Shenzhen Lejin radio frequency technology Co., LTD

SPECIFICATIONS FOR APPROVAL

Customer Name: ZXInfoTek(Shenzhen) Co., Ltd

Product Name: 4G Antenna

Product Model: LJF01

Part Number: LJF01-19082601-R1A

Write By : Huxuwen

Issued Date: 2019-08-26

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	2019/08/26	
V1.1	Update the cable spec	2020/02/14	

Add：Rm 301B,A4 Bld,Junfeng Innovation Park,Fuyong, Baoan Dist,Shenzhen. Tel:0755-27780515 Email:phxcler@szljrf.com

Index

Add：Rm 301B,A4 Bld,Junfeng Innovation Park,Fuyong, Baoan Dist,Shenzhen. Tel:0755-27780515 Email:phxcler@szljrf.com

3.Product Specification

A. Electrical Characteristics	
Frequency	824MHz ~960 MHz 1710MHz ~2170 MHz 2300MHz ~2690 MHz
VSWR	<2.0
Efficiency	≥30%
Impedance	50Ohm
Polarization	Linear
Gain	≤3.0dB
B. Material & Mechanical Characteristics	
Material of Radiator	FPC(Black),black
Cable Type	Φ0.81,black,72.5mm
Connector Type	IPX2
Dimension	73.5*16.8mm
C. Environmental	
Operation Temperature	- 20 ˚C ~ + 70 ˚C
Storage Temperature	- 30 ˚C ~ + 85 ˚C
Humidity	40%~95%

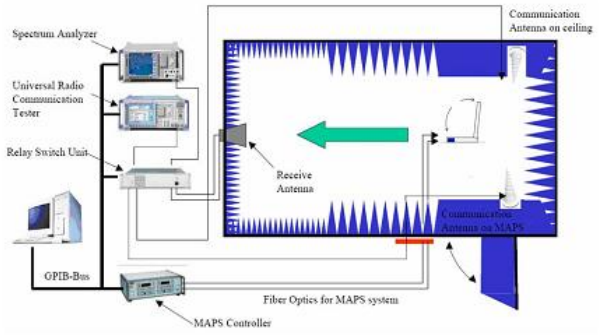
4.Test Equipment & Conditions

1.Network Analyzers Agilent 8753D/5071C

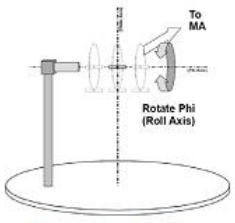
2.HSPA and LTE protocol test set R&S CMW500 -PT

3.Communications Test Set Agilent 8960

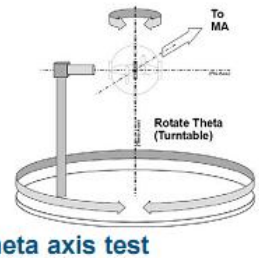
4.3D Chamber Test System



(Testing by 3D anechoic chamber)



Phi axis test



Theta axis test

Chart 1 Test topology

5.Test Report

5.1 Voltage Standing Wave Ratio(VSWR).

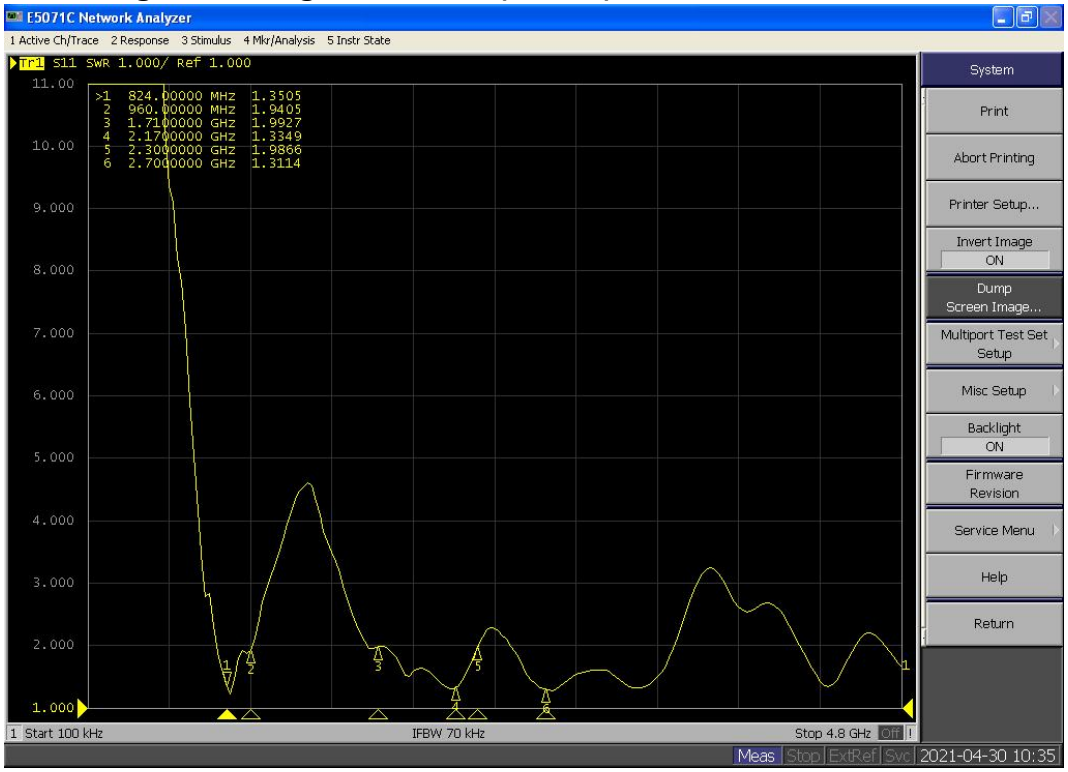


Chart 2 VSWR

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

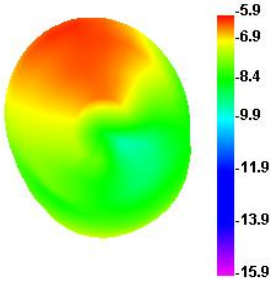
Passive Test For 3G	Freq (MHz)	1710	1730	1750	1770	1790	1810	1830	1850	1870	1890	1910	1930	1950	1970	1990	2010
	Effi (%)	41.39	46.53	48.89	44.36	45.22	43.19	48.51	49.42	54.01	49.56	52.40	48.16	50.67	47.29	47.86	52.71
	Gain (dBi)	1.72	1.75	1.89	1.95	1.98	2.00	2.05	1.75	1.85	2.10	1.82	1.78	1.92	2.18	1.96	2.15
	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
	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											

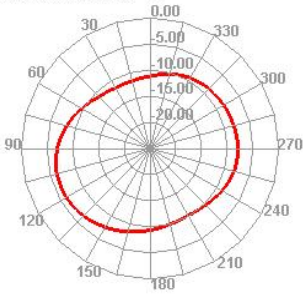
5.3 Radiation pattern.

Add：Rm 301B,A4 Bld,Junfeng Innovation Park,Fuyong, Baoan Dist,Shenzhen. Tel:0755-27780515 Email:phxcler@szljrf.com

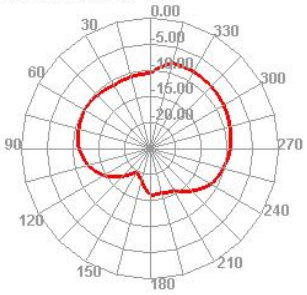
690.000MHz



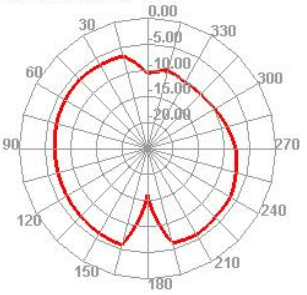
690.000MHz H



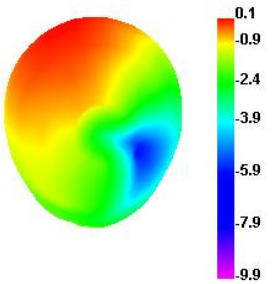
690.000MHz E1



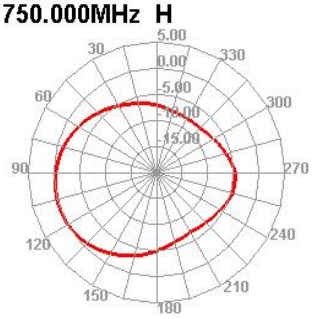
690.000MHz E2



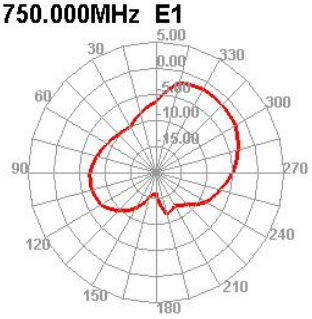
750.000MHz



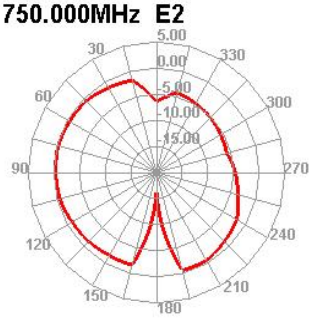
750.000MHz H



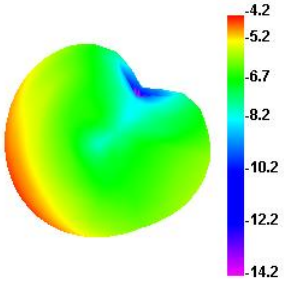
750.000MHz E1



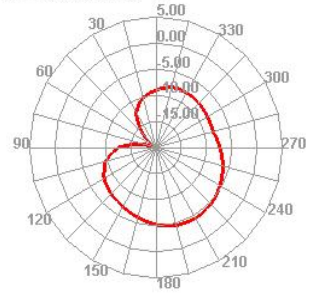
750.000MHz E2



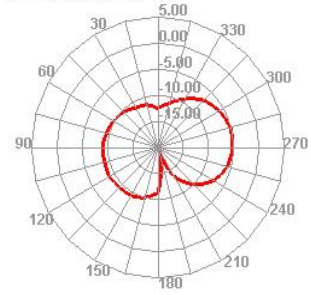
800.000MHz



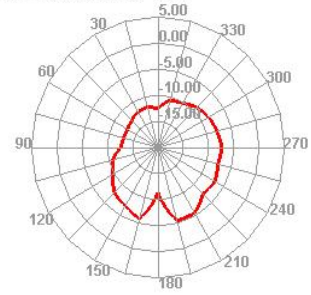
800.000MHz H



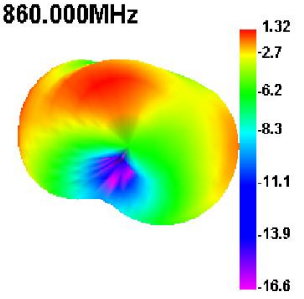
800.000MHz E1



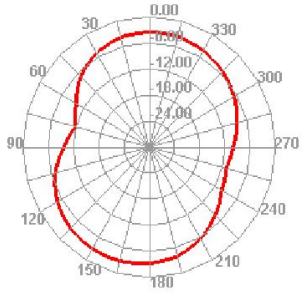
800.000MHz E2



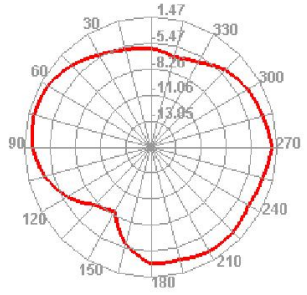
860.000MHz



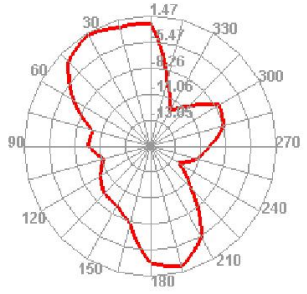
860.000MHz H



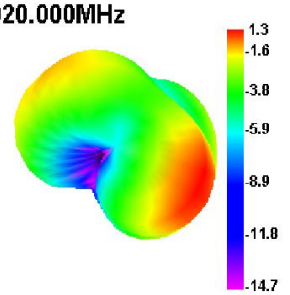
860.000MHz E1



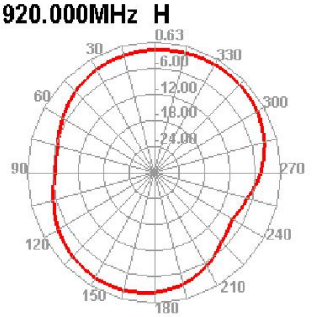
860.000MHz E2



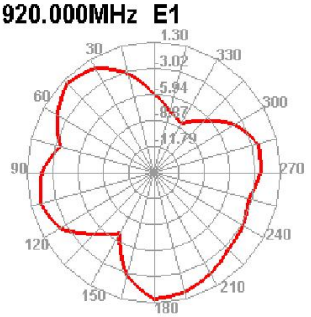
920.000MHz



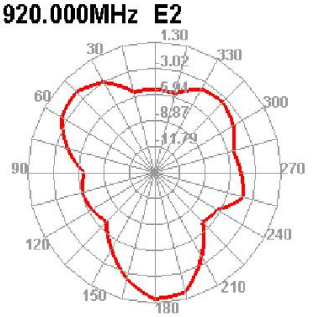
920.000MHz H



920.000MHz E1

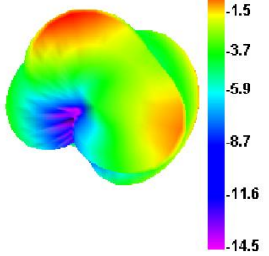


920.000MHz E2

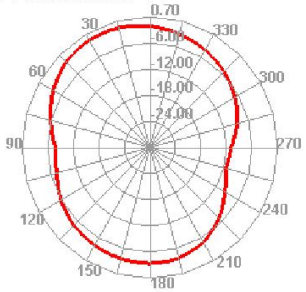


Add：Rm 301B,A4 Bld,Junfeng Innovation Park,Fuyong, Baoan Dist,Shenzhen. Tel:0755-27780515 Email:phxcler@szljrf.com

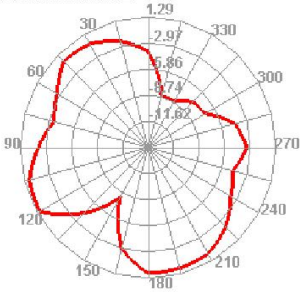
960.000MHz



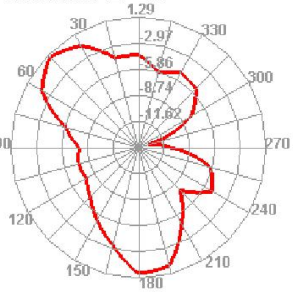
960.000MHz H



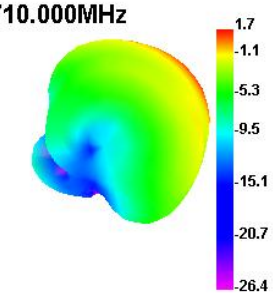
960.000MHz E1



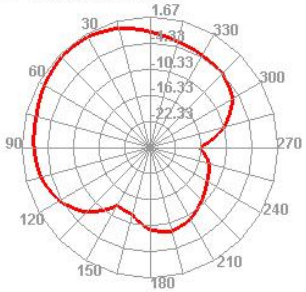
960.000MHz E2



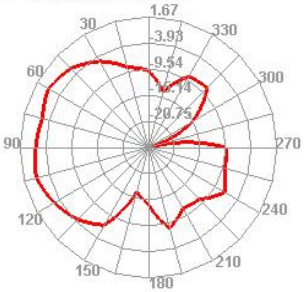
1710.000MHz



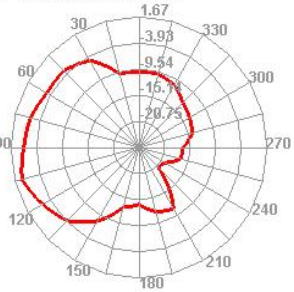
1710.000MHz H



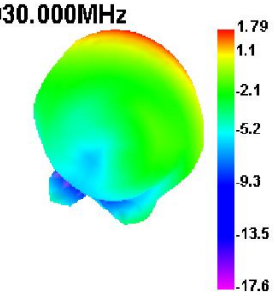
1710.000MHz E1



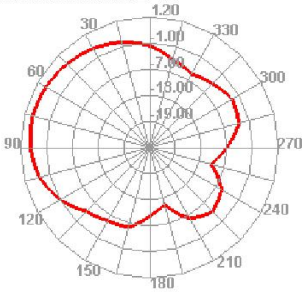
1710.000MHz E2



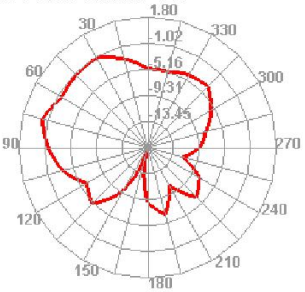
1930.000MHz



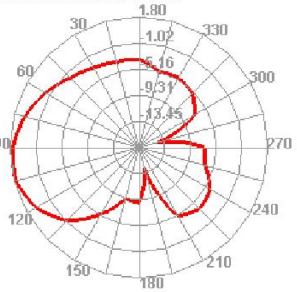
1930.000MHz H



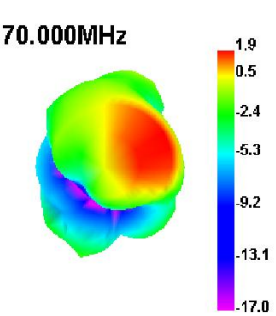
1930.000MHz E1



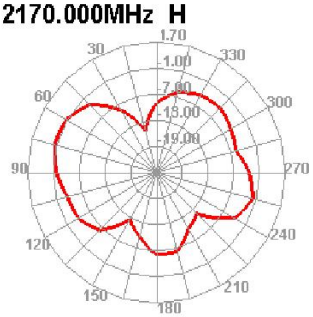
1930.000MHz E2



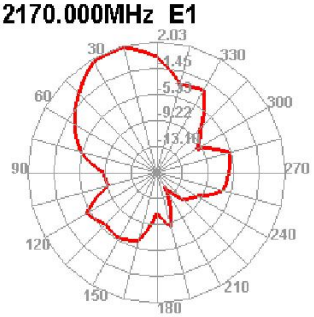
2170.000MHz



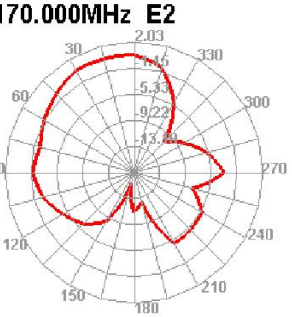
2170.000MHz H



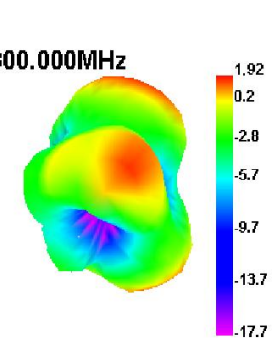
2170.000MHz E1



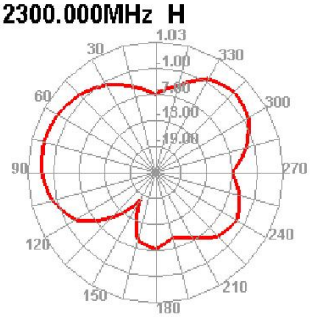
2170.000MHz E2



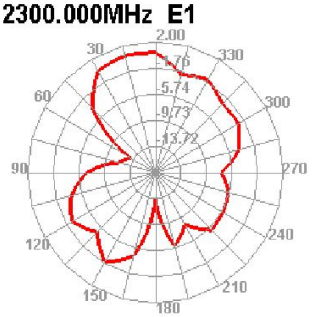
2300.000MHz



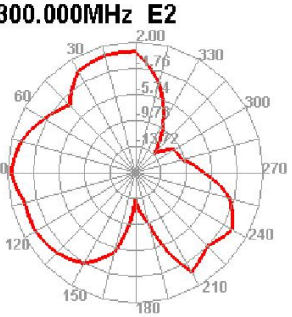
2300.000MHz H



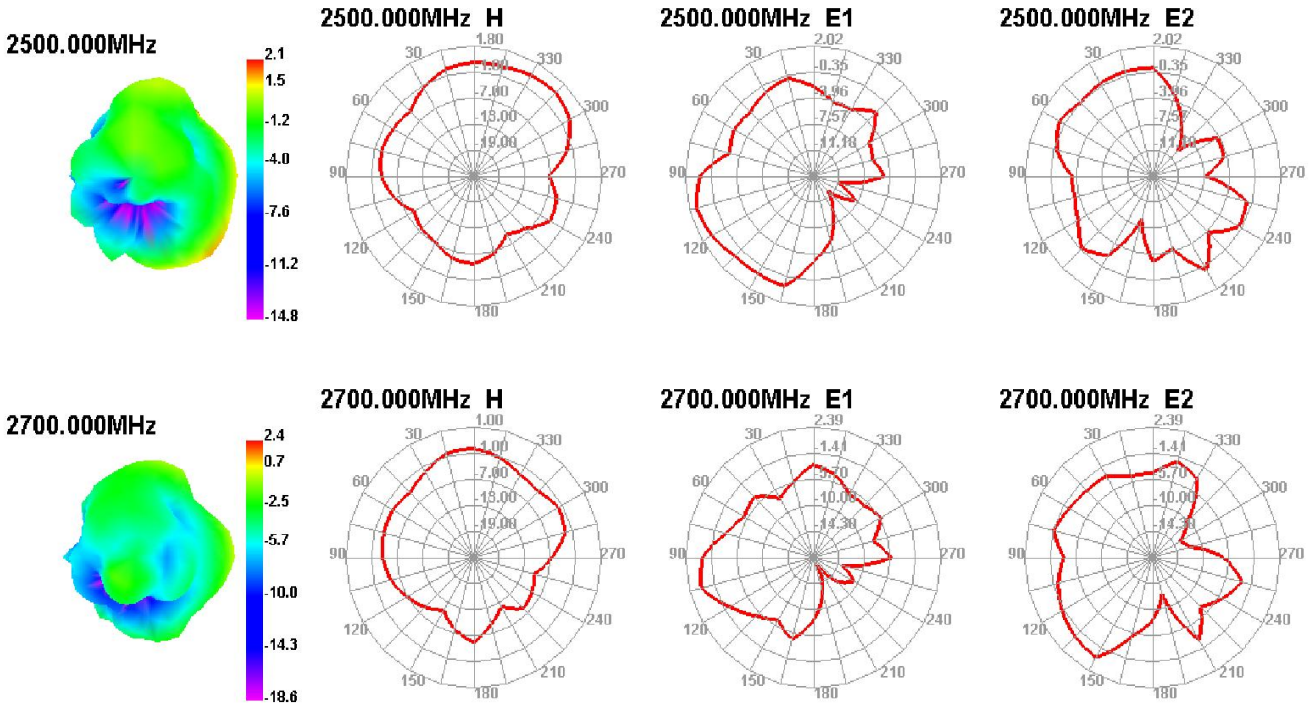
2300.000MHz E1



2300.000MHz E2



Add：Rm 301B,A4 Bld,Junfeng Innovation Park,Fuyong, Baoan Dist,Shenzhen. Tel:0755-27780515 Email:phxcler@szljrf.com



6.Reliability Test

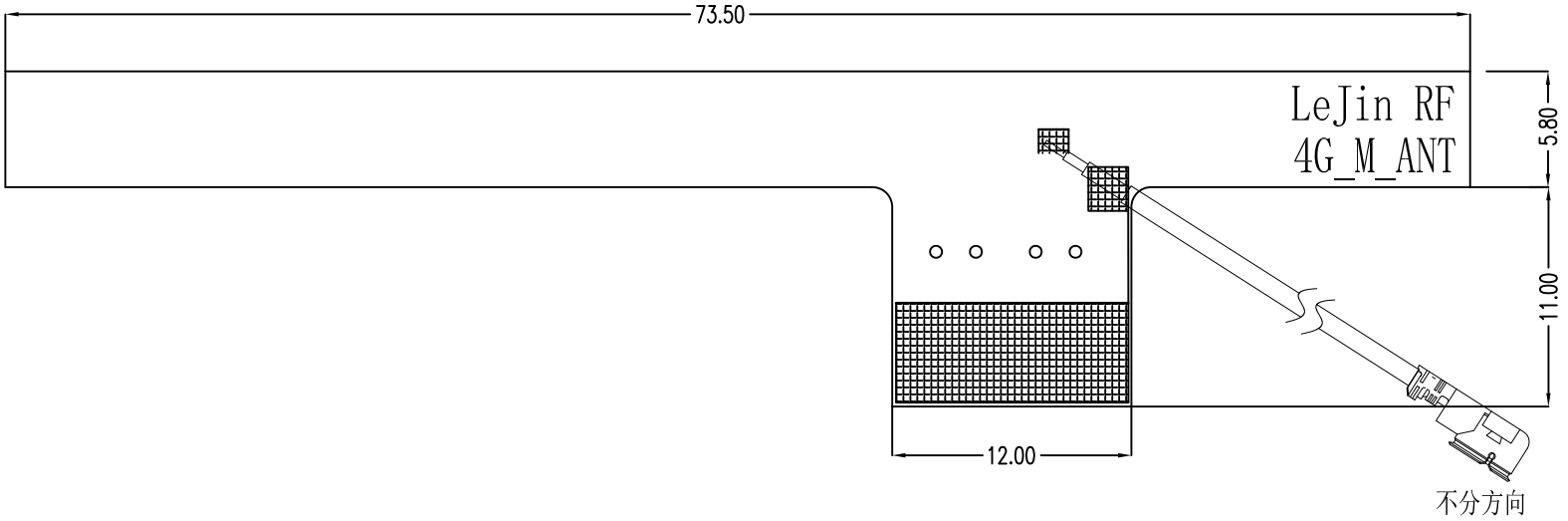
Test Item		Test condition	Equipment	Specification	Result
1	Low Temp. Storage Test	Temperature: -30℃， Time:48hrs Test condition: Placing antenna in a Low/High Temperature Chamber, keep the temp is 25℃and humidity is 65% for one hour, then step-down the temp. to -30℃ in one hour, store antenna for44 hours; 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 tempto 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±2℃ Humidity: 85% NaCl salt spray :5±1%.PH value :6.5~7.2 Testtime:24hours	Salt-Spray Tester	No color change No appear rusting	PASS

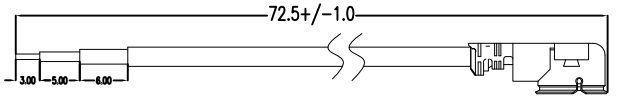
7. Assemble type(omit)

8.Product Drawing

Add：Rm 301B,A4 Bld,Junfeng Innovation Park,Fuyong, Baoan Dist,Shenzhen. Tel:0755-27780515 Email:phxcler@szljrf.com

RoHS
Compliant
G P





0.81黑色银锡线，二代KCC端子

要求：

1. "*"为重点尺寸.
2. FPC材料:电解铜,一对半材质(蔡伦格帝).
3. 反面背胶(3M300LSE).
4. 未标公差尺寸请依图纸,模具冲出尺寸公差为±0.1,
   铜箔线条尺寸公差为±0.05,标重点的孔公差为±0.05.
5. 各零件中Pb、Hg、Cr+6、PBBs、PBDEs各项小于1000PPM，Cd小于100PPM.

Rev	Description	Date	Remark
A	New drawing		

深 圳 乐 进 射 频 科 技 有 限 公 司
SHEN ZHEN LEJIN RADIO FREQUENCY CO.,LTD

Third Angle			
0～10	±0.05	○	0.02
10～18	±0.10	◎	⌀0.03
18～30	±0.12	⊥	0.02
30～40	±0.15	▱	0.04
40～	±0.20	Angle	±0.5°
Location			

Project	QC ER	Date	2019-8-26
Part Name	4G M	Designed by	
Part No.		Checked by	MD
Material			RF
Treatment	LJF01-19082601-R0A	Approved by	
		Unit mm	Scale FIT Rev A