

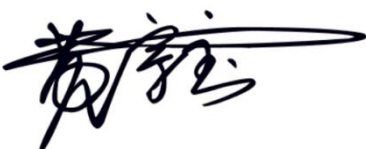




Acknowledgment Letter

SPECIFICATION FOR APPROVAL

Customer Name	Yihua		
Customer Project Name	T89	Project Name	T89
Antenna type	Four in one antenna	SDC P/N	WG5107B-A
Band	WiFi2. 4G/5. 8G/BT/GPS		
Version	A0		
Designer Information			
RF Engineer		R&D Director	
ME Engineer			

Approval				ustomer Approval	
	Prepared By	Checked By	Approval By	Checked By	Approval By
Signature	Huang Zongbao	Fu Xuerong	Xia Chenglei		
Date	2023. 9. 28	2023. 9. 28	2023. 9. 28		

hange Log				
Version	Change Description	Person in Charge	Approval By	Date



Catalogue

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[illegible]

Company Address: 4th Floor, Building B5, Xinfu Industrial Park, Chongqing Road, Fuyong Town, Bao'an District,
Shenzhen TEL:0755-27211658 FAX:0755-29485750



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Sample Dimensions Test Report

Test Date	2023. 9. 28	Sample Qty.	3	Inspector	Xu Yanfang
Dimension No.	Standard	Sample 1	Sample 2	Sample 3	Pass/NG
①length	29.75±0.2mm	29.75	29.85	29.75	Pass
②width	8.45±0.2mm	8.45	8.55	8.55	Pass
③thickness	0.1±0.03mm	0.1	0.1	0.1	Pass
④					
⑤					
⑥					
⑦					
Conclusion					PASS
Inspector & Date	Xu Yanfang 2023. 9. 28		Approval & Date		



RF Performance Test Report

Antenna Test Equipment Introduction

Test of antenna input characteristics using **Agilent E5071C** and **Agilent 5062A** vector network analyzer; The radiation pattern of the antenna are tested using the guangping 3D near field Anechoic Chamber, and the instrument is used to agilent8960 E5515 and Agilent E4438C. The test coordinates of the darkroom are as follows:

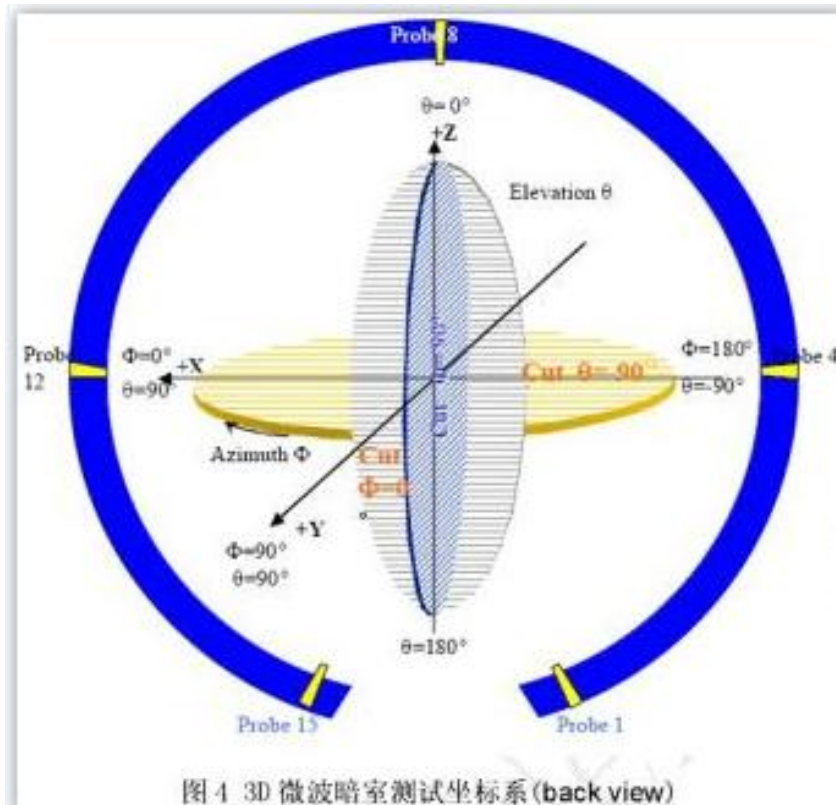


图4 3D 微波暗室测试坐标系(back view)

1. **S11 Parameter-VSWR**

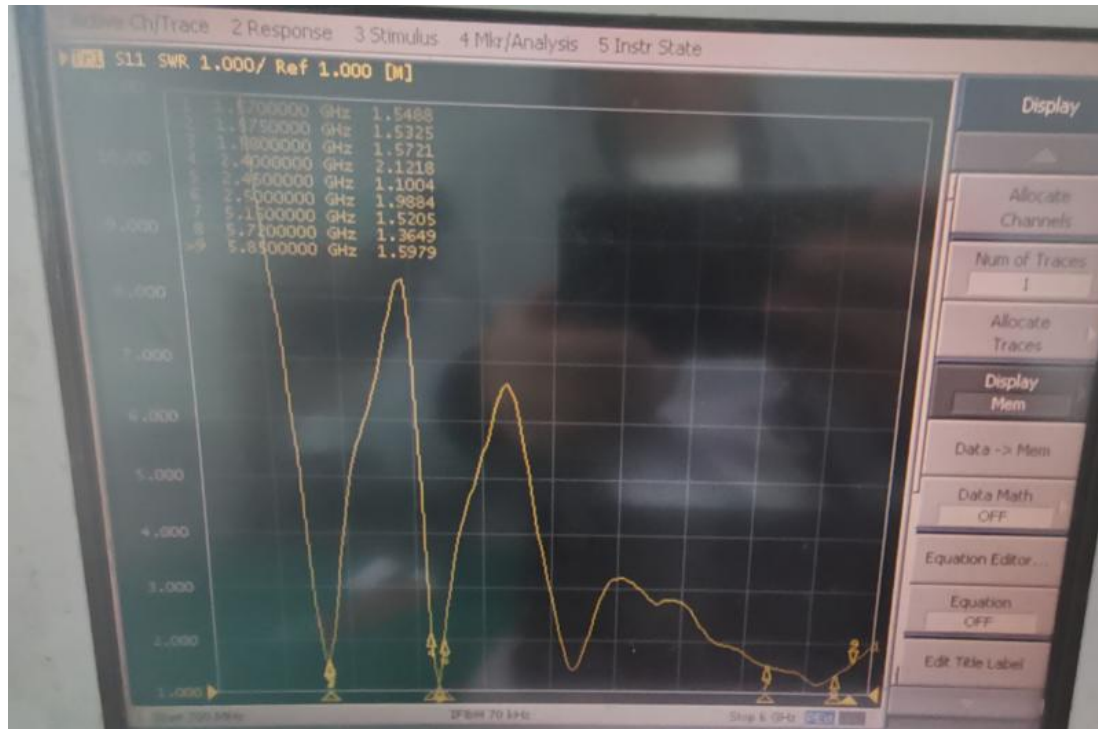
Measuring Method is a 50Ω coaxial cable is connected to the antenna. Then this cable is connected to a network analyzer to measure the S11 parameter, Keeping this fixture away from metal at least 20cm.



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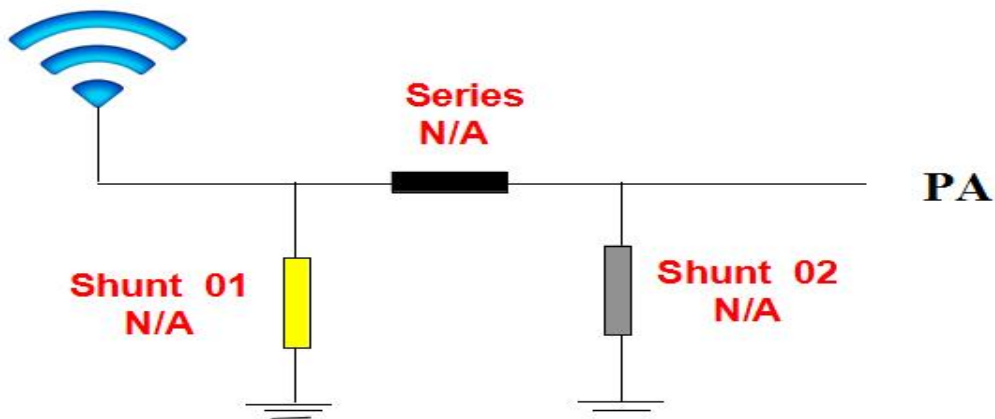
S11 Parameter-VSWR

Frequency(MHz)	1570	1575	1580	2400	2450	2500	5150	5720	5850
VSWR	1.54	1.53	1.57	2.12	1.10	1.98	1.52	1.36	1.59



2. Antenna Matching Network

Antenna





3. Electrical parameter:

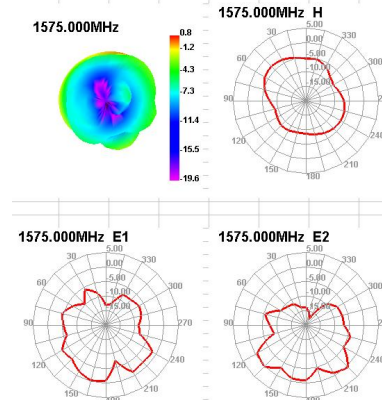
Electrical parameter	
(Frequency range)	1575-5850Mhz
Polarization mode	Horizontal and vertical polarization
Measurement program	Wide screen
Test equipment	Agilent(5071B) /Agilent (8960) /ROHDE&SCHWARZ(CMW500)
Test Settings	Insert the testing white card, fix the entire machine on the testing turntable, open the testing software, and select the corresponding testing frequency band
Testing location	OTA microwave anechoic chamber
Antenna manufacturer	Shenzhen Shundacheng Technology Co., Ltd
Debugging mode	PIFA
Antenna material	FPC+coaxial line

4. Gain & Efficiency

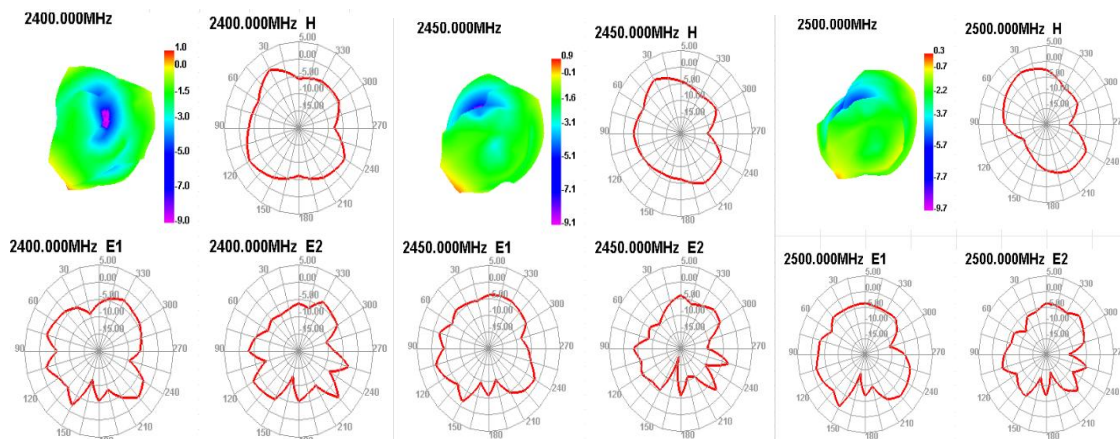
Passive Test For GPS-RB										
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Attenut Hor	Attenut Ver
1500	32.5	-3.14	2.8	0.65	16.66	31.838	0.8	-20.4	43.83	44.08
1525	32.86	-3.2	0.59	0.44	15.309	32.552	0.59	-21.47	43.89	43.93
1550	43.28	-3.64	1.82	-0.33	12.607	30.669	1.82	-15.36	44.11	44.11
1575	38.85	-4.58	0.81	-1.34	9.312	25.539	0.81	-19.56	44.82	44.78
1600	34.74	-4.59	0.67	-1.48	10.102	24.642	0.67	-20.95	46.1	45.91
1500.00MHz - 1600.00MHz Gain										



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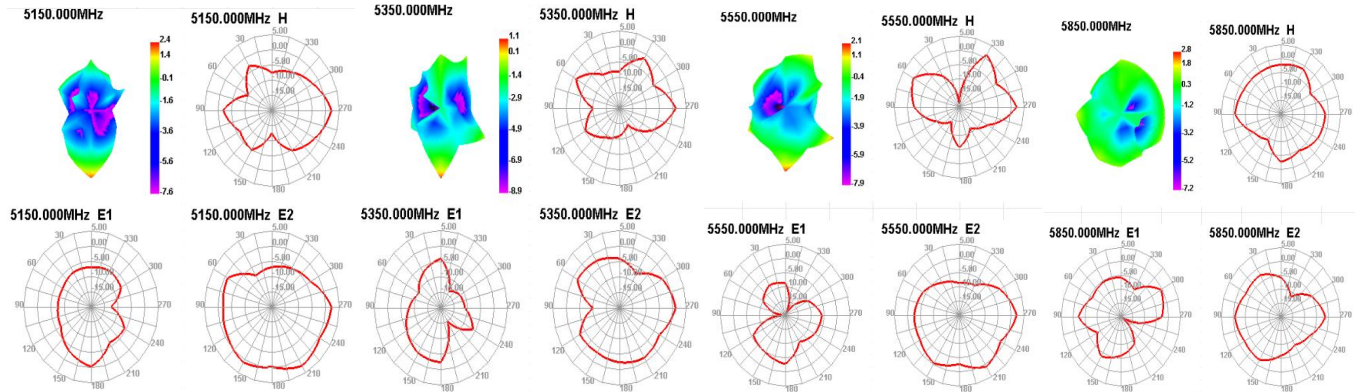
Passive Test For 2.4G												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	irectivity (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
2400	43.54	-3.61	1.03	-1.12	20.581	22.962	1.03	-15.9	4.64	15	48.93	49.09
2425	45.48	-2.97	1.96	-0.19	23.926	26.555	1.96	-16.48	4.93	15	49.09	49.22
2450	36.53	-4.37	0.87	-1.28	17.136	19.397	0.87	-19.74	5.24	15	49.25	49.27
2475	35.97	-4.44	0.52	-1.63	17.205	18.763	0.52	-23.22	4.96	75	49.98	49.91
2500	36.94	-4.32	0.32	-1.83	17.676	19.267	0.32	-18.36	4.64	75	49.71	49.62



Passive Test For 5.8G												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	irectivity (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
5150	42.13	-3.75	2.36	0.21	16.688	25.441	2.36	-12.69	6.11	0	58.6	58.01
5250	36.5	-4.38	1.37	-0.78	16.245	20.256	1.37	-11.52	5.75	30	58.53	57.74
5350	33.61	-4.73	1.07	-1.08	14.487	19.127	1.07	-15.18	5.81	60	57.99	57.08
5450	38.75	-4.12	2.03	-0.12	14.442	24.308	2.03	-15.14	6.15	0	59.19	57.9
5550	43.16	-3.65	2.14	-0.01	15.599	27.564	2.14	-19.43	5.79	60	60.21	58.81
5650	45.41	-3.43	2.1	-0.05	16.711	28.699	2.1	-20.47	5.53	0	60.31	59.42
5750	46.58	-3.32	2.17	0.02	17.996	28.581	2.17	-18	5.49	30	60.88	60.28
5850	44.83	-3.48	2.78	0.63	18.496	26.336	2.78	-23.77	6.27	30	61.09	60.41



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5. OTA data

2.4G	802.11b, (2.4G) 11M		
Channel	CH1	CH6	CH11
TRP	13.35	13.63	13.71
TIS	-81.29	-80.64	-80.22
5.8G	802.11A, (5.8G) 54M		
Channel	CH36	CH60	CH165
TRP	11.35	11.13	11.26
TIS	-70.29	-70.64	-70.22

6. GPS measurement map



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Measured on the rooftop of the 5th floor, the best star value is around 2 stars and 40 stars, with a positioning time of about 70 seconds



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Reliability Test Report

Test Date	2023. 9. 28	Sample Qty.	3	Inspector	Xu Yanfang	
Test Item	Requirement	testing equipment	Sample 1	Sample 2	Sample 3	PASS/NG
high temperature storage	Expose to+85 °C for 24 hours, recover for 2 hours, and conduct testing	Constant temperature and humidity box	OK	OK	OK	Pass
low temperature storage	Expose to -40 ° C for 24 hours, recover for 2 hours, and perform testing	Constant temperature and humidity box	OK	OK	OK	Pass
High temperature operation	Powered on for 24 hours at+60 °C	Constant temperature and humidity box	OK	OK	OK	Pass
Low temperature operation	Powered on for 24 hours at -20 °C	Constant temperature and humidity box	OK	OK	OK	Pass
Salt spray test	(5 ± 0. 5)%sodium chloride, pHValue is6.5~7.2, Temperature of experimental chamber (35±2) °C <input type="checkbox"/> 24H <input checked="" type="checkbox"/> 48H	Salt spray testing machine	OK	OK	OK	Pass
Connector riveting and pulling force	1.13Wire diameter ≥ 10N 0.81Wire diameter ≥ 8N RG174 ≥60N RG178 ≥50N	Push-pull force gauge	≥10N	≥10N	≥10N	Pass
Conclusion						Pass
Inspector & Date	Xu Yanfang 2023. 9. 28		Approval & Date			



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Product ROHS Composition Declaration Form

product name	Uniform material	Harmful substance content(PPM)					HS test report number	Date of HS test report
		Pb	Cd	Hg	Cr	Br		
four in one antenna terminal	FPC	ND	ND	ND	ND	ND	UNIB21042707HR-01	2023. 9. 28
		ND	ND	ND	ND	ND		
		ND	ND	ND	ND	ND		
		ND	ND	ND	ND	ND		
	wire rod terminal	ND	ND	ND	ND	ND		
		ND	ND	ND	ND	ND		
		ND	ND	ND	ND	ND		
		ND	ND	ND	ND	ND		

Install Wizard or Other
setup script:

Take 1 PCS of product, tear off the release paper on the back of the FPC by hand, and then align the FPC positioning hole position with the shell positioning hole position (positioning rib position or positioning line), and attach it flat to the shell, as shown in the following figure:

Installation process precautions:

- ☐Ensure that the FPC is fully attached to the housing after pasting the antenna;
- ☐Align the positioning hole with the position of the casing positioning column;
- ☐Align FPC edge with shell edge;
- ☐When attaching the terminal to the PCBA end of the motherboard, please first align the terminals and then snap them vertically;
- ☐When disassembling antenna terminals, it is necessary to use a tool (such as a special pry bar) to vertically lift the terminals and not directly pull the wires for disassembly

Test equipment(The following equipment is calibrated every six months, in March/September of each year)



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agilent 8960 is mainly
used for testing 2G/3G



Nordschwarz CMW500 is
mainly used for testing
WiFi/4G



The Agilent E5071B network
analyzer is mainly used for passive
2D/3D antenna testing



Certificate

Certificate Number: UNIB23083106HC-01



Product: 5G/4G/WIFI/GPS/BT antenna
Applicant: ShenZhen ShunDaCheng Technology Co., Ltd.
4th Floor, Building B5, Xinfu Industrial Zone, Fuyong Chongqing Road,
Baoan District, Shenzhen
Manufacturer: N/A
Model No.: N/A
Trade Name: N/A
Test Methods: IEC 62321-2:2021, IEC 62321-3-1:2013, IEC 62321-4:2013 +A1:2017,
IEC 62321-5:2013, IEC 62321-6:2015, IEC 62321-7-1:2015
IEC 62321-7-2:2017, IEC 62321-8:2017

The laboratory tested the product provided by the applicant according to the above test methods. According to the test results, the product conforms to RoHS Directive [(2011/65/EU and Amendment (EU) 2015/863)] issued by the European Commission. It is possible to use CE marking to demonstrate the compliance with RoHS Directive.

The certificate applies to the tested sample above mentioned only and shall not imply an assessment of the whole production. It is only valid in connection with the test report number: UNIB23083106HR-01.

Note: According to the requirements of the applicant for testing, details are shown in the test report.

RoHS

Sep. 06, 2023
Issue Date

Hoffer Lau



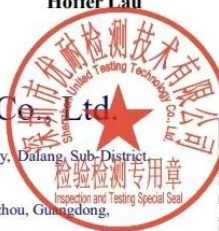
Shenzhen United Testing Technology Co., Ltd.

Shenzhen: D101&D401, No. 107, Kaicheng High-Tech Park, Taoyuan Community, Dalang Sub-District,
Longhua District, Shenzhen, Guangdong, China/518109
Guangzhou: No.47-3, Industrial Road, Zhushan, Dalong Street, Panyu District, Guangzhou, Guangdong,
China/511450;

101/F, Building 2, Tongxin Industrial Park, Xinqiao Village, Dalong Street, Panyu District, Guangzhou,
Guangdong, China/511450

Tel: +86-755-86180996/+86-020-39277769 Fax: +86-0755-86180156

Web Site: www.uni-lab.hk/ E-mail: hofferlau@uni-lab.hk



Certificate of Compliance