

# Shenzhen Zhisheng Technology Co., LTD

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## SPECIFICATION FOR APPROVAL

Name: WIFI antenna 2.4/5.8GHz (F965W/N3S)

Item No: WIFI antenna XHF-N3S/T-WIFI-V1.0

Custoer name: Shenzhen XinHuaFeng Technology Co., Ltd

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

drawing			Customer approve
MADE	CHECKED	APPROVED	
QIU	Mr Yi	Mr Tang	
DATE: 2022.07.08			DATE

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## 1、specification

The report mainly provides the testing of various electrical performance parameters of F965W/N3S models. The XHF-N3S/T-WIFI-V1.0 antenna is a WIFI built-in antenna, and the antenna is composed of FPC+RF lines. (As shown in Figure 1 below)

Photo 1 XHF-N3S/T-WIFI-V1.0 antenna WIFI antenna

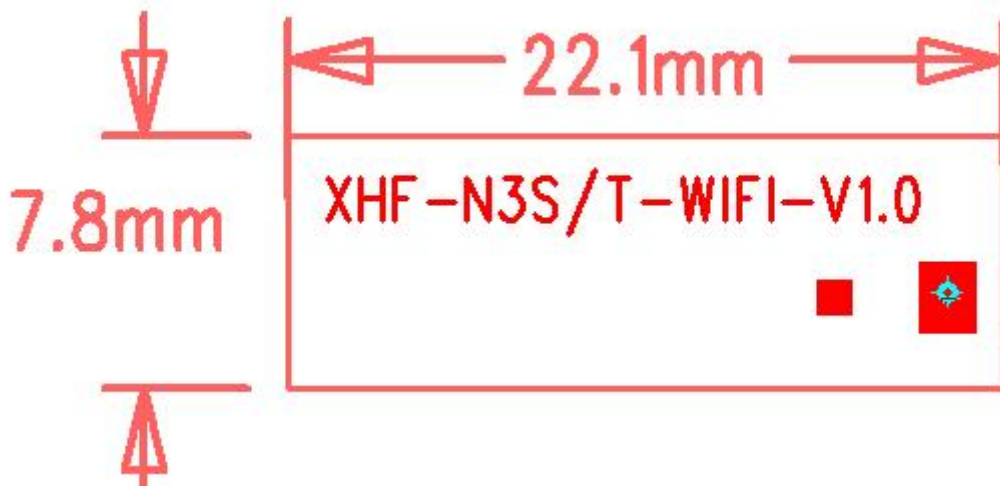


Photo 2 XHF-N3S/T-WIFI-V1.0 antenna (Line length is 50 $\pm$ 2mm 1-IPEX)



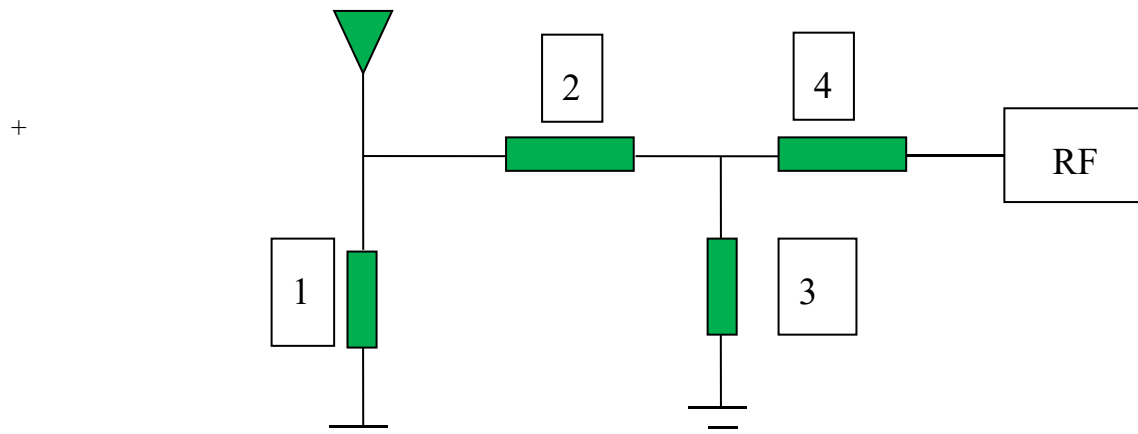
Photo 3 Assembly drawing (WIFI antenna)



Tip: Fasten the terminal block first and then tear the back tape antenna, the antenna must be attached to the plastic shell.

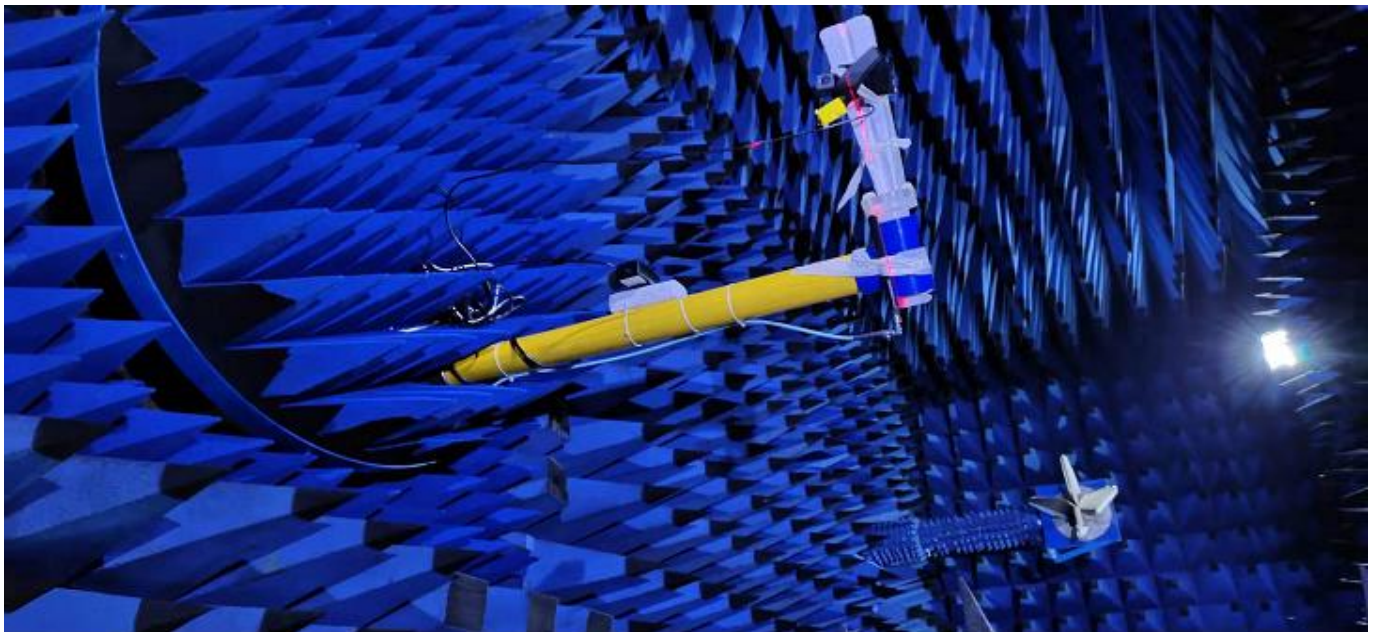
## 2. Electrical performance

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



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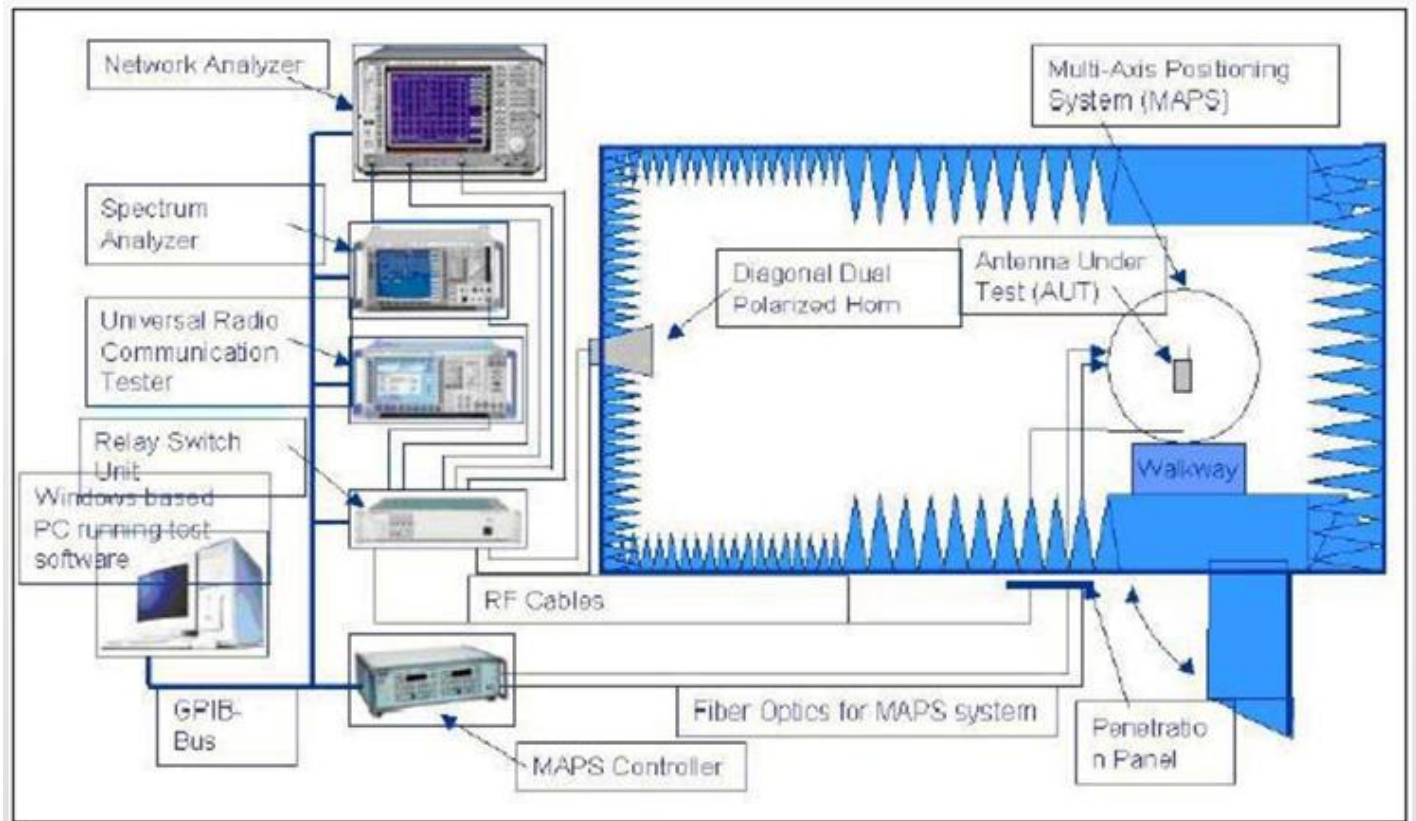
## 4 OTA microwave darkroom test instrument



5 Test environment: OTA743 darkroom, 8960/  
W500/8753ES/5071C, the machine is placed at the turntable  
4 meters away from the standard horn day



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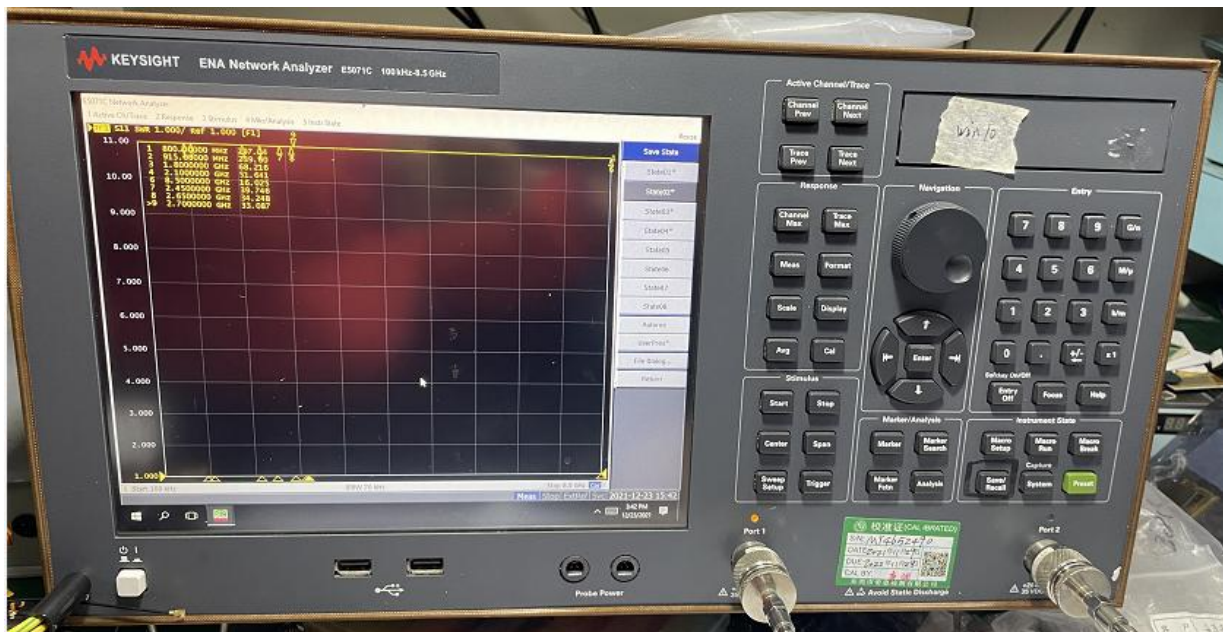
## 2.3 VSWR (Standing wave Ratio) test

### 2.3.1. Test Settings

The VSWR test unit is connected in turn to the Agilent E5071B Network analyzer ®50 ohm coaxial Cable®120mm long copper tube ® test fixture

Treatment of test fixtures: A hard cable is used to lead out the SMA-J connector from the 50 ohm test point of the antenna on the flat PCB, which is connected to the copper tube with the choke, and then connected to the other devices in turn.

## 6 Agilent E5071B network analyzer



## WIFI Standing-wave ratio

### 2.3 Measurement of standing wave ratio (VSWR)

#### 2.3.1. Test setup

The VSWR test unit is connected in turn to the Agilent E5071B Network analyzer @50 ohm coaxial Cable@120mm long copper tube @ test fixture

Treatment of test fixtures: A hard cable is used to lead out the SMA-J connector from the 50 ohm test point of the antenna on the flat PCB, which is connected to the copper tube with the choke, and then connected to the other devices in turn.

### 3 WIFI Standing-wave ratio

图7WIFI Standing-wave



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frequency(MHz)	2412	2480	2500	5700	5800
VSWR	1.1	1.1	1.2	1.6	2.0

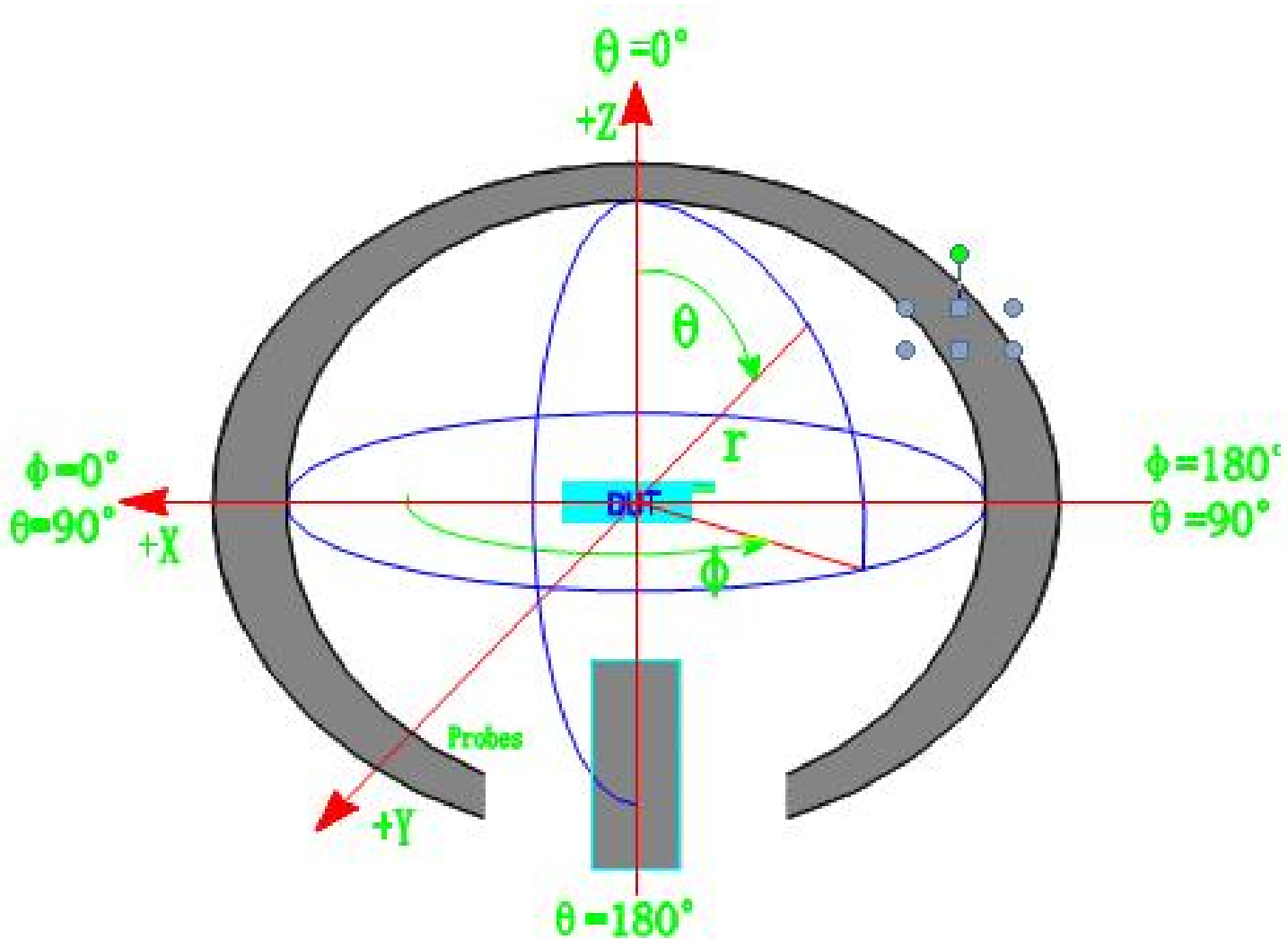
## 3.1 Test site

TCT microwave darkroom: The test frequency range is 600MHz – 6GHz, the static zone range is 50cm circle, and the reflectivity is less than -90 dB. (Figure 4, Figure 5)

## 3.2 Environmental treatment

Environmental treatment: No environmental treatment.

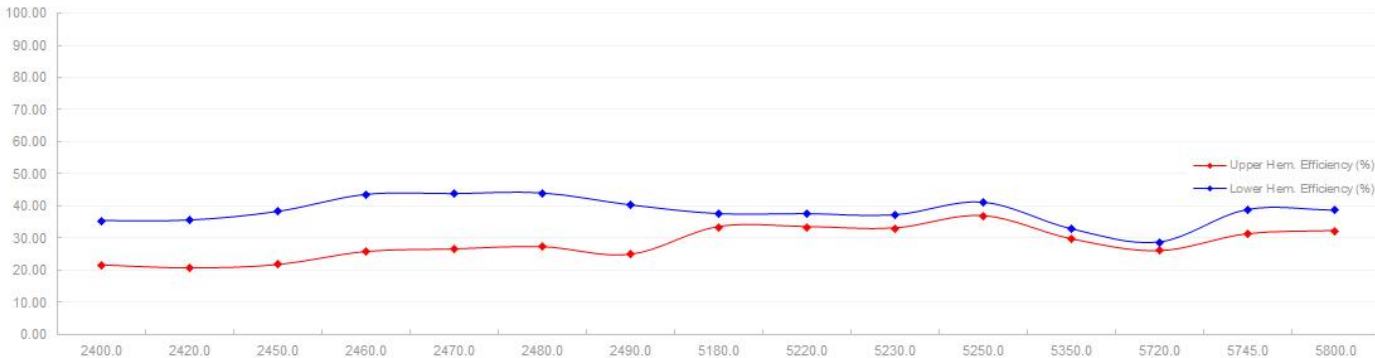
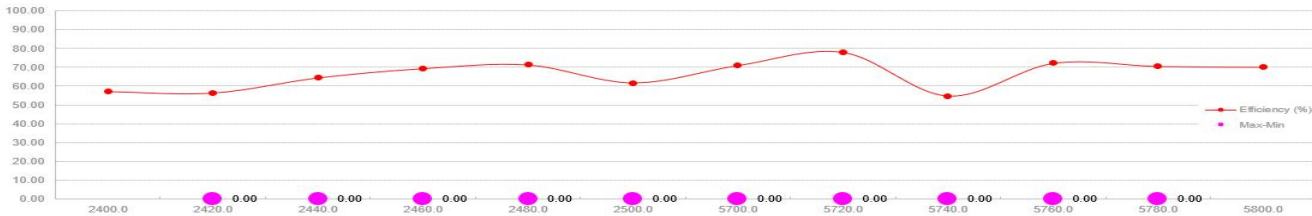
Figure 8 Return loss



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## WIFI passive test report

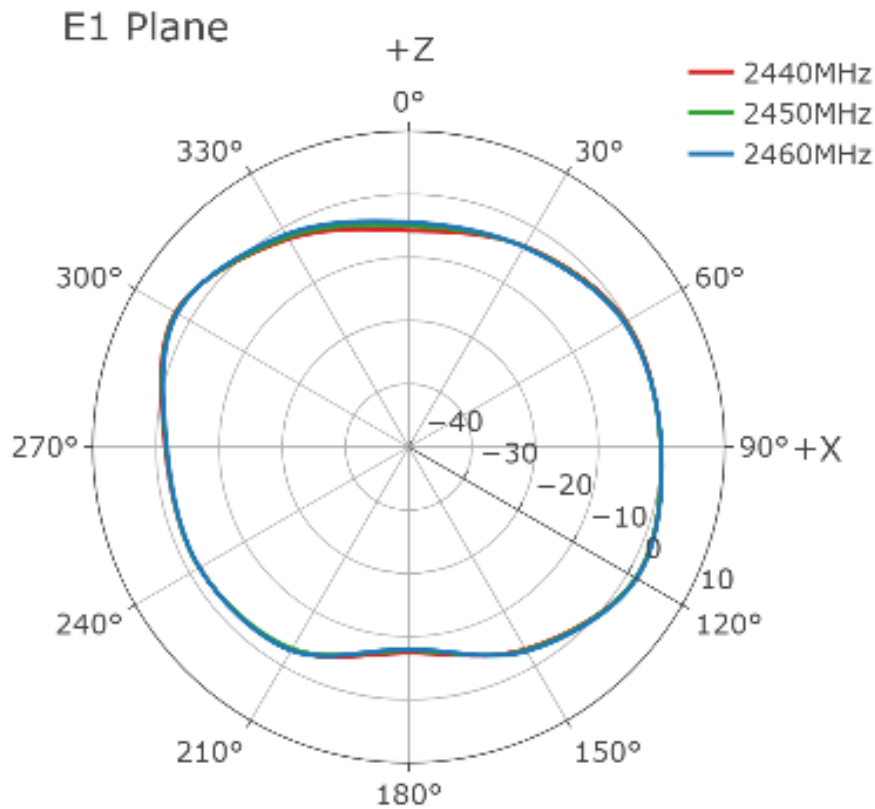
FEITUKEJI											
Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (dBi)	-2.44	-2.63	-2.50	-2.22	-1.91	-1.94	-1.59	-1.52	-1.47	-1.86	-2.10
Gain (dBi)	2.22	2.13	2.61	3.19	3.43	3.46	3.80	3.39	2.91	2.31	2.38
Efficiency (%)	57.02	54.55	56.28	59.97	64.38	63.94	69.33	70.41	71.29	65.19	61.70
Directivity (dB)	4.66	4.76	5.11	5.41	5.34	5.40	5.39	4.92	4.38	4.17	4.48
Peak Gain Position (Theta)	144.00	144.00	141.00	144.00	144.00	124.00	124.00	144.00	144.00	144.00	145.00
Peak Gain Position (Phi)	180.00	180.00	180.00	180.00	180.00	210.00	210.00	180.00	180.00	180.00	180.00
Efficiency ThetaPol (%)	39.41	37.33	39.00	41.74	45.30	45.67	49.26	49.81	50.37	45.84	43.36
Efficiency PhiPol (%)	17.60	17.22	17.28	18.23	19.08	18.27	20.07	20.59	20.92	19.35	18.34
Upper Hem. Efficiency (%)	21.62	20.43	20.70	21.72	23.32	23.41	25.75	26.56	27.24	24.88	23.07
Lower Hem. Efficiency (%)	35.39	34.12	35.57	38.25	41.06	40.54	43.58	43.84	44.04	40.30	38.62



9 pattern



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## 5、Suggestion and conclusion

This report is based on the antenna electrical performance measured in the final version of the F965W/N3S model project.

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

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