



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 Antenna2

Product Model: XU160

Part Number: LJF02-24031208B-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	

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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(2.4G)	≤2.50dB
Gain(5G)	≤2.0dB
B. Material & Mechanical Characteristics	
Material of Radiator	FPC(Black),LJWF25C-L
Cable Type	Φ1.13mm,L350mm,Gray
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 | |

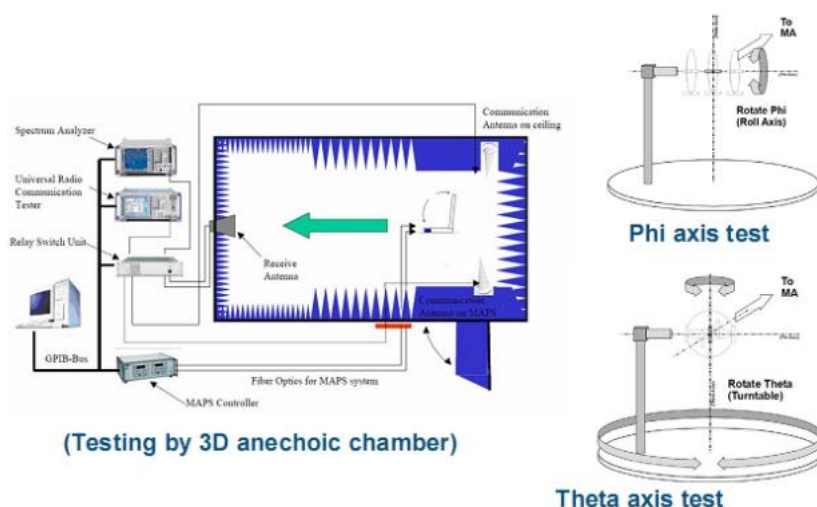


Chart 1 Test topology

5.Test Report

5.1 Voltage Standing Wave Ratio(VSWR).

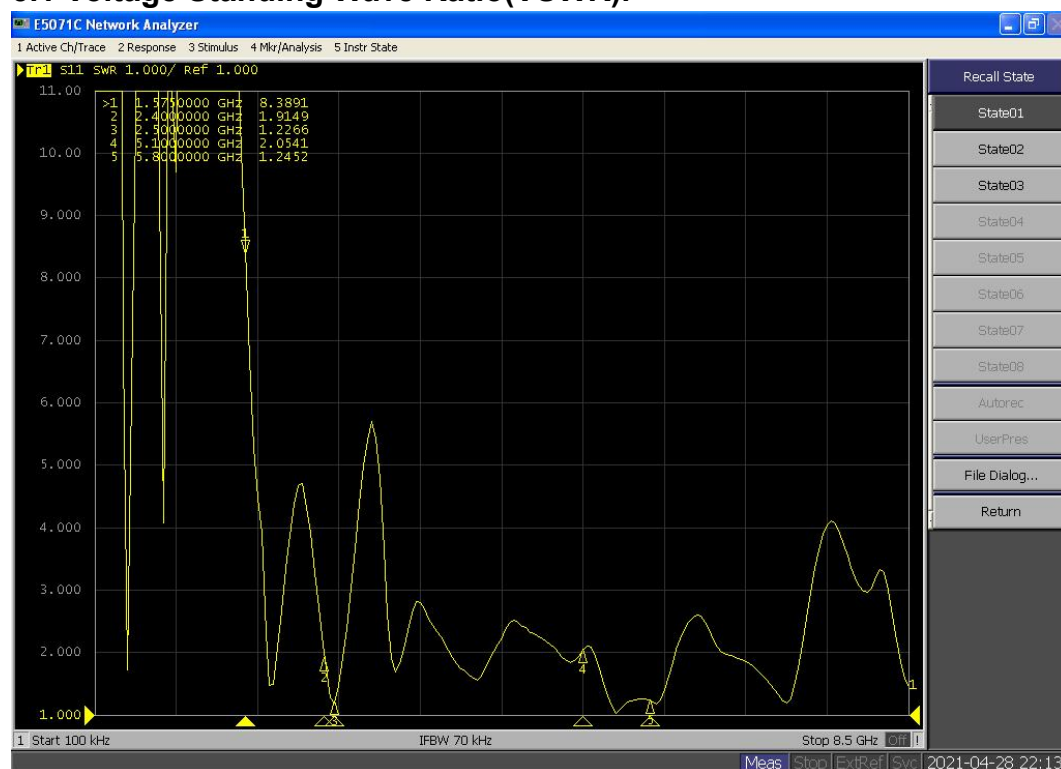


Chart 2 VSWR

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

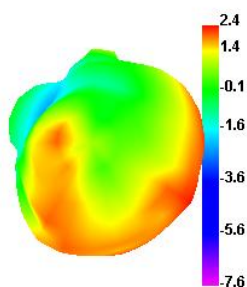
5.2 Efficiency and Gain.

Passive Test 2.4GHz	Freq(MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
	Effi(%)	42.31	52.02	44.78	50.86	39.17	49.60	42.40	53.62	44.44	48.05	38.85
	Gain(dBi)	2.41	2.92	2.60	2.92	2.16	2.66	2.12	2.60	2.27	2.85	2.39

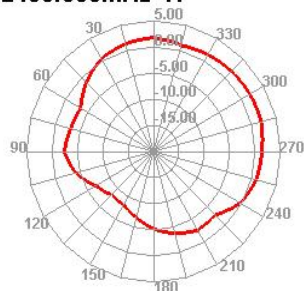
Passive Test WIFI 5G	Freq(MHz)	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700	5750	5800	5850	5900	5950	6000
	Effi(%)	42.66	40.14	47.72	52.14	57.78	52.88	47.58	57.12	59.61	63.27	65.02	68.66	65.14	68.44	62.00	63.70	63.84	68.86
	Gain(dBi)	2.96	2.44	2.48	2.07	2.49	3.07	2.99	3.96	4.43	4.34	4.48	4.44	4.10	4.19	3.71	3.98	3.73	4.09

5.4 Radiation pattern.

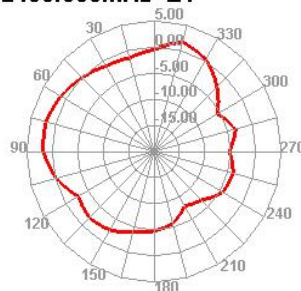
2400.000MHz



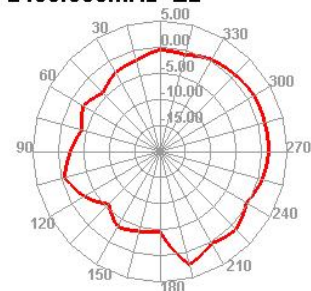
2400.000MHz H



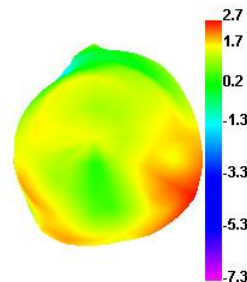
2400.000MHz E1



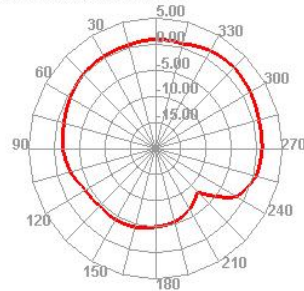
2400.000MHz E2



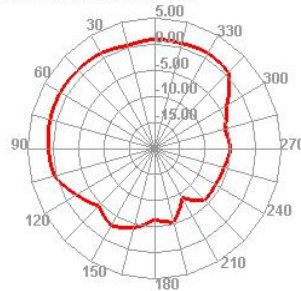
2450.000MHz



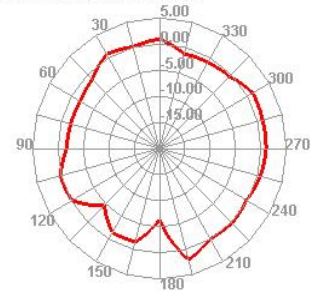
2450.000MHz H

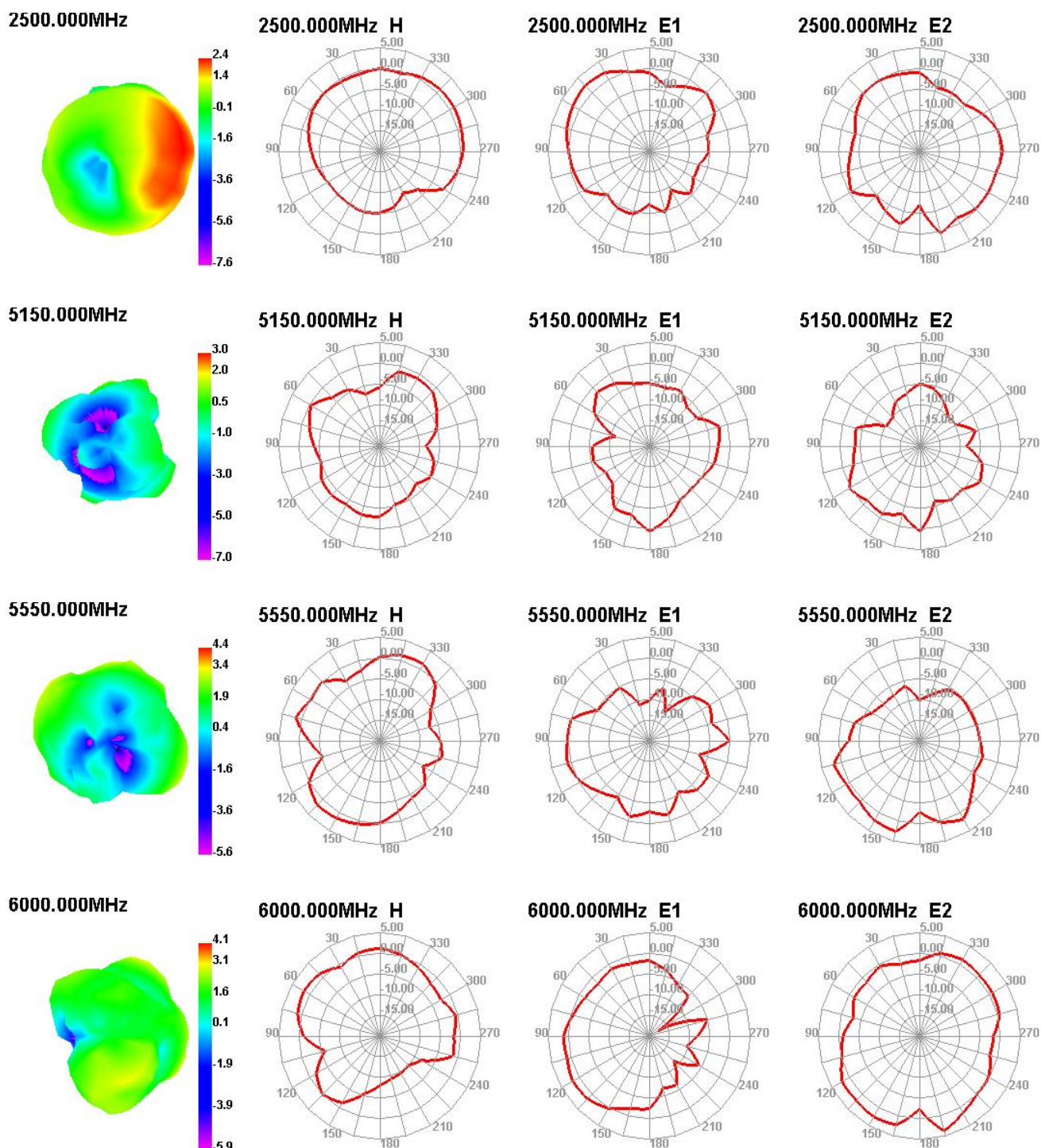


2450.000MHz E1



2450.000MHz E2





6. Reliability Test

Test Item	Test condition	Equipment	Specification	Result
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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 6 pray Test	Placing antenna in the Salt-Spray Tester ,set the test condition , Temp: 35±2℃ Humidity: 85% NaCl salt spray :5±1%.PH value :6.5~7.2 Testtime:24hours	Salt-Spray Tester	No color change No appearance rusting	PASS

7.Assemble type

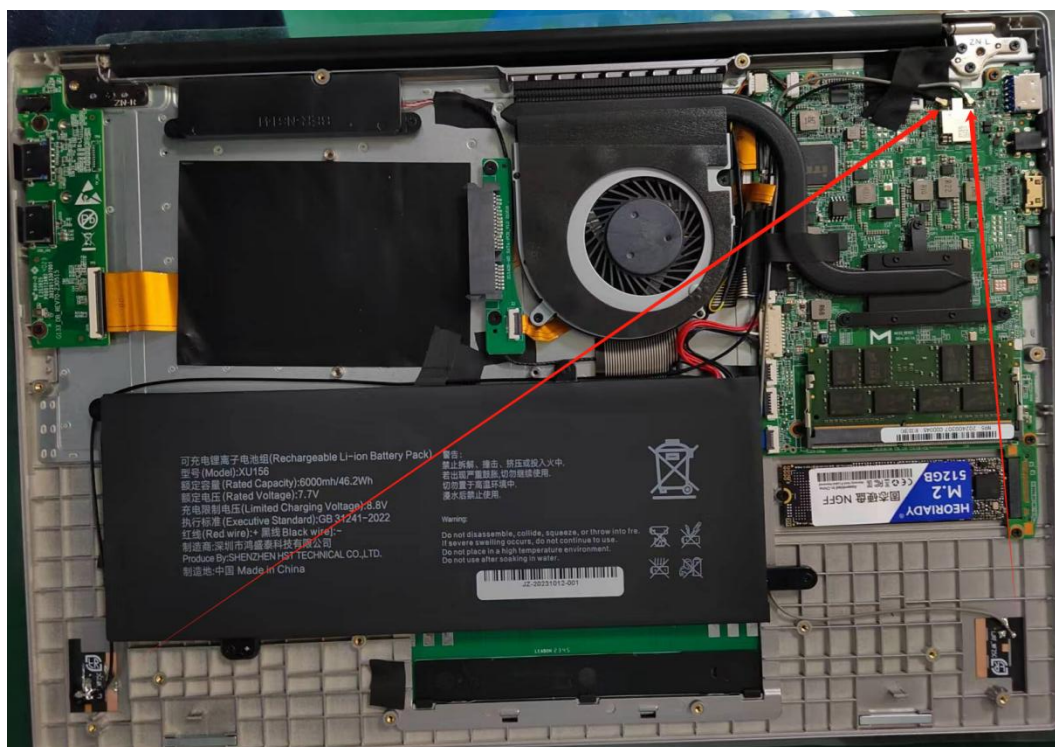
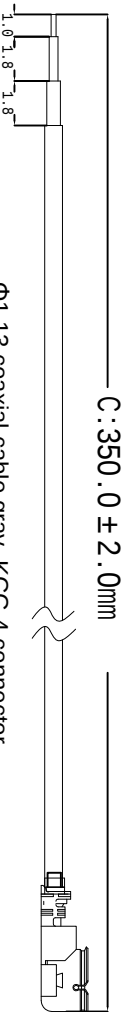
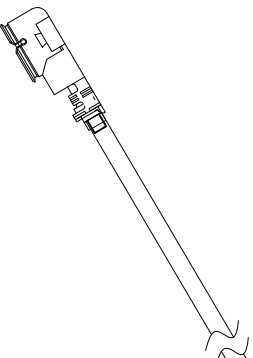
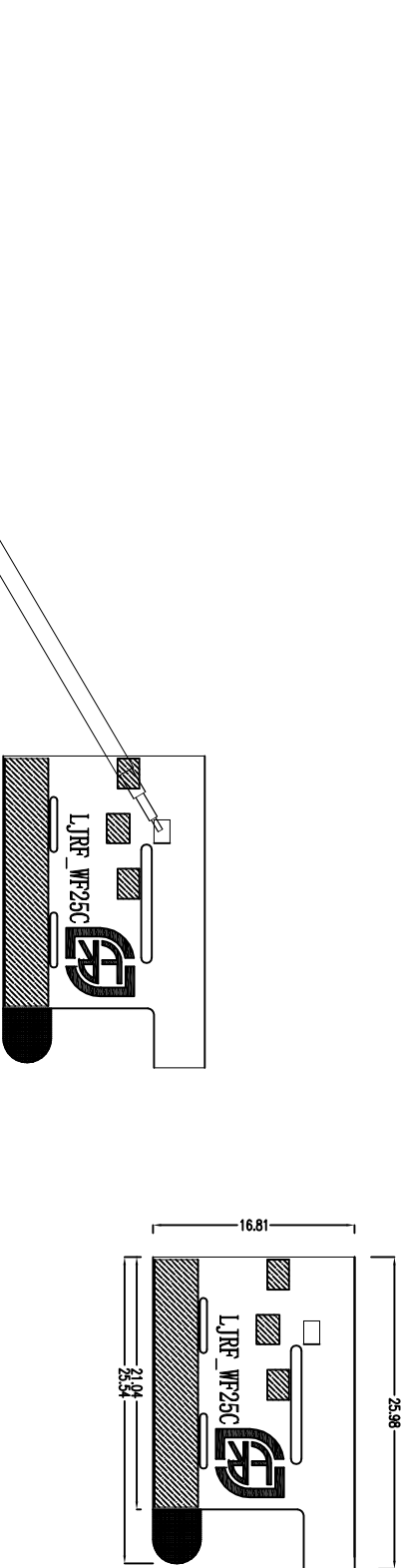


Chart 3 Assemble type(overall)



Chart 4 Assemble type(Close-up)

8.Product Drawing



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.

 深 圳 乐 进 射 频 科 技 有 限 公 司

SHEN ZHEN LEJIN RADIO FREQUENCY CO., LTD

D				D			
				0~10	±0.05	Third Angle	0.02
				10~18	±0.10	◎	Ø0.03
				18~30	±0.12	⊥	0.02
				30~40	±0.15	∠	0.04
				40~	±0.20	Angle	±0.5°
A	New drawing			Location	Project		
Rev	Description	Date	Remark	Part Name			WIFI ANT
1				Material			
				Treatment			LJF02-240312088-ROA
				Unit	mm	Scale	FTT
				Rev			A