

OTA TEST REPORT

Applicant Shenzhen General Test System Co., Ltd
Product RayZone1800
Issue Date August 10, 2023

Shenzhen Fu Bang Wireless Technology Co., Ltd. tested the above equipment in accordance with the requirements in **ANTI/IEEE Std 149-2008**. The test results show that the equipment tested is capable of demonstrating compliance with the Requirements as documented in this report.

Prepared by: Lunkang Yan

Approved by: Guoqing Hu

Shenzhen Fu Bang Wireless Technology Co., Ltd.

Room 302, lianjian Industry Part, Huarong road, Longhua District, Shenzhen, P.R. China

1. Test Laboratory

1.1 Notes of the Test report

This report shall not be reproduced in full or partial. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of applicable standards stated above.

1.2 Test facility

GTS1800 Microwave Anechoic Chamber : testing frequency ranges from 600MHz to 6GHz .

1.3 Testing Location

Company: Shenzhen Fu Bang Wireless Technology Co., Ltd

Address: Room 302, Lianjian Industry Part, Huarong road, Longhua District,
Shenzhen, P.R. China

Contact: Lunkang Yan

Telephone: 13760182610

E-mail: 646363118@qq.com

1.4 Laboratory Environment

Temperature	Min.= 19°C, Max.=25°C	
Relative humidity	Min.=40%, Max.=72%	
Shield effect	0.6-7GHz	>100dB
Ground resistance	<0.5 Ω	

2. General Description of Equipment under Test

2.1 Applicant and Manufacturer information

Applicant Name	Shenzhen General Test System Co., Ltd
Applicant address	Building C-A7 Suite 805,2190 Liuxian Avenue, Nanshan District, Shenzhen, P.R. China
Manufacturer Name	Shenzhen General Test System Co., Ltd
Manufacturer address	Building C-A7 Suite 805,2190 Liuxian Avenue, Nanshan District, Shenzhen, P.R. China

2.2 General information

EUT Description	
Product Name	RayZone1800
Model	GTS-ANT D-H
HW Version	RayZone1800 V1.0
SW Version	MaxSign 100
Antenna Type	PCB Antenna
Antenna Manufacturer	Shenzhen General Test System Co., Ltd
Test Frequency	620MHz-5.8GHz

2.3 Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test Method: **ANSI/IEEE Std 149-2008**

3. Test Conditions

3.1 Test Configuration

The method is used to measure the antenna 3D GAIN of EUT in OTA qualified anechoic chamber. Equipment Under Test (EUT) geometry centre vertical projection at the centre of platform, the distance from EUT to measurement antenna is 1m.

3.2 Test Measurement

Spherical coordinate system

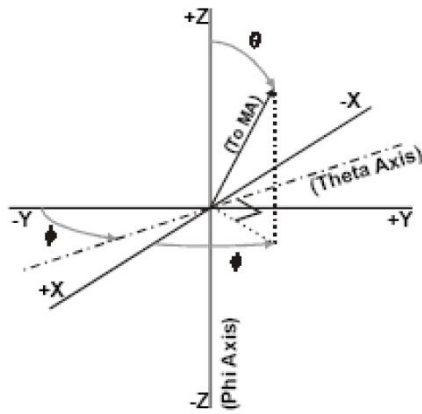
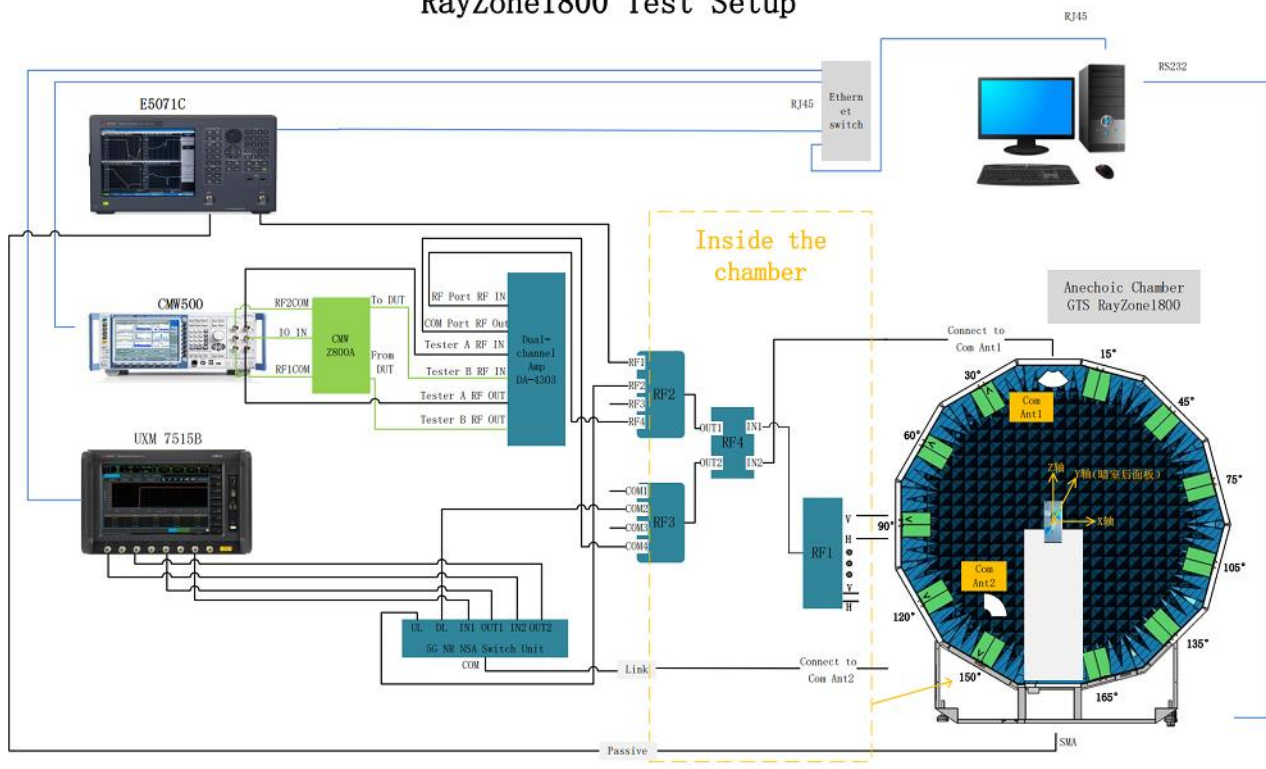


Figure 1 Test coordinate system

Note: Theta is from 0-180degree.Phi is from EUT and record the Date, the step of rotation is 15 degree.

Test Setup

RayZone1800 Test Setup



4. Test Results

4.1 Gain and Efficiency

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OTA Test Report

Model	Test	Frequency	Efficiency	Gain	Frequency	Efficiency	Gain	Note
	State	(MHz)	(%)	(dBi)	(MHz)	(%)	(dBi)	
		690	15.0	-5.5	1800	36.2	0.2	
		700	16.8	-5.1	1820	36.6	0.1	
		710	18.3	-4.6	1840	35.5	0.1	
		720	18.7	-4.5	1860	35.1	0.2	
		730	18.6	-4.5	1880	34.1	-0.1	
		740	18.4	-4.7	1900	34.2	0.0	
		750	17.7	-4.7	1920	46.0	1.6	
		760	16.7	-4.9	1940	48.6	2.0	
		770	16.2	-5.0	1960	47.7	1.6	
		780	14.9	-5.3	1980	46.6	1.4	
		790	13.6	-5.5	2000	43.9	0.8	
		800	13.0	-5.5	2020	41.2	0.7	
					2040	37.8	0.1	
		820	16.1	-4.9	2060	34.1	0.1	
		830	16.7	-4.7	2080	28.1	-0.4	
		840	16.8	-4.3	2100	22.9	-1.2	
		850	16.5	-4.3	2120	18.9	-2.0	
		860	16.4	-4.4	2140	15.0	-2.8	
		870	16.4	-4.3	2160	11.4	-4.0	
	Free	880	15.7	-4.4	2180	10.0	-5.5	
	Space	890	14.2	-4.9	2200	11.0	-4.9	
		900	12.9	-5.5	2300	21.6	-2.4	
					2320	23.3	-2.2	
		880	14.9	-6.5	2340	25.7	-1.8	
		890	15.9	-5.8	2360	28.2	-1.6	
		900	16.2	-5.3	2380	28.6	-1.4	
		910	15.8	-5.1	2400	28.1	-1.6	
		920	15.0	-4.1	2500	29.7	-1.1	
		930	15.6	-3.5	2520	29.6	-1.3	
		940	13.7	-3.2	2540	28.3	-1.5	
		950	13.8	-3.5	2560	27.3	-1.6	
		960	12.2	-3.9	2580	26.3	-1.8	
					2600	25.5	-1.9	
		1700	32.0	-0.4	2620	25.6	-1.7	
		1720	34.7	-0.4	2640	25.0	-1.7	
		1740	36.5	-0.2	2660	24.2	-1.8	
		1760	36.2	-0.1	2680	23.0	-2.0	
		1780	35.1	-0.1	2700	22.9	-2.1	

Model	Test	Frequency	Efficiency	Gain	Frequency	Efficiency	Gain	Note
	State	(MHz)	(%)	(dBi)	(MHz)	(%)	(dBi)	
		1550	30.5	-1.6	5100	25.9	-0.2	
		1560	30.5	-1.5	5130	27.2	-0.4	
		1570	29.8	-1.6	5160	27.4	-0.5	
		1580	29.3	-1.2	5190	28.1	-0.4	
		1590	29.5	-1.9	5220	29.7	-0.2	
		1600	29.0	-1.5	5250	27.9	-0.5	
					5280	28.2	-0.5	
		2400	26.2	-2.7	5310	27.7	-0.7	
		2410	26.1	-2.7	5340	26.7	-0.2	
		2420	26.1	-2.5	5370	26.0	0.6	
		2430	26.3	-2.1	5400	25.9	1.0	
		2440	26.4	-1.9	5430	26.1	0.9	
		2450	26.2	-1.9	5460	23.4	0.1	
		2460	25.9	-1.9	5490	22.0	-0.7	
		2470	25.4	-1.9	5520	21.2	-1.0	
		2480	25.1	-2.0	5550	21.5	-1.0	
	Free	2490	25.0	-2.0	5580	20.9	-1.3	
	Space	2500	24.9	-2.2	5610	20.4	-1.2	
					5640	19.9	-1.4	
					5670	18.2	-1.9	
					5700	17.6	-2.1	
					5730	17.4	-1.8	
					5760	16.0	-1.9	
					5790	16.0	-1.7	
					5800	16.5	-1.5	

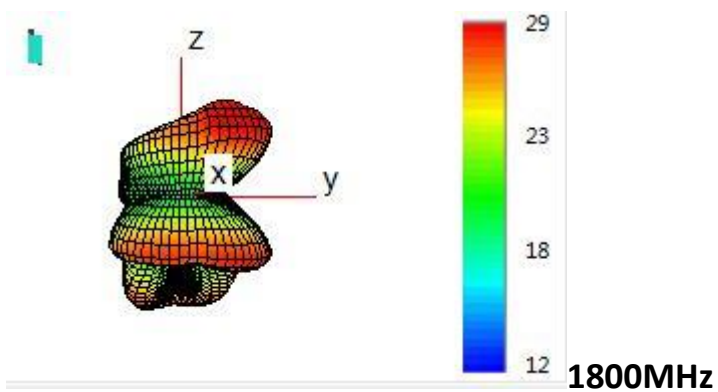
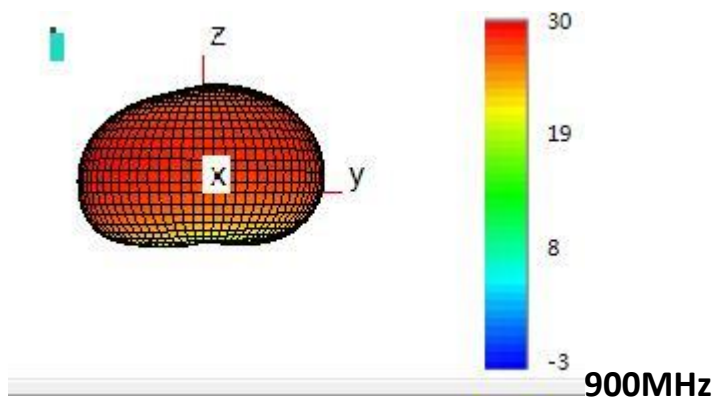
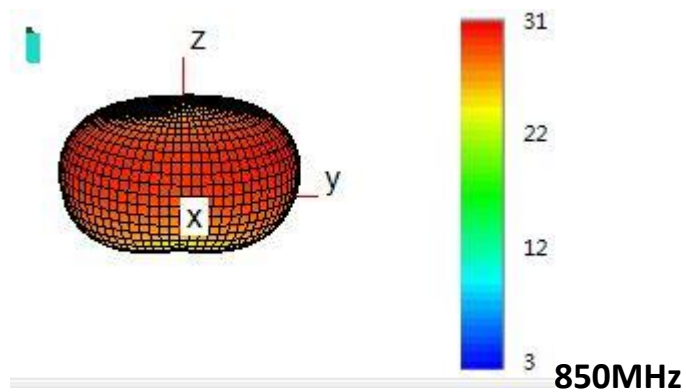
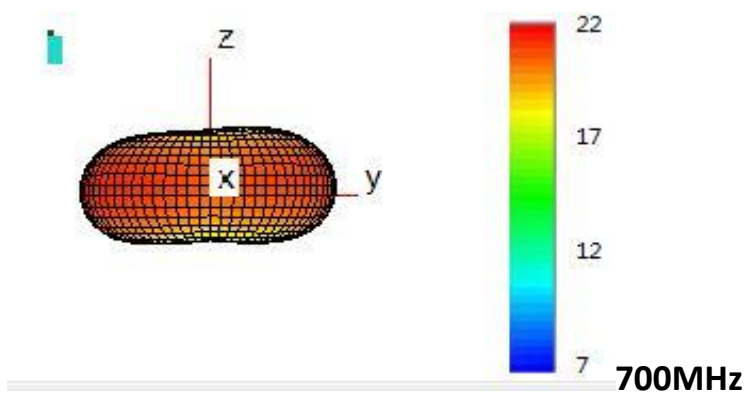
5. Equipment List

Type of Equipment	Manufacture	Model Number
Network Analyzer	Key sight	E5071C
Switch control System	GTS	RayZone1800
Software	GTS	MaxSign 100 Patten Measurement software

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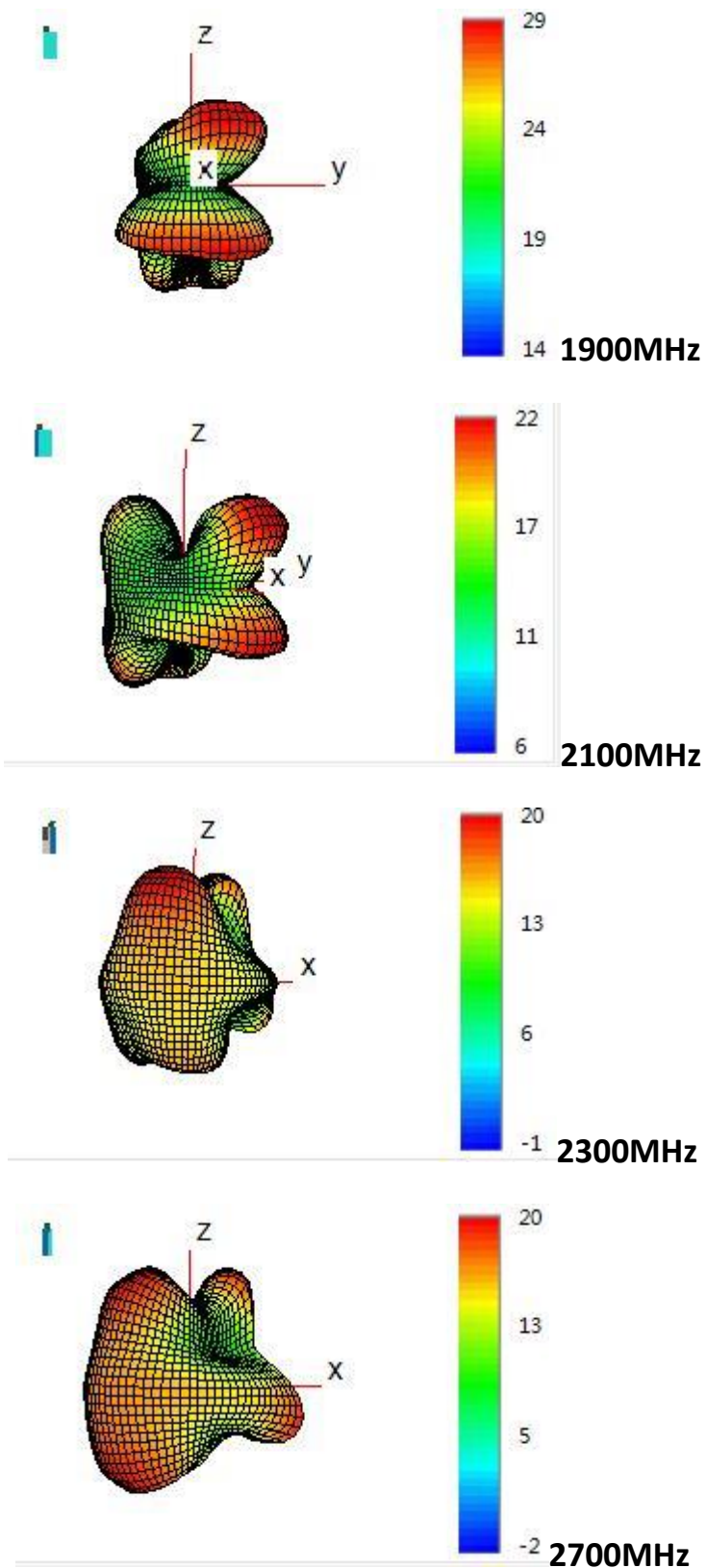
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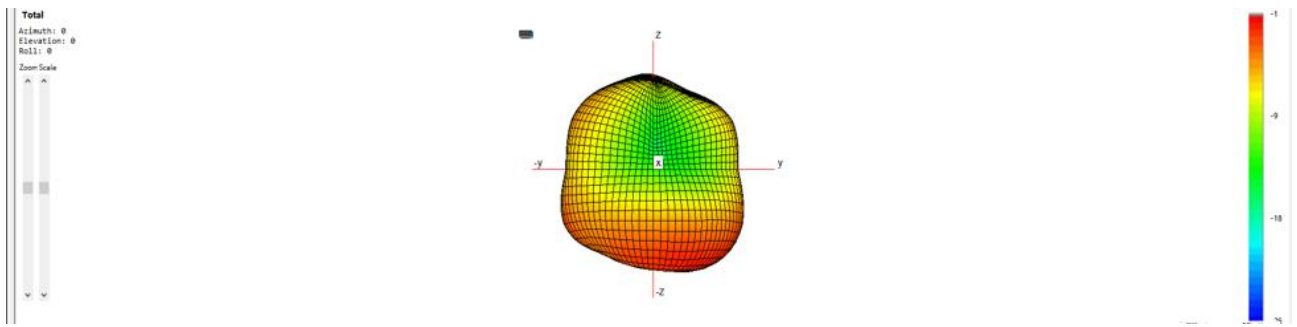
ANNEX A 3-D Patten Plots



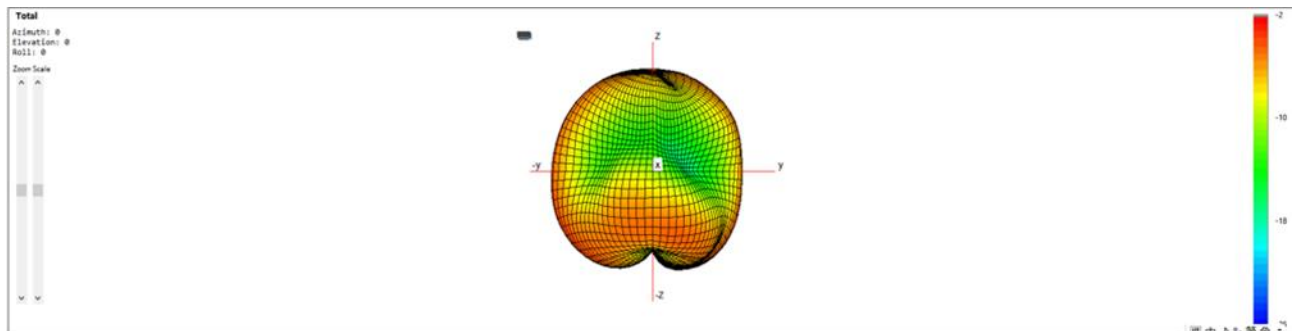
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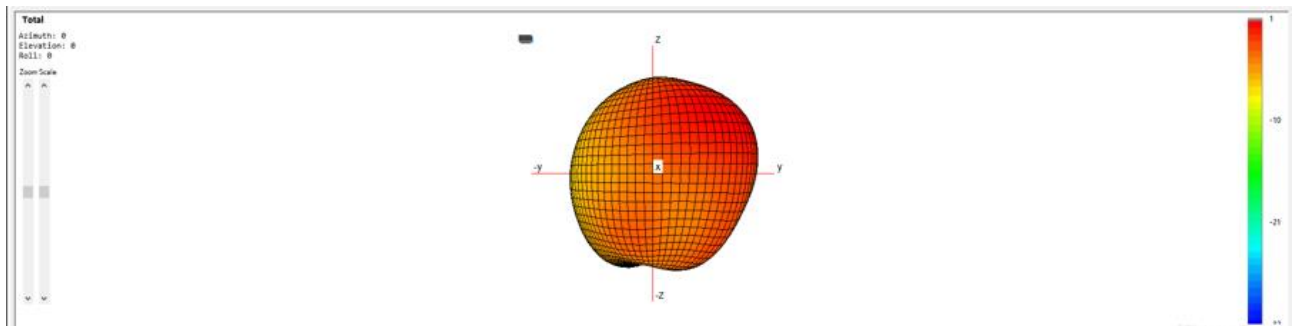




1575MHZ



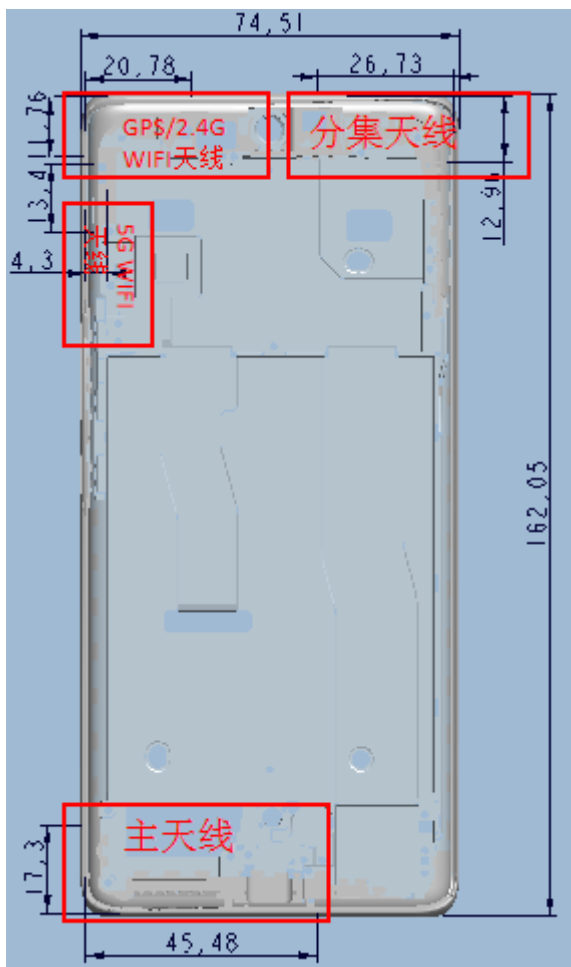
2400MHz



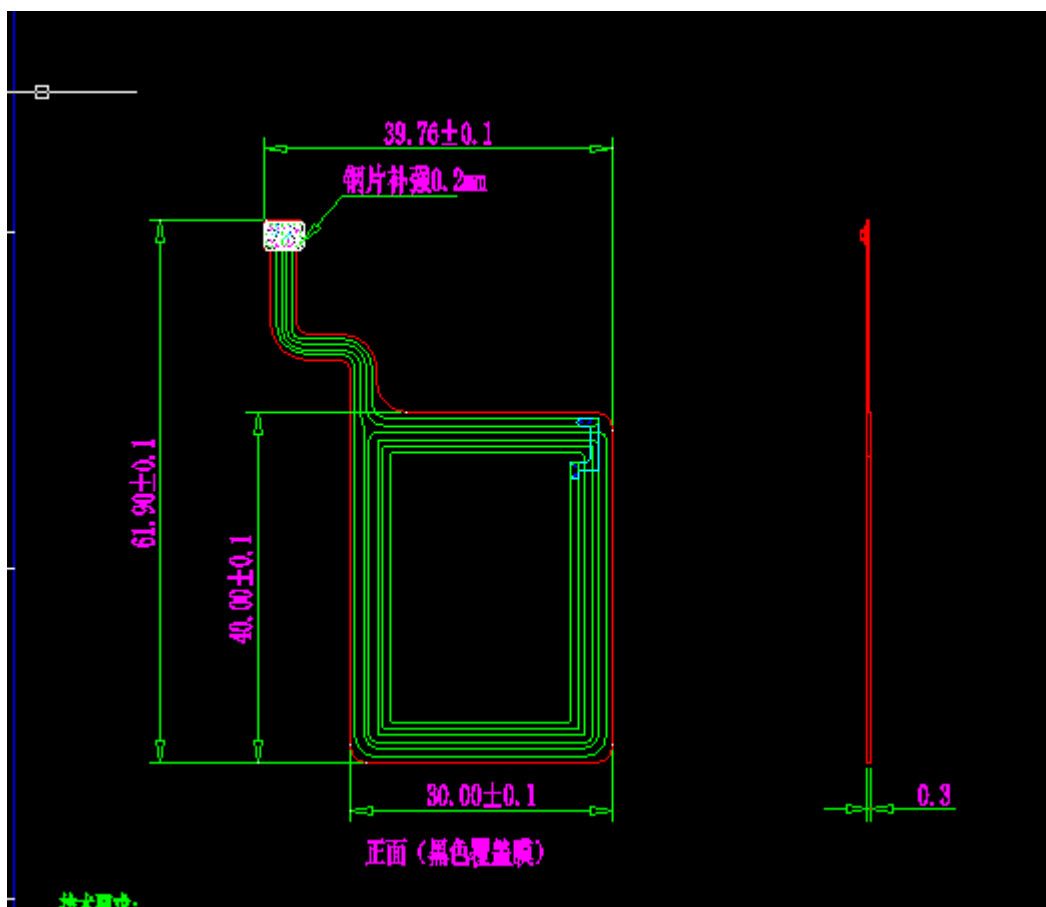
5100MHz

ANNEX B: The EUT Appearance and Test Configuration

B.1 EUT Appearance



NFC



B.2 Test Configuration

