



Approval Sheet

(Customer Name) Liyuan

(Specification) S09—WIFI antenna

(Customer P/N) _____

(O/I) _____

(Date) 2025-03-14

Frequency band	WIFI		
version	A		
radio frequency	Chenyanbo	confirm	
structure	Yangxuezhong		
customer confirmation			
date			

catalogue

1. Project images
2. Testing fixtures
3. Matching circuit

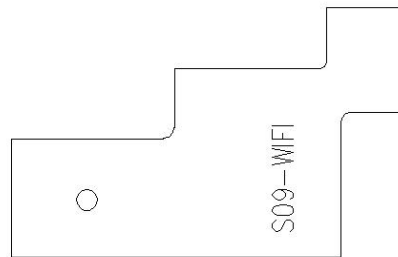
4. S11 testing electrical performance

4.1 S11 Test Method Description Specification Standards

4.2 S11 parameter image

5. Structural drawings

1. Project images (for reference only)

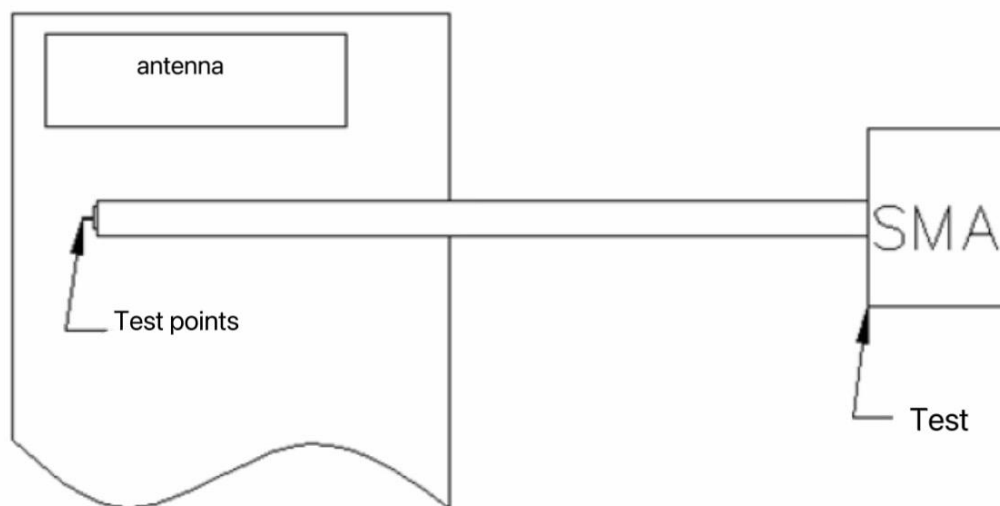


WIFI antenna

2. Passive Test

Purpose: To test the passive parameters of the antenna as accurately as possible.

Method: This fixture uses a 50 ohm coaxial cable, with one end connected to the testing point at the back end (front section of the RF test hole) of the matching circuit on the mobile phone motherboard, and the other end connected to the SMA connector. Specifically, as shown in the following figure:



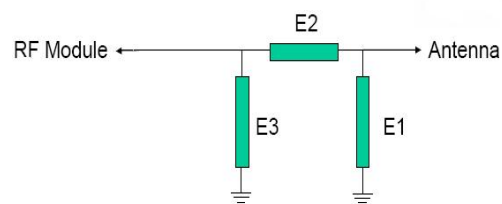
The following table shows the performance test indicators for the S09-WIFI

mass-produced antenna:

S09-WIFI antenna				
	frequency (MHz)	VSWR	frequency (MHz)	VSWR
Frequency band	Transmitting end		receiving end	
2.4G WIFI	2400-2550	≤ 3.0	2400-2550	≤ 3.0

3.matching circuit

antenna (Match without changes)



Element	Matching Value
E1 (0402)	
E2 (0402)	0 ohm
E3 (0402)	

4. S11 test

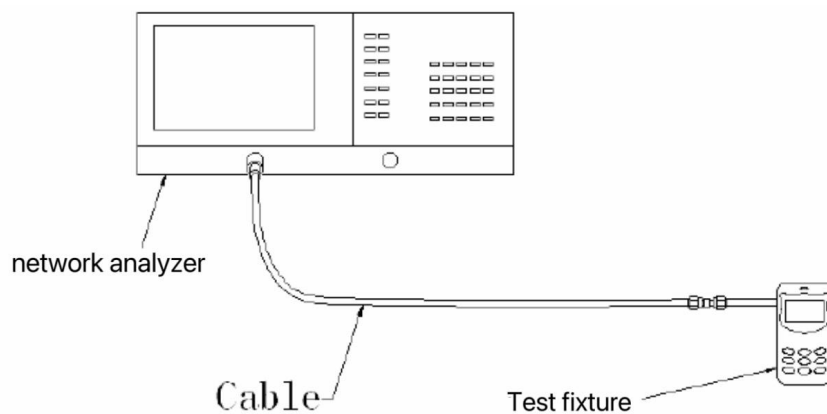
4.1 S11 Test Method Description Specification Standards

VSWR The connection of the testing device in sequence is : E5071B

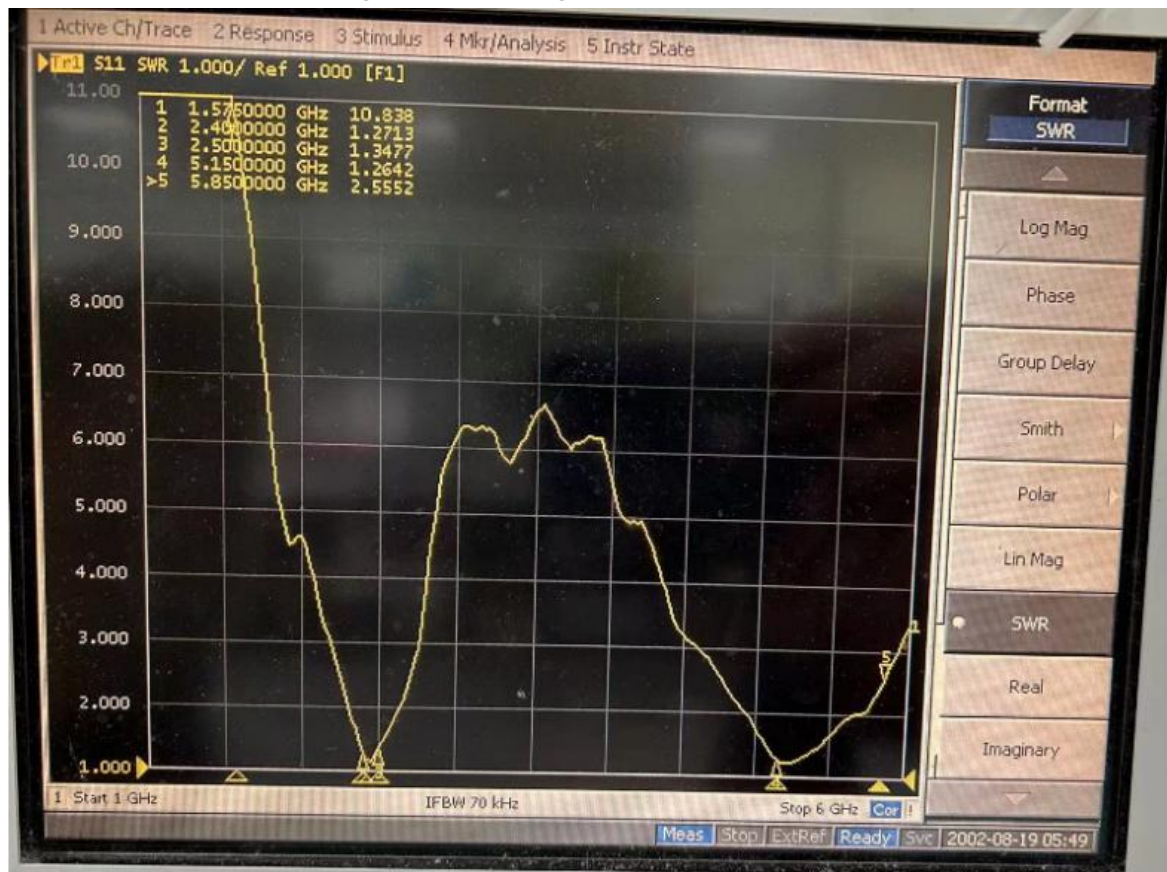
network analyzer → 50 Ohm's coaxial Cable → 120mm Long copper tube → Test fixture。

Processing of test fixture: Use a hard cable to lead out the SMA-J connector from the 50 ohm test point of the antenna on the mobile phone PCB, connect it to a copper tube with a choke coil, and then connect other devices in sequence.

Test schematic diagram



S11 Passive standing wave diagram

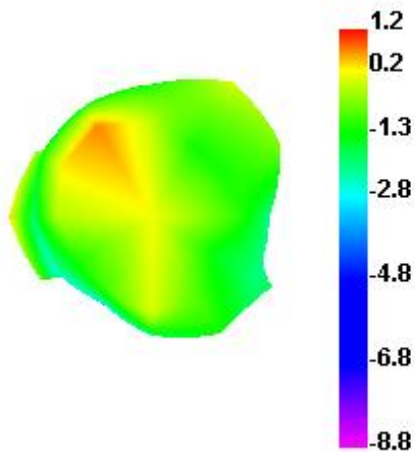


2.4 Efficiency/Gain

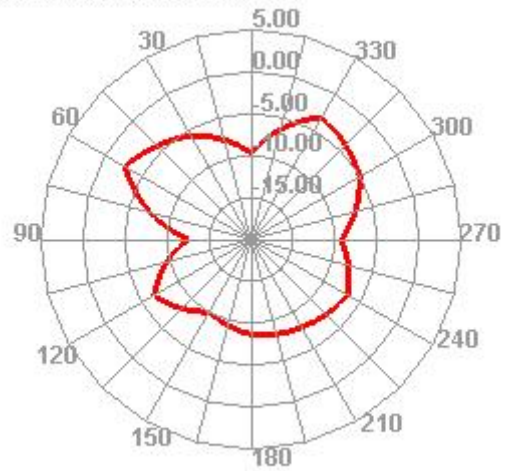
Passive Test For 2400-2500			
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	33.46	-4.75	-0.78
2410	32.75	-4.85	-1.07
2420	30.57	-5.15	-1.35
2430	30.16	-5.21	-1.43
2440	29.96	-5.24	-1.62
2450	30.02	-5.23	-1.66
2460	28.84	-5.4	-1.82
2470	26.36	-5.79	-2.09
2480	26.45	-5.78	-1.91
2490	25.36	-5.96	-2.06
2500	21.41	-6.69	-2.93

2.4.1 Antenna Pattern:

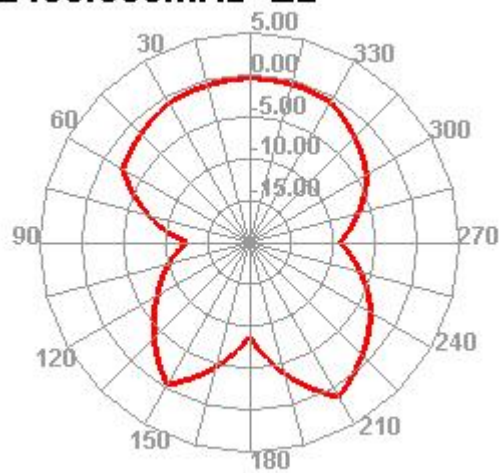
2400.000MHz



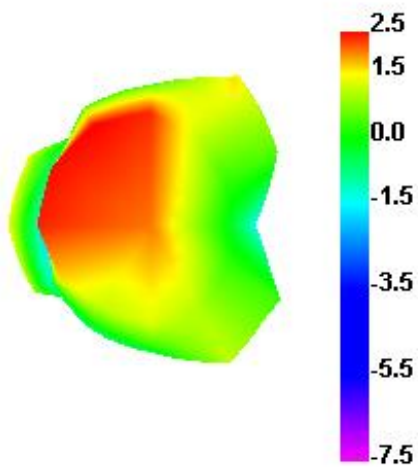
2400.000MHz H



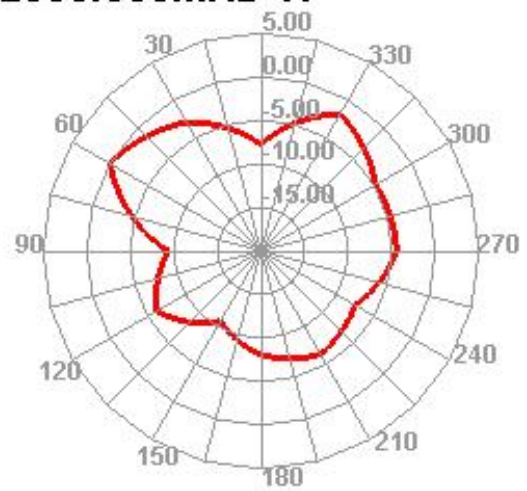
2400.000MHz E2



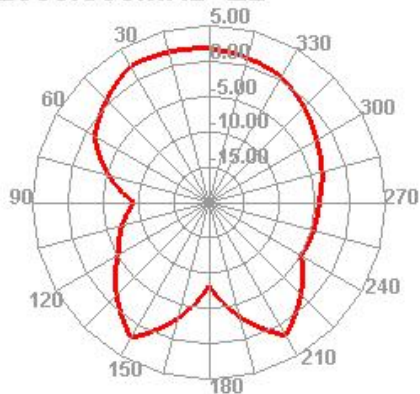
2500.000MHz



2500.000MHz H



2500.000MHz E2



2.4.2 Active data

	2.4GHZ WIFI antenna		
	1	6	11
TRP	11.35	11.85	11.57
TIS	-78.53	-78.89	-82.67

The above tests meet the design requirements and have excellent data quality。