



东莞市仁丰电子科技有限公司

Dongguan RF Electronic Technology Co., Ltd

公司地址: 东莞市塘厦镇清湖头三坑工业区1号 电话: 0769-38940168 传真: 0769-39010966 网址: http://rflink.net.cn

承 认 书

SPECIFICATION FOR APPROVAL

客户名称

CUSTOMER NAME:

产品名称

PRODUCT NAME: 2.4/5GHz 3dBi FPC Antenna L=90mm+端子

客户料号

CUSTOMER P/N: 0.6g ± 0.5%

仁丰料号

Ren Feng P/N: RF11C02085S REV: A

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
CHECKED BY:	宋耀杰	
AUDITOR BY:	宋俊	
APPROVED BY:	工程专用章 黄超	
DATE:	2018-5-25	

供应商: 东莞市仁丰电子科技有限公司

地址: 东莞市塘厦镇清湖头三坑路1号

电话: 0769-38940168

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Contents

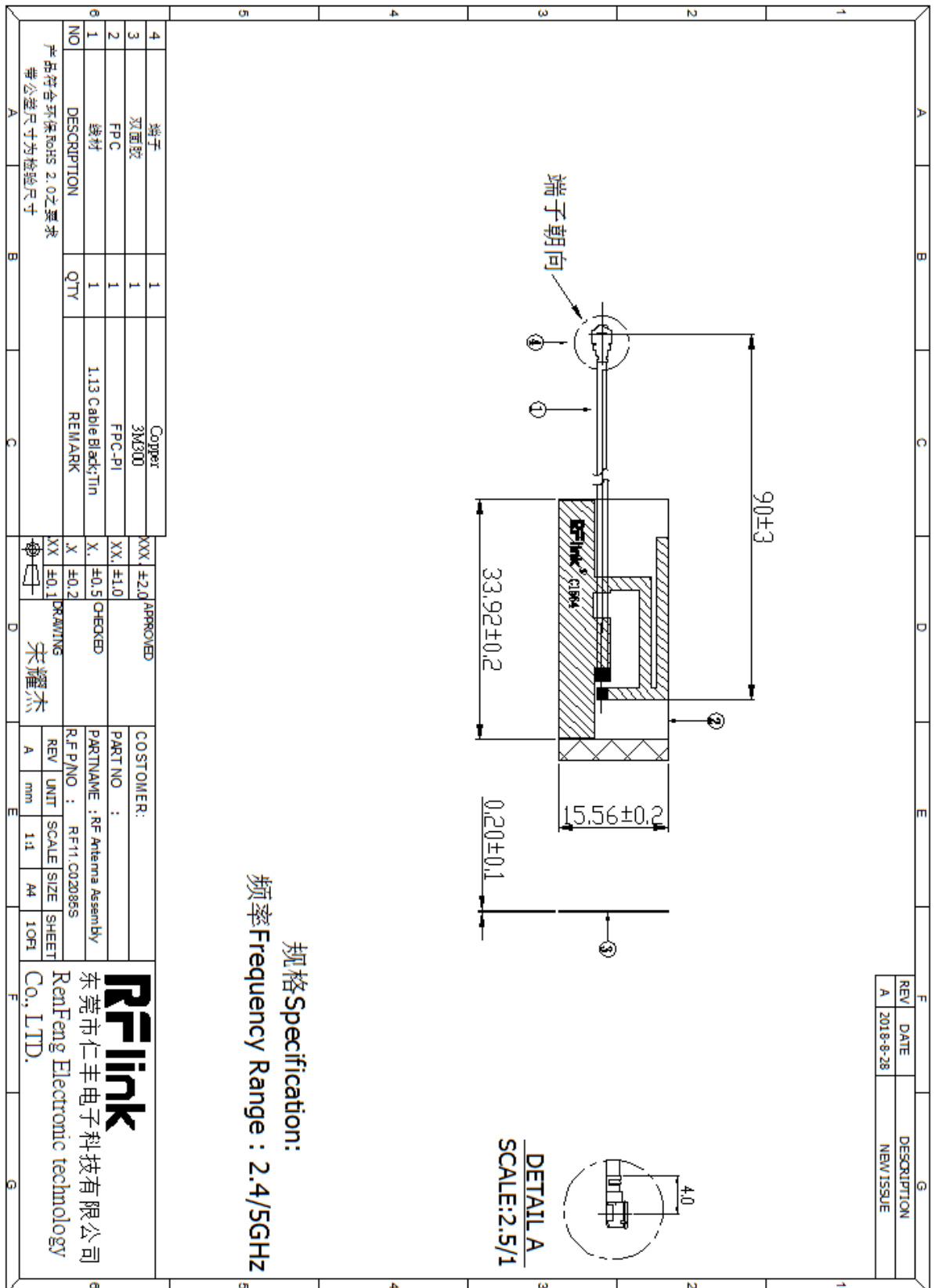
<i>Item</i>	<i>Description</i>
一、-----	规格表
二、-----	成品图/包装图
三、-----	测试报告
四、-----	ROHS/原材料清单
五、-----	可靠性测试

一、规格表：

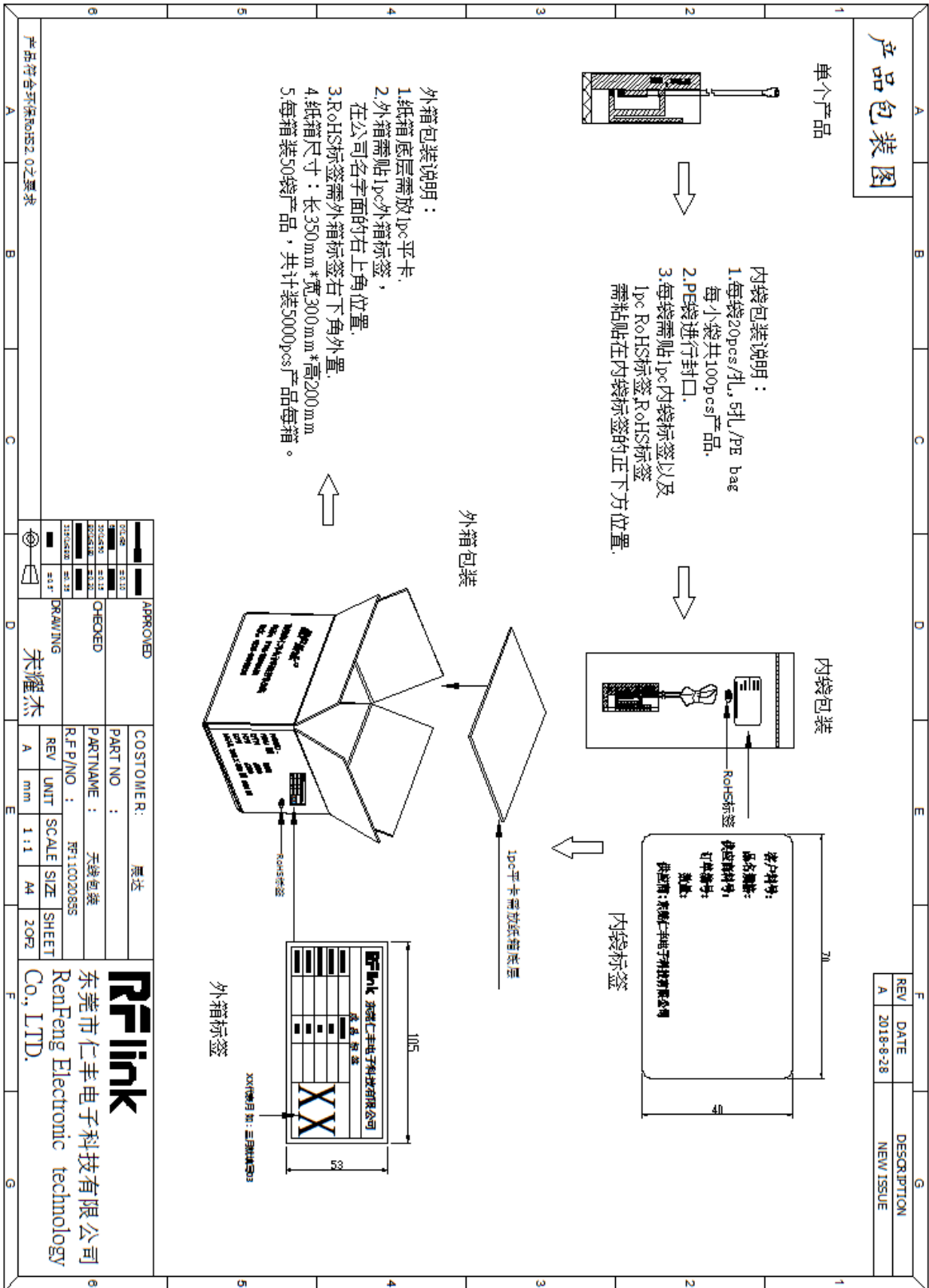
产品主要技术参数

主要技术指标		Main technical specifications	
频率范围 (MHZ)	2400~2500 5100~5900	Frequency Range (MHZ)	2400~2500 5100~5900
特性阻抗(Ω)	50	Impedance(Ω)	50
增益(dBi)	3 \pm 1.5	Peak Gain(dBi)	3 \pm 1.5
输出电压 驻波比	\leq 2.0	VSWR	\leq 2.0
极化方式	垂直极化	Polarization	Linear, Vertical
方向性	全向性	Radiation	Omni-directional
连接方式	Cable+端子	Connector Type	Cable+端子
物理性能		Physical Properties	
天线外套材料	FPC	Antenna cover	FPC
工作温度	-20 $^{\circ}$ C ~+70 $^{\circ}$ C	Operating Temp	-20 $^{\circ}$ C ~+70 $^{\circ}$ C
保存温度	-20 $^{\circ}$ C ~+70 $^{\circ}$ C	Storage Temp	-20 $^{\circ}$ C ~+70 $^{\circ}$ C

二、成品图：

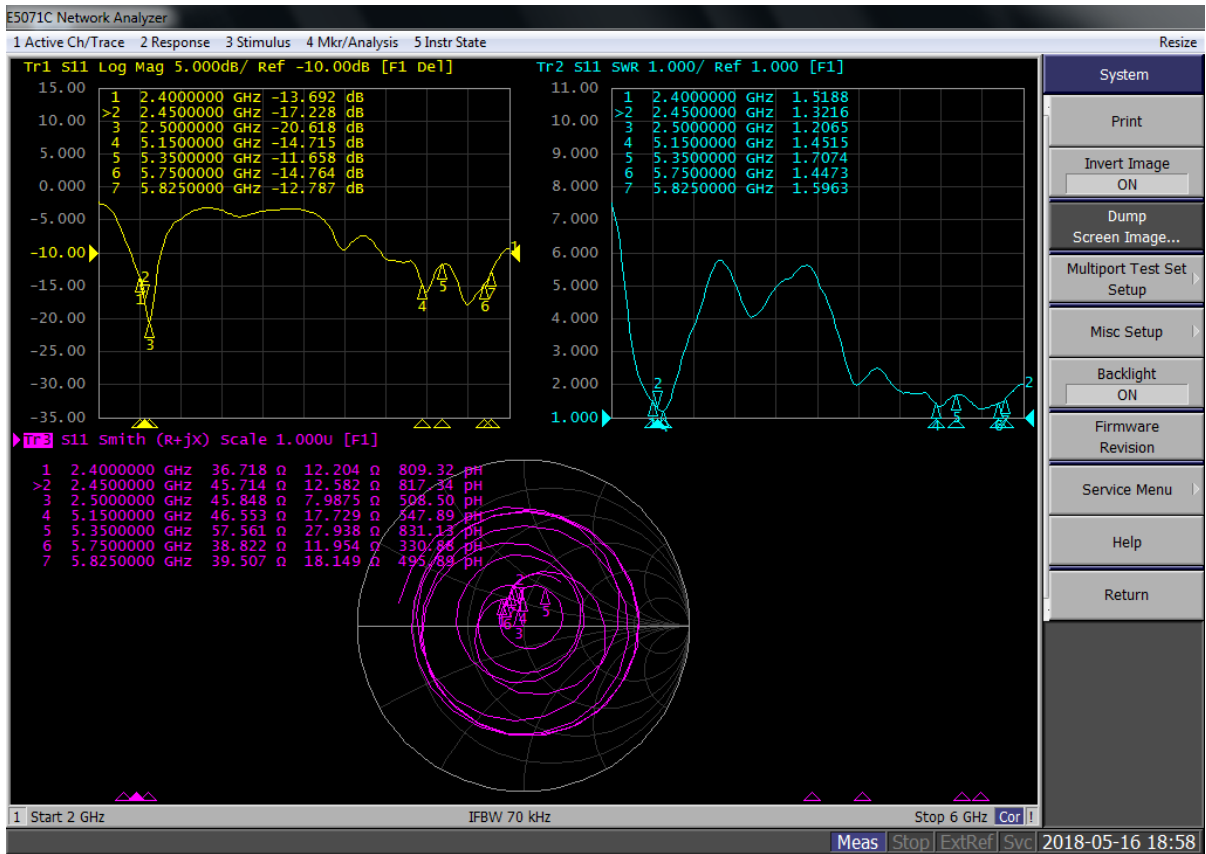


包装图：

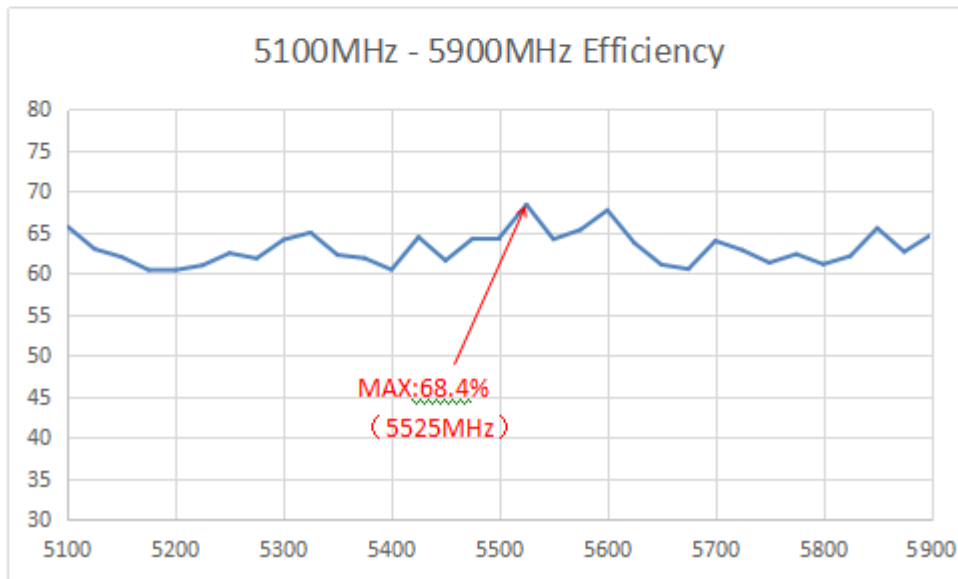
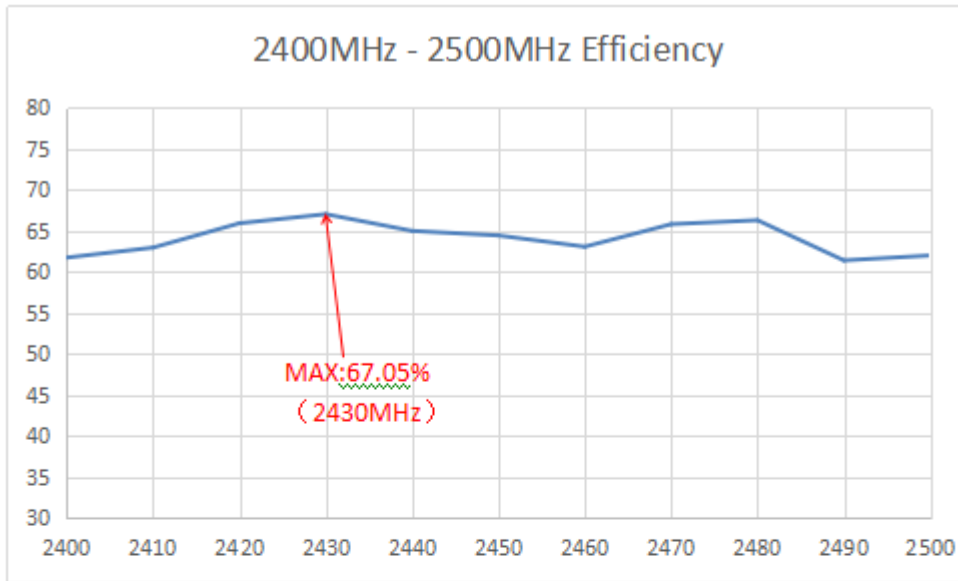


三、测试报告：

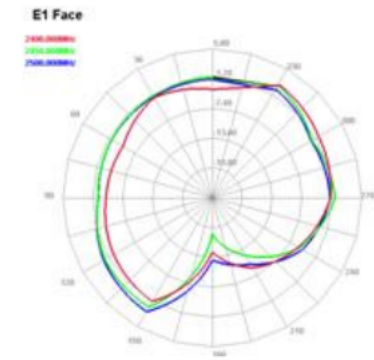
3.1: 网络分析仪测试报告



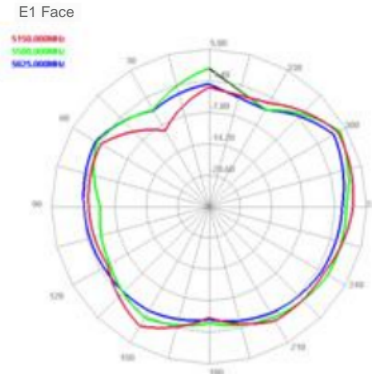
3.2: 暗室 2D、3DRaditation Pattern (带样机主板接 cable 测试)



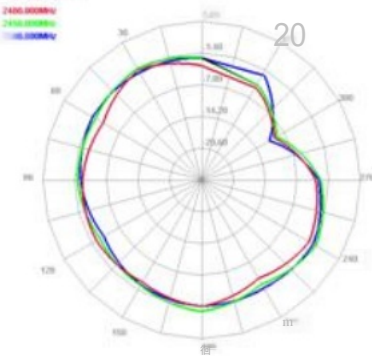
2.4G 高中低三个频点 X0Z面 (E1面) 增益图



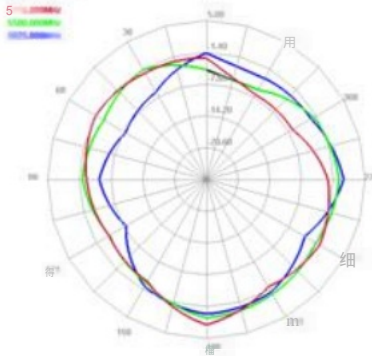
5G 高中低三个频点 X0Z面 (E1面) 增益图



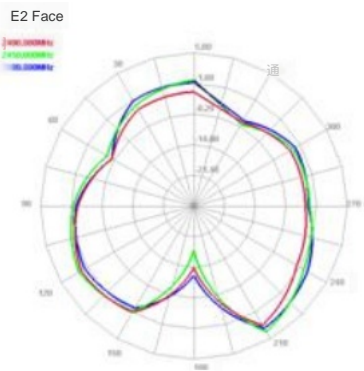
Horizontal



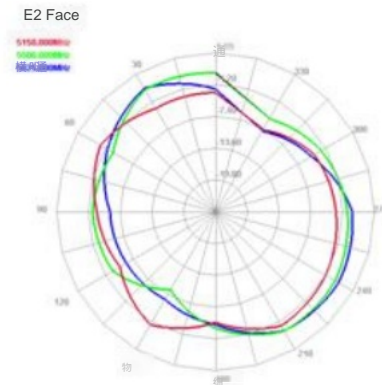
Horizontal



2.4G 高中低三个频点 X0Y面 (H面) 增益图



5G 高中低三个频点 X0Y面 (H面) 增益图



2.4G 高中低三个频点 Y0Z面 (E2面) 增益图

5G 高中低三个频点 Y0Z面 (E2面) 增益图

频点	增益	频点	增益
2.4G 低	2.7	5G低	3
2.4G中	2.9	5G中	2.6
2.4G高	3	5G高	2.8



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四、ROHS/原材料清单：

天线 RF11C02085S 符合 RoHS 要求。

组件编号	组件名称	原料组要材质	使用数量	单位	材料厂商	UL 认证编号	备注
1	1.13 线材	镀锡/FEP	1	pc	神宇/海联通	/	
2	FPC	PI	1	pc	东之羽/骏逸	/	
3	端子	铜	1	pc	科信成/彩美	/	

Laboratory Test Report

盐雾试验报告 (Salt fog Test Report)

厂商/客户 (Manufacturer / customer) : 展达 生产日期 (Date of manufacture) : 2019/3/21
 设备编号 (NO.): RF-YQ-027 测试日期 (Test date): 2019/3/21
 品名 (Part Name) : 内置天线 规格 (Specifications) : /
 料号 (Part No.) : RF11C02085A 盐雾浓度 (Salt fog concentration) : 5%

测试期间 (Testing Period) : 2019-3-21/15:00~15:30

测试项目 (Test Description) :
 1.外观检查 (Check the appearance of the product)
 3.盐雾测试 (Salt fog Test)
 3.外观检查 (Check the appearance of the product)

测试方法 (Test Method) :
 1.外观检查 (Check the appearance of the product)
 By visual inspection without noticeable rust.
 目视无生锈或其他不良。
 2.盐雾测试 (Salt Spray Test Report)
 The temperature control range of the test should be as follows: 10 RH ~55, precision = 3; salt solution concentration 5 % salt spray test machine, room temperature is 25 + 5, humidity 65 + 5%, test time according to the operation
 试验应使用温度控制范围可达: 10°C~55°C, 精度±3°C; 盐溶液浓度5%之盐水喷雾试验机, 室温为25°C±5°C, 湿度65±5% RH, 测试时间按照作业规范进行测试
 3.外观检查 (Check the appearance of the product)
 By visual inspection without noticeable rust.
 目视无生锈或其他不良。

测试结果 (Test Results) :
 1.外观检查 (Check the appearance of the product) PASS FAIL
 2.盐雾测试 (Salt fog Test) PASS FAIL
 3.外观检查 (Check the appearance of the product) PASS FAIL

测试项目 (Test Description) :
 1.产品外观检查(Check the appearance of the product) Standard : See Test Method 数量 (Quantity) : 3 PCS

NO.	sample-1	sample-2	sample-3	sample-4	sample-5
Result	PASS	PASS	PASS	/	/

Conclusion : PASS FAIL

2.盐雾测试 (Salt Spray Test Report) Standard : See Test Method 数量 (Quantity) : 3 PCS

NO.	sample-1	sample-2	sample-3	sample-4	sample-5
Result	PASS	PASS	PASS	/	/

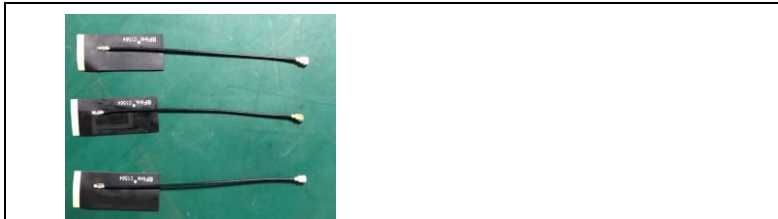
Conclusion : PASS FAIL

3.检验产品外观 (Check the appearance of the product) Standard : See Test Method 数量 (Quantity) : 3 PCS

NO.	sample-1	sample-2	sample-3	sample-4	sample-5
Result	PASS	PASS	PASS	/	/

Conclusion : PASS FAIL

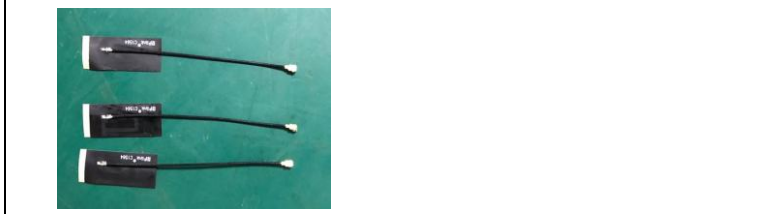
测试照片 (Test Photos) :



Step 1. Check the appearance of the product (检查产品外观).



Step 2. Salt Spray Test Report (盐雾测试)



Step 3. Check the appearance of the product (检查产品外观).

~ ~ The End Of Test Report ~ ~

Approved : _____ Checked : _____ Tester : 王艳春

Laboratory Test Report

高低温测试报告 (High and low temperature test Report)

厂商/客户 (Manufacturer / customer) **展达** 生产日期 (Date of manufacture) : **2019/3/21**

设备编号 (NO.): **RF-YQ-032** 测试日期 (Test date): **2019/3/21**

品名 (Part Name) : **内置天线** 规格 (Specifications) : **/**

料号 (Part No.) : **RE11C02085S** 高温(high temperature) : **80°C** 时间(time): **12H**

湿度 (humidity) : **90RH** 低温 (low temperature) : **-40°C** 时间(time): **12 H**

循环 (Through the bad) : **1** 测试期间 (Testing Period) : **2019-3-21/15:00~2019-3-22/15:00**

测试项目 (Test Description) :

- 1.外观检查 (Check the appearance of the product)
- 2.高低温测试 (High and low temperature test)
- 3.外观检查 (Check the appearance of the product)

测试方法 (Test Method) :

- 1.外观检查 (Check the appearance of the product)
By visual inspection without noticeable rust.
目视无生锈或其他不良。
- 2.高低温测试 (High and low temperature test)
Set parameters, products will be tested into constant temperature and humidity inside the instrument, shut the door, open the test box lamp switch, through the observation window light to check the test place, select the controller operation indication screen, according to the operation button, the machine began to work until the specified time to complete the beta test can be taken out

设定好参数，将待测产品放入恒温恒湿仪器内，关好箱门，打开试验箱灯开关，通过视窗观测灯检查被测试物放置情况，选择控制器运转表示画面，按运转键，机器开始工作，待到规定时间内测试完成即可取出

- 3.外观检查 (Check the appearance of the product)
No distortion, discoloration, splitting, blistering and so on
目视无变形、变色、裂开、起泡等外观不良

测试结果 (Test Results) :

1.外观检查 (Check the appearance of the product)	■	PASS	□	FAIL
2.高低温测试 (High and low temperature test)	■	PASS	□	FAIL
3.外观检查 (Check the appearance of the product)	■	PASS	□	FAIL

测试项目 (Test Description) :

1..产品外观检查(Check the appearance of the product) 数量 (Quantity) : **3** **PCS**
Standard : See Test Method

Test Result

NO.	sample-1	sample-2	sample-3	sample-4	sample-5		
Result	PASS	PASS	PASS	/	/		
Conclusion		:		■	PASS	□	FAIL

2.高低温测试 (High and low temperature test) 数量 (Quantity) : **3** **PCS**
Standard : See Test Method

Test Result

NO.	sample-1	sample-2	sample-3	sample-4	sample-5		
Result	PASS	PASS	PASS	/	/		
Conclusion		:		■	PASS	□	FAIL

3.检验产品外观 (Check the appearance of the product) 数量 (Quantity) : **3** **PCS**
Standard : See Test Method

Test Result

NO.	sample-1	sample-2	sample-3	sample-4	sample-5		
Result	PASS	PASS	PASS	/	/		
Conclusion		:		■	PASS	□	FAIL

测试照片 (Test Photos) :



Step 1.产品外观检查图片 (Product appearance inspection picture).



Step 2.测试图片 (Test picture)



Step 1.产品外观检查图片 (Product appearance inspection picture).

~ ~ The End Of Test Report ~ ~

Approved :

Checked :

Tester : **王艳春**

Laboratory Test Report

拉力测试报告 (Tensile test report)

厂商/客户 (Manufacturer / customer) **展达** **生产日期 (Date of manufacture)** **2019/3/21**
设备编号 (NO.): **RF-YQ-016** **测试日期 (Test date):** **2019/3/21**
品名 (Part Name) : **内置天线** **规格 (Specifications) :** **/**
料号 (Part No.) : **RF11C02085S** **拉力标准 (Pull the standard)** **> 0.7kg**
测试期间 (Testing Period) : **2019-3-21/17:00~17:30** **测试位置 (Test location)** **线材与FPC板之间**
测试项目 (Test Description) :

- 1.外观检查 (Check the appearance of the product)
- 2.拉力测试 (tensile test)
- 3.外观检查 (Check the appearance of the product)

测试方法 (Test Method) :

- 1.外观检查 (Check the appearance of the product)
Visual no fall or copper wire and other bad
目视无脱落或者掉铜丝等不良。
- 2.拉力测试 (tensile test)
Adjust the height of the upper and lower crossarm to make the fixture spacing appropriate,
clamp the upper end of the specimen with the upper clamp, press the reset button to make the pointer reset to zero, press the lock switch of the tension meter pointer, clamp the lower end of the specimen with the lower clamp, rotate 调整上、下横担之高度,使夹具间距适当,用上夹具夹紧试件之上端,按下归零按键使指针归零,按下拉力计指针锁定开关,用下夹具夹紧试件之下端,旋转手论使下横担下降以拉伸试件,由拉力计上读取拉力值并记录。
- 3.外观检查 (Check the appearance of the product)
Visual no fall or copper wire and other bad
目视无脱落或者掉铜丝等不良。

测试结果 (Test Results) :

- 1.外观检查 (Check the appearance of the product) **PASS** **FAIL**
- 2.拉力测试 (tensile test) **PASS** **FAIL**
- 3.外观检查 (Check the appearance of the product) **PASS** **FAIL**

测试项目 (Test Description) :

1..产品外观检查(Check the appearance of the product) **数量 (Quantity) :** **2** **PCS**
 Standard : See Test Method

Test Result

NO.	sample-1	sample-2	sample-3	sample-4	sample-5
Result	PASS	PASS	/	/	/

Conclusion : **PASS** **FAIL**

2.拉力测试 (tensile test) **数量 (Quantity) :** **2** **PCS**
 Standard : See Test Method

Test Result

NO.	sample-1	sample-2	sample-3	sample-4	sample-5
Result	1.25kg	1.54kg	/	/	/

Conclusion : **PASS** **FAIL**

3.检验产品外观 (Check the appearance of the product) **数量 (Quantity) :** **2** **PCS**
 Standard : See Test Method

Test Result

NO.	sample-1	sample-2	sample-3	sample-4	sample-5
Result	/	/	/	/	/

Conclusion : **PASS** **FAIL**

测试照片 (Test Photos) :



Step 1. 产品外观检查 (Product appearance inspection)



Step 2. 测试图片 (Test picture)



Step 3. 产品外观检查 (Product appearance inspection)

~ ~ The End Of Test Report ~ ~

Approved :

Checked :

Tester : 王艳春

Laboratory Test Report

拉力测试报告 (Tensile test report)

厂商/客户 (Manufacturer / customer) **展达** 生产日期 (Date of manufacture) 2019/3/21

设备编号 (NO.): RF-YQ-016 测试日期 (Test date): 2019/3/21

品名 (Part Name) : 内置天线 规格 (Specifications) : /

料号 (Part No.) : RF11C02085S 拉力标准 (Pull the standard) > 0.7kg

测试期间 (Testing Period) : 2019-3-21/16:30~17:00 测试位置 (Test location) 线材与端子之间

测试项目 (Test Description) :

- 外观检查 (Check the appearance of the product)
- 拉力测试 (tensile test)
- 外观检查 (Check the appearance of the product)

测试方法 (Test Method) :

- 外观检查 (Check the appearance of the product)
Visual no fall or copper wire and other bad
目视无脱落或者掉铜丝等不良。
- 拉力测试 (tensile test)
Adjust the height of the upper and lower crossarm to make the fixture spacing appropriate,
clamp the upper end of the specimen with the upper clamp, press the reset button to make the pointer reset to zero, press the lock switch of the tension meter pointer, clamp the lower end of the specimen with the lower clamp, rotate 调整上、下横担之高度,使夹具间距适当,用上夹具夹紧试件之上端,按下归零按键使指针归零,按下拉力计指针锁定开关,用下夹具夹紧试件之下端,旋转手论使下横担下降以拉伸试件,由拉力计上读取拉力值并记录。
- 外观检查 (Check the appearance of the product)
Visual no fall or copper wire and other bad
目视无脱落或者掉铜丝等不良。

测试结果 (Test Results) :

1.外观检查 (Check the appearance of the product)	■	PASS	□	FAIL
2.拉力测试 (tensile test)	■	PASS	□	FAIL
3.外观检查 (Check the appearance of the product)	□	PASS	□	FAIL

测试项目 (Test Description) :

1..产品外观检查(Check the appearance of the product) 数量 (Quantity) : 3 PCS
Standard : See Test Method

Test Result

NO.	sample-1	sample-2	sample-3	sample-4	sample-5
Result	PASS	PASS	PASS	/	/
Conclusion		■	PASS	□	FAIL

2.拉力测试 (tensile test) 数量 (Quantity) : 3 PCS
Standard : See Test Method

Test Result

NO.	sample-1	sample-2	sample-3	sample-4	sample-5
Result	1.98kg	2.05kg	1.9kg	/	/
Conclusion		■	PASS	□	FAIL

3.检验产品外观 (Check the appearance of the product) 数量 (Quantity) : 3 PCS
Standard : See Test Method

Test Result

NO.	sample-1	sample-2	sample-3	sample-4	sample-5
Result	/	/	/	/	/
Conclusion		□	PASS	□	FAIL

测试照片 (Test Photos) :



Step 1. 产品外观检查 (Product appearance inspection)



Step 2. 测试图片 (Test picture)



Step 3. 产品外观检查 (Product appearance inspection)

~ ~ The End Of Test Report ~ ~

Approved :

Checked :

Tester : 王艳春