



规格承认书 Specification For Approval

客户名称: _____

Customer

规格描述: IPEX-RG178-2.4G patch PCB Antenna L=200mm

Part name

BJL料号: BJL-PW2405-3000

Part No

客户料号: _____

Customer Part No

客户确认 Customer confirmation		
确认Confirmation	核实check	批准Approver

制造厂商承认 Manufacturer recognition			
销售代表 Sales	拟制 Drafters	核实 check	批准 Approver

感谢给予敝公司送样承认之机会. 如惠蒙承认通过, 烦请将此表签回敝公司.

Thank you for giving us the chance to approve samples. If you agree to pass it, please kindly send it back to us.

深圳市百进联无线技术有限公司

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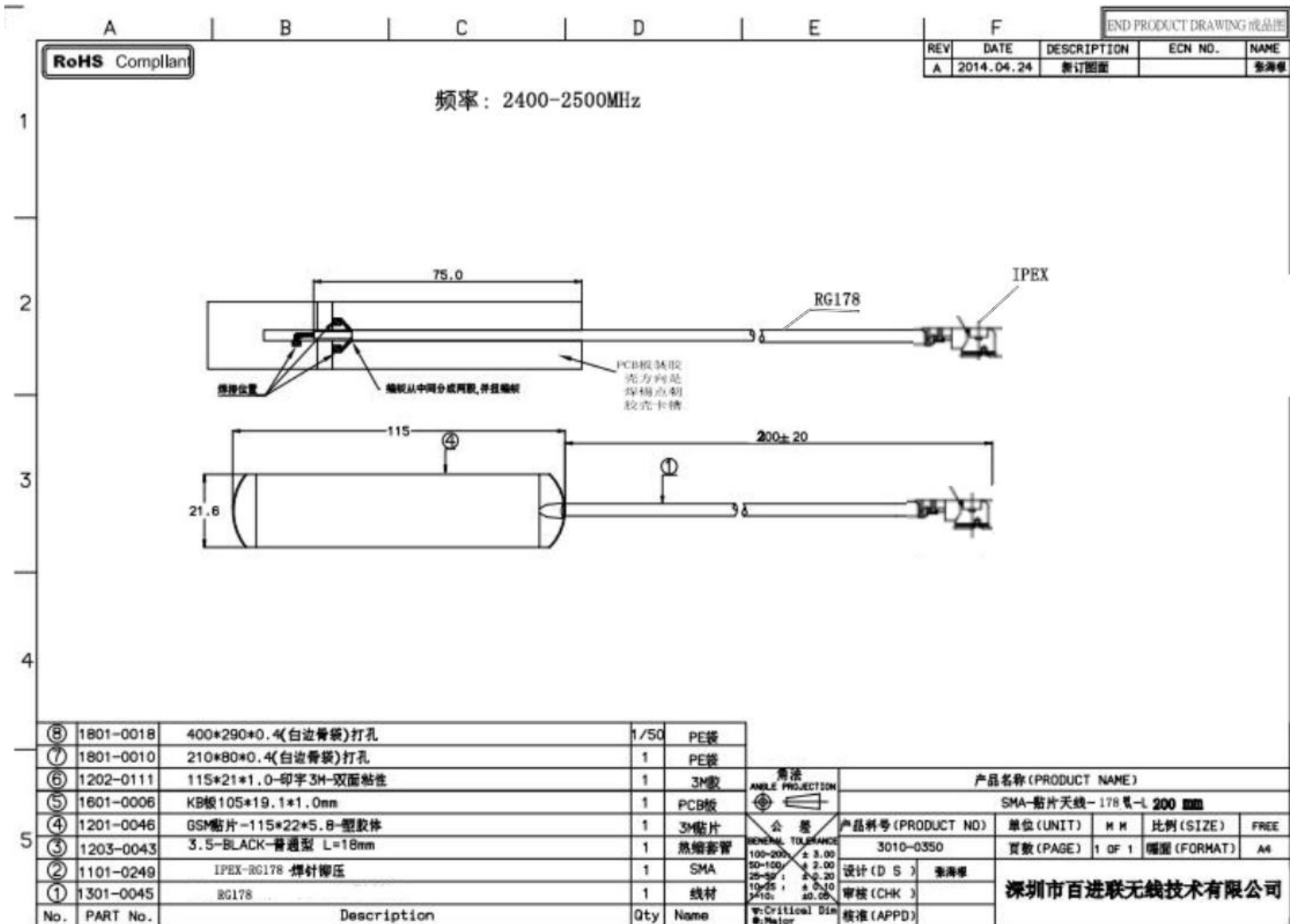
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修改记录

版本	日期	工程师	修改内容
A0	2022-08-29	郑少娟	新建

1. 产品尺寸图





2. 产品外观Product appearance

外型尺寸Size	115 * 21.6	固定方式Mounting	螺旋固定
重量Weight	≤9.5g	连接器型号Connector	IPEX
外壳颜色Color	Black	电缆Cable	RG178

3. 天线性能参数

项目	特性	单位
频率范围Frequency (MHz)	2400-2500	MHz
输出阻抗Impedance	50	Ω
驻波比V. S. W. R	对比波形Vertical polarization	- -
增益Gain	≤5	dBi
极化方式Polarization mode	垂直极化Vertical polarization	
辐射方向 Radiation direction	全向 Omni-directional	
最大输入功率Maximum input power	5	W
工作温度Working temperature	-45~+75	°C
储存温度Save temperature	-45~+75	°C

4. 线材规格 Cable specification

产品技术数据 Technical data of product				
电缆名称 Name of cable	实芯聚四氟乙烯绝缘同轴电缆 Solid polytetrafluoroethylene insulated coaxial cables			
电缆型号 Type of cable	RG178	执行标准 Standard	参照 MIL-C-17	
一、产品结构图 Structure diagram of product				
				
二、产品规格尺寸 Size of product				
序号 No.	项目 Item	结构 Structure	材质 Material	颜色 Color
1	内导体 Inner conductor	7/0.10±0.01mm	镀银铜丝 Silver covered copper	银色 Silver
2	绝缘层 Insulation	0.86 ± 0.05mm	聚四氟乙烯 PTFE	白色 White
3	编织 Wire braid	48*0.10mm	镀银铜丝 Silver covered copper	银色 Silver
4	外护层 Jacket	1.80 ± 0.10mm	聚全氟乙丙烯 FEP	浅棕色 light brown
5	标志 Making	--		
三、产品物理电气性能 Electrical physical and properties of product				
项目 Item	单位 Unit		典型值 Value	
电容 Capacitance	pF/m		100±5	
阻抗 Impedance	Ω		50±2	
速率 Velocity ratio	%		70	
弯曲半径 Bent radius	mm		10	
最大工作电压 Max voltage	VMS		750	
最大工作频率 Max Frequency	MHz		6000	
温度范围 Temperature scope	℃		-40 ~ +200	
20℃时衰减 Attenuation constant at 20℃	100MHz	dB/100m	52.6	
	200MHz	dB/100m	85.1	
	400MHz	dB/100m	118.8	
	1000MHz	dB/100m	190.7	
	1500MHz	dB/100m	225.2	
	2000MHz	dB/100m	270.8	
	3000MHz	dB/100m	340.4	
	5000MHz	dB/100m	385.7	
	6000MHz	dB/100m	423.1	



5. 机械特性 Mechanical properties

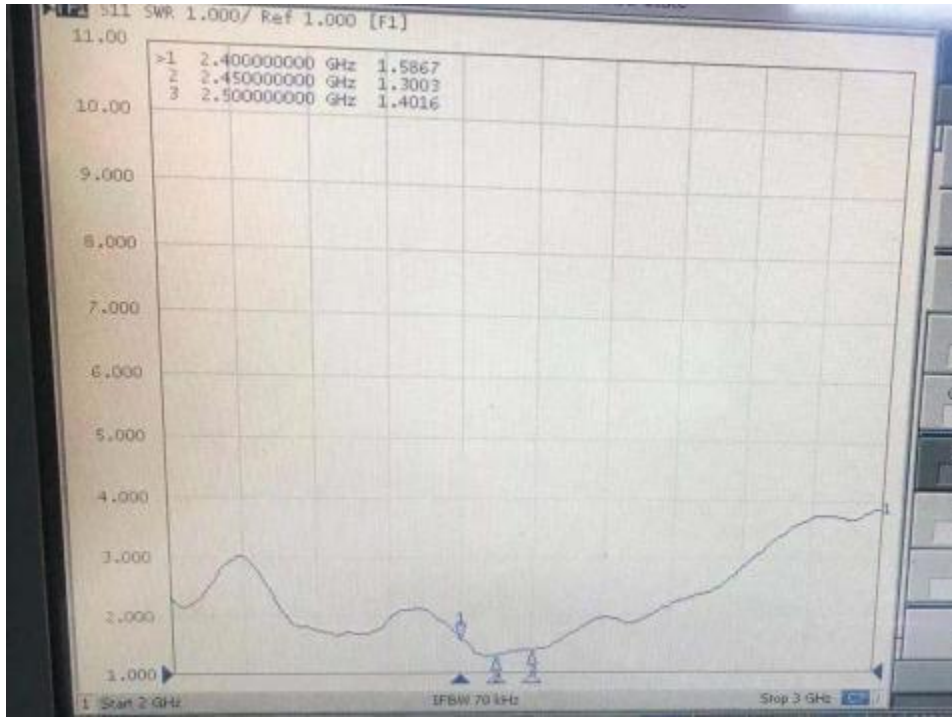
	项目 Items	实验条件 Test Conditions	规格 Specifications
1	插口和线缆强度 Strength of Connector and Cable	用60N的力牵拉插口和线缆保持5sec。 Pull connector part and cable with 60N for 5 seconds.	没有断线和机械损伤。 Breaking of cable and mechanical damage should not be observed.
2	线缆和天线单元本体的拉伸强度 Strength of Cable and Antenna Unit	用60N的力牵拉天线单元本体和线缆保持5sec。 Pull cable and antenna unit with 60N for 5 seconds.	没有断线和机械损伤。 Breaking of cable and mechanical damage should not be observed.

6. 环境实验 Environmental experiment

项目 Item	试验条件 Test Condition	规格 Specifications
低温测试 Low temperature test	周围环境温度: -40℃ 放置时间: 12±2hr Ambient Temperature: -40℃ Leaving Time: 12±2hr	试验后, 试验样件外观与试验前无变化, 电性能指标应符合第 5 项要求。 After the test, the test sample appearance and no change before the test, electrical performance indicators should meet the fifth requirements.
高温测试 High temperature test	周围环境温度: +80℃ 放置时间: 12±2hr Ambient Temperature: +80℃ Leaving Time: 12±2hr	试验后, 试验样件外观与试验前无变化, 电性能指标应符合第 5 项要求。 After the test, the test sample appearance and no change before the test, electrical performance indicators should meet the fifth requirements.

<p>雨淋测试 The rain test</p>	<p>在水龙头下放置 4 小时，让水流冲在外壳上；4 小时后拿起产品，底部没有进水现象，说明此产品具有良好防水功能。 Placed under the tap for 4 hours, so that the water rushed to the shell; 4 hours after the pick up the product, the bottom is not the phenomenon of water, indicating that this product has a good waterproof function</p>	<p>试验后，试验样件外观与试验前无变化，电性能指标应符合第 5 项要求。 After the test, the test sample appearance and no change before the test, electrical performance indicators should meet the fifth requirements.</p>
<p>自由跌落测试 Free fall test</p>	<p>自由跌落，严酷等级中跌落高度 1000mm，试验样件需带包装袋。 Free fall, drop height 1000mm severities, the test sample with packing bag</p>	<p>试验后，试验样件外观与试验前无变化，电性能指标应符合第 5 项要求。 After the test, the test sample appearance and no change before the test, electrical performance indicators should meet the fifth requirements.</p>
<p>振动测试 Vibration test</p>	<p>频率 (10~120) Hz, 加速度为 2m/s² , 经受 X、Y 方向的扫频振动试验，各振动 8h。 Frequency (10~120) Hz, the acceleration is 2m/s², the frequency of the X, Y direction of the sweep frequency vibration test, the vibration 8h.</p>	<p>试验后，试验样件外观与试验前无变化，电性能指标应符合第 5 项要求。 After the test, the test sample appearance and no change before the test, electrical performance indicators should meet the fifth requirements.</p>
<p>ESD 静电保护 ESD electrostatic protection</p>	<p>电压至终端 330 Ω / 150 pf, 接触放电 / 4 次, 应用电压: ± 1.5kv; 电压至操作部分 1.5 k Ω / 150 pf, 空气放电 / 4 次, 应用电压: ± 15 kv。 Voltage to terminal 330 / 150 PF, contact discharge /</p>	<p>试验后，电性能指标应符合第 5 项要求。 After the test, the electric performance index should be in accordance with the fifth requirements.</p>

7. 天线性能测试 Antenna performance test



天线单独测试 (空测)

Frequency (工作频段)	2400	2450	2500
VSWR (驻波比)	1.58	1.30	1.40

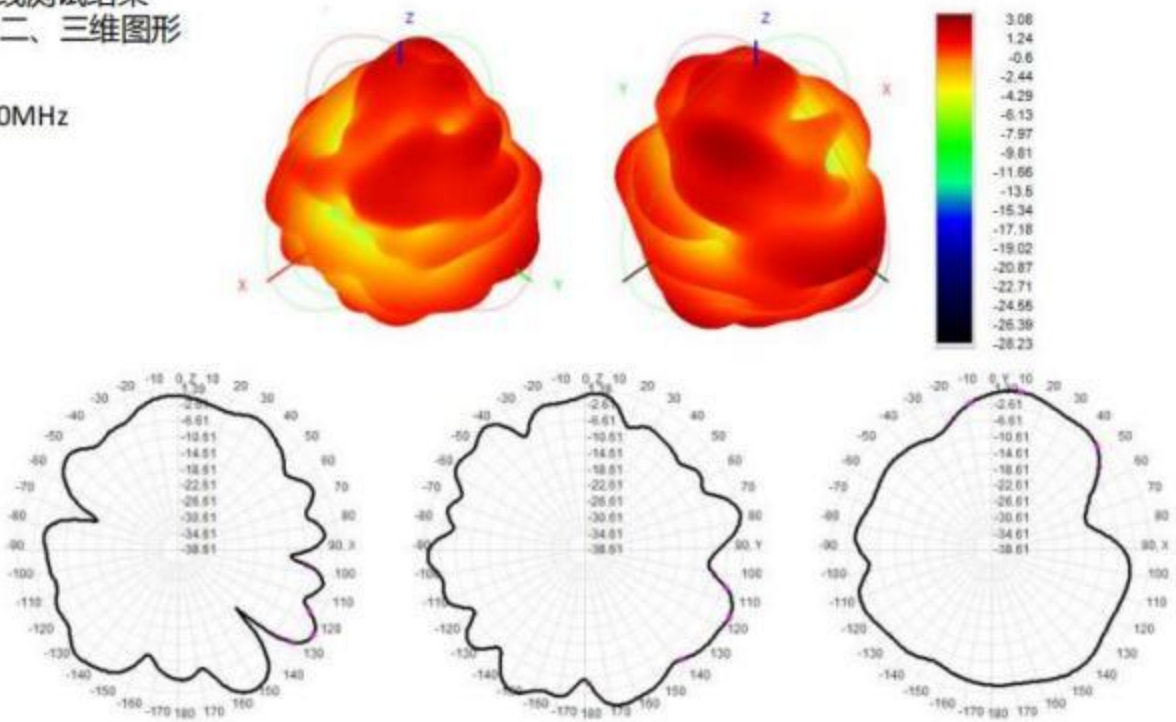
Frequency (MHz) (工作频段)	Efficiency (%) (效率)	Peak GAIN (dBi) (增益)
2400	53.6	3.05

2450	58.45	4.53
2500	60.04	5

方向图测试:

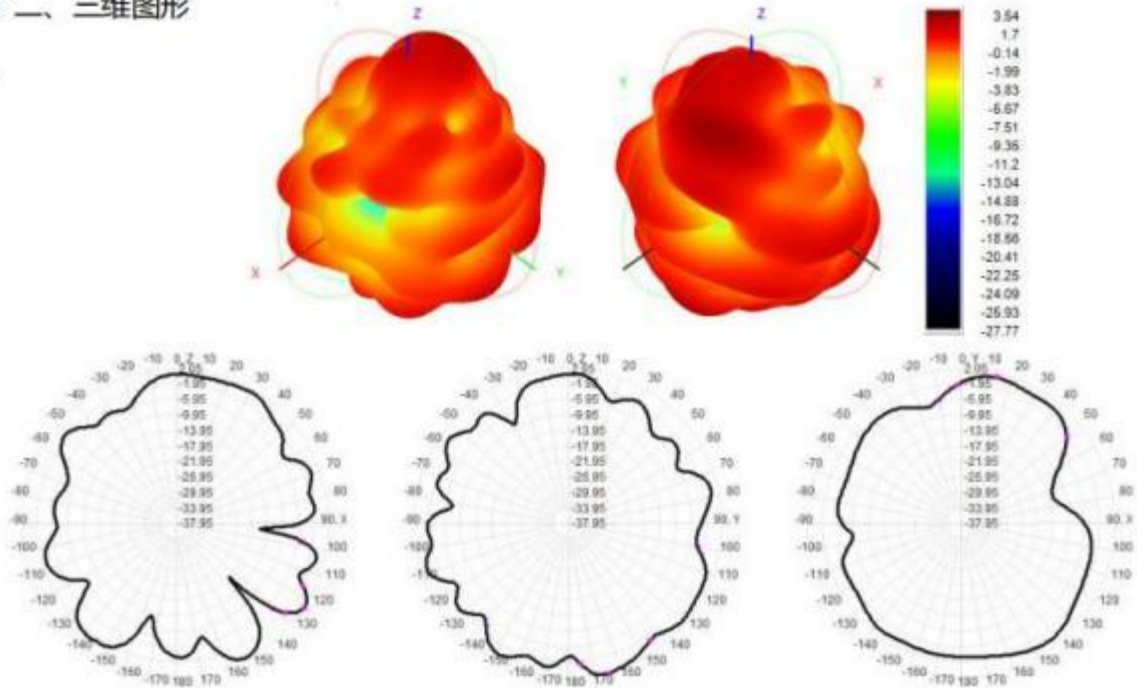
4、天线测试结果
4.3 二、三维图形

2400MHz



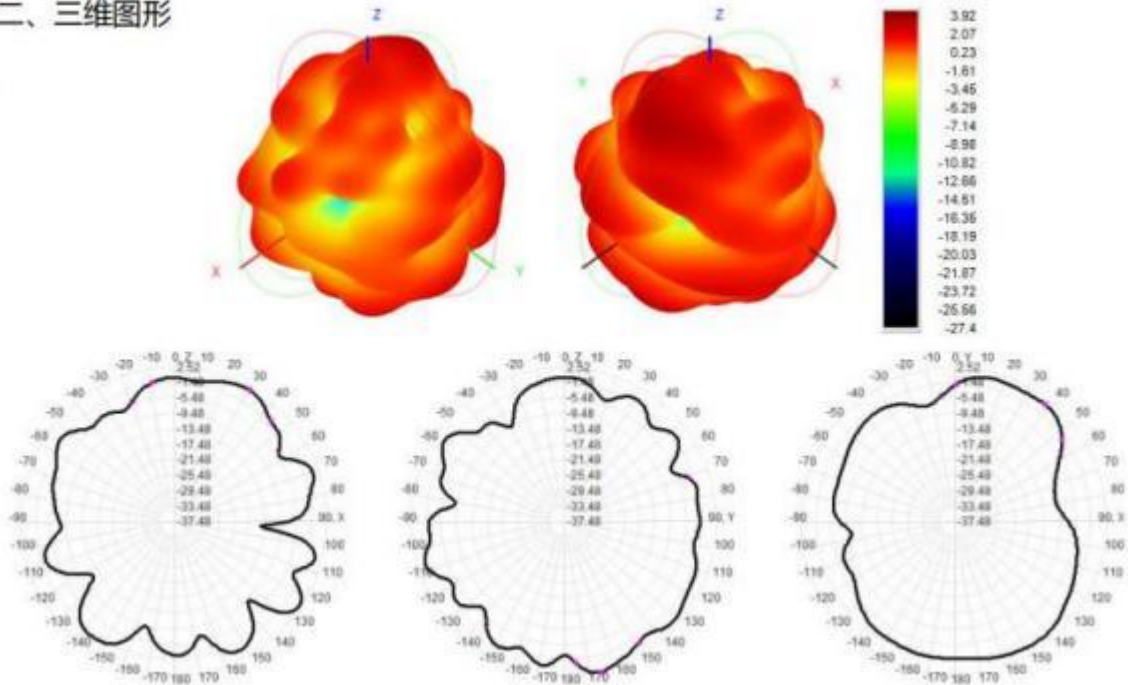
4、天线测试结果
4.3 二、三维图形

2450MHz



4、天线测试结果
4.3 二、三维图形

2500MHz



8. 产品实拍图Actual production drawing

