OTA TEST REPORT

Applicant Shenzhen General Test System Co., Ltd

ProductRayZone1800

Issue DateJune 14, 2024

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: Xiaoying 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.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	600MHz-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

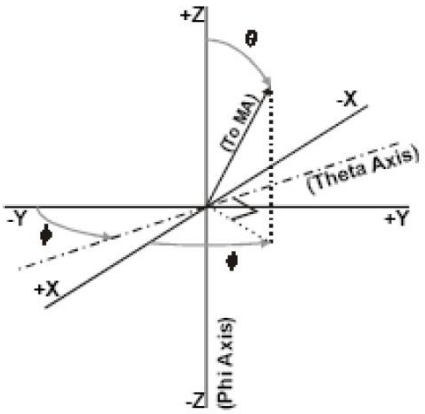
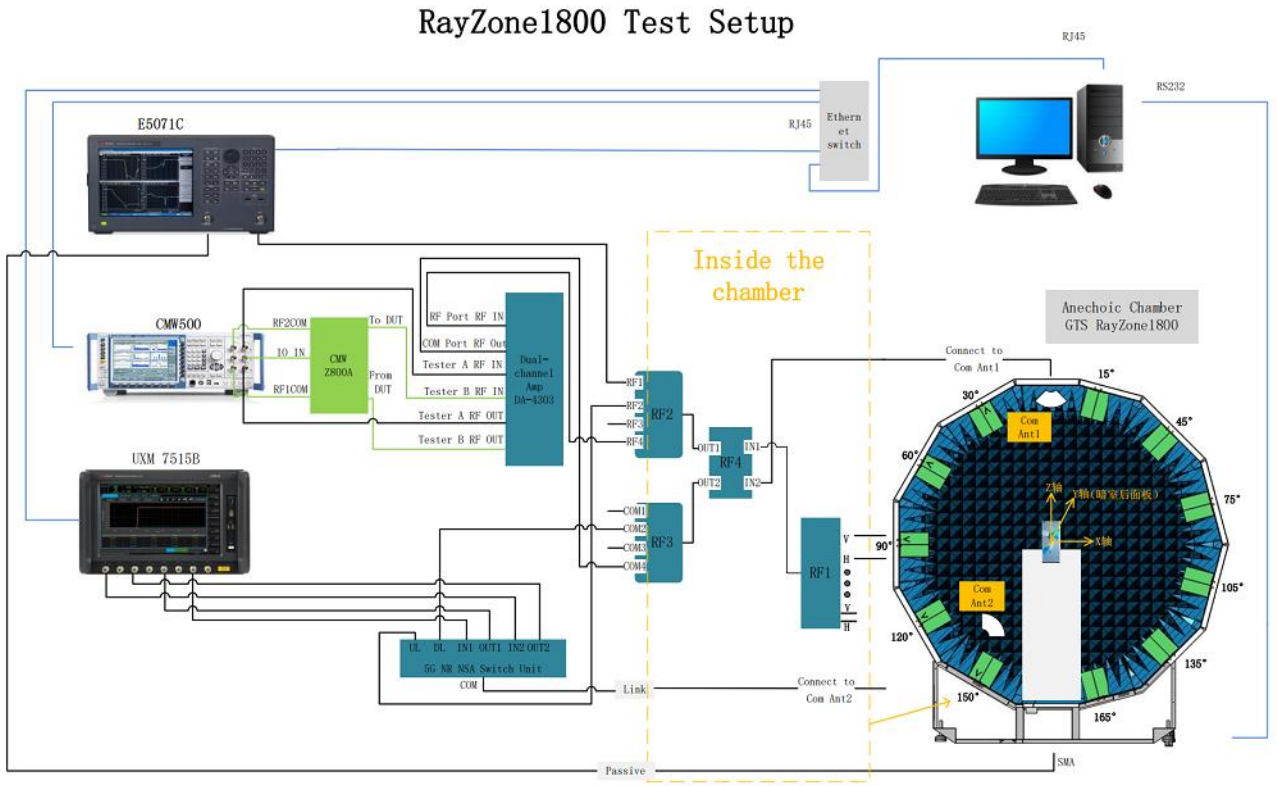


Figure 1 Test coordinate system

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	620	14.2	-6.5	1820	27.2	-0.3	
		630	14.5	-6.3	1840	27.7	-0.4	
		640	15.0	-5.9	1860	27.9	-0.3	
		650	15.5	-5.5	1880	29.4	-0.3	
		660	15.9	-5.1	1900	30.6	-0.2	
		670	15.4	-5.1	1920	32.3	-0.1	
		680	14.8	-6.1	1940	32.2	-0.5	
		690	14.4	-6.4	1960	33.2	-0.4	
		700	14.5	-6.3	1980	33.7	-0.7	
		710	14.7	-6.0	2000	34.3	-1.0	
		720	17.2	-5.2	2020	34.4	-1.3	
		730	18.3	-4.5	2040	32.3	-1.8	
		740	17.7	-4.4	2060	29.5	-1.5	
		750	16.9	-5.3	2080	25.6	-1.9	
		760	15.6	-5.5	2100	24.2	-1.9	
		770	14.9	-6.0	2120	23.1	-2.0	
		780	14.7	-6.3	2140	23.4	-1.7	
		790	14.4	-6.4	2160	24.0	-1.8	
		800	13.8	-6.6	2180	24.7	-2.0	
		810	15.7	-5.5	2200	24.9	-1.9	
		820	16.9	-5.0	2300	24.5	-1.8	
		830	17.8	-4.4	2320	24.3	-1.8	
		840	18.6	-4.2	2340	25.4	-1.6	
		850	19.8	-3.7	2360	26.4	-1.2	
		860	20.7	-3.5	2380	26.5	-1.2	
		870	21.8	-3.2	2400	26.0	-1.3	
		880	17.8	-4.0	2420	26.3	-1.6	
		890	20.2	-3.6	2440	26.2	-1.5	
		900	21.4	-2.9	2460	25.8	-1.4	
		910	22.0	-2.4	2480	26.3	-1.5	
		920	21.8	-2.6	2500	25.4	-1.6	
		930	20.3	-3.4	2520	25.4	-1.6	
		940	18.7	-3.8	2540	26.0	-1.3	
		950	17.3	-4.1	2560	26.3	-1.2	
		960	15.9	-5.4	2580	28.3	-0.9	
		1700	23.9	-1.5	2600	27.0	-1.0	
		1720	25.5	-1.1	2620	26.6	-1.0	
		1740	26.9	-0.9	2640	26.6	-1.1	
		1760	27.5	-0.8	2660	26.2	-0.9	
		1780	27.1	-0.9	2680	26.8	-1.2	
		1800	27.6	-0.7	2700	25.7	-1.4	

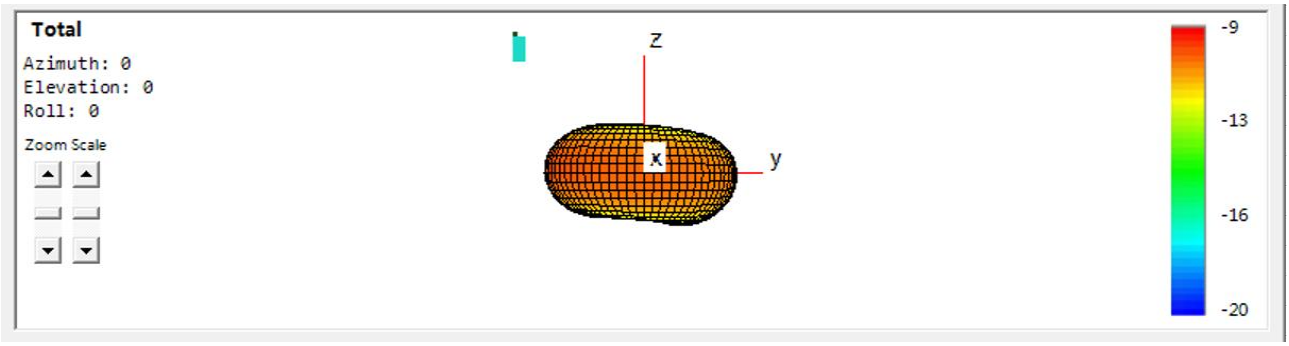
Model	Test State	Frequency (MHz)	Efficiency (%)	Gain (dBi)	Frequency (MHz)	Efficiency (%)	Gain (dBi)	Note
	Free Space	3300	30.2	-0.2				
		3310	30.7	-0.2				
		3320	30.9	-0.2				
		3330	30.4	-0.2				
		3340	31.6	-0.1				
		3350	32.3	-0.1				
		3360	32.5	-0.1				
		3370	33.3	-0.1				
		3380	33.7	-0.1				
		3390	34.5	0.2				
		4000	34.4	0.2				
		4010	32.3	0.1				
		4020	31.8	-0.2				
		4030	31.6	-0.2				
		4040	31.3	-0.2				
		4050	33.1	-0.1				
		4060	33.4	-0.1				
		4070	34.0	-0.1				
		4080	34.7	-0.2				
		4090	34.9	-0.3				
		4100	34.5	-0.4				
		4120	34.3	-0.7				
		4130	35.4	-0.8				
		4140	36.4	-0.6				
		4150	36.5	-0.7				
		4160	34.0	-1.0				
		4170	33.3	-1.0				
		4180	32.2	-1.0				
		4190	31.8	-1.1				
		4200	30.3	-1.2				

Model	Test State	Frequency (MHz)	Efficiency (%)	Gain (dBi)	Frequency (MHz)	Efficiency (%)	Gain (dBi)	Note
	Free Space	1550	36.0	-0.6	5320	44.1	1.8	
		1560	37.2	-0.6	5340	47.9	2.2	
		1570	38.9	-0.2	5360	46.0	2.0	
		1580	38.3	-0.4	5380	46.8	2.3	
		1590	38.8	0.0	5400	48.1	2.5	
		1600	38.7	-0.3	5420	46.9	2.3	
		2400	25.2	-1.6	5440	46.7	2.4	
		2410	27.3	-1.3	5460	45.5	2.3	
		2420	29.4	-1.2	5480	45.4	2.7	
		2430	30.4	-0.9	5500	44.8	2.7	
		2440	31.4	-0.9	5520	44.5	2.9	
		2450	33.3	-0.8	5540	43.9	2.7	
		2460	33.9	-0.8	5560	45.5	2.8	
		2470	33.6	-0.6	5580	45.0	2.8	
		2480	34.1	-0.6	5600	43.0	2.7	
		2490	33.6	-0.9	5620	44.8	3.1	
		2500	33.3	-0.9	5640	41.6	2.8	
		5100	41.2	1.6	5660	43.3	3.0	
		5120	47.8	2.0	5680	42.2	2.8	
		5140	42.1	1.4	5700	41.7	2.8	
		5160	45.1	1.6	5720	41.9	2.8	
		5180	47.0	1.9	5740	42.2	3.0	
		5200	44.5	1.7	5760	40.7	2.8	
		5220	46.3	2.0	5780	40.6	2.9	
		5240	48.0	2.1	5800	42.1	2.9	
		5260	45.4	2.0				
		5280	45.3	2.0				
		5300	46.9	2.1				

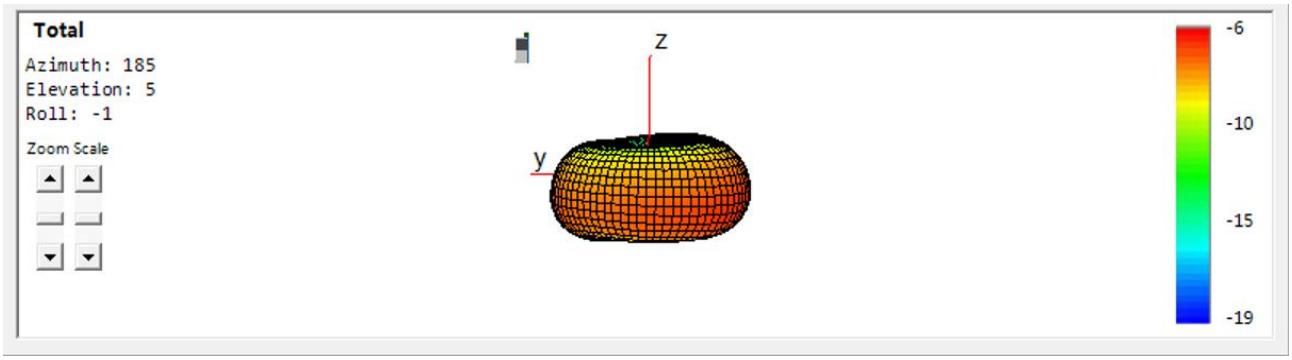
5. Equipment List

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

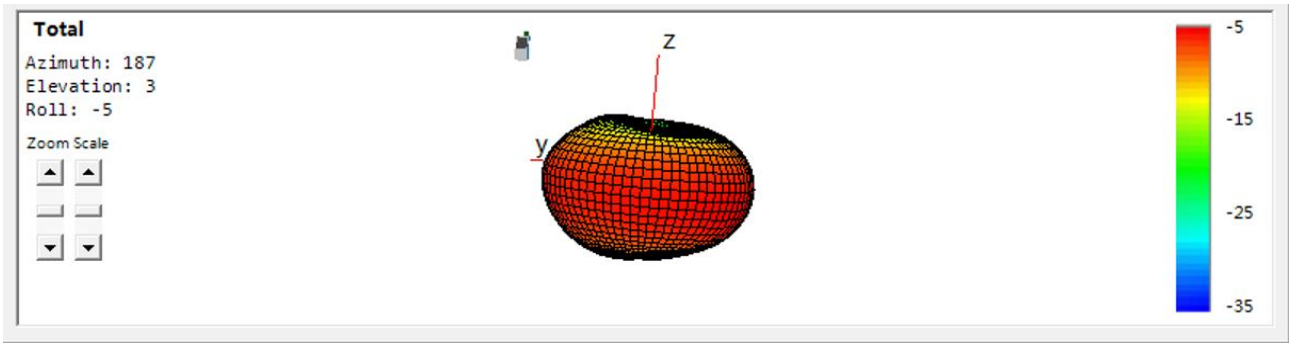
ANNEX A 3-D Patten Plots



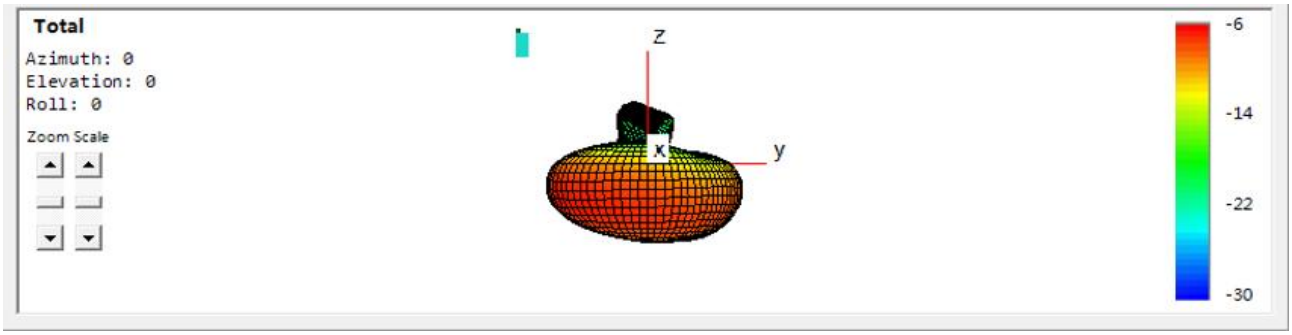
620MHz



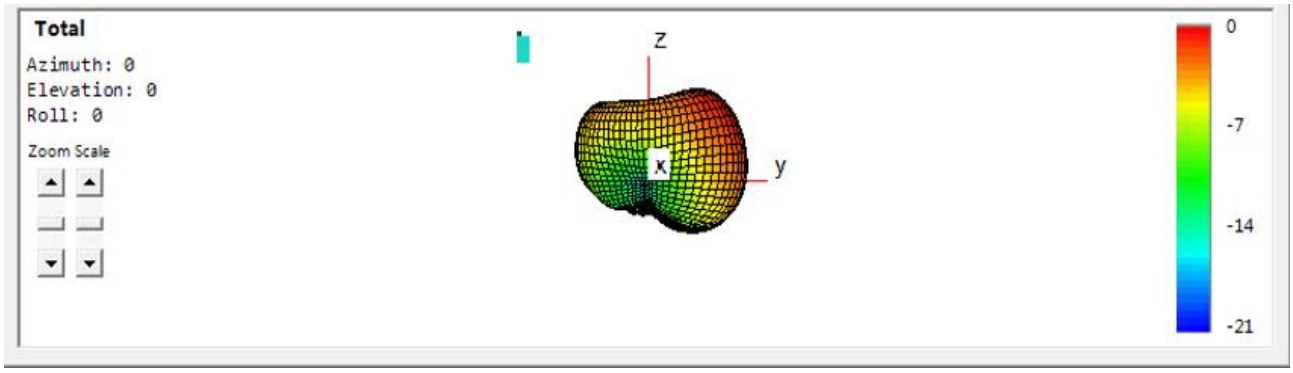
700MHz



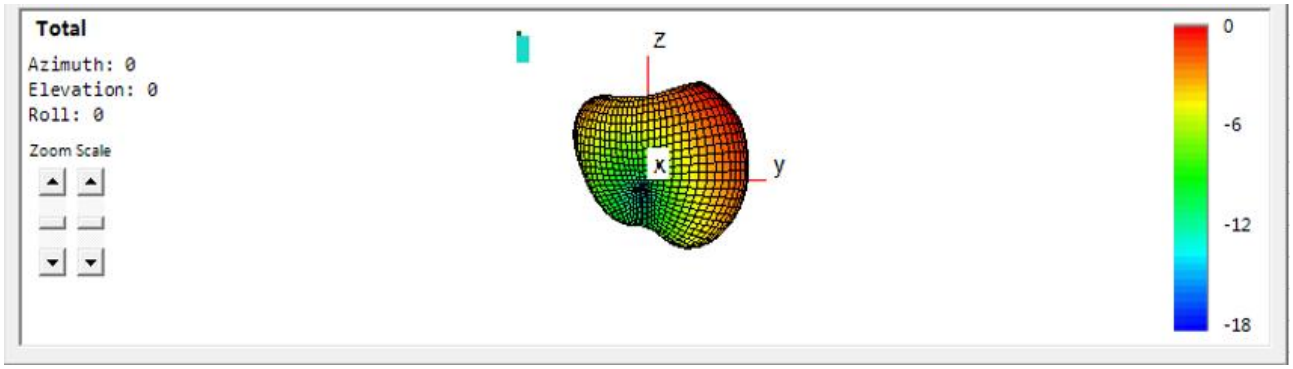
850MHz



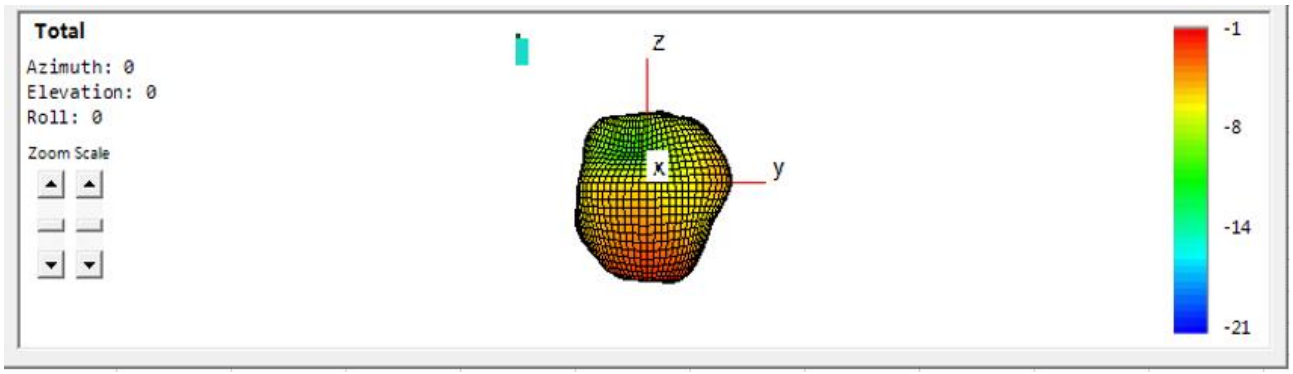
900MHz



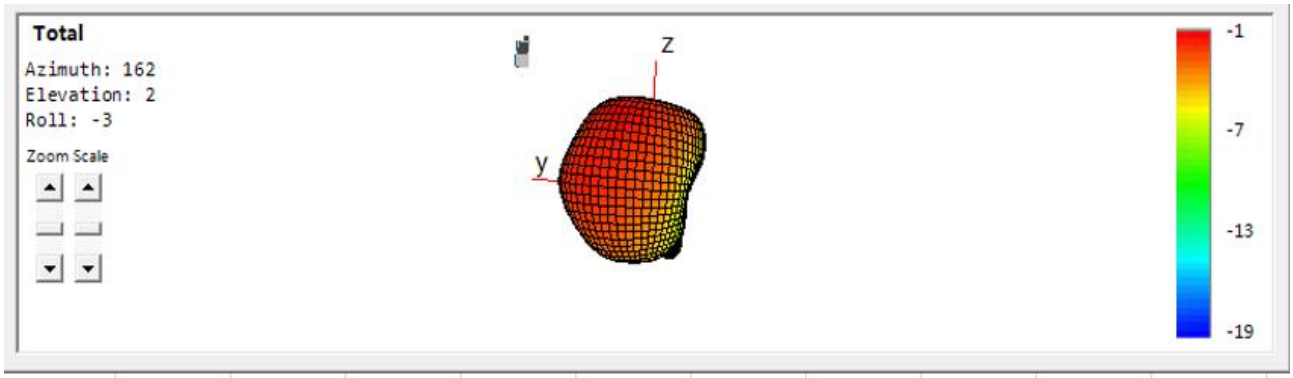
1800MHz



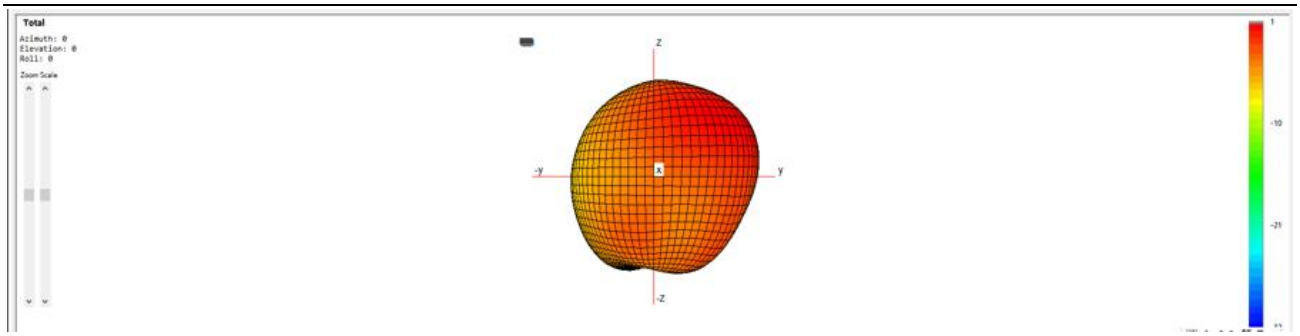
1900MHz



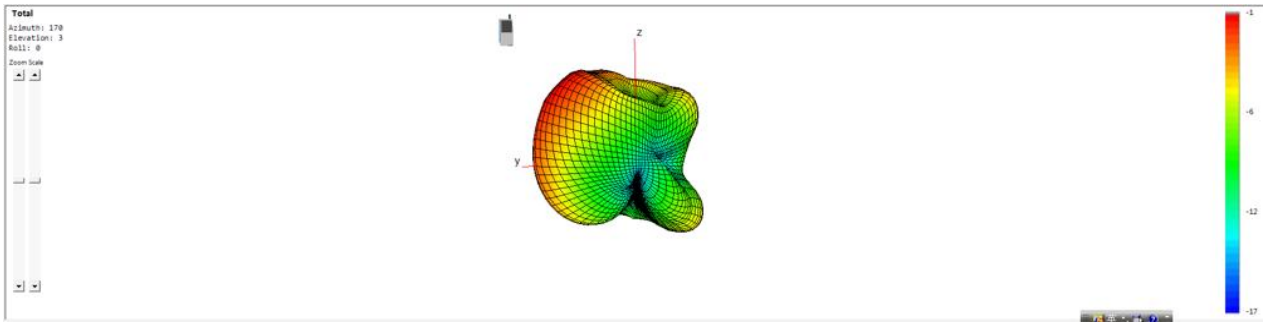
2100MHz



2700MHz

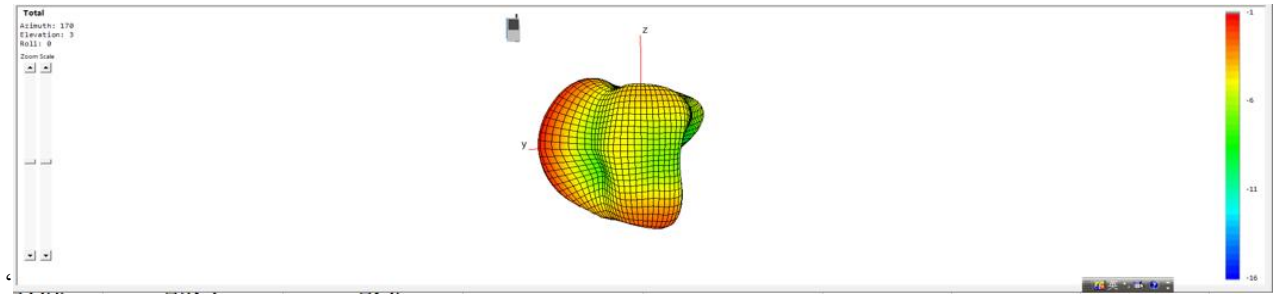


3300MHz



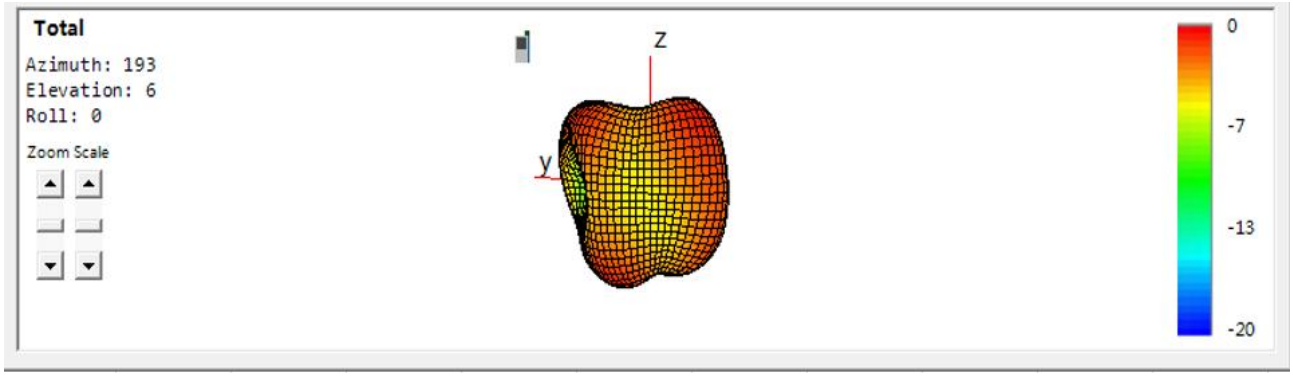
3800MHz

\

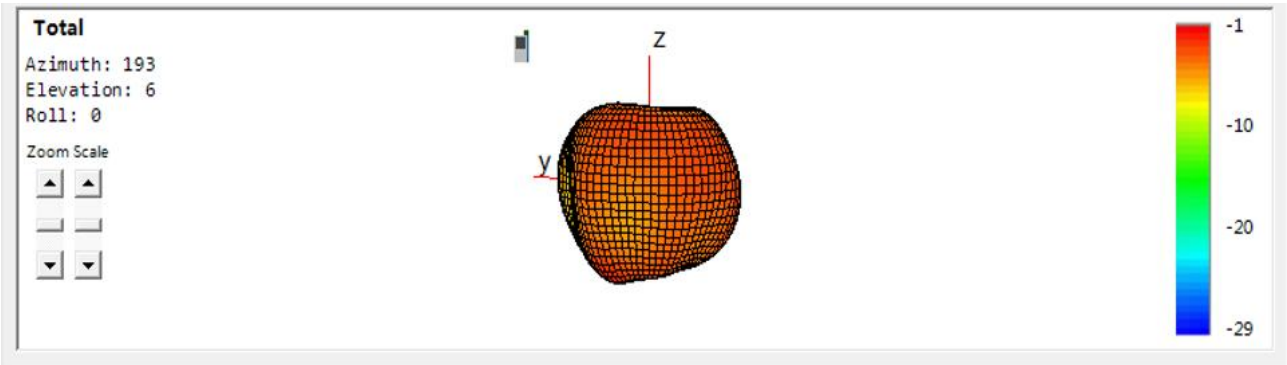


[piytrew

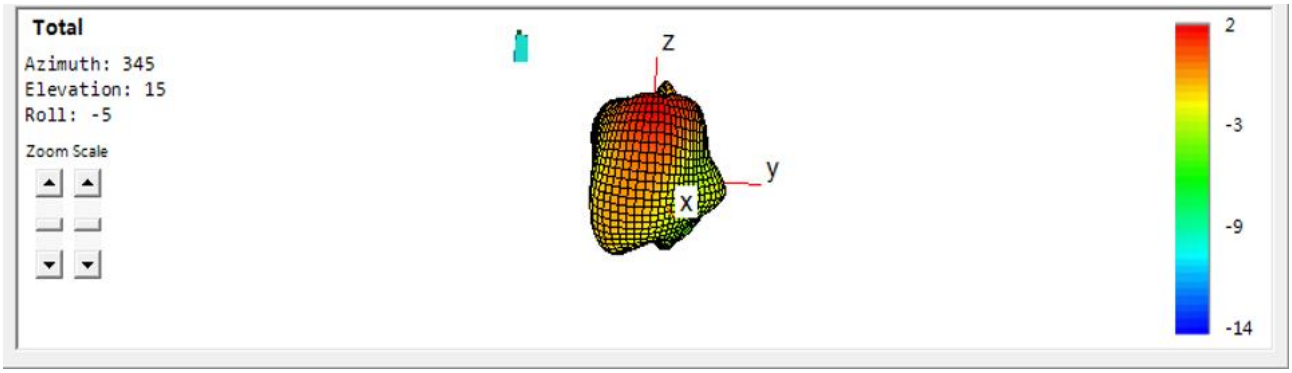
4200MHz



1575MHz



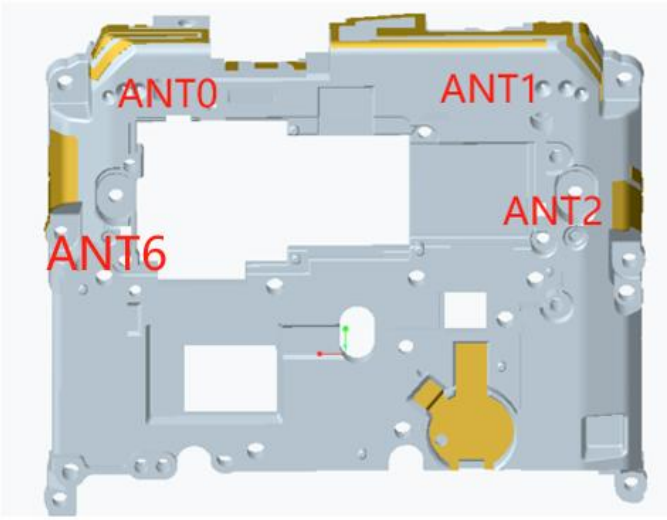
2400MHz

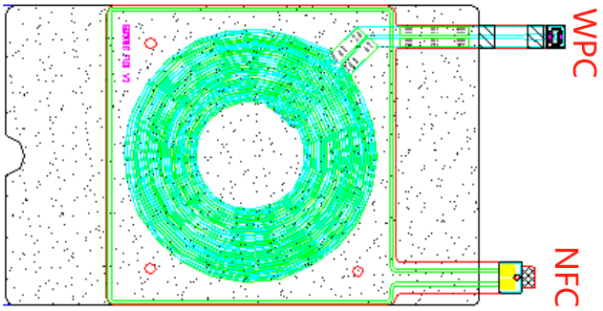


5100MHz

ANNEX B: The EUT Appearance and Test Configuration

B.1 EUT Appearance





B.2 Test Configuration