

Shanghai Sunnyway Communication Technology Limited Company

Temporary antenna specification

Customer: MOONS'		The project: A8768
Operating frequency band: 915MHz		
Motherboard version:		
Shangyuan material specifications		
Specifications and models	Shangyuan material number	Customer part number
WPAN	SH25439IB56-2	

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
Elbow Antenna	V0.1
Antenna form	PIFA antenna

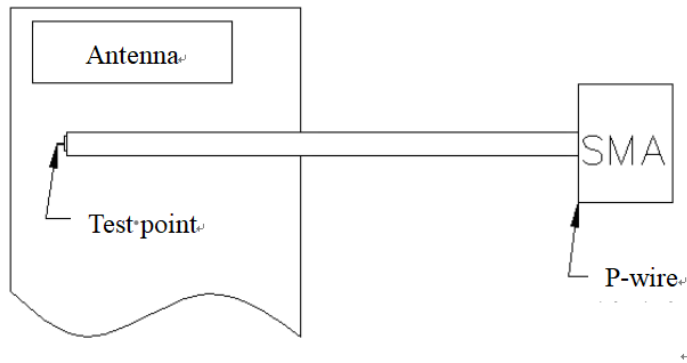


Note: The customer finally verified that the antenna performance prototype was retained in our company for at least one year, which is convenient for analysis and solution to abnormal situations in antenna mass production. Ensure antenna shipment quality.

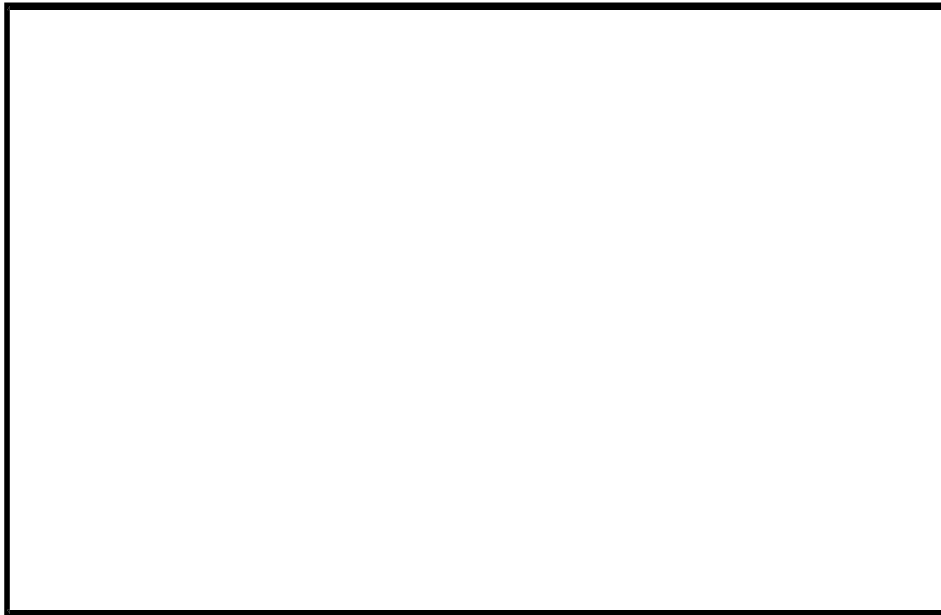
2. Test fixtures

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



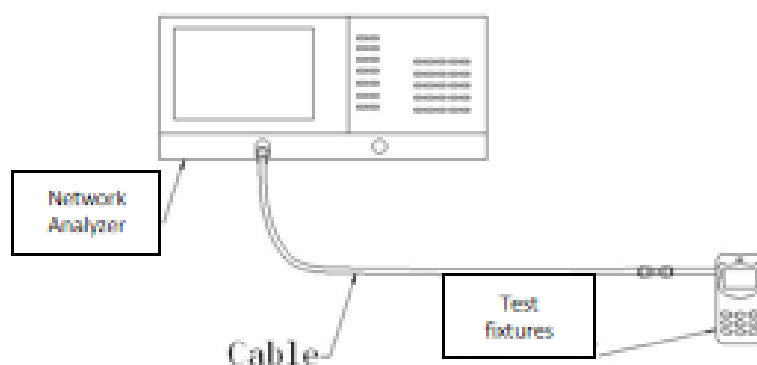
4. S11 test

5. 4. 1 S11 Test Method Description

6. Test Equipment: Network Analyzer (E5071C)

7. 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.

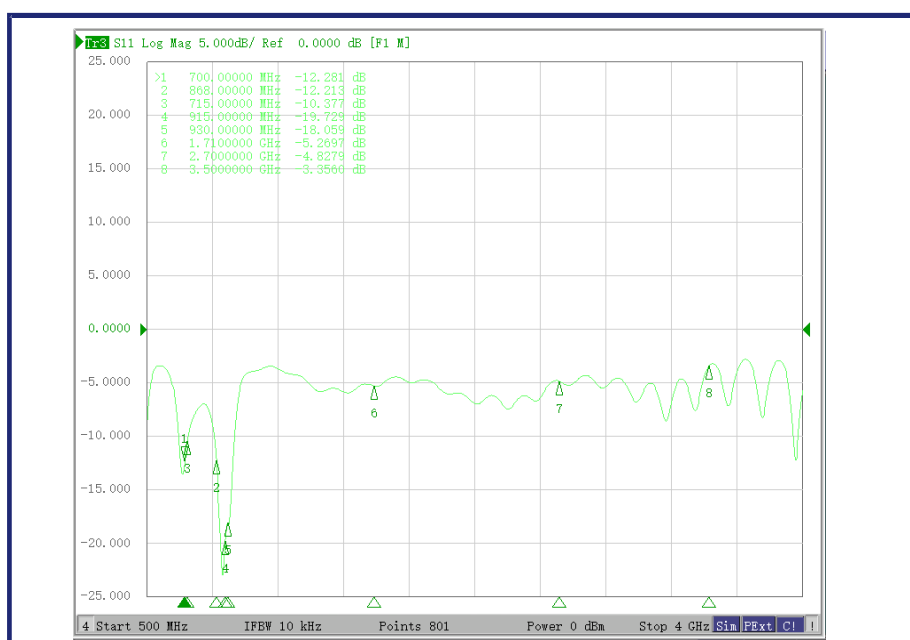
The test diagram is as follows:



Test the schematic

4.2 S11 parameter

Straighthead Antenna



Straighthead Antenna	
frequency (MHz)	Log Mag
868	-12.2
715	-10.3
915	-19.7
930	-18.3

5 Darkroom test data

Test system: Shielded darkroom

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

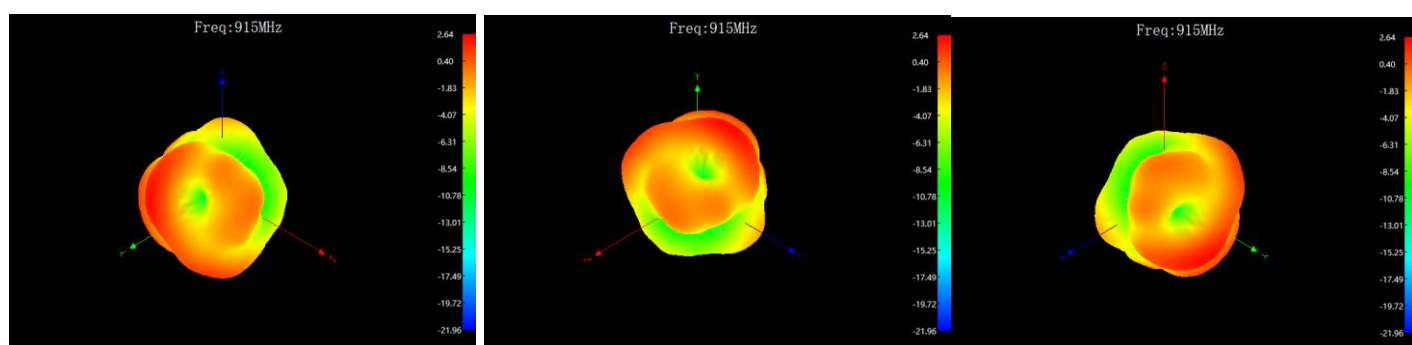
Test equipment: When testing passive data, use the Network Analyzer Agilent E5062C When testing active data, the Comprehensive Tester Agilent 8960 /CMW500/E4438C is used

5.1 Passive test data

Straighthead Antenn efficiency

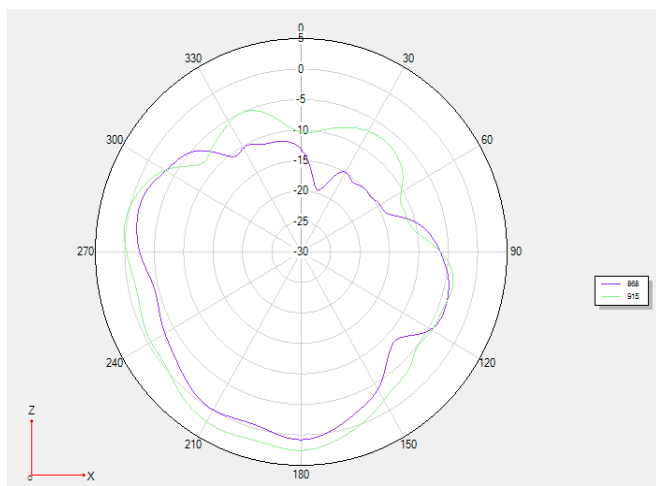
Elbow Antenna			
Freq.	Effi	Effi	Effi
(MHz)	(dB)	(%)	(dBI)
900	-3.09	49.09	2.59
901	-3.12	48.75	2.55
902	-3.21	47.75	2.47
903	-3.26	47.21	2.4
904	-3.2	47.86	2.43
905	-3.02	49.89	2.56
906	-2.9	51.29	2.66
907	-2.76	52.97	2.85
908	-2.69	53.83	2.94
909	-2.75	53.09	2.87
910	-2.89	51.4	2.69
911	-2.96	50.58	2.58
912	-2.99	50.23	2.5
913	-2.95	50.7	2.47
914	-2.86	51.76	2.53
915	-2.8	52.48	2.64
916	-2.69	53.83	2.81
917	-2.69	53.83	2.77
918	-2.74	53.21	2.62
919	-2.78	52.72	2.51
920	-2.71	53.58	2.57
921	-2.77	52.84	2.45
922	-2.72	53.46	2.52
923	-2.92	51.05	2.64
924	-2.86	51.76	2.69
925	-2.92	51.05	2.55
926	-2.91	51.17	2.43
927	-2.96	50.58	2.26
928	-3	50.12	2.17
929	-2.98	50.35	2.21
930	-2.87	51.64	2.36

Straighthead antenna 3D diagram

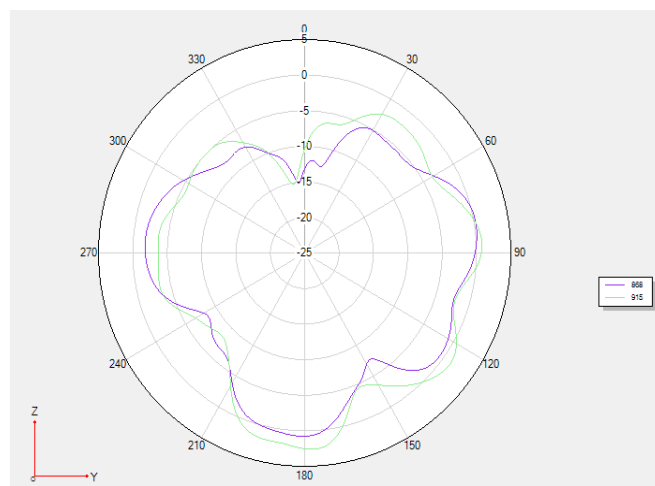


Straighthead antenna 2D diagram

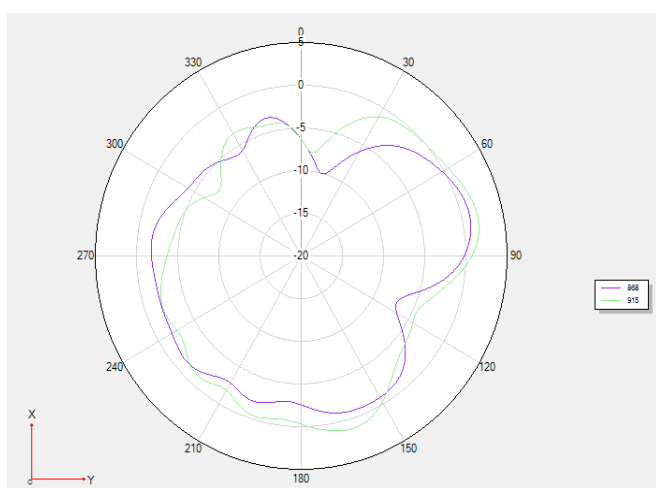
Phi 0 2D



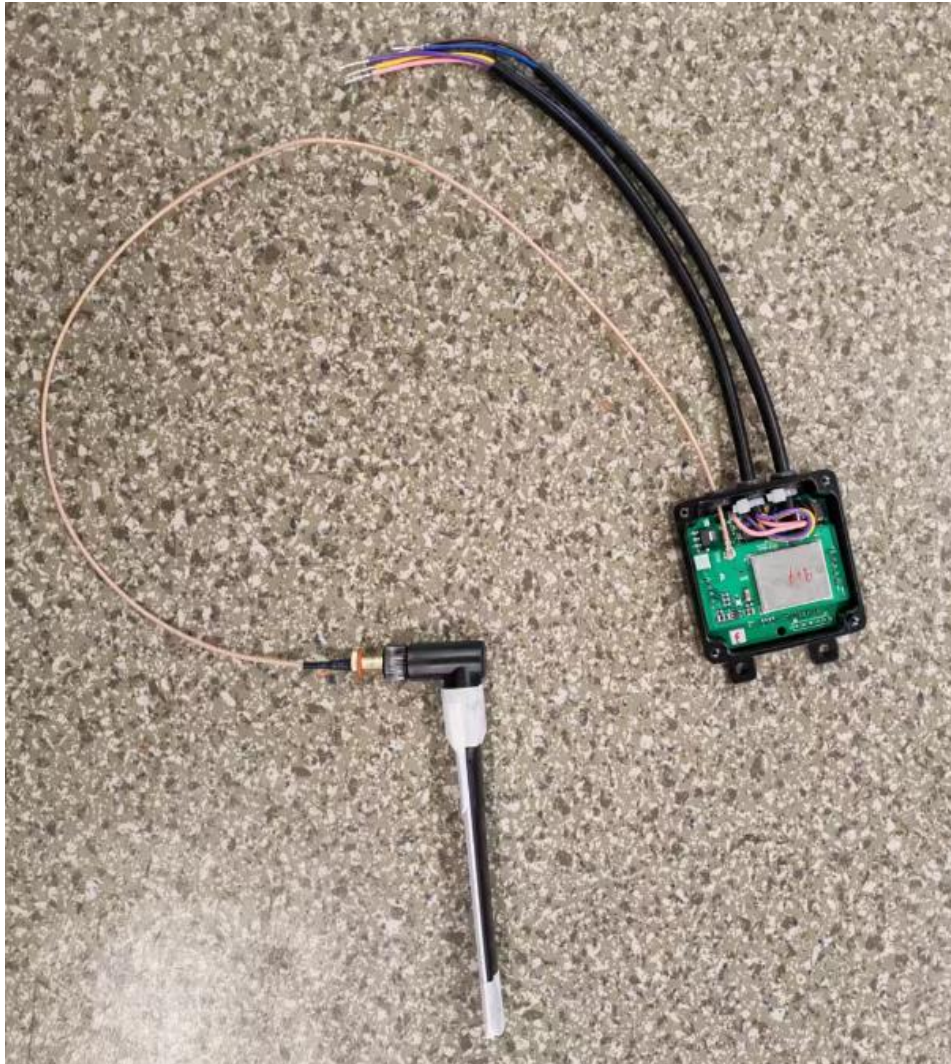
Phi 90 2D



Theta 90 2D



6. Prototype grounding treatment



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
868-930MHz	VSWR (Mass production performance) <VSWR(Acknowledge performance)+1

8 Drawings

[illegible]