

Shenzhen Guangyuanfa Electronic Co., Ltd.

Antenna Test Report

Customer Name	KaKa	Project Name	DC42
Date	2022/12/9	Report Version	A1
Engineer	Zhou Xuefeng	Tel	15768707879

History

Version	Report Date	Revision Description	Prepared by
A0	2022. 12. 6	Antenna test report	Zhou Xuefeng
A1	2022. 12. 9	Antenna test report	Zhou Xuefeng

Catalogue

1: Project Adjuster introduction

2: Test equipment description

3: Matching circuit description

4: Antenna OTA data

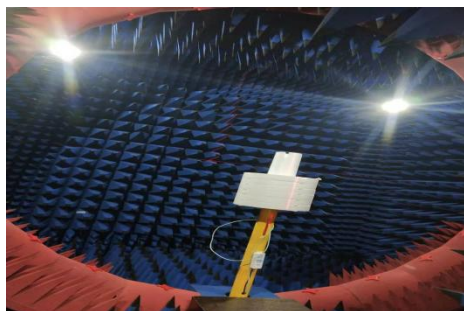
5: Antenna position

6: Notes

Project Adjuster introduction

Model	DC42			
Antenna size	FPC (Size:29.01*18.61mm)			
Frequency band and antenna material	Main antenna	Frequency band		Material
		2G	/	FPC
		3G	/	
		LTE	/	
	Other antenna	diversity	/	FPC
		WIFI	2.4G/5G	FPC
Performance requirement	According to customer requirements			

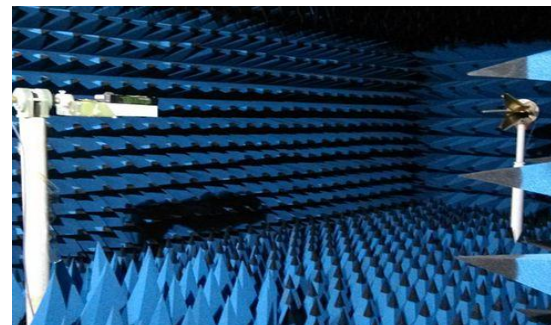
Test equipment description



24-probe microwave
anechoic chamber



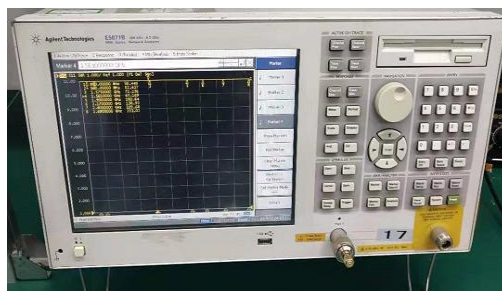
CMW500



7*4*3M ETS microwave
anechoic chamber



Agilent 8960



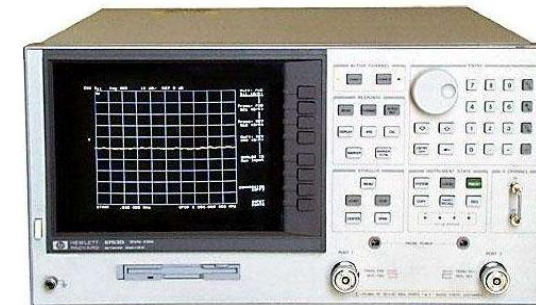
Agilent E5071B



High and low temperature
test chamber



MT8820C

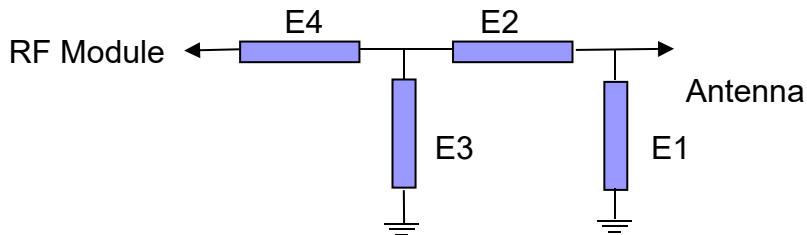


HP8753ES

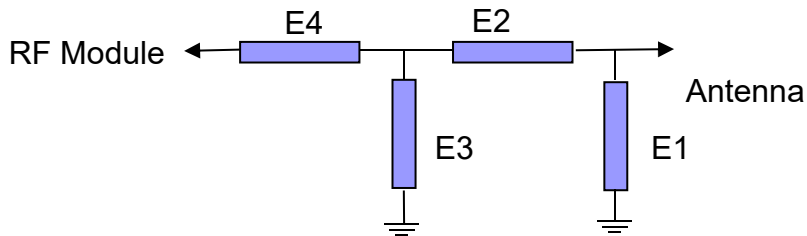
Test syste	Test environent	Active test	Passive Test
ETS darkroom	Temperature: 22°C ±3°C	Support 2G/3G/4G	400MHz——6G
24-probe OTA darkroom	Humidity: 50%±15%	Support NB-IoT/CAT-M/BT/WIFI	

Matching circuit description

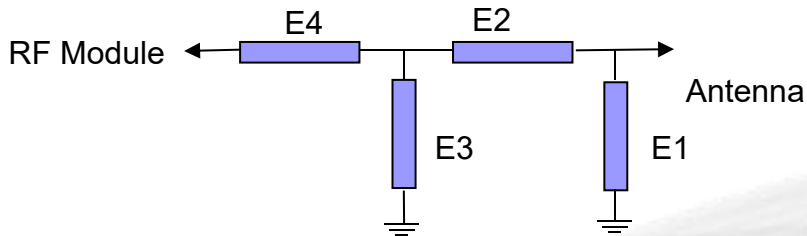
No change in antenna matching



Main antenna	Element	Value
	E1 (0402)	N/A
	E2 (0402)	0ohms
	E3 (0402)	N/A
	E4 (0402)	0ohms

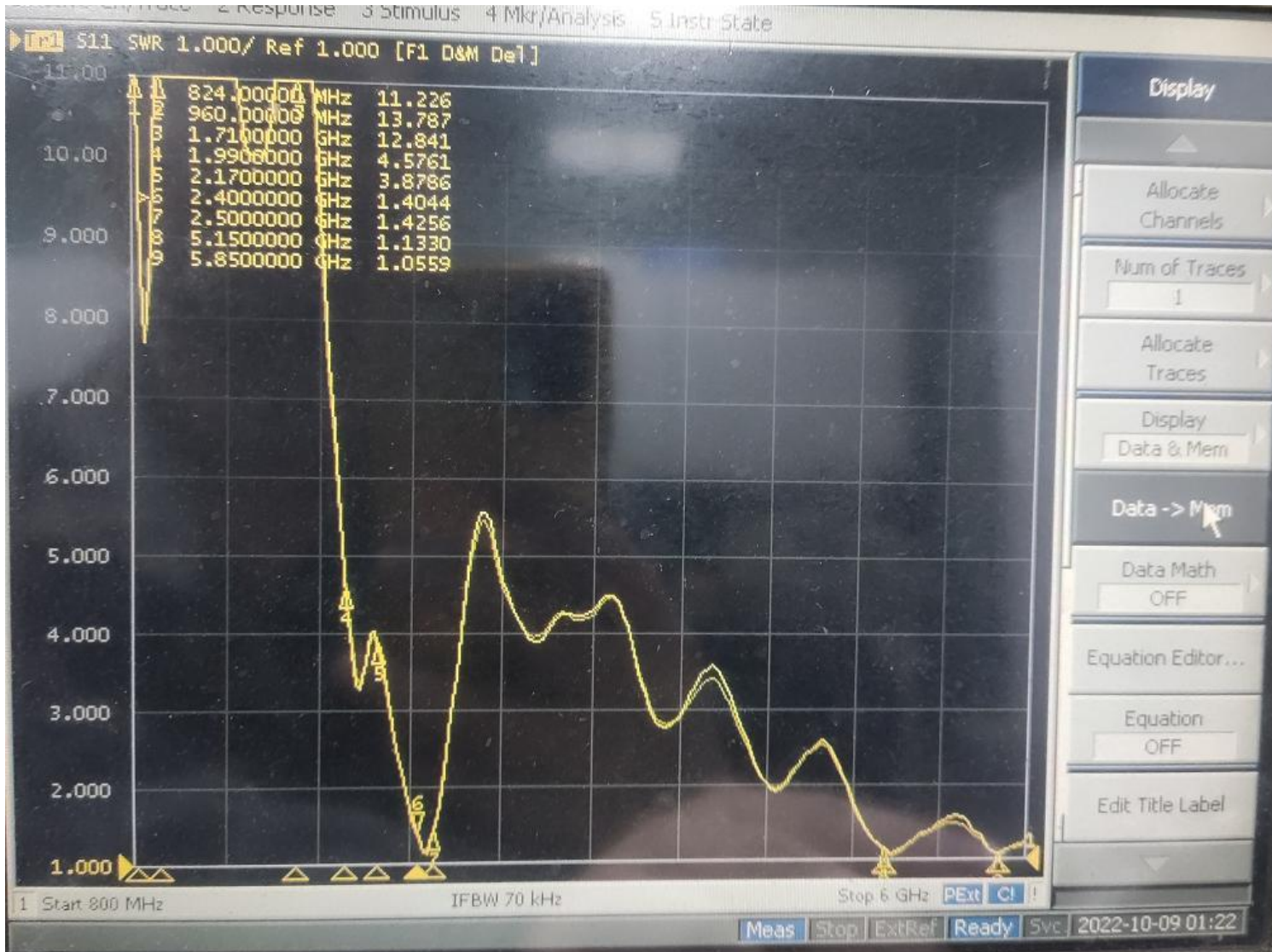


GWB antenna	Element	Value
	E1 (0402)	N/A
	E2 (0402)	0ohms
	E3 (0402)	N/A
	E4 (0402)	0ohms



DIV antenna	Element	Value
	E1 (0402)	N/A
	E2 (0402)	0ohms
	E3 (0402)	N/A
	E4 (0402)	0ohms

Antenna standing wave



OTA DATA----wifi/DC42

2.4G

frequency Gain Efficiency

2400	1.38dBi	40.30%
2410	1.44dBi	40.20%
2420	1.58dBi	41.60%
2430	1.79dBi	42.60%
2440	1.85dBi	42.60%
2450	1.87dBi	42.50%
2460	1.75dBi	41.70%
2470	1.59dBi	41.80%
2480	1.36dBi	41.20%
2490	1.31dBi	40.70%
2500	1.24dBi	40.90%

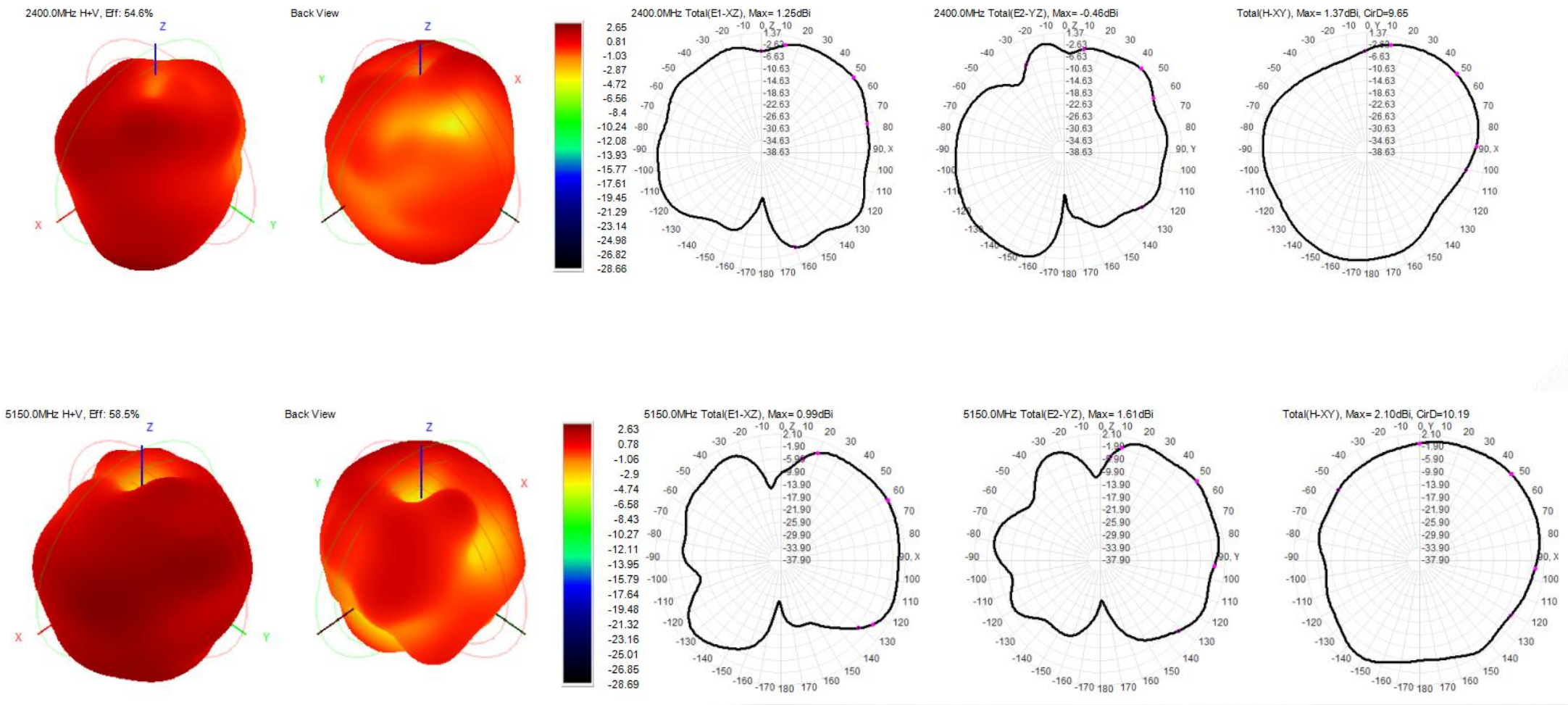
5G

Frequency Gain Efficiency Frequency Gain Efficiency

5150	1.65dBi	53.40%	5510	2.27dBi	53.80%
5170	1.53dBi	54.30%	5530	2.11dBi	52.30%
5190	1.49dBi	55.30%	5550	2.51dBi	54.80%
5210	1.57dBi	54.30%	5570	2.37dBi	54.10%
5230	1.77dBi	55.60%	5590	2.25dBi	53.20%
5250	1.71dBi	53.60%	5610	2.32dBi	52.80%
5270	1.72dBi	53.70%	5630	2.3dBi	52.30%
5290	1.59dBi	53.20%	5650	2.24dBi	50.80%
5310	1.52dBi	52.30%	5670	1.97dBi	48.40%
5330	1.67dBi	53.60%	5690	1.85dBi	47.60%
5350	1.83dBi	53.80%	5710	1.68dBi	46.10%
5370	2.06dBi	55.00%	5730	1.53dBi	45.80%
5390	2.15dBi	54.90%	5750	1.29dBi	44.90%
5410	2.28dBi	55.60%	5770	1.12dBi	44.00%
5430	2.34dBi	55.40%	5790	1.15dBi	44.80%
5450	2.41dBi	55.50%	5810	1.29dBi	45.50%
5470	2.38dBi	54.50%	5830	1.23dBi	44.40%
5490	2.09dBi	51.40%	5850	1.68dBi	44.70%



3D diagram



Antenna measurement(5.8G)

Test mobile phone: oppo find x3

Video size: 554M

Download time: 79s

Average: 7M/s

Actual measurement in the office: 10M without stuck delay

Antenna measurement(2.4G)

Test mobile phone: oppo find x3

Video size: 554M

Download time: 178s

Average: 3.1M/s

Actual measurement in the office: 10M without stuck delay

WIFI Test;

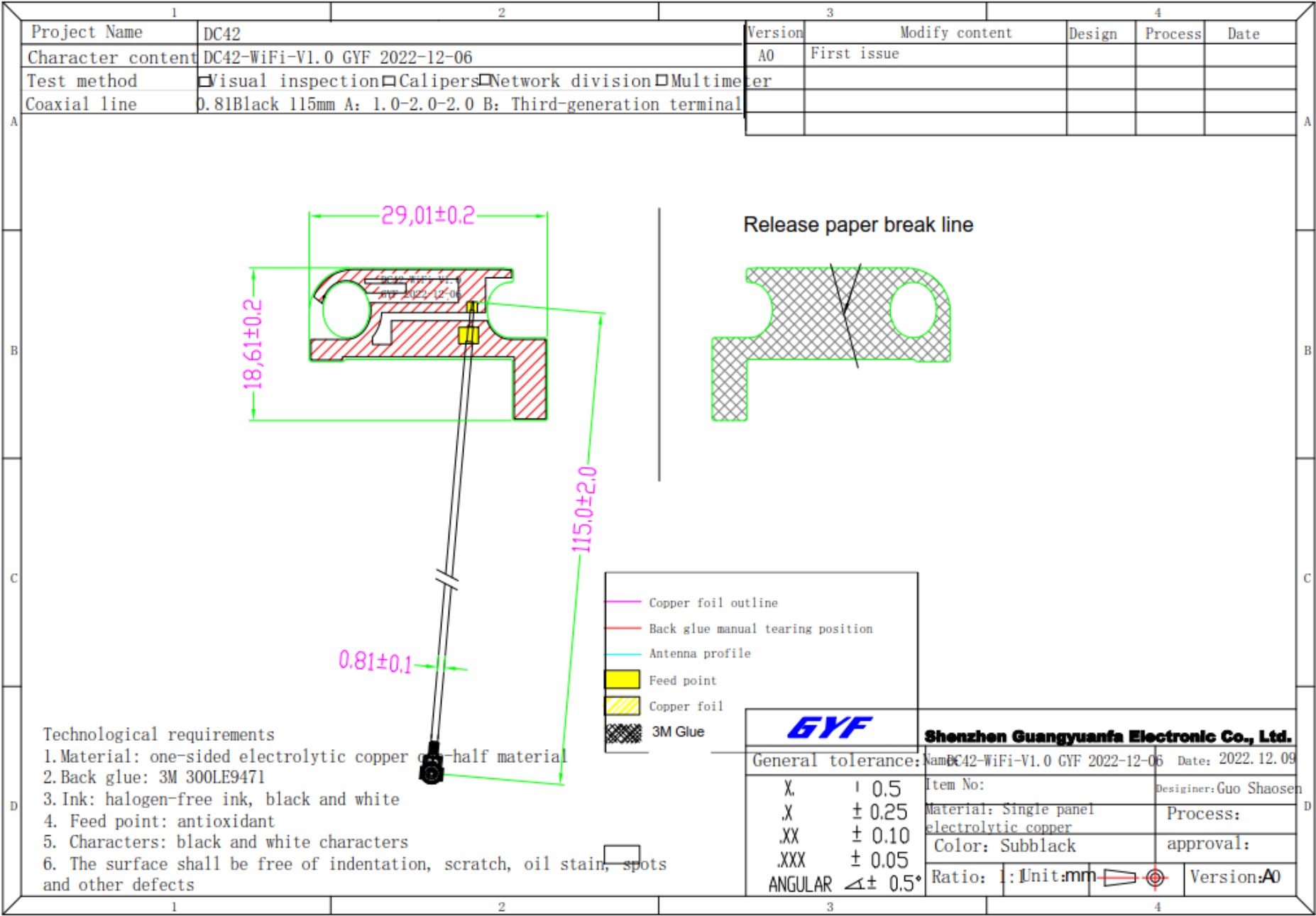
2.4G



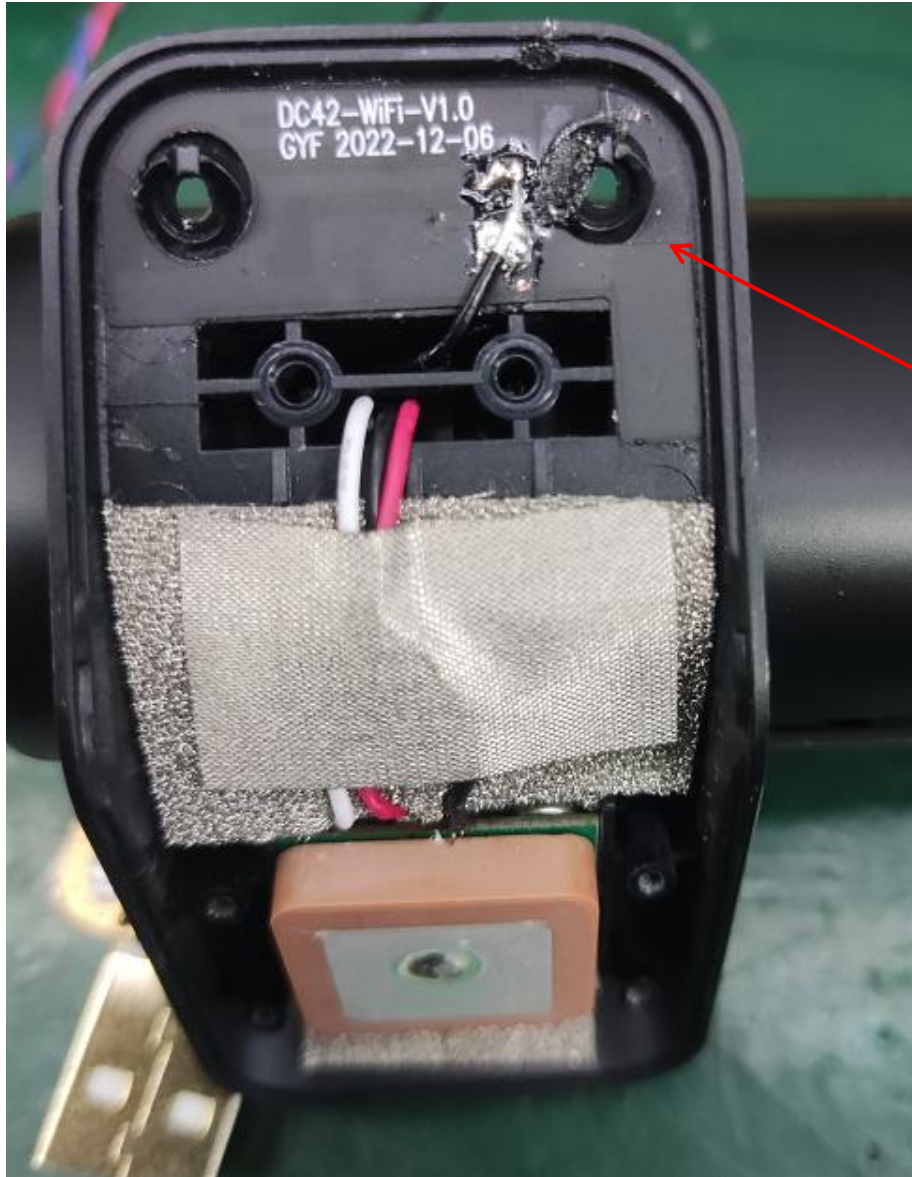
5G



Structural drawings



Antenna position



WIFI antenna

Note: The conductive velvet under the antenna has been changed (cut short) because the antenna should be pasted to the lower position

Notes

1. Please confirm whether the matching and environmental treatment methods in the report are acceptable; This will directly affect the antenna performance. If you have any different opinions, please timely

Contact our company;

2. If your company changes materials, components, software, environment, etc., please provide the latest state machine to our company to verify the performance; 3. If your machine needs to be sent to a third party to verify its performance, it is best to provide the machine to be sent to our company for testing and verification before it can be sent for testing; (Because the consistency of the motherboard, environmental treatment and antenna assembly will affect the antenna performance deviation).



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Thanks.



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