

Shanghai Sunnyway Communication Technology Limited Company

Temporary antenna specification

Customer: sunml		The project: Post-80s Kitchen Cloud Printer	
Operating frequency band: 860–870MHz 900–930MHz			
Motherboard version:			
Shangyuan material specifications			
Specifications and models	Shangyuan material number		Customer part number
MAIN	SH24027IB77		

The record of project changes			
Date of preparation/change	Changes	Change of person	version

Sunnyway counter-signature bar				
Research and development	ME:	Auditor:	QE:	Approver:
	RF:	Auditor:		
Client Counter-signature bar				
EE	PM		RF	QE

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1. Project information

Machine information



Antenna information

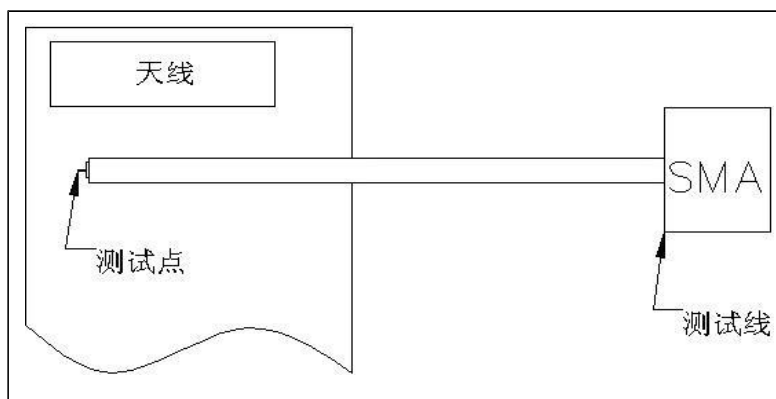
	version
Halow antenna	

Note: The customer finally verified that the antenna performance prototype was retained in our company for at least one year, which is convenient for analysis and solution to abnormal situations in antenna mass production.
Ensure antenna shipment quality.

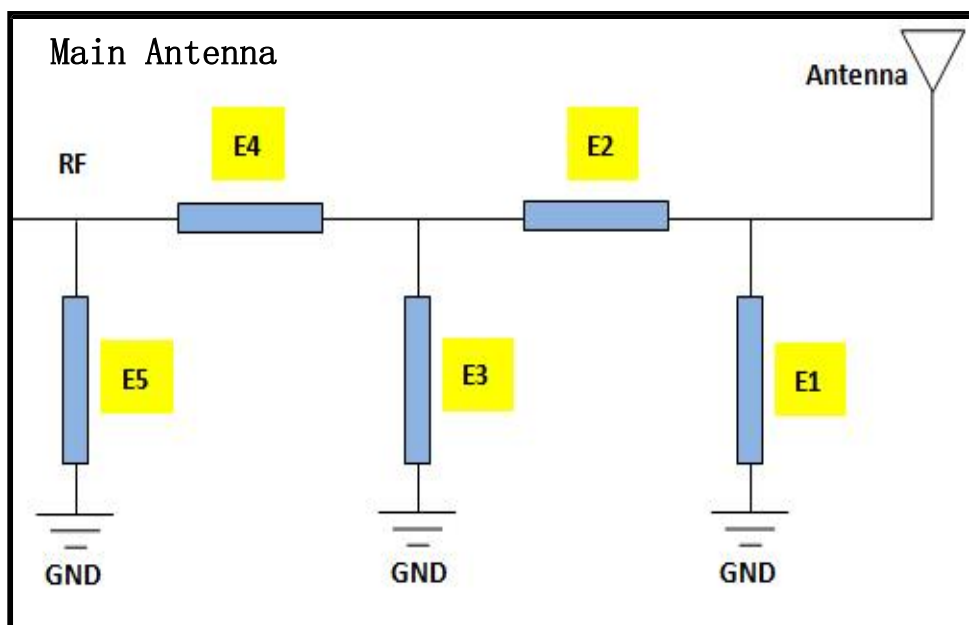
2. Test fixtures

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

How to make: The prototyping mechanism is made of a 50 ohm coaxial cable, one end is connected to the test point at the back of the matching circuit of the prototype motherboard (the front of the RF test hole), and the other end is connected to the SMA connector. The schematic diagram is as follows:



3. Matching circuits



Element	Value	Specification
E1	NC	
E2	0 Ω	
E3	NC	
E4	0 Ω	
E5	NC	

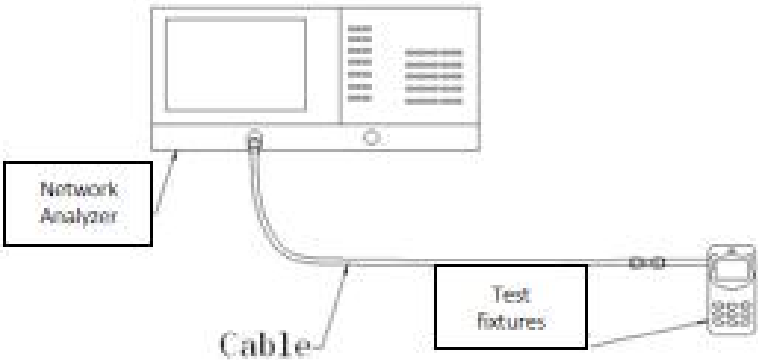
4. S11 test

4.1 S11 Test Method Description

Test Equipment: Network Analyzer (E5071C)

Test method: A 50 ohm CABLE cable is derived from the instrument test port, and the SMA connector of the prototype is connected after calibration using the calibrator to record the return loss and standing wave ratio corresponding to the relevant frequency point.

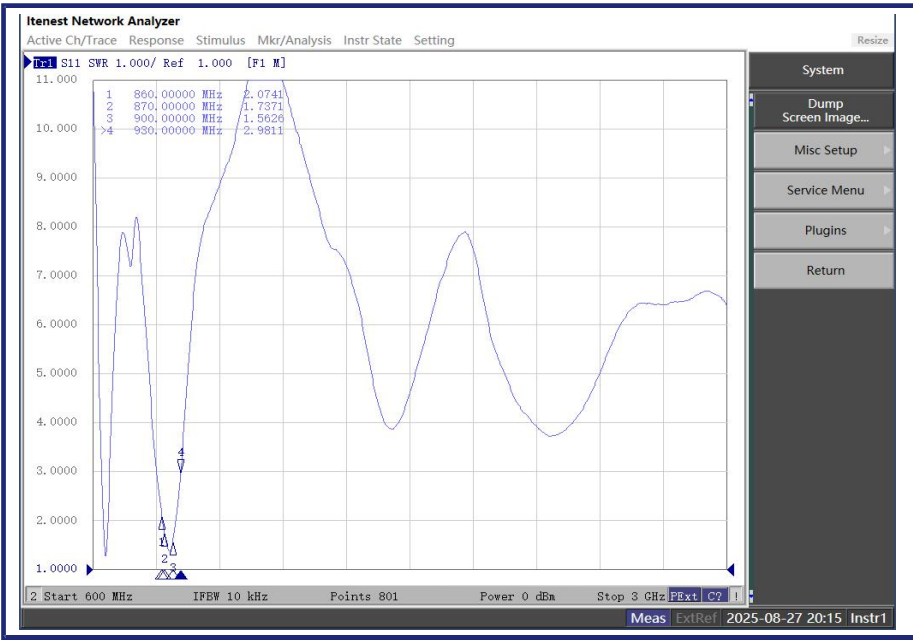
The test diagram is as follows:



Test the schematic

4.2 S11 parameter

Halow antenna S11



	Halow antenna
frequency (MHz)	SWR
860	2.0
870	1.7
900	1.5
930	2.9

5 Darkroom test data

Test system: Shielded darkroom

Test environment: temperature $22^{\circ}\text{C}\pm 3^{\circ}\text{C}$, humidity
50% $\pm$ 15%

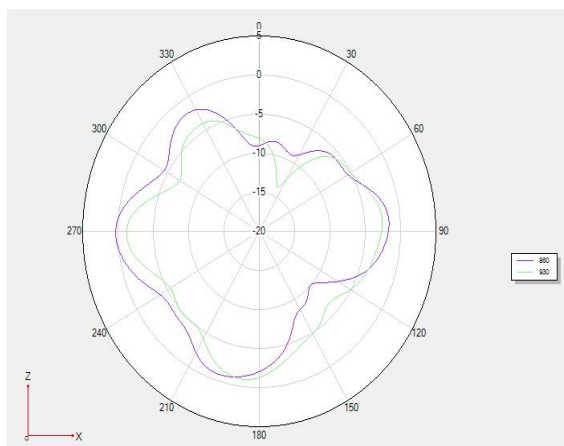
Test equipment: When testing passive data, use the
Network Analyzer Agilent E5062C When testing
active data, the Comprehensive Tester Agilent 8960
/CMW500/E4438C is used

5.1 Passive test data

Halow antenna efficiency

frequency(MHz)	Gain(dB)	Efficiency(dB)	Efficiency(%)
860	1.27	-3.63	43.31
870	2.12	-3.52	44.45
880	2.45	-3.38	45.88
890	2.85	-3.4	45.7
900	2.54	-3.45	45.21
910	1.98	-3.55	44.2
920	1.12	-3.55	44.16
930	0.75	-3.91	40.64

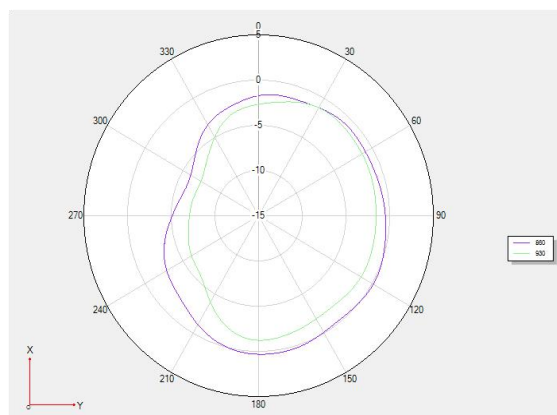
2D



$\text{PHI}=0$

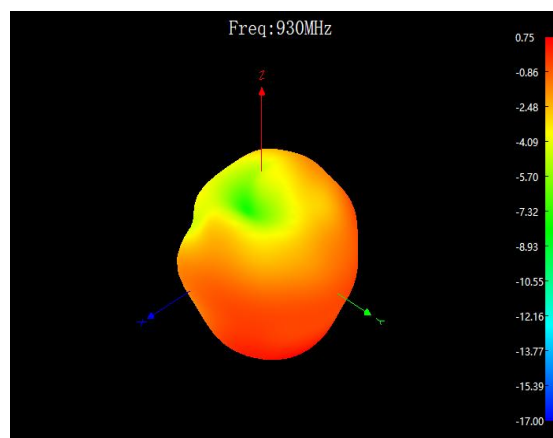
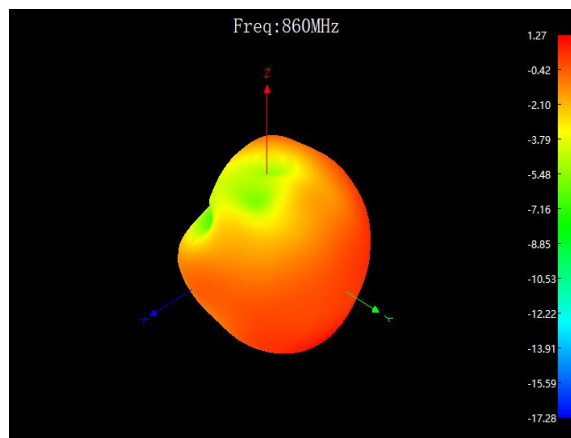


$\text{PHI}=90$



$\text{Theta}=90$

3D



6.Environmental treatment

No change in environment handling

7. Mass production antenna indicators

When the antenna is mass-produced, the standing wave ratio is used as the mass production test standard. According to the differences in the project itself, the following criteria are given:

frequency (MHz)	Mass production standards
600MHz-960MHz 1710MHz-2690MHz 3300MHz-5000MHz	VSWR (Mass production performance) <VSWR(Acknowledge performance)+1

8 Drawings

