

# Shenzhen Chi sheng Technology Co., LTD

Tel: 13487880011

Fax: 0755-29186477

Address: 2nd Floor, Building 5, Jiuyang Industrial Park, Heping Village, Fuyong Town, Bao 'an District, Shenzhen

## Recognition book SPECIFICATION FOR APPROVAL

Name: WIFI /BT 2.4GHz Antenna (H18)

Item No: CS-2506G-1 2.4G Gina:3.8dBi(Max)

Custoer name: Dongguan former Magic land Co., LTD

Company stamp: \_\_\_\_\_

drawing			Customer approve
MADE	CHECKED	APPROVED	
QIU	jack	MikeLiu	
DATE: 2023.12.15			DATE

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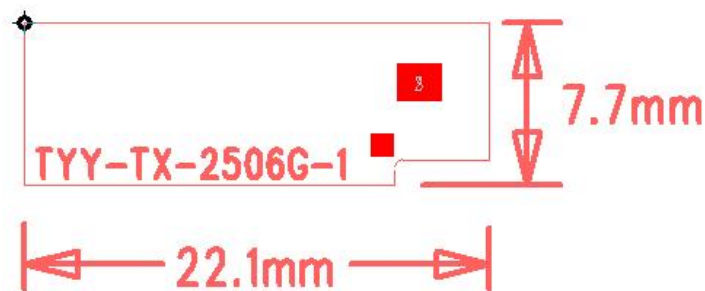
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## 1、 Specifications

The report provides a test of the electrical performance parameters of the antenna, which is a science and technology model. TX2506G-1 antenna WIFI in BT antenna, WIFI Antenna is made by copper pipe+RF Line composition. (As follows 1 Shown)

**Chart 1 CS-2506G-1 antenna WIFI/B T antenna**



**Chart 2 CS-2506G-1 Antenna finished (Line length 90+/-2mm. )**



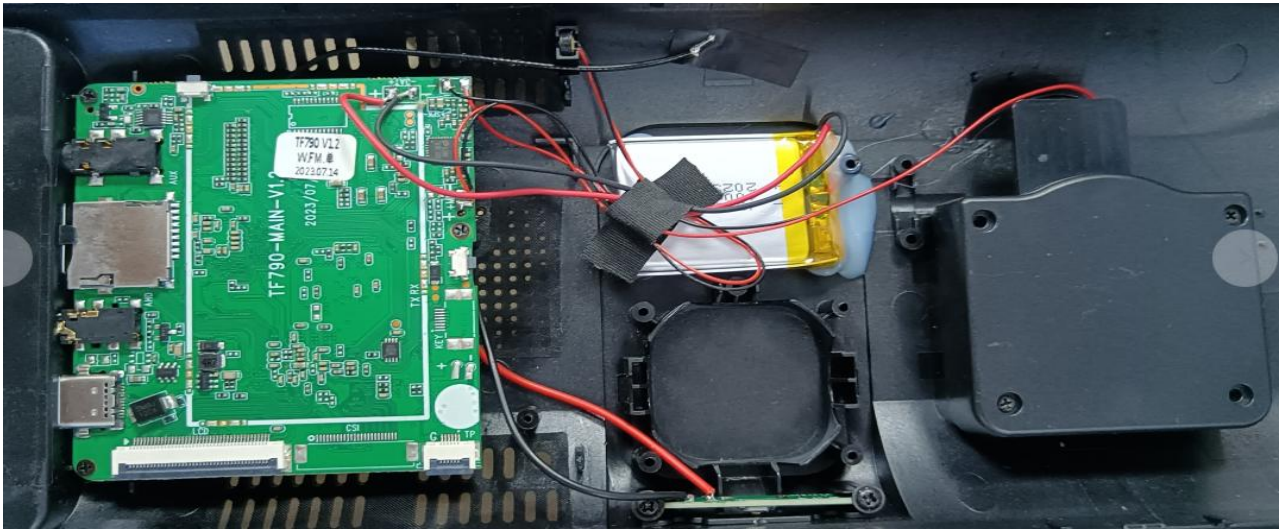
**Chart 3 Assembly drawing**

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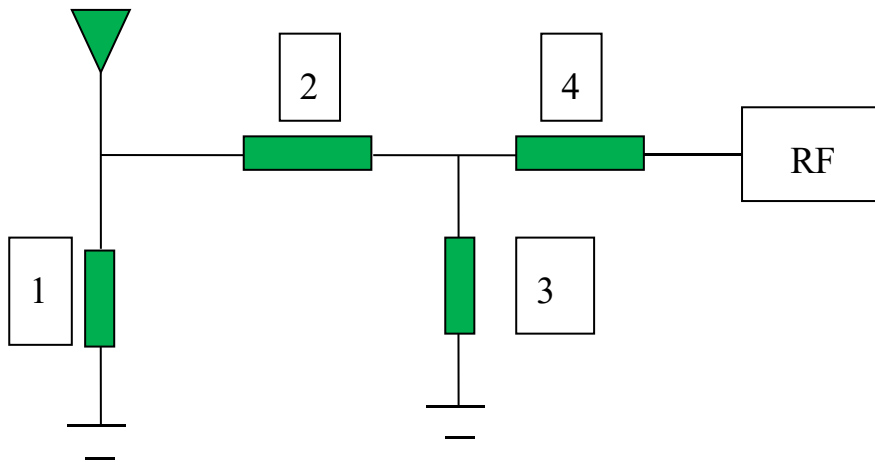
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## 2. Electrical properties

2.1 WIFI Antenna matching circuit This item matching circuit is provided by the customer.



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

**Chart 4 OTA Microwave dark room**

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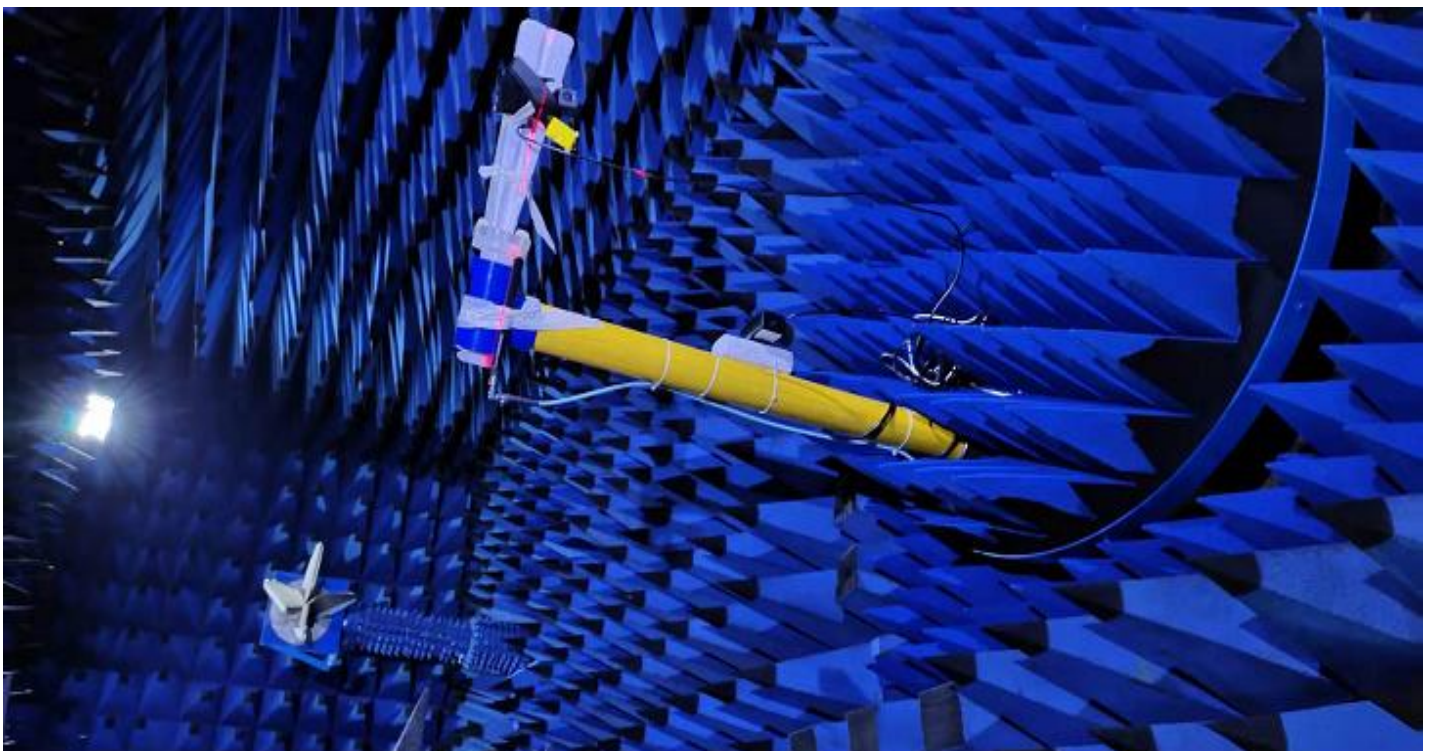


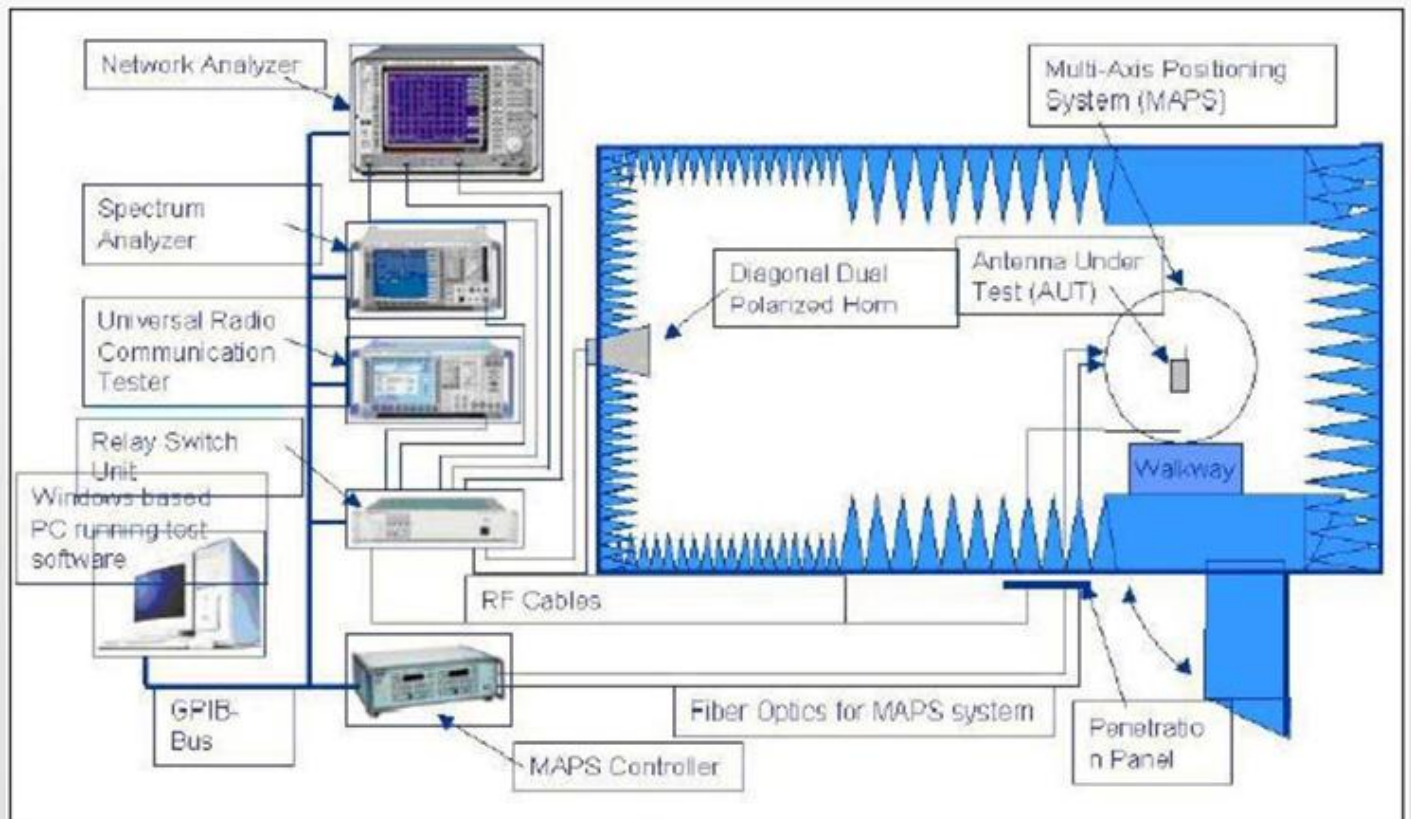
FIG. 8 Test environment: OTA743 darkroom, 8960/W500/8753ES/5071C, the machine is placed back to the turntable 4 meters away from the standard horn antenna

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## 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 90mm 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.

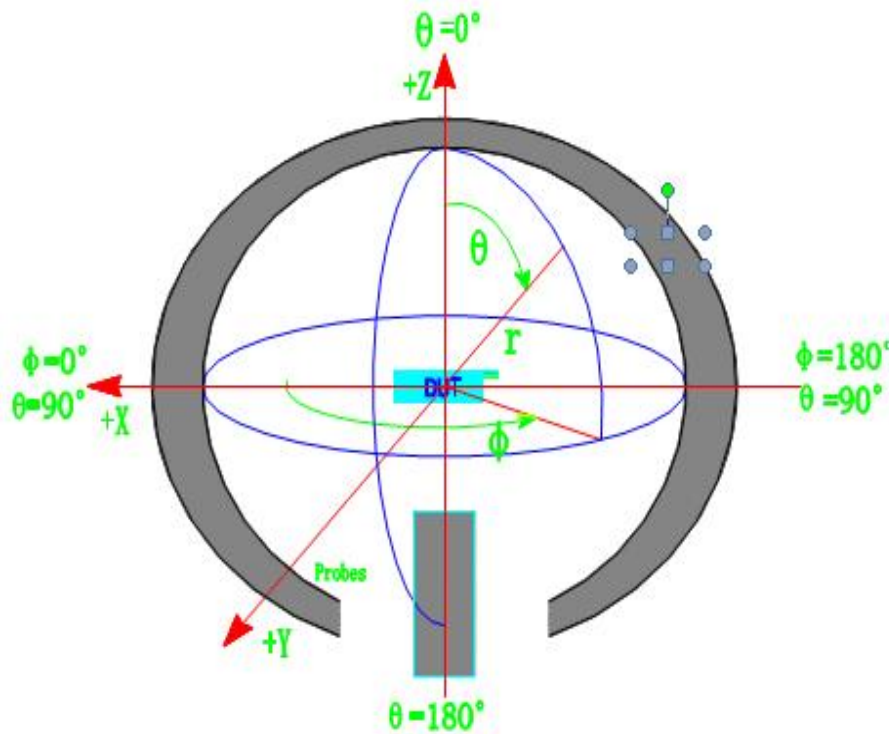
## Chart 5 Return loss

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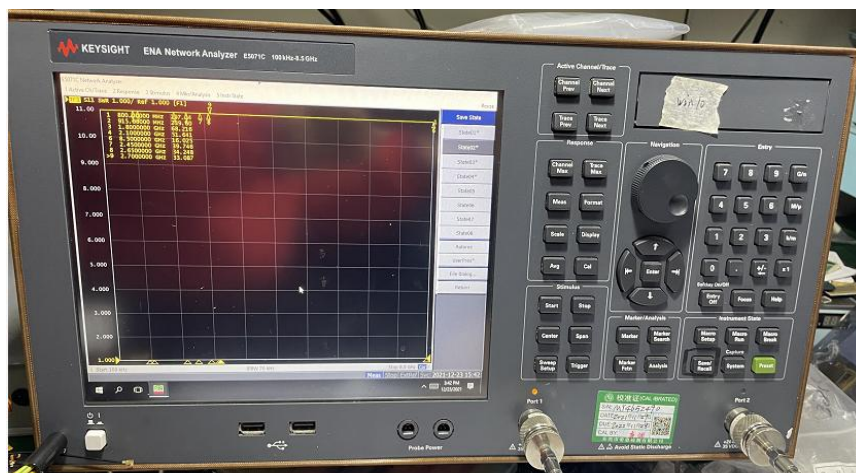


## 4. 3D dynamic test of the whole machine

### 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 8 Agilent E5071C network analyzer



### 2.3 Test of VSWR

#### 2.3.1. Test Settings

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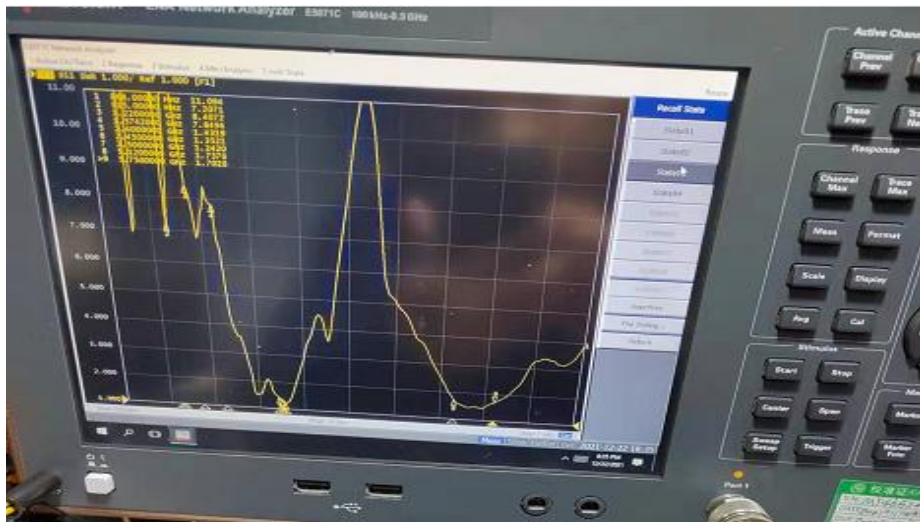
The VSWR test device is sequentially connected to Agilent E5071C Network Analyzer @50 ohm coaxial Cable@90mm long

Copper tube @ test fixture

Test fixture processing: from the antenna 50 ohm test point on the flat PCB with a hard cable out of the SMA-J connector, with the sleeve

The copper pipe of the choke is connected, which in turn is connected to other devices.

## Chart 6 WIFI/BT VSWR



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

## Chart 7 Elevation map coverage

FETUKEJI												
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

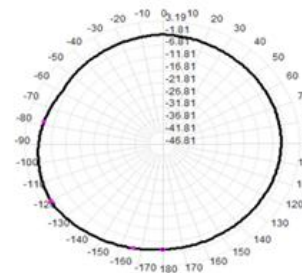
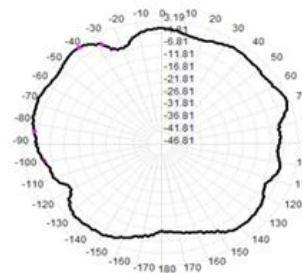
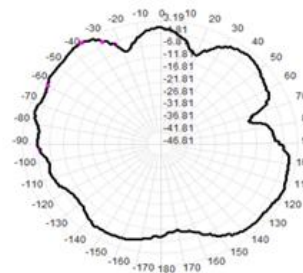
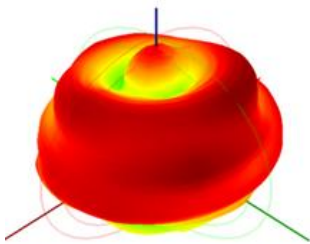
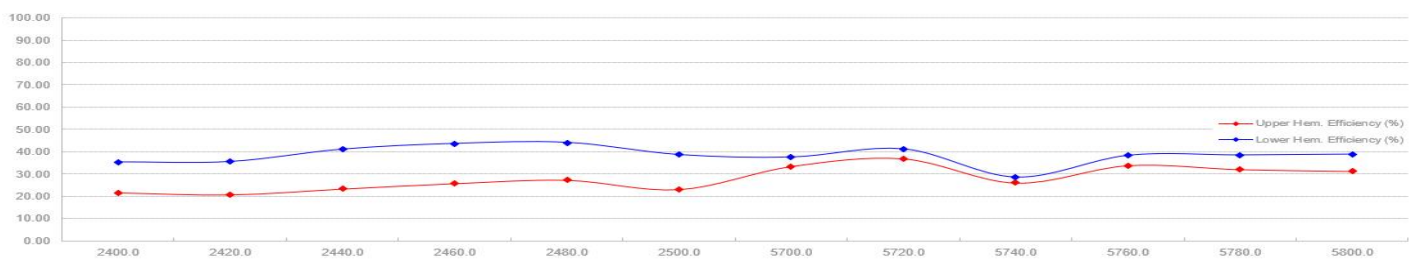
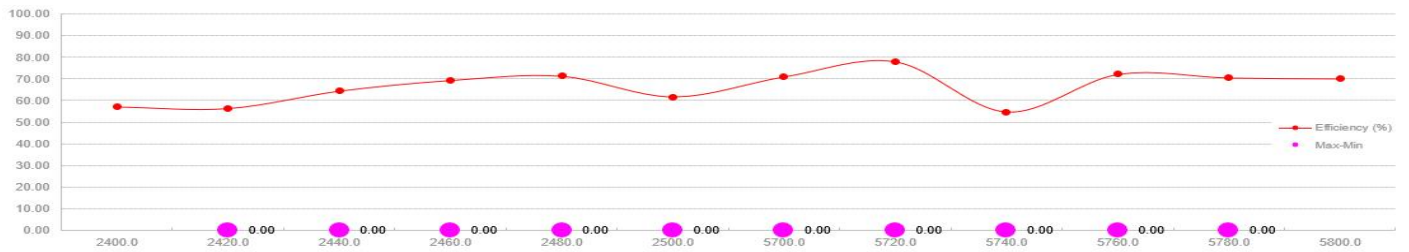
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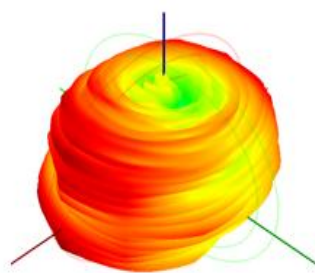
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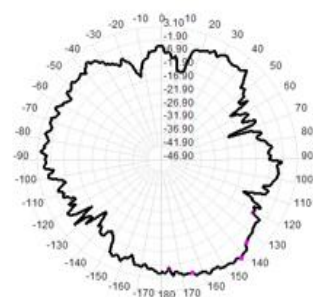
## Chart 8 3d renderings



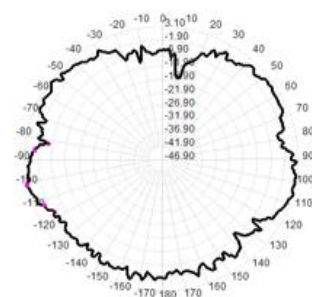
5700.0MHz H+V, Eff: 72.1%



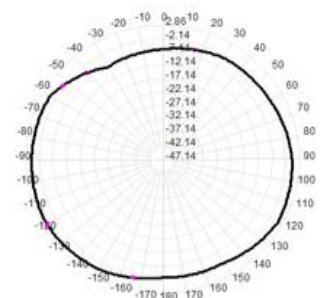
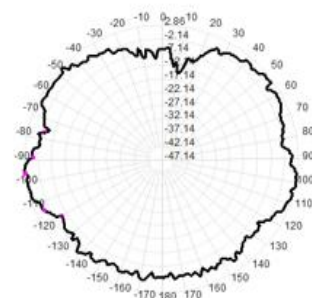
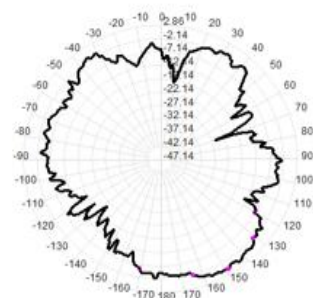
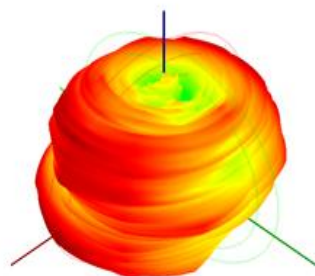
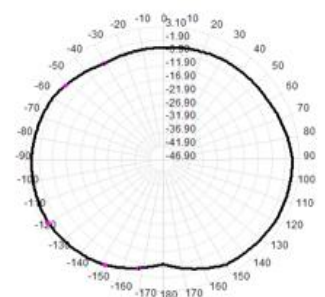
5700.0MHz Total(E1), Max= 0.86dBi



5700.0MHz Total(E2), Max= 3.86dBi



5700.0MHz Total(H), Max= 3.02dBi



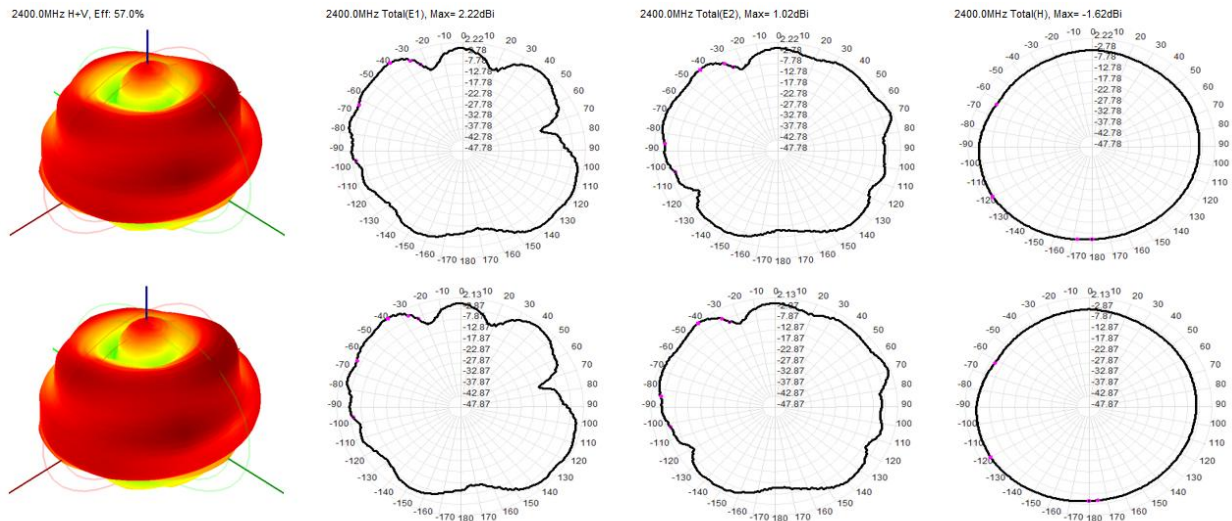


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## 3, recommendations and conclusions

This report is based on the final version of the measured antenna electrical performance in accordance with the customer to provide music for the scientific and technological models. From the above test data can be seen, this antenna provides a better electrical performance.

Tianyi source research and development and look forward to your confirmation, thank you for your cooperation!