



深圳市天逸源电子科技有限公司

Shenzhen Tianyiyuan Elec&Technology CO.,Ltd

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地址: 深圳市宝安区福海街道凤塘大道 50 号鑫龙欣科技园

# 承 认 书

SPECIFICATION FOR APPROVAL

Name: 2/3/4G(LTE)主副天线.WIFI 天线

Item No: TYT-TX3508-3WFG (2 个用量)

Custoer name: Xi'an Zhixiang Optoelectronics Technology Co., Ltd.

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

drawing			Customer approve
MADE	CHECKED	APPROVED	
QIU	蒋志远	唐晓宏	
DATE: 2023.10.08			DATE



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## 1、Specifications

The report mainly provides testing of various electrical performance parameters of Xi'an Zhixiang Optoelectronics Technology Co., Ltd.'s models. The TYY-TX3508-3WFG antenna is a built-in WIFI antenna, and the WIFI antenna is composed of FPC+RF lines. (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	≤2.0	VSWR	≤2.0
增益	3.39DBI	GAIN	3.39DBI
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	60mm	Cable length	60mm
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-TX3508-3WFG 天线 (尺寸图)

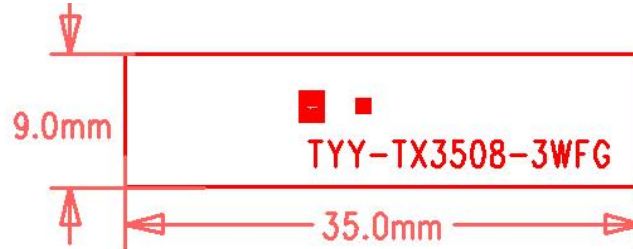


图 2 TYY-TX3508-3WFG (线总长是 70/+2mm (2 个用量))

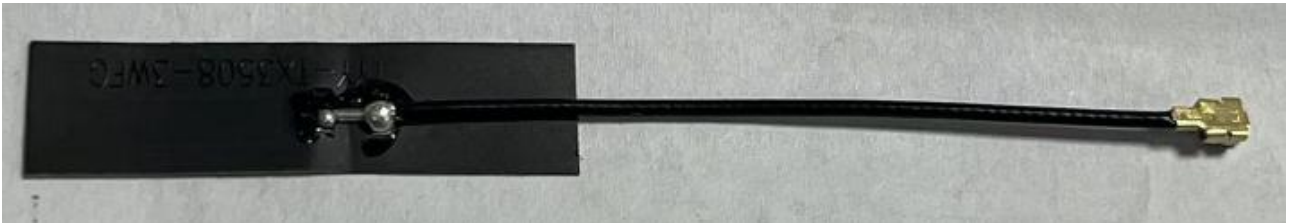
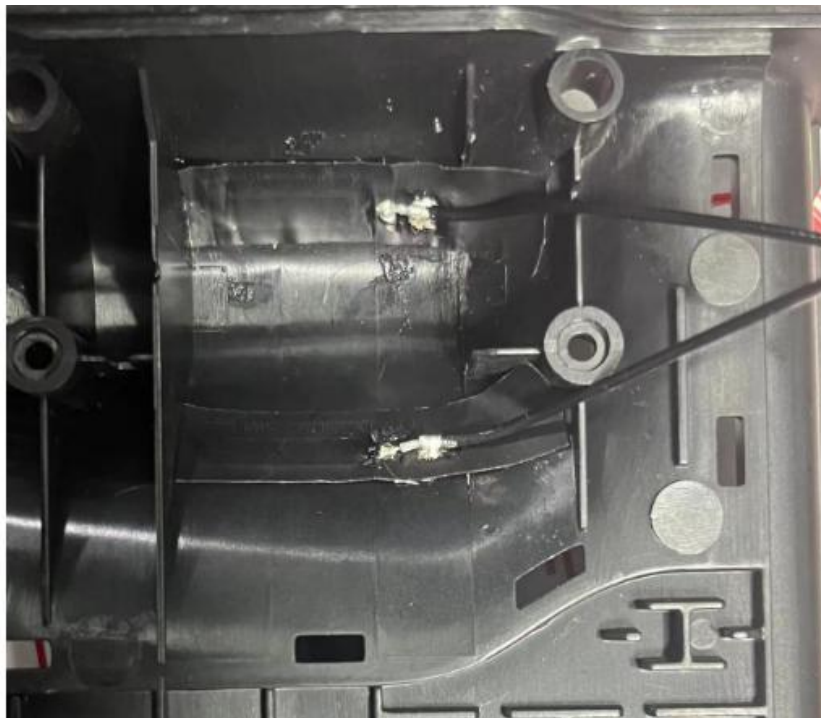
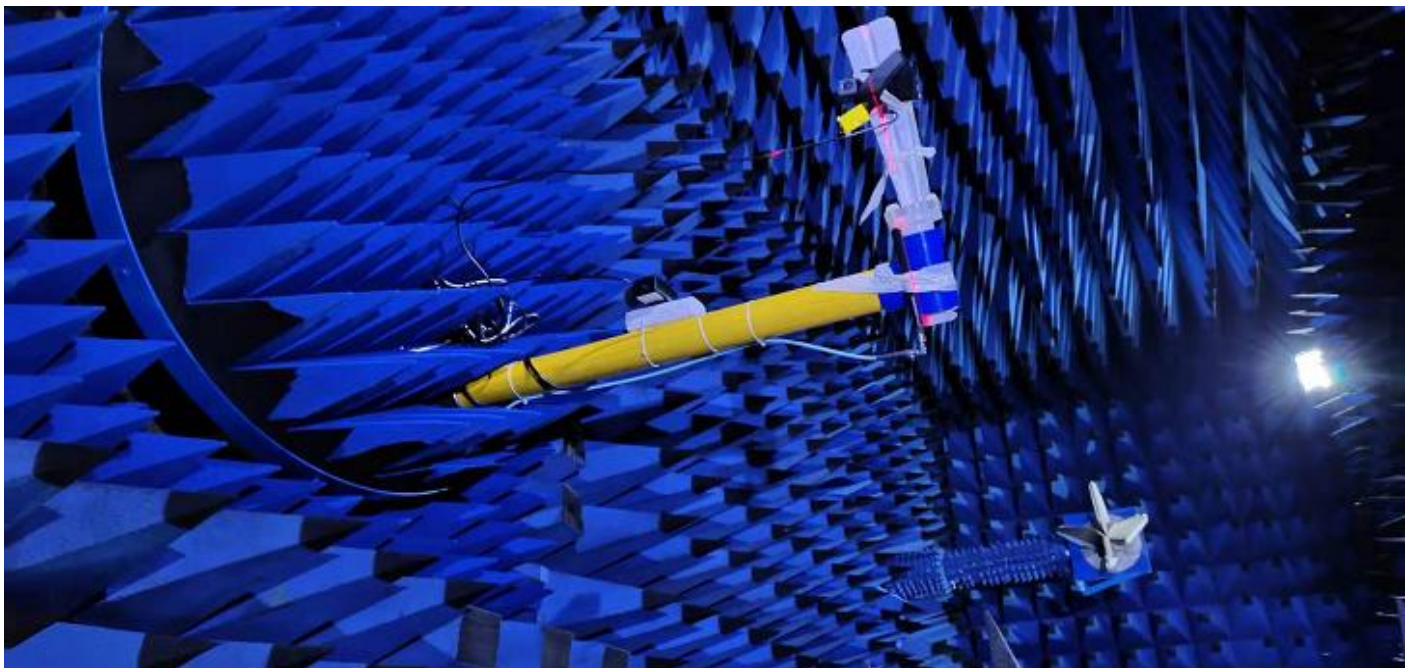


图 3 装配图 (双频天线)



**Tip: First fasten the terminal block and then peel off the adhesive tape on the back of the antenna. The antenna must be attached to the plastic shell and away from metal components.**

**图 4 OTA Microwave darkroom testing equipment**



**Figure 5 Test environment: OTA743 darkroom, 8960/W500/8753ES/5071C, the machine is placed on the turntable 4 meters away from the standard speaker sky with its back facing**

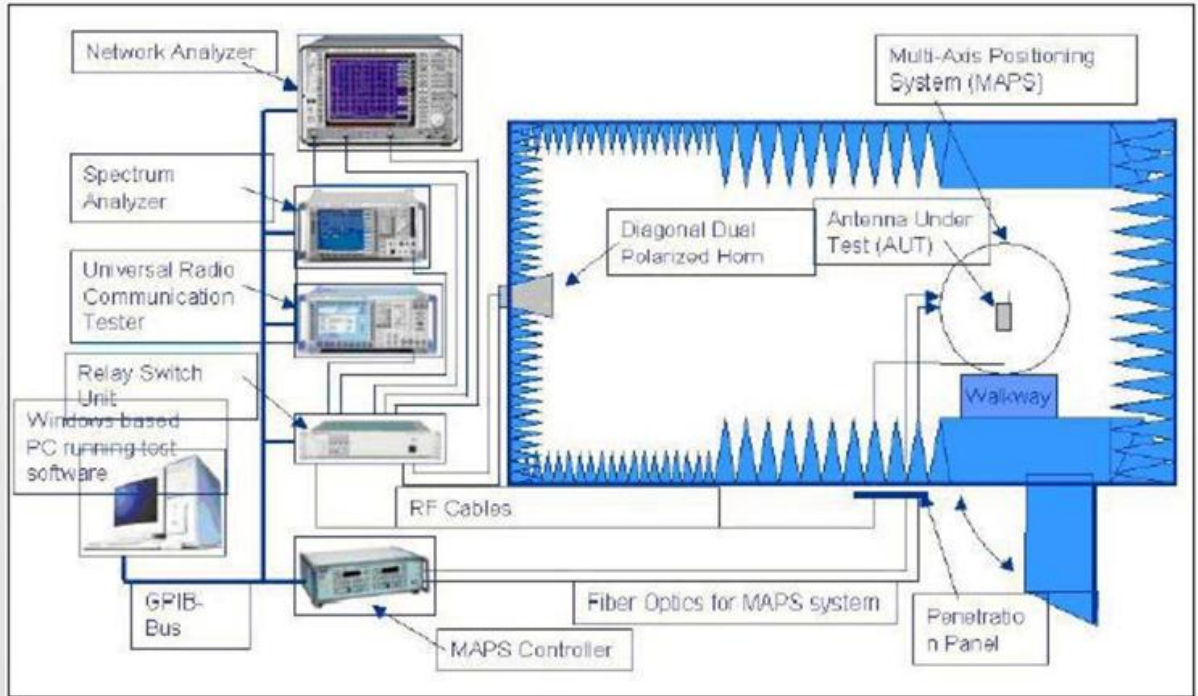


图 6 2/3/4 LTE 驻波比



制式	GSM				TDD-LTE		
	850	900	1800	1900	2100	2300	2700
频率(MHz)	850	900	1800	1900	2100	2300	2700



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VSWR	1.34	2.51	2.1	1.54	1.91	1.97	1.98
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## 2.4 Gain test

### 2.4.1 Test site

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

### 2.4.2 Test instruments

Agilent E5071B network analyzer, log-periodic antenna, computer, transmitting turntable, receiving antenna, printer, jacket choke (in order to reduce the loss of the signal connection line).

## 无源测试报告

## WIFI 无源测试报告

FETUKEJI													
Frequency ID	1	3	5	7	9	11	12	12	14	16	18	20	22
Frequency (MHz)	2400.0	2420.0	2440.0	2460.0	2480.0	2500.0	5150.0	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	-1.19	-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	2.12	3.39	3.13	2.22	3.61	3.78	3.82
Efficiency (%)	57.02	56.28	64.38	69.33	71.29	61.70	69.01	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	4.28	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	86.00	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	90.00	270.00	60.00	90.00
Efficiency ThetaPol (%)	39.41	39.00	45.30	49.26	50.37	43.36	20.93	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	46.08	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	30.45	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	35.56	37.56	41.16	28.66	38.32	38.47	38.83



图 9 三维方向图



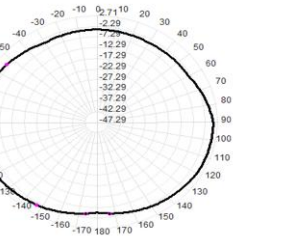
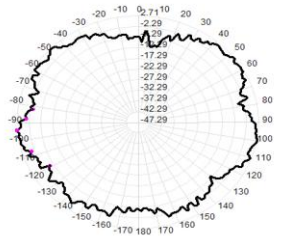
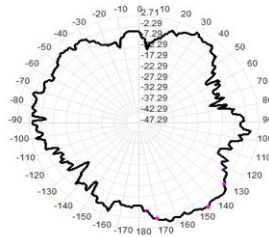
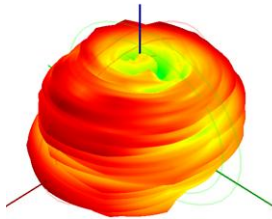
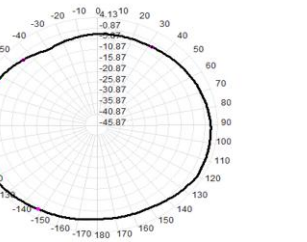
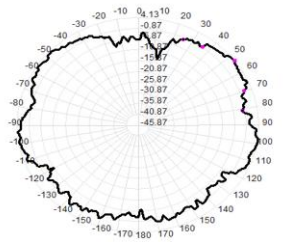
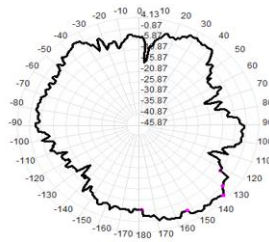
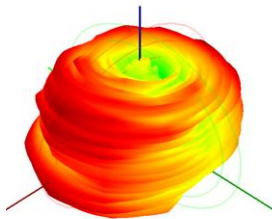
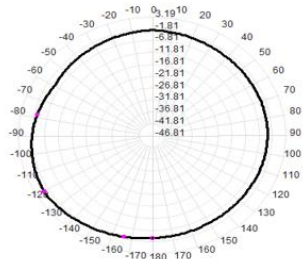
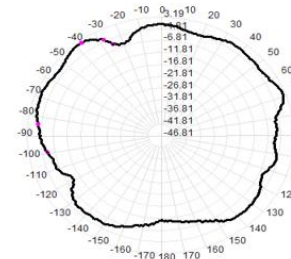
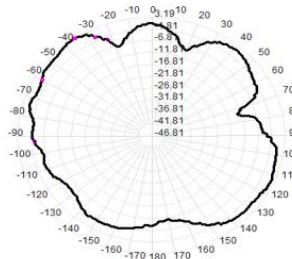
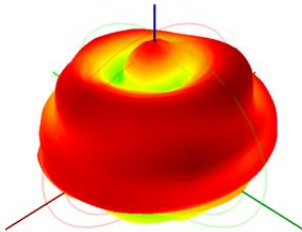
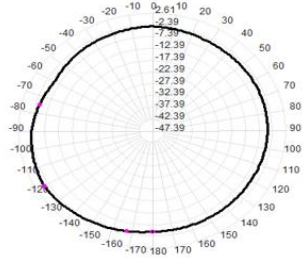
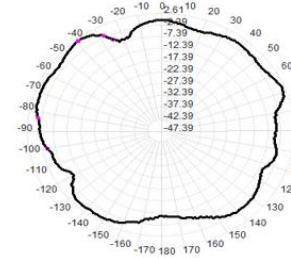
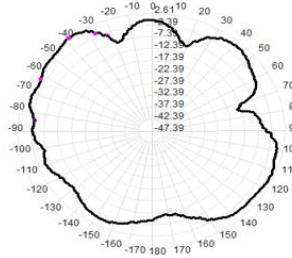
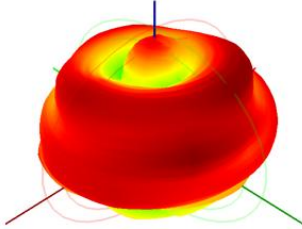


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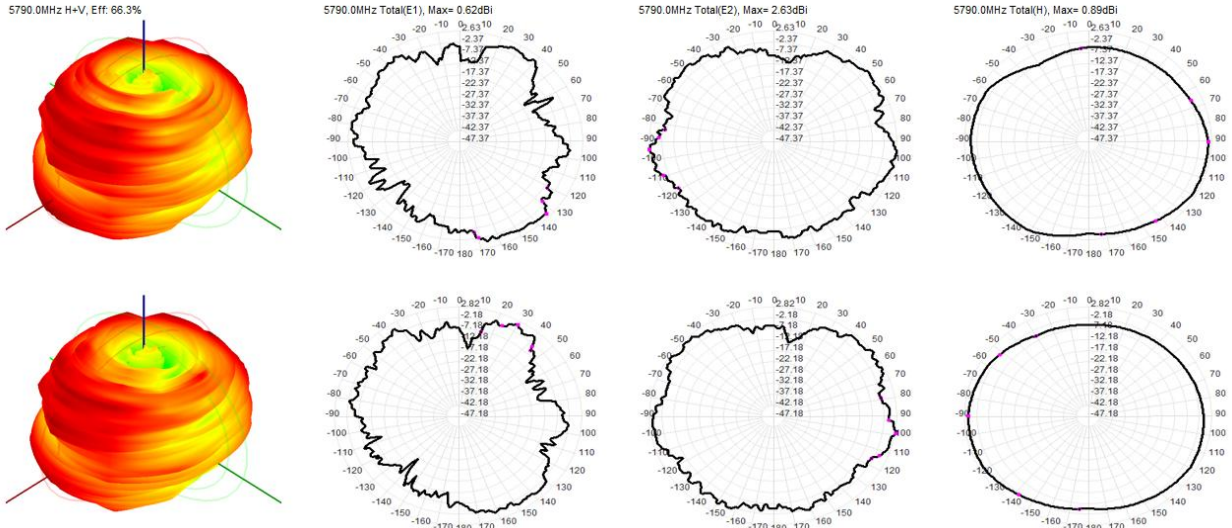




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### 3、Recommendations and conclusions

This report is based on the electrical performance of the antenna measured on the final version of the Xi'an Zhixiang Optoelectronics Technology Co., Ltd. model project provided by the customer. As can be seen from the above test data, this antenna provides better electrical performance.

Shenzhen Tianyiyuan Electronic Technology Co., Ltd. R&D looks forward to your confirmation, thank you for your cooperation!