深圳市天逸源电子科技有限公司
Shenzhen Tianyiyuan Elec&Technology CO.,Ltd
Add: 6th Floor, Building A, Xinlongxin Industrial Park, No.50 Fengtang Avenue, Fuhai Street, Baoan District, Shenzhen

Recognition book

SPECIFICATION FOR APPROVAL

Name: WIFI/BT Antenna

Item No: TYY-TX2808

Custoer name: Shenzhen Xinruihe Technology Co.

Company stamp:

drawing			Customer approve
MADE	CHECKED	APPROVED	
QIU	**jack**	**Miketang**	
DATE: 2023.07.25			DATE

1、Specifications

The report provides a test of the electrical performance parameters of the **TYY-TX2808**Technical parameters of antenna electrical appliances antenna, which is a science and technology model.TYY-TX2808 WIFI Built in antenna,WIFIAntenna is made bycopper pipe+RF Line composition。（As follows 1 Shown）

Electrical technical parameters			
电 性 能 指 标		Electrical Specifications	
频率范围	2400～2500MHZ	Frequency Range	2400～2500MHZ
电压驻波比	≤2.0	VSWR	≤2.0
增益	3.8 DBI max	GAIN	3.8 DBI max
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-1	Input connector	IPEX-1
线长度	110mm	Cable length	110mm
工作温度	-40℃~+85℃	Working Temperature	-40℃~+85℃
工作湿度	20~80%	Working Humidity	20~80%

Chart 1 TYY-TX2808 Product size

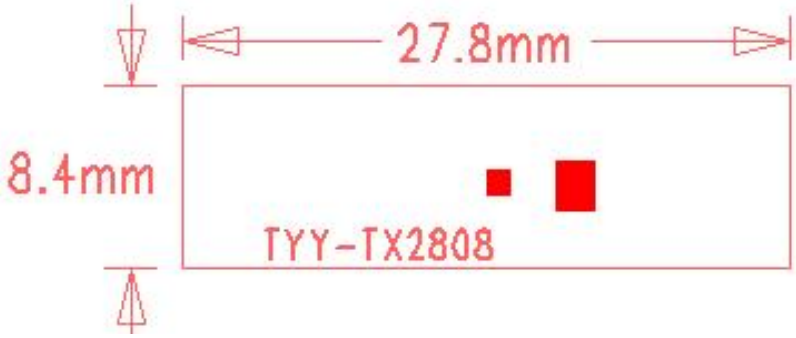
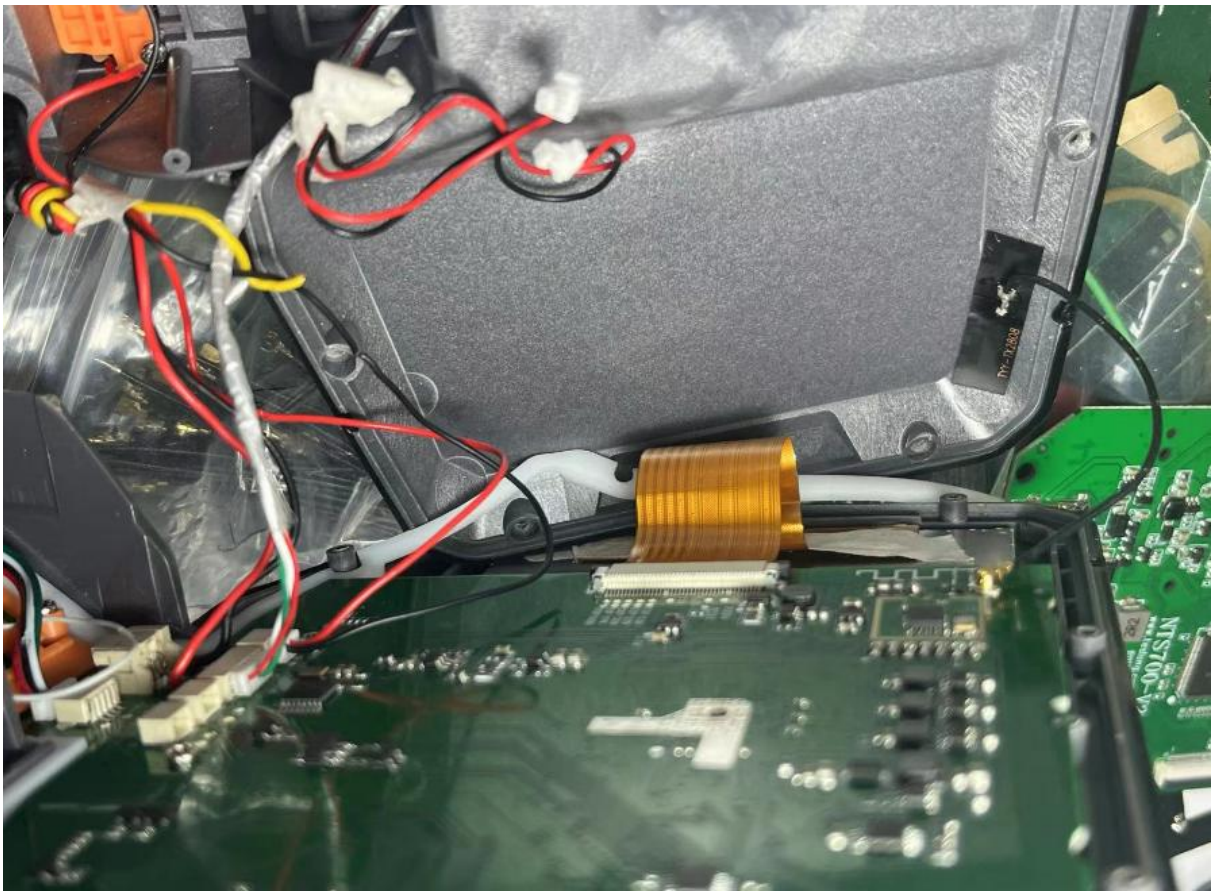


Chart 2 TYY-TX2808 Antenna finished

Line length 110+/-2mm，The other end with the 1-IPEX。

Chart 3 Location of antenna patch

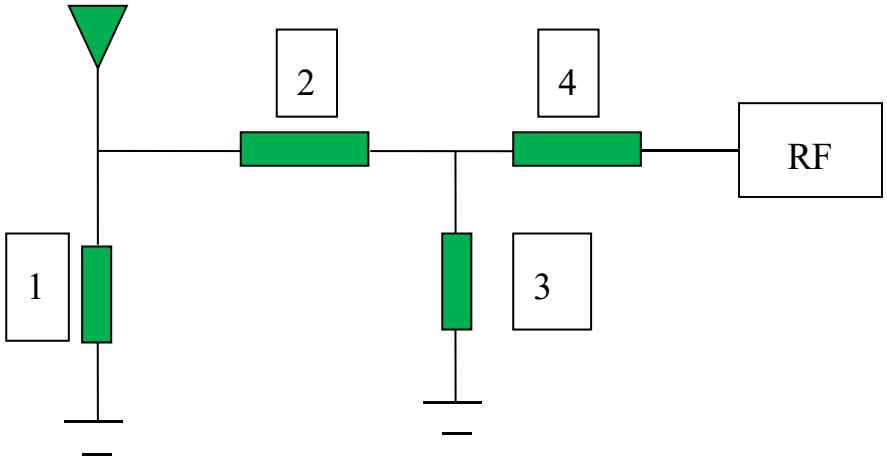


Matters needing attention: WIFI antenna behind the tear tape on the back glue stick flat side, away from the screen on the back of the metal, away from the loudspeaker hardware, if the antenna near the metal lead to WIFI signal frequency deviation, make the antenna standing wave ratio and power and efficiency will become poor, and the signal will become worse, the frequency shift signal variation can also cause interference, so must be in accordance with our marking the location of the antenna, thank you!

2. Electrical properties

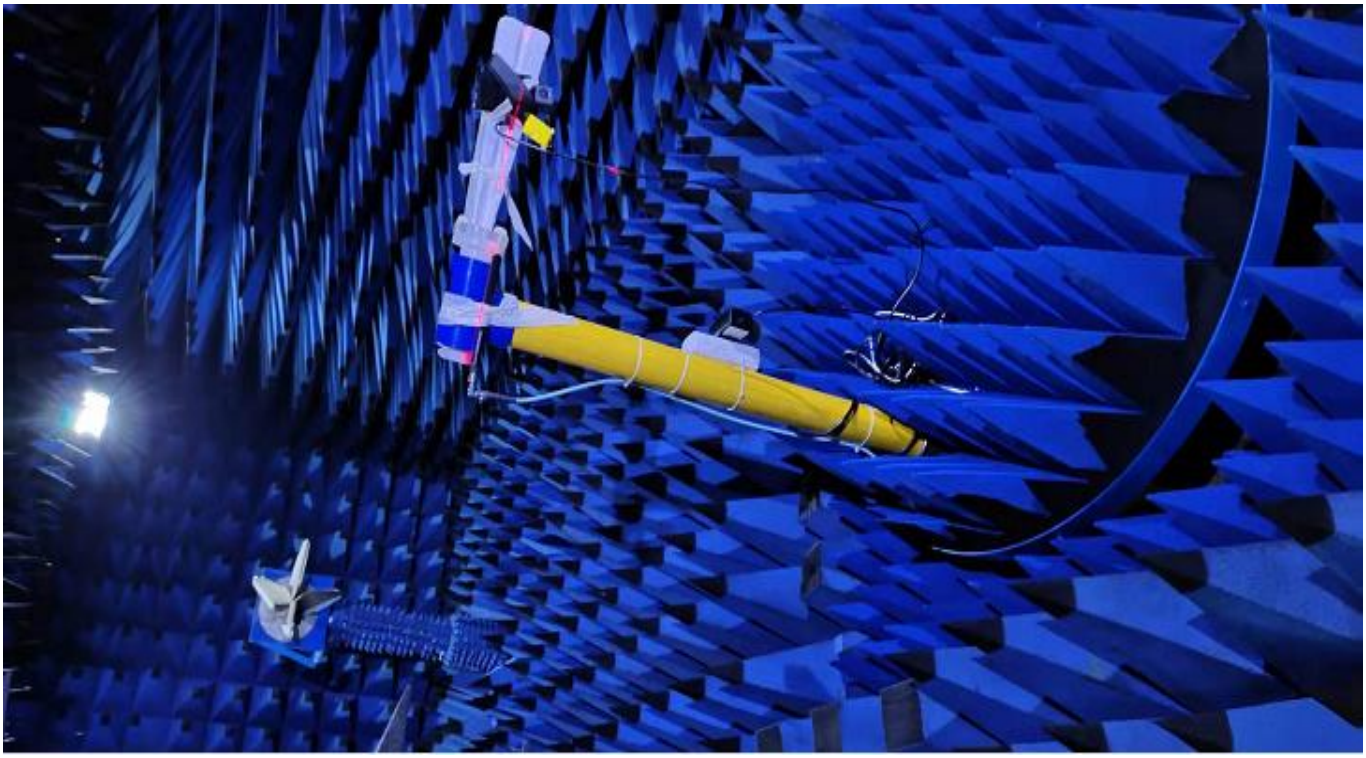
2.1WIFI Antenna matching circuit

This item matching circuit is provided by the customer。



Element number	1	2	3	4
WIFI optimum	NC	0 ohm	NC	
Original (spare)	50 ohm matching (inductance capacitance / sunlord Darfon)			

Chart 4 OTA Microwave dark room



2.3 Bobbi (VSWR) test

2.3.1. Test setup

Connect the VSWR test device are: Agilent E5071B network analyzer from 50 ohm coaxial Cable 120mm long

Brass & test fixture

Processing test fixture: 50 ohm antenna leads to SMA-J connector from the test point on the plate PCB with a rigid cable, and a

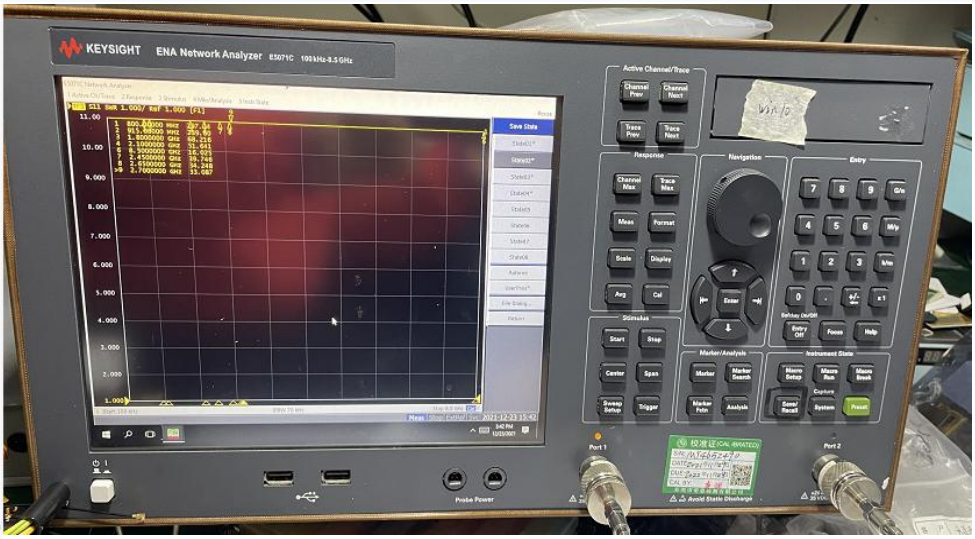
Connect the choke tube, and then sequentially connected with other devices.

4. 3D dynamic test of the whole machine

4.1 Test site

TCT microwave anechoic chamber: the test frequency range is 800mhZ-6ghz, the quiet zone range is 50cm circle, and the reflectivity is less than -90 dB.

Chart 5 Agilent E5071C network analyzer



ratio

Chart 6 WIFI VSWR

standard	Low frequency		High frequency		
frequency (MHz)	2400	2500	5700	5800	
VSWR	14	1.1	1.4	1.9	

Chart 7 Test environment: OTA743 darkroom, 8960/W500/8753ES/5071C, the machine is placed back to 4 meters away from the standard horn antenna turntable

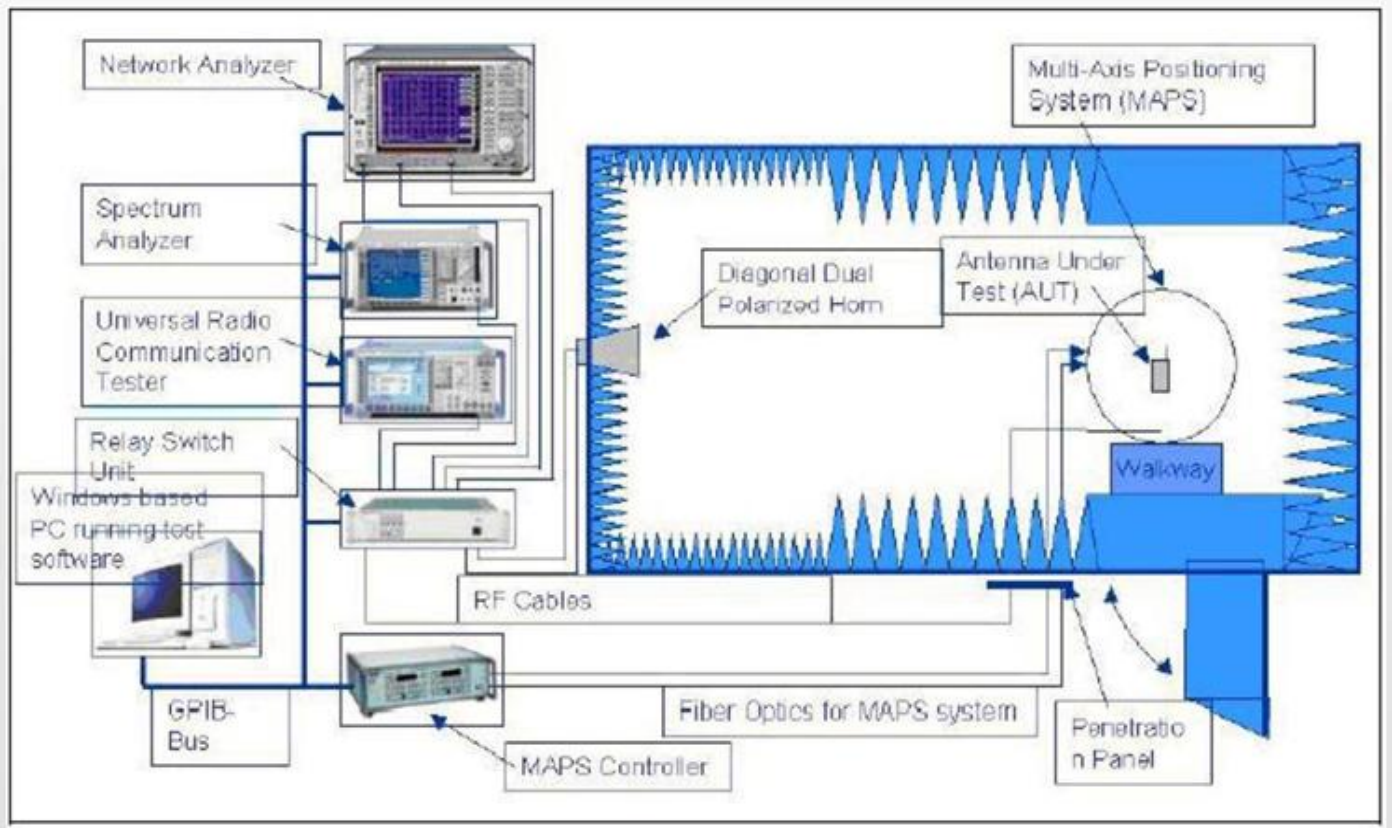
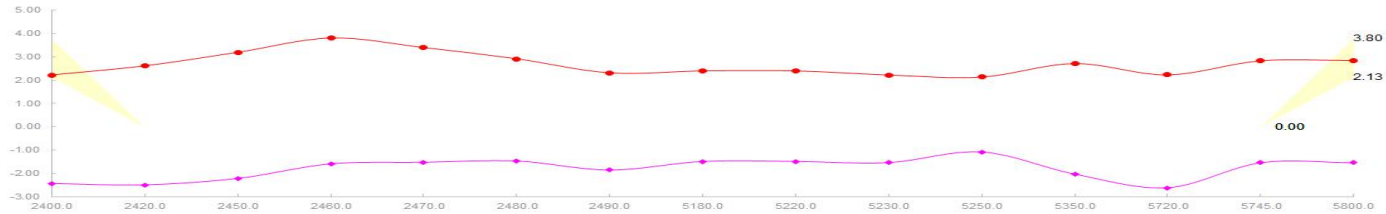
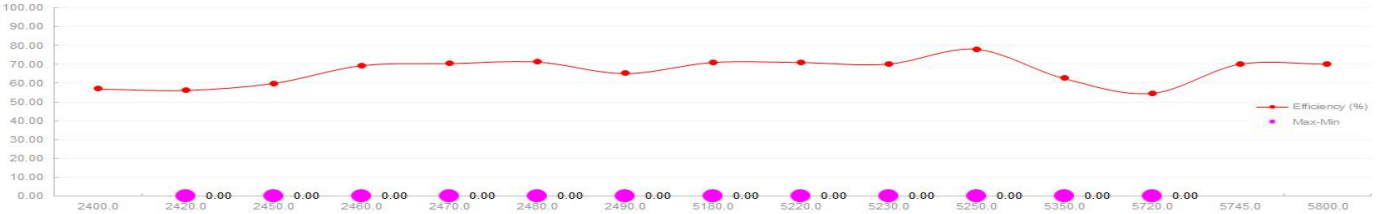
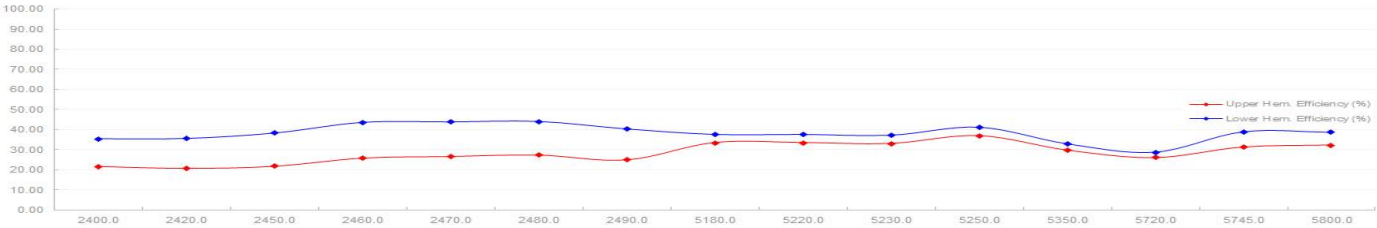


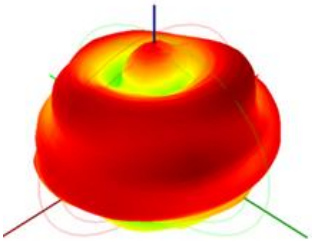
Chart 8 Elevation map coverage

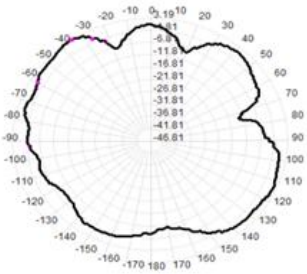
FEITUKEJI												
Frequency ID	1	3	5	7	9	11	12	14	16	18	20	22
Frequency (MHz)	2400.0	2420.0	2440.0	2460.0	2480.0	2500.0	5700.0	5720.0	5740.0	5760.0	5780.0	5800.0
Efficiency (dBi)	-2.44	-2.50	-1.91	-1.59	-1.47	-2.10	-1.49	-1.08	-2.62	-1.42	-1.52	-1.55
Gain (dBi)	2.22	2.61	3.43	3.80	2.91	2.38	3.39	4.13	2.22	3.61	3.78	2.82
Efficiency (%)	57.02	56.28	64.38	69.33	71.29	61.70	71.01	78.01	54.67	72.14	70.49	70.06
Directivity (dB)	4.66	5.11	5.34	5.39	4.38	4.48	4.88	5.21	4.85	5.03	5.30	4.37
Peak Gain Position (Theta)	144.00	141.00	144.00	124.00	144.00	145.00	80.00	127.00	79.00	86.00	141.00	81.00
Peak Gain Position (Phi)	180.00	180.00	180.00	210.00	180.00	180.00	90.00	90.00	90.00	270.00	60.00	90.00
Efficiency ThetaPol (%)	39.41	39.00	45.30	49.26	50.37	43.36	22.93	23.88	24.09	23.92	23.84	23.39
Efficiency PhiPol (%)	17.60	17.28	19.08	20.07	20.92	18.34	48.08	54.13	30.58	48.22	46.65	46.67
Upper Hem. Efficiency (%)	21.62	20.70	23.32	25.75	27.24	23.07	33.45	36.85	26.01	33.82	32.02	31.23
Lower Hem. Efficiency (%)	35.39	35.57	41.06	43.58	44.04	38.62	37.56	41.16	28.66	38.32	38.47	38.83

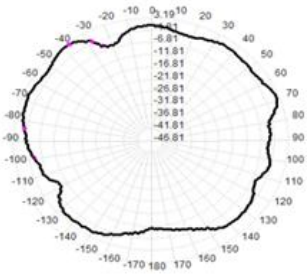


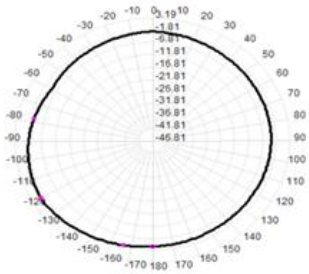




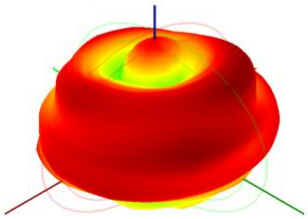




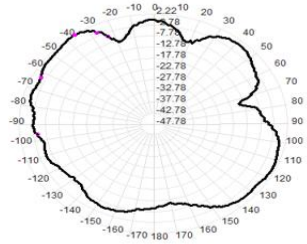




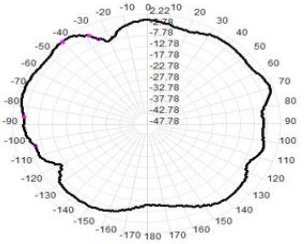
2400.0MHz H+V, Eff: 57.0%



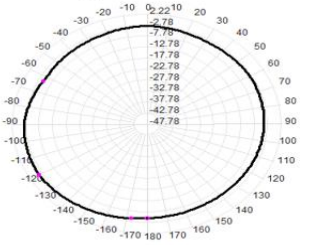
2400.0MHz Total(E1), Max= 2.22dBi

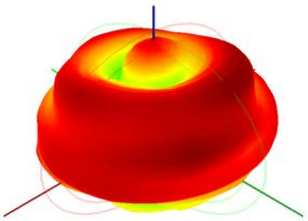


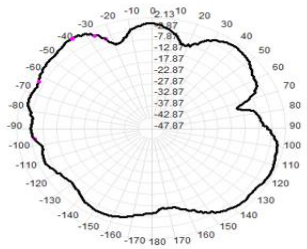
2400.0MHz Total(E2), Max= 1.02dBi

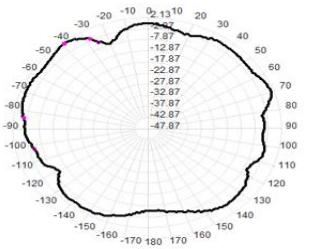


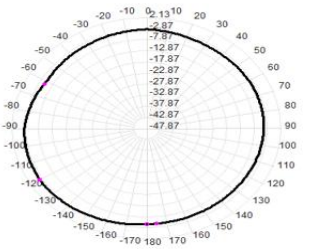
2400.0MHz Total(H), Max= -1.62dBi

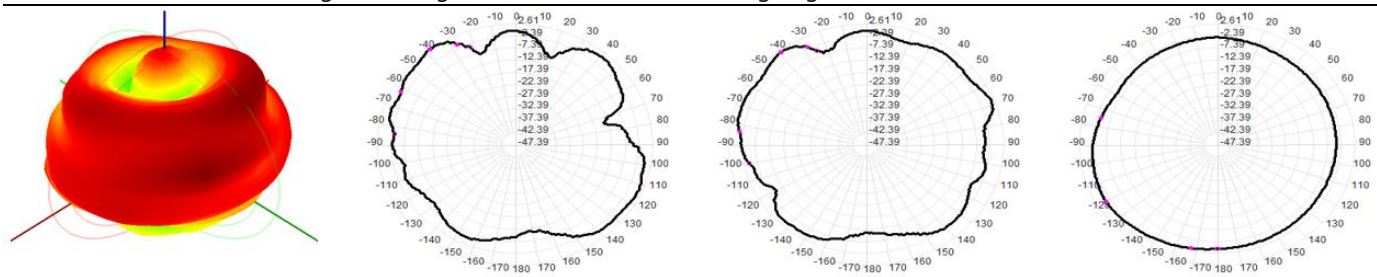


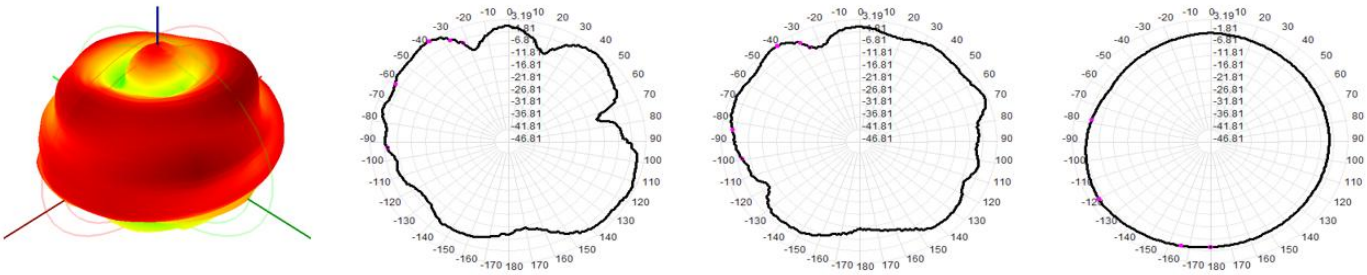


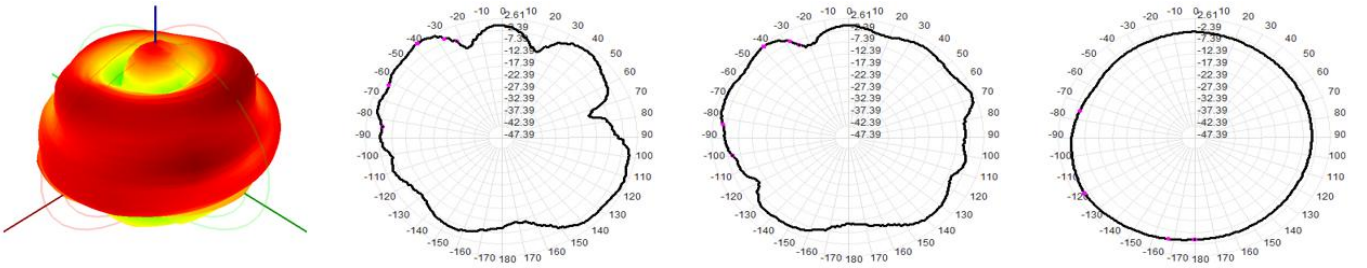










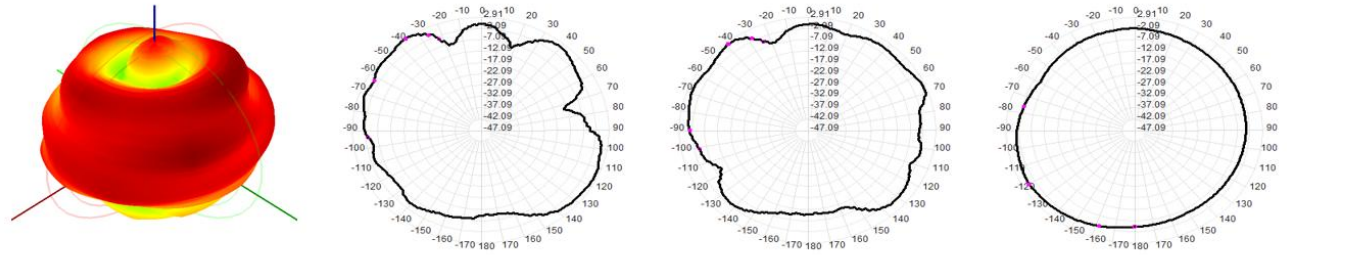


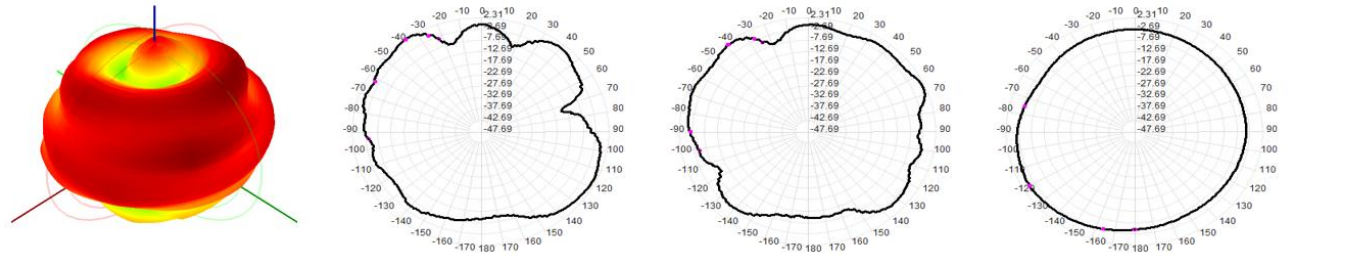
2470.0MHz H+V, Eff: 70.4%

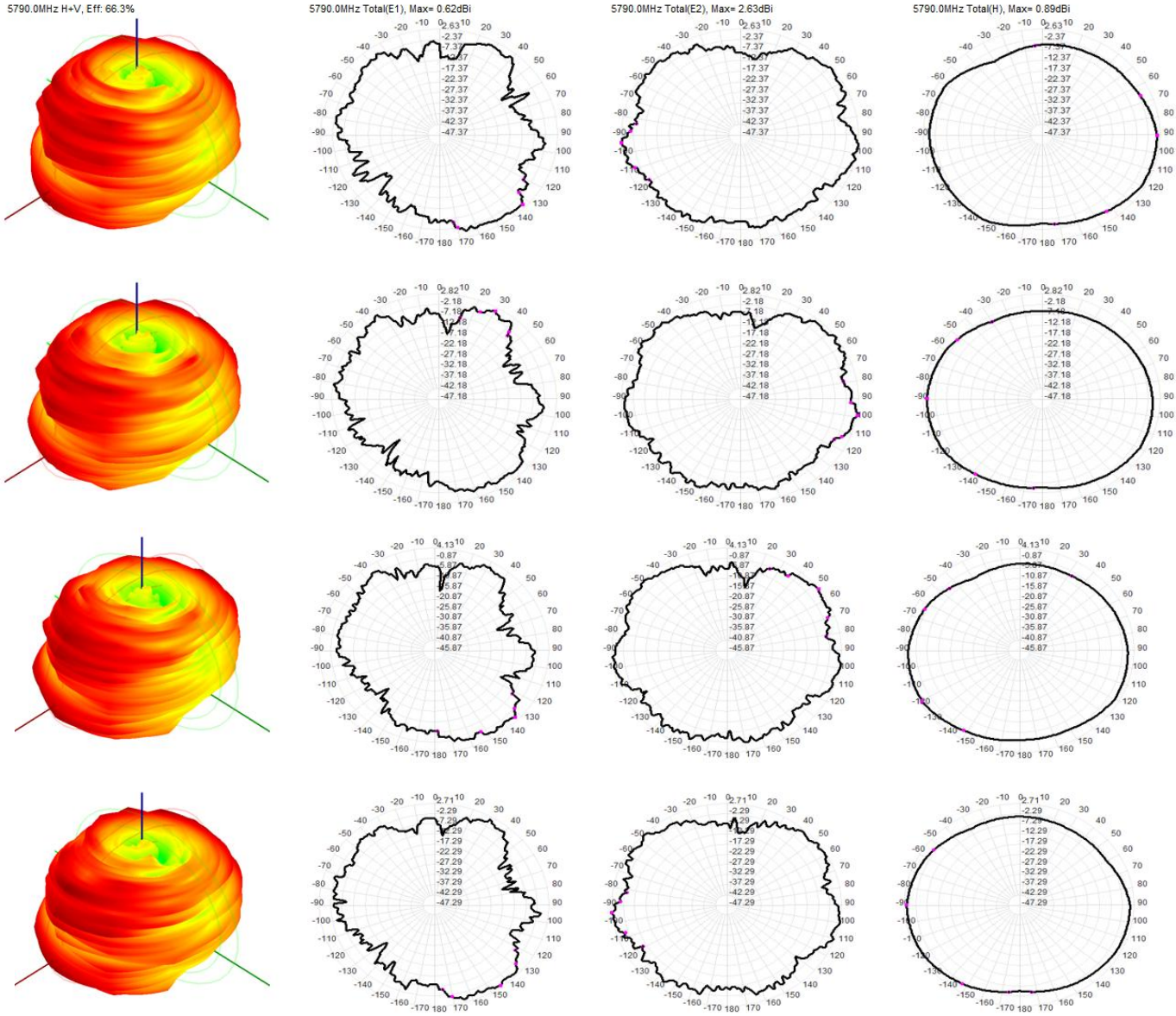
2470.0MHz Total(E1), Max= 3.39dBi

2470.0MHz Total(E2), Max= 2.29dBi

2470.0MHz Total(H), Max= 0.74dBi







3, recommendations and conclusions

This report is based on the final version of the antenna electrical performance measured by the customer Shenzhen Xinrui and Technology Co., Ltd. As can be seen from the above test data, this antenna provides better electrical performance. Tianyiyuan R & D looks forward to your confirmation, thank you for your cooperation!