OTA TEST REPORT

Applicant Shenzhen General Test System Co., Ltd

ProductRayZone1800

Issue DateMarch 16, 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 theRequirements as documented in this report.

Prepared by: Lunkang Yan

Approved by: GuoqingHu

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.Theresults documented in this report applyonly 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 purposesonly. This report is written to support regulatory compliance of applicable standards stated above.

1.2 Test facility

GTS1800Microwave 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℃, Max.=25℃	
Relative humidity	Min.=40%， Max.=72%	
Shield effect	0.6-7GHz	>100dB
Ground resistance	<0.5Ω	

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.

3.2Test Measurement

Spherical coordinate system

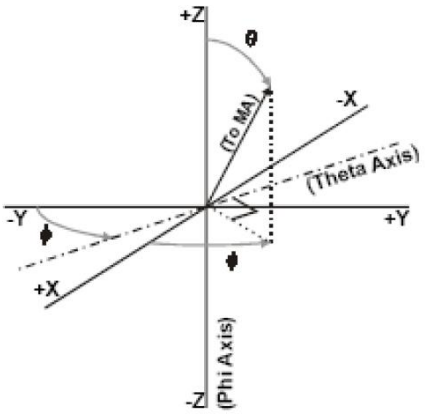
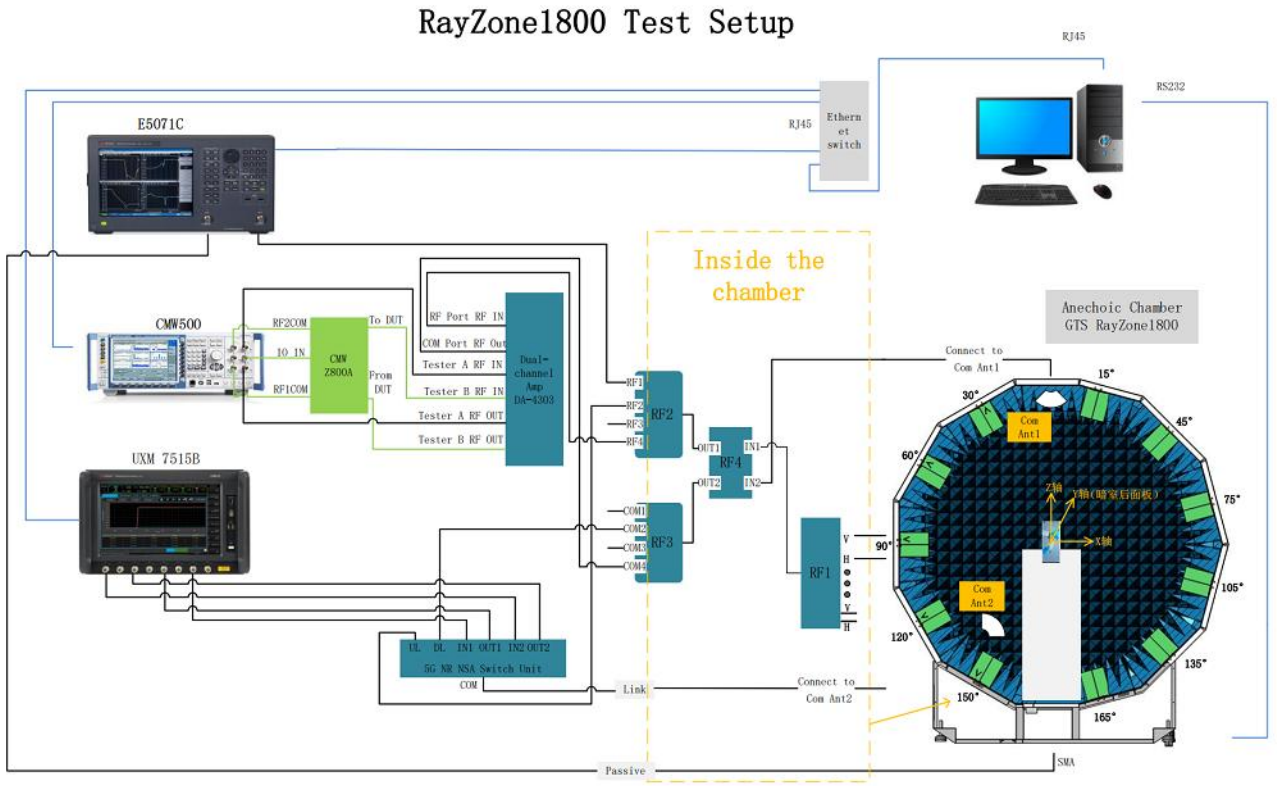


Figure 1 Test coordinate system

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

Test Setup



4. Test Results

4.1 Gain and Efficiency

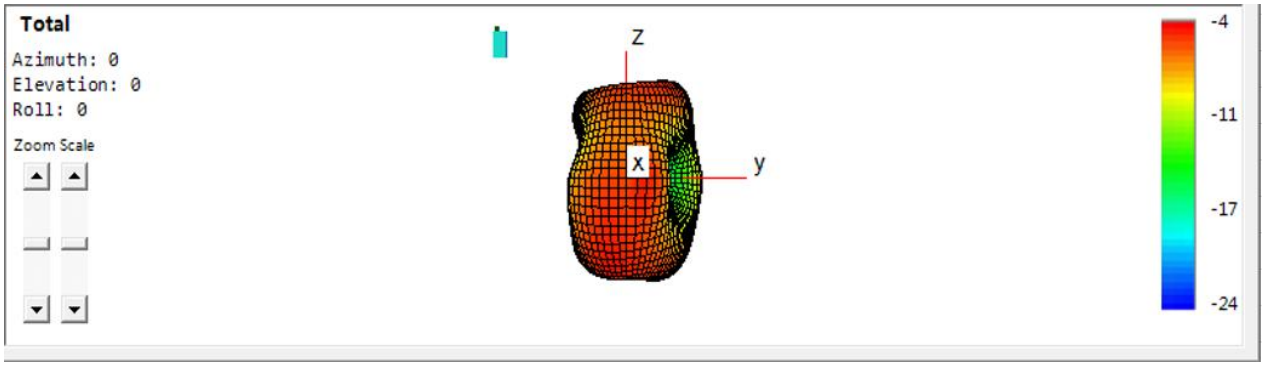
Model	Test State	Frequency (MHz)	Efficiency (%)	Gain (dBi)	Frequency (MHz)	Efficiency (%)	Gain (dBi)	Note
	Free Space	**610**	13.4	-4.5	**1700**	25.0	-1.2	
		620	14.5	-4.3	**1720**	26.6	-1.2	
		630	14.4	-4.3	**1740**	28.2	-1.0	
		640	15.5	-4.2	**1760**	29.6	-1.0	
		650	15.5	-4.2	**1780**	30.1	-1.0	
		660	15.3	-4.3	**1800**	33.8	-0.9	
		670	16.2	-4.1	**1820**	28.0	-1.0	
		680	16.5	-4.1	**1840**	28.9	-1.0	
		690	15.3	-4.3	**1860**	28.8	-1.2	
		700	16.4	-4.2	**1880**	29.4	-1.5	
		710	16.9	-4.1	**1900**	31.6	-1.3	
		720	17.3	-3.9	**1920**	33.4	-1.0	
		730	17.5	-3.9	**1940**	33.5	-1.3	
		740	17.5	-3.8	**1960**	34.1	-1.5	
		750	17.3	-3.9	**1980**	34.4	-1.6	
		760	16.6	-4.0	**2000**	34.7	-1.3	
		770	16.5	-4.1	**2020**	34.1	-1.4	
		780	15.6	-4.3	**2040**	33.5	-1.4	
		790	15.4	-4.4	**2060**	32.3	-1.4	
		800	14.6	-4.6	**2080**	30.2	-1.9	
		810	16.4	-4.0	**2100**	28.3	-2.2	
		820	17.4	-3.9	**2120**	27.9	-2.2	
		830	18.5	-3.5	**2140**	27.1	-2.2	
		840	19.6	-3.3	**2160**	25.1	-2.6	
		850	22.5	-2.8	**2180**	23.7	-2.7	
		860	21.5	-3.0	**2200**	24.8	-2.3	
		870	19.9	-3.2	**2500**	25.1	-2.4	
		880	18.4	-3.5	**2520**	24.7	-2.5	
		890	18.2	-3.6	**2540**	25.1	-2.4	
		900	17.1	-4.1	**2560**	25.7	-2.3	
		910	22.1	-2.8	**2580**	25.1	-2.3	
		920	23.7	-2.6	**2600**	24.6	-2.1	
		930	24.7	-2.4	**2620**	25.4	-1.5	
		940	24.5	-2.4	**2640**	26.4	-1.5	
		950	22.0	-2.8	**2660**	26.1	-1.5	
		960	21.6	-3.0	**2680**	26.3	-1.3	
					2700	26.6	-0.8	

Model	Test State	Frequency (MHz)	Efficiency (%)	Gain (dBi)	Frequency (MHz)	Efficiency (%)	Gain (dBi)	Note
					5260	44.5	1.7	
					5280	44.8	1.8	
					5300	47.0	2.0	
		1550	27.6	-1.8	**5320**	43.9	1.7	
		1560	31.6	-1.5	**5340**	47.8	2.1	
		1570	35.0	-1.1	**5360**	45.8	1.8	
		1580	36.4	-1.0	**5380**	47.1	1.7	
		1590	37.6	-0.9	**5400**	48.1	2.0	
		1600	37.8	-0.8	**5420**	47.2	1.8	
		2400	28.2	-2.1	**5440**	47.2	1.9	
		2410	29.1	-2.0	**5460**	46.9	1.9	
		2420	30.9	-1.9	**5480**	46.0	1.8	
		2430	32.1	-1.7	**5500**	45.2	1.8	
		2440	33.4	-1.5	**5520**	45.0	1.7	
		2450	33.9	-1.4	**5540**	44.3	1.7	
	Free Space	**2460**	34.2	-1.5	**5560**	46.7	2.0	
		2470	34.7	-1.3	**5580**	46.0	2.0	
		2480	34.9	-1.3	**5600**	43.5	1.6	
		2490	34.5	-1.3	**5620**	45.2	1.8	
		2500	33.9	-1.7	**5640**	41.7	1.4	
		5100	34.7	0.4	**5660**	44.0	1.8	
		5120	35.7	0.6	**5680**	42.4	1.6	
		5140	35.5	0.6	**5700**	42.3	1.5	
		5160	38.3	0.9	**5720**	41.4	1.4	
		5180	38.7	1.0	**5740**	41.8	1.4	
		5200	38.6	1.0	**5760**	39.3	1.2	
		5220	44.1	1.6	**5780**	39.5	1.3	
		5240	39.7	1.2	**5800**	40.3	1.6	

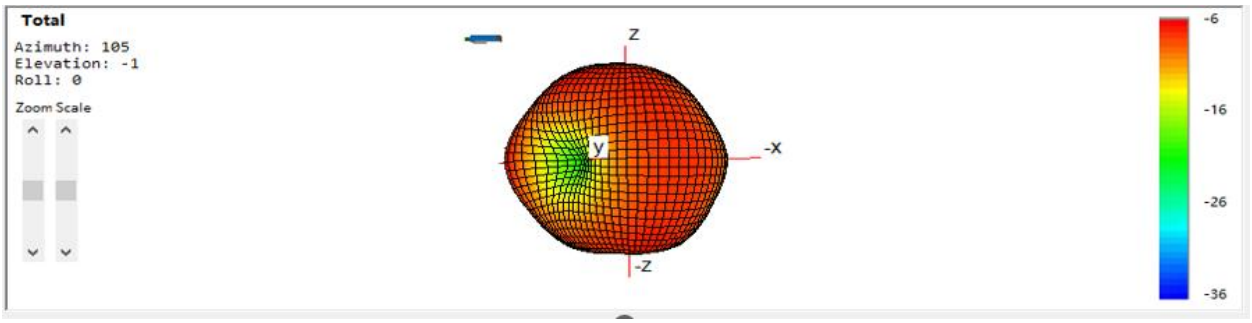
5. Equipment List

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

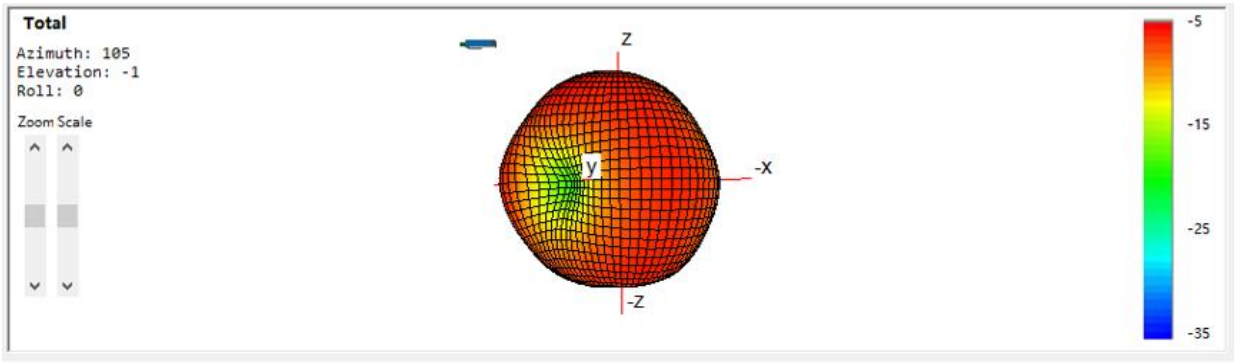
ANNEX A 3-D Patten Plots



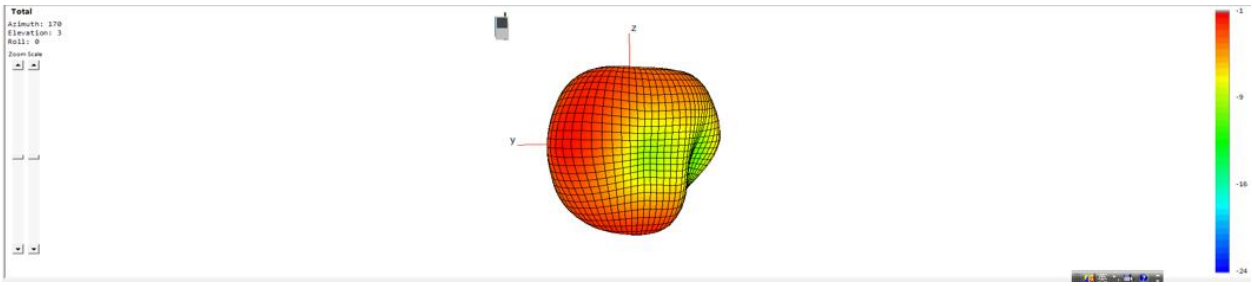
700MHz



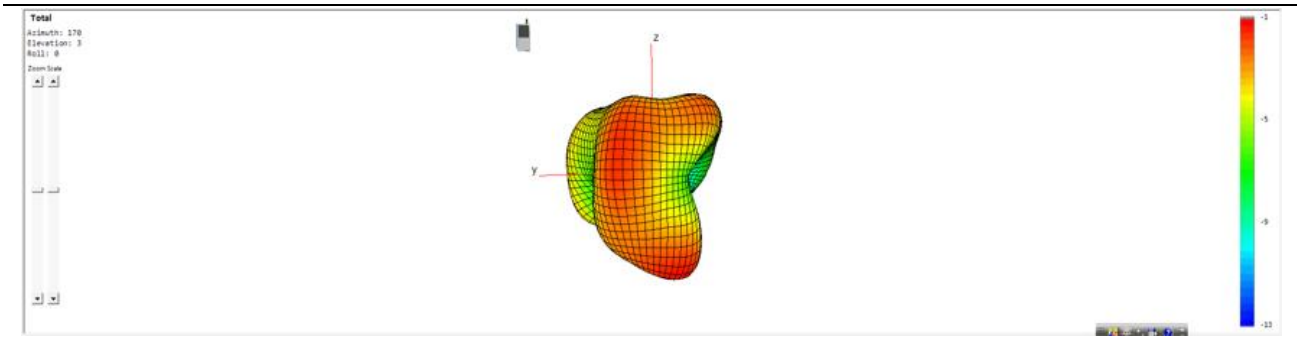
850MHz



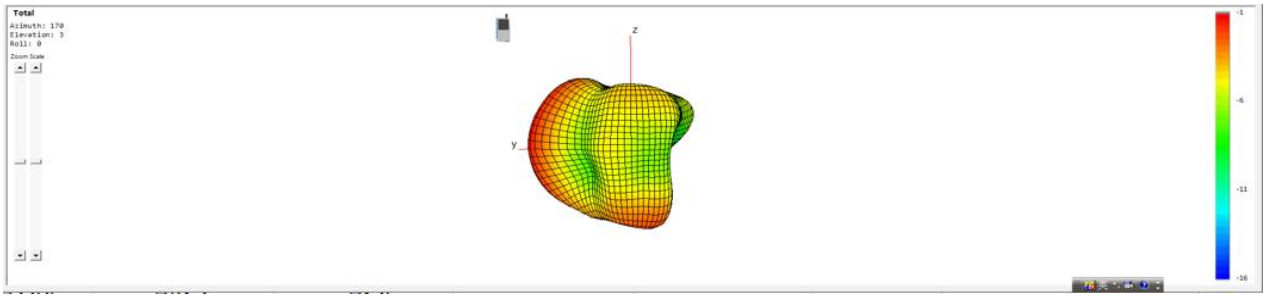
900MHz



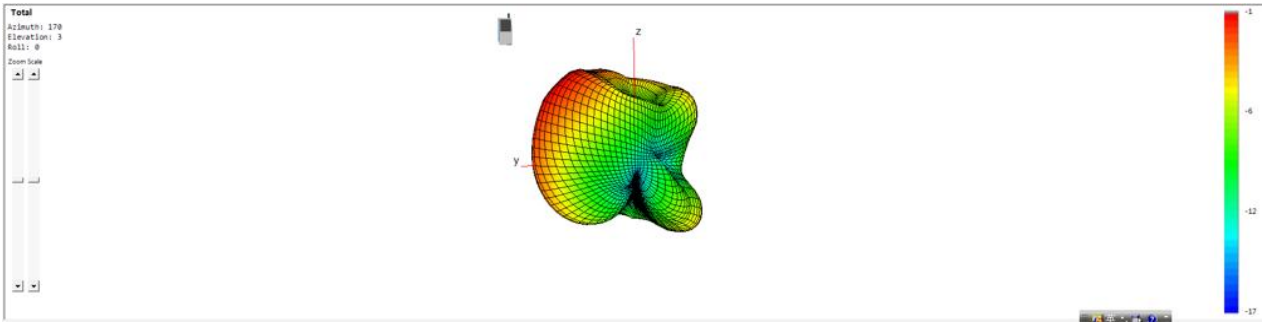
1800MHz



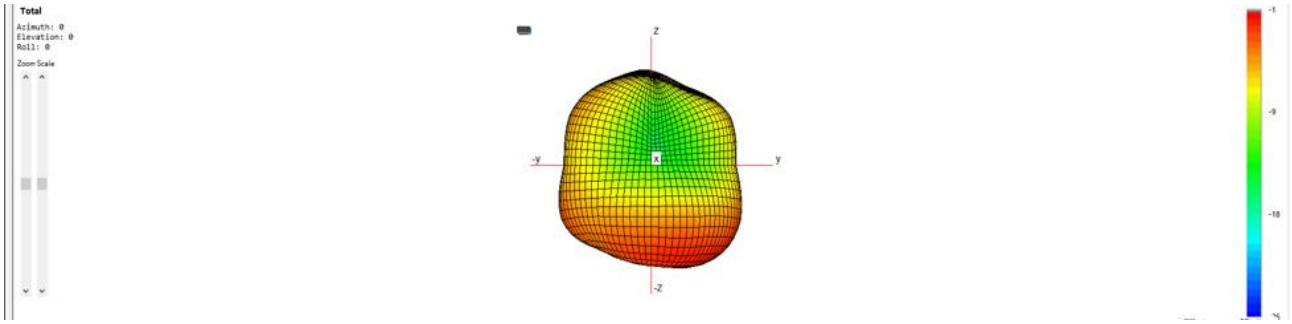
1900MHz



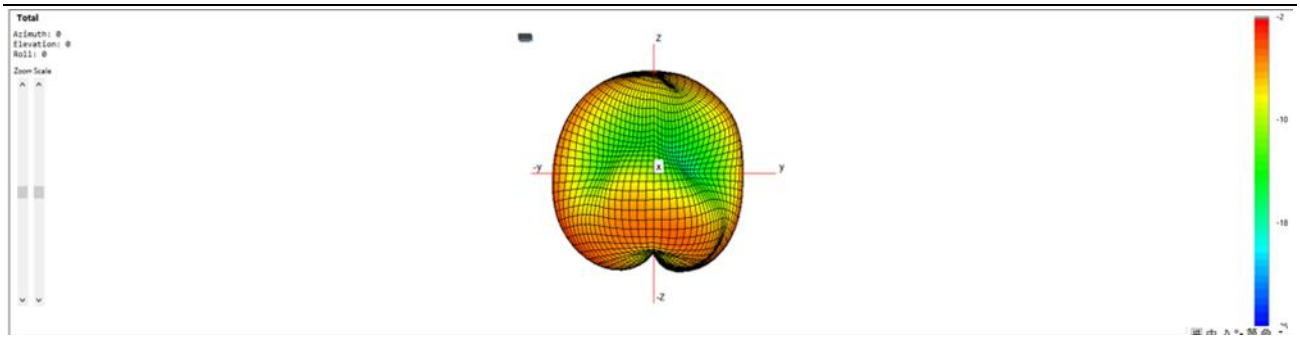
2100MHz



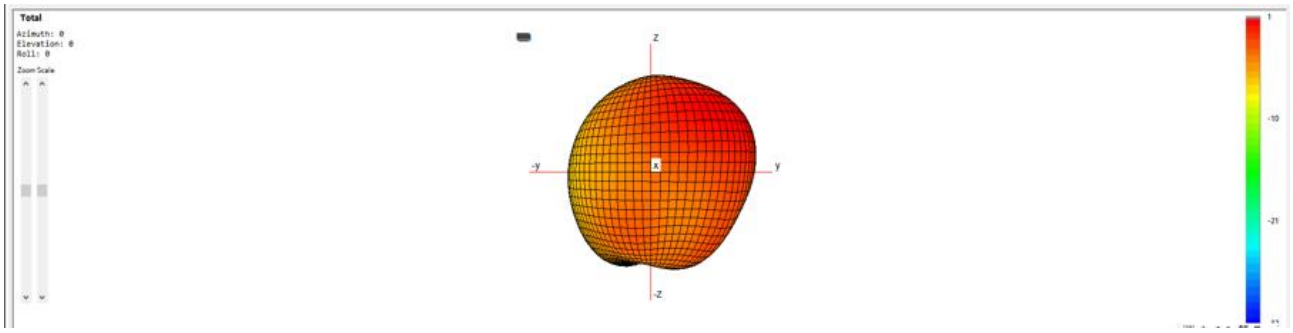
2700MHz



1575MHz



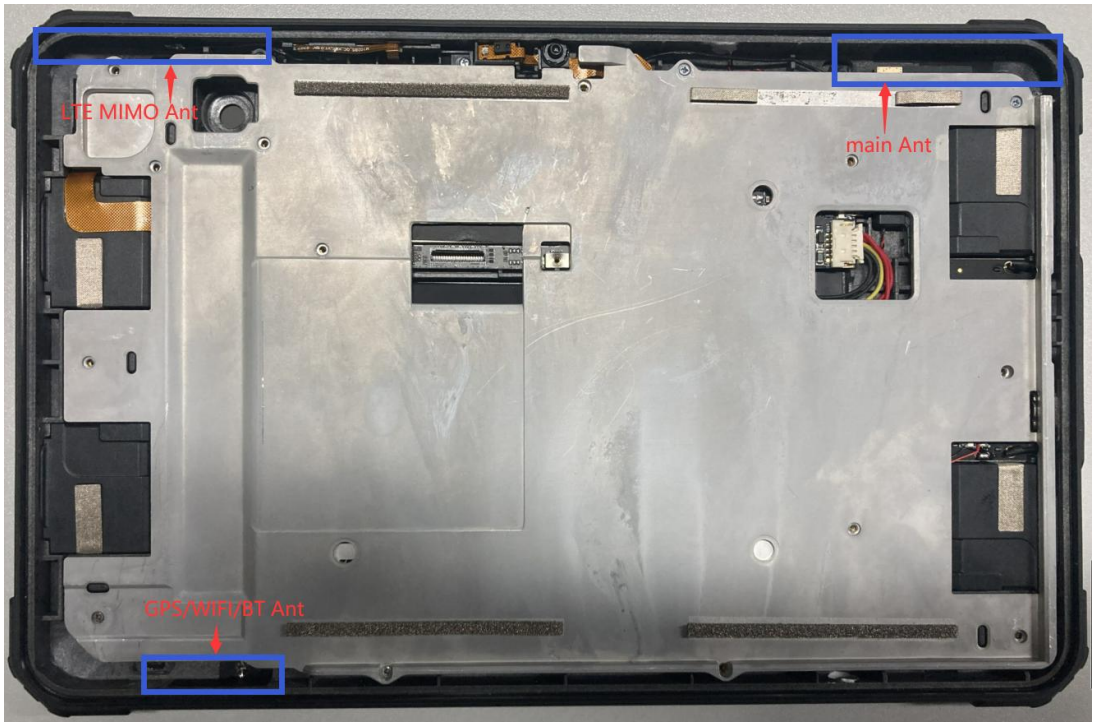
2400MHz

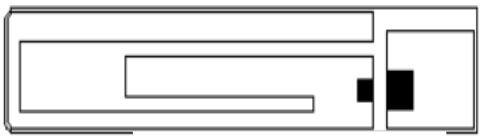


5100MHz

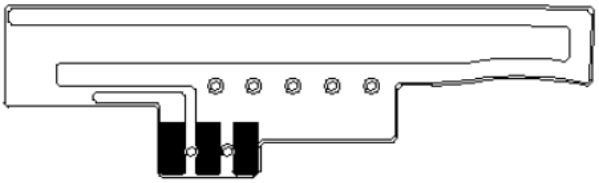
ANNEX B: The EUT Appearance and Test Configuration

B.1 EUT Appearance

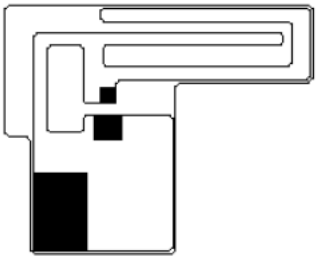




36*7mm



45*14mm



24*19mm

B.2 Test Configuration