



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	熔基		
客户项目名 Customer Project Name	Ultima 1000	盛邦尔料号 Surbaner P/N	3160-180-00514
客户编码 Customer P/N	/	工作频段 Working Band	2400-2500MHz, 5150-5850MHz
产品描述 Description	2.4+5.8G 天线:丝印白色 SUR-Ultima 1000-WIFI-V1.0/尺寸: 32.23*24.62*0.12MM/带 1.13 白色线 202mm (±3mm)		
版本号 Version	V02		
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	批准 Approval By
签章 Signature	曾心荣	林德友	朱浩奎		
日期 Date	2024.4.18	4.12	4/22		

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
V02	更新版本	林德友	朱浩奎	2024.4.18

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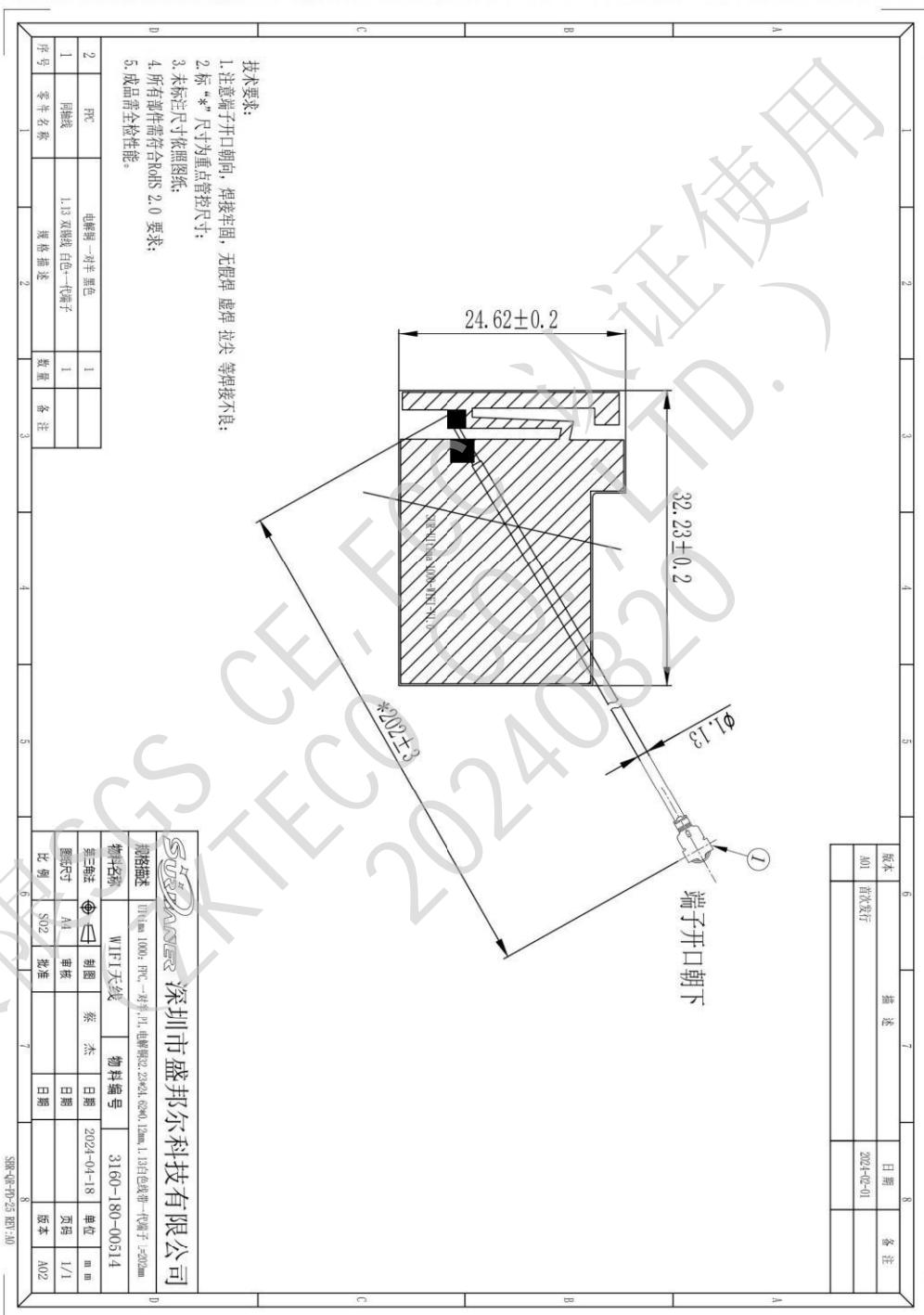
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一. 产品图纸或实物图片/Drawing or Product Image



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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, 5150-5850MHz
2	Impedance/阻抗	50 ohm nominal
3	Gain/增益	Low Band 2.18dBi
		High Band 3.18dBi
4	Polarization/极化	LINE
5	VSWR/驻波比	≤2.0
6	Efficiency/效率	≥30%
7	RF Cable/射频连接线	1.13 白色线 202mm
8	RF Connector/连接器	一代端子
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 °C
3	Store Temperatuer/工作 储存温度	-30~+70 °C
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	UItima 1000	盛邦尔料号 Surbaner P/N	3160-180-00514
频段 Band	2400-2500MHz, 5150-5850MHz	测试日期 Test Date	2024/4/18	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 Anechoic Chamber, and the instrument is used to agilent8960 E5515 and Agilent E4438C. The test coordinates of the darkroom are as follows:

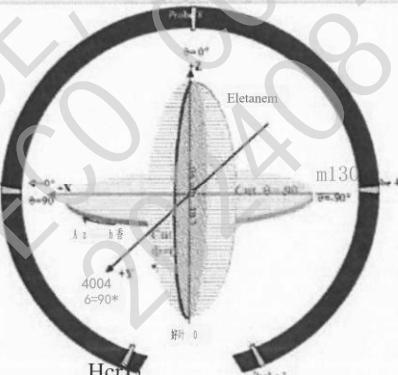


图 4.3 微波暗室测试坐标系 (back view)

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 50Qcoaxial 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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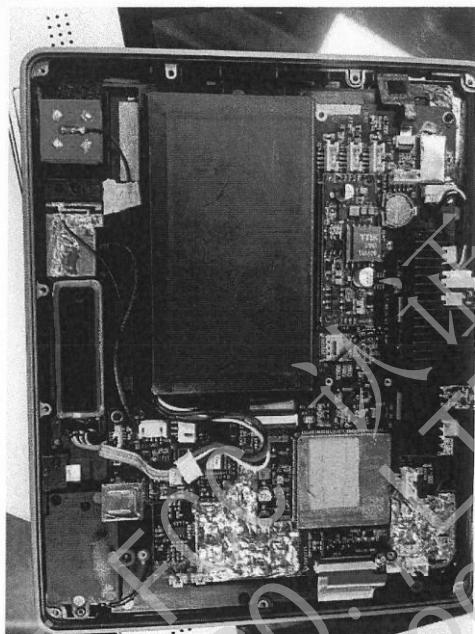
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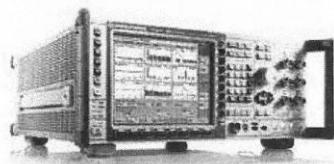
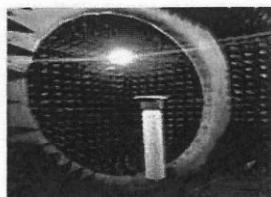
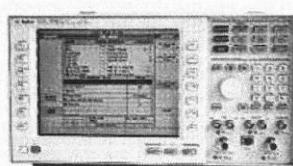
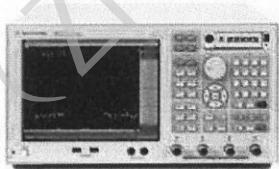
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2. Antenna Matching Network



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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S11 Parameter-VSWR



Frequency(MHz)	2400	2450	2500	5150	5720	5850
VSWR	1.46	1.21	1.34	1.65	1.46	1.63

3.Gain & Efficiency

Frequency (MHz)	Efficiency (%)	Peak GAIN (dBi)
2400	35.8	2.21
2450	34.3	2.69
2500	33.7	2.18
5150	48.7	3.18
5720	50.8	2.79
5850	47.3	2.83

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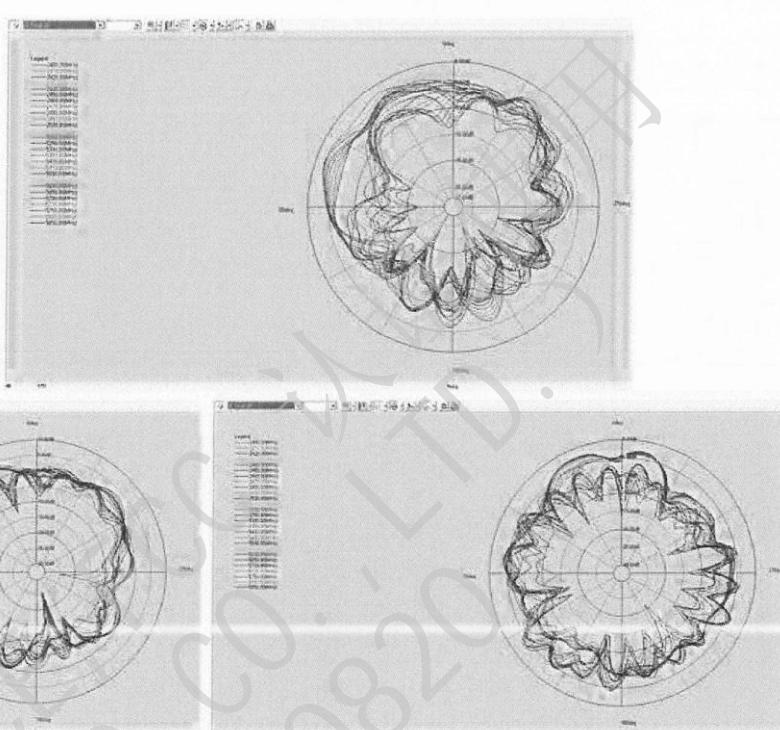


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2D Pattern

Test Result

2D Pattern



Test Result---WiFi

A	B	C	D	E	F	G	H
1. Test WiFi 2G TRP							
2. Result	1	5	7				
3. Frequency (MHz)	2412	2437	2442				
4. Txp Ave(dBm)	9.11	8.29	8.58				
5. NHPRP(dBm)	NULL	NULL	NULL				
6. Max(dBm)	12.51	11.41	11.63				
7. EIRP peak	12.51	11.41	11.63				
8. Min(dBm)	4.79	2.64	2.9				
9. Attenuation Horizc	17.06	17.99	17.64				
10. Attenuation Vertic	16.85	17.28	16.93				
11. Test WiFi 2G TIS							
12. Result	1	5	7				
13. Frequency (MHz)	2412	2437	2442				
14. Sanc Ave(dBm)	-81.6	-81.29	-81.99				
15. RRPIS(dBm)	NULL	NULL	NULL				
16. RSSISlave	8.35	7.71	8.42				
17. MaxPosRSSI	11.05	9.06	9.68				
18. MinPosRSSI	-81.4	-81.05	-83.33				

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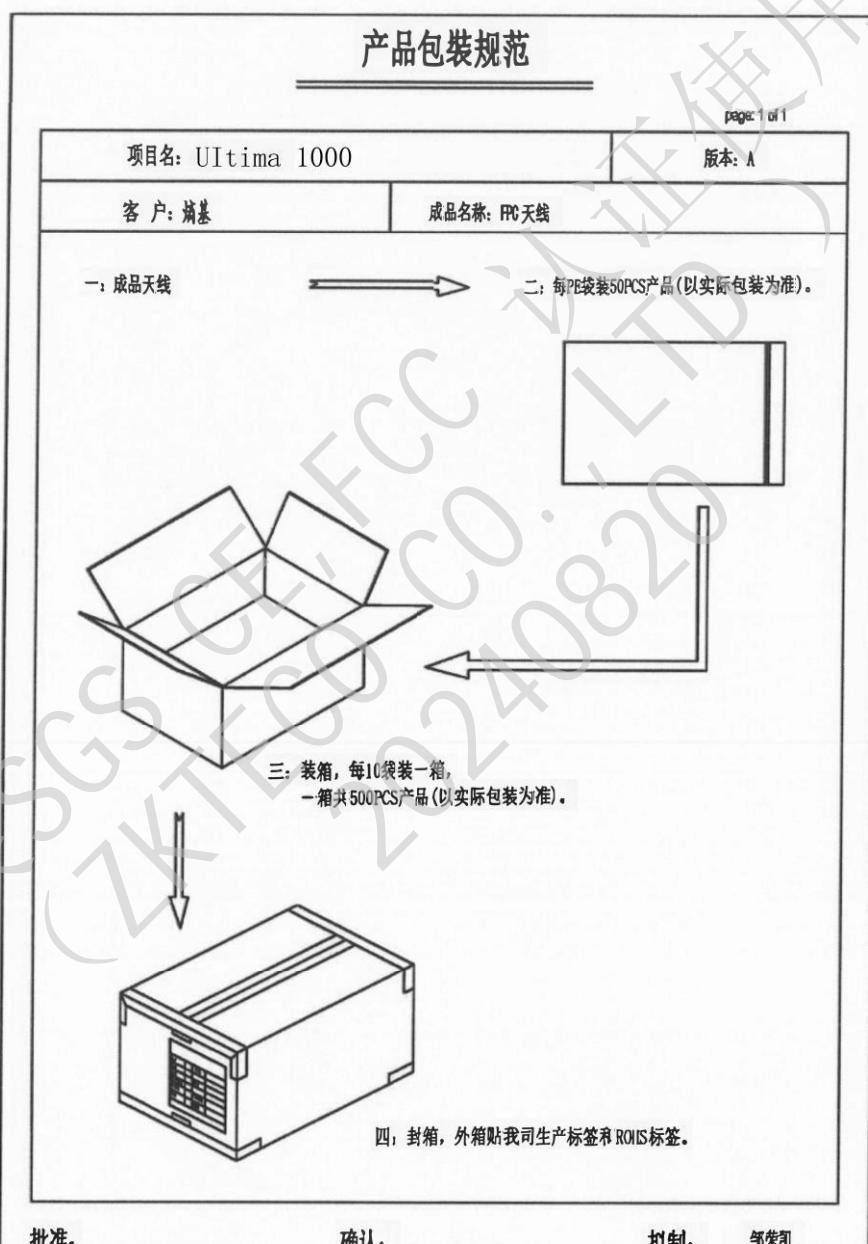
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产品包装规范

Product packaging specifications



批准: _____

确认: _____

拟制: _____

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样品尺寸测量报告

Sample Dimensions Test Report

客户名称 Customer Name	矽基	客户料号 Customer P/N	/	盛邦尔料号 Surbamer P/N	3160-180-00514
测试日期 Test Date	2024/4/18	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	32.23±0.2mm	32.24	32.23	32.24	Pass
② 宽度	24.62±0.2mm	24.63	24.62	24.63	Pass
③ 厚度	0.12±0.05mm	0.12	0.13	0.12	Pass
④ 线长	202±3mm	202	202	203	Pass
⑤					
⑥					
⑦					
⑧					
最终结论 Conclusion					PASS
测试人&日期 Inspector & Date	曾心荣 2024/4/18	批准&日期 Approval & date			

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可靠性测试报告

Reliability Test Report

客户名称 Customer Name	矽基	客户料号 Customer P/N	*****	盛邦尔料号 Surbanner P/N	3160-180-00514	
测试日期 Test Date	2024/4/18	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°C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°C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°C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°C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, 实验箱温 度 (35±2) °C <input checked="" type="checkbox"/> 24H <input type="checkbox"/> 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	13N	15N	15N	Pass
最终结论 Conclusion						Pass
测试人&日 期 Inspector & Date	何春辉 2024/4/18	批准& 日 期 Approval & Date				

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产品 ROHS 成分宣告表

产品名称	均匀物质材料	有害物质含量(PPM)										HS 测试报告编号	HS 测试报告日期
		Pb	Cd	Hg	Cr6+	PBBs	PBDEs	DEHP	BBP	DBP	DIBP		
WIFI 天线	FPC	文字油墨	ND	ND	ND	ND	ND	ND	ND	ND	ND	ETR22A01347M01	22/10/17
		3M 胶	ND	ND	ND	ND	ND	ND	ND	ND	ND	SHAEC2217569205	23/1/4
		基材	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	ETR23701480	23/7/13
		抗氧剂	ND	ND	ND	ND	ND	ND	ND	ND	ND	SZXEC23000119402	23/2/27
	线材	氟化物	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	SHAEC23010829308	23/7/26
		白色色母	ND	ND	ND	ND	ND	ND	ND	ND	ND	A2230222421101001C	23/5/23
	端子	C5210	ND	ND	ND	ND	ND	ND	ND	ND	ND	CANECC2301145810	23/2/8
		塑胶	ND	ND	ND	ND	ND	ND	ND	ND	ND	ETR23705937	23/8/4
		镀金	ND	ND	ND	ND	ND	ND	ND	ND	ND	A2220404860101001C	22/9/17

安装事宜或其它

Install Wizard or Other

安装过程：

取 1PCS 产品，用手撕下 FPC 背面的离型纸，然后将 FPC 定位孔位置与壳定位孔位置（定位筋位或定位线）对齐，平整的贴附与壳上，具体位置如下图所示：

安装过程注意事项：

- 粘贴天线后保证 FPC 完整贴附于壳；
- 定位孔与壳定位柱位置对齐；
- FPC 边缘与壳边缘对齐
- 带端子天线在将端子扣合到主板 PCBA 端时请首先对齐端子，然后垂直扣合；
- 拆卸天线端子时需使用工具（如专用撬棍）垂直翘起端子，不可直接拽线拆卸。

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