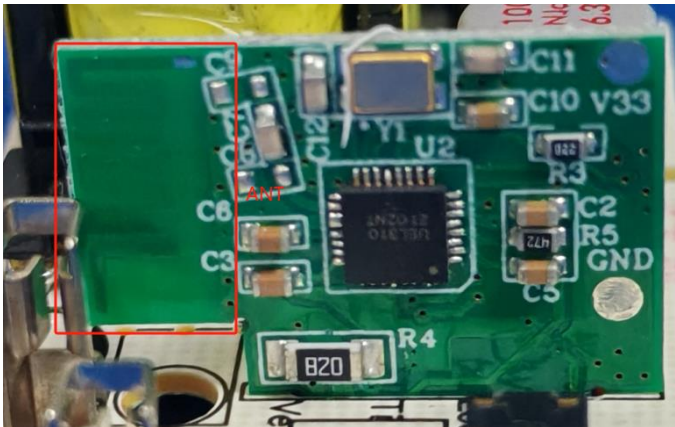


Antenna Specification

Antenna picture	
Antenna Type	Internal inverted F PCB antenna
Antenna Peak Gain	-0.52 dBi
Operating Band	2400-2500MHz
Test laboratory name and Address	429 Chuanjin Road, Dongcheng Town, Linhai City, Taizhou City, Zhejiang Province, China
Antenna Manufacturer	Zhejiang Changshuo Lighting Co., LTD
Model name	Smart RGB XMAX Decorative lights
DUT photo	
Test Date	2023-12-20
Test Conductor	Zhu Wei

OTA measurement

Test System

The SY-16 OTA system and RayZone2800 OTA system are anechoic chambers, which can measure antenna passive data such as antenna efficiency, antenna gain, and 2D&3D pattern. The systems are shown as follows:



Figure 1 SY-16 OTA system

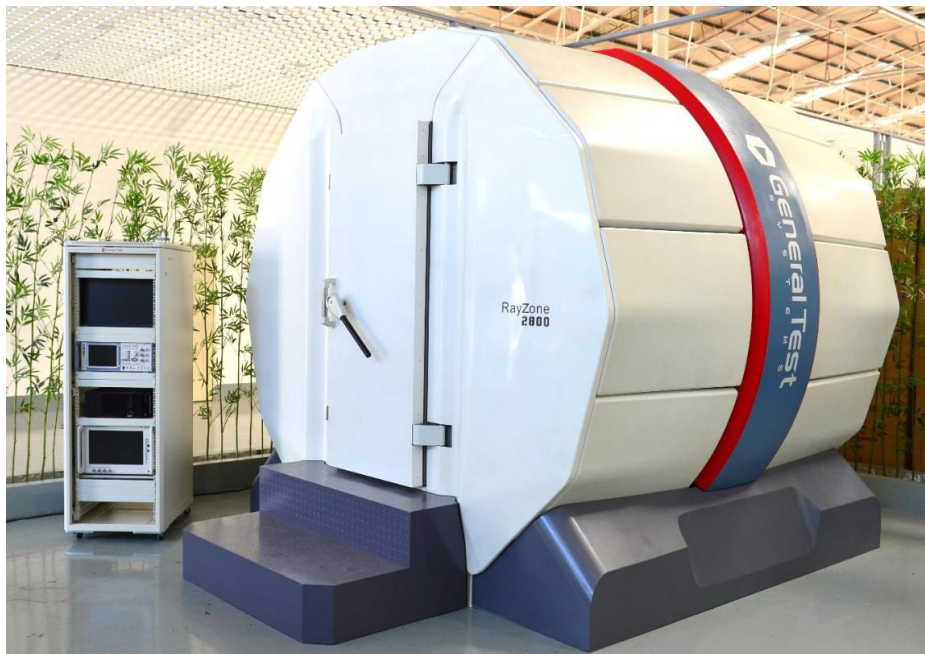


Figure 2 RayZone2800 OTA system

Equipment List

Table 1 Equipment List

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
☒	Network Analyzer	Keysight	E5071C	MY46527808	2024/1/9	2025/1/8
☐	Network Analyzer	Keysight	E5071C	MY46108051	2023/4/20	2024/4/19
☒	Anechoic Chamber	Sunyield	SY-16	SI1727	2023/5/10	2024/5/9
☐	Anechoic Chamber	General Test System	RayZone2800	CT10121244 B5079	2023/5/20	2024/5/19

Test Method

Table 2 Test Method

Name	Antenna Performance				
Parameter	Radiation Efficiency				
Test Method	IEEE Standard Test Procedures for Antennas				
Standard No.	ANSI/IEEE Std 149-2021				
Test Software	PMS-V2.8.5	☒	MaxSign-V1.4.3	☐	

Test Result

Efficiency and Gain

Table 3 Antenna Efficiency and Gain

Frequency (MHz)	Gain(dBi)
2400	-0.20
2410	-0.52
2420	-0.75
2430	-0.93
2440	-0.94
2450	-0.90
2460	-1.03
2470	-1.32
2480	-1.58
2490	-1.67
2500	-1.51

Radiation Pattern

Table 4 Product coordinates

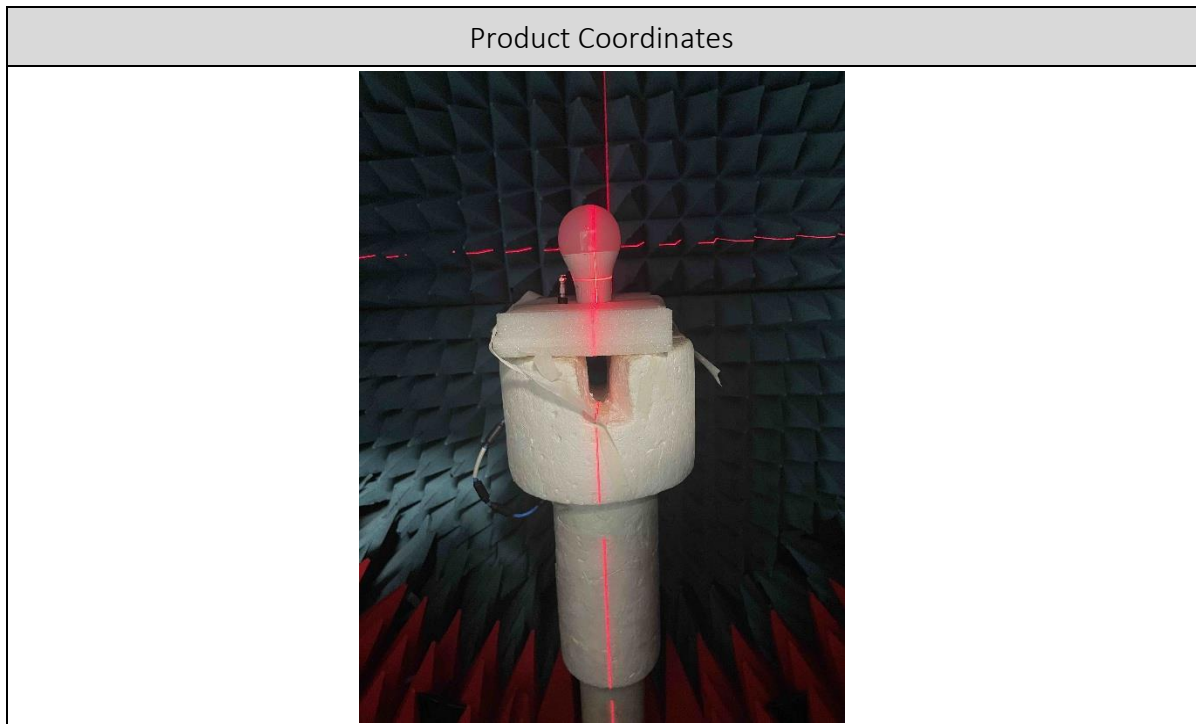


Table 5 3D radiation pattern

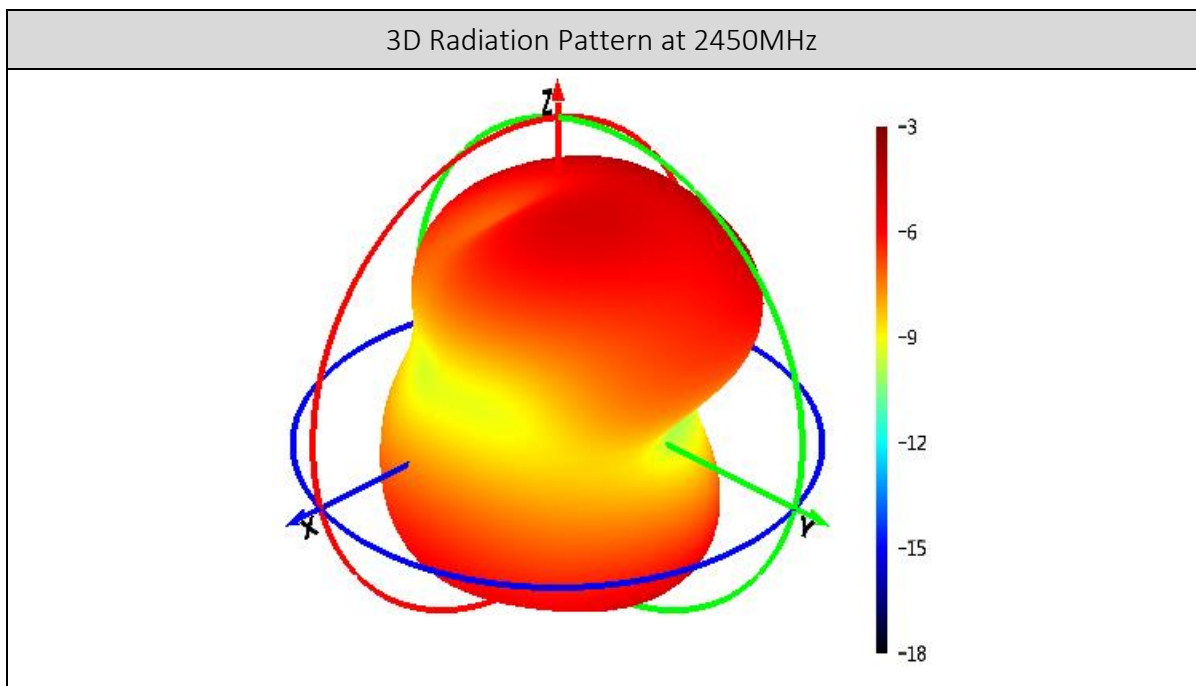


Table 6 Radiation pattern in XY Plane

2D Radiation Pattern ($\theta = 90^\circ$, XY Plane)

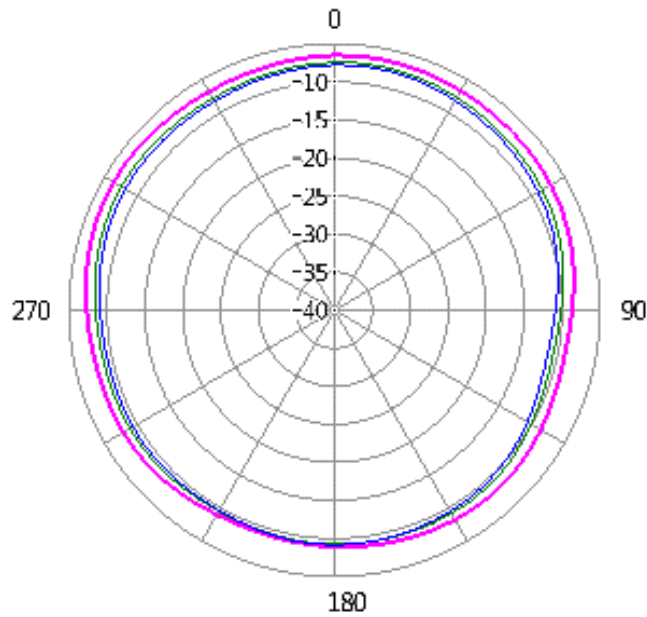


Table 7 Radiation pattern in XZ Plane

2D Radiation Pattern ($\phi = 0^\circ$, XZ Plane)

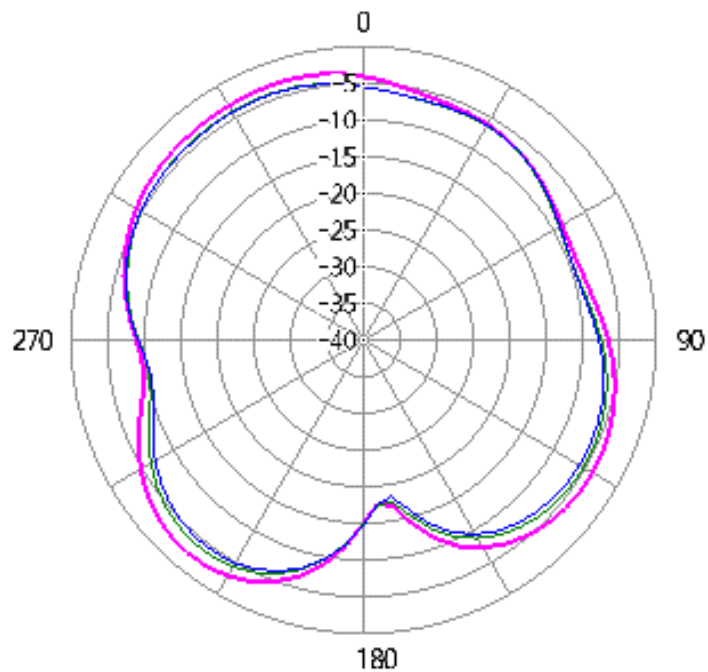


Table 8 Radiation pattern in YZ Plane

2D Radiation Pattern ($\phi = 90^\circ$, YZ Plane)

