

Antenna Specification

Antenna Type	Metal IFA antenna
Antenna Peak Gain	1.41 dBi @ Sub-G; 3.81 dBi @ BLE
Operating Band	902 ~ 928 MHz & 2400 MHz ~ 2500 MHz
Test laboratory name and Address	IoT Antenna Test Laboratory, 3 / A, LEEDARSON LIGHTING CO., LTD. Xingtai Industrial Park, Changtai Economic Development Zone, Zhangzhou, 363900, China
Antenna Manufacturer	LEEDARSON LIGHTING CO., LTD.
Model name	7AFYA7
Test Date	2025-09-26
Test Conductor	ouyanglongji

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	2025/1/9	2026/1/8
☐	Network Analyzer	Keysight	E5071C	MY46108051	2025/4/19	2026/4/18
☒	Anechoic Chamber	Sunyield	SY-16	SI1727	2025/4/28	2026/4/27
☐	Anechoic Chamber	General Test System	RayZone2800	CT10121244 B5079	2025/5/10	2026/5/9

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 (%)
902	-0.42	-5.62	27.44
904	-0.21	-5.36	29.07
906	-0.08	-5.23	29.98
908	0.13	-5.07	31.14
910	0.42	-4.8	33.12
912	0.61	-4.59	34.72
914	0.71	-4.46	35.79
916	0.74	-4.42	36.11
918	0.79	-4.41	36.25
920	0.95	-4.29	37.23
922	1.21	-4.1	38.93

924	1.41	-3.91	40.65
926	1.03	-3.87	41.04
928	0.93	-3.98	40.03
2400	3.57	-1.46	71.37
2410	3.59	-1.33	73.68
2420	3.65	-1.26	74.8
2430	3.58	-1.32	73.86
2440	3.59	-1.25	75
2450	3.64	-1.33	73.65
2460	3.73	-1.31	73.88
2470	3.73	-1.28	74.49
2480	3.81	-1.26	74.77
2490	3.75	-1.29	74.22
2500	3.79	-1.19	75.96

Radiation Pattern

Table 5 3D radiation pattern @ 915 MHz

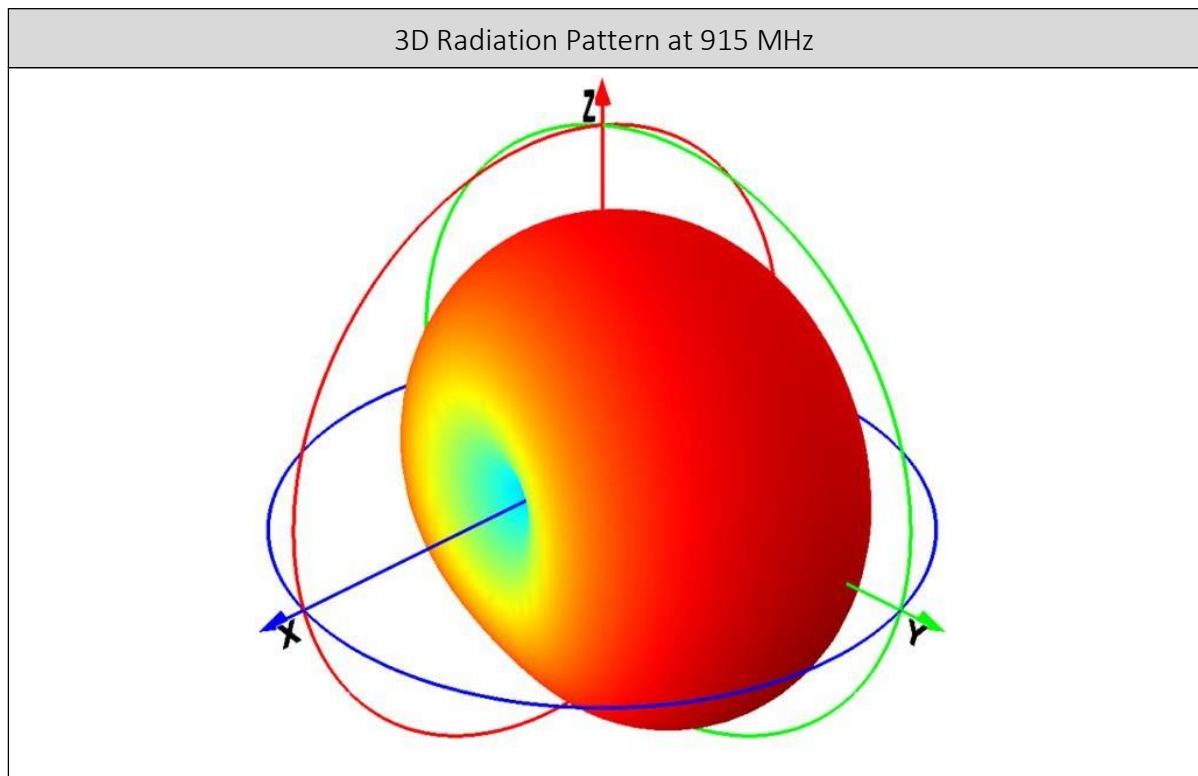


Table 6 Radiation pattern in XY Plane

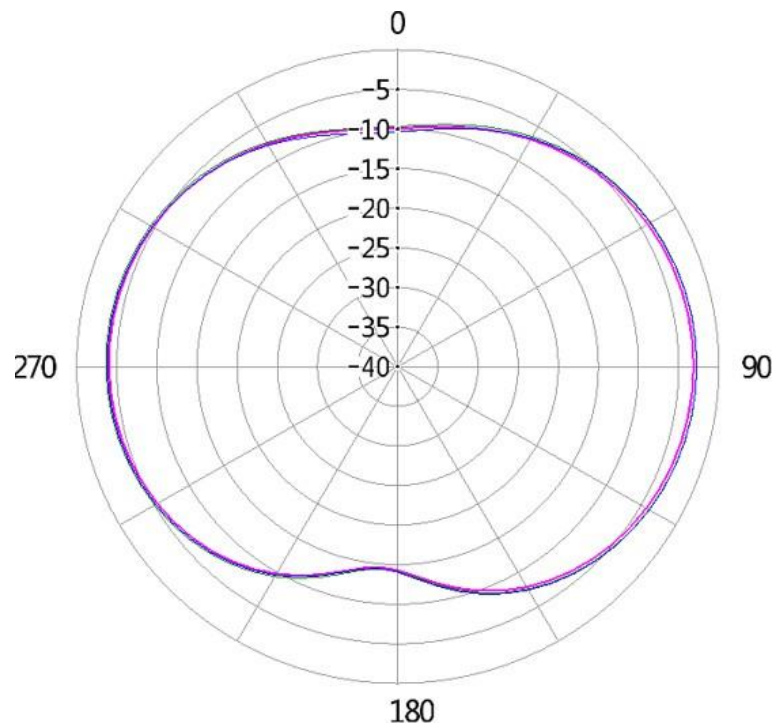
2D Radiation Pattern ($\theta = 90^\circ$, XY Plane)

Table 7 Radiation pattern in XZ Plane

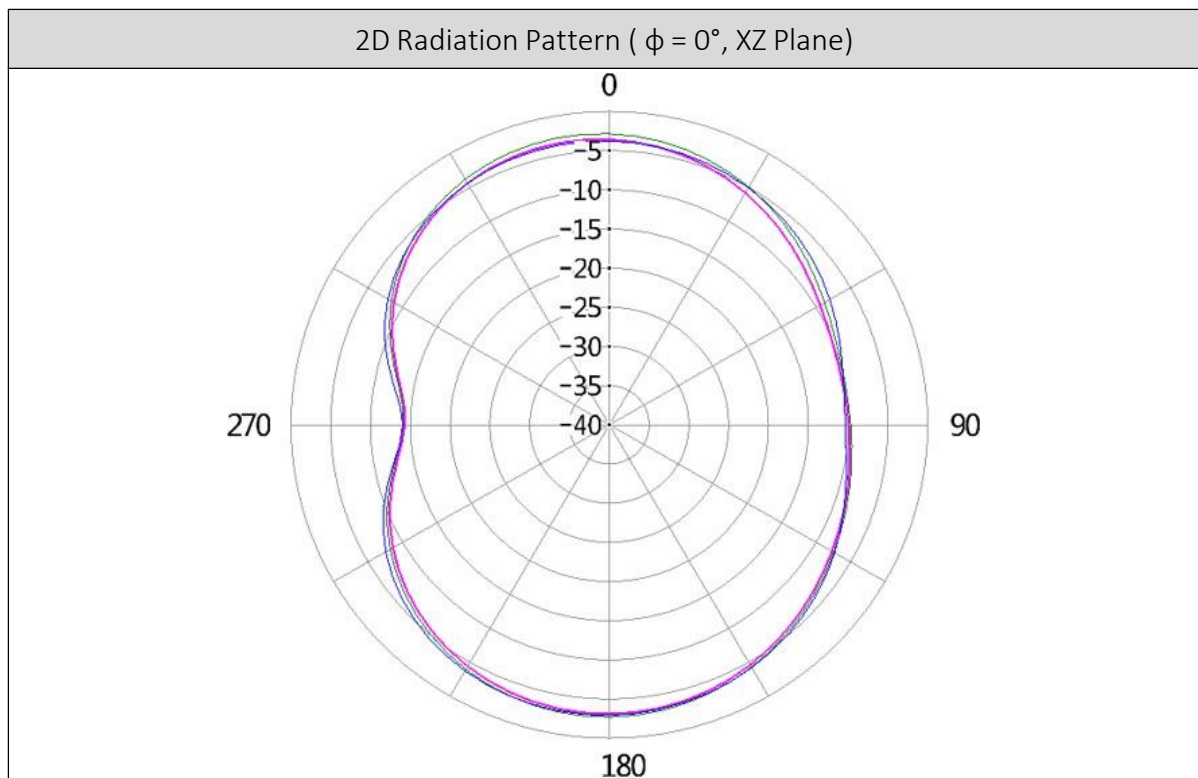


Table 8 Radiation pattern in YZ Plane

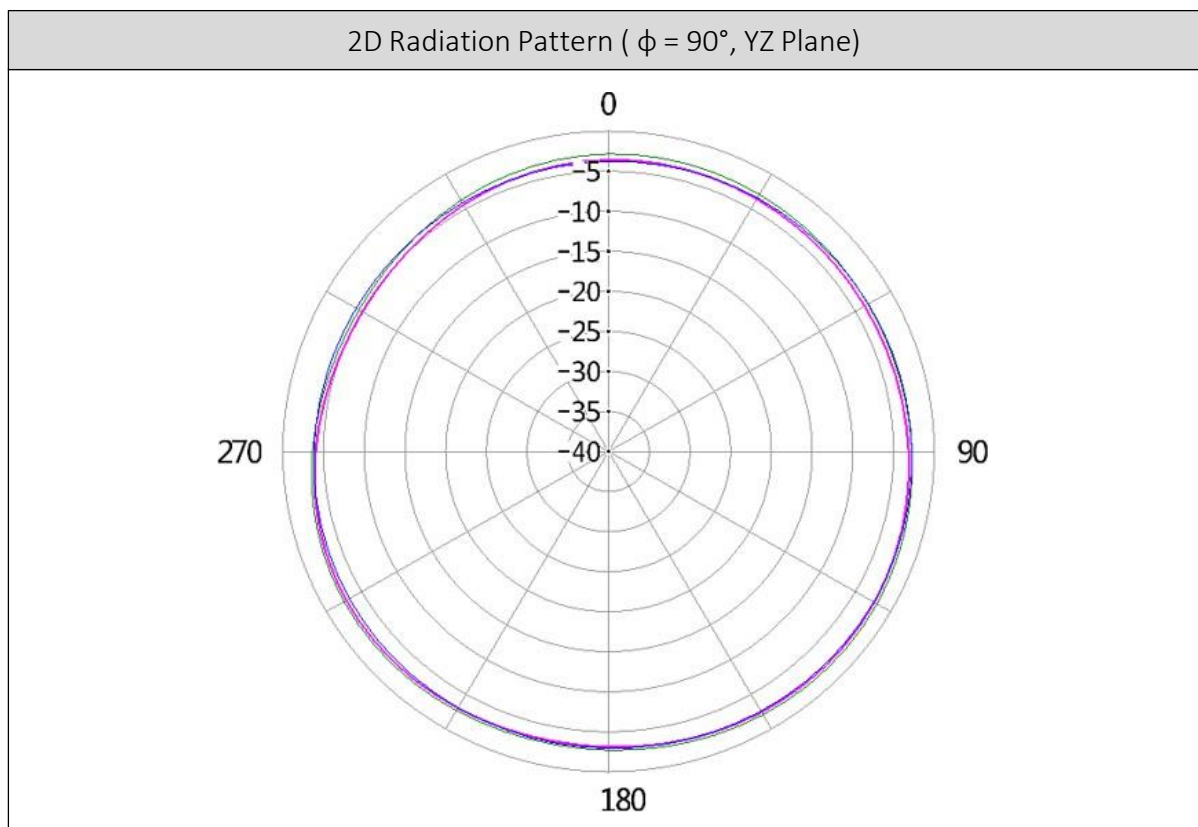


Table 9 3D radiation pattern @ 2450 MHz

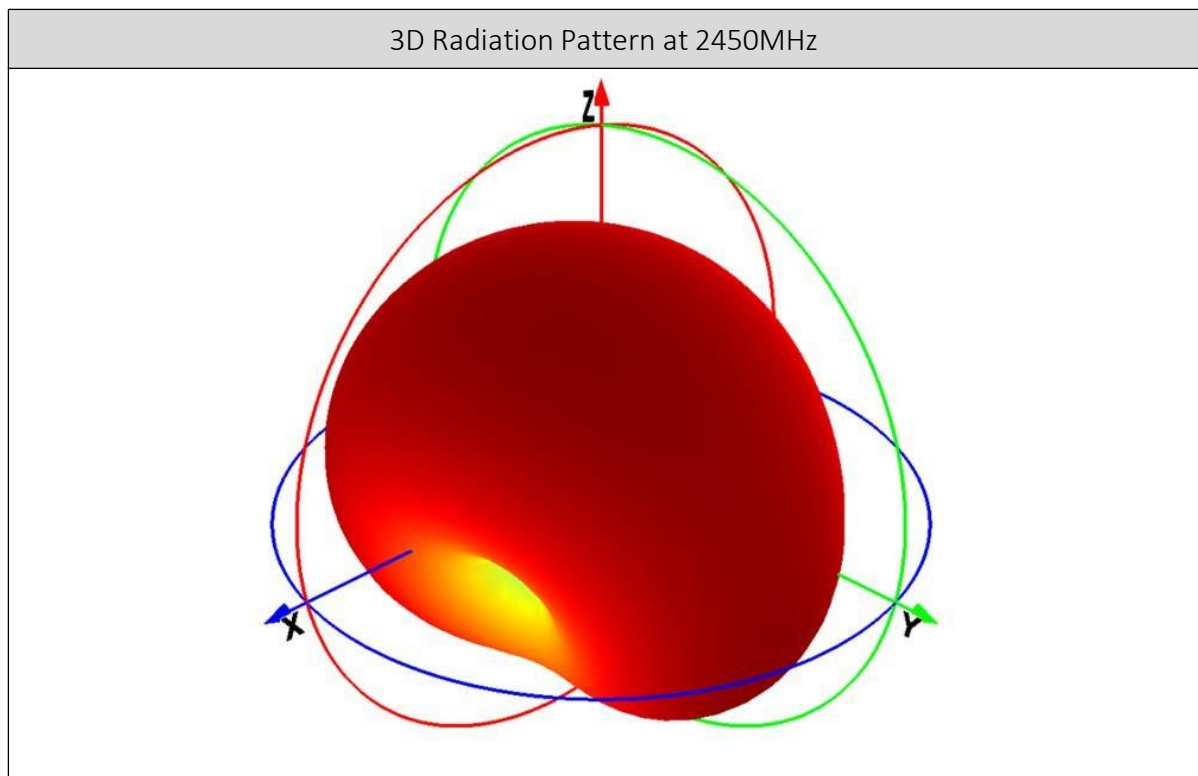


Table 10 Radiation pattern in XY Plane

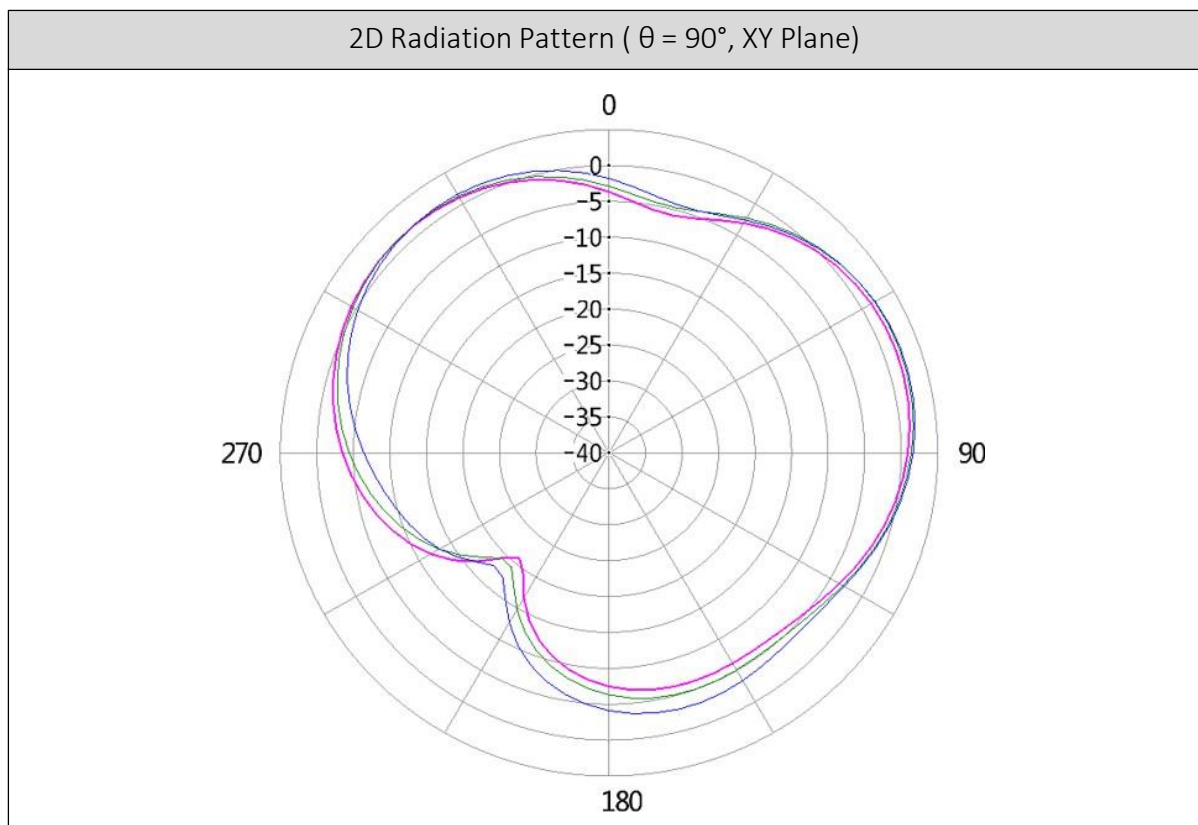


Table 11 Radiation pattern in XZ Plane

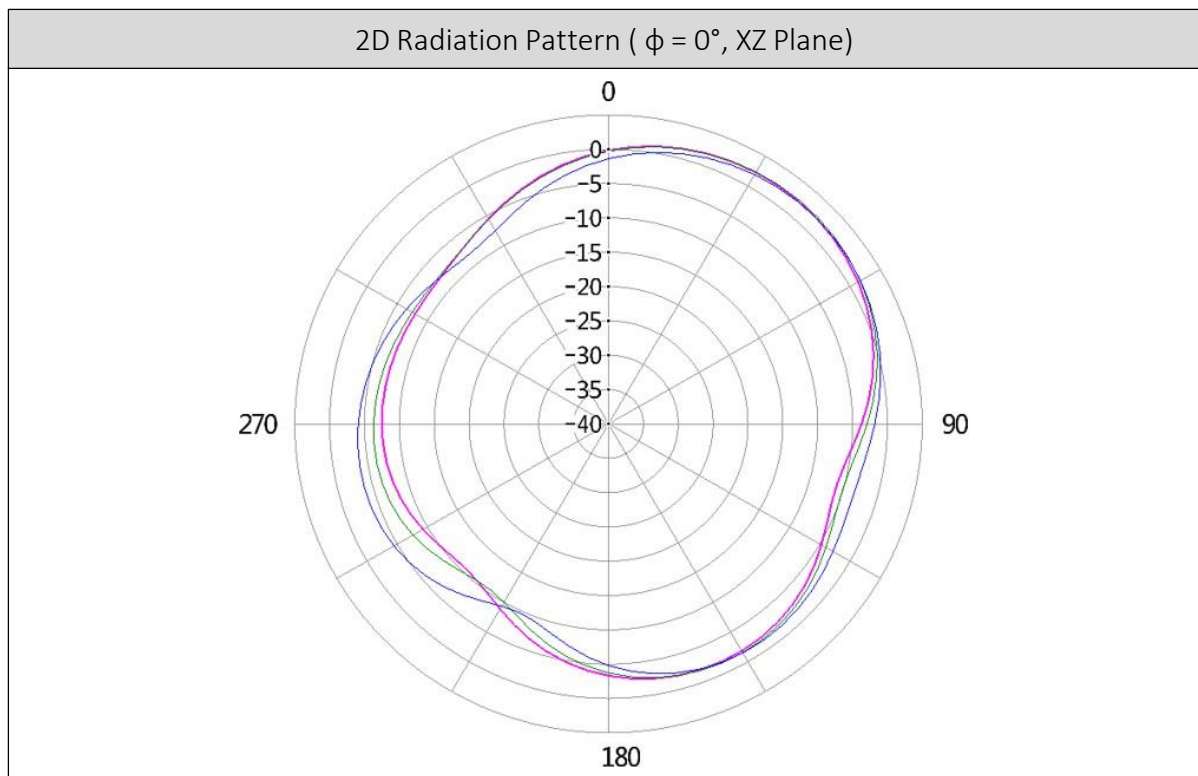


Table 12 Radiation pattern in YZ Plane

