Name	Zface13000	盛邦尔料号 Surbaner P/N	3160-180-00715
频段 Band	2400-2500MHz	测试日期 Test Date	2023/11/22	测试人 Inspector	林德友

天线测试设备简介

Antenna Test Equipment Introduction

测试天线输入特性使用 Agilent E5071C 和 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 Anecoic Chamber, and the instrument is used to agilent8960 E5515 and Agilent E4438C. The test coordinates of the darkroom are as follows:

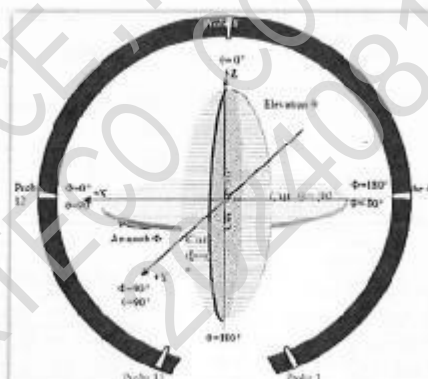


图 4-30 微波暗室测试坐标系(bask view)

1. S11 参数测量/S11 Parameter-VSWR

使用一根 50Ω 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 50Ωcoaxial 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.

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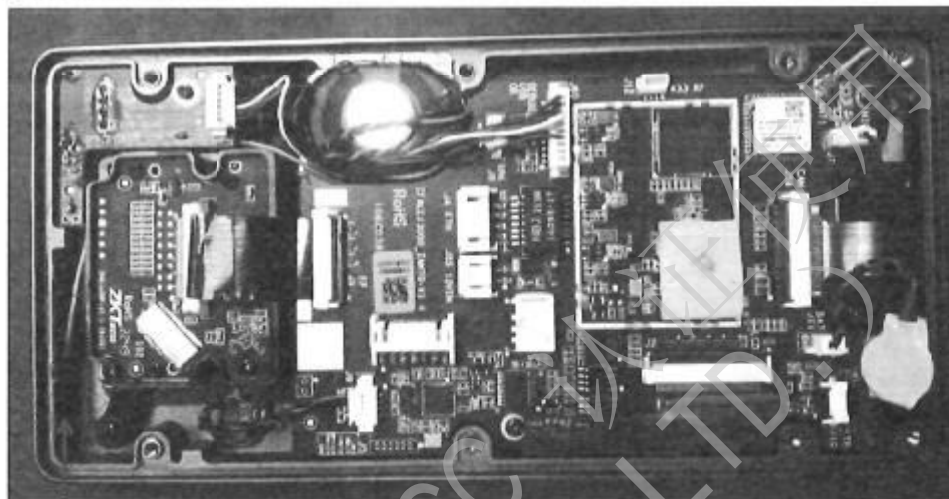
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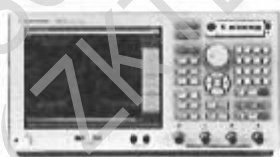
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Antenna Matching Network



Test System

Sequence Number	Test Item	equipment
S parameter	VSWR	Agilent 5071C & Agilent 5062A
OTA Test	TRP&TIS	Agilent 8960 E5515C & Agilent 4438C & CMW500 & CMW270 ETS&SATIMO
Gain & Efficiency	Gain & Efficiency	ETS&SATIMO Agilent 5071C



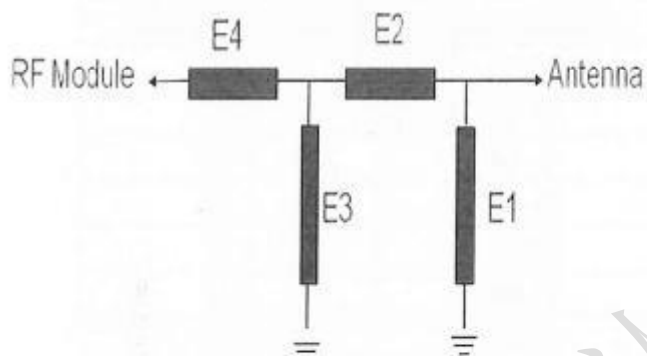
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2. Antenna Matching Network



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

PCB 板端匹配电路未改动

S11 Parameter-VSWR



Frequency	2400	2450	2500
VSWR	1.36	1.20	1.86

8

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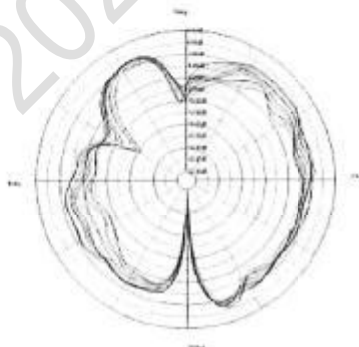
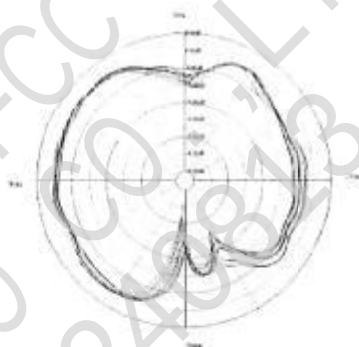
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3. Gain & Efficiency

Frequency (MHz)	Efficiency (%)	Peak GAIN (dBi)
2400	52.25	1.60
2420	54.36	1.94
2440	51.80	2.50
2450	52.60	2.80
2460	54.09	3.04
2480	52.29	3.17
2500	53.14	3.29

2D Pattern



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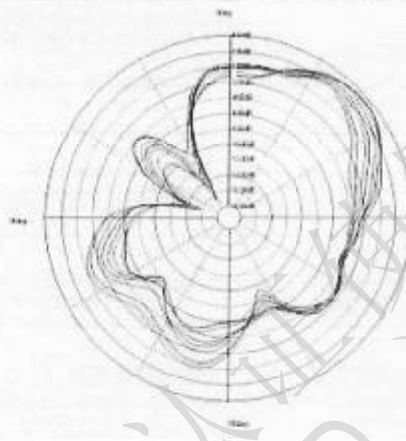


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Legend
-10 dBm
-15 dBm
-20 dBm
-25 dBm
-30 dBm
-35 dBm
-40 dBm
-45 dBm
-50 dBm
-55 dBm
-60 dBm
-65 dBm
-70 dBm
-75 dBm
-80 dBm
-85 dBm
-90 dBm
-95 dBm
-100 dBm



4.OTA

Band	Channel	TRP	TIS
WIFI-11b 11Mbps	1	16.10	-77.98
	6	16.42	-75.70
	11	18.19	-77.67

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产品包装规范

Product packaging specifications

产品包装规范		page: 1 of 1
项目名称: Z6ad3000	版本: 1.0	
客户: 瑞星	成品名称: 3G 天线	
一: 成品天线 二: 每匣共装50PCS产品(以实际包装为准) 三: 装箱, 每匣装一箱, 一箱共50PCS产品(以实际包装为准) 四: 封箱, 外箱贴我司生产标签和BOS标签		
批准: _____	确认: _____	抵制: _____ 蔡杰

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样品尺寸测量报告

Sample Dimensions Test Report

客户名称 Customer Name	瀚基	客户料号 Customer P/N	*****	盛邦尔料号 Surbaner P/N	3160-180-00715
测试日期 Test Date	2023/11/23	样品数量 Sample Qty.	3	测试人 Inspector	曾心荣
尺寸编号 Dimension No.	标准 Standard	样品 1 Sample 1	样品 2 Sample 2	样品 3 Sample 3	Pass/NG
① 长度	34.50±0.2mm	34.60	34.40	34.50	Pass
② 宽度	9.00±0.2mm	9.10	9.00	9.20	Pass
③ 厚度	0.32±0.05mm	0.31	0.33	0.30	Pass
③ 线长	220±3mm	221	220	221	Pass
⑤					
⑥					
⑦					
⑧					
最终结论 Conclusion					PASS
测试人&日期 Inspector & Date	曾心荣 2023/11/23		批准&日期 Approval & ate		

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可靠性测试报告

Reliability Test Report

客户名称 Customer Name	熵基	客户料号 Customer P/N	*****	盛邦尔料号 Surbaner P/N	3160-180-00715	
测试日期 Test Date	2023/11/25	样品数量 Sample Qty.	3	测试人 Inspector	何春辉	
测试项目 Test Item	要求 Requirement	试验设备 testing equipment	样品 1 Sample 1	样品 2 Sample 2	样品 3 Sample 3	判定 PASS/NG
高温存储	在+70℃条件下暴露 24H, 恢复 2H 后进行测试电气性能正常	恒温恒湿箱	OK	OK	OK	Pass
低温存储	在-30℃条件下暴露 24H, 恢复 2H 后进行测试电气性能正常	恒温恒湿箱	OK	OK	OK	Pass
高温工作	在+60℃条件下通电工作 24H 电气性能正常	恒温恒湿箱	OK	OK	OK	Pass
低温工作	在-20℃条件下通电工作 24H 电气性能正常	恒温恒湿箱	OK	OK	OK	Pass
端子盐雾试验	(5 ± 0.5)%氯化钠, pH 值为 6.5~7.2, 试验箱温度 (35 ± 2) °C ☒ 24H ☐ 48H	盐雾试验机	OK	OK	OK	Pass
端子铆压拉拔力	1. 13 线径接 1 代 IPEX ≥ 10N	推拉力计	12N	13N	15N	Pass
最终结论 Conclusion						Pass
测试人&日期 Inspector & Date	何春辉 2023/11/23		批准&日期 Approval & Date			

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产品 ROHS 成分宣告表
Product ROHS ingredient declaration table

产品名 称	均勾物质材料		有害物质含量 (PPM)										IIS 测试 报告编号	IIS 测试 报告日期
			Pb	Cd	Hg	Cr6+	PBBs	PBDEs	DEHP	BBP	DBP	DIBP		
2.4G 天线	FPC	文字油墨	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ETR23A00852M01	23/10/13
		3M 胶	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SHAEC2217569205	23/1/4
		基材	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SHAEC23001049106	23/2/15
		防焊油墨	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ETR23701480	23/7/13
		抗氧化剂	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SZSEC23000119402	23/2/27
	线材	氟化物	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NGBMR23000169901	23/2/6
		镀锡铜线	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SHAEC23010829308	23/7/26
		黑色色母	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	A2230222421101001C	23/5/23
	端子	黄铜	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	TAOEC2209224505	23/1/6
		塑胶	4.77	ND	ND	ND	ND	ND	ND	ND	ND	ND	ETR23705937	23/8/4

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