



Shenzhen Lejin radio frequency technology Co., LTD

SPECIFICATIONS FOR APPROVAL

Customer Name: 深圳乐木骆科技有限公司

Product Name: WIFI/BT Antenna

Product Model: LB001

Part Number: LJF02-24122608-R0A

Write By : LIMINGJIN

Issued Date: 2024-12-28

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	2024/12/28	

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[illegible]

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)	≤2.83dBi
Gain(5.8GHz)	≤3.79dBi
B. Material & Mechanical Characteristics	
Material of Radiator	FPC(Black),LJWF29A
Cable Type	Φ1.13mm,L200mm,Black
Connector Type	IPX1
Dimension	43.0mm*11.5mm
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 | |

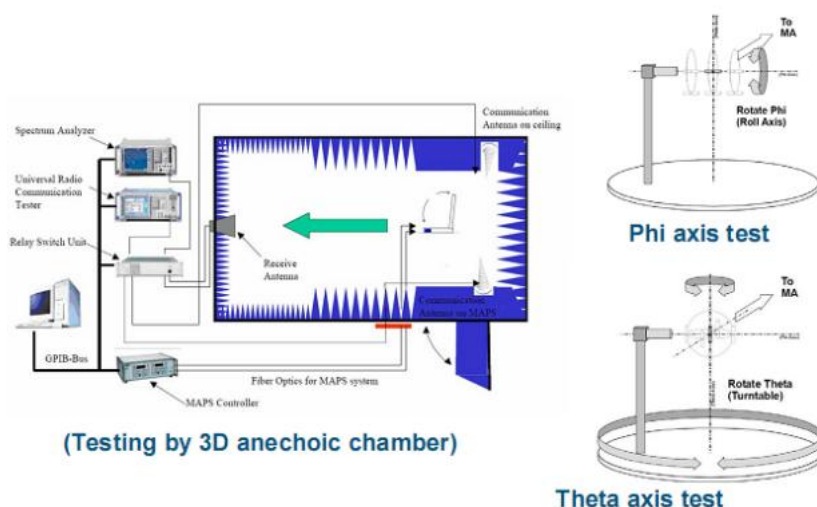


Chart 1 Test topology

5.Test Report

5.1 Voltage Standing Wave Ratio(VSWR).

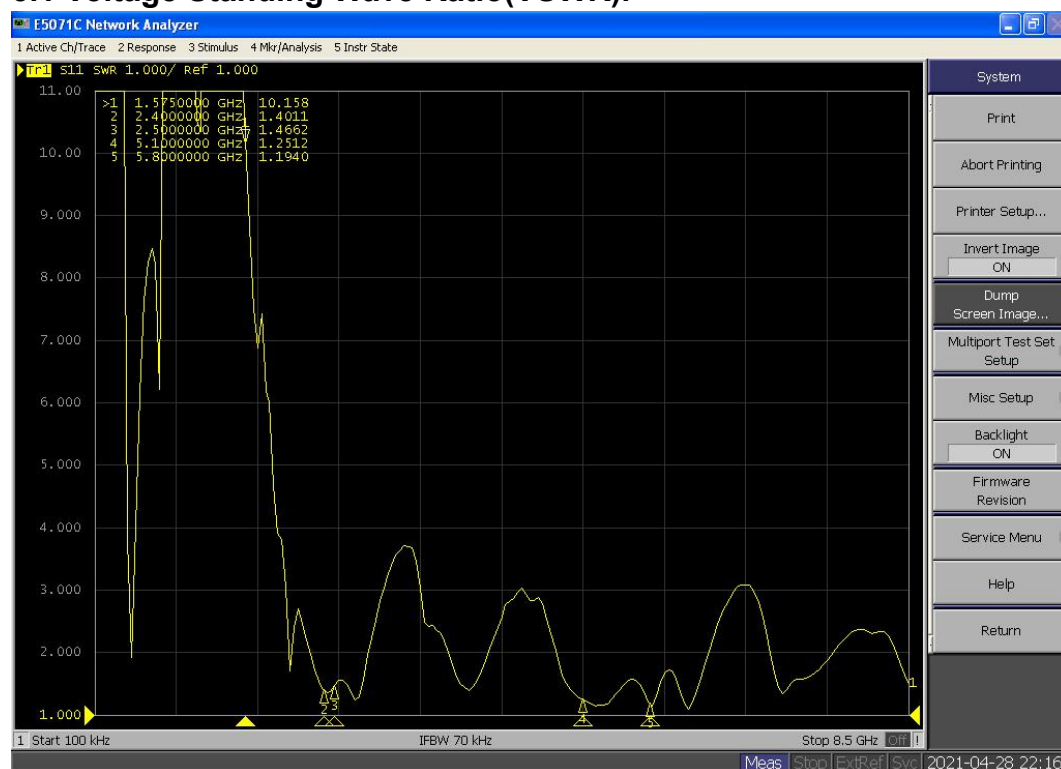


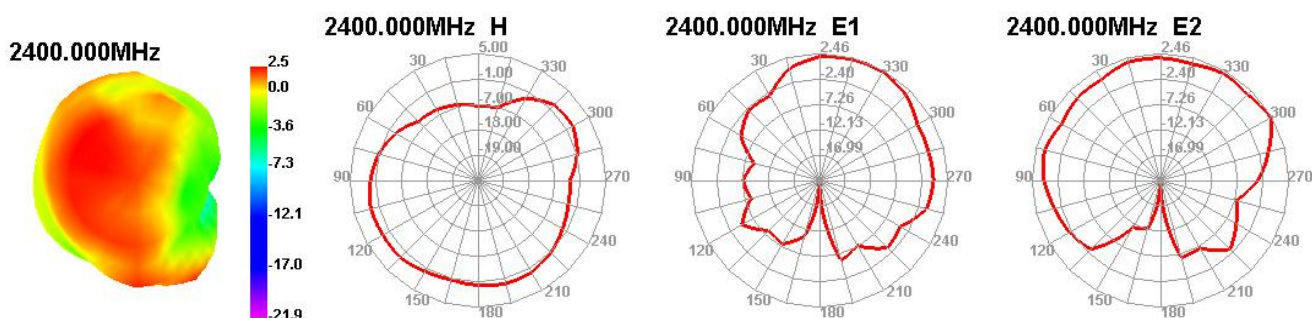
Chart 2 VSWR

5.2 Efficient and gain.

Passive	Freq(MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Test 2.4GHz	Effi(%)	66.02	62.84	63.89	66.49	67.37	67.02	67.98	65.42	69.24	68.82	71.71
	Gain(dBi)	2.46	2.37	2.51	2.64	2.72	2.62	2.83	2.61	2.83	2.78	2.99

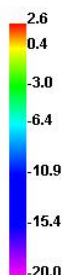
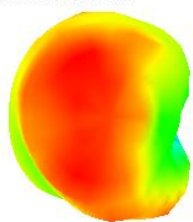
Passive	Freq(MHz)	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700	5750	5800	5850	5900	5950	6000
Test WIFI 5G	Effi(%)	66.53	73.34	63.66	67.09	63.50	69.46	73.42	72.19	69.14	75.63	71.28	66.83	63.12	61.49	59.35	58.56	59.64	65.23
	Gain(dBi)	3.06	3.41	2.52	2.68	2.65	3.10	3.18	3.50	3.08	3.79	3.48	2.44	2.18	2.47	2.53	2.37	2.94	3.23

5.3 Radiation pattern.

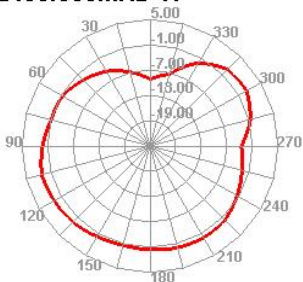




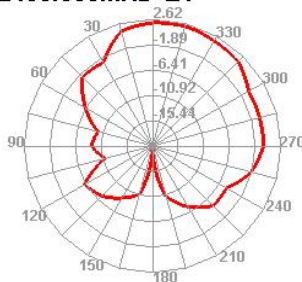
2450.000MHz



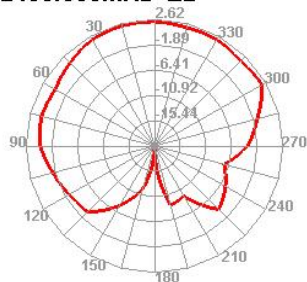
2450.000MHz H



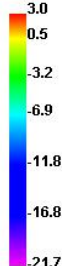
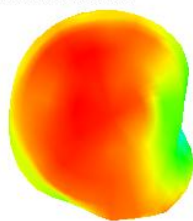
2450.000MHz E1



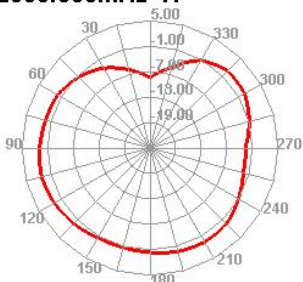
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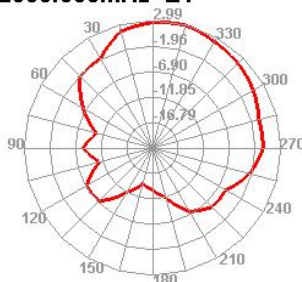
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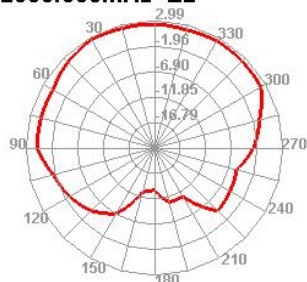
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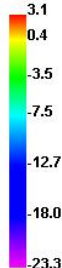
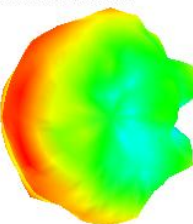
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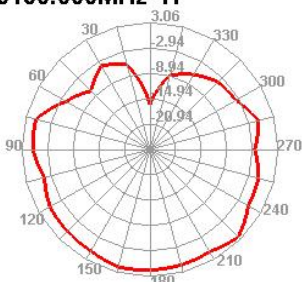
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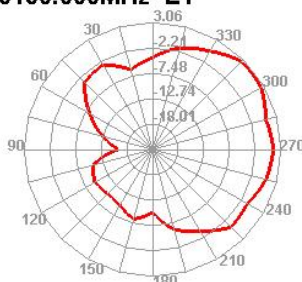
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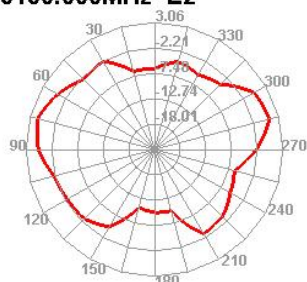
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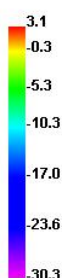
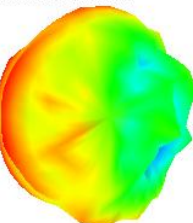
5150.000MHz E1



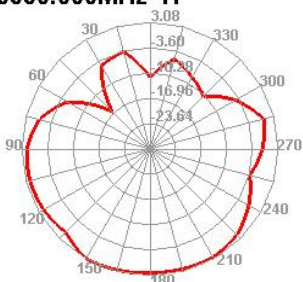
5150.000MHz E2



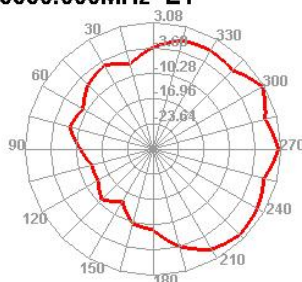
5550.000MHz



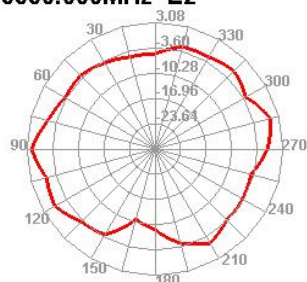
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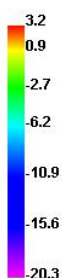
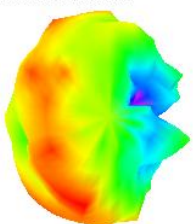
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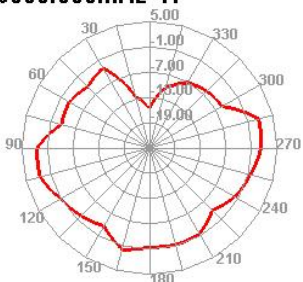
5550.000MHz E2



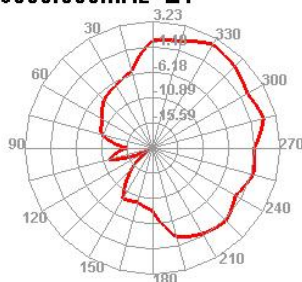
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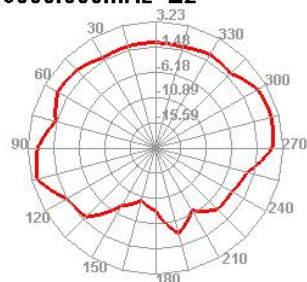
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6000.000MHz E1



6000.000MHz E2



6. Reliability Test

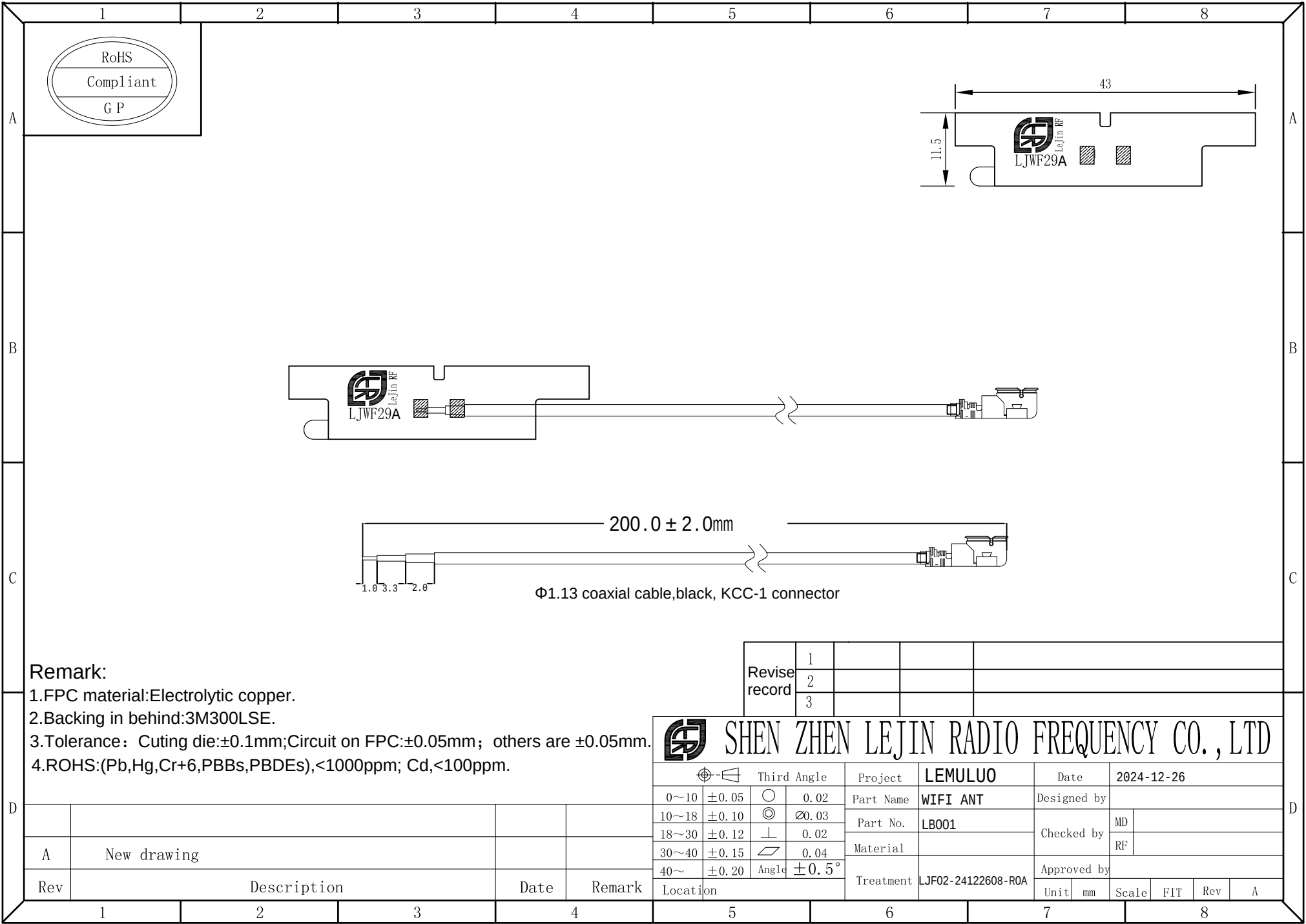
Test Item		Test condition	Equipment	Specification	Result
1	Low Temp. Storage Test	Temperature: -30℃, Time: 48hrs Test condition: Placing antenna in a Low/High Temperature Chamber, keep the temp is 25℃ and humidity is 65% for one hour, then step-down the temp. to -30℃ in one hour, store antenna for 44 hours; step-up temp to 25℃, test antenna after 2 hours.	Temp. & Humi. 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. & Humi. 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: 24 hours	Salt-Spray Tester	No color change No appearance rusting	PASS

7. Assemble type



Chart 4 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.

Revise record	1			
	2			
	3			

SHEN ZHEN LEJIN RADIO FREQUENCY CO., LTD											
 Third Angle				Project	LEMULUO		Date		2024-12-26		
0~10		±0.05	○	0.02	Part Name	WIFI ANT		Designed by			
10~18		±0.10	◎	Ø0.03	Part No.	LB001		Checked by	MD		
18~30		±0.12	⊥	0.02					RF		
30~40		±0.15	▤	0.04	Material			Approved by			
40~		±0.20	Angle	±0.5°	Treatment	LJF02-24122608-ROA					
Location						Unit	mm	Scale	FIT	Rev	A

A	New drawing		
Rev	Description	Date	Remark