



Lejin RF

Shenzhen Lejin radio frequency technology Co., LTD

## SPECIFICATIONS FOR APPROVAL

Customer Name: ZXInfoTek(Shenzhen) Co., Ltd

Product Name: 4G Antenna

Product Model: 开发板

Part Number: LJF01-20070104-R0A

Write By : Huxuwen

Issued Date: 2025-05-26

### 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	2025/05/26	



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### 3. Product Specification

A. Electrical Characteristics	
<b>Frequency</b>	824MHz ~960 MHz 1710MHz ~2170 MHz 2300MHz ~2690 MHz
<b>VSWR</b>	<2.0
<b>Efficiency</b>	≥30%
<b>Impedance</b>	50Ohm
<b>Polarization</b>	Linear
<b>Gain</b>	2.35dB
B. Material & Mechanical Characteristics	
<b>Material of Radiator</b>	FPC(Black),black
<b>Cable Type</b>	Φ0.81,black,90mm
<b>Connector Type</b>	Wire soldering
<b>Dimension</b>	70.3*19.5mm
C. Environmental	
<b>Operation Temperature</b>	- 20 °C ~ + 70 °C
<b>Storage Temperature</b>	- 30 °C ~ + 85 °C
<b>Humidity</b>	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

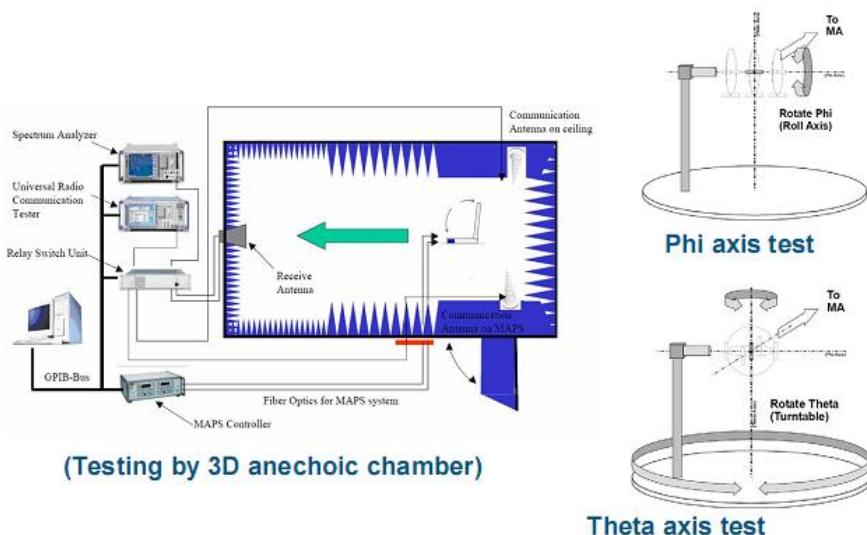


Chart 1 Test topology

## 5. Test Report

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

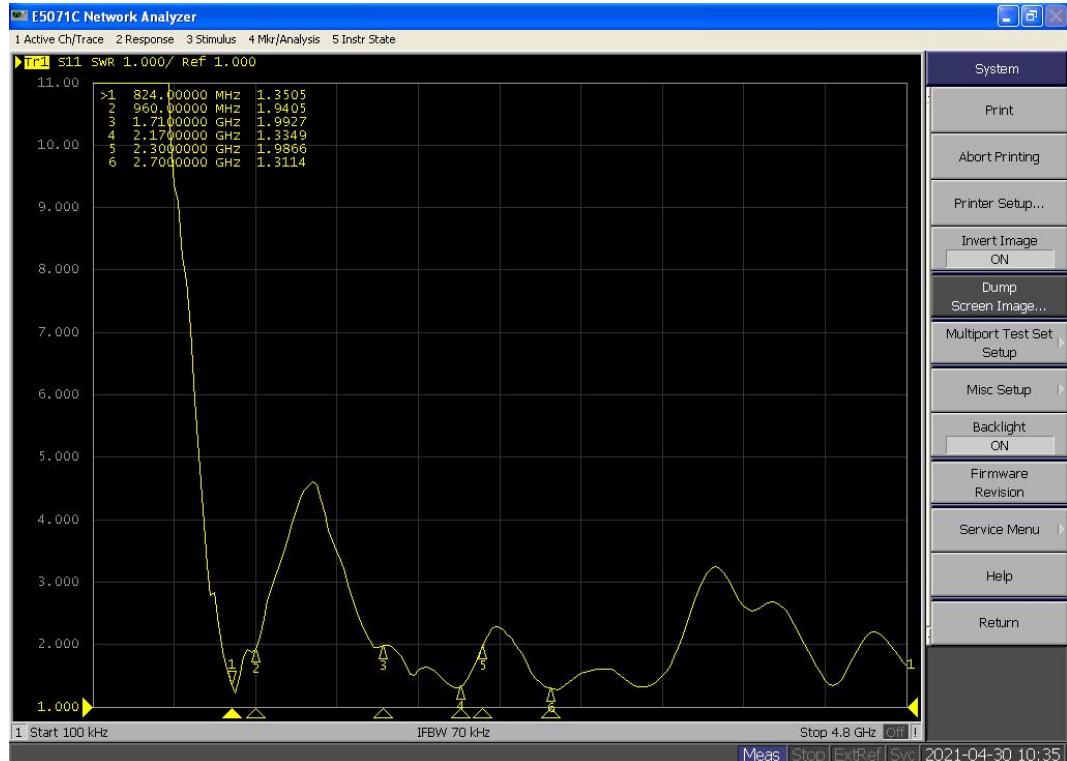


Chart 2 VSWR

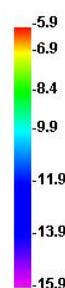
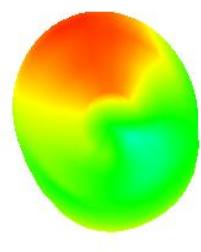
### 5.2 Efficient and gain.

Passive Test For 2G	Freq (MHz)	690	700	710	720	730	740	750	760	770	780	790	800				
	Effi (%)	13.26	15.99	21.00	26.13	30.20	35.27	42.59	44.76	31.35	16.44	9.77	14.87				
	Gain (dBi)	-5.87	-4.81	-3.70	-2.72	-1.85	-0.91	0.14	0.45	-1.16	-4.17	-5.61	-4.20				
Passive Test For 2G	Freq (MHz)	810	820	830	840	850	860	870	880	890	900	910	920	930	940	950	960
	Effi (%)	23.87	24.82	27.97	26.29	26.10	32.58	29.00	31.68	28.21	34.07	35.44	36.93	29.10	25.18	31.21	29.10
	Gain (dBi)	1.18	1.22	1.25	1.26	1.36	1.32	1.31	1.38	1.31	1.21	1.28	1.23	1.32	1.28	1.32	1.26
Passive Test For 3G	Freq (MHz)	1710	1730	1750	1770	1790	1810	1830	1850	1870	1890	1910	1930	1950	1970	1990	2010
	Effi (%)	41.39	46.53	48.89	44.36	45.22	43.19	48.51	49.42	54.01	49.56	52.40	48.16	50.67	47.29	47.86	52.71
	Gain (dBi)	1.72	1.75	1.89	1.95	1.98	2.00	2.05	1.75	1.85	2.10	1.82	1.78	1.92	2.18	1.96	2.15
Passive Test For 4G	Freq (MHz)	2030	2050	2070	2090	2110	2130	2150	2170								
	Effi (%)	49.11	50.85	51.52	49.21	49.13	52.44	47.11	45.38								
	Gain (dBi)	2.03	1.95	1.99	2.14	2.28	2.22	2.03	1.98								
Passive Test For 4G	Freq (MHz)	2300	2320	2340	2360	2380	2400	2420	2440	2460	2480	2500	2520	2540	2560	2580	2600
	Effi (%)	46.15	52.17	47.64	51.39	51.34	51.15	51.67	50.18	52.38	50.69	52.85	49.47	50.84	45.78	47.74	44.78
	Gain (dBi)	1.92	2.05	2.09	2.27	2.04	2.26	2.27	2.06	2.09	2.14	2.02	2.12	1.99	2.35	2.26	1.84
Passive Test For 4G	Freq (MHz)	2620	2640	2660	2680	2700											
	Effi (%)	49.22	50.04	51.87	48.52	51.41											
	Gain (dBi)	1.94	1.95	2.31	2.12	2.34											

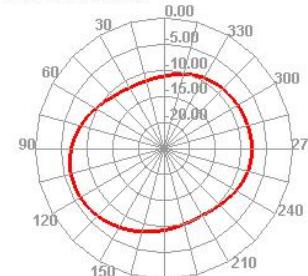
### 5.3 Radiation pattern.



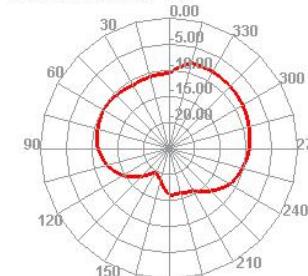
690.000MHz



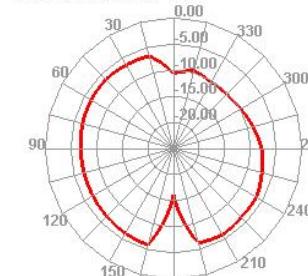
690.000MHz H



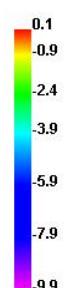
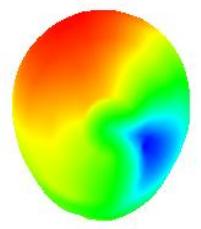
690.000MHz E1



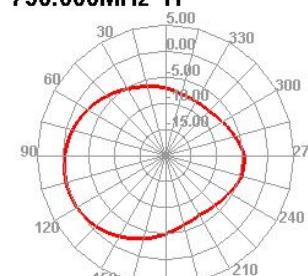
690.000MHz E2



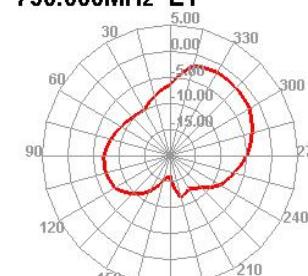
750.000MHz



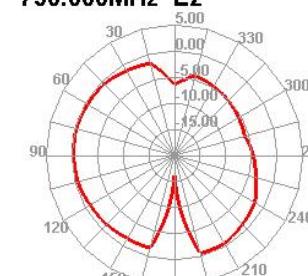
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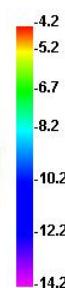
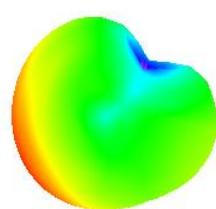
750.000MHz E1



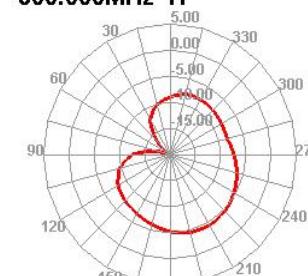
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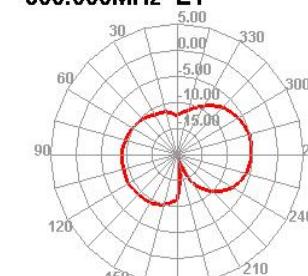
800.000MHz



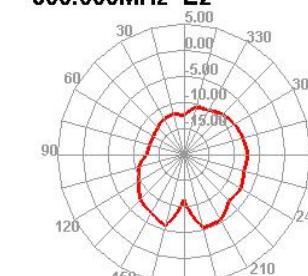
800.000MHz H



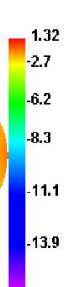
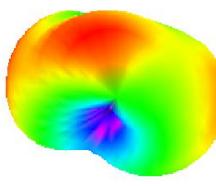
800.000MHz E1



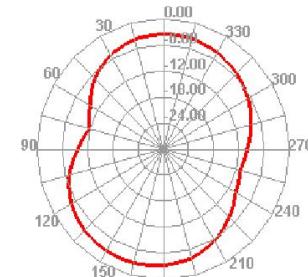
800.000MHz E2



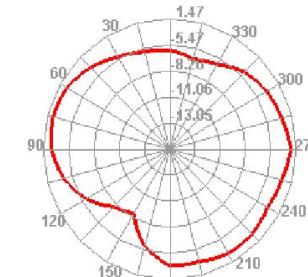
860.000MHz



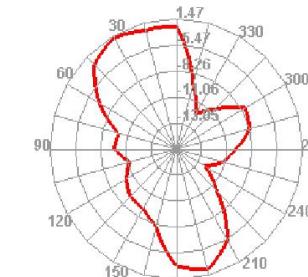
860.000MHz H



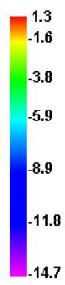
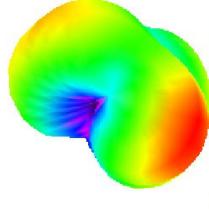
860.000MHz E1



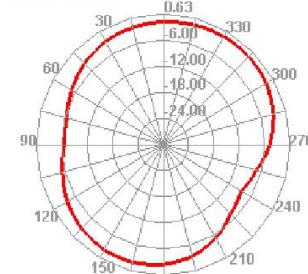
860.000MHz E2



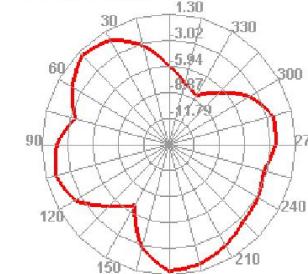
920.000MHz



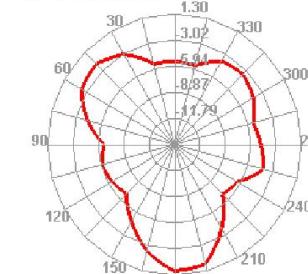
920.000MHz H

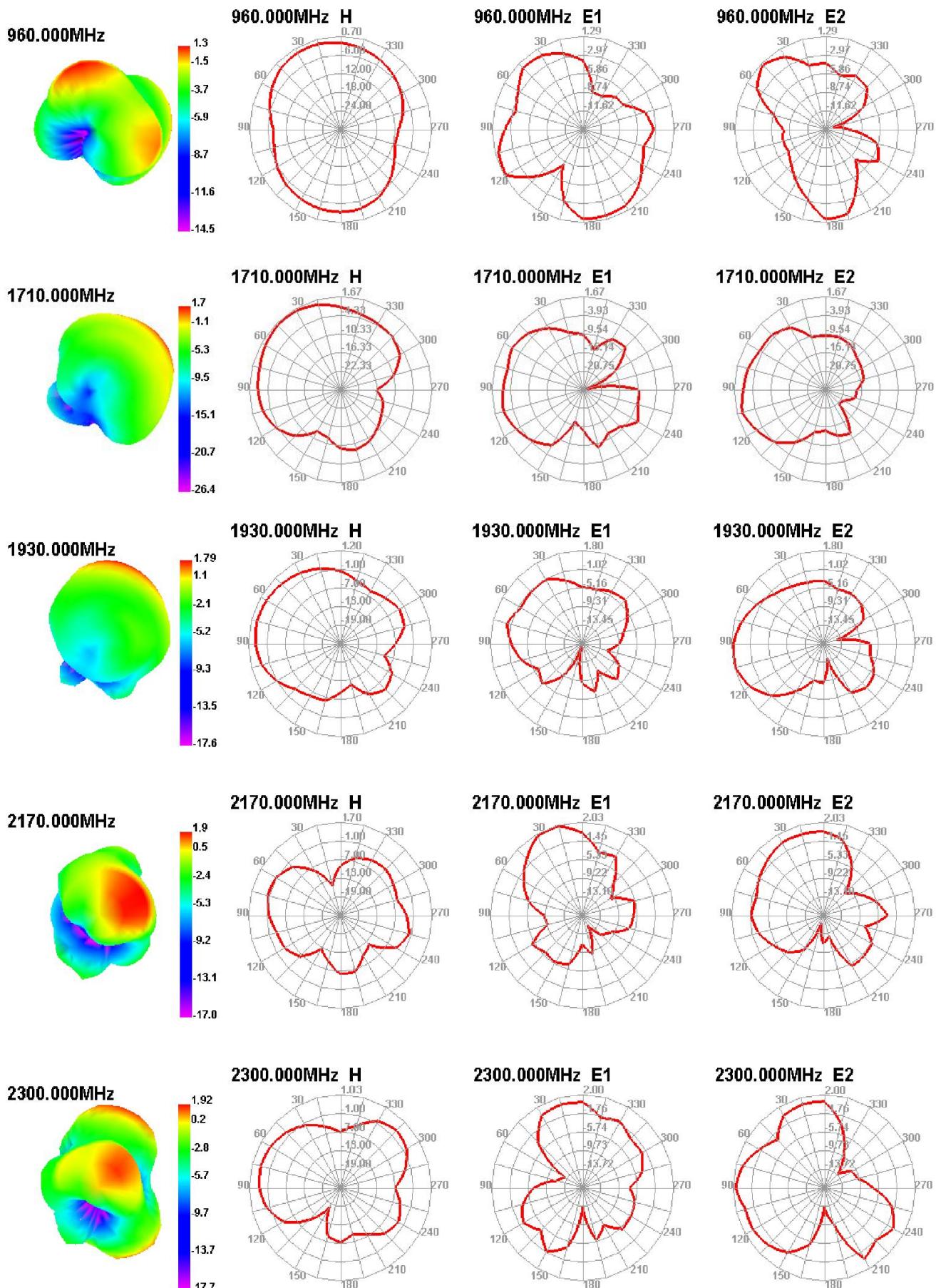


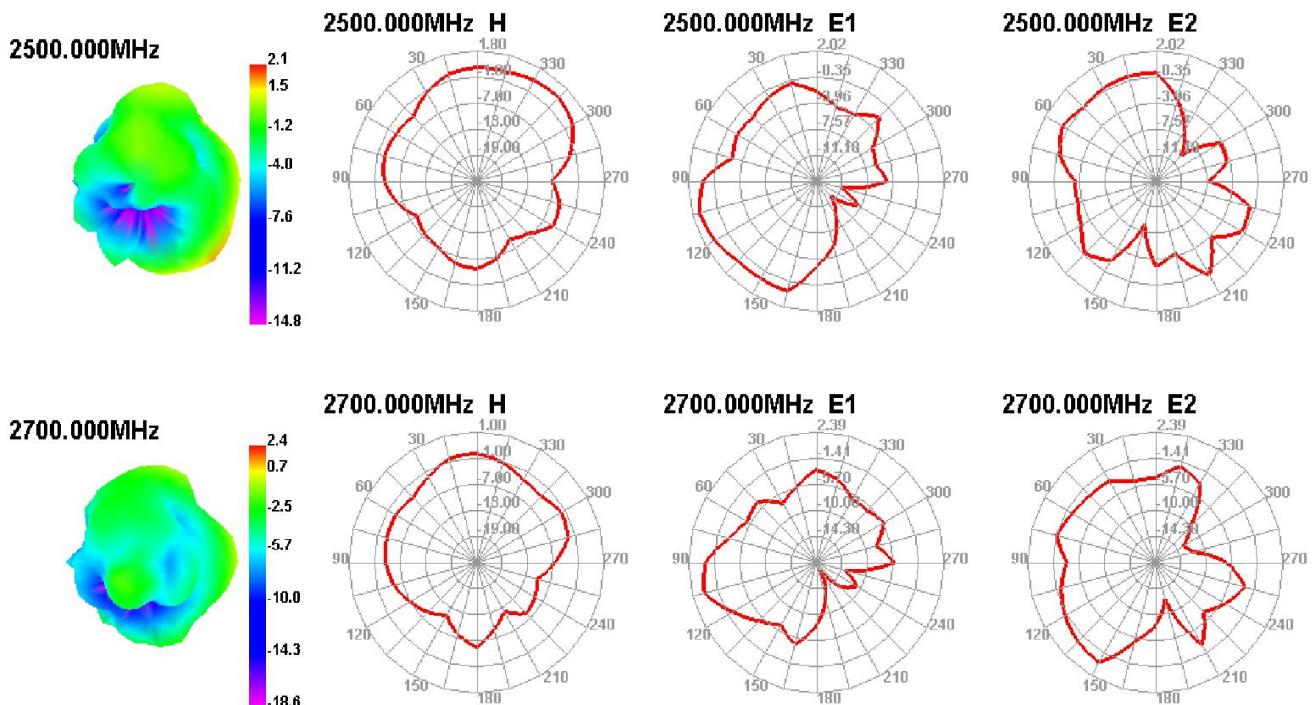
920.000MHz E1



920.000MHz E2







## 6. Reliability Test

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

## 7. Assemble type(omit)

## 8. Product Drawing

