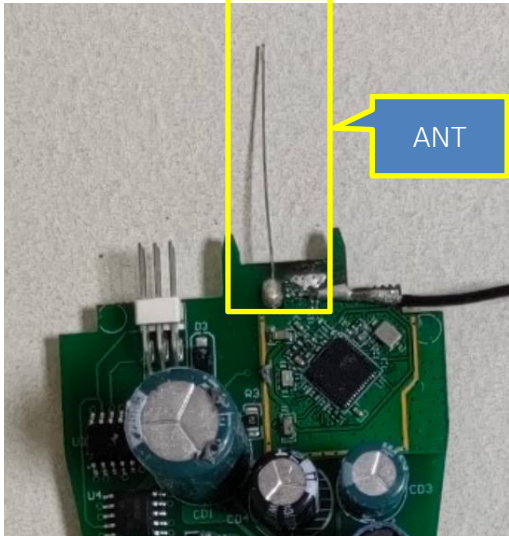


Antenna Specification

Antenna picture	
Antenna Type	Metal monopole antenna
Antenna Peak Gain	-0.33 dBi
Operating Band	2400 MHz ~ 2483.5 MHz
Test laboratory name and Address	IoT Antenna Test Laboratory, 11 / F, LEEDARSON LIGHTING CO., LTD. Xingtai Industrial Park, Changtai Economic Development Zone, Zhangzhou, 363900, China
Antenna Manufacturer	LEEDARSON LIGHTING CO., LTD.
Model name	A21 RGBTW
DUT photo	
Test Date	2024-11-4
Test Conductor	Shangqing 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:

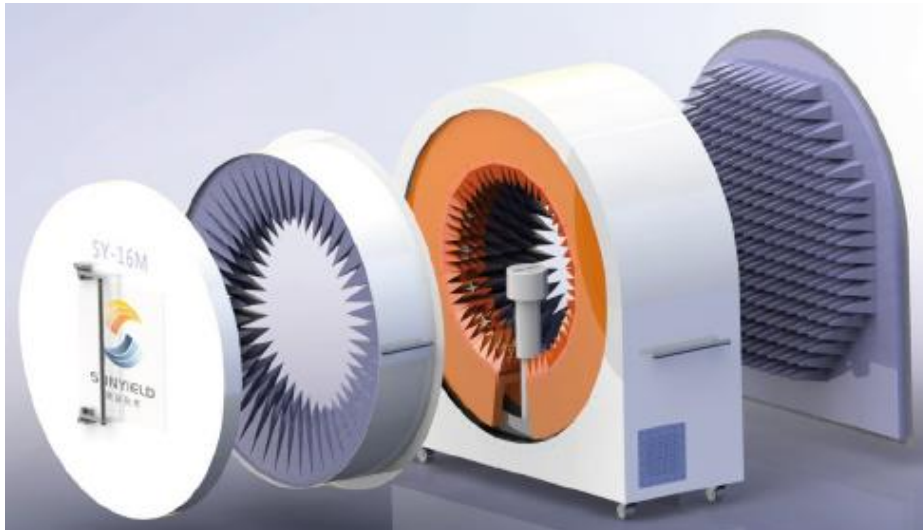


Figure 1 SY-16 OTA system

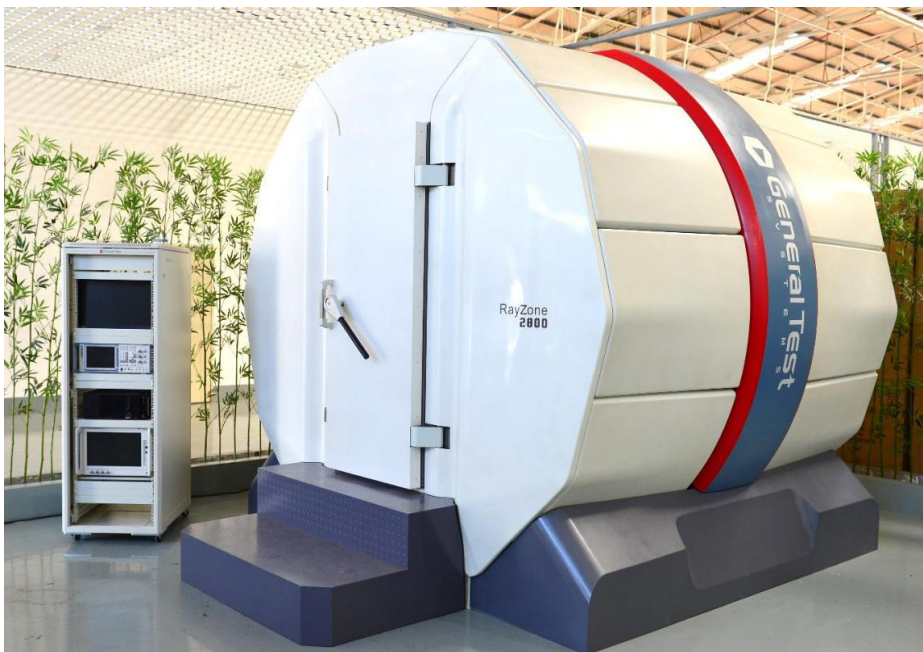


Figure 2 RayZone2800 OTA system

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	2024/4/19	2025/4/18
☒	Anechoic Chamber	Sunyield	SY-16	SI1727	2024/4/28	2025/4/27
☐	Anechoic Chamber	General Test System	RayZone2800	CT10121244 B5079	2024/5/10	2025/5/9

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)	Efficiency (dB)	Efficiency (%)
2400	-0.53	-6.43	22.76
2410	-0.44	-6.28	23.57
2420	-0.55	-6.30	23.44
2430	-0.34	-5.98	25.21
2440	-0.33	-5.91	25.66
2450	-0.62	-6.15	24.26
2460	-0.49	-5.95	25.39
2470	-0.53	-5.94	25.48
2480	-0.78	-6.14	24.32
2490	-0.75	-6.07	24.74
2500	-0.94	-6.23	23.83

Radiation Pattern

Table 4 Product coordinates

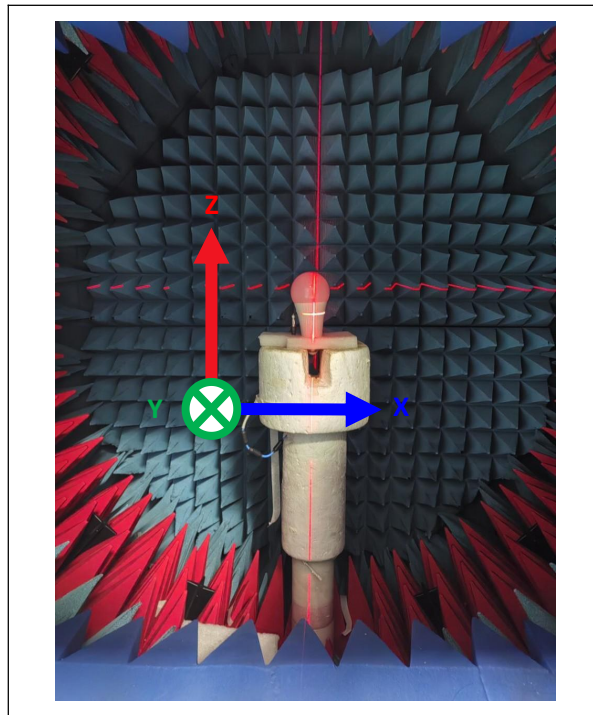


Table 5 3D radiation pattern

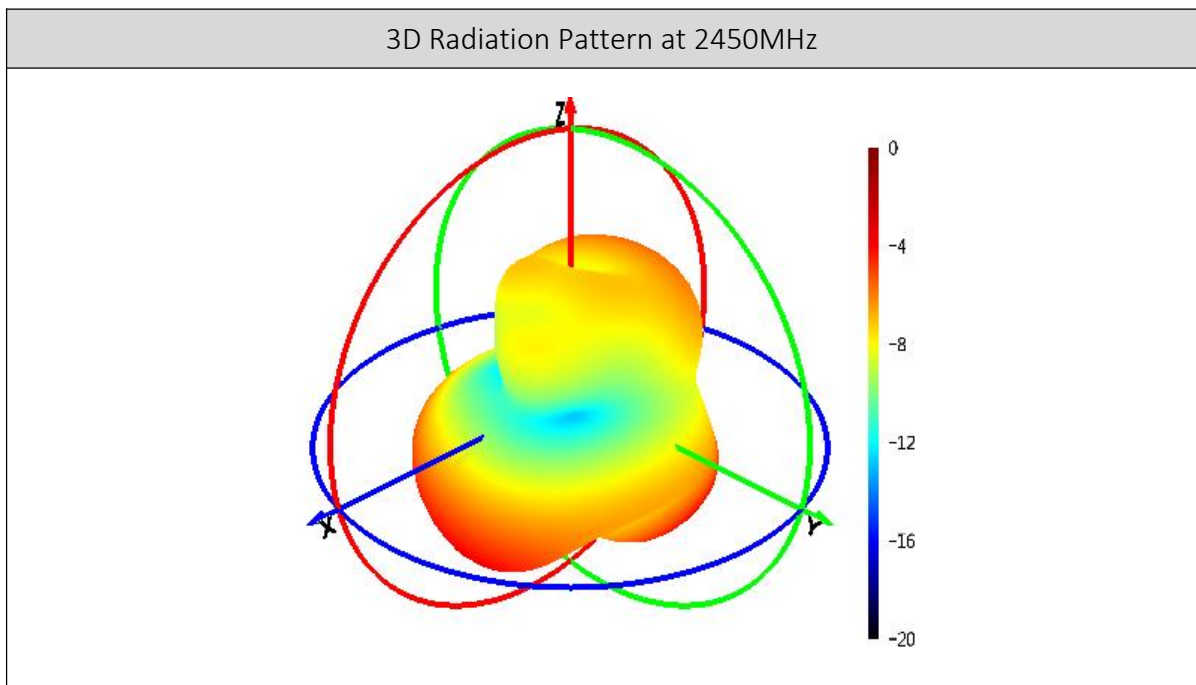


Table 6 Radiation pattern in XY Plane

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

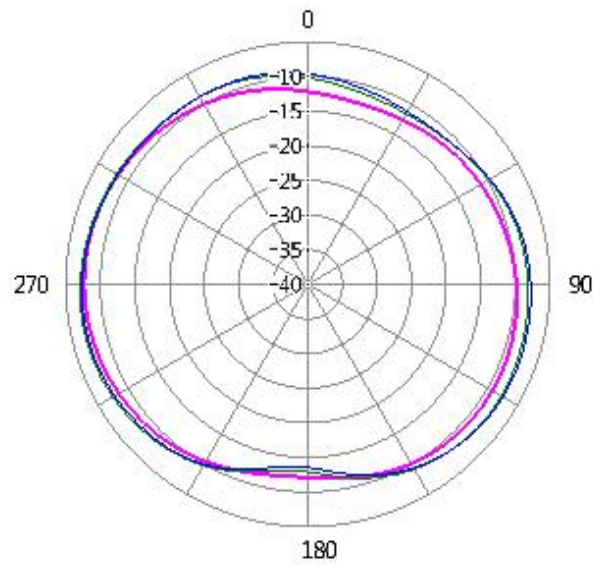


Table 7 Radiation pattern in XZ Plane

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

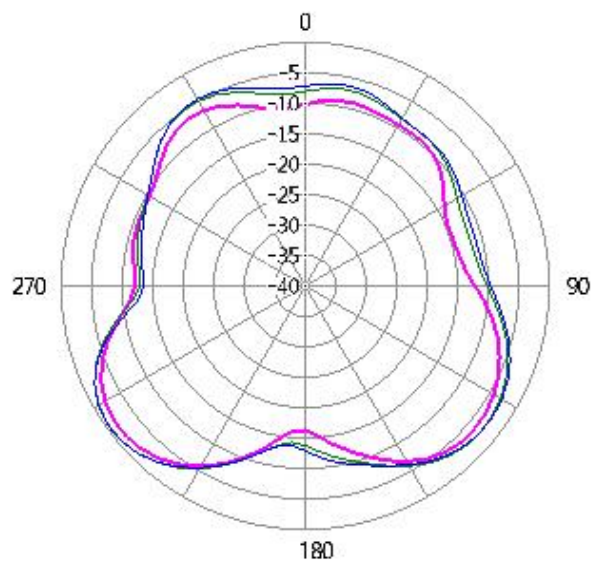


Table 8 Radiation pattern in YZ Plane

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