



宁波立捷电子有限公司

Ningbo LiJie Electronics Co., Ltd

承认书

APPROVAL SHEET

客户名称 Customer Name Shining 3D Tech Co., Ltd.

产品型号 Product Model WIFI antenna 3: band 5150-5850MHz; FPC coated with black oil with adhesive backing+RF1.13MM black coaxial cable+MHF I generation terminal cable length 40mm

客户料号 Customer P/N立捷 /

料号 Lijie P/N LJ89SAWF003R

制作日期 Date Prepared 2022-09-15

制作版本 Revision A/0

立捷电子 (LJICT)		
制作 (Prepare)	审核 (Checked)	核准 (R&D)
客户 (Customer)		
承办人(Responsible)	审核 (Checked)	批准 (APPROVED)

制造厂商 Manufacturer: 宁波立捷电子有限公司 Ningbo LiJie Electronics Co., Ltd

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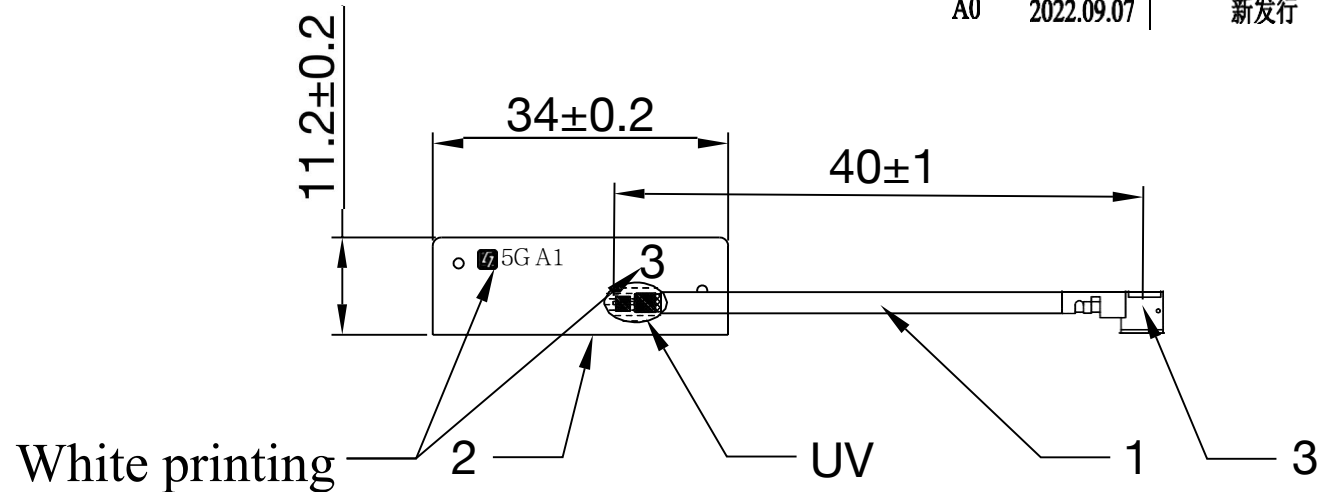
手机(Mob): +86 18126545121

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REV.	DATE	DESCRIPTION	OWNER
A0	2022.09.07	新发行	ZHANG



NOTES:

1. Electrical:
 - 1.1 Impedance: 50 OHM;
 - 1.2 Fequency: 5150-5850MHz;
 - 1.3 VSWR: <3.0;
 - 1.4 Gain:<1.6dBi;
 - 1.5 Max Power:50W.
 - 1.6 Polarization: Horizontal.
 - 1.7 Azimuch:Omni-directional
2. Enviromental:
 - 2.1 Storage Temperature Range: -40 TO +85.
 - 2.2 Operating Temperature Range: -40 TO +85.
- 3.All Materials Must Meet & Shall RoHS Request.2.4G/5G antenanal 1.13 black coaxial cable L=40MM

SHEET: OF

TOLERANCES UNLESS OTHERWISE SPECIFIED		
ONE PLACE DECIMAL	.X	±0.2
TWO PLACE DECIMAL	.XX	±0.1
THREE PLACE DECIMAL	.XXX	±0.05
HOLE DIA. VARIATION	.XX	N/A
ANGULAR DIMENSION (ENG)		N/A

3	terminal	MHF I generation terminal with RG1.13 coaxial cable, Rohs	1
2	FPC	Base material is PI, electrolytic copper, covered with black oil, backed with 3M300	1
1	coaxial cable	50Φ1.13mm coaxial cable, black, cable length 40MM	1
Item	SPEC	SPEC	QTY

TITLE	2.4G/5G antenna 1.13 black coaxial cable L=40MM		UNIT	m/m
ORD. NO.	LJ89SAWF003R	MODEL NO.		
BOM NO.	LJ89SAWF003R	SCALE	FREE	1 1
CUSTOMER PART NO.		DWG NO.	CAD21-07-041	

APPROVE	CHECKED	DRAWN



宁波立捷电子有限公司

CUSTOMER

SHINING3D

5G Antenna Test Report

Customer	先临三维 SHINING3D
Project	AOS4
Antenna Revision	A1
Product Description	FPC+Cable+MHF I
Product No	

Purpose

This report is to measure the performance of **LJ 5G WIFI antenna** for **先临三维-AOS4** Shining3D- AOS4. All test date **are showed as below**

Content

- 1: Product Overview & Dimension
- 2: Test Result
 - 2.1 Antenna Matching Network
 - 2.2 VSWR
 - 2.3 GAIN & Efficiency
 - 2.4 Radiation Pattern
 - 2.5 OTA
- 3: Antenna Assembly Method

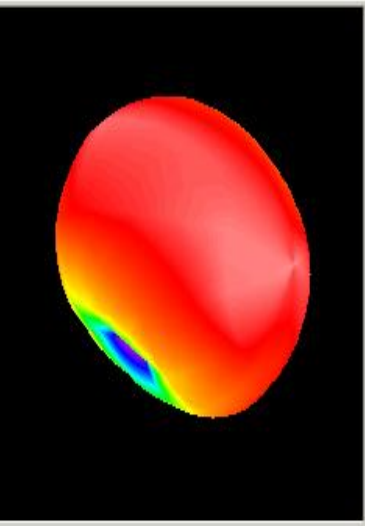
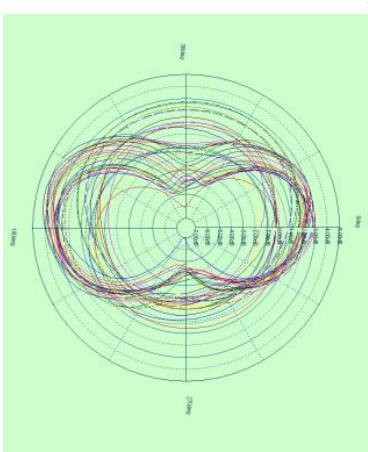


1. Product Overview & Dimension

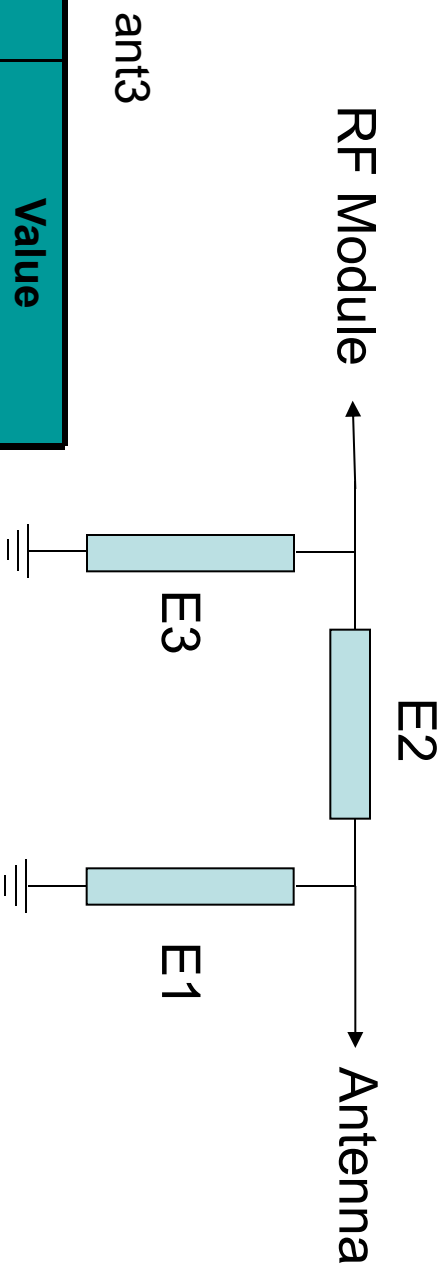


2. Test System

Sequence Number	Test Item	equipment
1. S parameter	VSWR	Agilent 5071C
2. OTA Test	TRP&TIS	Agilent 8960 E5515C& Agilent 4438C&CMW500 & CMW270 GTS
3. Gain & Efficiency	Gain & Efficiency	GTS Agilent 5071C



2.1 Antenna Matching Network

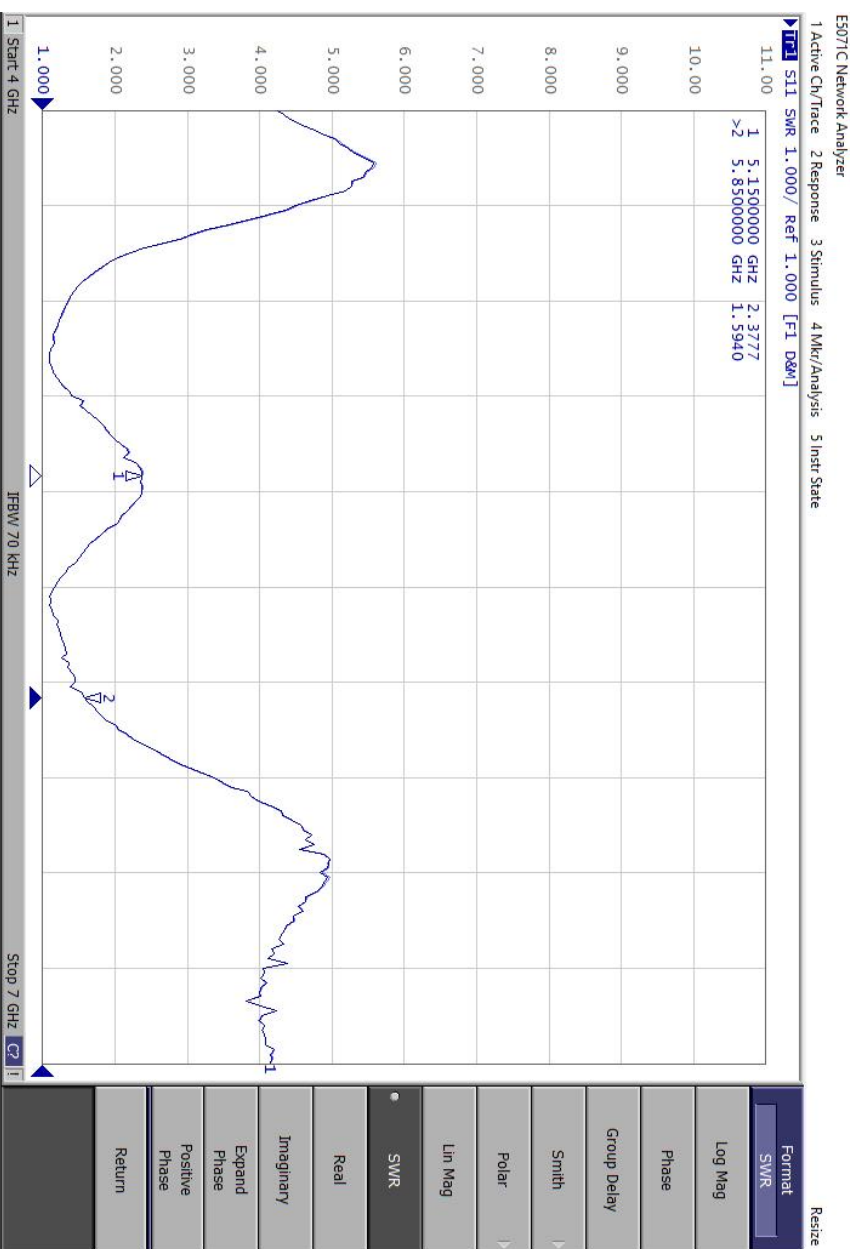


Element	Value
E1(0402)	NC
E2(0402)	0 Ω
E3(0402)	NC

No change in antenna matching

2.2 VSWR

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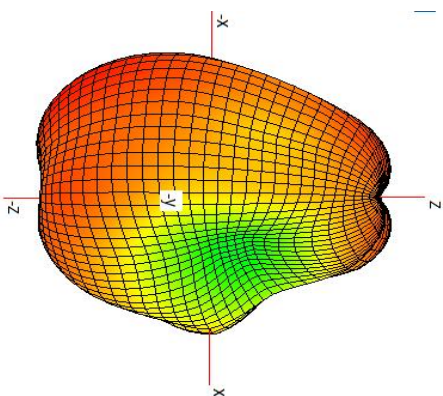
Freq. (MHz)	5150	5850
VSWR	2.37	1.59

2.3 GAIN & Efficiency

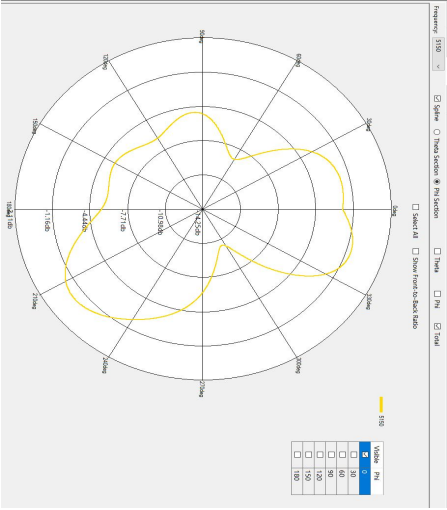
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Freq. (MHz)	Effi. (dB)	Effi. (%)	Gain(dBi)
5150	-3.84	41.29	-1.1
5200	-3.78	41.88	-0.75
5250	-3.79	41.8	0.04
5300	-3.61	43.53	0.58
5350	-3.46	45.07	0.82
5400	-3.35	46.29	0.88
5450	-3.54	44.26	0.73
5500	-3.59	43.75	0.57
5550	-3.48	44.88	0.85
5600	-3.45	45.21	1.2
5650	-3.41	45.63	1.33
5700	-3.41	45.6	1.59
5750	-3.41	45.58	1.36
5800	-3.81	41.62	0.73
5850	-4.05	39.35	0.36

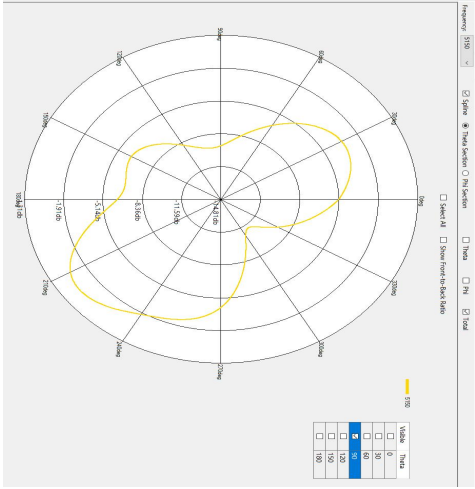
2.4 Radiation Pattern



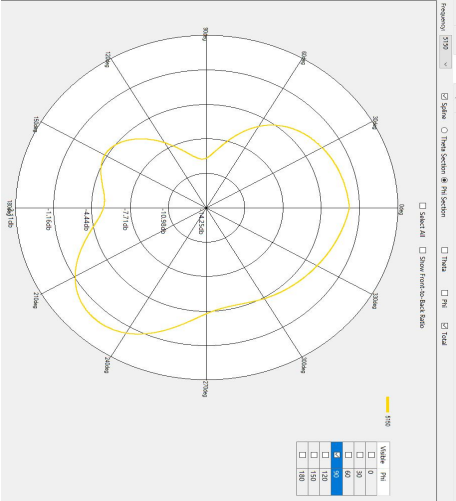
5150MHz



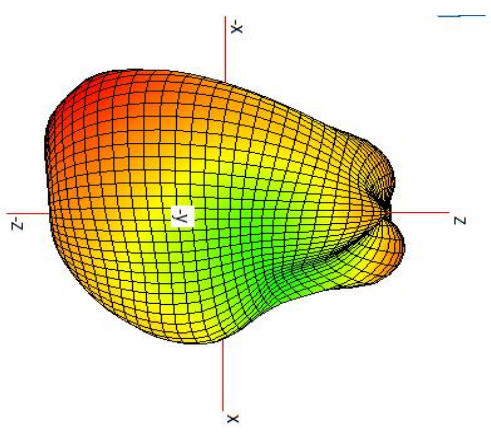
5150MHz(XOZ)



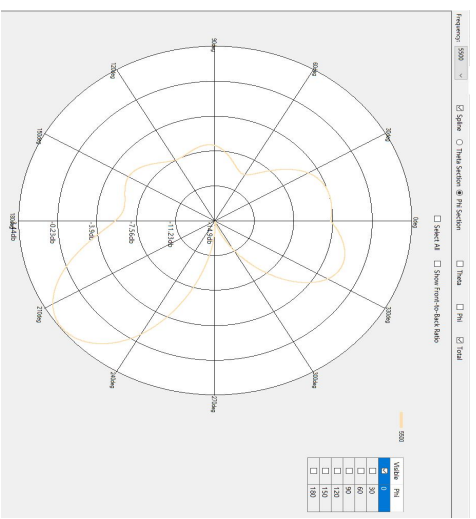
5150MHz(XOY)



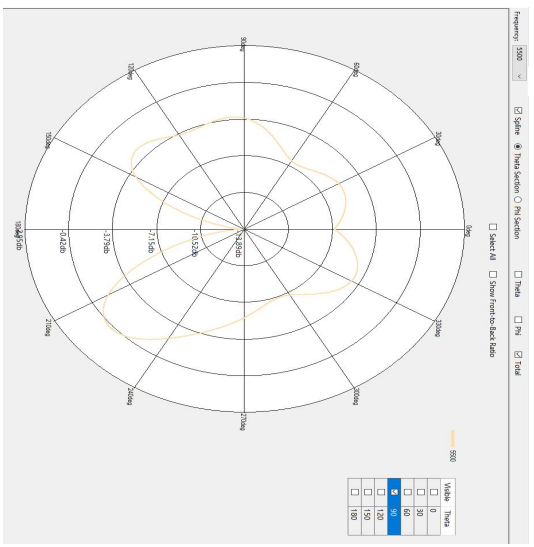
5150MHz(YOZ)



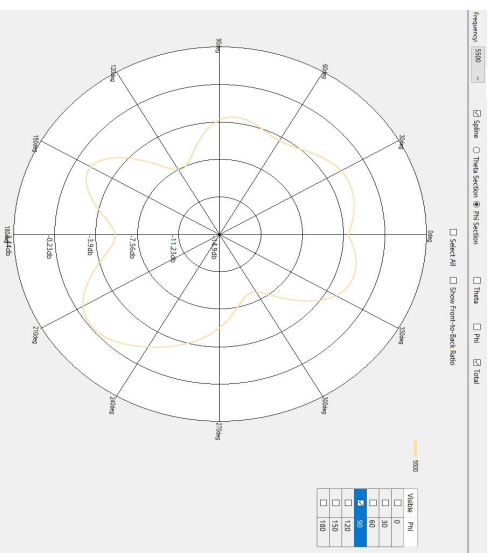
5500MHZ



5500MHZ(XOZ)



5500MHZ(XOY)



5500MHZ(YOZ)

2.5 OTA

ant3

Band	Channel	TRP	Channel	TIS
11A	36	17.27	36	-72.05
	149	17.69	149	-69.54
	157	16.64	157	-69.66
	165	16.29	165	-69.08

ant4

Band	Channel	TRP	Channel	TIS
11A	36	17.09	36	-71.16
	149	16.79	149	-70.98
	157	16.15	157	-71.56
	165	16.48	165	-71.06

合路

Band	Channel	TRP	Channel	TIS
11A	36	20.26	36	-74.0
	149	20.29	149	-72.52
	157	19.52	157	-73.83
	165	19.31	165	-72.29



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拉力测试报告 PULLING FORCE TEST REPORT

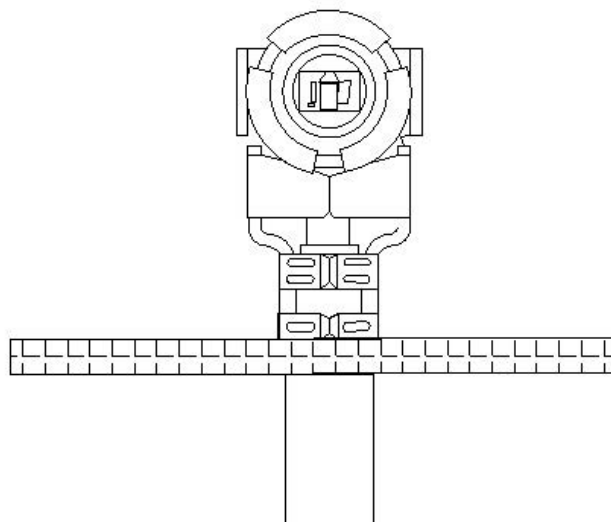
客户 Customer: Shining 3D Tech Co., Ltd.

品名 Part Number: LJ89SAWF003R

订单号 Order: Sample

日期 Date: 2022.09.15

测试条件 Test conditions	拉力 Snap force	拉力标准 Pull force	1Kg
		时间 Time	1 minute
		使用设备 Equipment	Pulling Tester



测试部位
Test position

SMA CONNECTOR

测试结果 Test results.

样品编号 Sample No	测试标准 Test Standard		判定 Decided
	Cable Appearance	Electric Test	
1	No damaged	No open and no short circuit	Pass
2	No damaged	No open and no short circuit	Pass
3	No damaged	No open and no short circuit	Pass
4	No damaged	No open and no short circuit	Pass
5	No damaged	No open and no short circuit	Pass

备注 Remarks:

The Pulling Force Test Weight Load 1Kg/min.

核准 Approved By: 侯卫红

作成 checked By: 郑九龙

Date: 2022.09.15

Date: 2022.09.15



宁波立捷电子有限公司

样品检验报告 Sample Inspection Report

客 户/CUSTOMER: Shining 3D Tech Co., Ltd. 日 期 /DATE: 2022.09.15

料 号/PART NO.: LJ89SAWF003R 数 量/QTY: 5 PCS

结论/CONCLUSION

合格/PASS ☒

不合格/FAIL ☐

一. 外观检验(Appearance Inspection):

检验项目	检验结果	PASS	FAIL
1.外观(Appearance)	良好	☒	☐
2.结构描述(Construction)	WIFI天线3: 频段5150-5850MHz; FPC覆黑油带背胶 +RF1.13MM黑色同轴线+MHF I 代端子线长40mm	☒	☐

二. 电气特性测试 (Electric Characteristic Inspection):

测试项目(Test Item)	测试条件(Test Condition)	PASS	FAIL
1. 导通测试(Continuity Test)	0.5Ω	☒	☐
2. 耐压测试(Withstand Voltage)	DC 500V/ AC300 V	☒	☐
3. 绝缘阻抗(Insulation Resistance)	20MΩ	☒	☐
4. 导通阻抗(Conductive Resistance)	0.5Ω	☒	☐
5. VSWR:	≤3.0	☒	☐

三. 机械特性测试(Mechanical Characteristic Inspection): 有 ☒ 无 ☐

测试项目(Test Item)	测试条件(Test Condition)	测试结果	PASS	FAIL
吊拉力	1Kg/min	OK	☒	☐

四. 尺寸检验(Dimension Inspection):

规格值Spec(Unit:mm)		实测值范围Actual Range (Unit:mm)					PASS	FAIL
		样品1	样品2	样品3	样品4	样品5		
1	40±1	40.00	40.15	40.09	39.10	39.04	☒	☐
2	34±0.2	34.15	34.03	34.08	34.02	34.00	☒	☐
3	11.2±0.2	11.25	11.20	11.20	11.22	11.16	☒	☐
4								
5								
6								
7								
8								
9								
10								

核准Approve :

审核 Audit:

制表 Compie :