

# OTA TEST REPORT

**Applicant** Shenzhen Guanqun Electronics Co. , Ltd.

**Product** GQ3109

**Issue Date** December 14,2022

Shenzhen Maya Communication Equipment 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.

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**Approved by:** GuoJun Feng

**Shenzhen Maya Communication Equipment Co. ,  
Ltd.**

2/F, Unit 2, Building 1, Guanghui Science and Technology Park, Minqing Road,  
Longhua Street, Longhua District, Shenzhen City



# 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 Maya Communication Equipment Co. , Ltd.

Address: 2/F, Unit 2, Building 1, Guanghui Science and Technology Park, Minqing Road, Longhua Street, Longhua District, Shenzhen City

Contact: RongFeng Yan

Telephone: 15815509272

E-mail: yyf@mayaant.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	<0.5Ω	



## 2. General Description of Equipment under Test

### 2.1 Applicant and Manufacturer information

<b>Applicant Name</b>	Shenzhen Guanqun Electronics Co. , Ltd.
<b>Applicant address</b>	Block A, Block 7B01, Tianyao Plaza, Anhongji, Tai Leng community, Minzhi Street, Longhua District, Shenzhen City
<b>Manufacturer Name</b>	Shenzhen Maya Communication Equipment Co. , Ltd.
<b>Manufacturer address</b>	2/F, Unit 2, Building 1, Guanghui Science and Technology Park, Minqing Road, Longhua Street, Longhua District, Shenzhen City

### 2.2 General information

EUT Description	
Product Name	GQ3109
Model	GTS-ANT D-H
Antenna Type	FPC Antenna
Antenna Manufacturer	Shenzhen Maya Communication Equipment 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.

### 3.2 Test Measurement

**Spherical coordinate system**



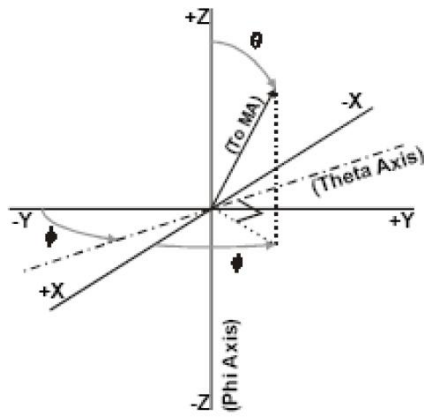
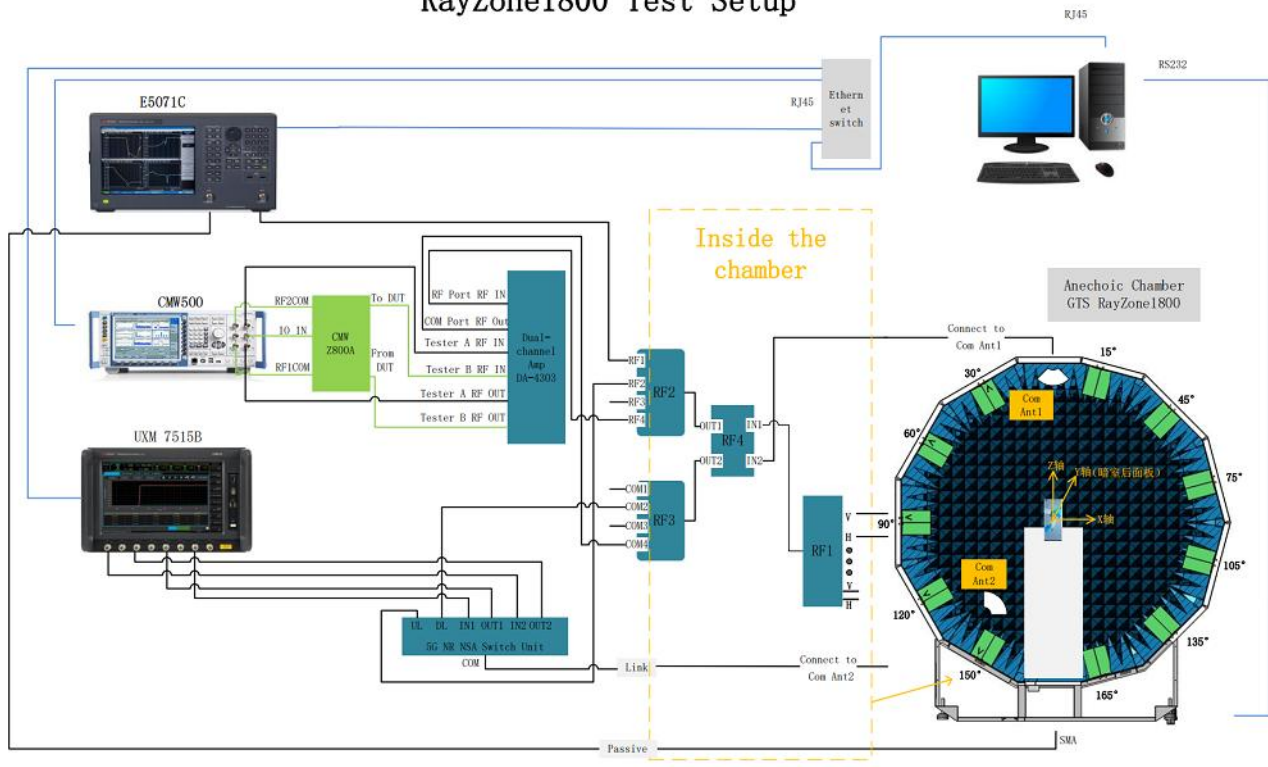


Figure 1 Test coordinate system

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 ANT

#### 4.2 Gain and Efficiency

ANTO								
Model	Test State	Frequency (MHz)	Gain (dBi)	Efficiency (%)	Frequency (MHz)	Gain (dBi)	Efficiency (%)	Note
	Free Space	700	-6.98	12.01	1710	-0.68	22.97	
		710	-5.47	13.54	1759	-0.22	24.52	
		720	-4.05	14.59	1809	-0.18	24.98	
		730	-2.45	15.94	1858	-0.52	25.68	
		740	-1.94	17.16	1908	-0.97	26.42	
		750	-1.45	18.45	1957	-0.33	26.21	
		760	-1.63	18.71	2007	-0.13	22.61	
		770	-2.14	18.47	2056	-0.26	22.37	
		780	-2.56	18.07	2106	-0.45	22.43	
		790	-3.04	17.69	2155	-0.61	23.19	
		800	-2.15	11.11	2205	0.04	25.92	
		810	-2.35	13.39	2254	0.25	26.15	
		820	-1.73	16.63	2304	-0.07	24.45	
		830	-0.86	20.24	2353	-0.58	24.49	
		840	-0.99	24.16	2403	-0.33	27.89	
		850	-1.44	27.73	2452	0.04	30.19	
	860	-1.2	29.46	2502	0.44	36.37		



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		870	-2.77	30.41	2551	0.78	38.85	
		880	-3.59	31.14	2601	1.06	38.12	
		890	-3.72	31.80	2650	1.47	37.01	
		900	-4.78	18.73	2700	1.57	35.19	
		910	-4.78	19.68				
		920	-2.19	18.93				
		930	-1.23	19.40				
		940	-0.43	20.94				
		950	-0.69	18.78				
		960	-1.11	16.71				

<b>ANT1</b>								
<b>Model</b>	<b>Test State</b>	<b>Frequency (MHz)</b>	<b>Gain (dBi)</b>	<b>Efficiency (%)</b>	<b>Frequency (MHz)</b>	<b>Gain (dBi)</b>	<b>Efficiency (%)</b>	<b>Note</b>
		1570	0.57	34.92	5200	4.26	54.54	
		1571	0.56	34.88	5230	4.31	54.15	
		1572	0.46	34.72	5260	4.17	51.83	
		1573	0.37	34.50	5290	4.10	49.24	
		1574	0.36	34.28	5320	3.95	45.54	



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Free Space	1575	0.35	34.19	5350	3.19	38.64
	1576	0.31	34.19	5380	3.90	37.78
	1577	0.34	34.30	5410	3.68	42.83
	1578	0.38	34.56	5440	4.26	47.34
	1579	0.34	34.70	5470	4.24	46.13
	1580	0.31	34.72	5500	5.10	50.70
				5530	5.74	53.72
	2400	3.55	24.08	5560	5.66	51.30
	2410	3.51	25.8	5590	5.60	45.44
	2420	3.50	28.82	5620	5.19	40.55
	2430	3.28	26.16	5650	4.68	37.36
	2440	2.84	31.39	5680	4.44	35.74
	2450	2.82	28.28	5710	4.05	33.69
	2460	2.61	30.52	5740	3.81	33.97
	2470	2.05	35.07	5770	4.31	37.89
	2480	1.59	28.76	5800	4.38	37.39
	2490	1.56	35.63			
	2500	1.48	26.96			

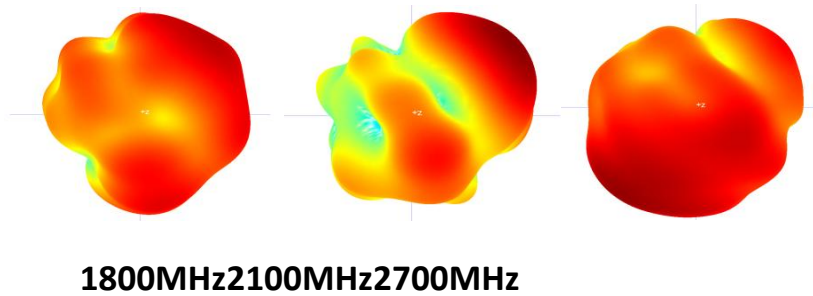
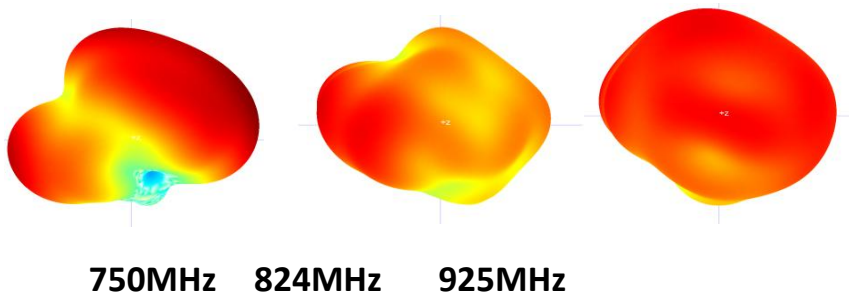


## 5. Equipment List

Type of Equipment	Manufacture	Model Number
Network Analyzer	Agilent Technologies	E5071B
Switch control System	GTS	RayZone1800
Software	GTS	MaxSign 100 Patten Measurement software

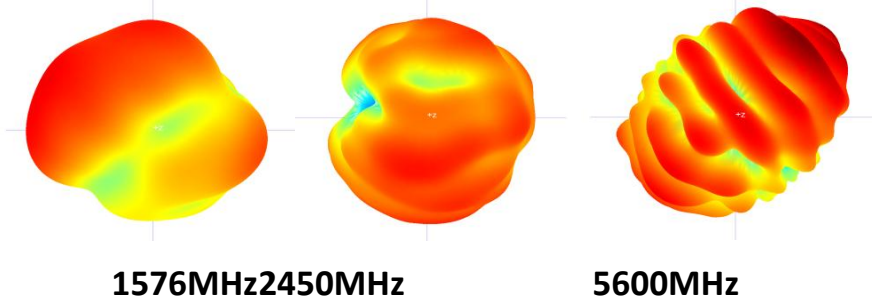
### ANNEX A 3-D Patten Plots

ANT0:





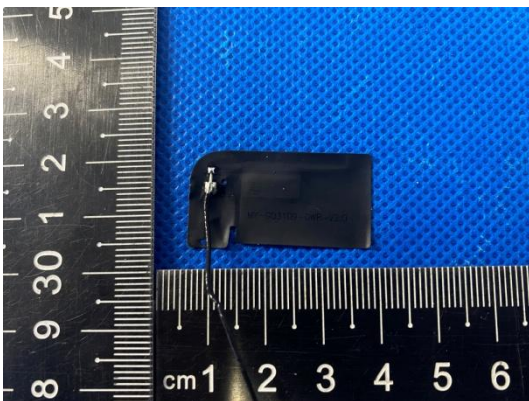
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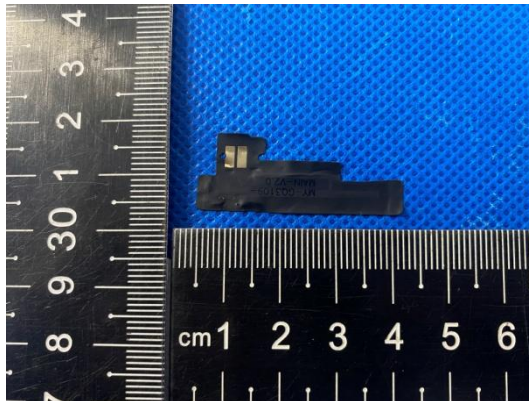
## ANNEX B: The EUT Appearance and Test Configuration

### B.1 EUT Appearance

ANT1:BT/WIFI



ANT0:GSM/WCDMA/LTE



## B.2 Test Configuration

