

Antenna Test Report

entry name: W49X

Item number: W49X.WIFI.C081.100B.2

Person in charge: Fang Zhengfeng

Version: V2

Date:2023-08-08

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Fax: 0755-85263741

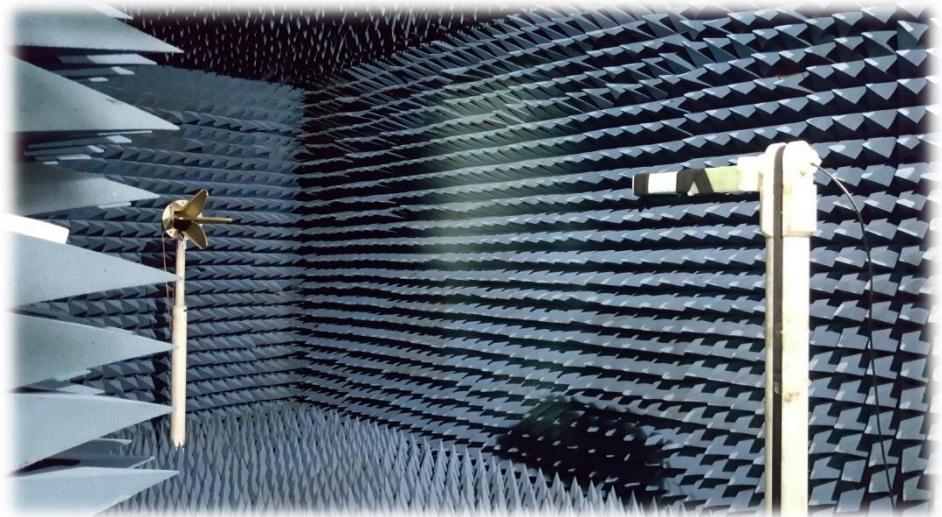
Company address: 5D, Building L, No. 26, Second Lane, Liuxian 1st Road, District 71, Bao'an District, Shenzhen

<http://www.tll-skylink.com>

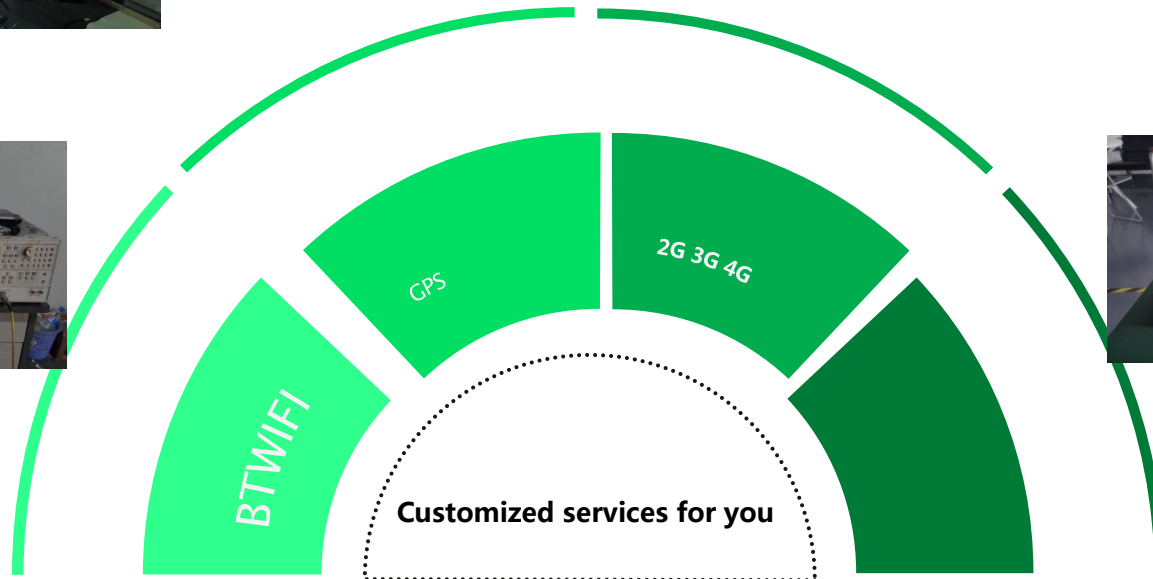
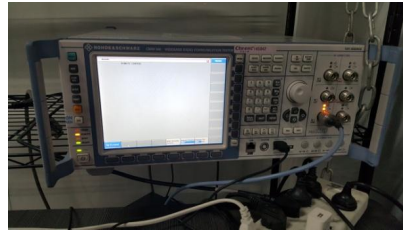
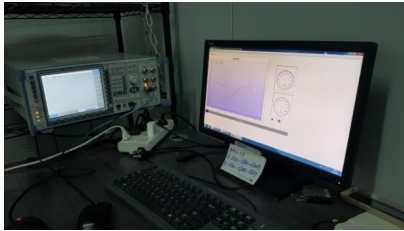
R&D environment

anechoic chamber

1. 2G/3G communication microwave anechoic chamber 2.4G microwave anechoic chamber communication products
2. CMW500
3. Agilent Network Analyzer
4. HP Network Analyzer
5. GPS101, etc



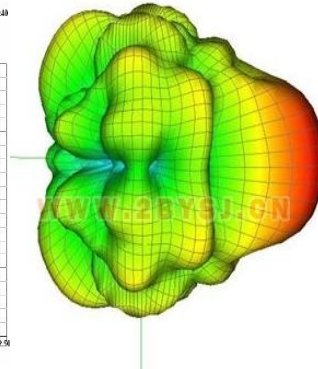
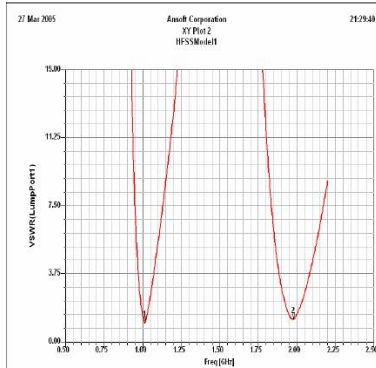
R&D equipment



Testing Capability

Passive Test

- Impedance
- VSWR
- Gain
- Efficiency
- Direction map

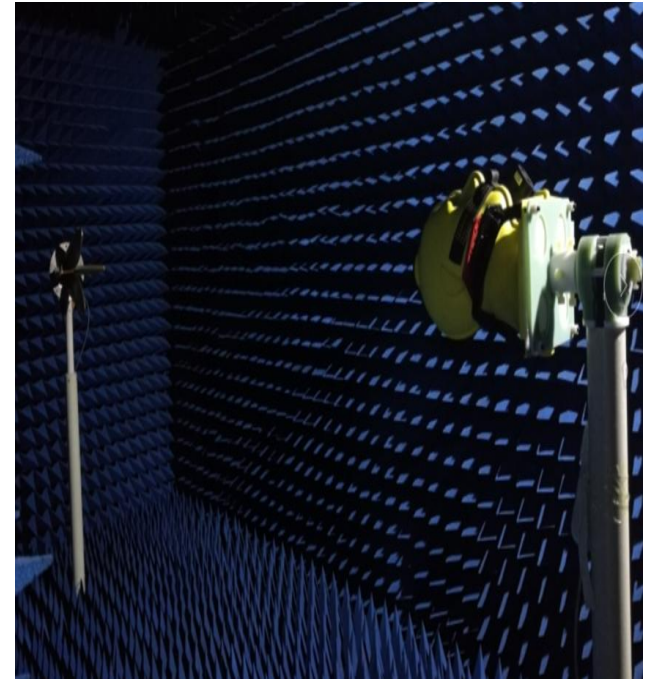


Active testing

- 2G 3G 4G
- WIFI 2.4G&5.8G
- BT
- GPS
- NB-IOT
- TRP
- 0~7.5G

Conduction test & TRP&TIS

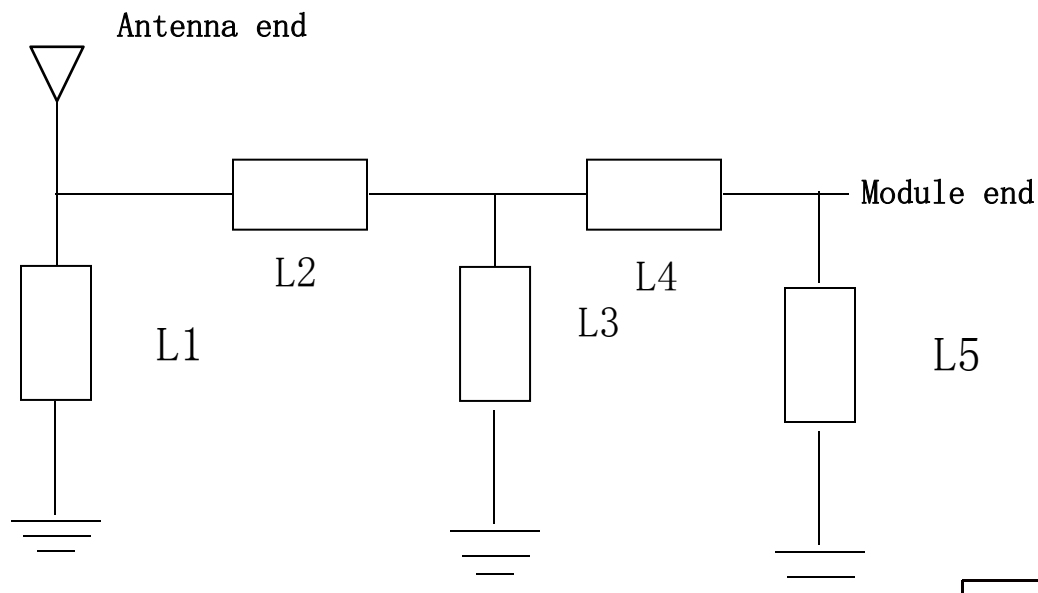
Conduction testing in
non signaling mode&
Scanning interference analysis



Information Description

Customer Name	model	Antenna mode
Weifu	W49X	FPC
frequency		
WIFI	2400MHz-2500MHz 5150MHz-5850MHz	

Antenna matching circuit



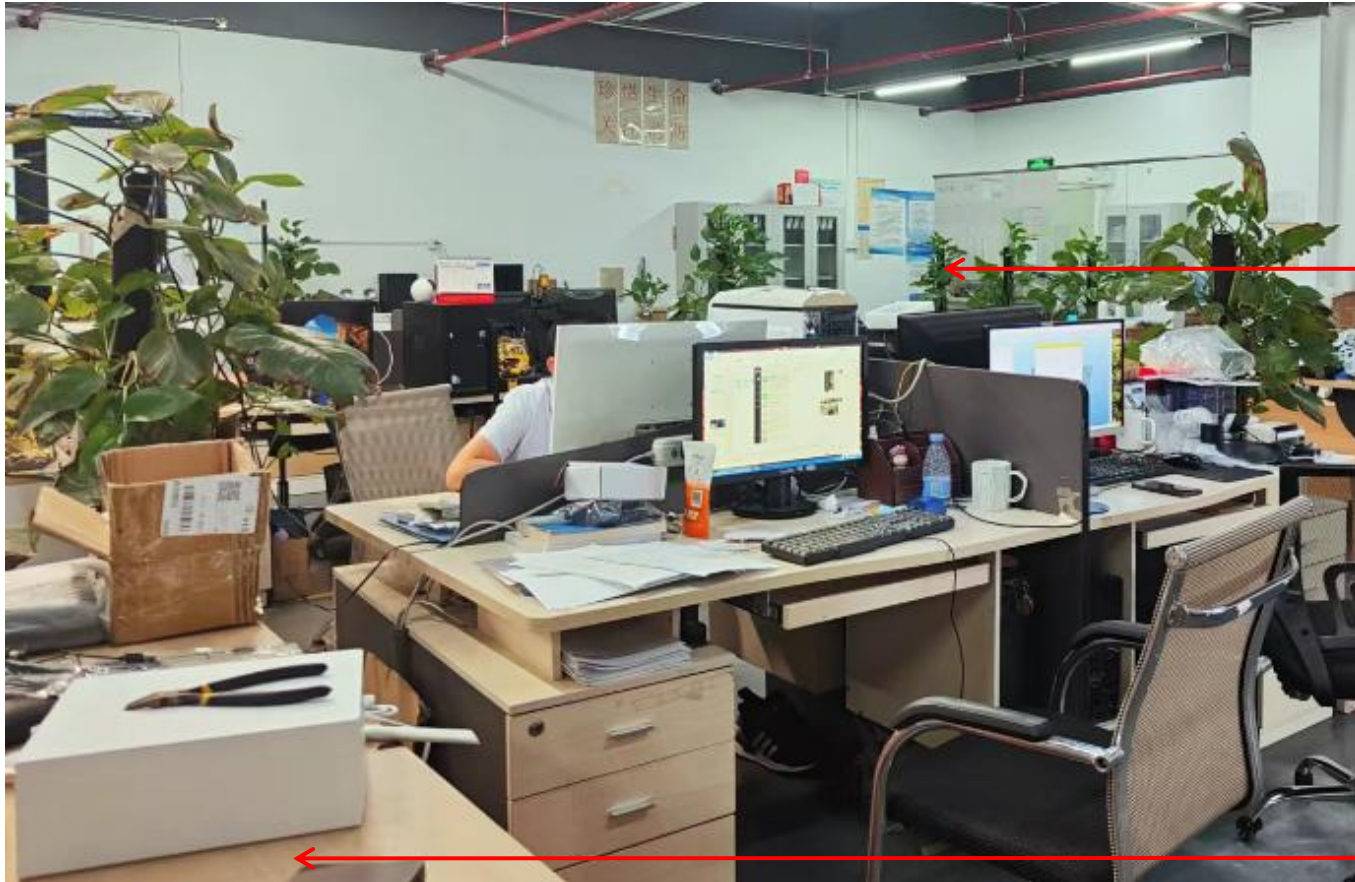
Original motherboard matching
remains unchanged

	price
L1 (0201)	/
L2 (0201)	/
L3 (0201)	/
L4 (0201)	/
L5 (0201)	/

Customer equipment diagram



Photos of indoor antenna testing environment

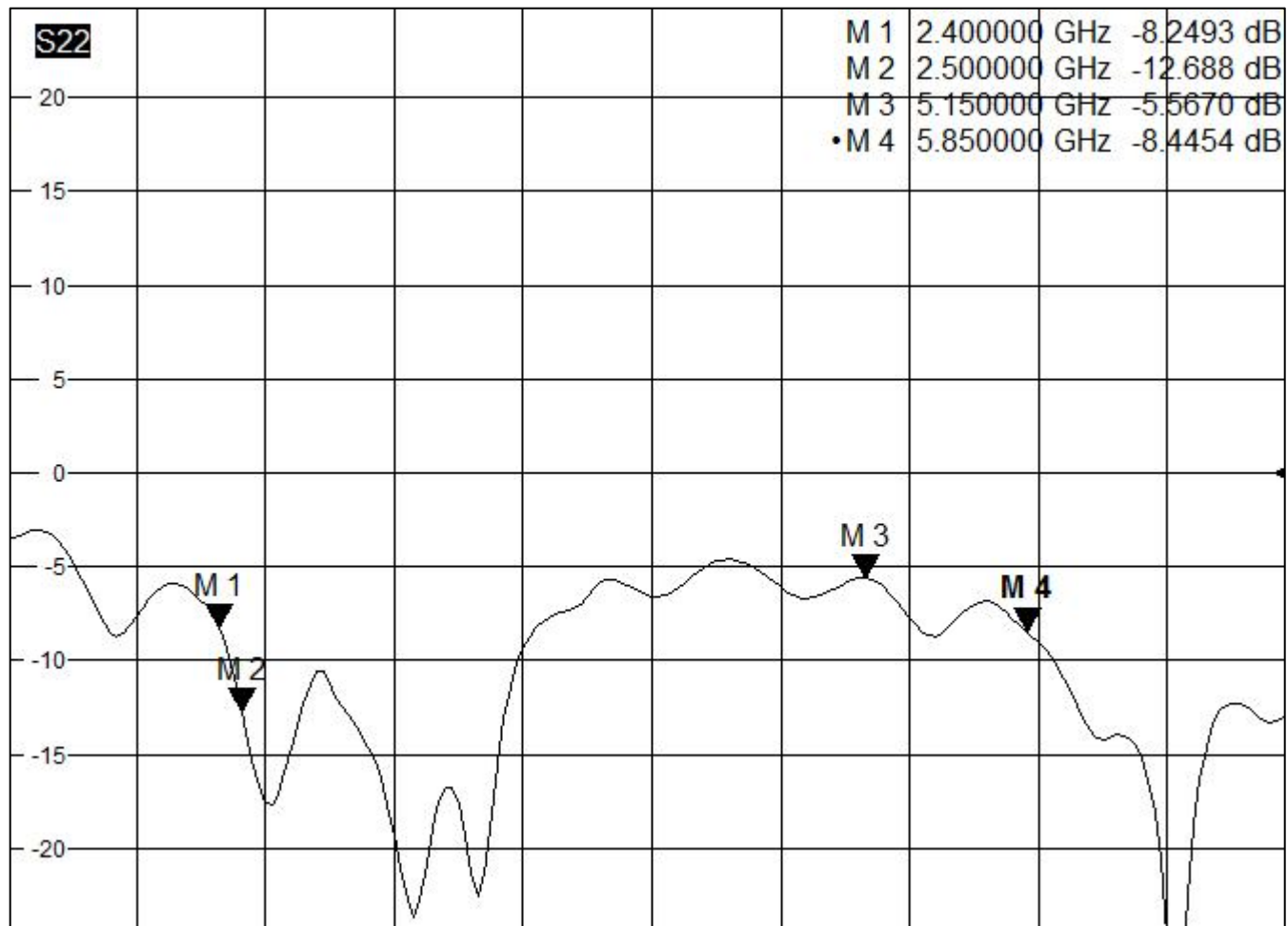


Test phone
location

Customer machine
location

Test the distance between the mobile phone position and the customer's machine position by 9 meters

Return Loss



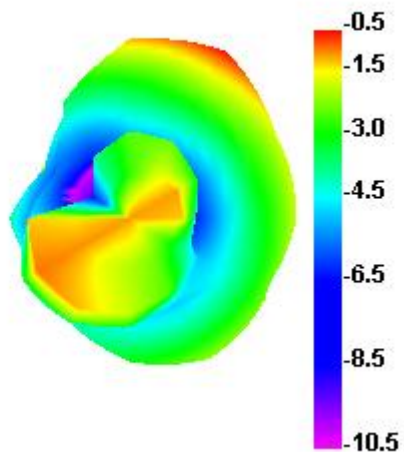
Efficiency/Gain

Freq (MHz)	Effi (%)	Gain (dBi)
2400	29.47	-0.52
2410	30.66	-0.57
2420	32.03	-0.49
2430	32.33	-0.39
2440	32	-0.53
2450	30.38	-0.68
2460	31.94	-0.34
2470	31.2	-0.3
2480	32	-0.14
2490	32.08	-0.1
2500	33.01	0.05

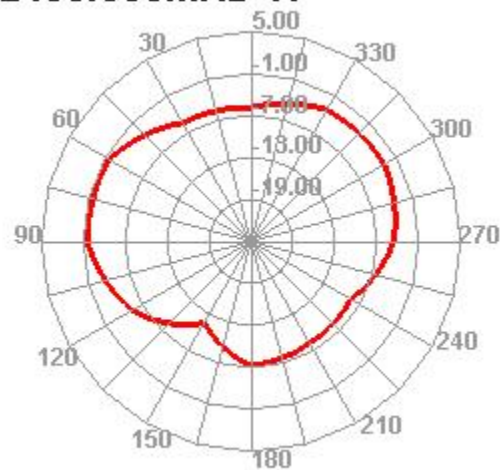
Freq (MHz)	Effi (%)	Gain (dBi)
5150	24.42	-3.48
5200	20.25	-1.64
5250	23.43	-0.55
5300	25.23	-0.38
5350	31.87	0.8
5400	34.97	1.05
5450	27.56	1.39
5500	32.9	1.91
5550	25.56	2.34
5600	29.47	2.78
5650	30.22	2.64
5700	27.48	2.28
5750	26.1	2.23
5800	32.87	1.89
5850	25.38	2.31

Direction map (2.4G)

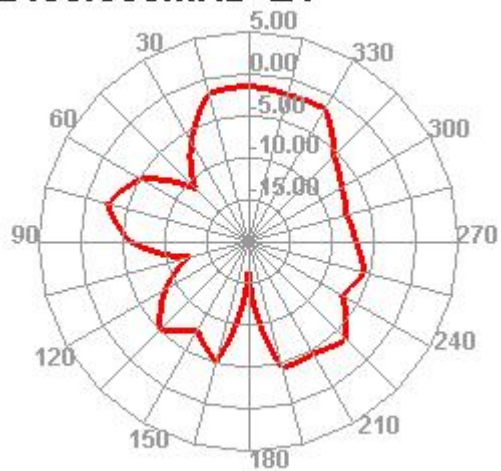
2400.000MHz



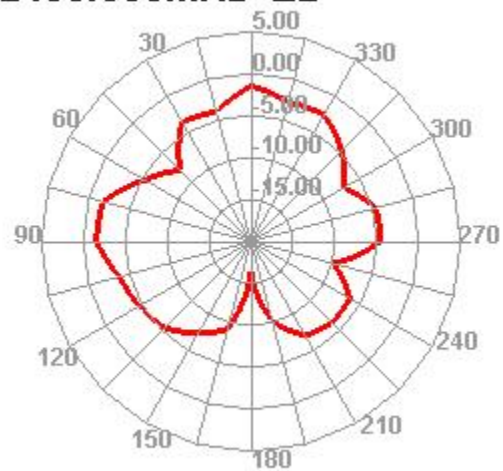
2400.000MHz H



2400.000MHz E1

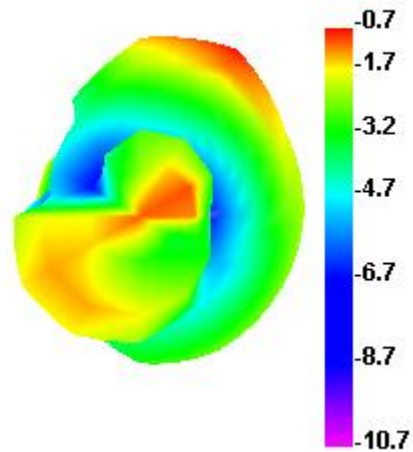


2400.000MHz E2

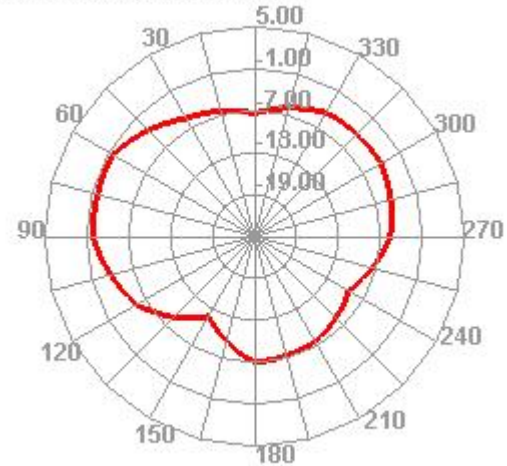


Directional pattern

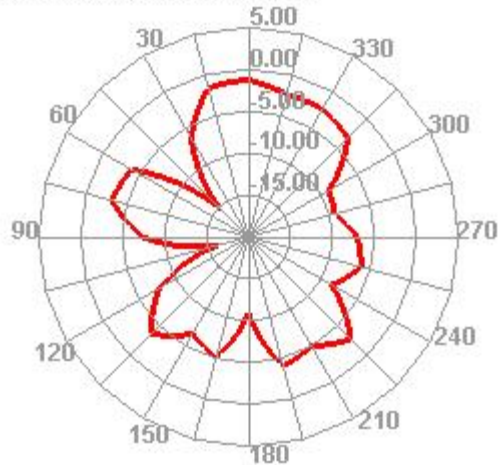
2450.000MHz



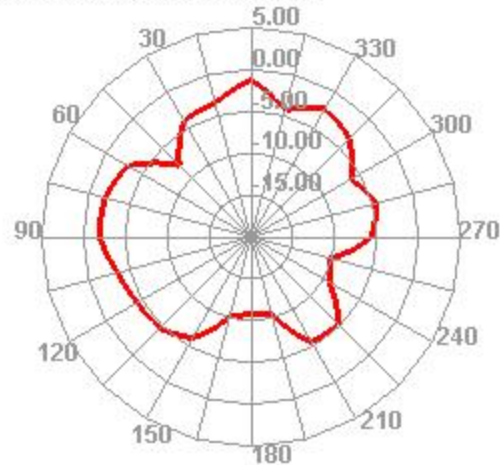
2450.000MHz H



2450.000MHz E1

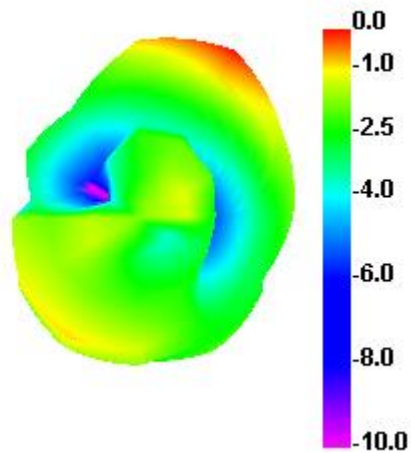


2450.000MHz E2

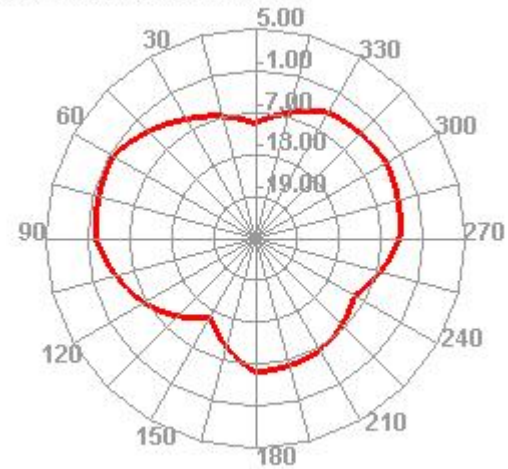


Directional pattern

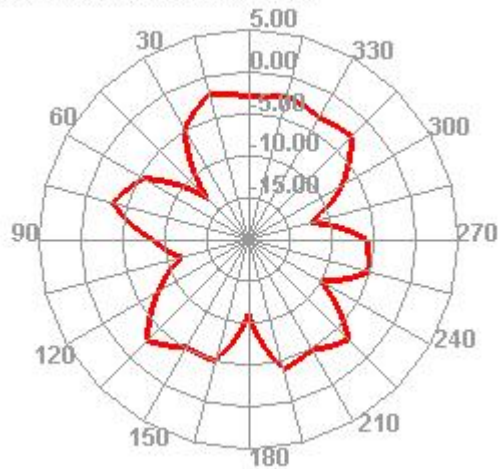
2500.000MHz



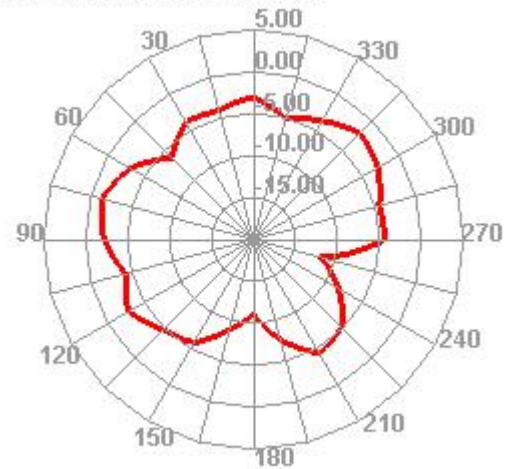
2500.000MHz H



2500.000MHz E1

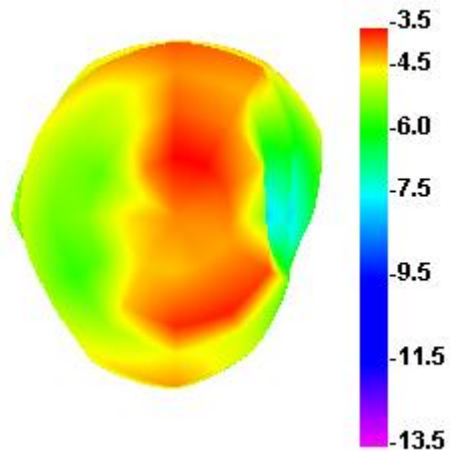


2500.000MHz E2

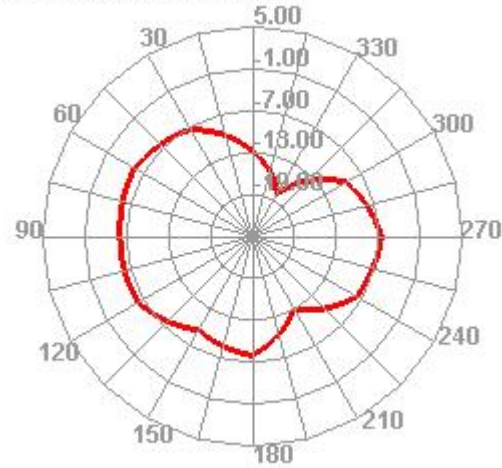


Directional pattern(5.8)

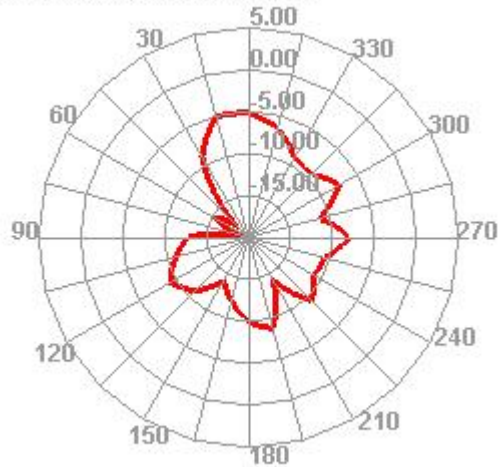
5150.000MHz



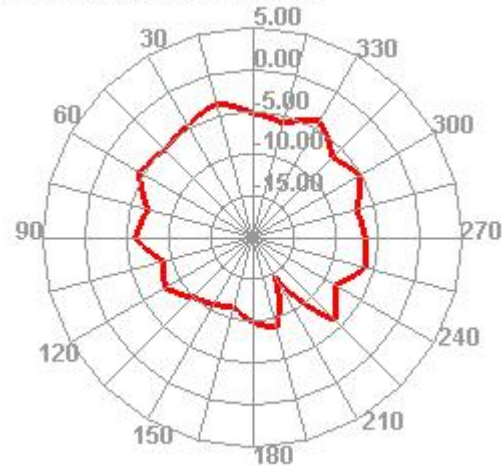
5150.000MHz H



5150.000MHz E1

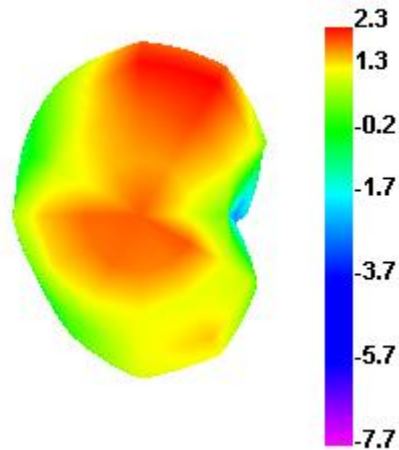


5150.000MHz E2

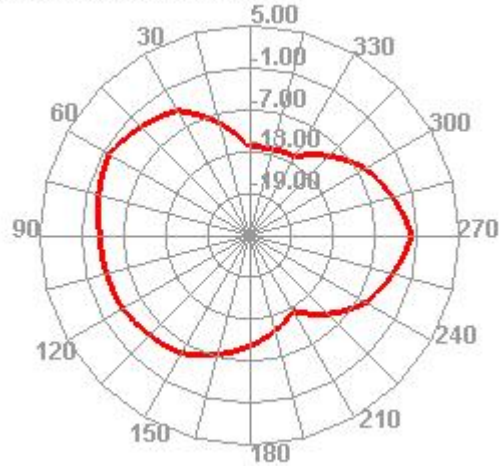


Directional pattern

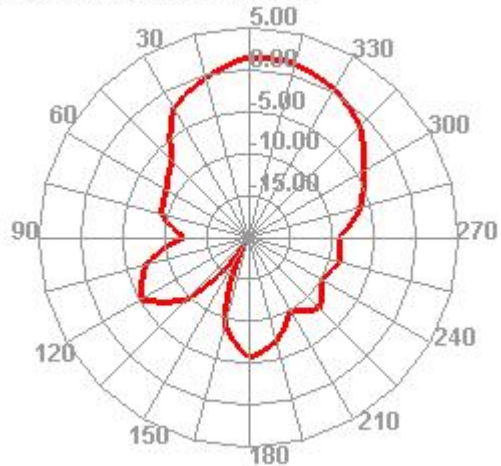
5550.000MHz



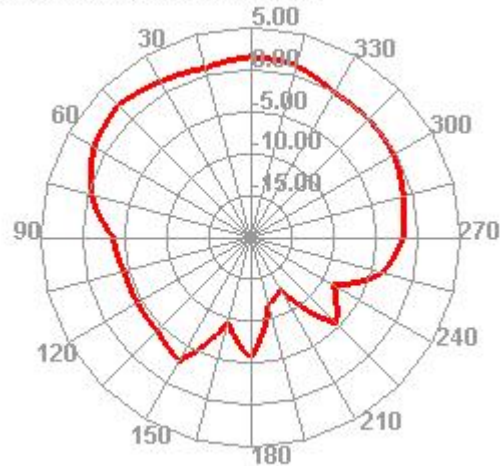
5550.000MHz H



5550.000MHz E1

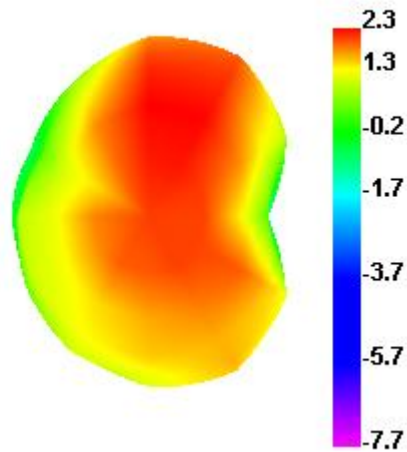


5550.000MHz E2

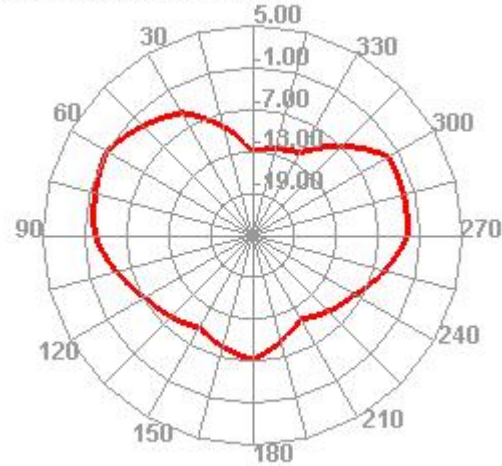


Directional pattern

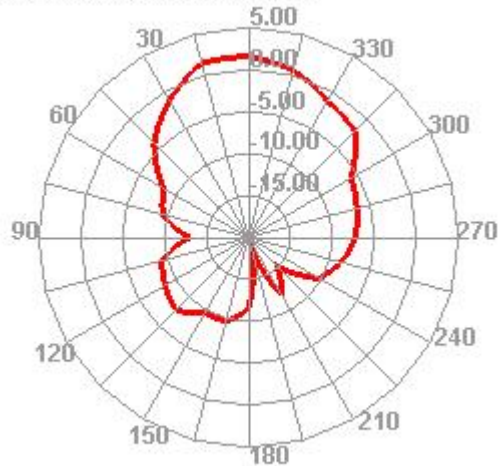
5850.000MHz



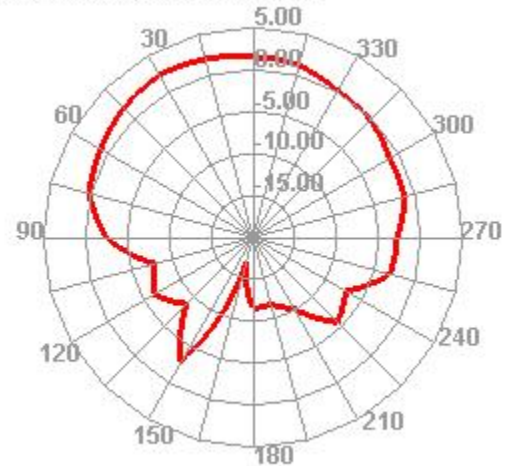
5850.000MHz H



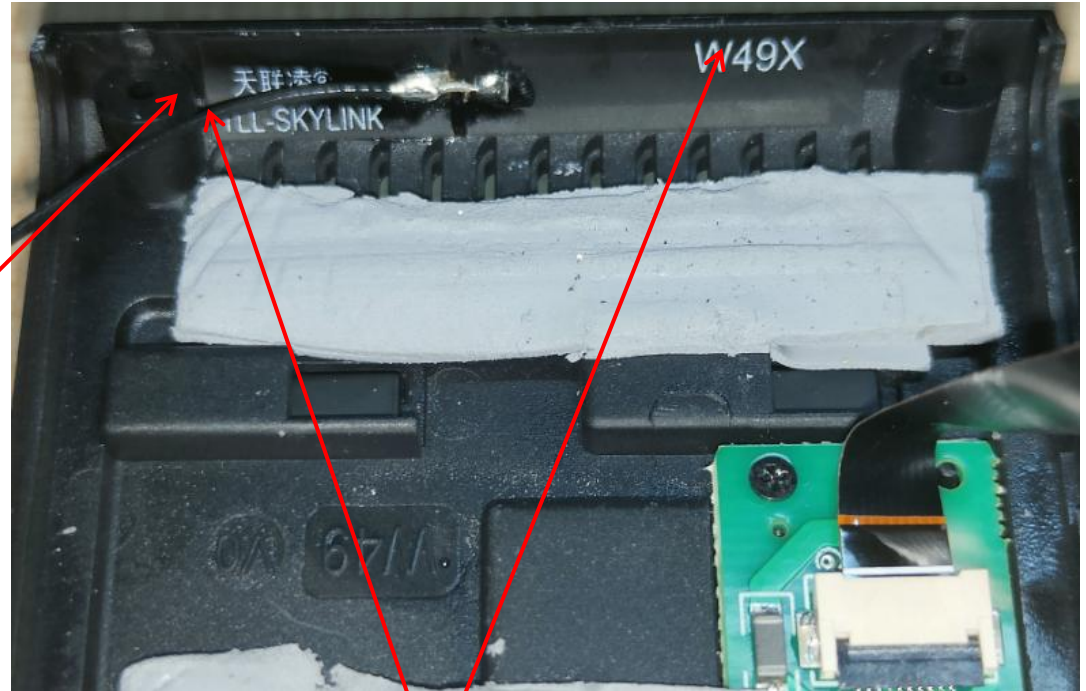
5850.000MHz E1



5850.000MHz E2

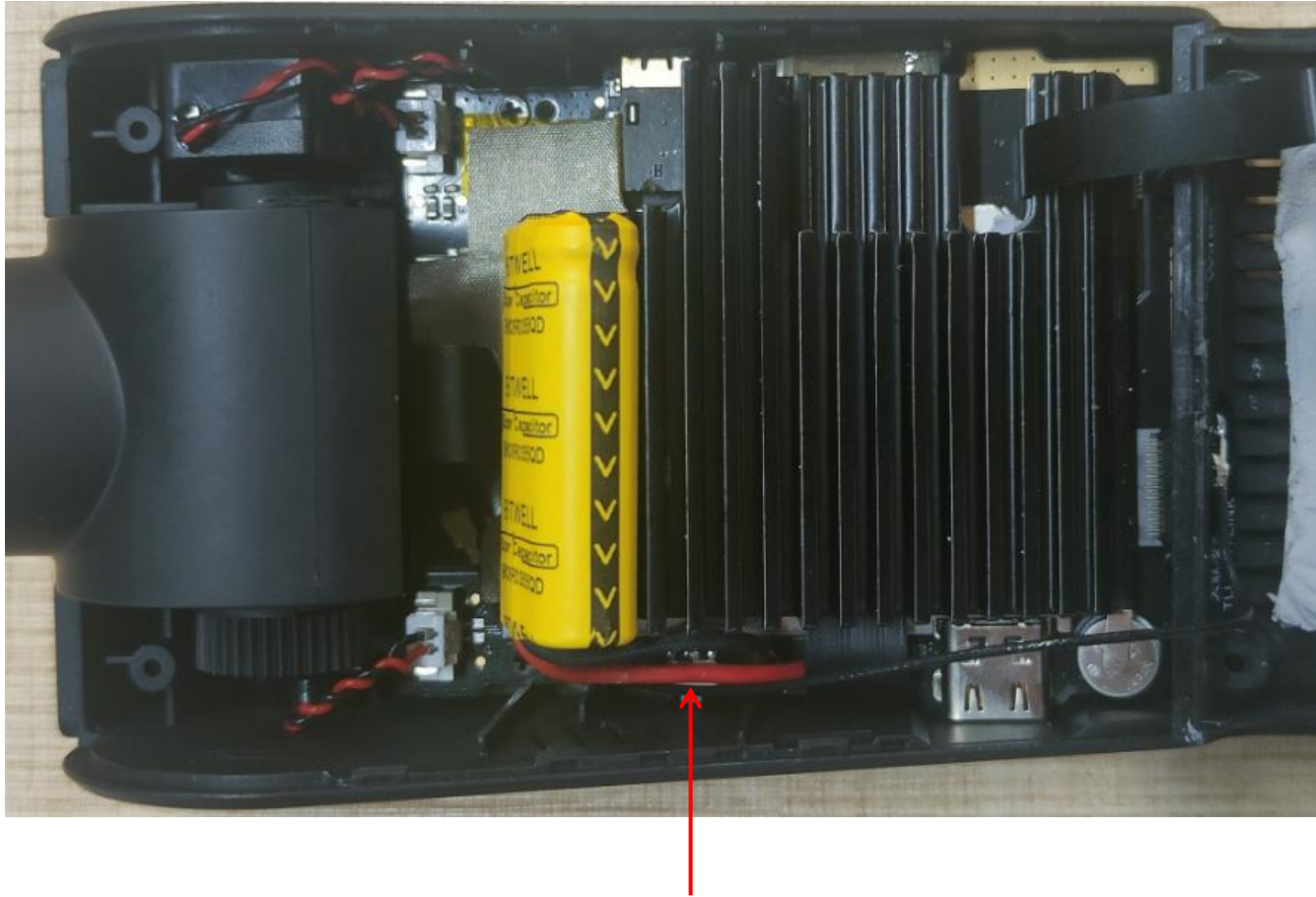


Antenna positioning diagram



The antenna is aligned and tightly attached to the bone position along the arrow direction, and the antenna screen is finally changed to W49X.WIFI.

RF cable routing diagram



The RF cable runs in the direction shown in the figure above

Summarize

1: During passive testing of the entire machine, the antenna is affected by the metal heat dissipation plate, resulting in low overall efficiency, ranging from 20% to 35%.

2: The antenna assembly position and RF wiring have been marked in the above figure. Please strictly follow our company's requirements for assembly and wiring; (Illustrated on pages 17 and 18).

3: Through testing with OPPO mobile phones, there was no jamming phenomenon up to 9 meters in our indoor environment; The download speed can reach 2.5M/s within 3 meters; Now the antenna has been debugged to meet the requirements and can be used normally.

4: The actual testing distance is based on the customer, and if there are any issues, please provide feedback to our company.



THANK
YOU