



Shenzhen Lejin radio frequency technology Co., LTD

## SPECIFICATIONS FOR APPROVAL

Customer Name: Shenzhen Lemu Luo Technology Co., Ltd.

Product Name: WIFI Antenna

Product Model: 203

Part Number: LJF02-23022508-R0A

Write By : Huxuwen

Issued Date: 2023-02-27

### CUSTOMER

ENGINEER R&D DEPT	BUSSINESS DEPT	APPROVAL

### LEJIN

R&D DEPT	ENGINEER DEPT	APPROVAL

REV	MODIFIED DESCRIPTION	DATE	REMARK
V0.1	Initial Draft Release	2023/02/27	



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### 3.Product Specification

A. Electrical Characteristics	
Frequency	2400MHz ~2500 MHz 5150MHz ~5850 MHz
VSWR	<2.0
Efficiency	≥40%
Impedance	50Ohm
Polarization	Linear
Gain(2.4GHz)	≤2.5dB
B. Material & Mechanical Characteristics	
Material of Radiator	FPCB(Yellow),LJWF84A
Cable Type	Φ1.13mm,L120mm,Black
Connector Type	IPX1
Dimension	45.0*11.mm
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         |                     |

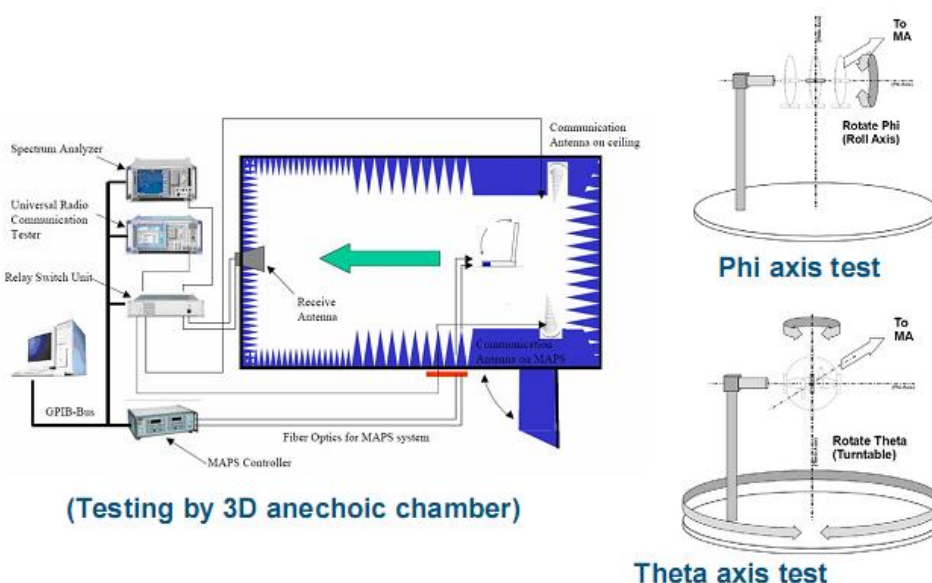


Chart 1 Test topology

## 5. Test Report

### 5.1 Voltage Standing Wave Ratio(VSWR).

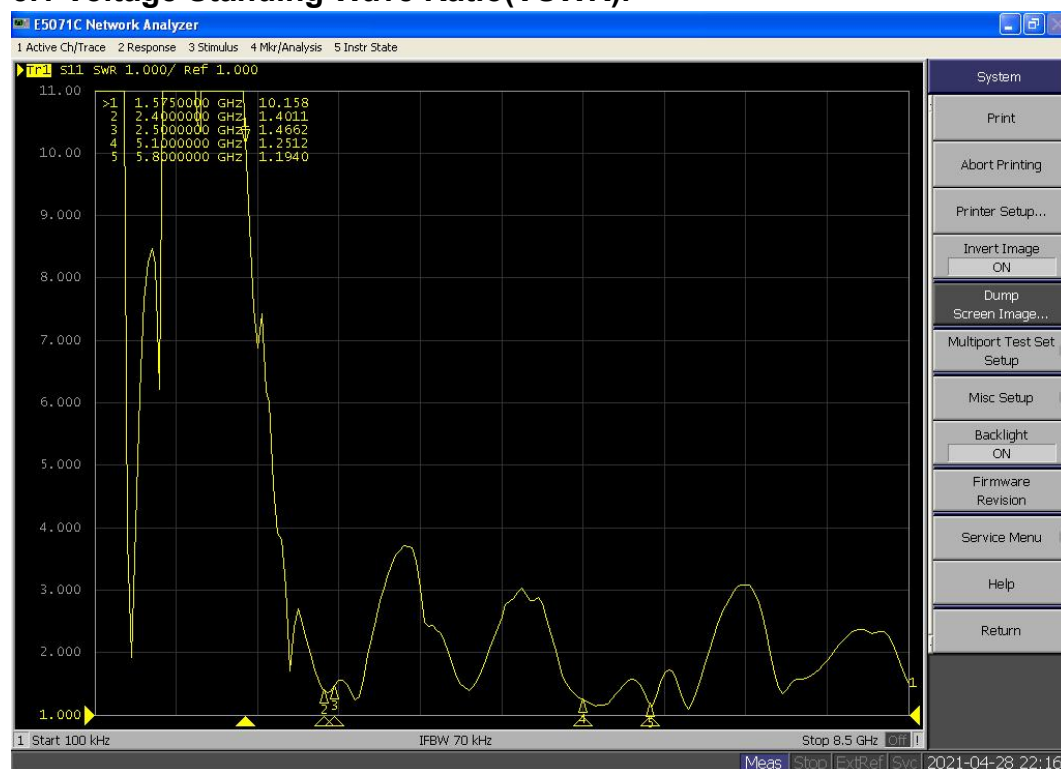


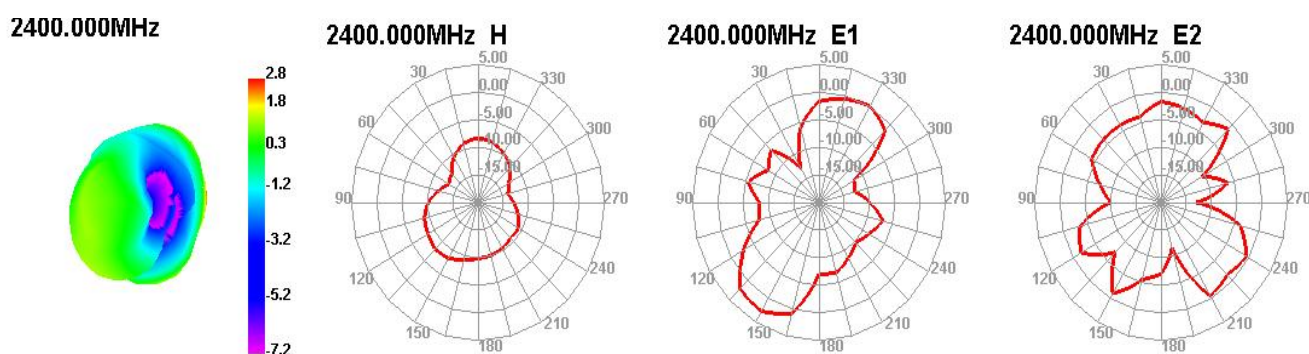
Chart 2 VSWR

### 5.2 Efficient and gain.

Passive Test For 2.4GHz	Freq(MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
	Effi(%)	53.13	56.42	51.28	52.75	56.56	55.37	59.05	57.41	58.62	60.07	58.52
	Gain(dBi)	2.14	2.28	1.92	1.94	2.10	1.98	2.24	2.18	2.26	2.15	2.08

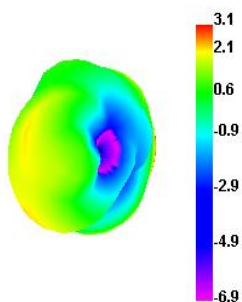
Passive Test For WIFI 5G	Freq(MHz)	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700	5750	5800	5850
	Effi(%)	54.31	53.00	52.99	57.95	57.71	56.34	55.47	57.58	56.27	54.79	57.37	55.58	57.06	52.53	53.91
	Gain(dBi)	2.23	2.39	2.32	2.37	2.35	2.48	2.58	2.31	2.55	2.48	2.57	2.48	2.37	2.34	2.28

### 5.3 Radiation pattern.

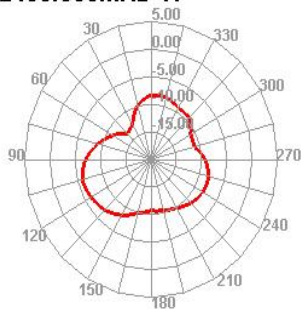




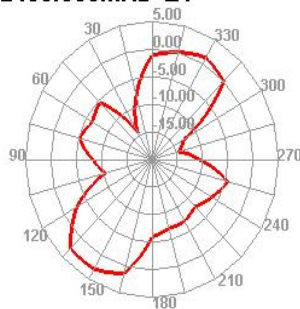
2450.000MHz



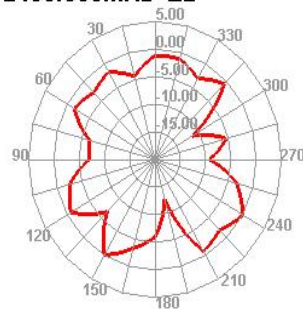
2450.000MHz H



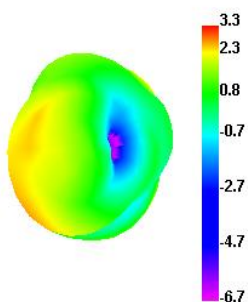
2450.000MHz E1



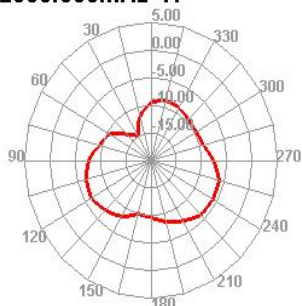
2450.000MHz E2



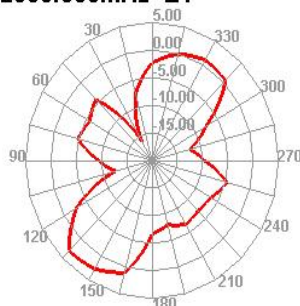
2500.000MHz



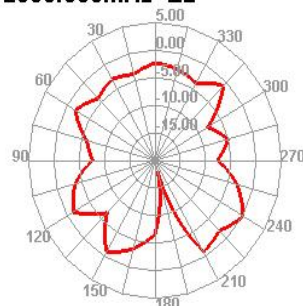
2500.000MHz H



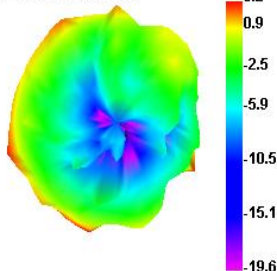
2500.000MHz E1



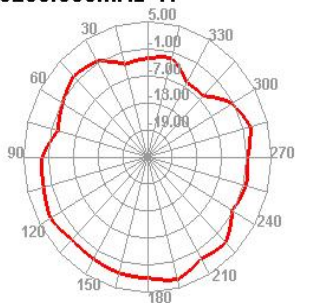
2500.000MHz E2



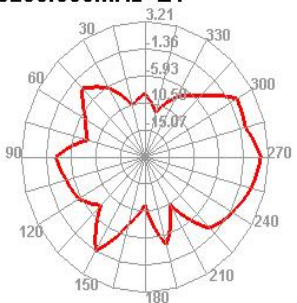
5200.000MHz



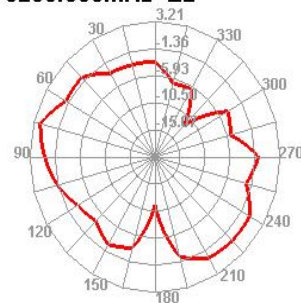
5200.000MHz H



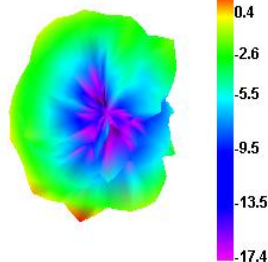
5200.000MHz E1



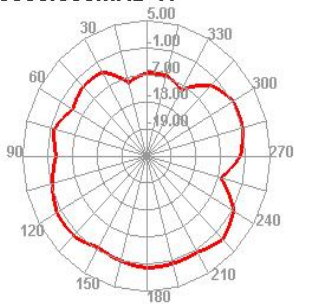
5200.000MHz E2



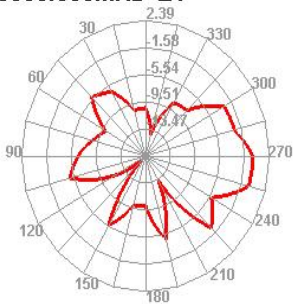
5550.000MHz



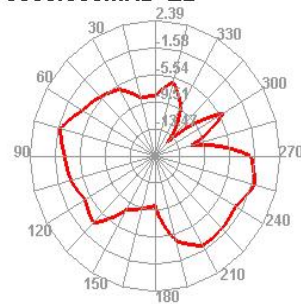
5550.000MHz H



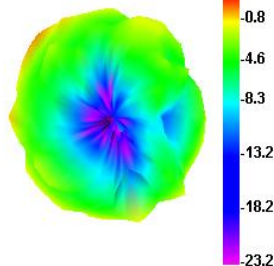
5550.000MHz E1



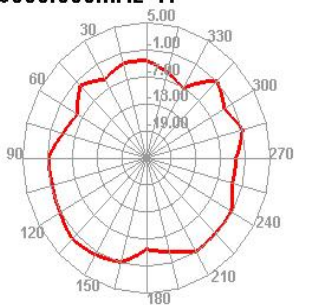
5550.000MHz E2



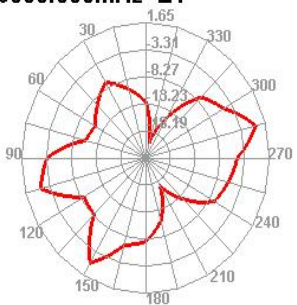
6000.000MHz



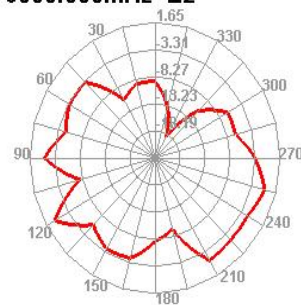
6000.000MHz H



6000.000MHz E1



6000.000MHz E2





## 6. Reliability Test

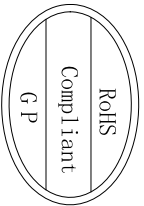
Test Item		Test condition	Equipment	Specification	Result
1	Low Temp. Storage Test	Temperature: -30℃, Time:48hrs Test condition: Placing antenna in a Low/High Temperature Chamber, keep the temp is 25℃ and humidity is 65% for one hour, then step-down the temp. to -30℃ in one hour, store antenna for 44 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 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: 24 hours	Salt-Spray Tester	No color change No appearance rusting	PASS

## 7. Assemble type



Chart 3 203 assemble type

## 8. Product Drawing



Remark:

- 1.FPC material:Electrolytic copper.
- 2.Backing in behind:3M300LSE.
- 3.Tolerance: Cutting die:±0.1mm;Circuit on FPC:±0.05mm; others are ±0.05mm.
- 4.ROHS:(Pb,Hg,Cr+6,PBBs,PBDEs),<1000ppm; Cd,<100ppm.

1				
Revise	2			
record	3			

D		C		B		A	
A		New drawing					
Rev		Description		Date		Remark	
1				4			

SHEN ZHEN LEJIN RADIO FREQUENCY CO., LTD

Third Angle		Project		Date	
0~10 ±0.05		乐木骆		2023-02-27	
10~18 ±0.10		Part Name			
18~30 ±0.12		WIFI/BT ANT			
30~40 ±0.15		Part No.		203	
40~ ±0.20		Material			
Location		Treatment		Approved by	
		LJF02-23022508-ROA			
		Unit		Scale	
		mm		FIT	
				Rev	
				A	