



Shenzhen Lejin radio frequency technology Co., LTD

SPECIFICATIONS FOR APPROVAL

Customer Name: 宁波星巡智能科技有限公司

Product Name: WIFI Antenna

Product Model: EMK4

Part Number: LJF02-23062508-R0A

Write By : Huxuwen

Issued Date: 2023-06-25

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	2023/06/25	



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	6
8. Product Drawing	7

3.Product Specification

A. Electrical Characteristics	
Frequency	2400MHz ~2500 MHz 5150MHz ~5850 MHz
VSWR	<2.0
Efficiency	≥40%
Impedance	50Ohm
Polarization	Linear
Gain	≤2.5dB
B. Material & Mechanical Characteristics	
Material of Radiator	FPC(Green),LJWF28B
Cable Type	Φ1.13mm,L50mm,black
Connector Type	IPX1
Dimension	43.0*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

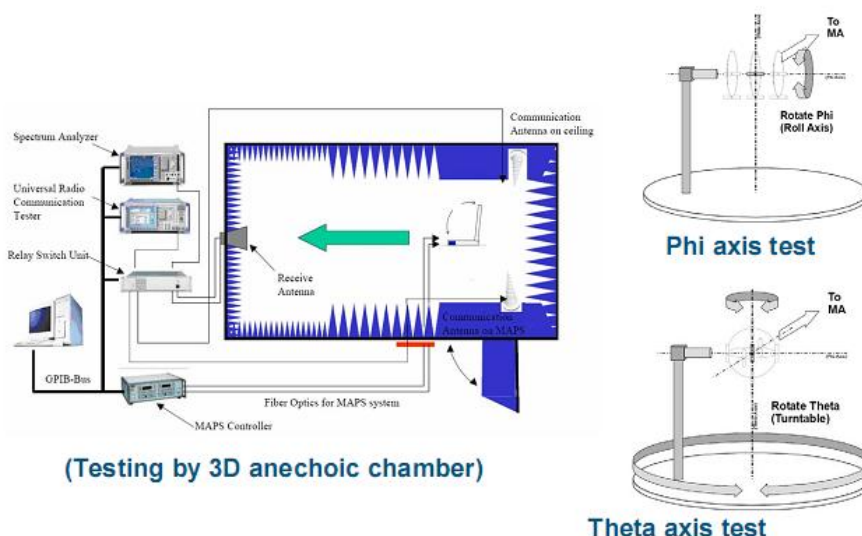


Chart 1 Test topology

5.Test Report

5.1 Voltage Standing Wave Ratio(VSWR).

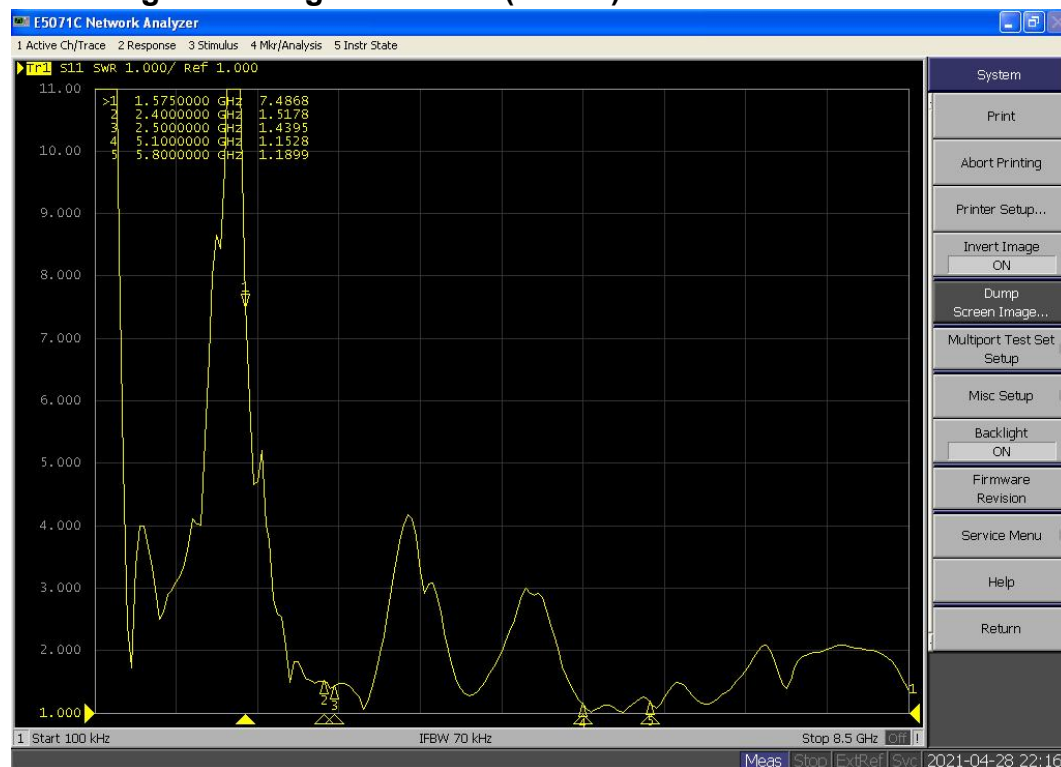


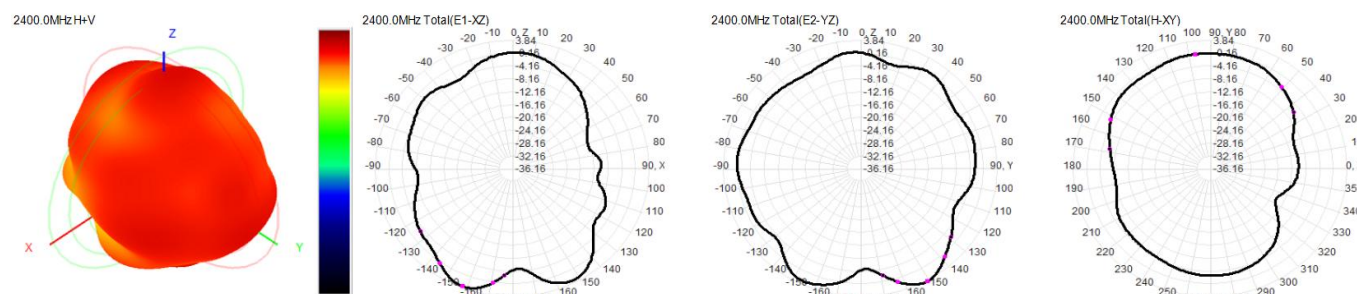
Chart 2 VSWR

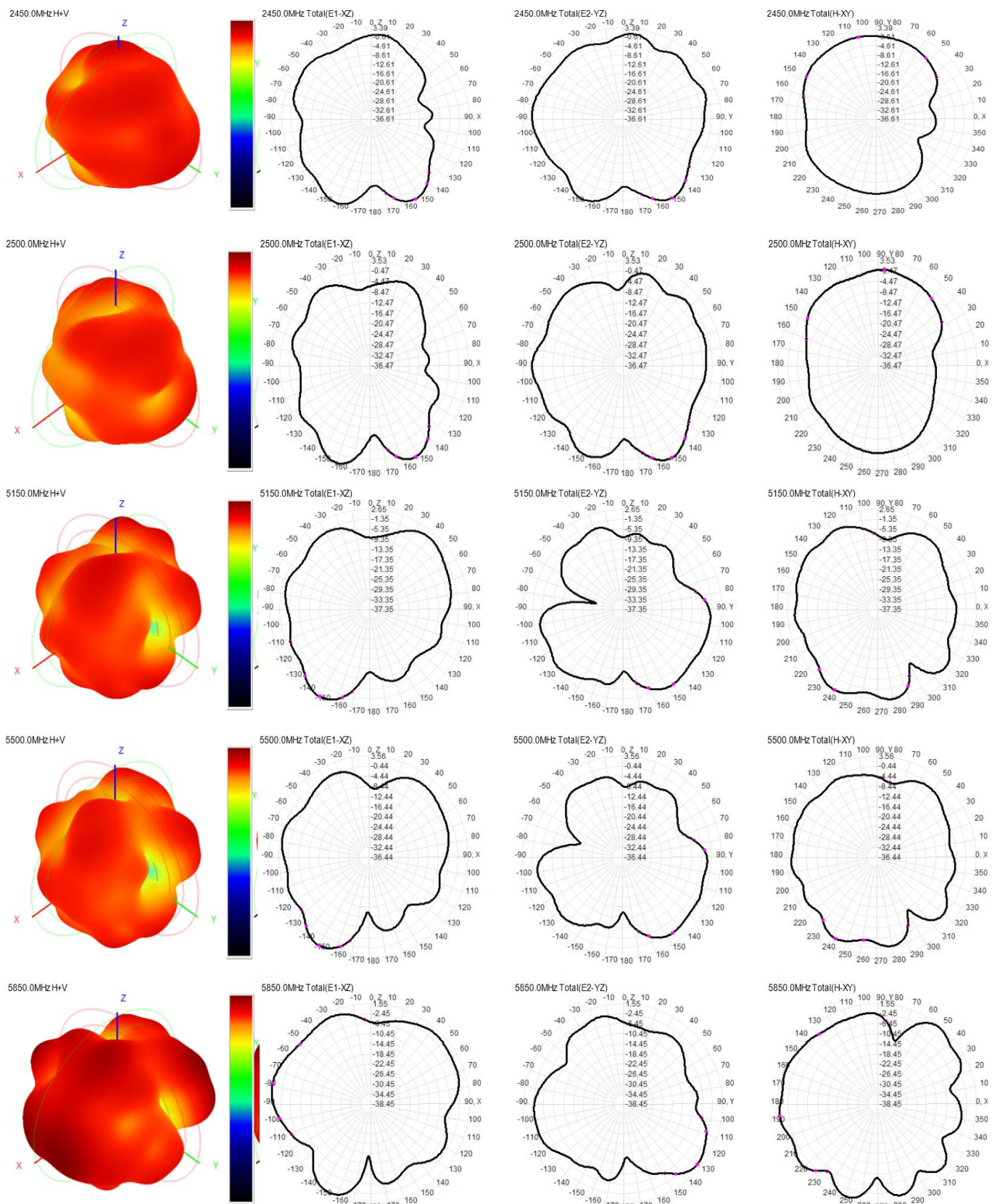
5.2 Efficient and gain.

Passive Test	Freq(MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
2.4GHz	Effi(%)	56.02	55.58	53.39	52.24	53.74	52.94	53.83	52.92	51.61	51.10	49.53
	Gain(dBi)	2.19	2.30	2.19	2.08	2.10	1.87	1.88	1.82	1.87	2.05	2.19

Passive Test WIFI 5G	Freq(MHz)	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700	5750	5800	5850
5G	Effi(%)	48.09	52.50	57.55	55.42	49.98	51.41	54.49	57.86	59.07	59.25	51.08	53.39	55.98	56.41	53.58
	Gain(dBi)	1.75	2.18	2.28	2.47	2.23	2.86	2.50	2.37	2.36	2.24	2.30	2.48	2.48	2.37	2.28

5.3 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 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

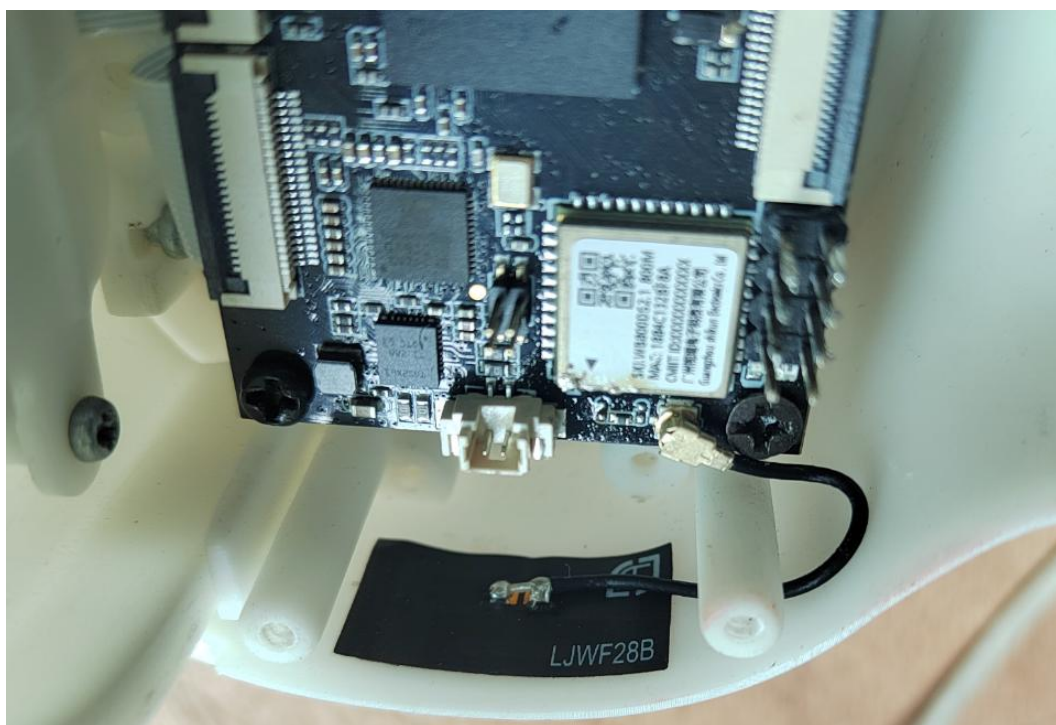
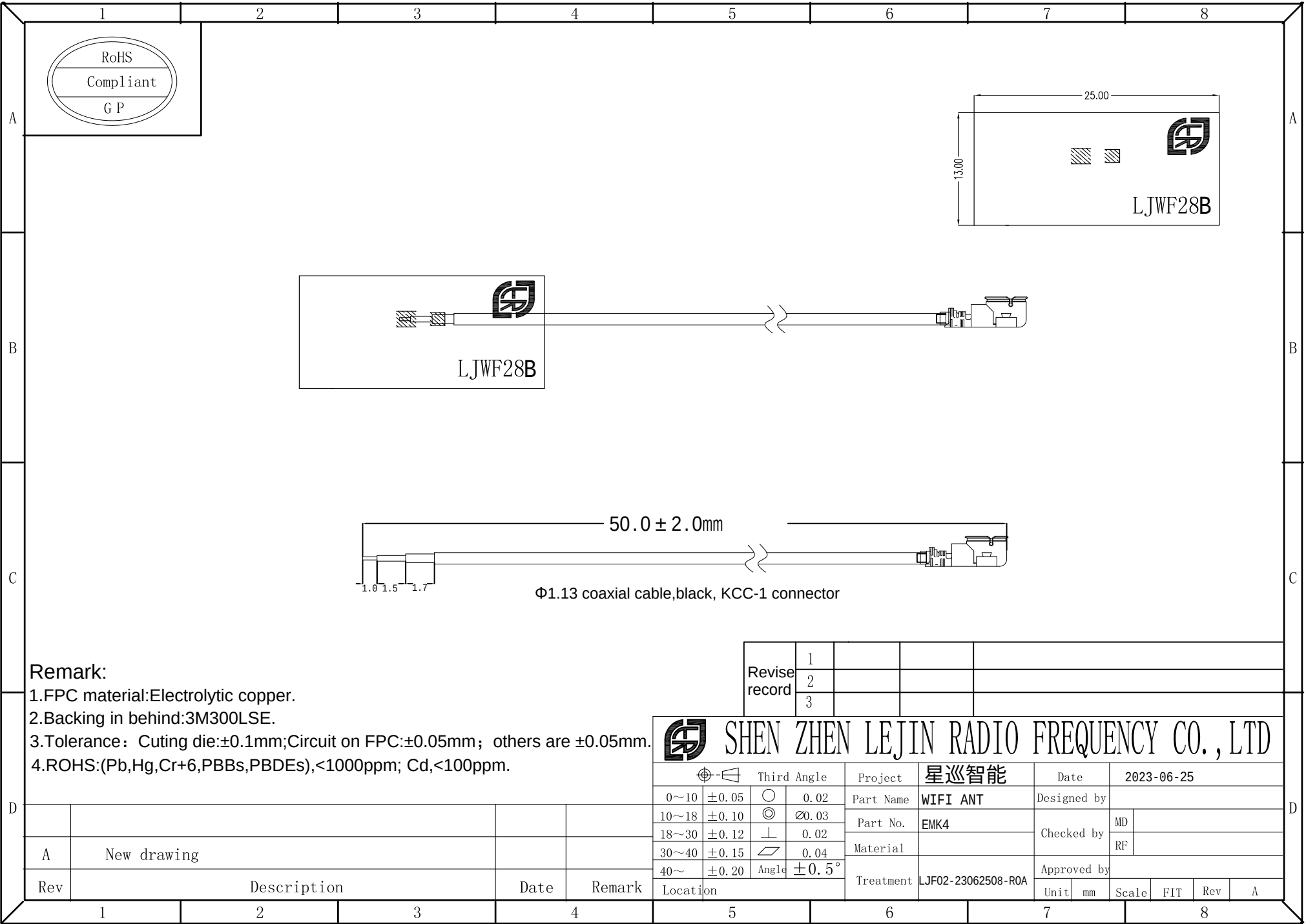


Chart 3 assemble type

8. Product Drawing



Remark:

- 1.FPC material:Electrolytic copper.
- 2.Backing in behind:3M300LSE.
- 3.Tolerance: Cuting 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		星巡智能		Date		2023-06-25	
0~10		±0.05				0.02		Part Name		WIFI ANT	
10~18		±0.10				Ø0.03		Part No.		EMK4	
18~30		±0.12				0.02		Material			
30~40		±0.15				0.04		Treatment		LJF02-23062508-ROA	
40~		±0.20		Angle		±0.5°		Approved by			
Location								Unit		mm	
								Scale		FIT	
								Rev		A	

New drawing			
Rev	Description	Date	Remark