

Antenna Specification

Antenna Type	Metal Monopole antenna
Antenna Peak Gain	-3.51 dBi @ Sub-G; -0.51 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	7AFYA8
Test Date	2025-11-24
Test Conductor	Rong Chen

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	Sunyild	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	-6.65	-10.7	8.5
904	-6.29	-10.32	9.28
906	-6.09	-10.1	9.76
908	-5.97	-9.98	10.05
910	-5.79	-9.8	10.48
912	-5.47	-9.49	11.26
914	-5.22	-9.21	11.99
916	-5.03	-8.99	12.61
918	-4.9	-8.86	13.01
920	-4.75	-8.7	13.49
922	-4.49	-8.44	14.31

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924	-4.09	-8.08	15.58
926	-3.72	-7.72	16.91
928	-3.51	-7.5	17.79
2400	-1.28	-4.52	35.28
2410	-0.67	-3.91	40.68
2420	-0.51	-3.74	42.31
2430	-0.77	-3.89	40.82
2440	-0.76	-3.75	42.19
2450	-0.71	-3.57	43.96
2460	-1.03	-3.91	40.63
2470	-1.1	-3.89	40.85
2480	-1.07	-3.67	42.91
2490	-1.2	-3.74	42.27
2500	-1.31	-3.77	42.01

Table 5 3D radiation pattern @ 915 MHz

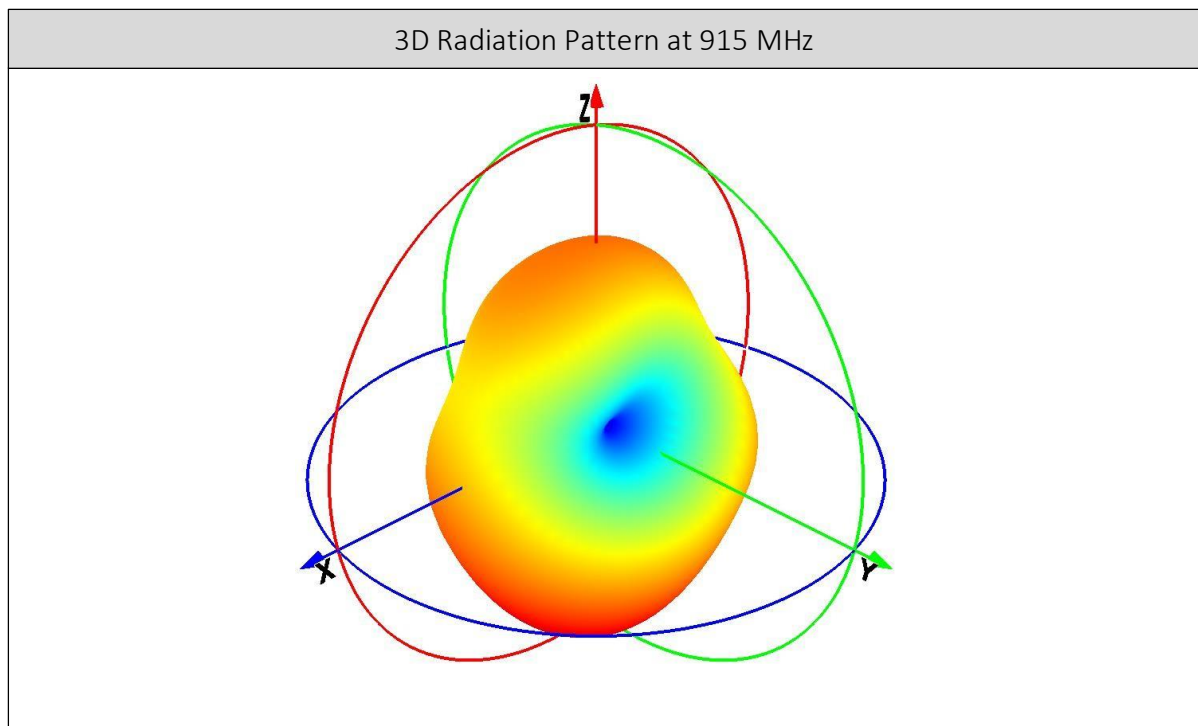


Table 6 Radiation pattern in XY Plane

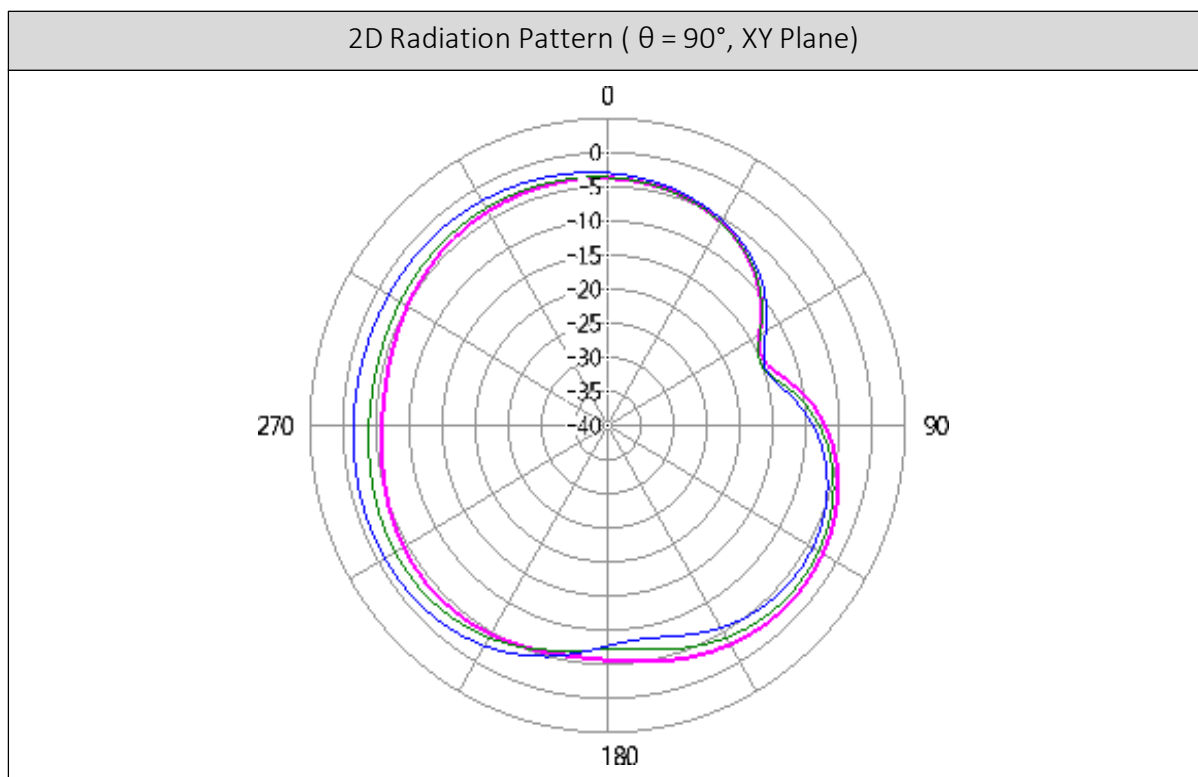


Table 7 Radiation pattern in XZ Plane

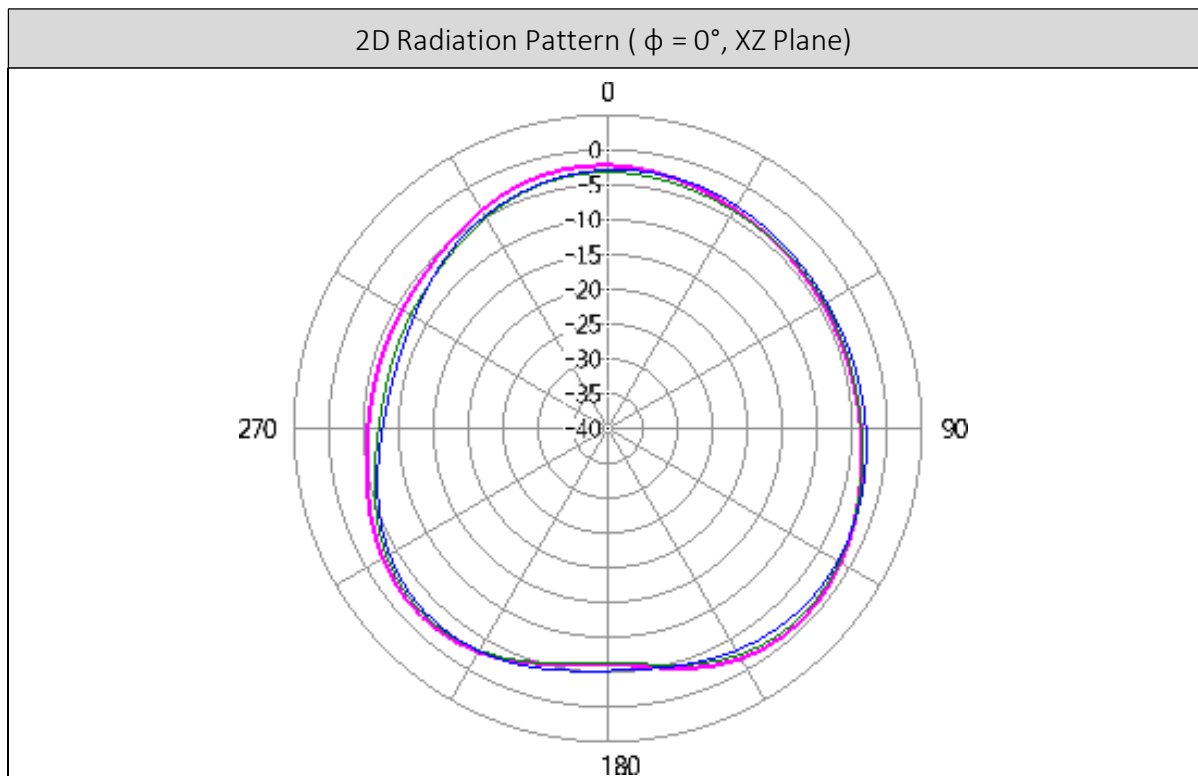


Table 8 Radiation pattern in YZ Plane

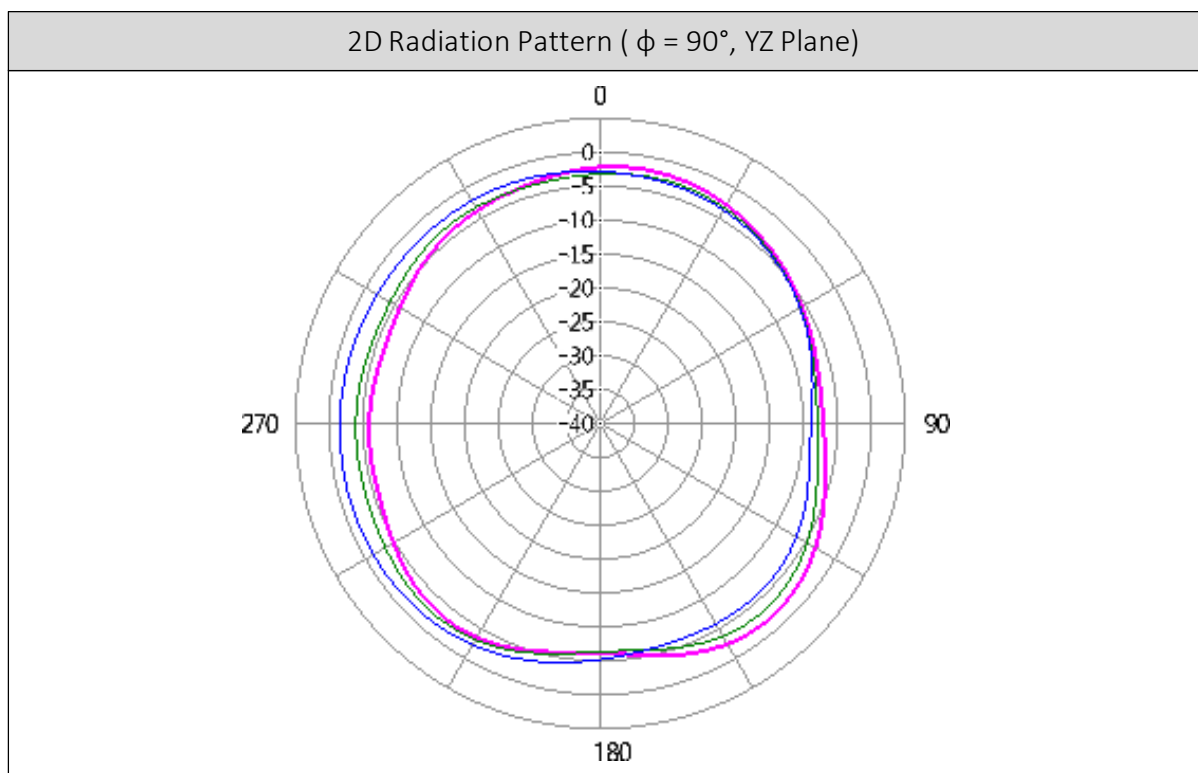


Table 9 3D radiation pattern @ 2450 MHz

3D Radiation Pattern at 2450MHz

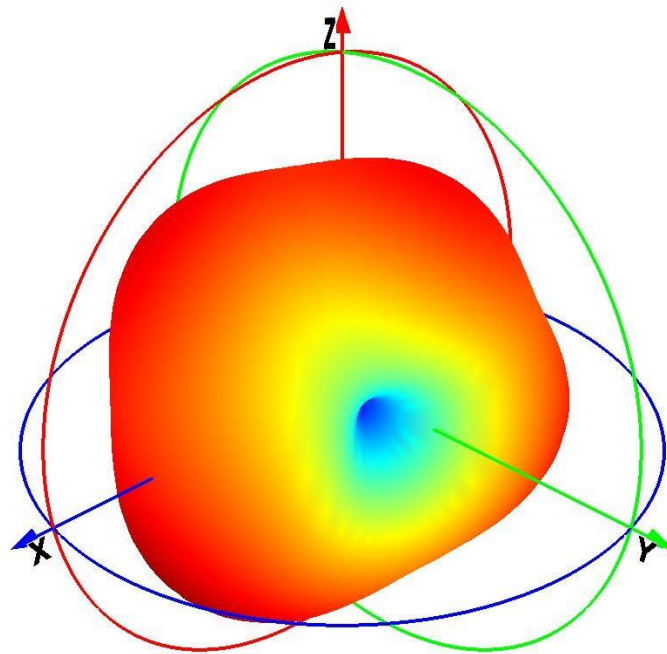


Table 10 Radiation pattern in XY Plane

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

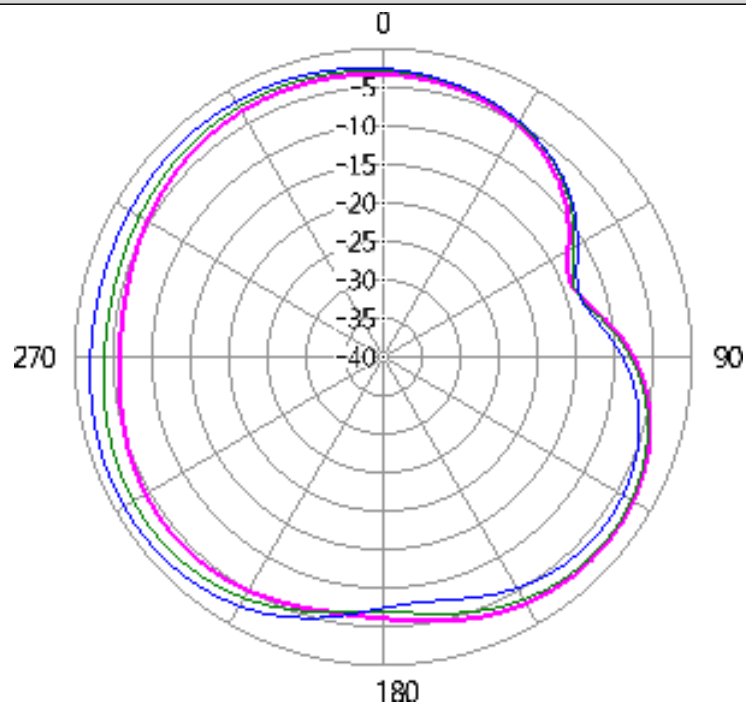


Table 11 Radiation pattern in XZ Plane

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

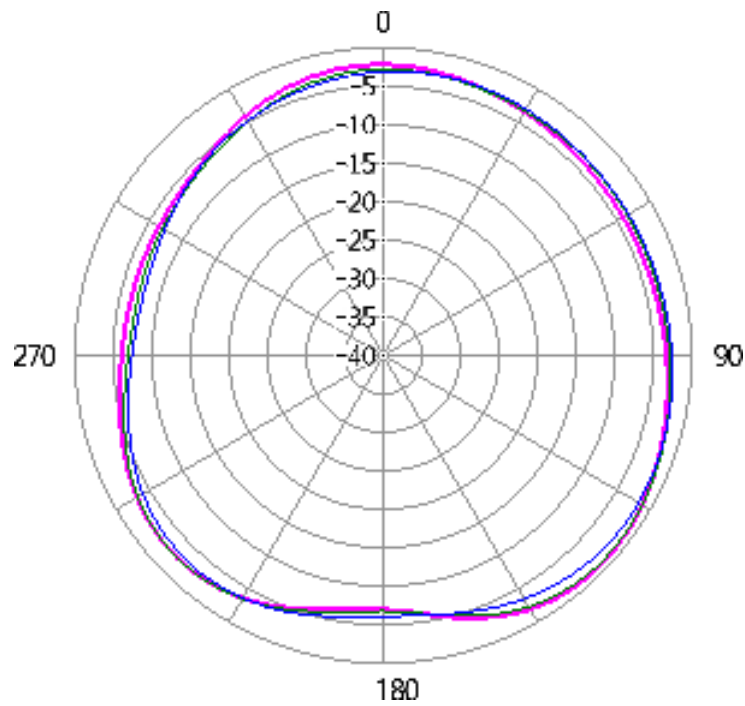


Table 12 Radiation pattern in YZ Plane

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

