

OTA TEST REPORT

Applicant Shenzhen General Test System Co., Ltd

Product RayZone1800

Issue Date January 8, 2025

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: Rui Jiexie

Approved by: Siwen Lv

Shenzhen Fu Bang Wireless Technology Co., Ltd.

Room 302, Lianjian Industry Park, 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: RuiJiexie

Telephone: 13259980153

E-mail: 1822707889@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	700MHz-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

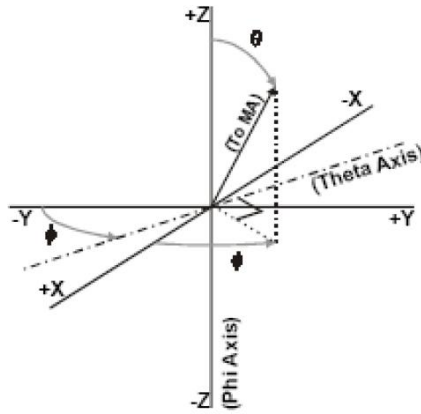
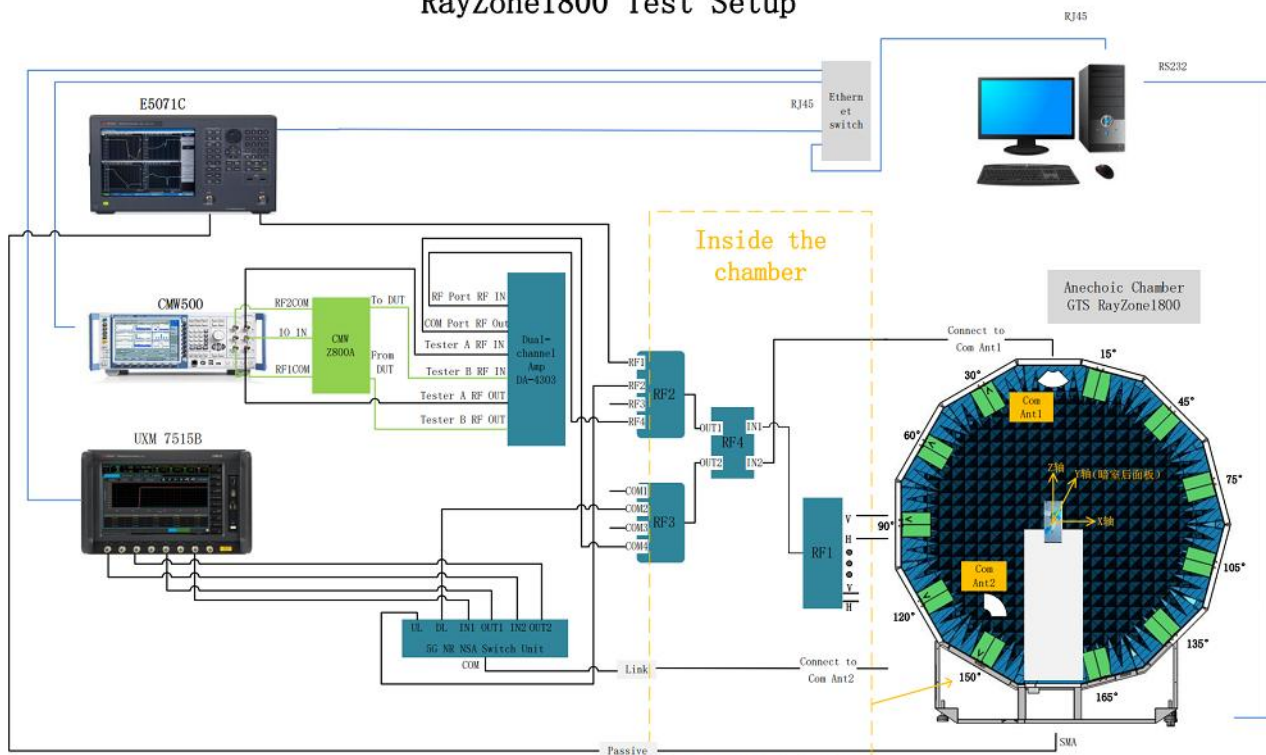


Figure 1 Test coordinate system

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 State	Frequency (MHz)	Efficiency (%)	Gain (dBi)	Frequency (MHz)	Efficiency (%)	Gain (dBi)	Note
	Free Space	700	13.42	-5.1	1700	29.54	-1.04	
		710	14.24	-4.81	1720	26.16	-1.45	
		720	15.55	-4.34	1740	29.63	-1.13	
		730	16.52	-3.93	1760	32.67	-1.02	
		740	17.22	-3.75	1780	31.53	-0.97	
		750	17.6	-3.7	1800	28.82	-1.29	
		760	17.62	-3.6	1820	28.26	-1.43	
		770	16.97	-3.76	1840	27.33	-1.64	
		780	16.71	-3.85	1860	28.5	-1.19	
		790	20.19	-1.99	1880	28.63	-1.39	
		800	19.54	-2.26	1900	28.25	-1.1	
		810	18.99	-2.73	1920	26.35	-0.62	
		820	19.79	-2.66	1940	26.22	-0.08	
		830	20.63	-2.49	1960	27.28	0.27	
		840	20.64	-2.4	1980	27.79	0.06	
		850	19.59	-2.59	2000	28.13	-0.33	
		860	17.6	-3.19	2020	28.14	-0.5	
		870	15.45	-3.95	2040	26.6	-0.36	
		880	16.73	-3.25	2060	25.39	-0.16	
		890	19.33	-2.78	2080	24.83	0.21	
		900	19.76	-2.6	2100	23.78	0.38	
		910	19.4	-2.54	2120	21.72	0.26	
		920	17.6	-3.16	2140	21.82	0.14	
		930	15.73	-4.35	2160	22.15	-0.31	
		940	13.75	-4.9	2180	20.39	-1.03	
		950	11.6	-5.58	2200	19.8	-1.37	
		960	9.88	-6.36	2500	20.07	-1.32	
					2520	19.74	-1.47	
					2540	19.73	-1.56	
					2560	21.11	-1.41	
					2580	21.09	-1.35	
					2600	21.19	-1.21	
					2620	22.95	-0.81	
					2640	23.85	-0.4	
					2660	23.82	-0.8	
					2680	23.13	-1.02	
					2700	22.44	-1.07	

Model	Test State	Frequency (MHz)	Efficiency (%)	Gain (dBi)	Frequency (MHz)	Efficiency (%)	Gain (dBi)	Note
	Free Space	1550	50.86	0.49	5300	29.05	-0.57	
		1560	49.73	0.41	5320	27.69	-0.75	
		1570	48.02	0.39	5340	27.77	-0.59	
		1580	48.27	0.51	5360	28.02	-0.53	
		1590	48.81	0.6	5380	28.23	-0.53	
		1600	49.08	0.64	5400	28.11	-0.65	
					5420	29.43	-0.44	
		2400	43.47	0.63	5440	29.53	-0.28	
		2410	43.79	0.68	5460	29.85	0.17	
		2420	43.5	0.87	5480	29.89	0.41	
		2430	43.74	0.9	5500	29.25	0.73	
		2440	43.26	1.02	5520	29.1	0.84	
		2450	42.48	1.05	5540	31.7	1.36	
		2460	41.03	1.01	5560	31.57	1.26	
		2470	40.63	1	5580	32.46	1.6	
		2480	40.78	0.97	5600	31.84	1.45	
		2490	40.73	1.01	5620	31.49	1.32	
		2500	39.53	1	5640	31.58	1.01	
		5100	31.61	0.25	5660	30.39	0.78	
		5120	31.52	0.42	5680	30.49	0.46	
		5140	30.19	0.21	5700	29.72	0.35	
		5160	32.08	0.46	5720	29.51	0.4	
		5180	30.59	-0.05	5740	26.09	-0.1	
		5200	31.4	-0.08	5760	26.59	-0.15	
		5220	33.58	-0.04	5780	25.65	-0.03	
		5240	32.14	-0.23	5800	26.88	0.31	
		5260	31.05	-0.59				
		5280	31.28	-0.44				

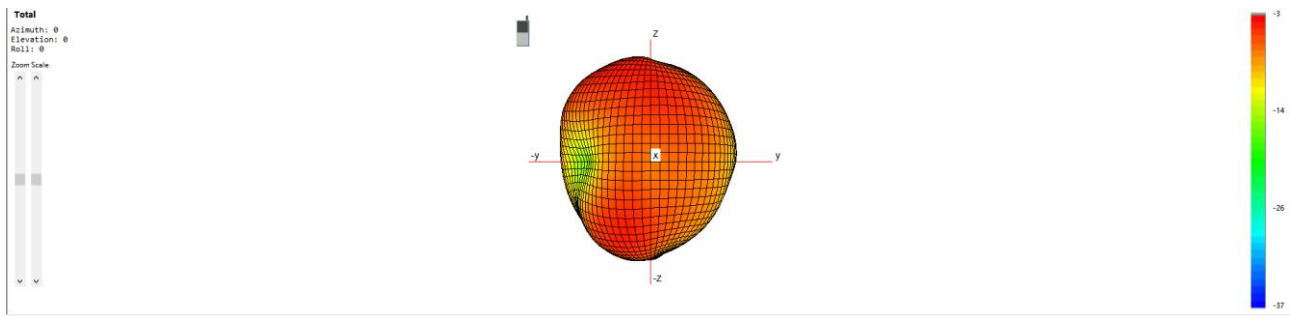
5. Equipment List

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

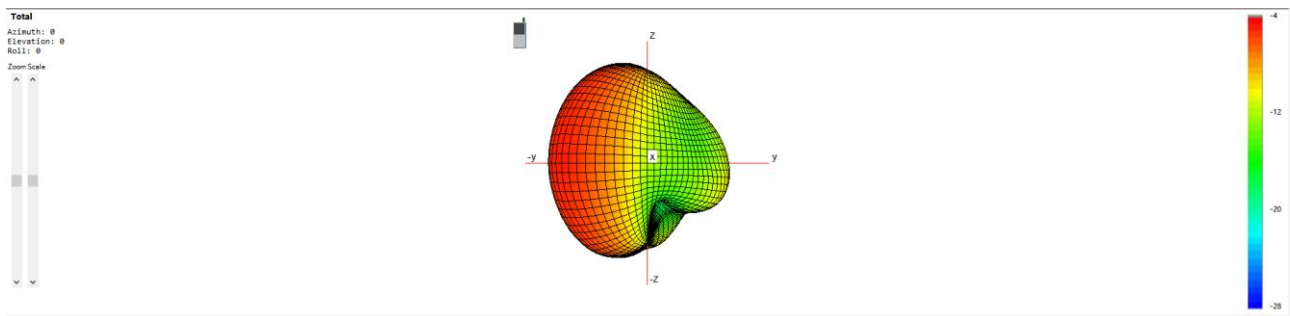
ANNEX A 3-D Patten Plots

Shenzhen Fu Bang Wireless Technology Co., Ltd.

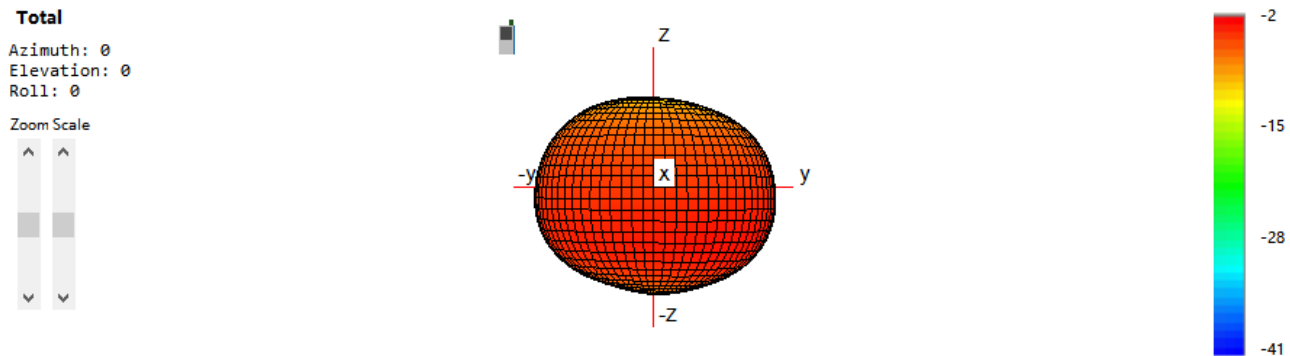
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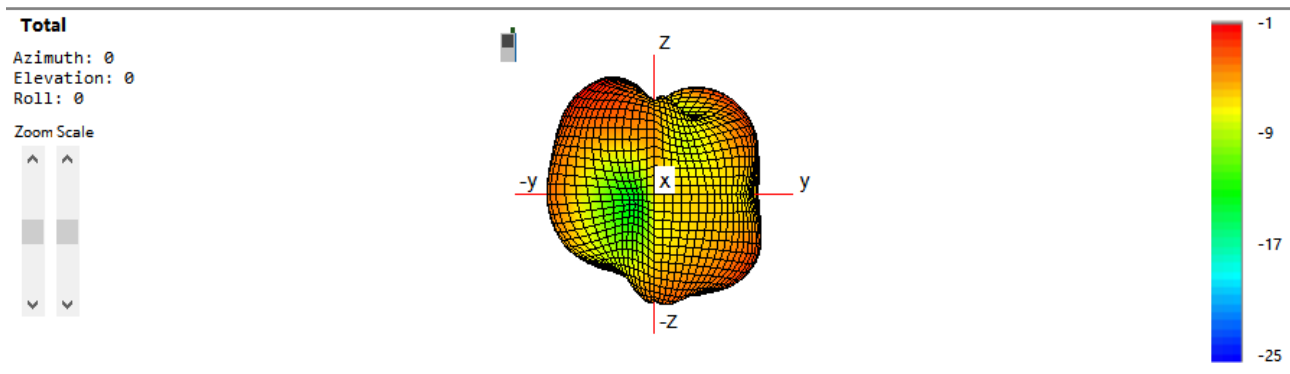
700MHz



850MHz



900MHz

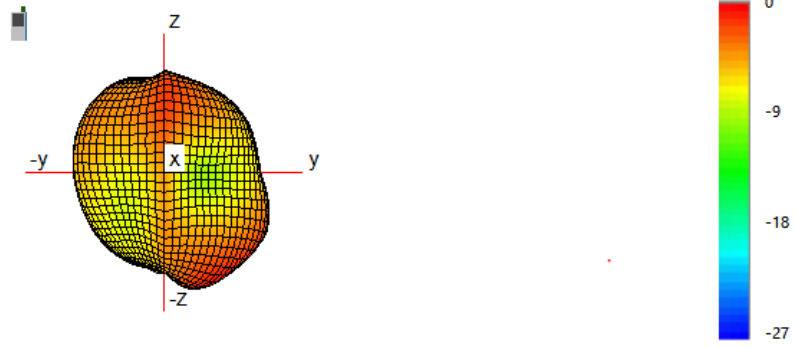


1800MHz

Total

Azimuth: 0
Elevation: 0
Roll: 0

Zoom Scale

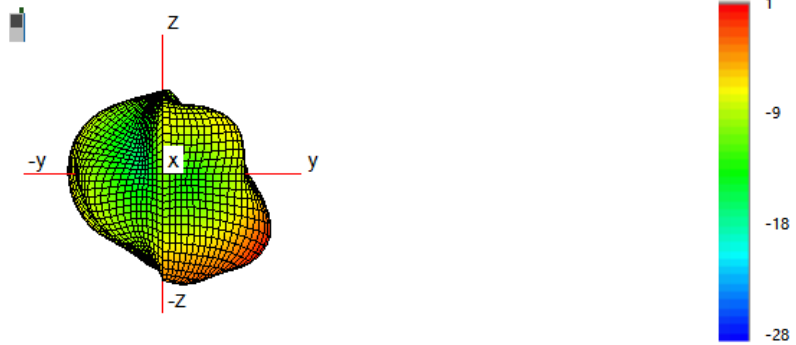


1900MHz

Total

Azimuth: 0
Elevation: 0
Roll: 0

Zoom Scale

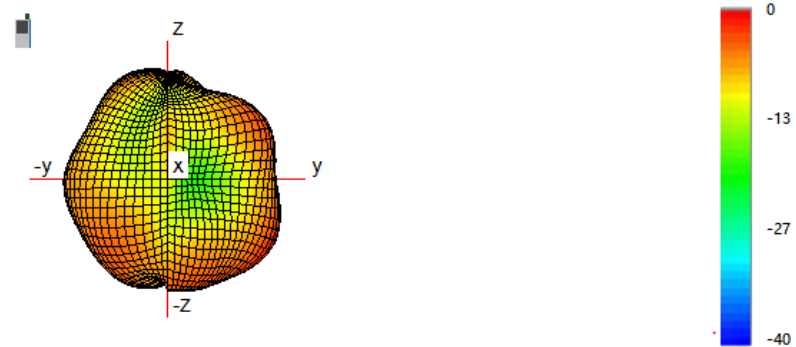


2100MHz

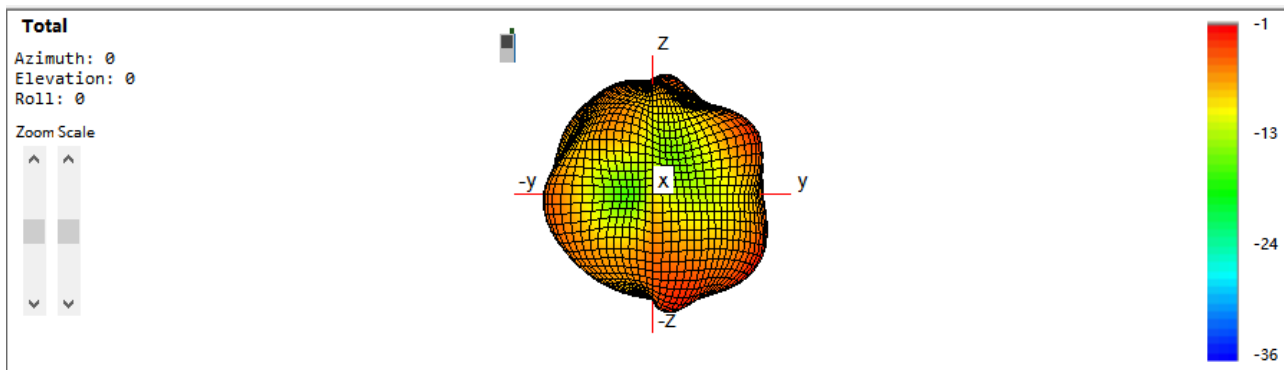
Total

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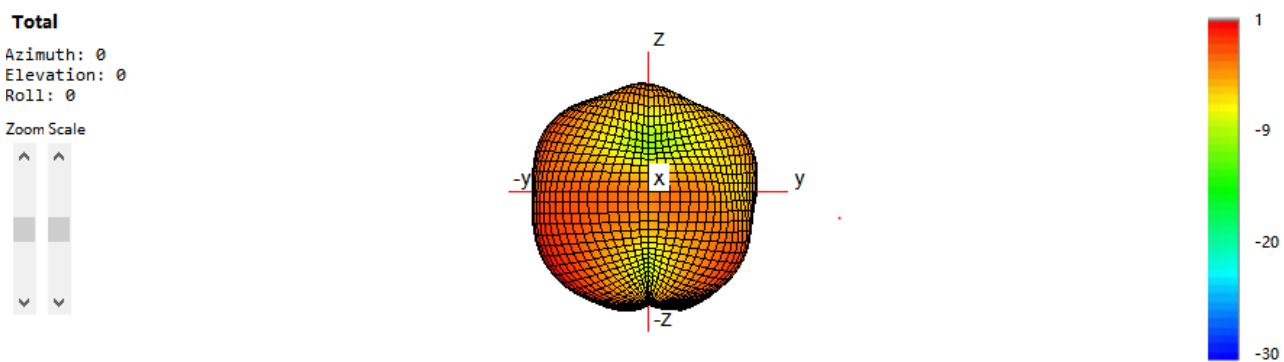
Zoom Scale



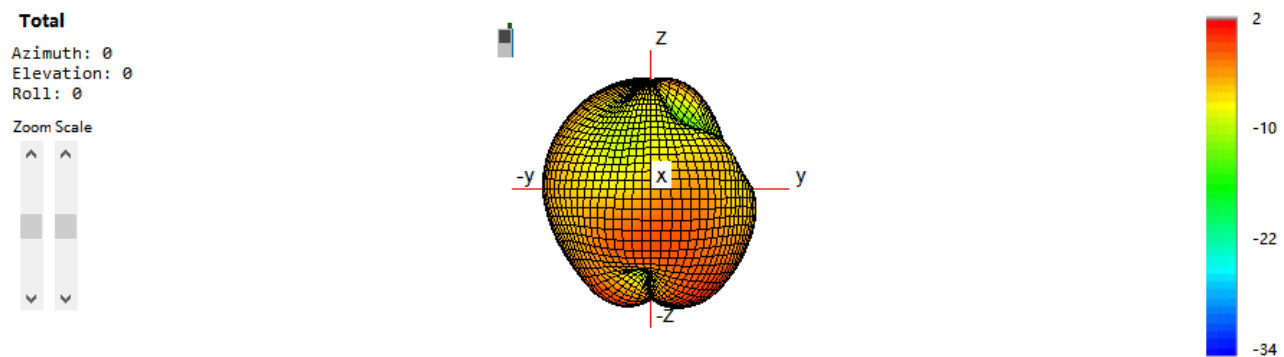
2400MHz



2700MHz



1575MHz

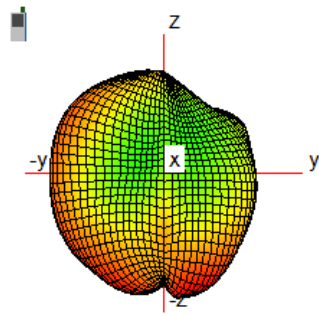


2400MHz

Total

Azimuth: 0
Elevation: 0
Roll: 0

Zoom Scale

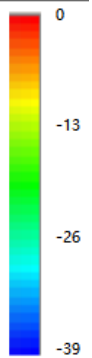
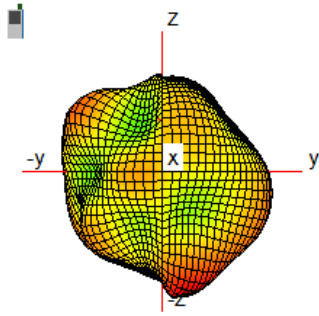


5200MHz

Total

Azimuth: 0
Elevation: 0
Roll: 0

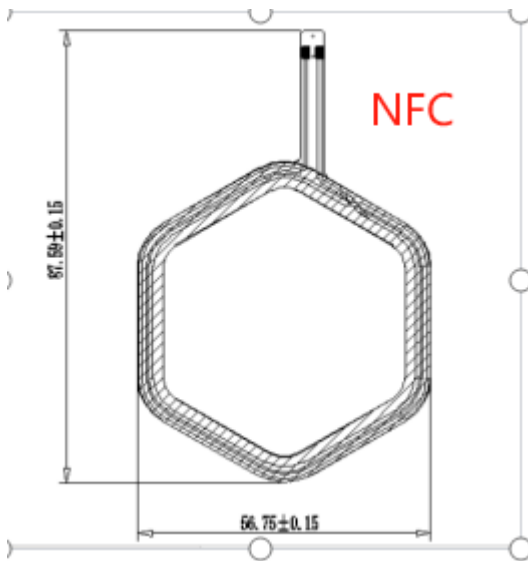
Zoom Scale

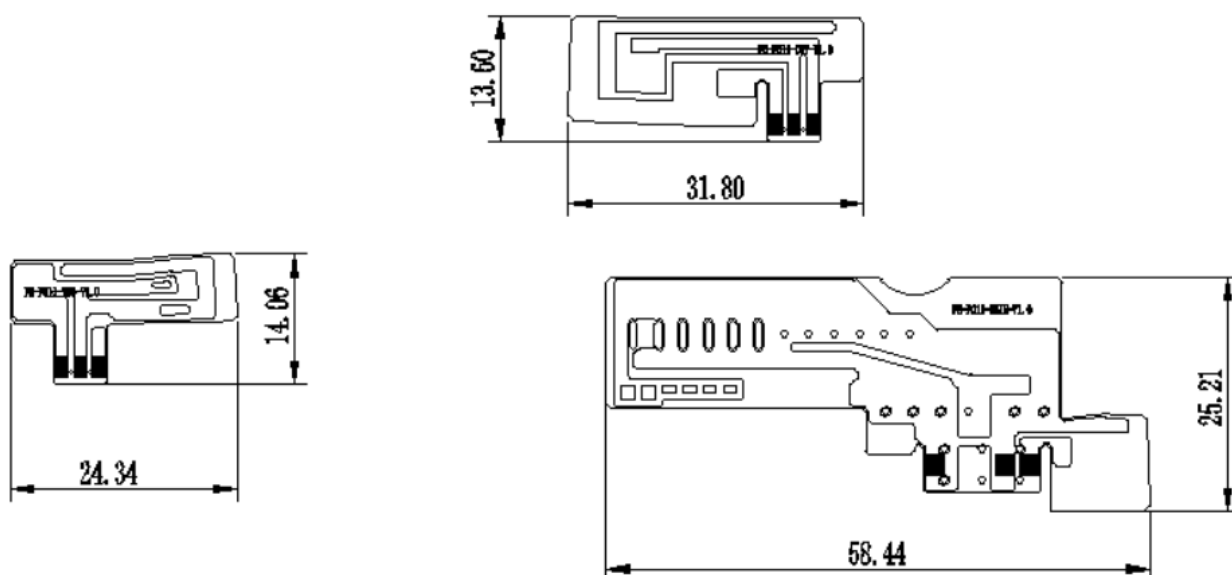


5800MHz

ANNEX B: The EUT ANT and Test Configuration

B.1 EUT ANT





B.2 Test Configuration

