



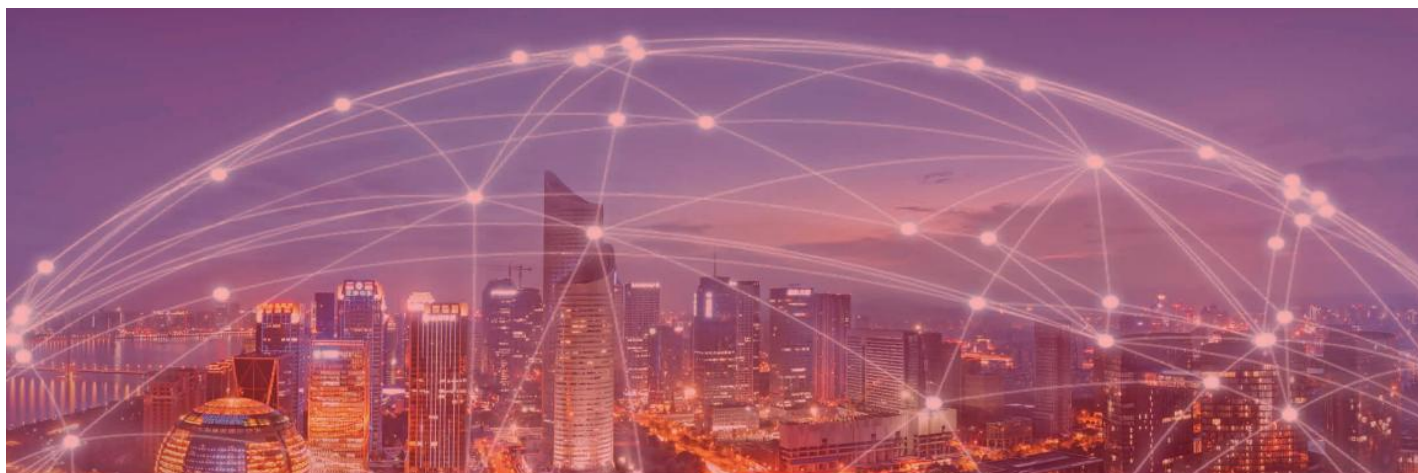
深圳市天逸源电子科技有限公司

Shenzhen Tianyiyuan Elec&Technology CO.,Ltd

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项目信息 Project Information

客户 <u>Customer</u>	深圳市赛腾世纪科技有限公司 Shenzhen Saiteng century Technology Co.,LTD
项目名 <u>Project</u>	WIFI 天线WIFI Antenna
频段 <u>Band</u>	2450/5250MHz
TTY 料号 <u>Part number</u>	TTY-TX2808-1A
版本 <u>Version</u>	01
射频 <u>RF</u>	唐工
结构 <u>ME</u>	蒋工
日期 <u>Date</u>	2025.09.08
报告版本 <u>project Version</u>	V1.0
客户料号 <u>Customer part number</u>	

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WIFI Specification

1、规格 Specifications

The report mainly provides testing of various electrical performance parameters of Shenzhen Saiteng Century Technology Co., Ltd. models. The TYY-TX2808-1A antenna is a built-in WIFI antenna, which is composed of FPC+RF wires. (As shown in Figure 1 below)

The finished product features

电 性 能 指 标		Electrical Specifications	
频率范围	2450/5250MHz	Frequency Range	2450/5250MHz
电压驻波比	≤1.5	VSWR	≤1.5
最大增益	3.80DBI	Max GAIN	3.80DBI
输入阻抗	50 Ω	Input Impedance	50 Ω
机 械 指 标		Mechanical Specifications	
天线颜色	黑色	Antenna Color	BLACK
接口形式	IPEX-3	Input connector	IPEX-3
线长度	55mm	Cable length	55mm
工作温度	-40°C~+85°C	Working Temperature	-40°C~+85°C
工作湿度	20~80%	Working Humidity	20~80%

Figure 1 TYY-TX2808-1A 尺寸图 Size chart

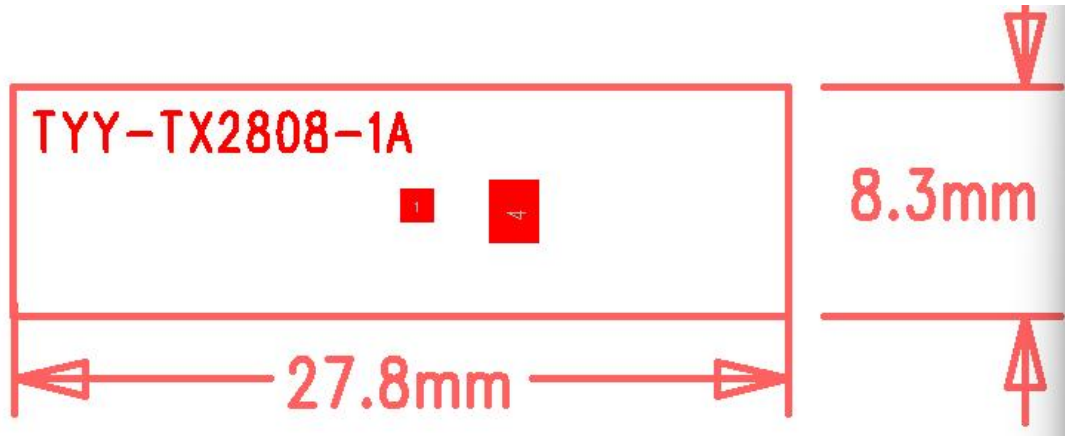


Figure 2 TYY-TX2808-1A WIFI Antenna finished product (wire length 55mm with 3rd generation terminals)



Figure 3 Assembly drawing (WIFI antenna)

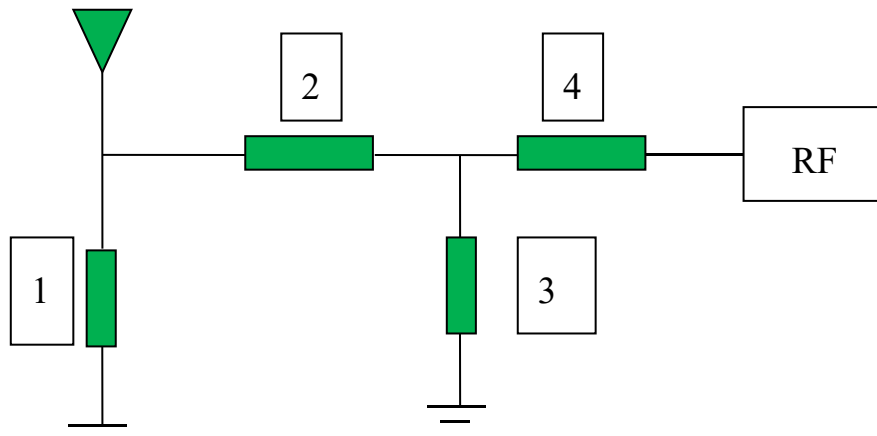


Attention: First, tear off the adhesive tape behind the FPC and stick it on the red

frame. Place it at a right angle close to the bottom frame and keep it flat, away from the metal hardware of the speaker. Thank you!

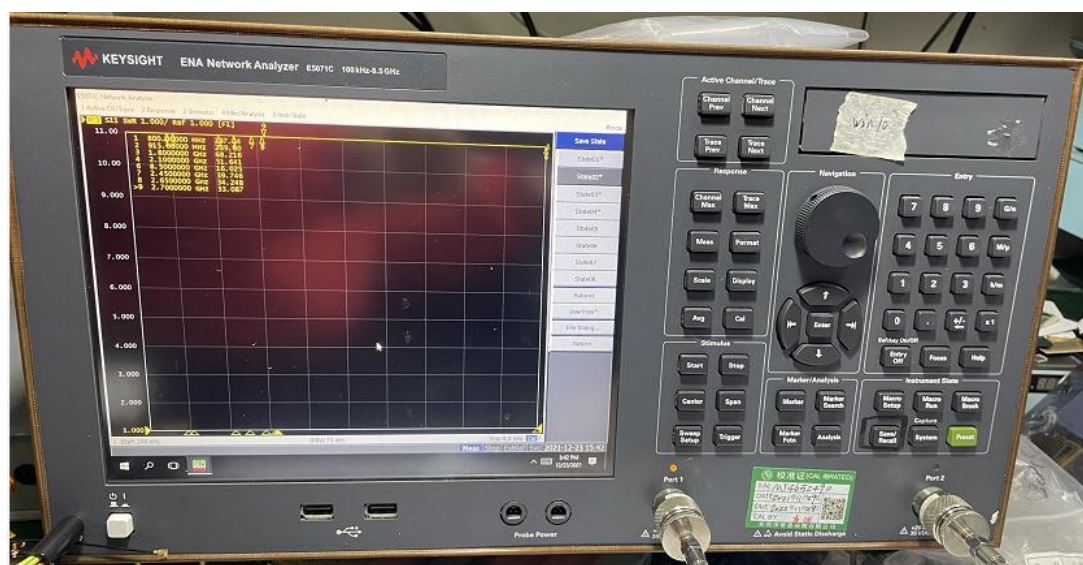
2. Electrical performance

2.1 Matching circuit for WIFI antenna, the matching circuit for this project is provided by the customer.



Part Number	1	2	3	4
Best WIFI	NC	0 ohms	NC	
Original (backup)	50 ohm matching			

Figure 4 Agilent E5071C Network Analyzer



OTA 微波暗室 :测试频率范围为 800MHz—6GHz,静区范围为 50cm 圆周,反射率小于-90 dB。

OTA microwave anechoic chamber: The testing frequency range is 800MHz-6GHz, the quiet zone range is 50cm circumference, and the reflectivity is less than -90dB.

2.4.2

Agilent E5071C network analyzer, logarithmic periodic antenna, computer, transmitting turntable, receiving antenna, printer, and external choke coil (to reduce signal connection line losses).

Figure 5 OTA anechoic chamber

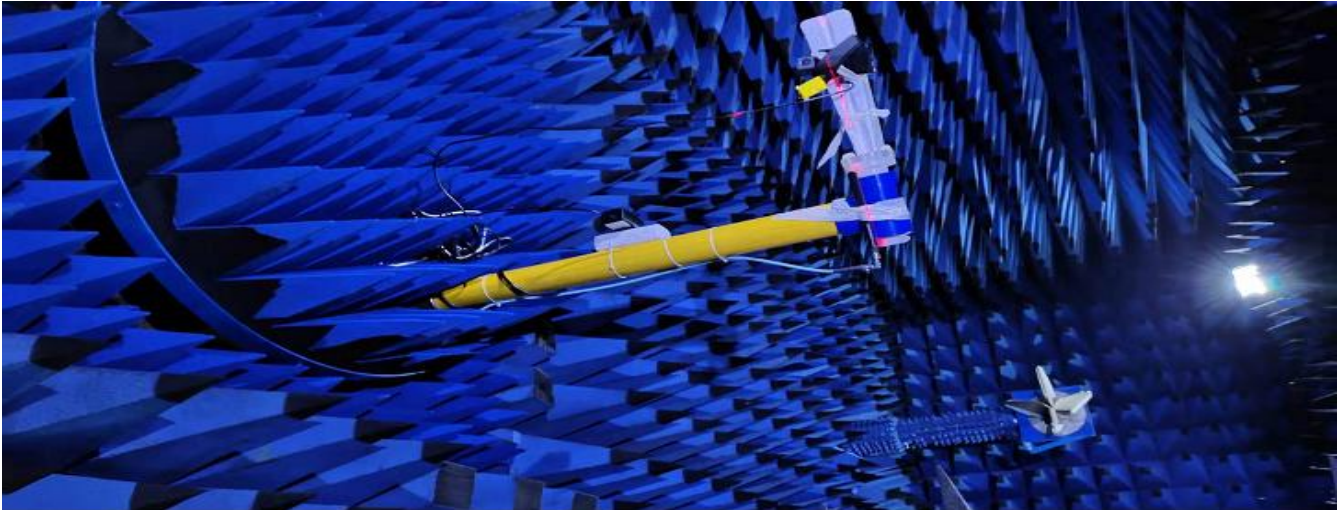
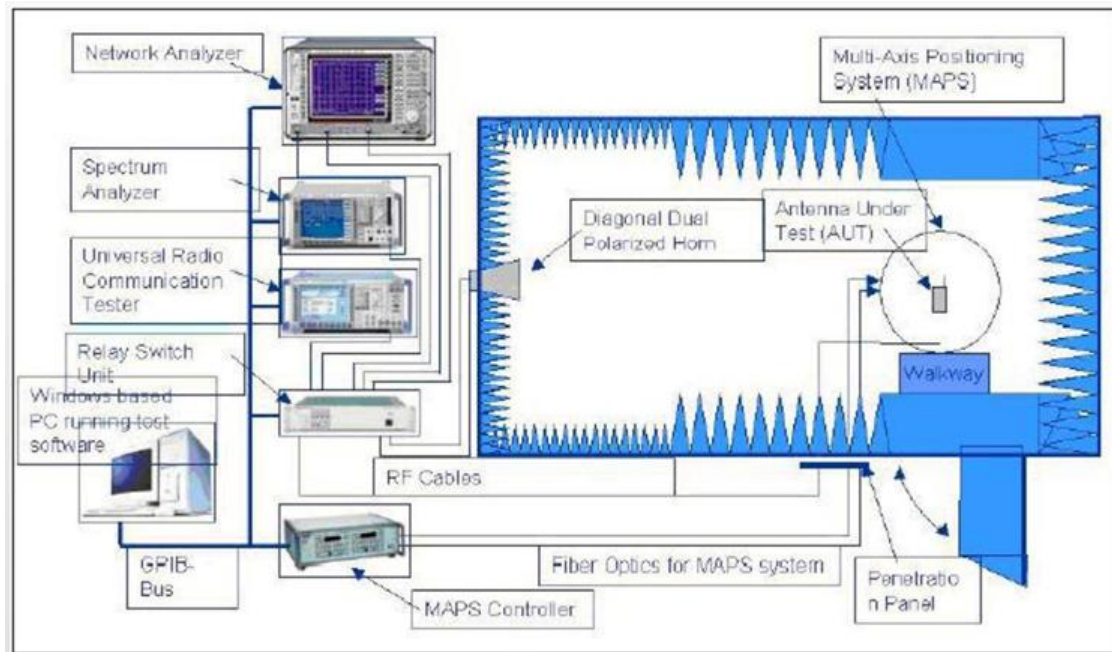


Figure 6 Test environment: OTA743 darkroom, 8960/W500/8753ES/5071C, machine placed facing away from the standard horn antenna at a distance of 4 meters from the turntable

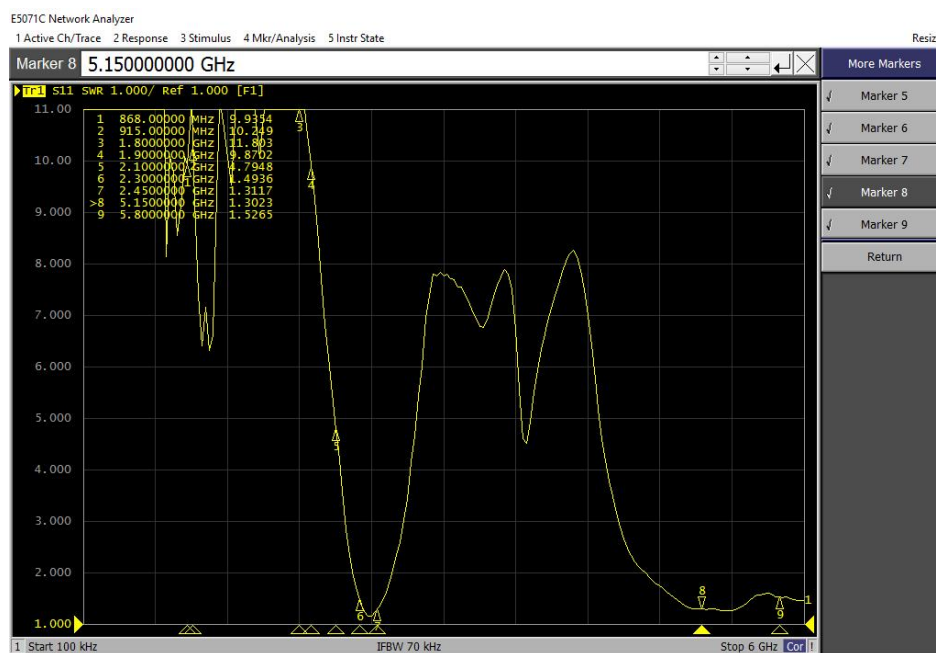


2.3 Test of Standing Wave Ratio (VSWR)

2.3.1. Test settings

The setup and testing device for VSWR testing are sequentially connected to the Agilent E5071C network analyzer @ 50 ohm coaxial cable @ 45mm long copper pipe @
Test fixture processing: Use a hard cable to lead out the SMA-J connector from the 50 ohm test point of the antenna on the flat PCB, connect it to a copper tube with a choke coil, and then connect other devices in sequence.

Figure 7 Standing Wave Ratio (VSWR) Diagram

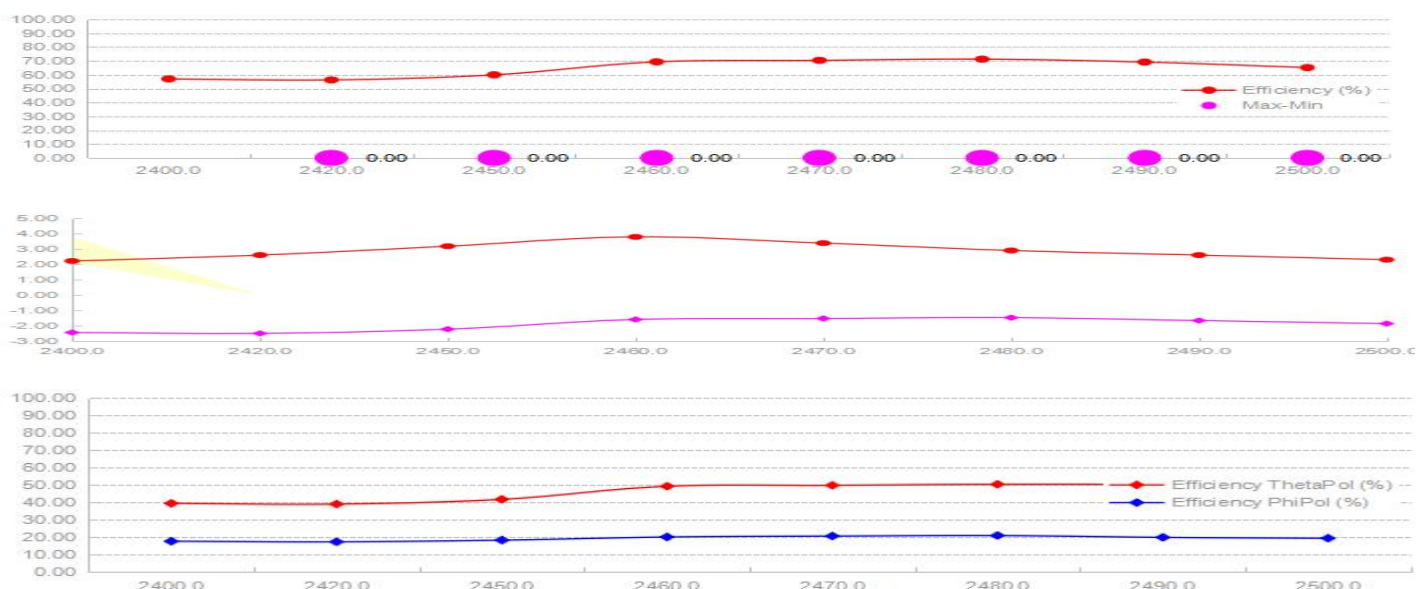


VSWR standing wave ratio

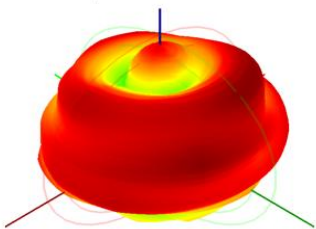
standard	2.4~2.5GHz		5.7~5.8GHz		
Frequency(MHz)	2450	2500	5150	5800	
VSWR	1.3	1.4			

WIFI Test Report

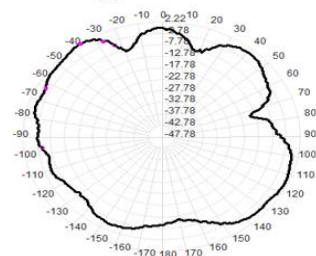
FEITUKEJI								
Frequency ID	1	3	4	7	8	9	10	10
Frequency (MHz)	2400.0	2420.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (dBi)	-2.44	-2.50	-2.22	-1.59	-1.52	-1.47	-1.66	-1.86
Gain (dBi)	2.22	2.61	3.19	3.80	3.39	2.91	2.61	2.31
Efficiency (%)	57.02	56.28	59.97	69.33	70.41	71.29	69.19	65.19
Directivity (dB)	4.66	5.11	5.41	5.39	4.92	4.38	4.27	4.17
Peak Gain Position (Theta)	144.00	141.00	144.00	124.00	144.00	144.00	144.00	144.00
Peak Gain Position (Phi)	180.00	180.00	180.00	210.00	180.00	180.00	180.00	180.00
Efficiency ThetaPol (%)	39.41	39.00	41.74	49.26	49.81	50.37	49.84	45.84
Efficiency PhiPol (%)	17.60	17.28	18.23	20.07	20.59	20.92	19.85	19.35
Upper Hem. Efficiency (%)	21.62	20.70	21.72	25.75	26.56	27.24	24.81	24.88
Lower Hem. Efficiency (%)	35.39	35.57	38.25	43.58	43.84	44.04	42.30	40.30



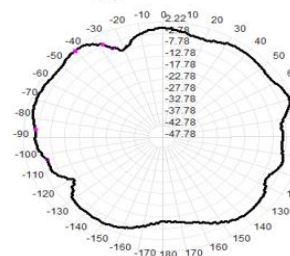
2400.0MHz H+V, Eff: 57.0%



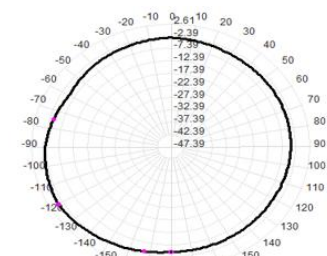
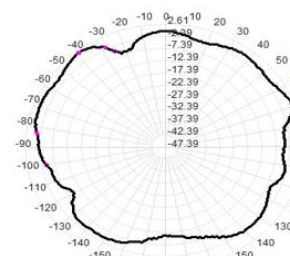
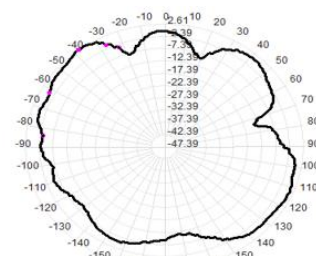
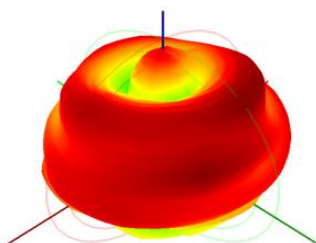
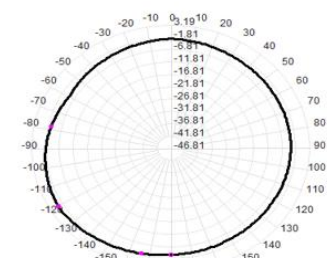
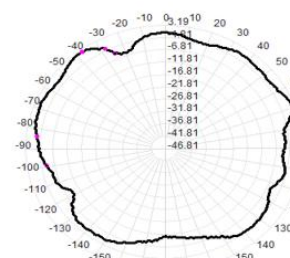
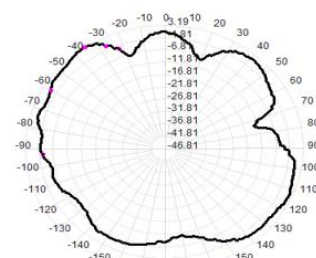
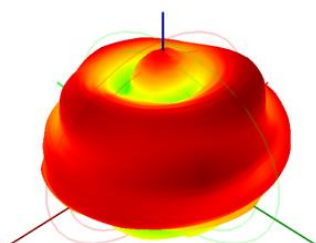
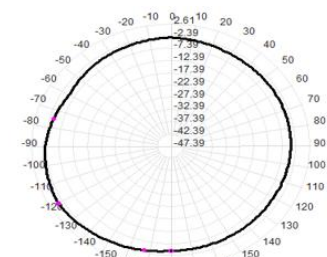
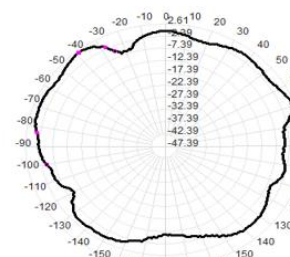
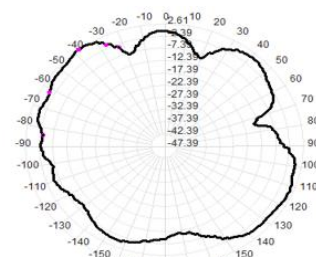
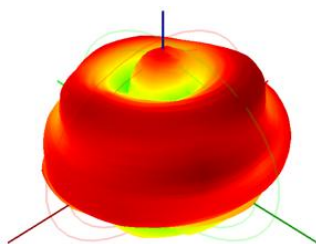
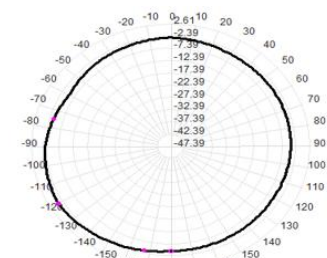
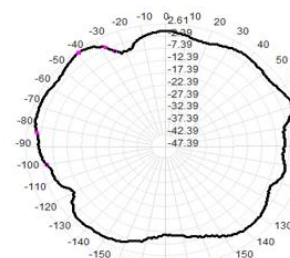
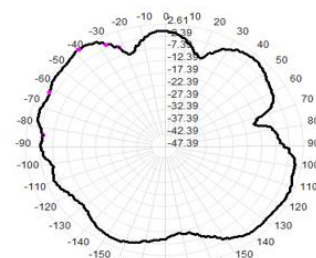
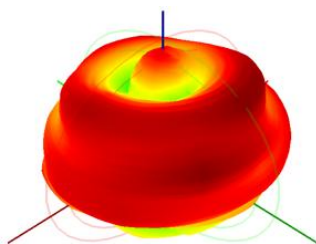
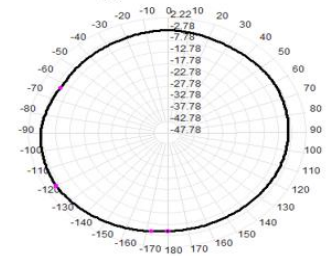
2400.0MHz Total(E1), Max= 2.22dBi

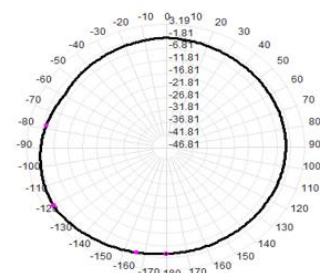
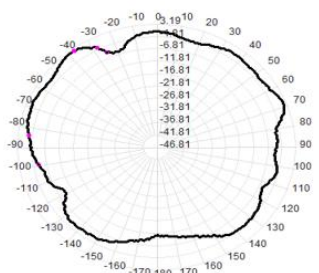
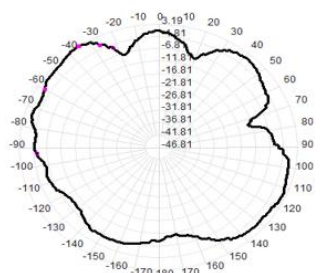
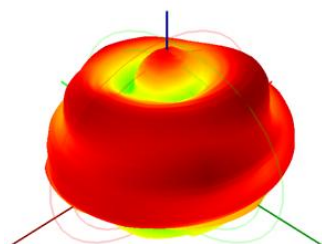
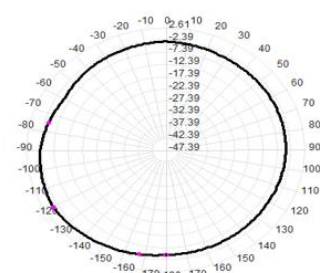
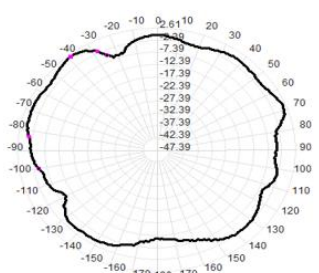
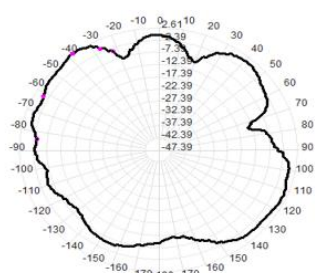
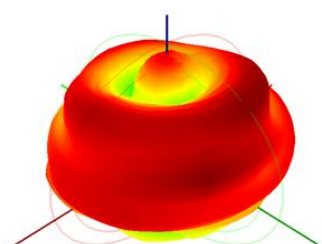
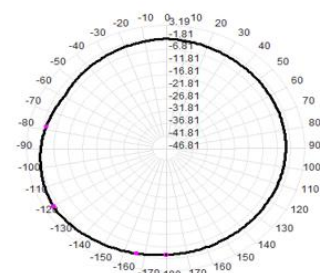
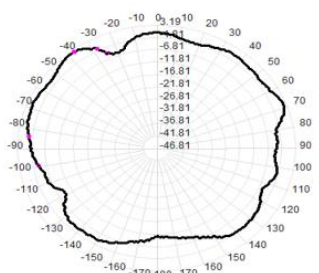
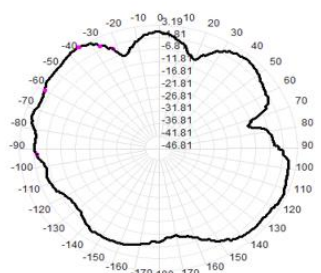
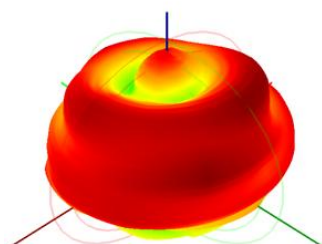
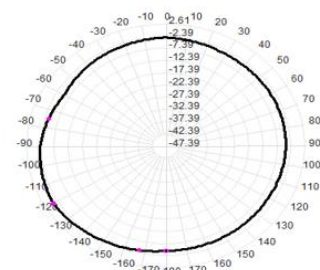
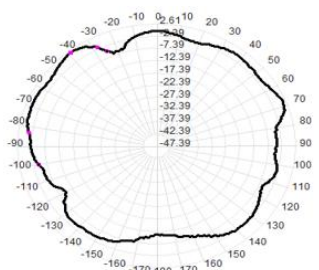
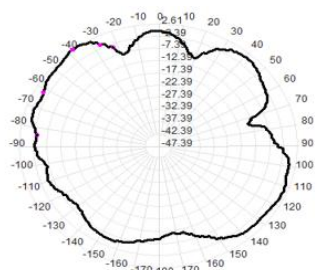
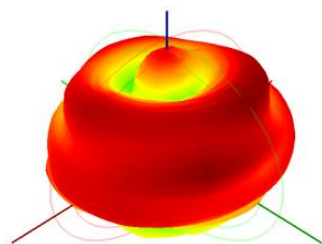


2400.0MHz Total(E2), Max= 1.02dBi



2400.0MHz Total(H), Max= -1.62dBi





3、Recommendations and Conclusions

This report is based on the antenna electrical performance measured in the final version of the model project proposed by the customer Shenzhen Saiteng Century Technology Co., Ltd.

From the above test data, it can be seen that this antenna provides good electrical performance.

Tianyiyuan R&D looks forward to your confirmation. Thank you for your cooperation!