

ANTENNA SPECIFICATION

Name of an article : Spring antenna

Material code : YL1656

Date : 2025-05-10

Manufacture: Shenzhen Jinghe Spring Technology Co., Ltd.

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Province

1. 天线参数 (antenna parameters)

Design Specifications	Typical	Units
天线形式(antenna form)	弹簧天线(Spring antenna)	
工作频率 (working Frequency)	2400-2500	MHZ
最大增益(Max Gain*)	2.0	DBi
天线效率 (Antenna efficiency)	30~80	%
电压驻波比 (VSWR)	<1.8	
极化方式 (Polarization)	垂直极化(Vertical polarization)	
辐射方向 (Radiation pattern)	全向(Omnidirectional)	
馈电阻抗 (impedance)	50	ohm
功率容量 (Power handling)	33	dbm
天线接口 (Interface)		
天线尺寸 (Overall dimensions)	9.5*5.5	mm
最大重量 (Maximum Weight)	1	g
工作温度 (Operatin Temp)	-40-85	°C
储存温度 (Storing Temp)	-40-85	°C

2. 天线实物图 (Physical image of antenna)



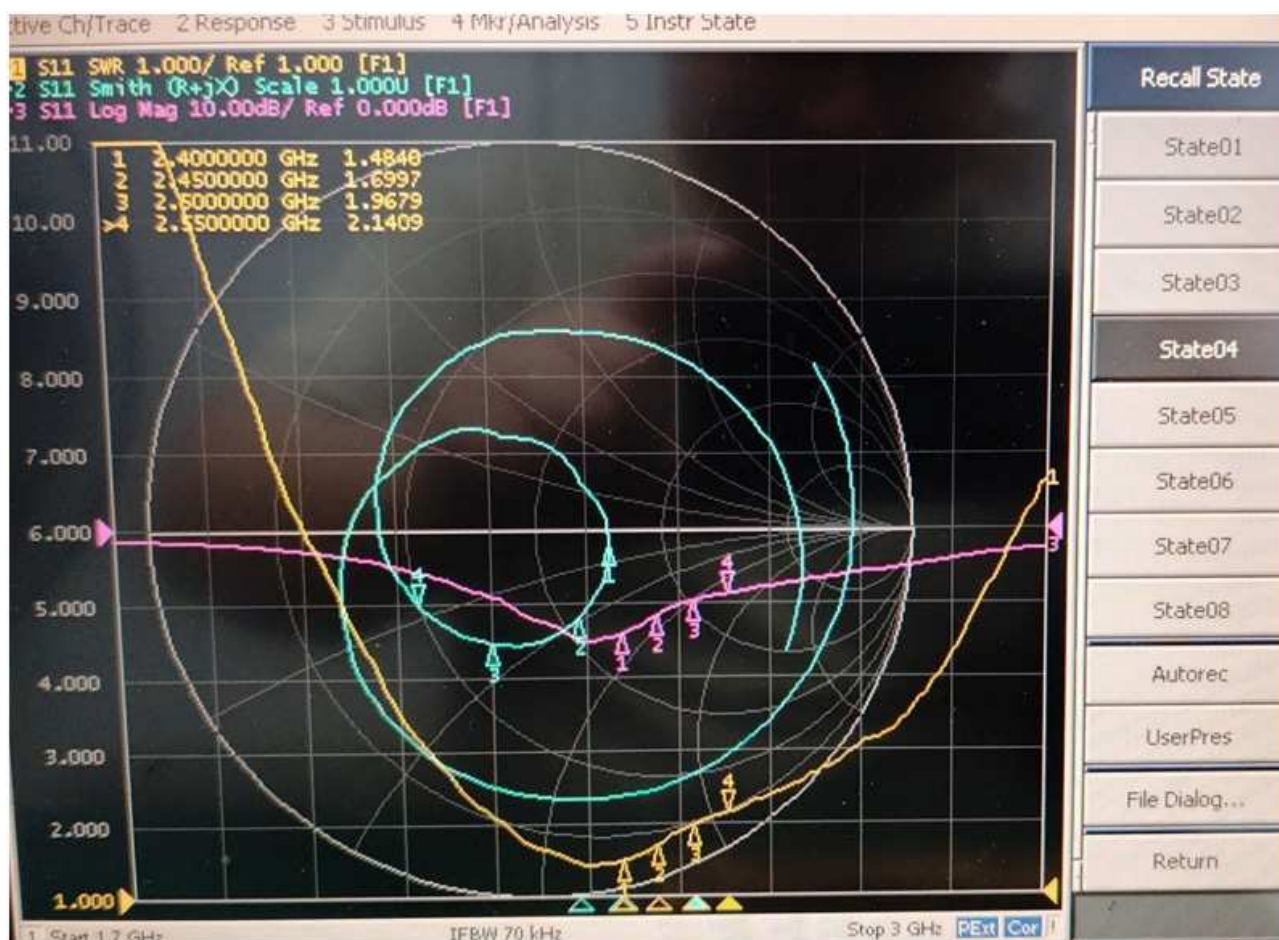
注：1. 天线参数是根据模拟环境测试，针对不同的产品会有性能偏差。

2. 天线功能较为敏感，主体周边结构有变更请通知我们评估。

Note: 1. Antenna parameters are tested based on simulated environments, and there may be performance deviations for different products.

2. The antenna function is relatively sensitive. Please notify us for evaluation if there are any changes to the surrounding structure of the main body.

3. 电压驻波比 (VSWR) / 回波损耗 (Return Loss) / 史密斯圆图 (Smith Chart)



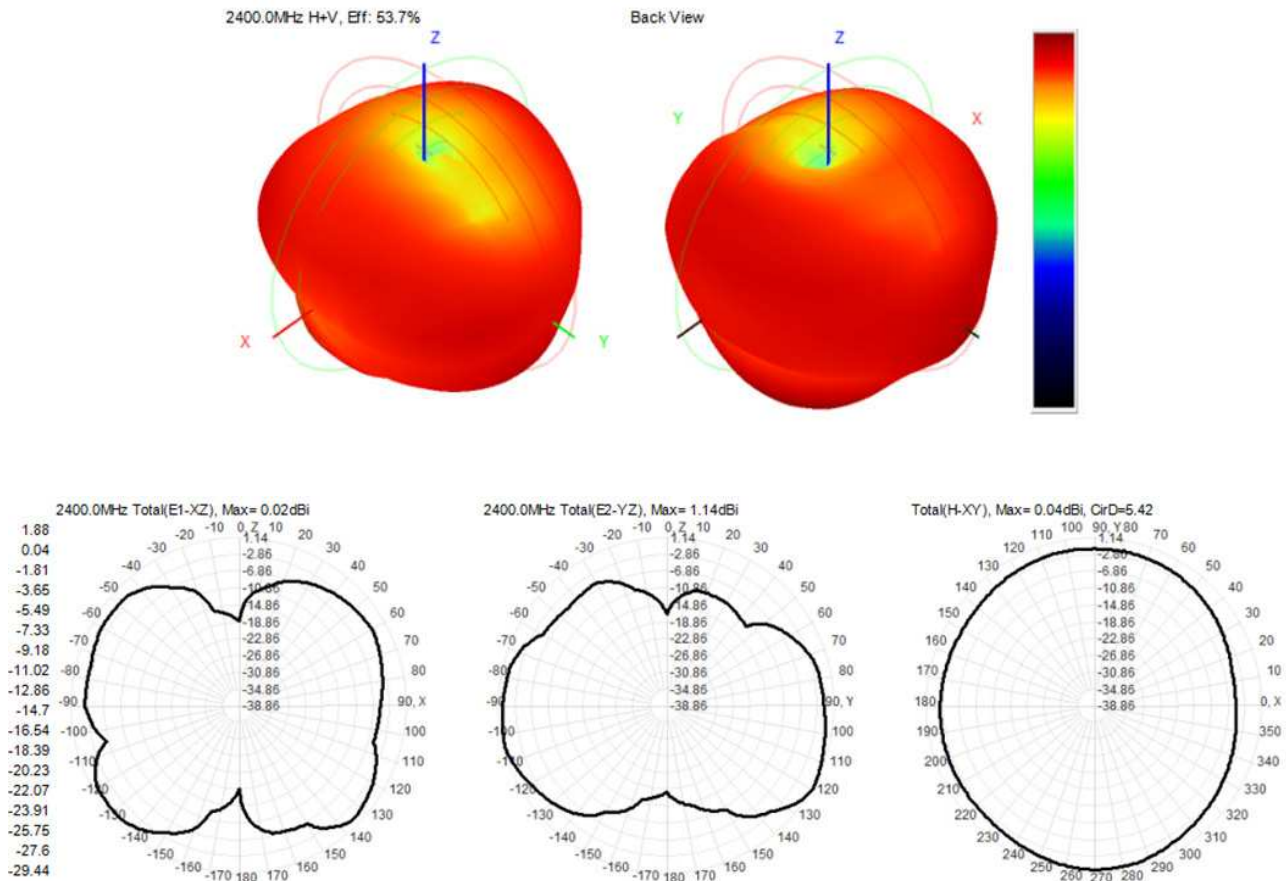
Frequency	VSWR	Return Loss	Input Impedance(Ω)
2400M	1.52	-11.70	66.43
2450M	1.72	-11.53	44.73
2480M	1.92	-10.00	34.59
2500M	2.06	-9.20	29.20

4.增益（Gain）/效率（efficiency）

Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Efficiency (dBi)	-2.70	-2.56	-2.54	-2.47	-2.51	-2.52	-2.71	-2.82	-2.94	-2.90	-2.79
Gain (dBi)	1.88	2.00	1.71	1.55	1.27	1.10	0.85	0.77	0.71	0.69	0.67
Efficiency (%)	53.67	55.52	55.67	56.67	56.13	55.95	53.63	52.29	50.84	51.33	52.59
Directivity (dB)	4.58	4.46	4.26	4.01	3.78	3.62	3.56	3.59	3.65	3.59	3.46
Peak Gain Position (Theta)	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00
Peak Gain Position (Phi)	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00
Efficiency ThetaPol (%)	45.91	47.67	47.98	48.92	48.58	48.39	46.52	45.41	44.42	44.95	46.26
Efficiency PhiPol (%)	7.76	7.85	7.70	7.75	7.55	7.56	7.11	6.88	6.42	6.38	6.33
Upper Hem. Efficiency (%)	24.21	25.47	26.24	27.57	28.05	28.42	27.30	26.40	25.37	25.60	26.46
Lower Hem. Efficiency (%)	29.46	30.05	29.43	29.10	28.08	27.53	26.33	25.89	25.47	25.73	26.13

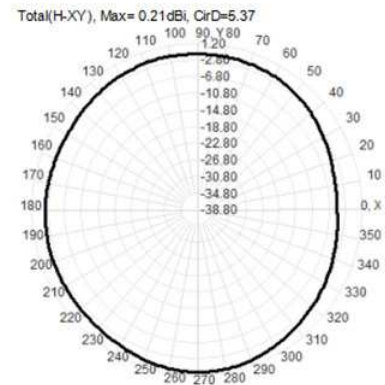
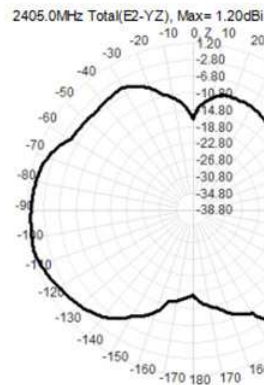
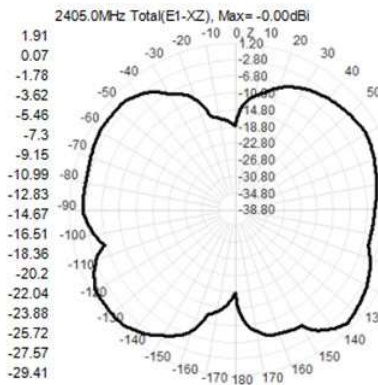
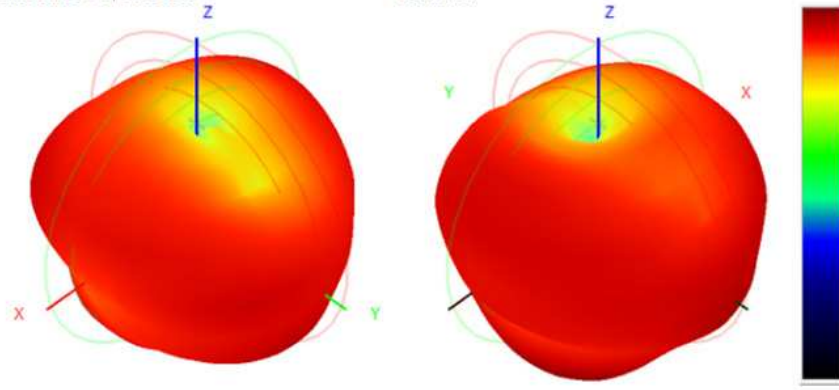
T90(H)圆度	5.42	5.34	5.28	5.19	5.04	5.11	5.22	5.32	5.25	5.10	4.74
Gain 15deg (dBi)											
E1(XZ)波瓣宽度	38.00	38.00	39.00	60.00	59.00	58.00	57.00	36.00	35.00	54.00	53.00
E1(XZ)前后比	4.12	3.97	3.71	3.40	3.37	3.00	2.74	2.82	3.02	3.32	3.60
E2(YZ)波瓣宽度	51.00	54.00	58.00	60.00	62.00	63.00	64.00	66.00	65.00	64.00	64.00
E2(YZ)前后比	10.84	10.71	10.74	10.20	10.04	9.80	9.51	9.30	9.41	9.57	9.81
最大增益处轴比(P)	17.97	16.49	15.48	15.29	15.74	16.80	18.27	19.36	19.68	18.91	18.83
顶点(Theta=0)处轴比(P)	6.83	7.49	7.23	5.28	4.21	3.22	3.06	2.61	3.94	4.46	5.81
仰角10度最差(大)轴比(P)	55.05	46.51	52.63	45.40	50.10	66.00	45.37	50.46	48.64	53.56	50.20
Hc(XY)波瓣宽度	282.00	283.00	287.00	165.00	158.00	162.00	298.00	300.00	301.00	303.00	308.00
Hc(XY)前后比	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
左旋圆极化效率(%)	25.69	26.25	25.66	25.66	24.99	25.03	24.63	24.45	23.97	24.02	24.05
右旋圆极化效率(%)	27.98	29.27	30.01	31.00	31.14	30.91	29.00	27.84	26.87	27.31	28.54

5.天线辐射方向图（antenna radiation pattern）



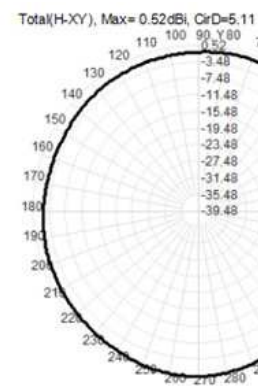
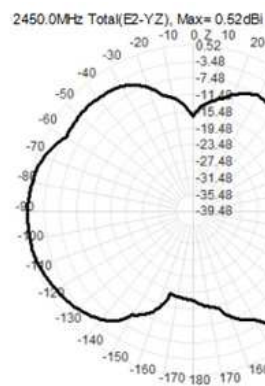
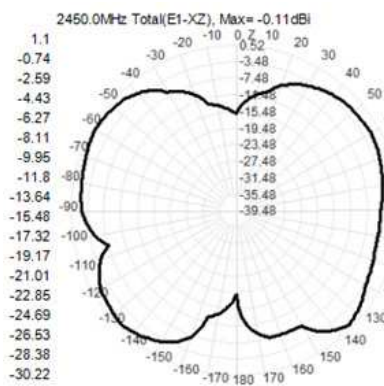
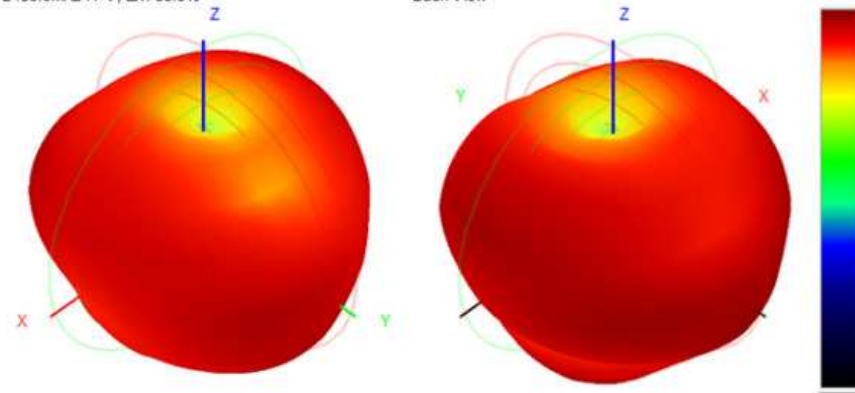
2405.0MHz H+V, Eff: 54.8%

Back View



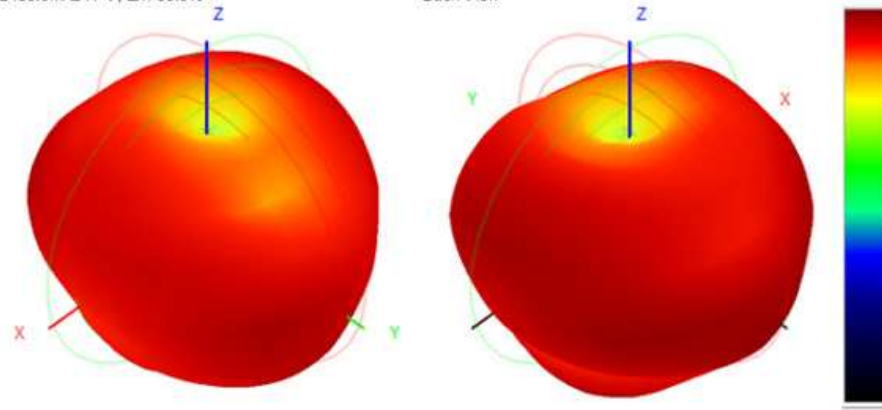
2450.0MHz H+V, Eff: 55.9%

Back View



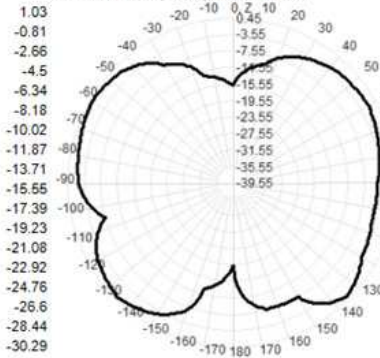
2455.0MHz H+V, Eff: 55.5%

Back View

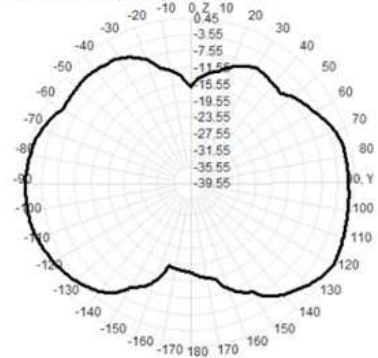


Antenna

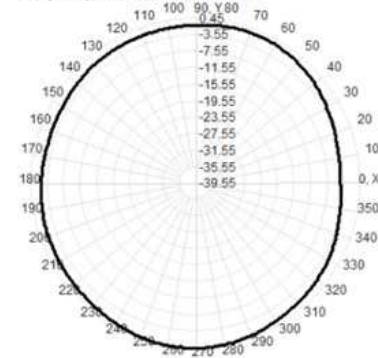
2455.0MHz Total(E1-XZ), Max=-0.15dBi



2455.0MHz Total(E2-YZ), Max=0.45dBi

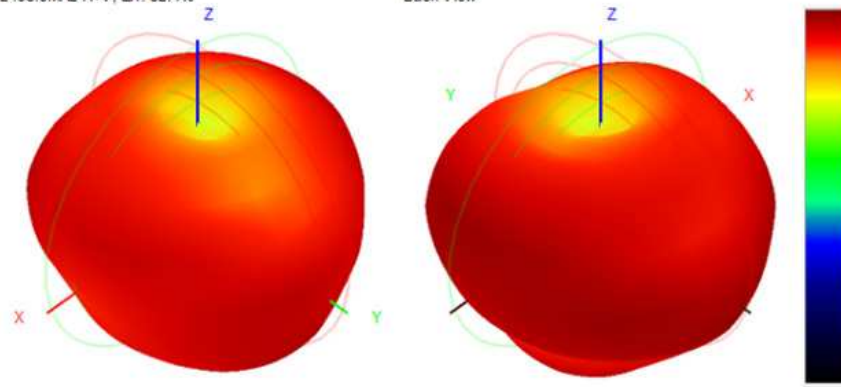


Total(H-XY), Max=0.45dBi, CirD=5.04

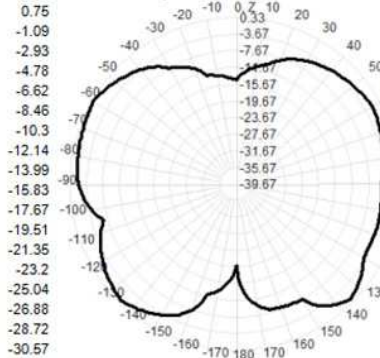


2495.0MHz H+V, Eff: 52.4%

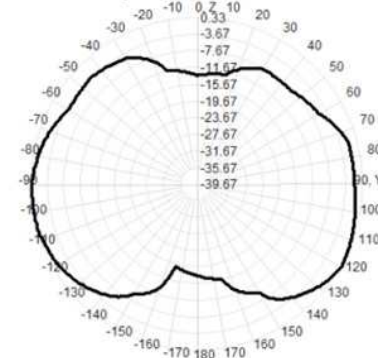
Back View



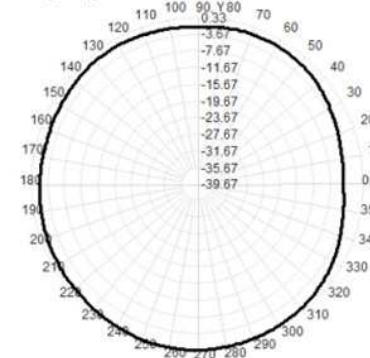
2495.0MHz Total(E1-XZ), Max=-0.10dBi

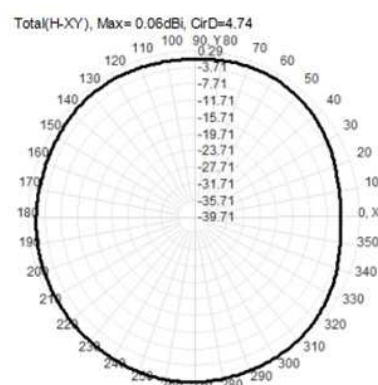
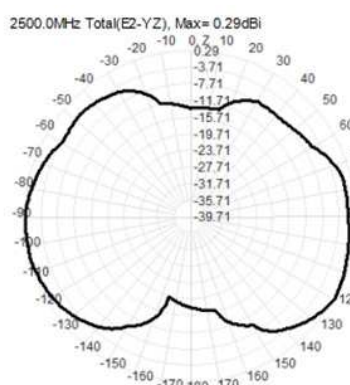
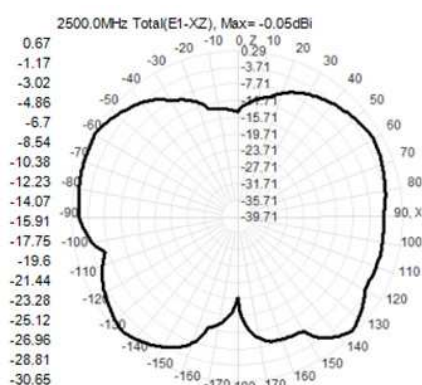
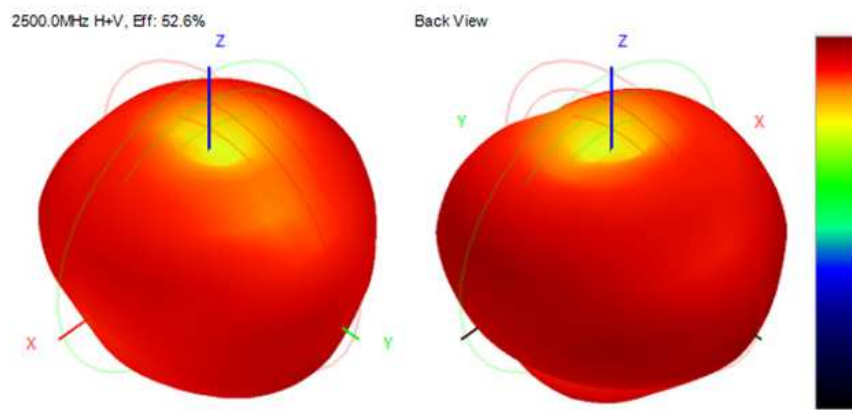


2495.0MHz Total(E2-YZ), Max=0.33dBi

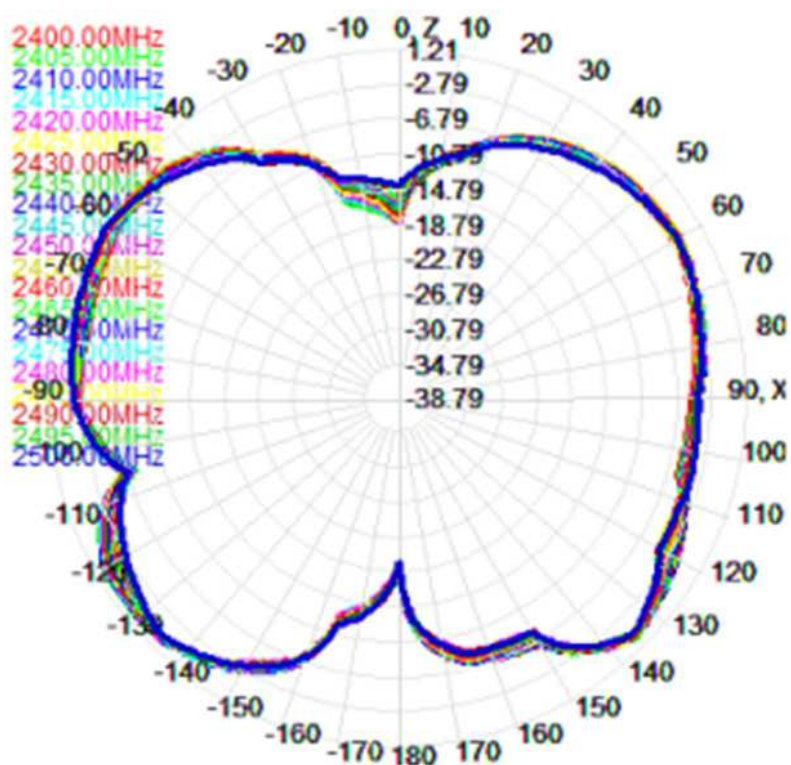


Total(H-XY), Max=0.01dBi, CirD=4.88

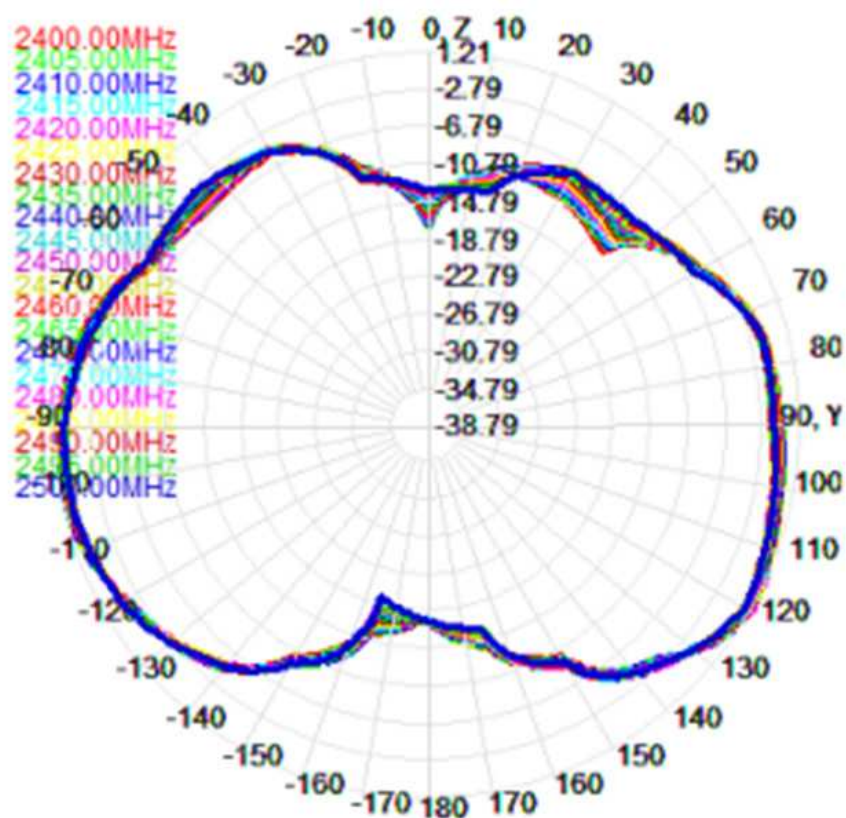




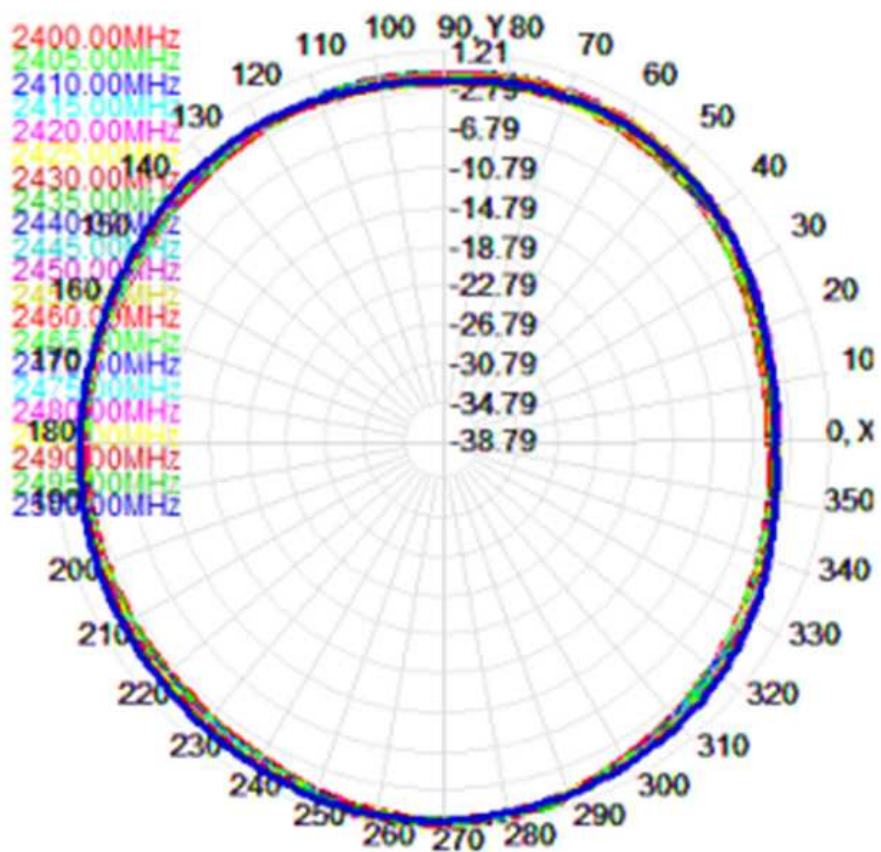
X-Z:



Y-Z:



X-Y:



5.尺寸规格 (Specification)

