

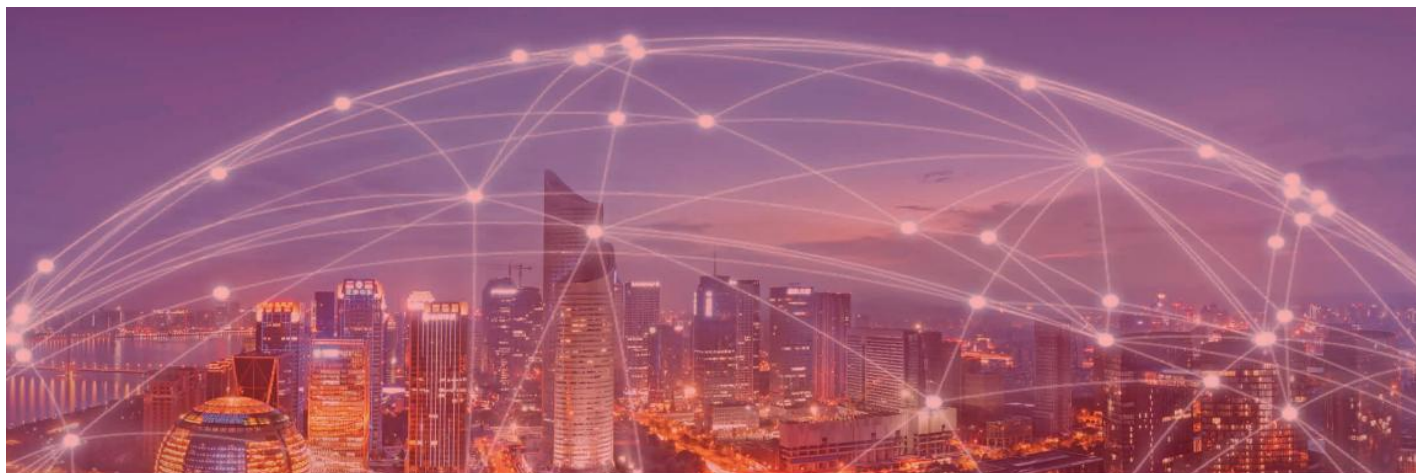


深圳市天逸源电子科技有限公司

Shenzhen Tianyiyuan Elec&Technology CO.,Ltd

Contact number: Tang Worker: 13244864327 (same number for WeChat)

Address: No. 50 Fengtang Avenue, Fuhai Street, Bao'an District, Shenzhen City, Xinglongxin Industrial Park, Building A, 6th Floor



Item information

客户 <u>Customer</u>	Chengdu Yanzhiyang Technology Co., Ltd.
项目名 <u>Project</u>	---
频段 <u>Band</u>	2450/5250/5800MHz
TTY 料号 <u>Part number</u>	TTY-TX2208
版本 <u>Version</u>	01
射频 <u>RF</u>	Tang Gong
<u>Type of Antenna</u>	FPCB Antenna
日期 <u>Date</u>	2026.04.03
报告版本 <u>project Version</u>	V1.0
客户料号 <u>Customer part number</u>	

销售：熊小姐 13249844286

技术支持：电话微信号：唐先生 13244864327 QQ: 2813565803

网址：<http://www.sztianyee.com/>

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WIFI Specification

1. Specifications

The report mainly provides the test results of various electrical performance parameters of the models produced by Chengdu Yanzhiyang Technology Co., Ltd. The TYY-TX2208 antenna is an in-built WIFI antenna. The WIFI antenna is composed of FPC + RF cable (as shown in Figure 1 below).

The finished product features

电 性 能 指 标		Electrical Specifications	
频率范围	2400~2500MHZ 5180~5320MHZ 5700~5800MHZ	Frequency Range	2400~2500MHZ 5180~5320MHZ 5700~5800MHZ
电压驻波比	≤1.5	VSWR	≤1.5
最大增益	2.98DBi	Max GAIN	2.98DBi
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	100mm	Cable length	100mm
工作温度	-40°C~+85°C	Working Temperature	-40°C~+85°C
工作湿度	20~80%	Working Humidity	20~80%

图 1 TYY-TX2208 Picture

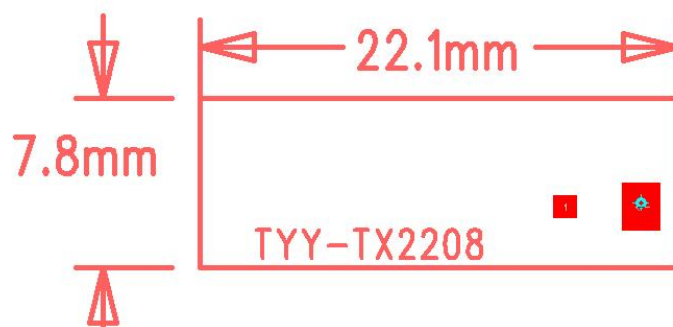
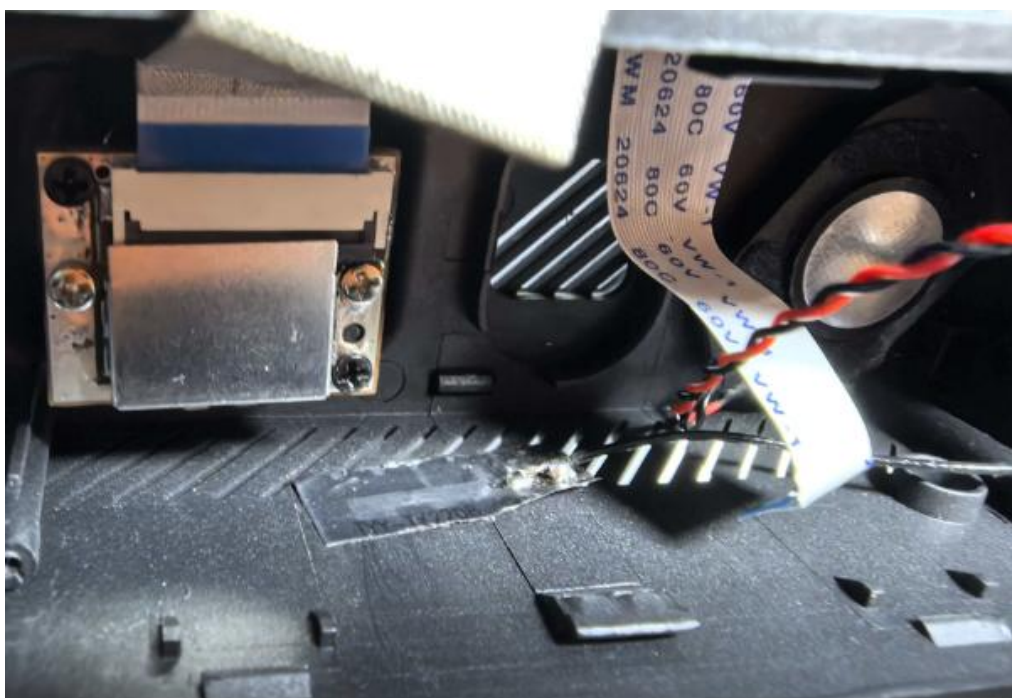


图 2 TYY-TX2208 WIFI Antenna finished product (with a length of 100mm and 3rd-generation terminals)



图 3 Assembly drawing (WIFI antenna)





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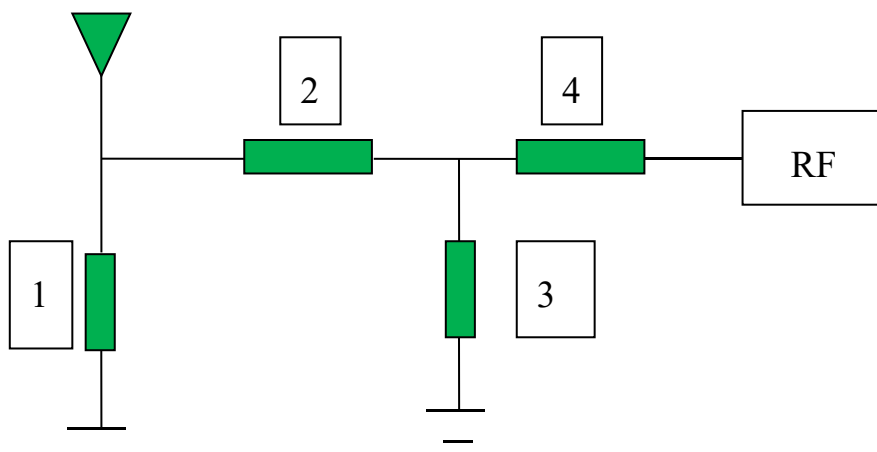
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Notes: First, tear off the adhesive tape on the back of the FPC and stick it in the middle depression, close to the pillar or the right angle of the frame, flat against the metal on the back of the screen, away from the speaker hardware, and away from the metal on the rear of the speaker. If the antenna is close to the metal causing the WIFI signal frequency to shift, follow the marked position on the picture to stick the antenna. Thank you!

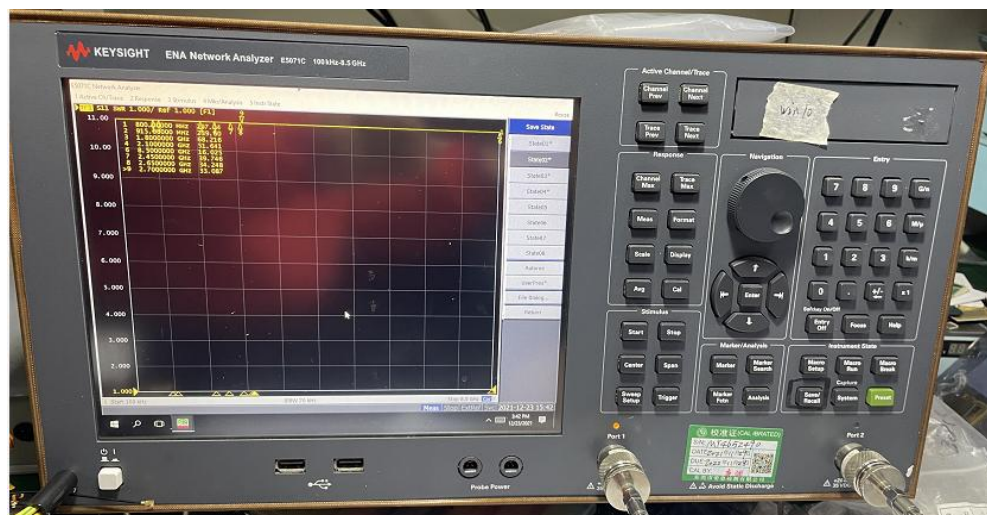
2. Electrical performance

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



Component number	1	2	3	4
WIFI	NC	0 Ohms	NC	
Original (backup)	50-ohm matching			

图 4 Agilent E5071C Network Analyzer



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Figure 5 OTA Microwave Darkroom

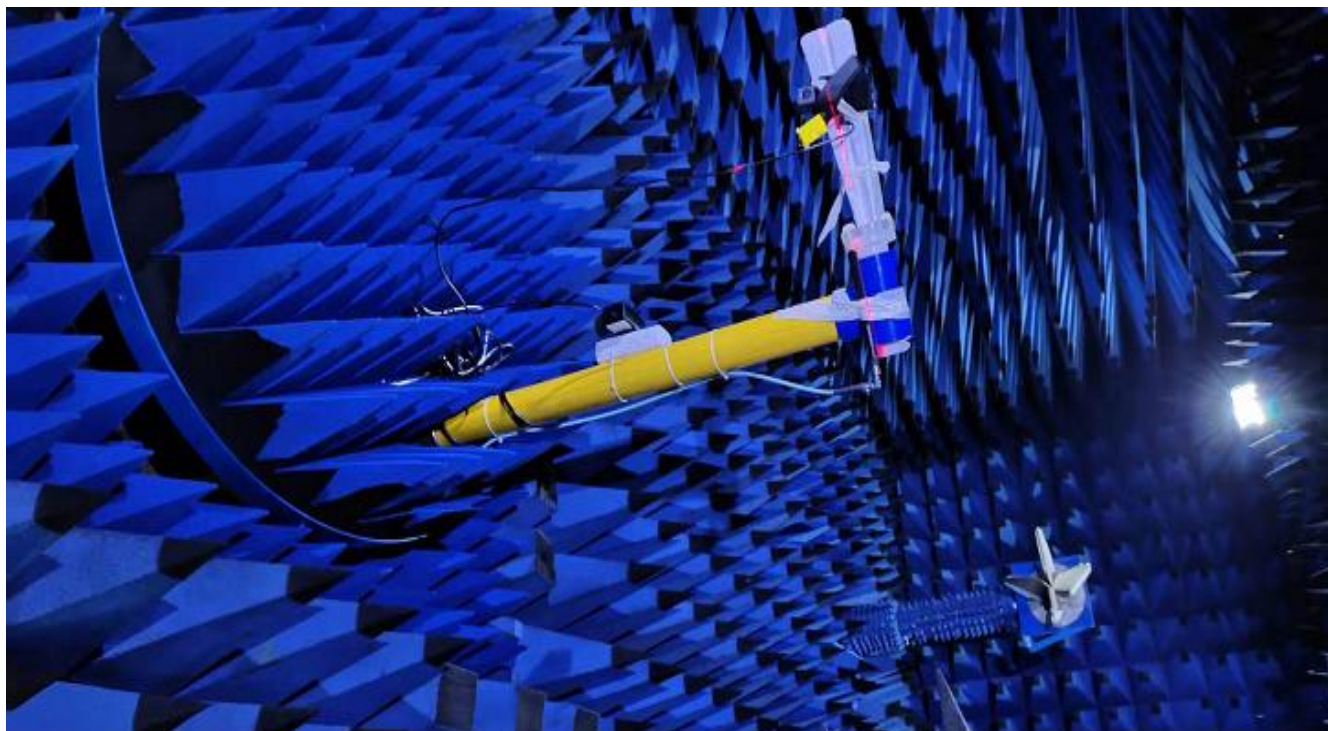
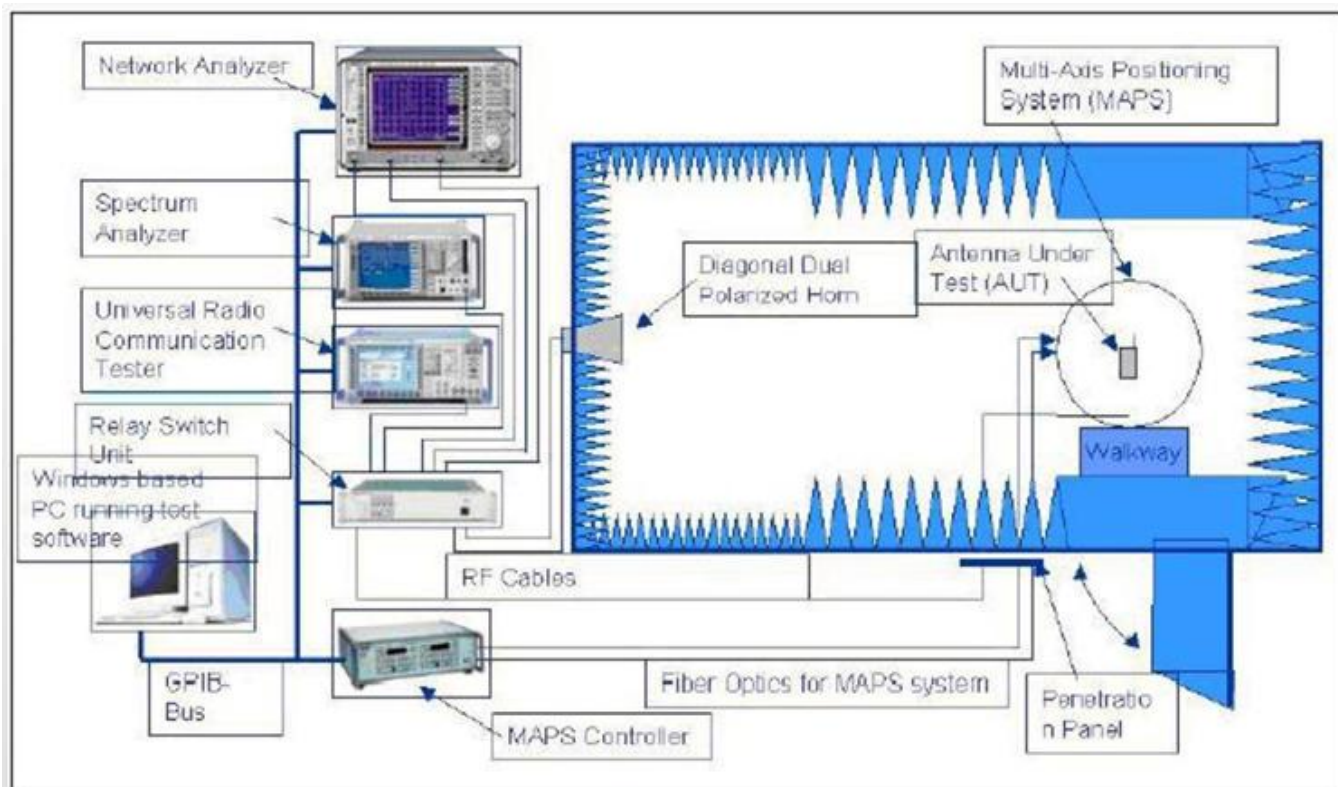


图 6 testing environment: OTA743 darkroom, 8960/W500/8753ES/5071C, the machine is placed with its back facing away from the standard speaker antenna 4 meters away.



2.3 Test of VSWR

2.3.1. Test Setup

The VSWR test device is connected in sequence as follows: Agilent E5071C network analyzer® with 50-ohm coaxial cable®; 45mm long copper tube®; test fixture. The processing of the test fixture: From the antenna test point of 50 ohms on the flat PCB, a hard cable is led out to the SMA-J connector, which is connected to the copper tube with a choke coil, and then other devices are connected in sequence.

Figure 7 Standing Wave Ratio (VSWR) diagram

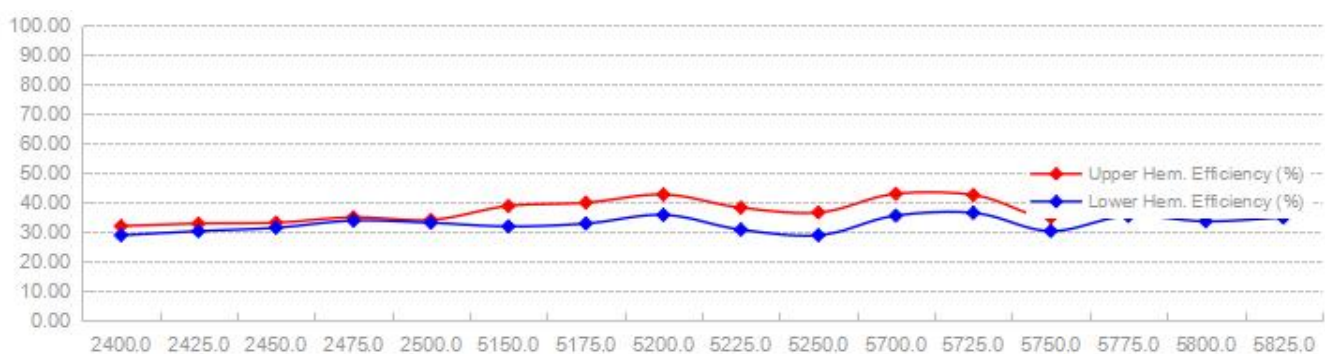
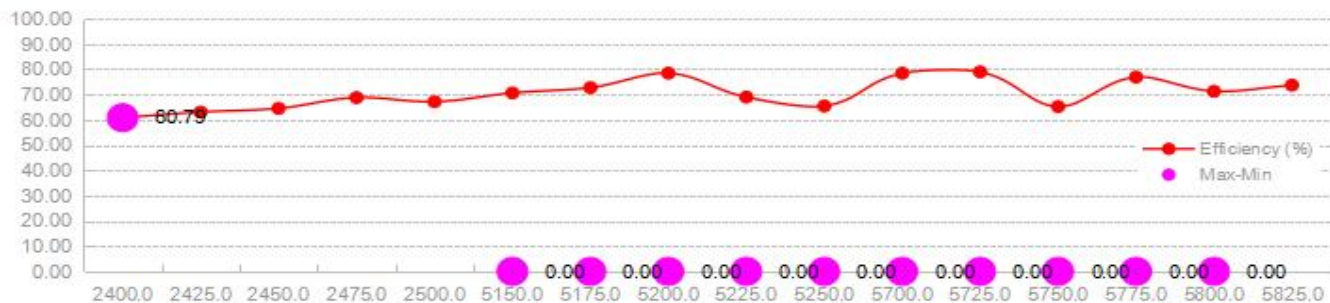


VSWR – Voltage Standing Wave Ratio

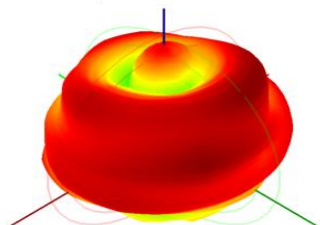
system	2.4~2.5GHz		5.7~5.8GHz		
frequency(MHz)	2450	2500	5250	5700	5800
VSWR	1.2	1.2	1.8	1.7	1.7

WIFI Test report

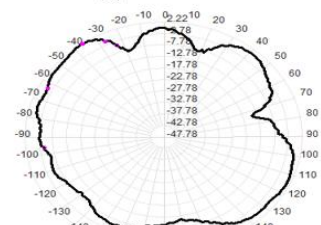
FETUKEJI																
Frequency ID	1	2	3	4	5	12	13	14	15	16	17	18	19	20	21	22
Frequency (MHz)	2400.0	2425.0	2450.0	2475.0	2500.0	5150.0	5175.0	5200.0	5225.0	5250.0	5700.0	5725.0	5750.0	5775.0	5800.0	5825.0
Efficiency (dBi)	-2.16	-2.00	-1.91	-1.63	-1.73	-1.51	-1.38	-1.06	-1.62	-1.84	-1.06	-1.03	-1.86	-1.14	-1.47	-1.33
Gain (dBi)	2.22	2.24	2.28	2.51	2.47	2.58	2.55	2.65	2.52	2.56	2.63	2.77	2.98	2.55	2.61	2.78
Efficiency (%)	60.79	63.03	64.48	68.74	67.12	70.59	72.70	78.38	68.93	65.41	78.37	78.91	65.20	76.86	71.26	73.66
Directivity (dB)	4.08	4.20	4.29	4.74	4.70	4.59	4.93	5.31	5.43	5.64	5.29	4.80	5.03	4.69	4.38	4.21
Peak Gain Position (Theta)	79.00	79.00	40.00	44.00	44.00	42.00	42.00	42.00	39.00	33.00	33.00	44.00	31.00	32.00	45.00	36.00
Peak Gain Position (Phi)	330.00	330.00	30.00	30.00	30.00	240.00	240.00	240.00	240.00	210.00	180.00	210.00	120.00	150.00	240.00	180.00
Efficiency ThetaPol (%)	46.42	47.51	48.72	51.70	50.50	39.98	40.88	43.24	42.73	44.99	50.03	46.16	38.80	45.71	41.73	43.12
Efficiency PhiPol (%)	14.37	15.52	15.76	17.04	16.62	30.60	31.82	35.14	26.21	20.41	28.35	32.75	26.40	31.15	29.53	30.54
Upper Hem. Efficiency (%)	31.95	32.81	33.10	34.94	34.05	38.74	39.89	42.65	38.19	36.56	42.89	42.48	34.92	41.47	37.67	38.84
Lower Hem. Efficiency (%)	28.83	30.22	31.38	33.80	33.07	31.84	32.82	35.73	30.74	28.84	35.48	36.42	30.28	35.39	33.59	34.82



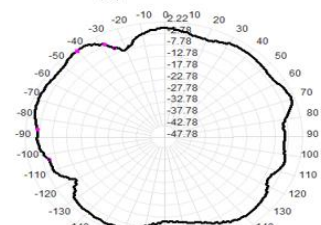
2400.0MHz H+V, Eff: 57.0%



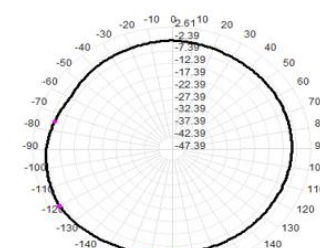
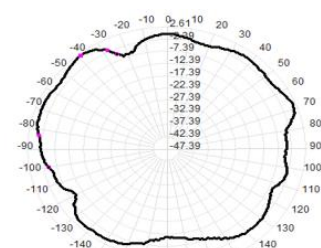
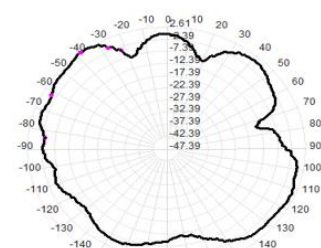
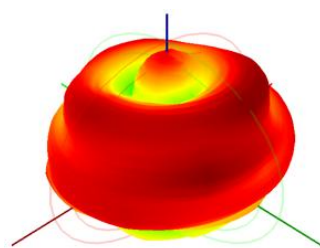
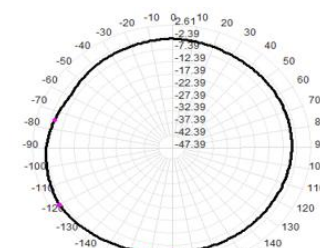
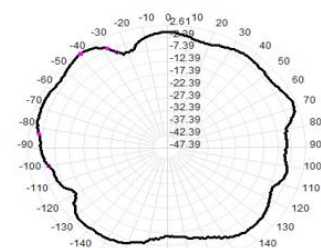
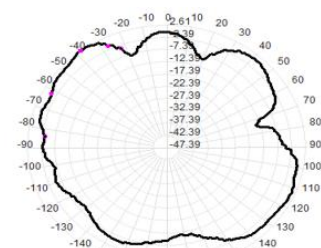
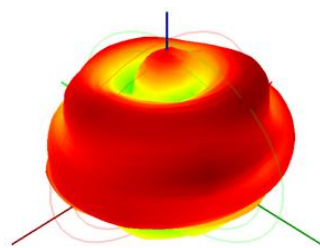
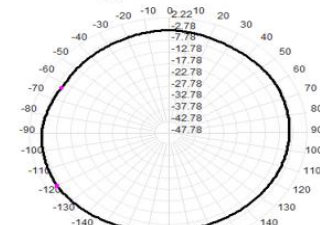
2400.0MHz Total(E1), Max= 2.22dBi

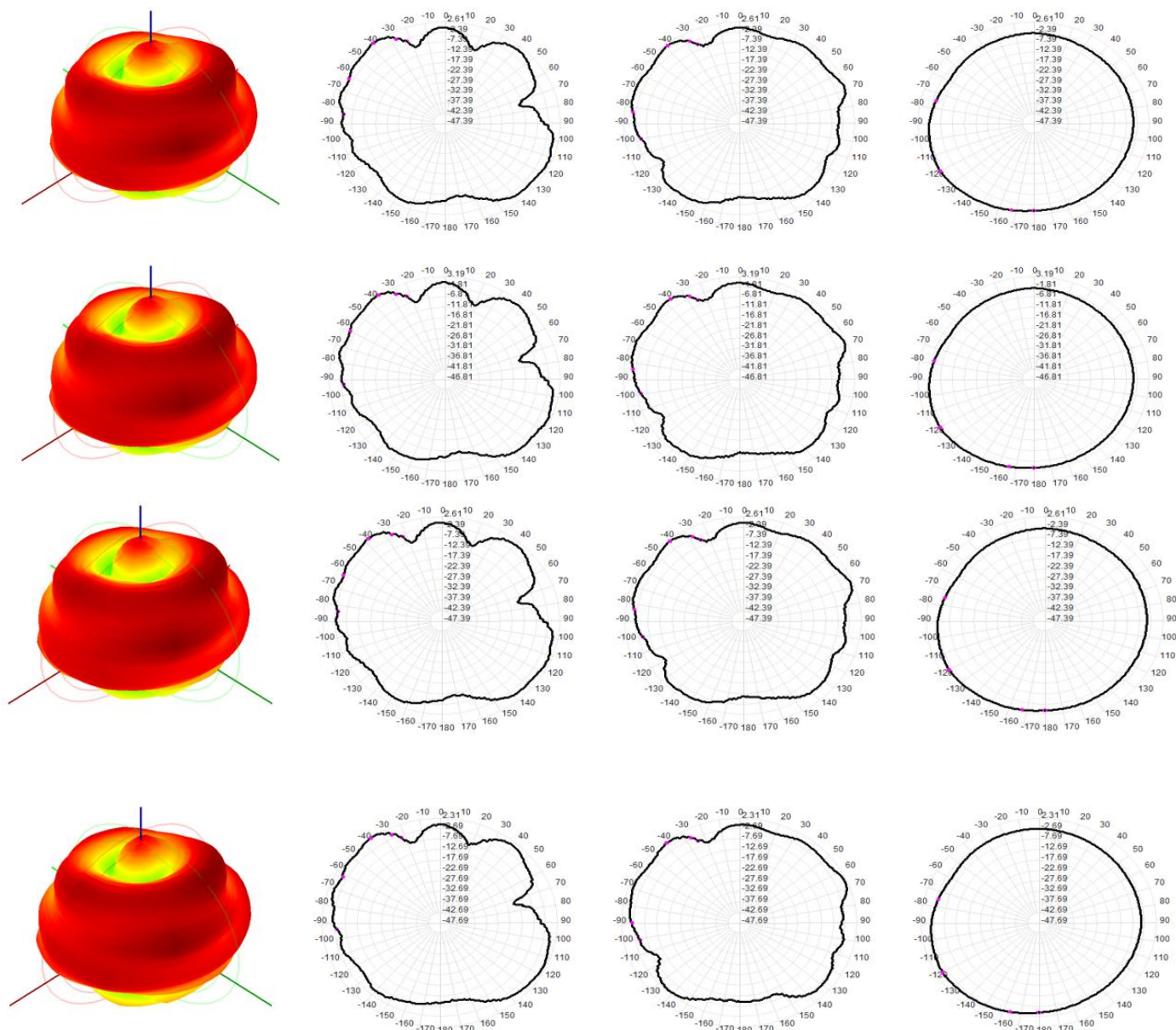


2400.0MHz Total(E2), Max= 1.02dBi



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





4. Recommendations and Conclusions

This report is based on the final test results of the antenna electrical performance for the project proposed by Chengdu Yanzhiyang Technology Co., Ltd.

From the above test data, it can be seen that this antenna offers excellent electrical performance. Tianyi Yuan Research and Development sincerely requests your confirmation. Thank you for your cooperation!