



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

地址(Add): 浙江省宁波市鄞州区投资创业中心启明路599号启发工业城

Inspire Industrial City, No.599 Qiming Road, Investment and

Entrepreneurship Center, Yinzhou District, Ningbo City, Zhejiang Province

电话(Tel): +86 574 88025737

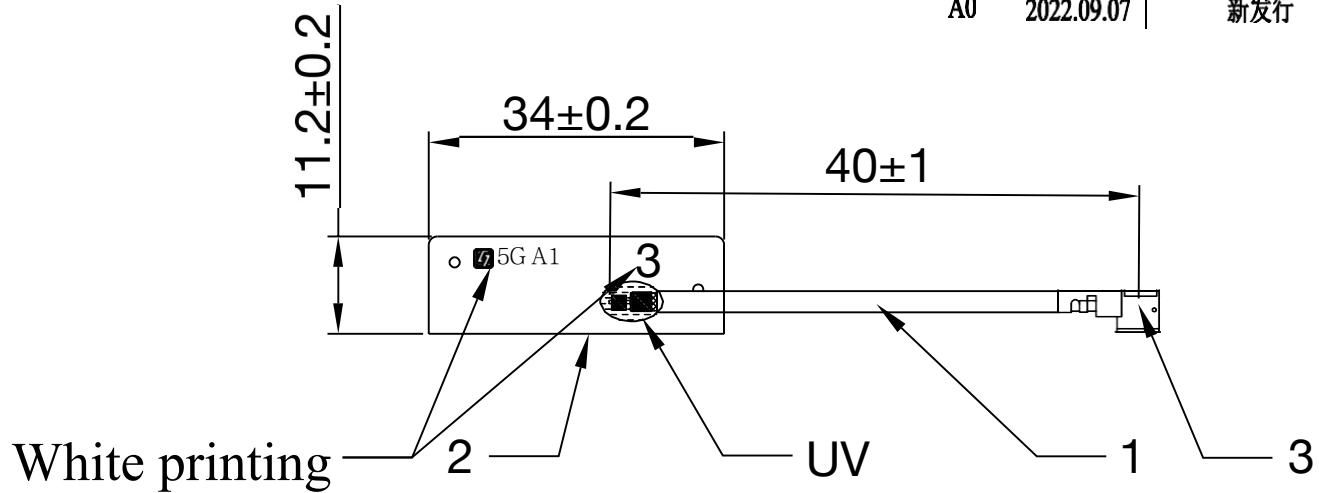
手机(Mob): +86 18126545121

目 录

Index

1、 Cover Page.....	1
2、 Index.....	2
3、 Engineering drawings.....	3
4、 Performance Test Report.....	4
5、 Tensile force test report.....	5
6、 Inspection Report.....	6

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 antenna 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	50φ 1.13mm 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



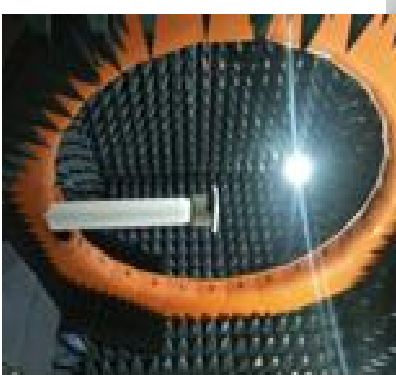
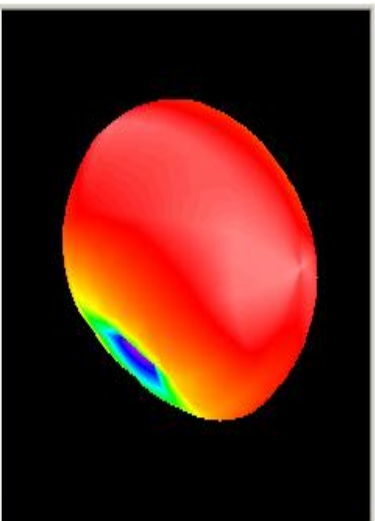
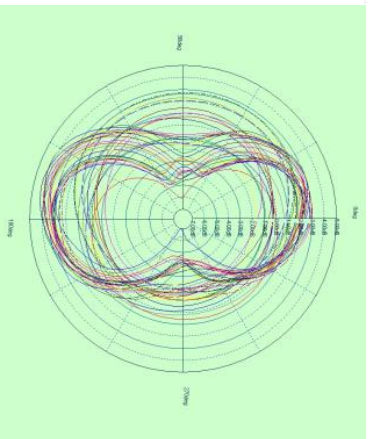
1. Product Overview & Dimension



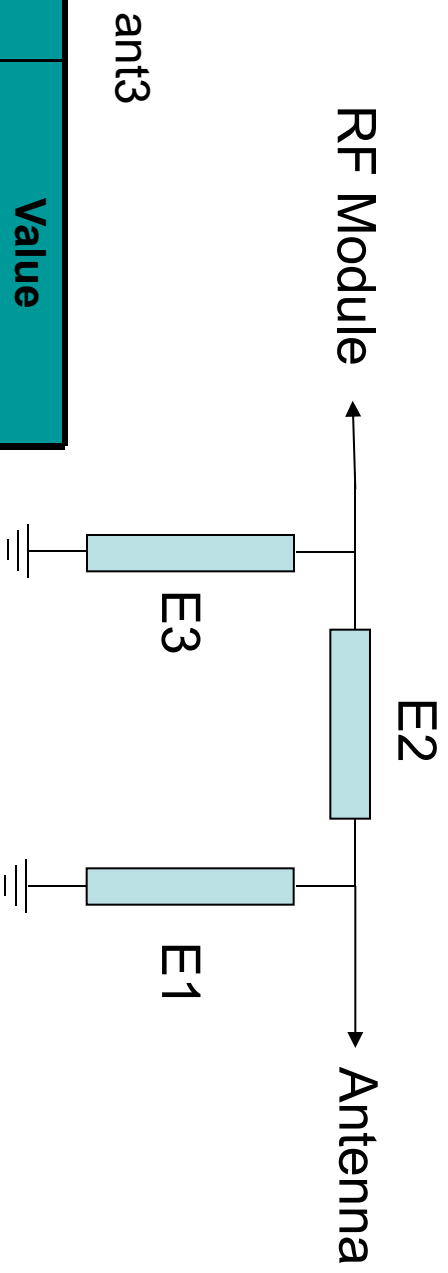


2. Test System

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



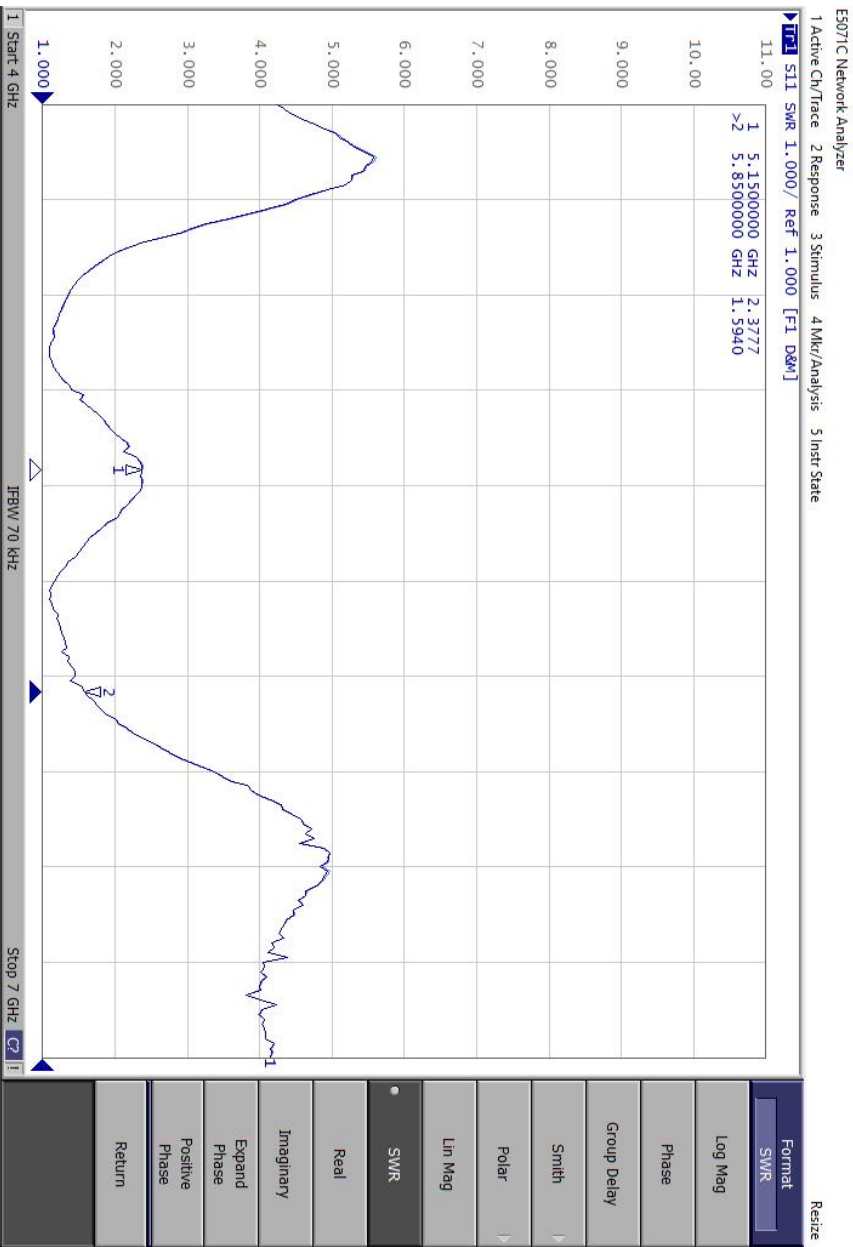
Element	Value
E1(0402)	NC
E2(0402)	0Ω
E3(0402)	NC

No change in antenna matching



2.2 VSWR

ant3



Freq. (MHz)	5150	5850
VSWR	2.37	1.59

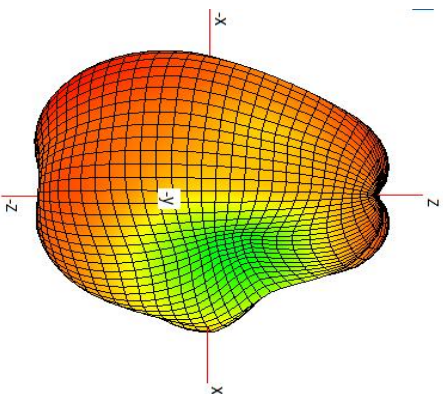


2.3 GAIN & Efficiency

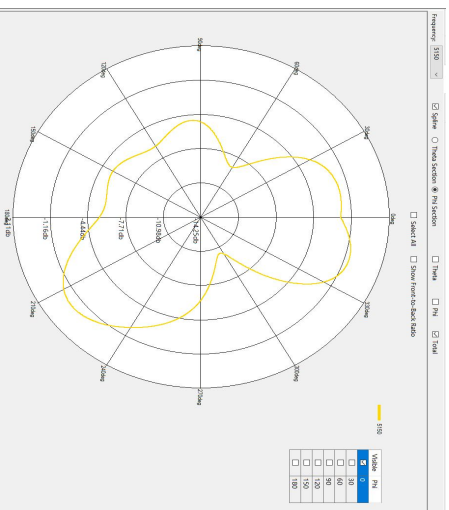
ant3

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

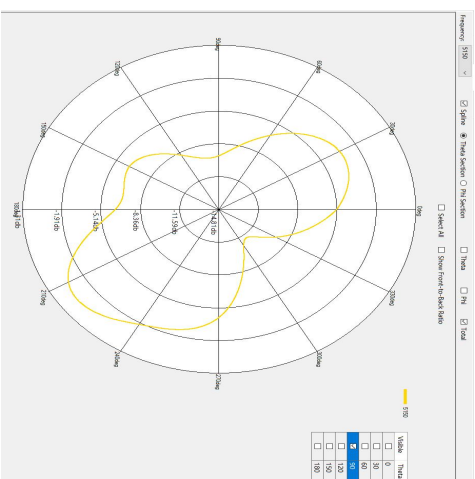
2.4 Radiation Pattern



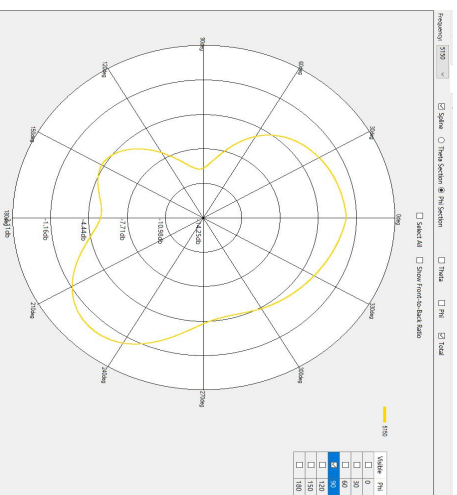
5150MHZ



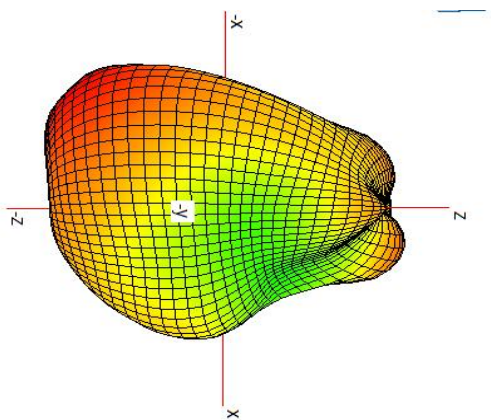
5150MHZ(XOZ)



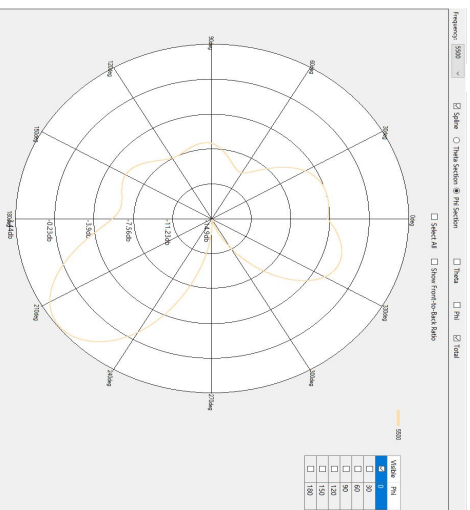
5150MHZ(XOY)



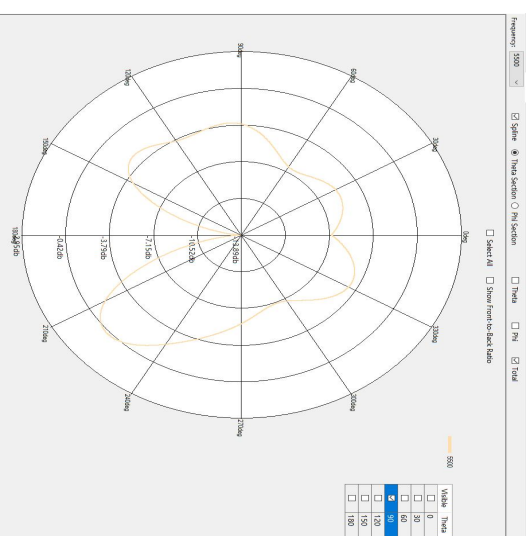
5150MHZ(YOZ)



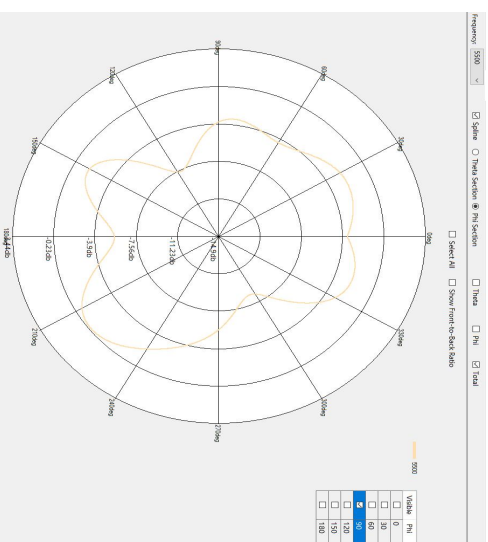
5500MHZ



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



宁波立捷电子有限公司

拉力测试报告 PULLING FORCE TEST REPORT

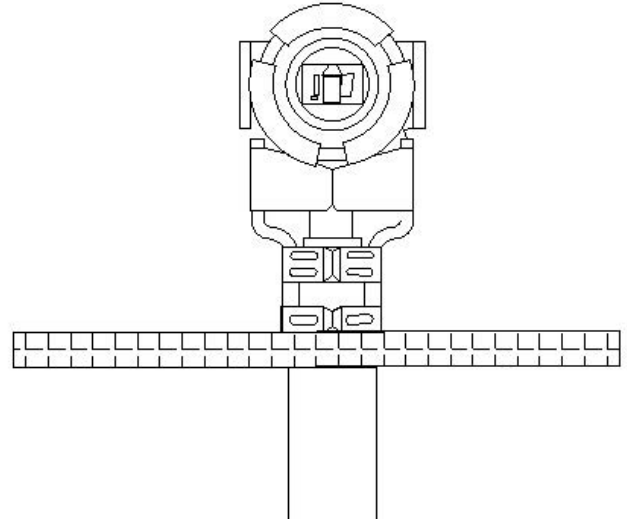
客户 Customer: Shining 3D Tech Co., Ltd.

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 TechCo, 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	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. 耐压测试(Withstand Voltage)	DC 500V/ AC300 V	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. 绝缘阻抗(Insulation Resistance)	20MΩ	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. 导通阻抗(Conductive Resistance)	0.5Ω	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. VSWR:	≤3.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 34±0.2	34.15	34.03	34.08	34.02	34.00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3 11.2±0.2	11.25	11.20	11.20	11.22	11.16	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4							
5							
6							
7							
8							
9							
10							

核准Approve :

审核 Audit:

制表 Complie :