



Shenzhen Lejin radio frequency technology Co., LTD

SPECIFICATIONS FOR APPROVAL

Customer Name: 深圳市九州云海科技有限公司

Product Name: 2.4/5G Antenna1

Product Model: XU160

Part Number: LJF02-24031208A-R0A

Write By : Qiang Fu

Issued Date: 2024-03-12

CUSTOMER

ENGINEER R&D DEPT	BUSSINESS DEPT	APPROVAL

LEJIN

R&D DEPT	ENGINEER DEPT	APPROVAL

REV	MODIFIED DESCRIPTION	DATE	REMARK
V1.0	Initial Draft Release	2024/03/12	

Index

1. Cover • • • • •	1
2. Index • • • • •	2
3. Product Specification • • • • •	3
4. Test Equipment & Conditions • • • • •	3
5. Test Report • • • • •	4
6. Reliability Test • • • • •	5
7. Assemble type • • • • •	8
8. Product Drawing • • • • •	9

3.Product Specification

A. Electrical Characteristics	
Frequency	2400MHz ~2500 MHz 5150MHz ~5850 MHz
VSWR	<2.0
Efficiency	≥40%
Impedance	50Ohm
Polarization	Linear
Gain(2.4G)	≤2.5dB
Gain(5G)	≤2.0dB
B. Material & Mechanical Characteristics	
Material of Radiator	FPC(Black),LJWF25C-R
Cable Type	Φ1.13mm,L520mm,Black
Connector Type	IPX4
Dimension	26.0mm*16.8mm
C. Environmental	
Operation Temperature	- 20 °C ~ + 70 °C
Storage Temperature	- 30 °C ~ + 85 °C
Humidity	40%~95%

4.Test Equipment & Conditions

- | | |
|----------------------------------|---------------------|
| 1.Network Analyzers | Agilent 8753D/5071C |
| 2.HSPA and LTE protocol test set | R&S CMW500 -PT |
| 3.Communications Test Set | Agilent 8960 |
| 4.3D Chamber Test System | |

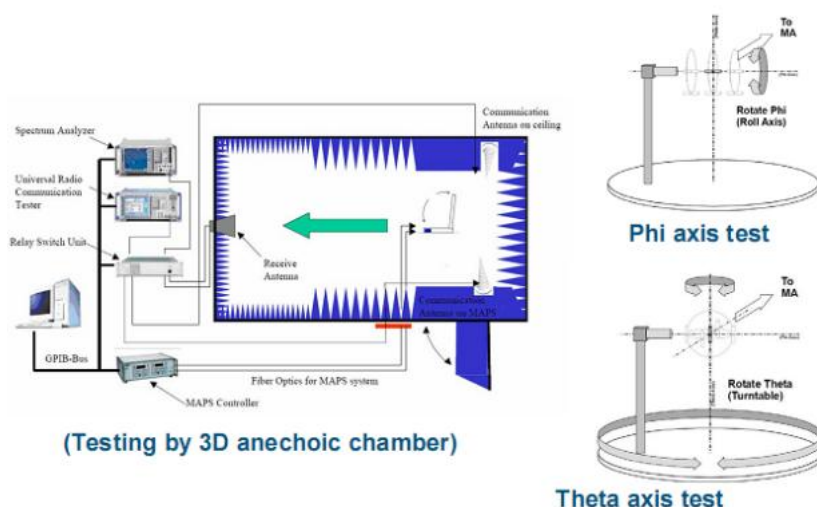


Chart 1 Test topology

5. Test Report

5.1 Voltage Standing Wave Ratio(VSWR).

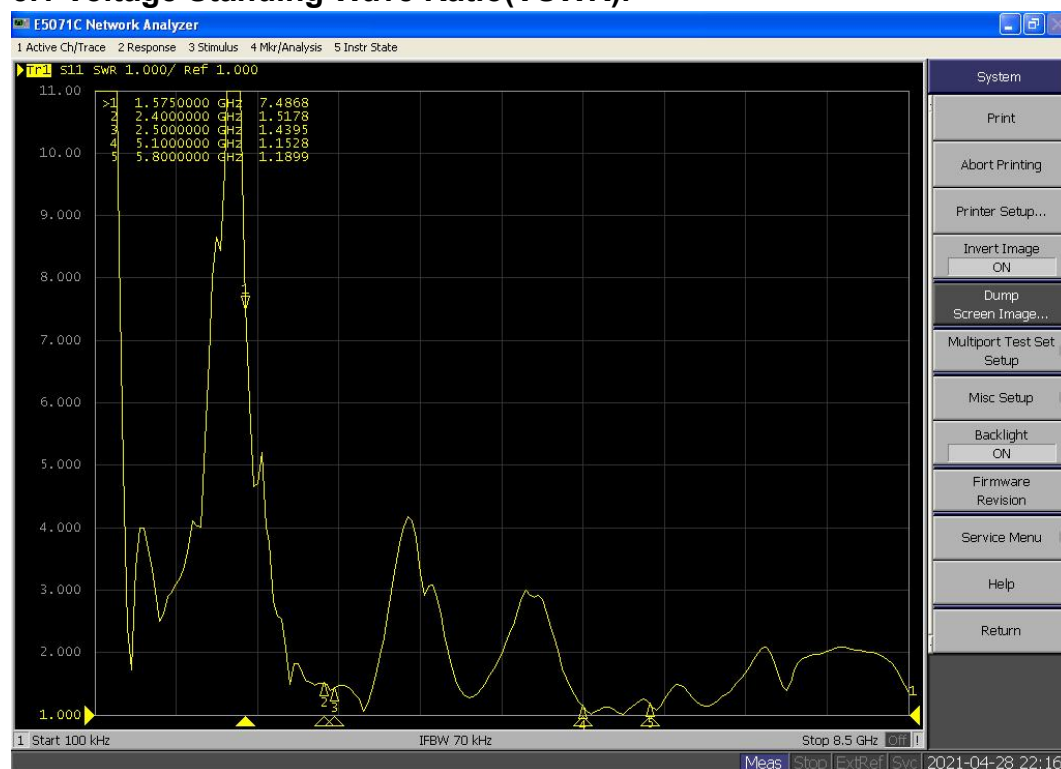


Chart 2 VSWR

5.2 OTA test data.

测试项目	WIFI 2.4G		
Mode	WIFI 802.11b,11Mbps		
Frequency	TRP(dbm)		
1 (2412MHz)	11.01		
6 (2437MHz)	11.16		
11 (2462MHz)	11.67		
Frequency	TIS(dbm)		
1 (2412MHz)	-75.40		
6 (2437MHz)	-74.57		
11 (2462MHz)	-76.51		
测试项目	WIFI 2.4G	测试项目	WIFI 5G
Mode	WIFI 802.11g,54Mbps	Mode	WIFI 802.11a,54Mbps
Frequency	TRP(dbm)	Frequency	TRP(dbm)
1 (2412MHz)	10.70	36 (5180MHz)	8.68
6 (2437MHz)	11.91	60 (5300MHz)	7.90
11 (2462MHz)	11.13	161 (5805MHz)	8.09
Frequency	TIS(dbm)	Frequency	TIS(dbm)
1 (2412MHz)	-69.71	36 (5180MHz)	-66.96
6 (2437MHz)	-70.61	60 (5300MHz)	-67.10

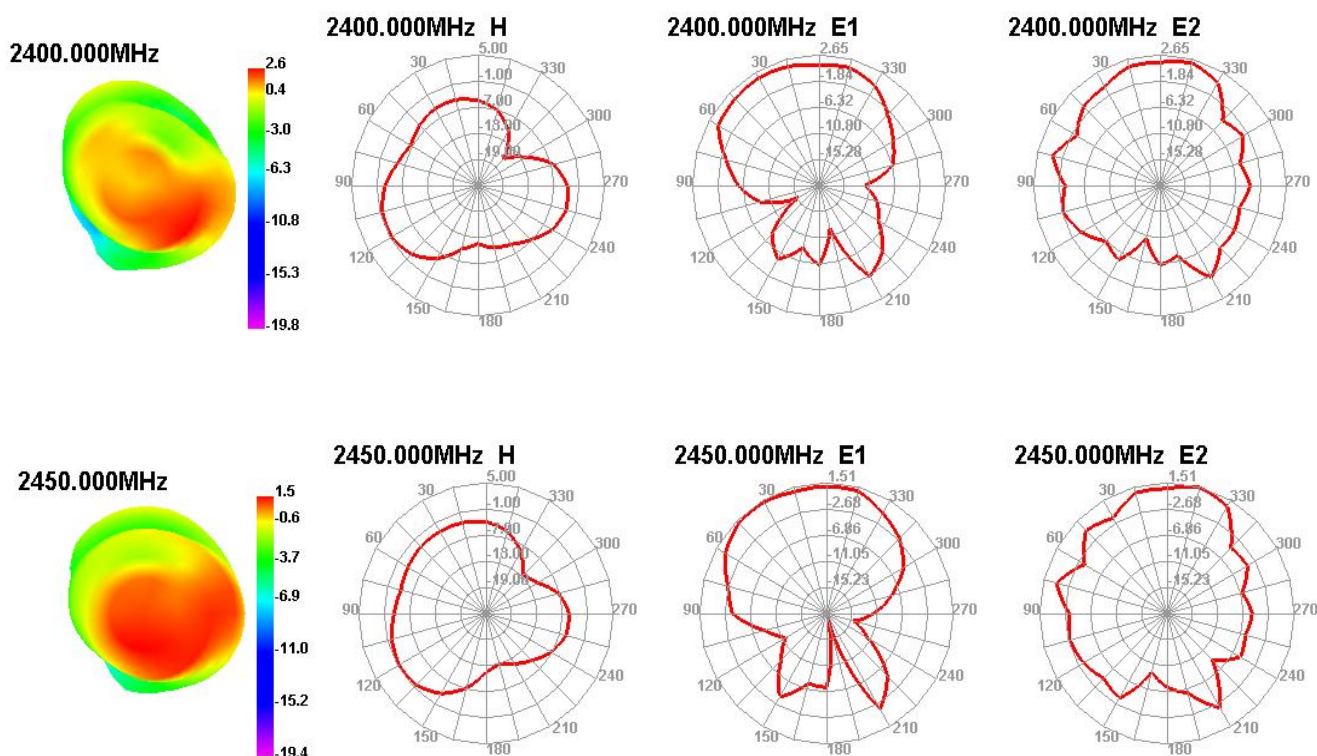
11 (2462MHz)	-71.97	161 (5805MHz)	-67.12
测试项目	WIFI 2.4G	测试项目	WIFI 5G
Mode	WIFI 802.11n,MCS7	Mode	WIFI 802.11n,MCS7
Frequency	TRP(dbm)	Frequency	TRP(dbm)
1 (2412MHz)	8.31	36 (5180MHz)	8.31
6 (2437MHz)	9.39	60 (5300MHz)	7.48
11 (2462MHz)	9.43	161 (5805MHz)	8.9
Frequency	TIS(dbm)	Frequency	TIS(dbm)
1 (2412MHz)	-65.39	36 (5180MHz)	-64.24
6 (2437MHz)	-64.21	60 (5300MHz)	-65.76
11 (2462MHz)	-66.35	161 (5805MHz)	-67.18

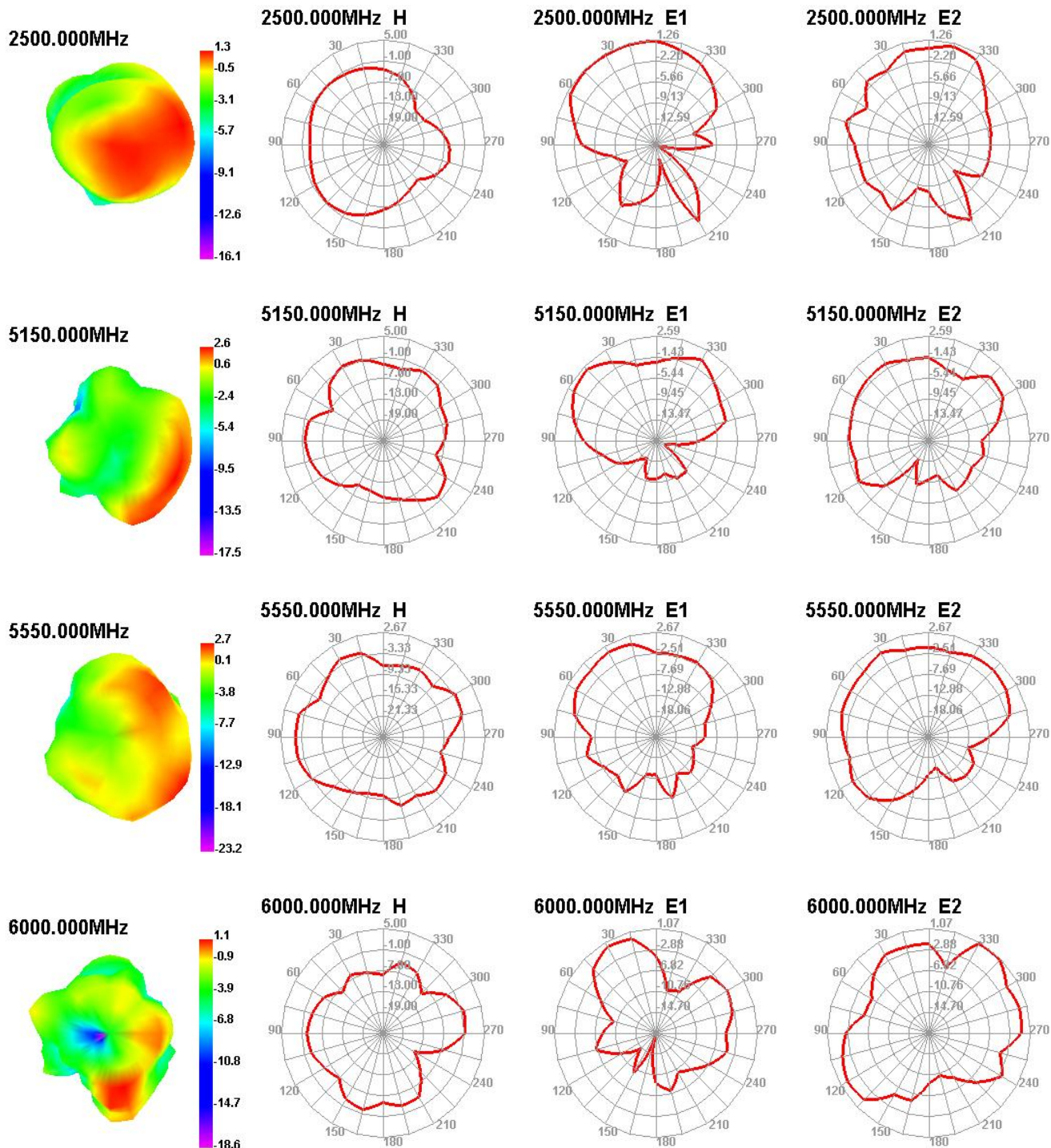
5.3 Efficiency and Gain.

Passive Test 2.4GHz	Freq(MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
	Effi(%)	46.29	41.99	47.09	41.85	43.20	42.78	48.22	40.37	39.61	42.25	44.68
	Gain(dBi)	2.65	2.18	2.37	1.60	1.57	1.51	1.86	1.02	0.87	1.13	1.26

Passive Test For WIFI 5G	Freq(MHz)	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700	5750	5800	5850	5900	5950	6000
	Effi(%)	46.86	50.56	49.39	41.62	51.05	50.45	51.72	50.61	49.04	51.40	57.95	57.31	70.97	67.37	65.77	70.18	36.89	36.13
	Gain(dBi)	2.59	2.69	2.53	1.79	2.25	2.63	3.07	3.19	2.67	2.23	2.89	2.33	3.44	3.85	3.86	4.44	1.62	1.07

5.4 Radiation pattern.





6. Reliability Test

Test Item	Test condition	Equipment	Specification	Result
-----------	----------------	-----------	---------------	--------

1	Low Temp. Storage Test	Temperature: -30℃ , Time:48hrs Test condition: Placing antenna in a Low/High Temperature Chamber, keep the temp is 25 ℃ and humidity is 65% for one hour, then step-down the temp. to -30℃ in one hour, store antenna for44 hours; step-up temp to 25℃ ,test antenna after 2 hours.	Temp.&Humidity Tester	No material deformation is allowed. Electronic Performance is ok .	PASS
2	High Temp./High Humid Storage Test	Temperature: 85℃ Humidity: 85% RH Time:48hrs Test condition: Placing antenna in a Low/High Temperature Chamber, keep the temp is 25 ℃ and humidity is 65% for one hour, then step-up the temp. to 80 ℃ and the humidity up to 85% in one hour, store antenna for 44 hours; step-down temp to 25 ℃ ,test antenna after 2 hours.	Temp.&Humidity Tester	No material deformation is allowed. Electronic Performance is ok .	PASS
3	Salt-Spray 6 pray Test	Placing antenna in the Salt-Spray Tester ,set the test condition , Temp: $35 \pm 2^{\circ}\text{C}$ Humidity: 85% NaCl salt spray : $5 \pm 1\%$.PH value :6.5~7.2 Testtime:24hours	Salt-Spray Tester	No color change No appearance rusting	PASS

7.Assemble type

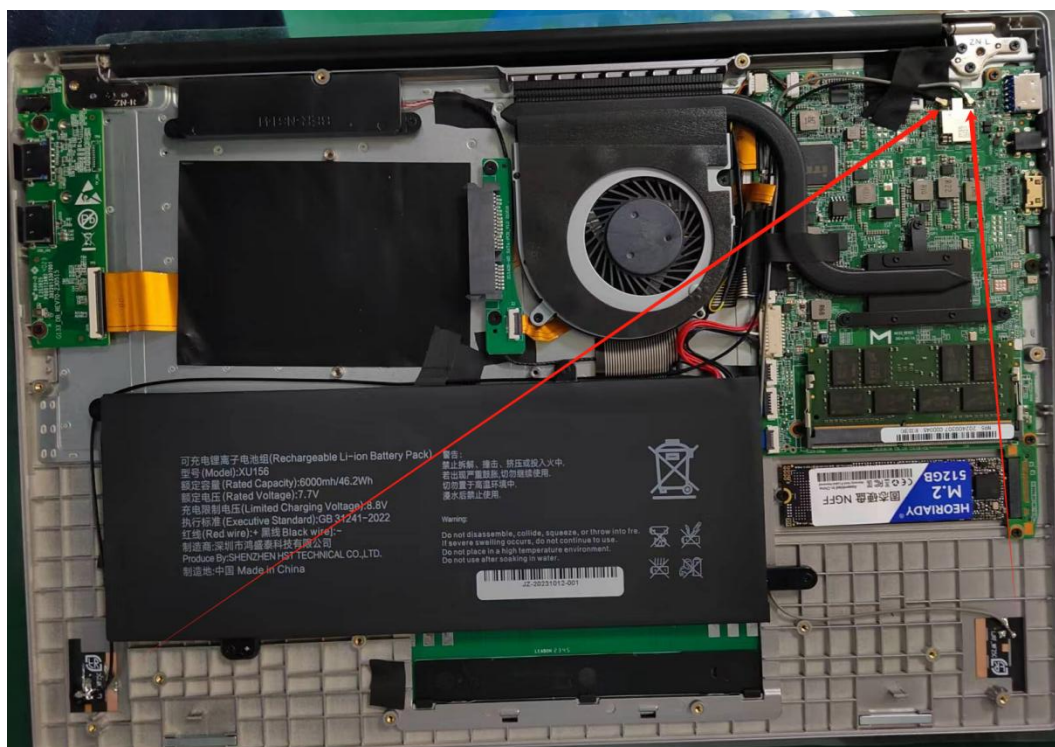


Chart 3 Assemble type(overall)

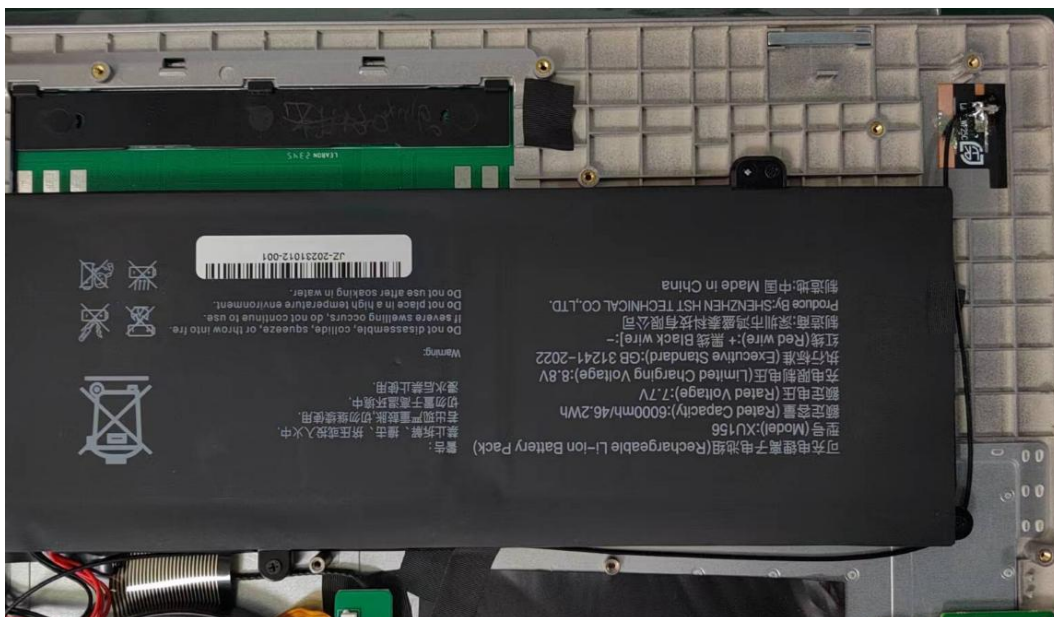


Chart 4 Assemble type(Close-up)

8.Product Drawing

