



Ningbo Lijie Electronics Co., Ltd

APPROVAL SHEET

Customer Name	SHINING 3D
Product Model	BT antenna: frequency band 2400-2500 MHz; FPC covered with black oil tape backing glue + RF1.13MM Black coaxial + MHFI terminal, line length 110mm
Customer P / N	/
Lijie P / N	LJ89SAWF005R
Date Prepared	2023.08.18
Revision	A1

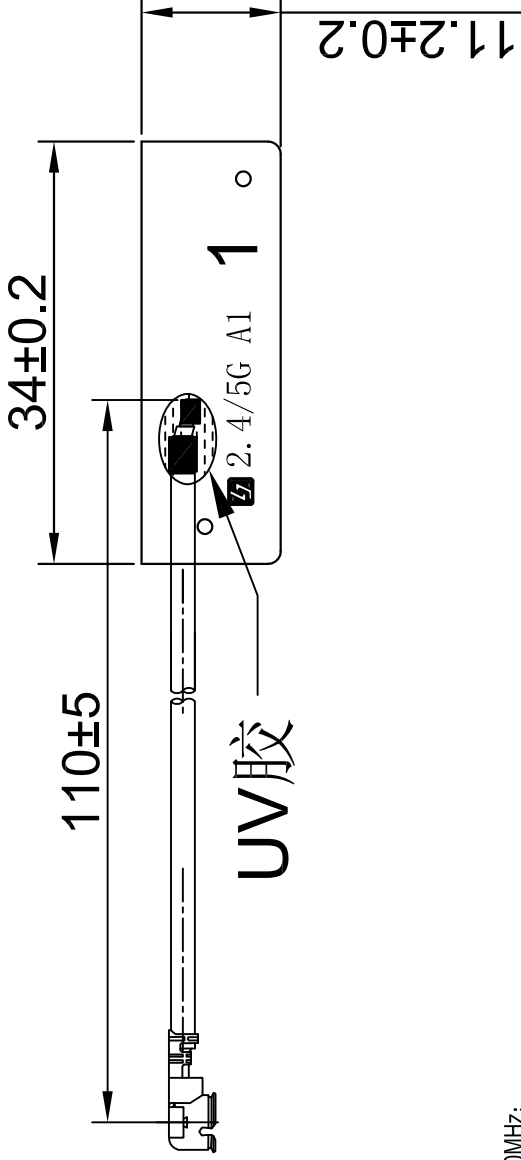
Lijie Electronics (LJICT)		
Design	Verify	Approval
Customer (Customer)		
Design	Verify	Approval

Manufacturer: Ningbo Lijie Electronics Co., Ltd
Address (Add): No.599, Qiming Road, Yinzhou District Investment and Entrepreneurship Center, Ningbo City, Zhejiang Province
Inspired Industrial City telephone (Tel): + 86 0574 88025737
Mobile phone (Mob): + 86 18126545121

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REV.	DATE	DESCRIPTION	OWNER
A0	2023.08.18	NWE	ZHANG



NOTES:

1. Electrical:
 - 1.1 Impedance: 50 OHM;
 - 1.2 Frequency: 2400-2500MHz;
 - 1.3 VSWR: <3.0
 - 1.4 Gain: 2400-2500MHz<1dBi;
 - 1.5 Max Power:50W.
 - 1.6 Polarization: Linear polarization.
 - 1.7 Azimuth: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.

3	Connector	MHF I	1
2	FPC	material quality PI Adhesive backing 3M300.	1
1	RF cable	50QΦ 1.13mm RF cable, Black , L=110MM.	1
ITEM	SPEC	SPEC	QTY

TITLE		2.4G/5G Antenna-1.13 RF cable L=110MM-MHF 1			UNIT	m/m	TOLERANCES UNLESS OTHERWISE SPECIFIED			APPROVE	CHECKED	DRAWN	 Ningbo Lijie Electronics Co., Ltd CUSTOMER SHINING 3D
ORD. NO.	LJ89SAWF005R	MODEL NO.		/		ONE PLACE DECIMAL .X ±0.2							
BOM NO.	LJ89SAWF005R	SCALE	FREE	SHEET : 1 OF 1		TWO PLACE DECIMAL .XX ±0.1							
CUSTOMER PART NO.	/	DWG NO.	/		THREE PLACE DECIMAL .XXX ±0.05								
					HOLE DIA. VARIATION .XX N/A								
					ANGULAR DIMENSION (ENG) N/A								

BT Antenna Test Report

Customer	The first three dimensions
Project	AOS4
Antenna Revision	A 1
Product Description	BT antenna
Product No	LJ89SAWF005R

Purpose

This report is to measure the performance of LJ BT antenna for Shinning 3D. All test date are showed as below.

Content

1:Test Result

1.1:Antenna Matching Network

1.2:VSWR

1.3:GAIN & Efficiency

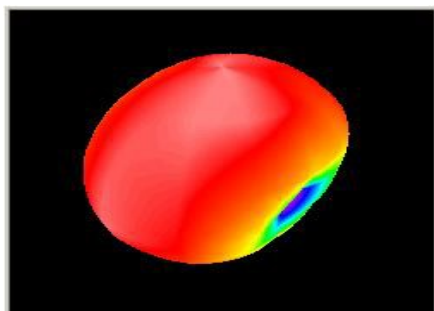
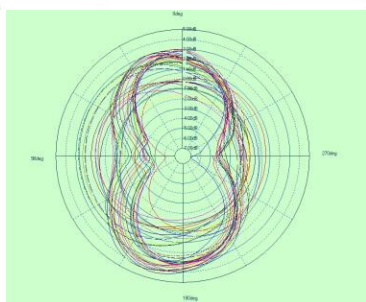
1.4:Radiation Pattern

1.5 OTA

2:PULLING FORCE TEST REPORT

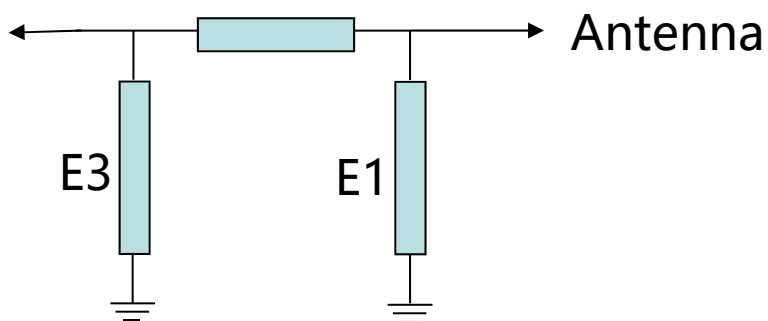
1. Test System

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



1.1 Antenna Matching Network E2

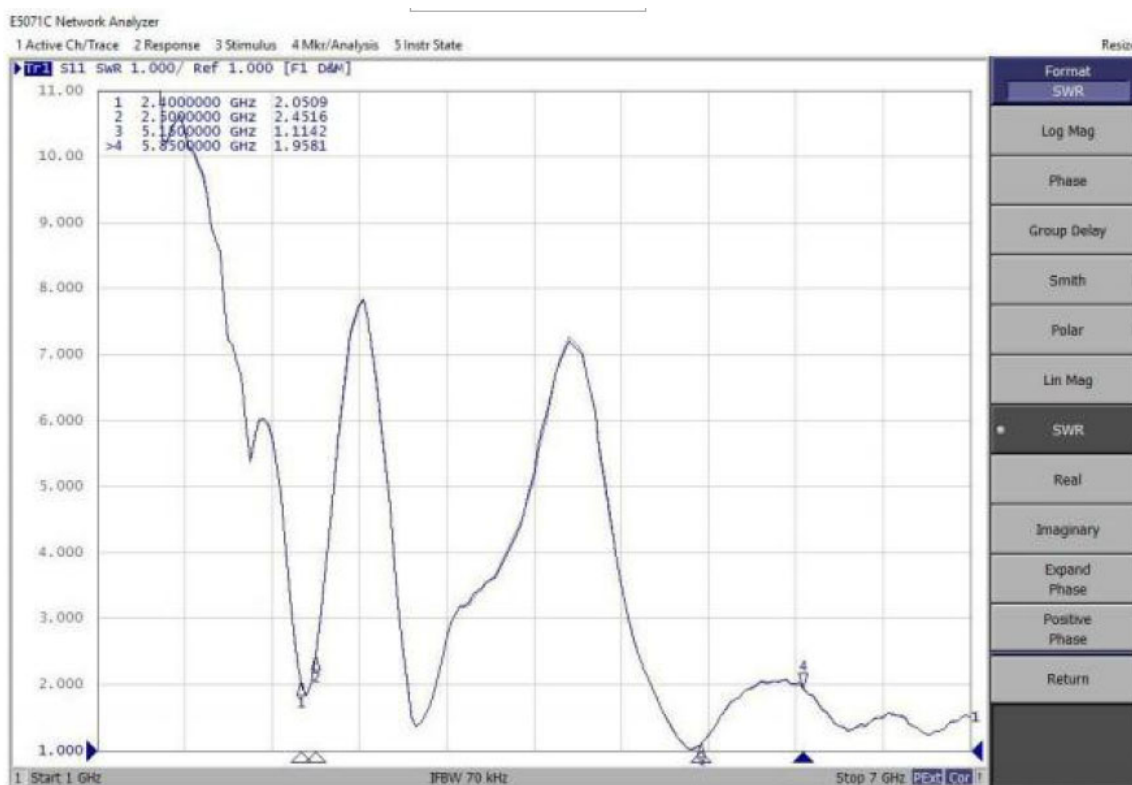
RF Module



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

Antenna match was not changed.

1.2 VSWR

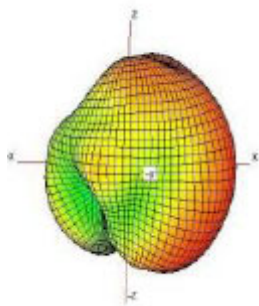


Freq. (MHz)	2400	2500
VSWR	2.05	2.45

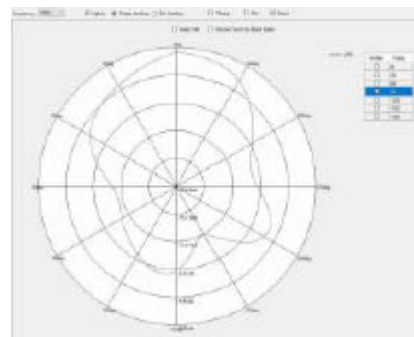
1.3 GAIN & Efficiency

Freq. (MHz)	Effi. (dB)	Gain. (dBi)	Effi. (%)
2400	-5.91	25.63	-0.55
2420	-5.74	26.7	-0.48
2440	-5.61	27.48	-0.37
2460	-5.86	25.95	-0.82
2480	-6.15	24.25	-1.02
2500	-6.22	23.86	-1.08

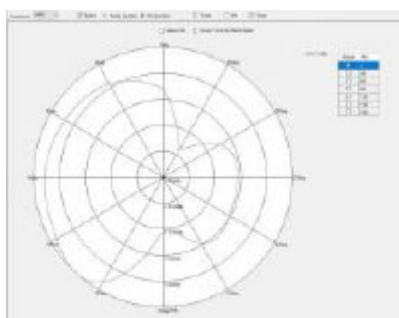
1.4 Radiation Pattern



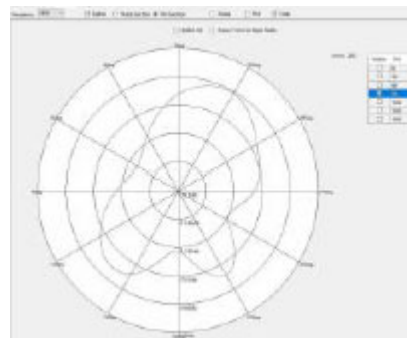
2450MH



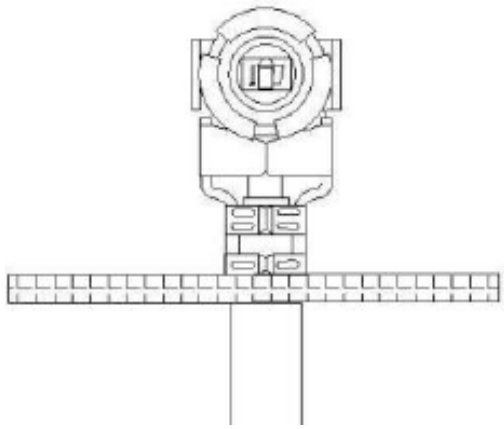
2450MHz(XOY)



2450MHz(XOZ)z



2450MHz(YOZ)

PULLING FORCE TEST REPORT																																		
Customer: Xianlin Sanwei Technology Co., Ltd																																		
Number: LJ89SAWF005R																																		
Order: Sample																																		
Date: 2023.08.18																																		
Test conditions	Snap force	Pull force	1Kg																															
		Time	1 minute																															
		Equipment	Pulling Tester																															
Test position		MHF 1 CONNECTOR																																
Test results. <table border="1"> <thead> <tr> <th rowspan="2">Sample No</th> <th colspan="2">Test Standard</th> <th rowspan="2">Decided</th> </tr> <tr> <th>Cable Appearance</th> <th>Electric Test</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>No damaged</td> <td>No open and no short circuit</td> <td>Pass</td> </tr> <tr> <td>2</td> <td>No damaged</td> <td>No open and no short circuit</td> <td>Pass</td> </tr> <tr> <td>3</td> <td>No damaged</td> <td>No open and no short circuit</td> <td>Pass</td> </tr> <tr> <td>4</td> <td>No damaged</td> <td>No open and no short circuit</td> <td>Pass</td> </tr> <tr> <td>5</td> <td>No damaged</td> <td>No open and no short circuit</td> <td>Pass</td> </tr> <tr> <td colspan="4"> Remarks: The Pulling Force Test Weight Load 1 Kg. </td> </tr> </tbody> </table>					Sample No	Test Standard		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	Remarks: The Pulling Force Test Weight Load 1 Kg.			
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Approved By: Hou Weihong		Checked By: Zhang Guolian																																
Date: 2023.08.18		Date: 2023.08.18																																

Sample Inspection Report

CUSTOMER: Xianlin 3 D Technology Co., LTD

DATE: 2023.08.18

PART NO.: LJ89SAWF005R

QTY: 5 PCS

CONCLUSION

PASS ☒

FAIL ☐

1 Appearance inspection :

Item	result	PASS	FAIL
1. Appearance	good	☒	☐
2. Construction	BT antenna: frequency band 2400-2500MHzFPC covered with black oil tape back glue + RF1.13MM black coaxis + MHF I generation terminal line length 110mm	☒	☐

2.Electric Characteristic Inspection:

Test Item	Test conditions	PASS	FAIL
1. Impedance	50 Ω	☒	☐
2. Withstand Voltage	DC 500V/ AC300 V	☒	☐
3. VSWR:	≤ 3.0	☒	☐
		☐	☐

3. Mechanical Characteristic Inspection):

Test Item	Test Condition	test result	PASS	FAIL
Hanging pull force	1Kg/min	OK	☒	☐

4. Dimension Inspection (Dimension Inspection):

Spec (Unit: mm)		Actual Range (Unit: mm)					PASS	FAIL
		Sample 1	Sample 2	Sample 3	Sample 4	Sample 5		
1	110 $\pm$ 1	110.00	110.15	110.10	110.75	110.05	☒	☐
2	34 $\pm$ 0.2	33.85	34.00	34.03	34.06	34.07	☒	☐
9	11.2 $\pm$ 0.2	11.22	11.15	11.18	11.20	11.26	☒	☐
10							☐	☐

approval:

verify:

tabulation: