

Product specification

Quick Reference Data

	Antenna module on the system board	
Antenna type	PCB	
Frequency	2.45GHz*1	
Ant. Port Input Pwr. (dBm)	0 (Typ. BT class 2 output power)	
Tot. Rad. Pwr. (dBm)	-2.3 (Input pwr ?loss pwr)	
Peak EIRP(dBm)	1.3	
Directivity (dBi)	1 (all direction antenna)	
Efficiency (dB)	-2.3 (58.5%)	
Gain (dBi)	1.7 (Peak Gain X Z-plane)	
Maximum Power (dBm)	1.3 (XY-plane)	
Minimum Power (dBm)	-4(XY-plane)	
Avg. Power (dBm)	-0.5(XY-plane)	
Max/Min Ratio (dB)	5.3(XY-plane)	
Max/Avg Ratio (dB)	1.8(XY-plane)	
Min/Avg Ratio (dB)	-3.5(XY-plane)	
Average Gain (dB)	-0.5 (Avg Gain XY-plane)	

All the technical data and information contained herein are subject to change without prior notice

Antenna Layout & module on the system board

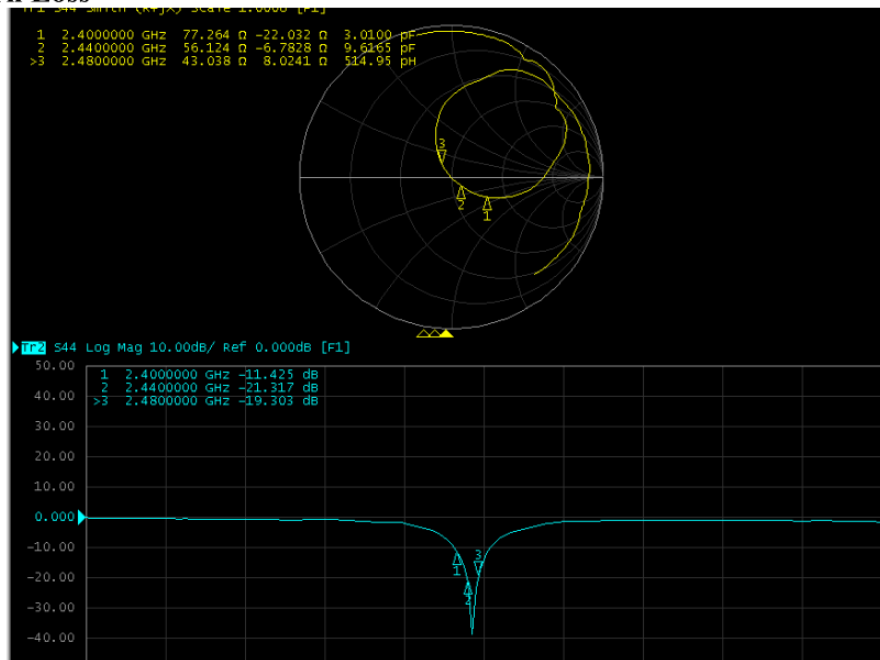


Antenna Gain

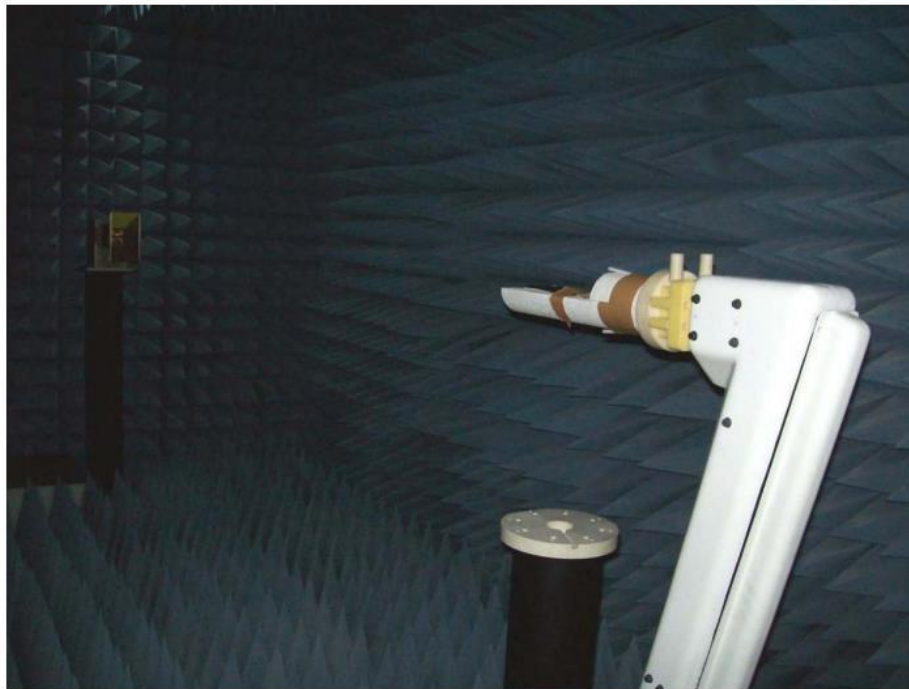
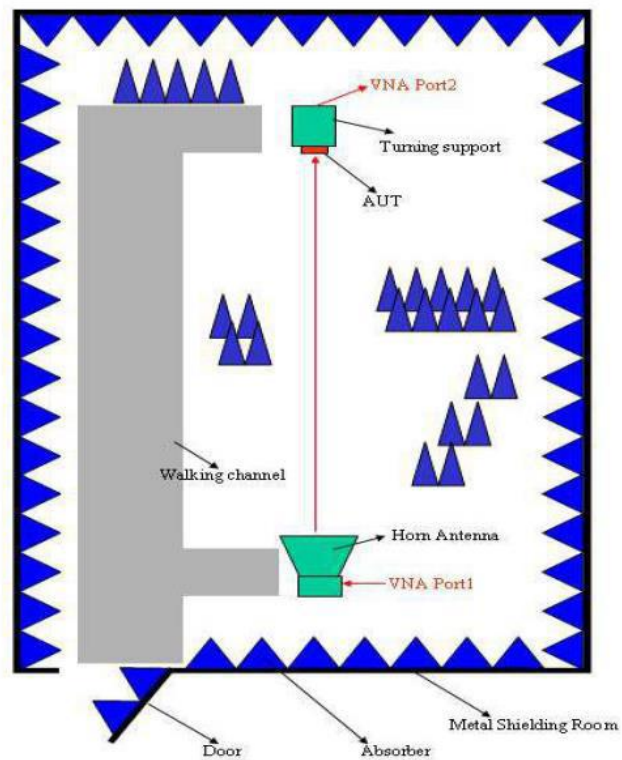
Gain Table

Unit in dBi @2.44GHz	XY-plane		XZ-plane		YZ-plane		Efficiency
	Peak	Avg.	Peak	Avg.	Peak	Avg.	
Module Board	1.3	-0.5	1.7	-3.8	1.1	-3.0	58.5%

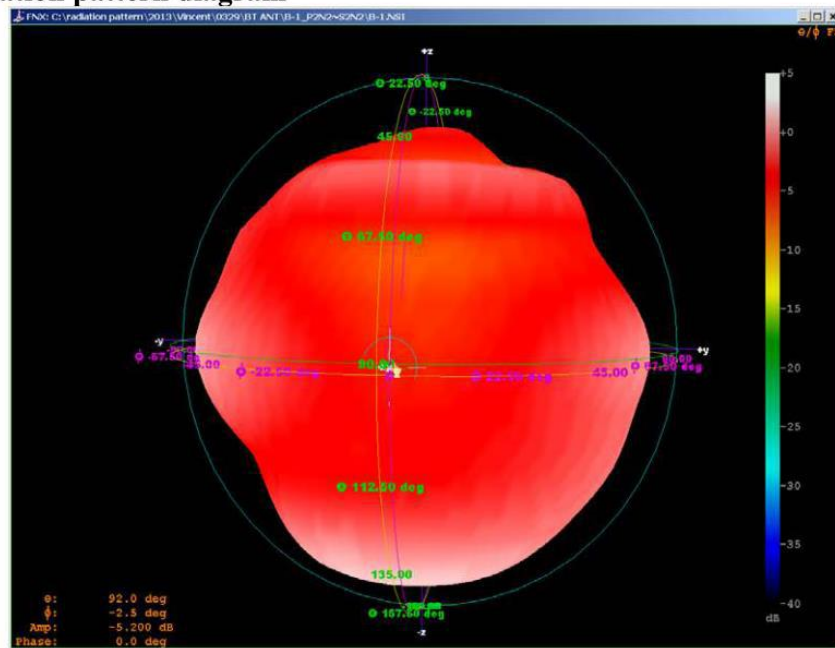
Return Loss



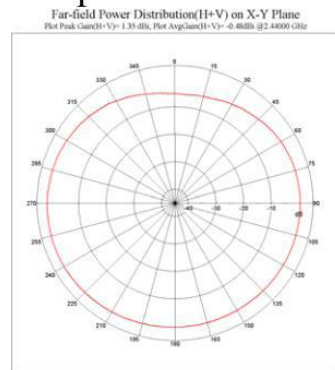
The Environment of Antenna Radiation Pattern



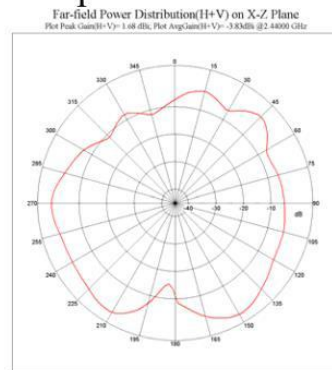
3D radiation pattern diagram



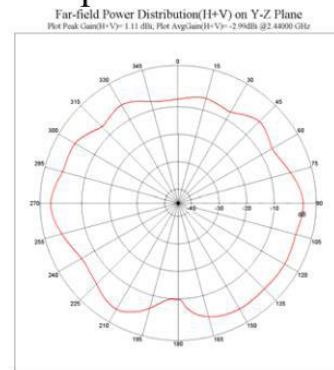
XY-plane



XZ-plane



YZ-plane





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SPECIFICATION FOR APPROVAL

Customer Name	Double pigeon		
Customer Project Name	W192	SDC Project Name	W192
Customer P/N		SDC P/N	WF461B-1131L-190
Band	WIFI2. 4G/5. 8G/BT		
Version	A0		
Designer Information			
RF Engineer	Yong-hui Yang	R&D Diretor	FuXueRong
ME Engineer	Huang Zongbao		

Approval				Customer Approval	
	Prepared By	Checked By	Approval By	Checked By	Approval By
Signature	Huang Zongbao	Yong-hui Yang	FuXueRong		
Date	2023. 12. 25	2023. 12. 25	2023. 12. 25		

Change Log				
Version	Change Description	Person in Charge	Approval By	Date



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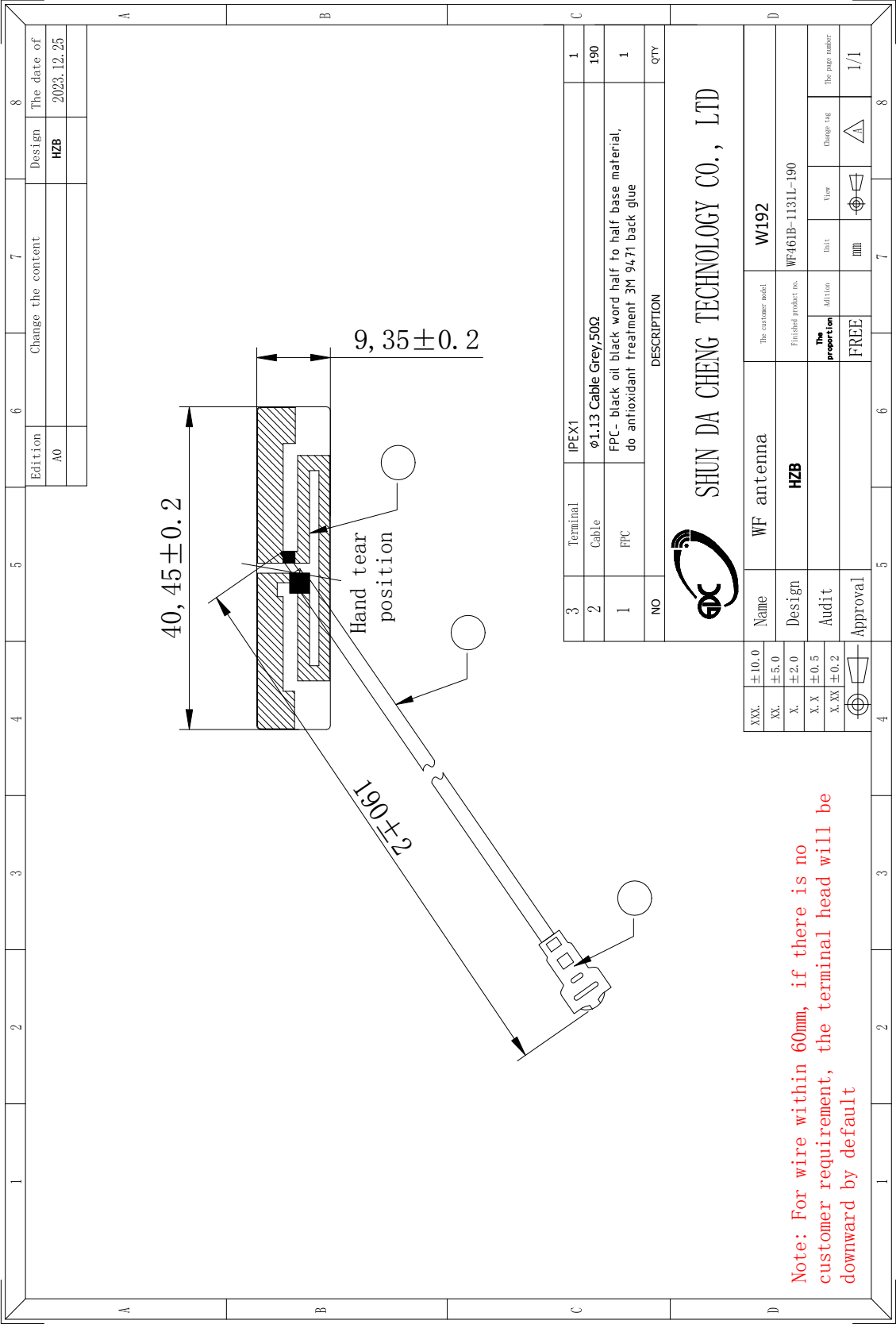
Catalogue

No.	Item	Page No.
1	Drawing or Product Image	3
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Drawing or Product Image





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Sample Dimensions Test Report

Test Date	2023. 12. 25	Sample Qty.	3	Inspector	Xu Yanfang
Dimension No.	Standard	Sample 1	Sample 2	Sample 3	Pass/NG
①length	40. 45±0. 2mm	40. 45	40. 55	40. 45	Pass
②width	9. 35±0. 2mm	9. 35	9. 45	9. 35	Pass
③thickness	0. 1±0. 03mm	0. 1	0. 1	0. 1	Pass
④Line length	190±2mm	191	190	190	Pass
Conclusion					PASS
Inspector & Date	Xu Yanfang 2023. 12. 25		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:

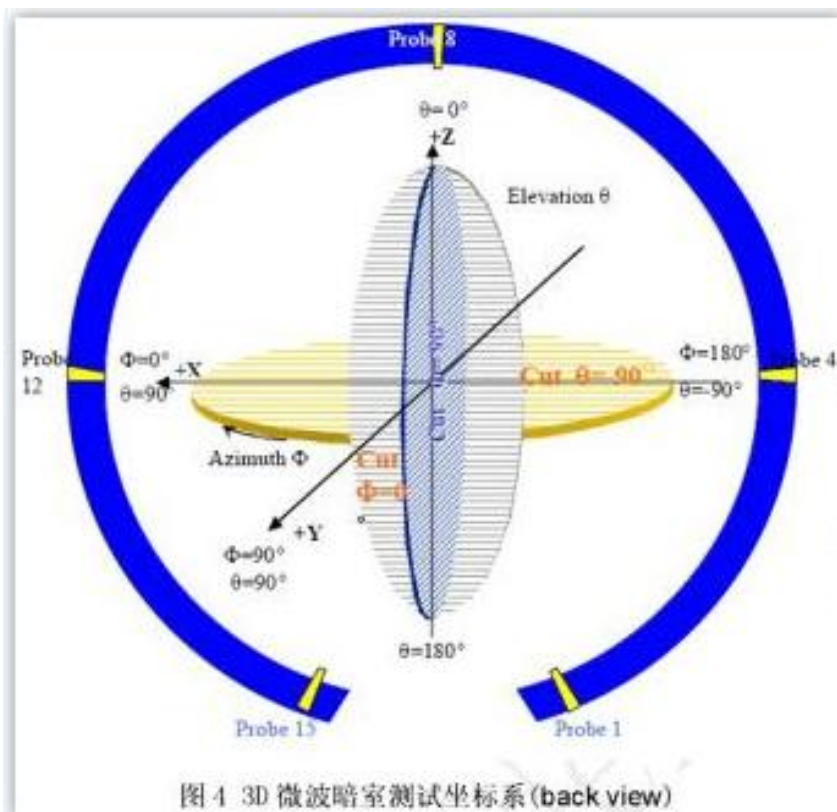


图4 3D 微波暗室测试坐标系(back view)

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.



WIFI副天线



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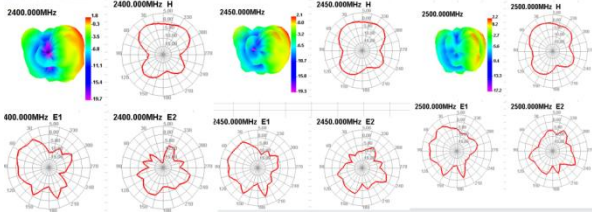
Gain & Efficiency

WIFI副天线

顺达成科技

Passive Test For 2.4G									
Freq (MHz)	Eff1 (%)	Eff2 (%)	Gain (dB)	Gain (dB)	DRIS (%)	DRIS (%)	Max (dB)	Min (dB)	Attenuat Hor
2400	43.91	-3.57	1.84	-0.31	22.401	21.511	1.84	-19.67	49.25
2450	44.96	-3.48	2.13	-0.02	22.886	21.973	2.13	-19.33	49.5
2500	45.49	-3.42	2.16	0.01	23.63	21.862	2.16	-17.15	49.52

2400.00MHz - 2500.00MHz Gain



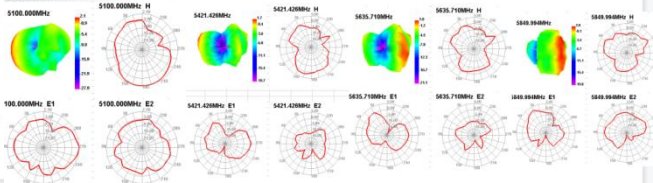
Gain & Efficiency

WIFI副天线

顺达成科技

Passive Test For 5.8G									
Freq (MHz)	Eff1 (%)	Eff2 (%)	Gain (dB)	Gain (dB)	DRIS (%)	DRIS (%)	Max (dB)	Min (dB)	Attenuat Hor
5100	39.74	-4.01	2.1	-0.05	19.309	20.435	2.1	-27.87	64.41
5207.14	32.4	-4.9	0.91	-1.24	15.743	16.652	0.91	-24.89	61.01
5314.28	35.76	-4.47	1.73	-0.42	17.326	17.834	1.73	-18.84	60.15
5421.43	37.05	-4.31	1.73	-0.42	19.307	17.743	1.73	-19.66	60.88
5528.57	44.37	-3.63	2.03	-0.12	24.066	20.305	2.03	-27.5	63.75
5635.71	34.14	-4.67	1.05	-1.1	19.484	14.656	1.05	-21.15	63
5742.86	42.37	-3.73	2.27	0.12	26.477	15.897	2.27	-21.05	63.75
5849.99	41.95	-3.77	2.04	-0.11	27.682	14.265	2.04	-19.91	64.46

5100.00MHz - 5850.00MHz Gain



4. OTA Data

2.4G	802.11b, (2.4G)11M		
	Channel1	CH6	CH11
TRP	10.21	11.71	10.39
TIS	-72.63	-73.32	-72.59

+

5G	802.11a, 54M		
	CH36	CH60	CH161
TRP	8.36	8.54	8.19
TIS	-65.26	-65.26	-64.1

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Reliability Test Report

Test Date	2023. 12. 25	Sample Qty.	3	Inspector	Xu Yanfang	
Test Item	Requirement	testing equipment	Sample 1	Sample 2	Sample 3	PASS/NG
High temperature storage	The test was carried out after 24H exposure at +85℃ and 2H recovery	Constant temperature and humidity box	OK	OK	OK	Pass
Low temperature storage	The test was carried out after 24H exposure at -40℃ and 2H recovery	Constant temperature and humidity box	OK	OK	OK	Pass
High temperature work	At +60℃ for 24H	Constant temperature and humidity box	OK	OK	OK	Pass
Work in low temperature	At -20℃ under the condition of power work for 24H	Constant temperature and humidity box	OK	OK	OK	Pass
Salt spray test	The pH value was 6.5 ~ 7.2, and the temperature of the experimental chamber was (35±2)℃ ☐ 24H ☒ 48H	Salt spray testing machine	OK	OK	OK	Pass
Connector riveting and drawing force	1. 13 线径 ≥10N 0. 81 线径 ≥8N RG174 ≥60N RG178 ≥50N	Push pull meter	≥10N	≥10N	≥10N	Pass
Conclusion						Pass
Inspector & Date	Xu Yanfang 2023. 12. 25		Approval & Date			



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Install Wizard or Other

Installation process:

Take 1PCS of products and tear off the release paper on the back of the FPC by hand. Then align the positioning holes of the FPC with the positioning holes of the shell (positioning bars or positioning wires) and attach them to the shell smoothly. The specific positions are shown in the figure below:

Precautions for installation:

- ☐ After attaching the antenna, ensure that the FPC is fully attached to the shell;
- ☐ The positioning hole is aligned with the position of the housing positioning column;
- ☐ FPC edges are aligned with housing edges;
- ☐ When connecting the antenna with terminal to the PCBA end of the motherboard, align the terminal first and then close it vertically.
- ☐ When removing the antenna terminal, use a tool (such as a dedicated crowbar) to lift the terminal vertically. Do not pull the cable to remove the terminal directly



SHUN DA CHENG TECHNOLOGY CO., LTD

ROHS certificate of the product

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.

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Certificate of Compliance

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