Shenzhen Tianyiyuan Elec& Technology co., Ltd
Address: 6th Floor, Building B2, Xinlongxin Science Park, No.50 Fengtang Avenue, Fu Street, Baoan District, Shenzhen

Recognition book

SPECIFICATION FOR APPROVAL

Name: WIFI/BT 2.4/5.8Gantenna()

Item No: TYY-TX2506G-3

Custoer name: Shenzhen Haotaike Electronics Co., LTD

Company stamp:

drawing			Customer approve
MADE	CHECKED	APPROVED	
QIU	**jack**	**Miketang**	
DATE: 2024.09.25			DATE

1、Specifications

Shenzhen Tianyiyuan Elec& Technology co., Ltd
Address: 6th Floor, Building B2, Xinlongxin Science Park, No.50 Fengtang Avenue, Fu Street, Baoan District, Shenzhen

The report provides a test of the electrical performance parameters of the **TYY-TX2506G-3**Technical parameters of antenna electrical appliances antenna, which is a science and technology model.TYY-TX2506G-3 WIFI Built in antenna,WIFIAntenna is made bycopper pipe+RF Line composition。Type of Antenna: FPC

Antenna（As follows 1 Shown）

Electrical technical parameters			
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	≤2.0	VSWR	≤2.0
增益	3.29DBI	GAIN	3.29DBI
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-4	Input connector	IPEX-4
线长度	60mm	Cable length	60mm
工作温度	-40℃~+85℃	Working Temperature	-40℃~+85℃
工作湿度	20~80%	Working Humidity	20~80%

Chart 1 TYY-TX2506G-3Product size

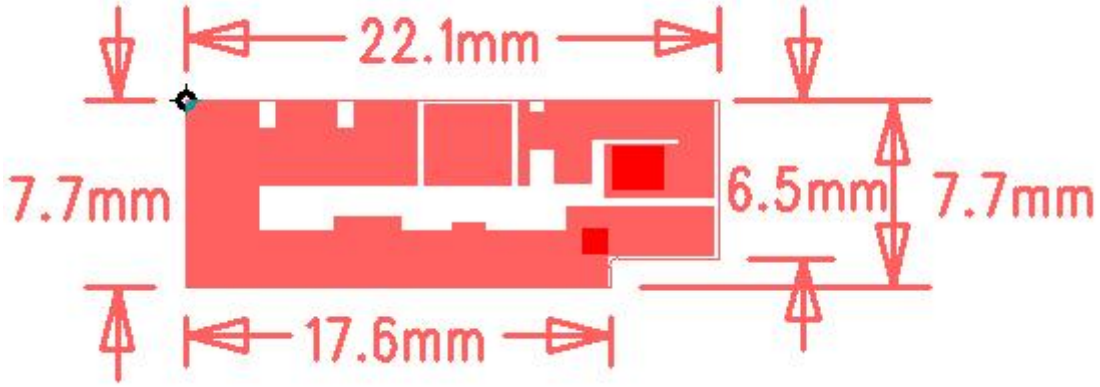
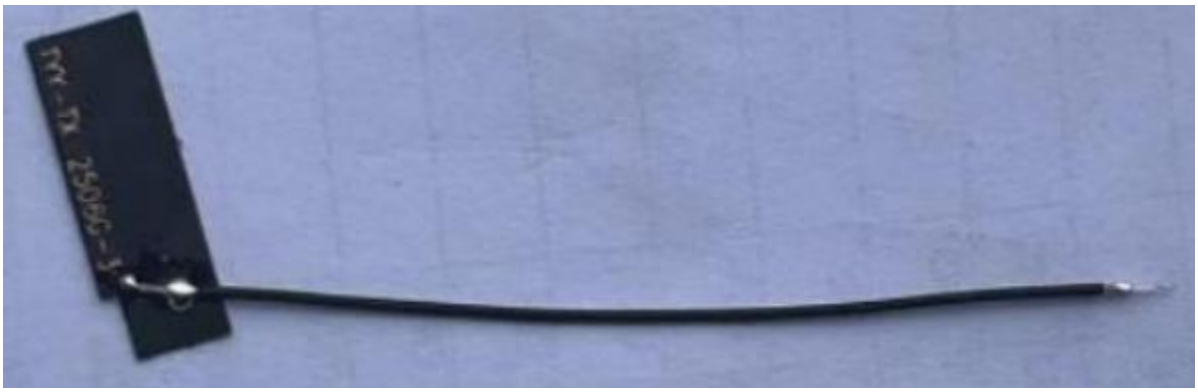


Chart 2 TYY-TX2506G-3 Antenna finished



Line length 70+/-2mm 0.81mm。

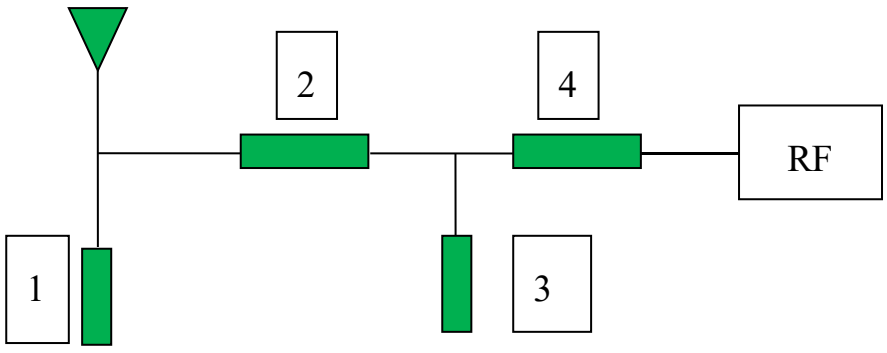
Chart 3 Location of antenna patch

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

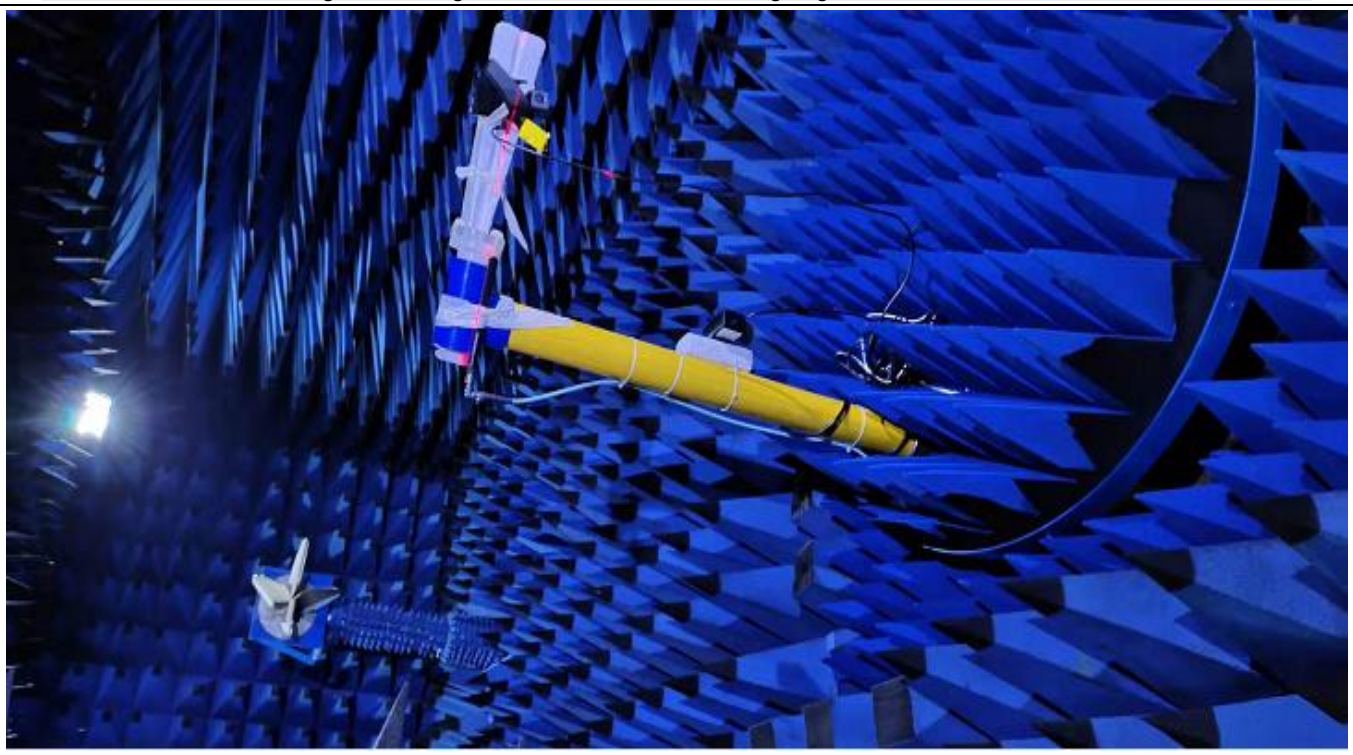
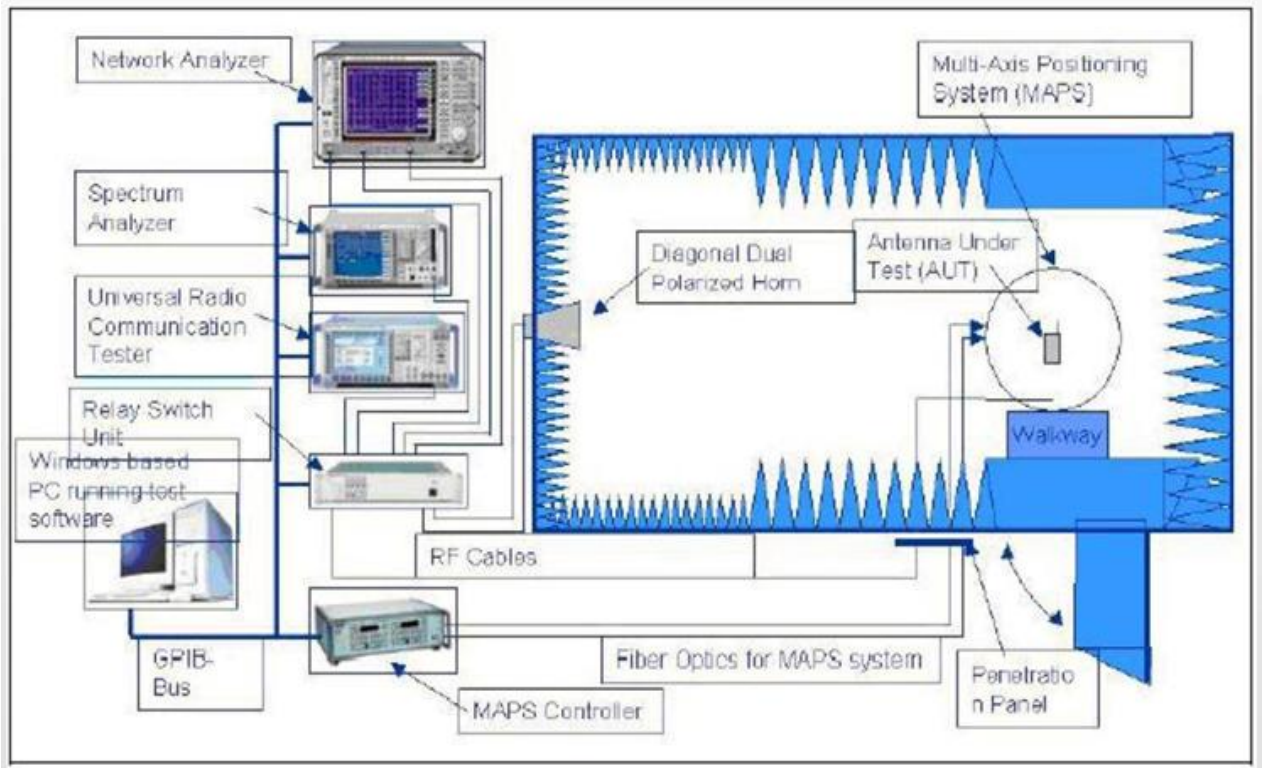


Chart 5 Test environment: OTA743 darkroom, W500/8960/8753ES /5071C, the machine is placed with its back to the turntable 4 meters away from the standard horn

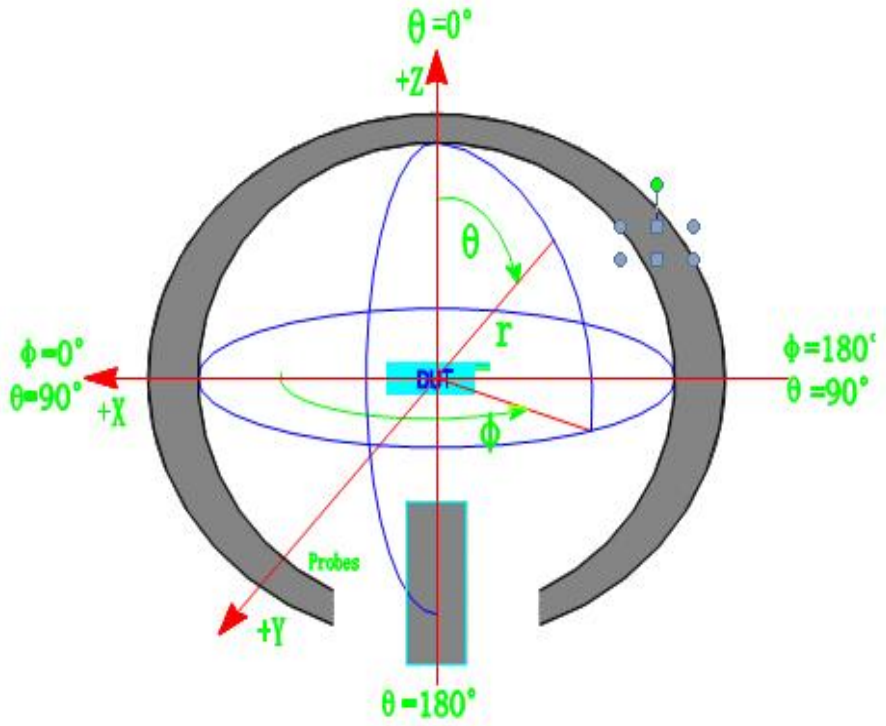


2.3 Bobbi (VSWR) test

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.

Chart 6 Return loss

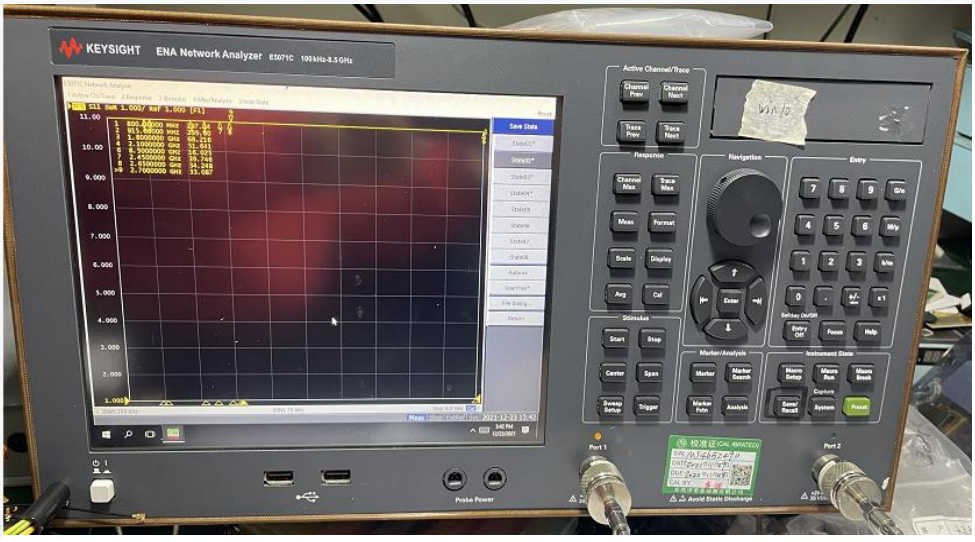


4. 3D dynamic test of the whole machine

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 7 Agilent E5071C network analyzer



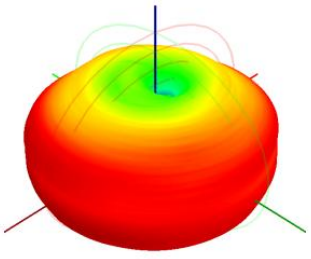
ratio

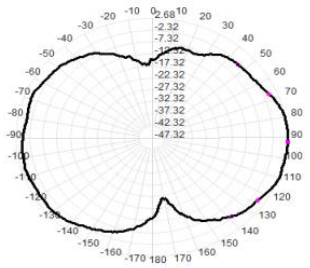
Chart 8 WIFI VSWR

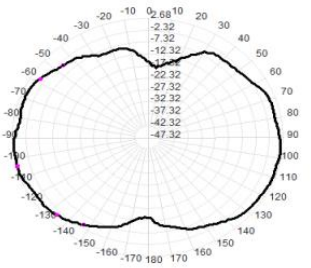
standard	Low frequency		High frequency		
frequency (MHz)	2412	2442	5700	5800	
VSWR	1.4	1.1	1.4	1.9	

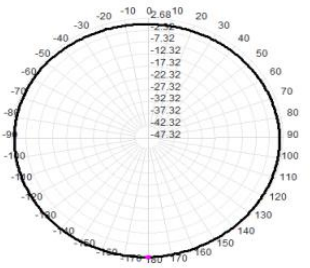
Chart 9 Elevation map coverage

FEITUKEJI																		
Frequency ID	1	2	3	4	5	6	7	8	9	10	11	12	12	13	14	15	16	17
Frequency (MHz)	2400.0	2420.0	2440.0	2460.0	2480.0	2500.0	5180.0	5200.0	5240.0	5260.0	5280.0	5300.0	5320.0	5710.0	5730.0	5750.0	5770.0	5790.0
Efficiency (dBi)	-2.16	-2.00	-1.91	-1.63	-1.73	-1.69	-1.55	-1.27	-1.54	-1.72	-1.83	-1.51	-1.51	-1.38	-1.06	-1.62	-1.84	-1.06
Gain (dBi)	1.92	2.20	2.38	3.11	2.97	3.13	3.23	3.29	2.56	2.22	2.38	3.08	3.08	3.55	4.25	3.82	3.80	4.23
Efficiency (%)	60.79	63.03	64.48	68.74	67.12	67.72	70.06	74.67	70.12	67.23	65.55	70.59	70.59	72.70	78.38	68.93	65.41	78.37
Directivity (dB)	4.08	4.20	4.29	4.74	4.70	4.82	4.78	4.56	4.10	3.95	4.21	4.59	4.59	4.93	5.31	5.43	5.64	5.29
Peak Gain Position (Theta)	79.00	79.00	40.00	44.00	44.00	139.00	137.00	83.00	140.00	140.00	140.00	42.00	42.00	42.00	42.00	39.00	33.00	33.00
Peak Gain Position (Phi)	330.00	330.00	30.00	30.00	30.00	30.00	30.00	330.00	360.00	360.00	360.00	240.00	240.00	240.00	240.00	240.00	210.00	180.00
Efficiency ThetaPol (%)	46.42	47.51	48.72	51.70	50.50	51.25	52.44	55.54	52.09	49.87	48.68	39.98	39.98	40.88	43.24	42.73	44.99	50.03
Efficiency PhiPol (%)	14.37	15.52	15.76	17.04	16.62	16.48	17.62	19.13	18.03	17.36	16.87	30.60	30.60	31.82	35.14	26.21	20.41	28.35
Upper Hem. Efficiency (%)	31.95	32.81	33.10	34.94	34.05	34.58	36.33	39.45	37.43	35.90	34.75	38.74	38.74	39.89	42.65	38.19	36.56	42.89
Lower Hem. Efficiency (%)	28.83	30.22	31.38	33.80	33.07	33.14	33.73	35.22	32.69	31.33	30.80	31.84	31.84	32.82	35.73	30.74	28.84	35.48





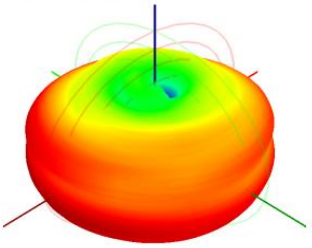




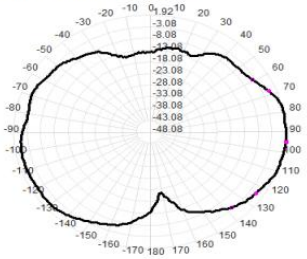
Shenzhen Tianyiyuan Elec& Technology co., Ltd

Address: 6th Floor, Building B2, Xinlongxin Science Park, No.50 Fengtang Avenue, Fu Street, Baoan District, Shenzhen

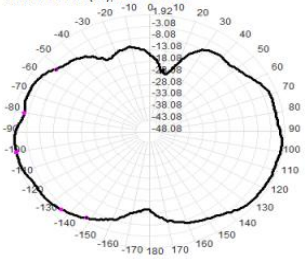
2400.0MHz H+V, Eff: 67.3%



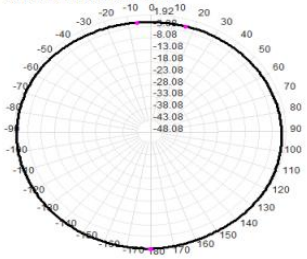
2400.0MHz Total(E1), Max= 1.92dBi

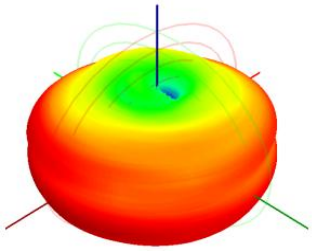


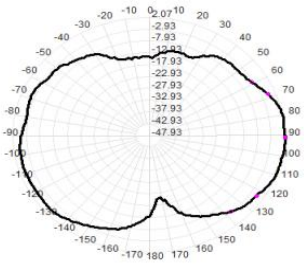
2400.0MHz Total(E2), Max= 1.36dBi

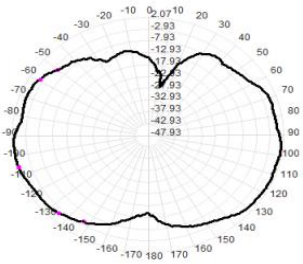


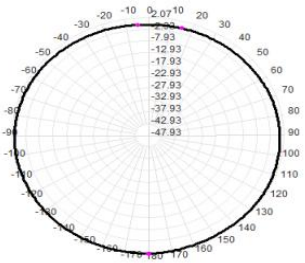
2400.0MHz Total(H), Max= 1.75dBi



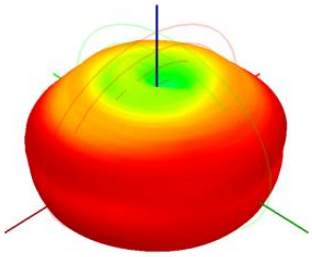




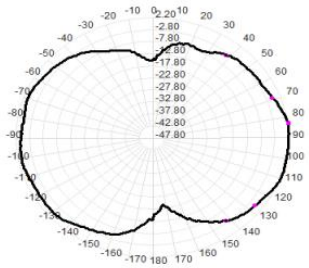




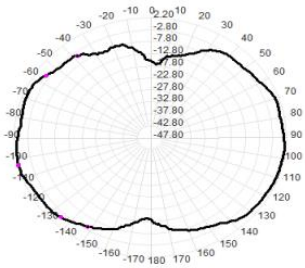
2470.0MHz H+V, Eff: 89.8%



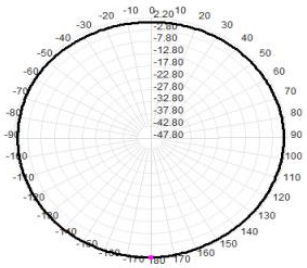
2470.0MHz Total(E1), Max= 2.88dBi

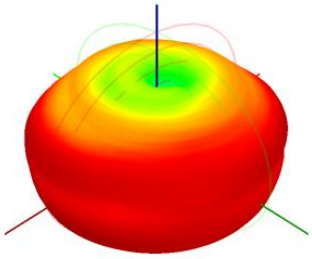


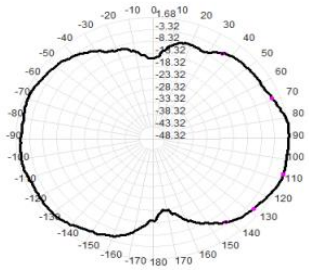
2470.0MHz Total(E2), Max= 2.43dBi

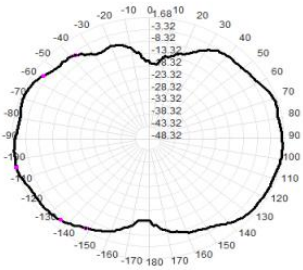


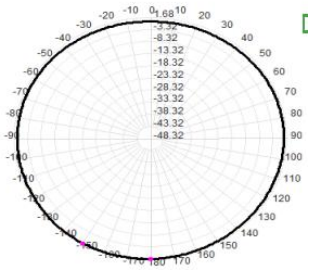
2470.0MHz Total(H), Max= 2.72dBi



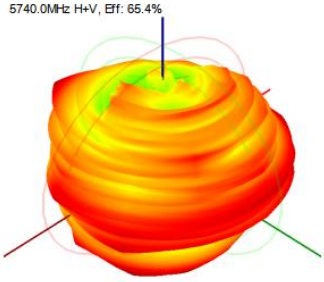




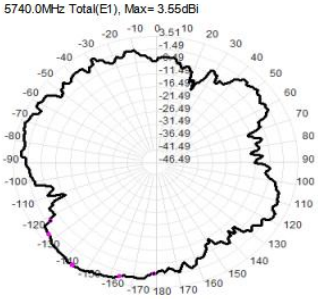




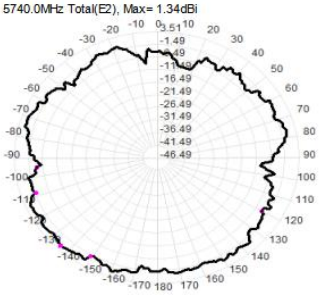
5740.0MHz H+V, Eff: 65.4%



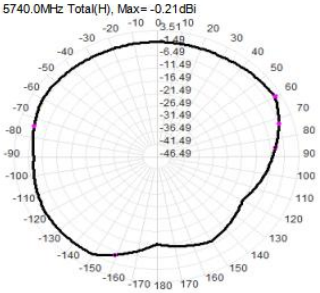
5740.0MHz Total(E1), Max= 3.55dBi

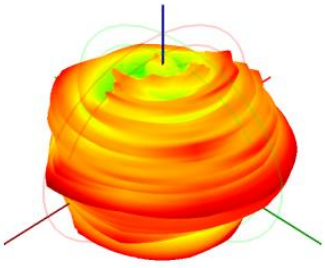


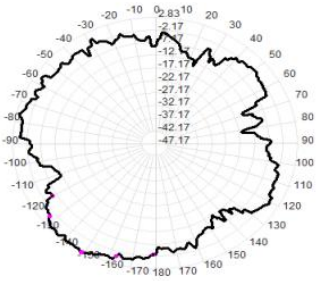
5740.0MHz Total(E2), Max= 1.34dBi

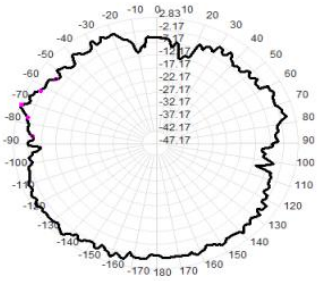


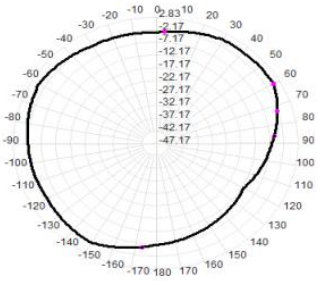
5740.0MHz Total(H), Max= -0.21dBi

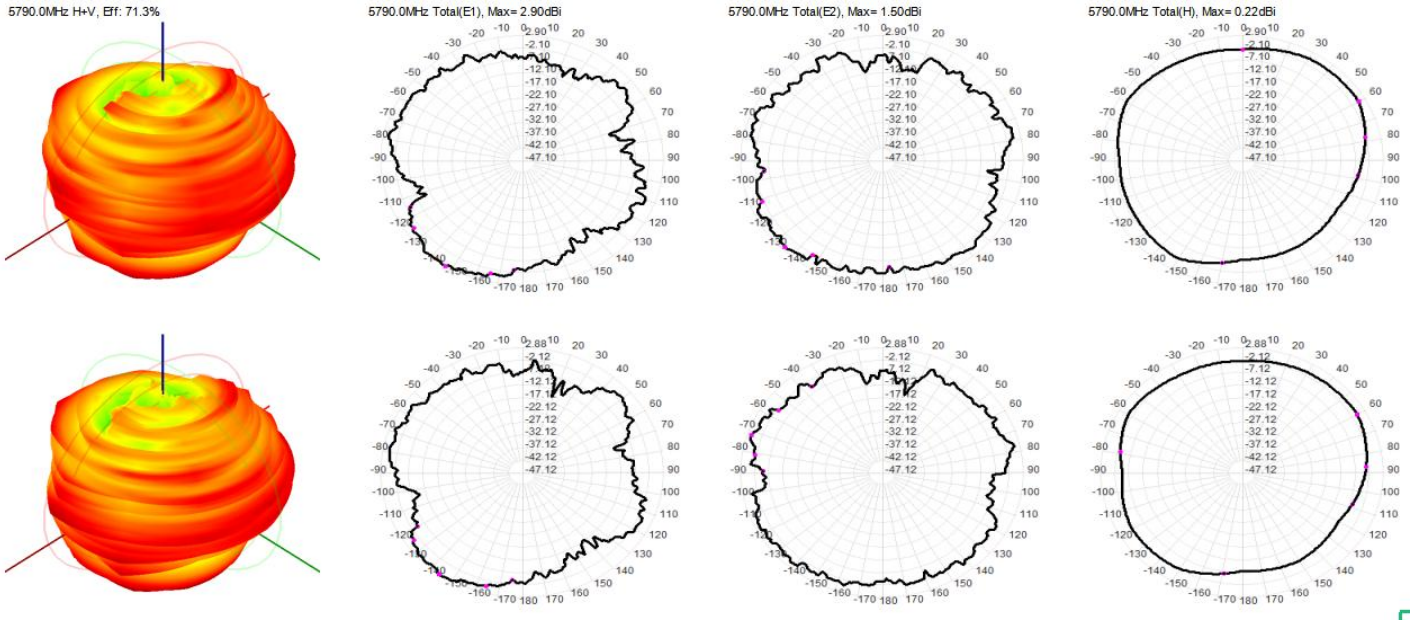












3, recommendations and conclusions

This report is based on the antenna electrical performance measured by the customer based on the final version of the model project of Shenzhen Haotaike Electronics Co., LTD

As can be seen from the above test data, the antenna provides good electrical performance.

Tianyiyuan is looking forward to your confirmation. Thank you for your cooperation!