

# OTA TEST REPORT

**Applicant** Shenzhen General Test System Co., Ltd

**Product** RayZone1800

**Issue Date** June 2023.08.29

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:** Zhanghong Lai

**Shenzhen MAYA 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 Maya Communication Equipment Co. LTD

Address: 2nd Floor, Building 1, Guanghui Science Park, Longhua New District,  
Shenzhen Shenzhen, P.R. China

Contact: Feng Guojun

Telephone: 13425109220

E-mail: 646878854@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	<0.5Ω	

# 2. General Description of Equipment under Test

Shenzhen MAYA Wireless Technology Co., Ltd.

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## 2.1 Applicant and Manufacturer information

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

## 2.2 General information

EUT Description	
Product Name	RayZone1800
Model	MVG
HW Version	RayZone1800 V1.0
SW Version	MaxSign 100
Antenna Type	PCB Antenna
Antenna Manufacturer	Shenzhen Maya Communication Equipment 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**

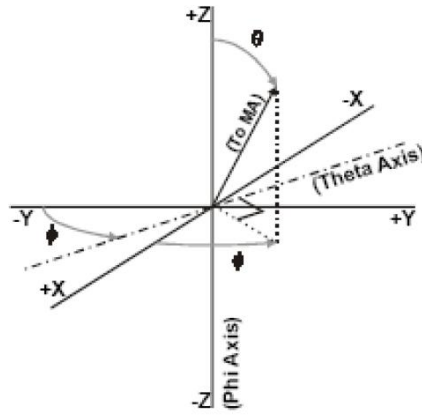
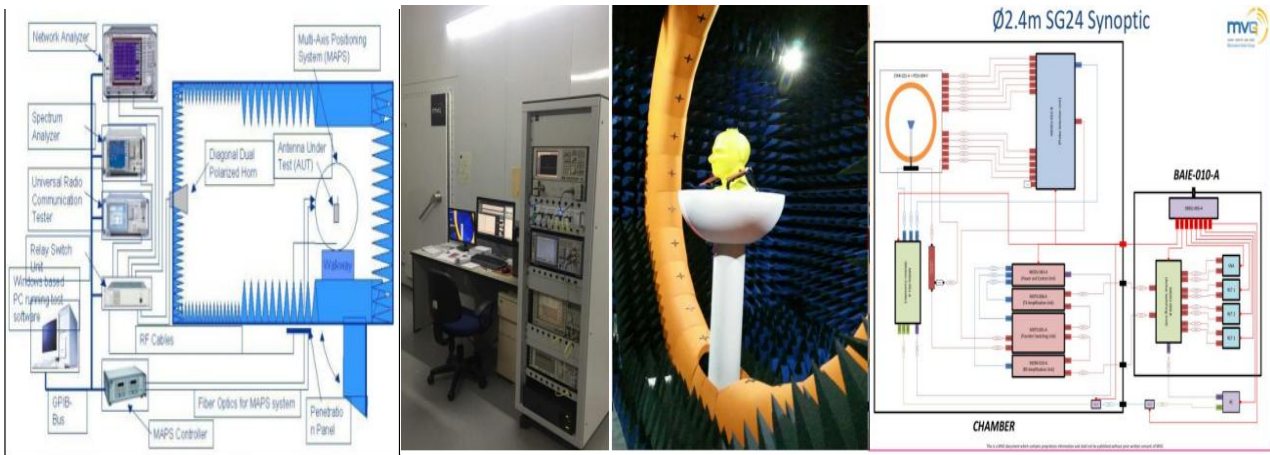


Figure 1 Test coordinate system

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

**Test Setup**



**4. Test Results**

**4.1 Gain and Efficiency**

## Passive parameters of main antenna

Frequency (MHz)	Efficiency (%)	PEAK Gain(dbi)
700	18.10%	-7.42
740	19.50%	-7.10
780	20.70%	-6.84
820	22.50%	-6.48
860	24.10%	-6.18
900	30.80%	-5.11
920	32.30%	-4.91
940	25.60%	-5.92
960	23.10%	-6.36
1700	40.20%	-3.96
1740	41.50%	-3.82
1780	42.60%	-3.71
1820	41.20%	-3.85
1860	40.10%	-3.97
1900	38.30%	-4.17
1940	36.50%	-4.38
1980	35.20%	-4.53
2020	33.40%	-4.76
2060	31.22%	-5.06

2100	29.30%	-5.33
2140	27.50%	-5.61
2180	25.70%	-5.90
2220	26.90%	-5.70
2260	28.40%	-5.47
2300	30.50%	-5.16
2340	33.10%	-4.80
2380	35.40%	-4.51
2420	38.10%	-4.19
2460	37.20%	-4.29
2500	36.10%	-4.42
2540	35.20%	-4.53
2580	34.10%	-4.67
2620	32.90%	-4.83
2660	31.30%	-5.04
2700	30.20%	-5.20

Frequency (MHz)	Efficiency (%)	PEAK Gain(dbi)	Frequency (MHz)	Efficiency (%)	PEAK Gain(dbi)
2400	30.20%	-5.20	5100	32.50%	-4.88
2420	32.30%	-4.91	5150	33.10%	-4.80
2440	33.50%	-4.75	5200	35.60%	-4.49
2460	35.40%	-4.51	5250	38.10%	-4.19
2480	38.30%	-4.17	5300	40.50%	-3.93
2500	38.90%	-4.10	5350	42.80%	-3.69
			5400	45.30%	-3.44
			5450	44.50%	-3.52
			5500	43.60%	-3.61
			5550	42.20%	-3.75
			5600	42.70%	-3.70
			5650	43.20%	-3.65
			5700	44.50%	-3.52
			5750	45.40%	-3.43
			5800	45.90%	-3.38
Frequency (MHz)	Efficiency (%)	PEAK Gain(dbi)			
1560	36.10%	-4.42			
1564	36.07%	-4.43			
1570	36.20%	-4.41			
1575	37.60%	-4.25			
1580	37.30%	-4.28			
1585	38.80%	-4.11			
1590	38.20%	-4.18			

# Diversity Antenna Passive Parameter

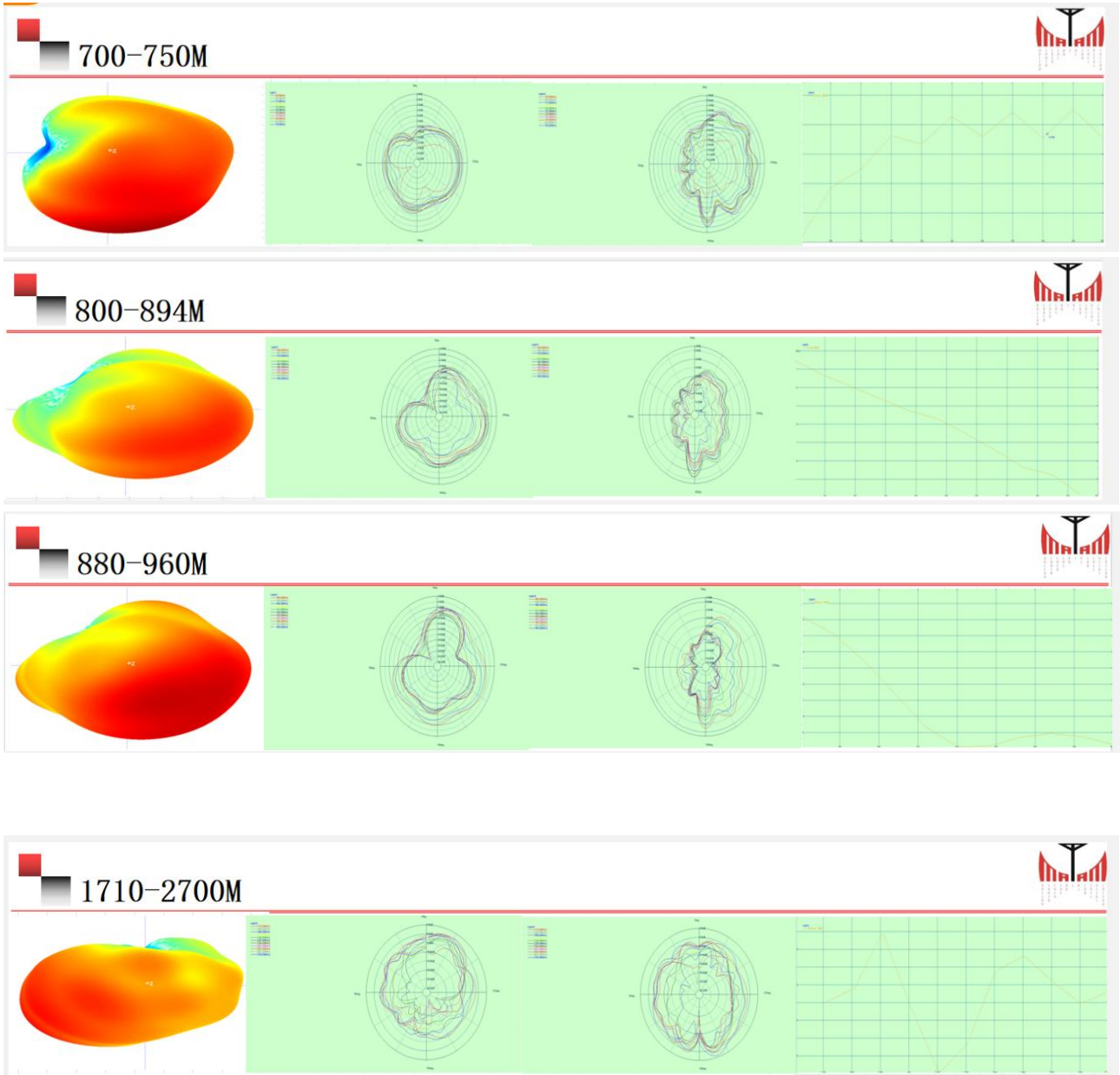
Frequency (MHz)	Efficiency (%)	PEAK Gain(dbi)
1750	20.20%	-6.95
1800	23.50%	-6.29
1850	22.30%	-6.52
1900	25.20%	-5.99
1950	26.40%	-5.78
2000	25.70%	-5.90
2050	25.10%	-6.00
2100	22.20%	-6.54
2150	20.30%	-6.93
2200	22.50%	-6.48
2250	21.40%	-6.70
2300	23.30%	-6.33
2400	25.10%	-6.00
2450	26.50%	-5.77
2500	26.50%	-5.77
2550	26.90%	-5.70
2600	27.50%	-5.61
2650	27.10%	-5.67
2700	26.50%	-5.77

## 5. Equipment List

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



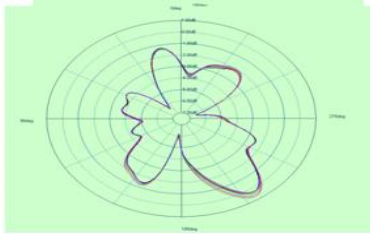
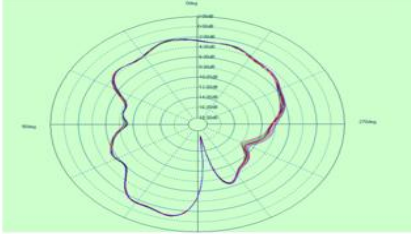
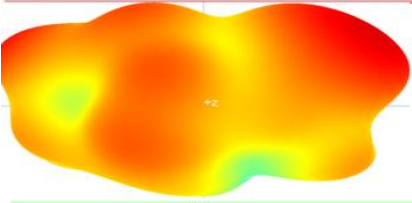
### ANNEX A 3-D Patten Plots



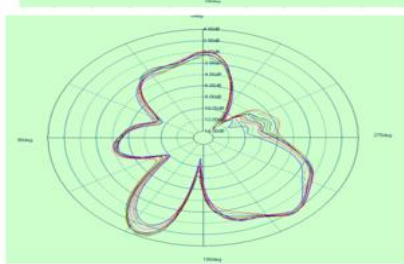
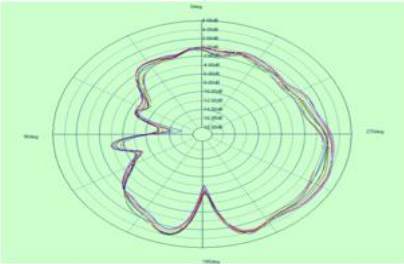
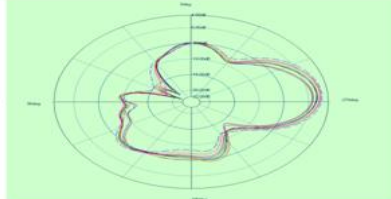
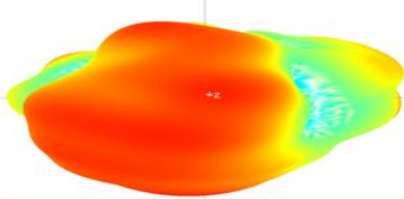




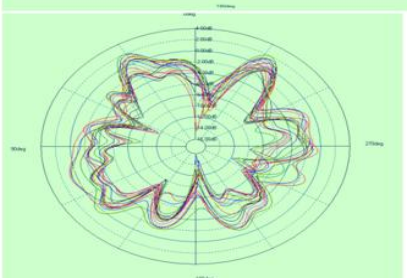
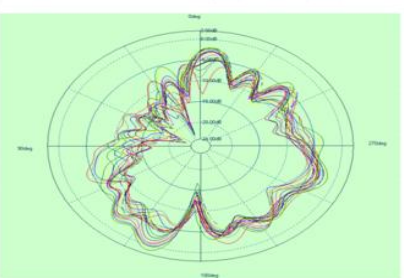
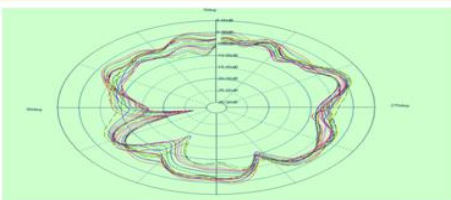
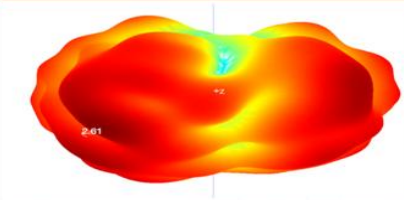
GPS



2.4G



5.2G-5.8G



## ANNEX B: The EUT Appearance and Test Configuration

### B.1 EUT Appearance

