

Antenna Specification

Antenna Type	Metal Monopole antenna
Antenna Peak Gain	-3.3 dBi @ Sub-G; -0.2 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	7AFYA5
Test Date	2025-11-11
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	-5.97	-10.01	9.97
904	-5.72	-9.74	10.61
906	-5.59	-9.61	10.94
908	-5.38	-9.41	11.46
910	-5.07	-9.09	12.34
912	-4.8	-8.8	13.19
914	-4.57	-8.54	13.99
916	-4.44	-8.39	14.48
918	-4.29	-8.25	14.97
920	-4.02	-7.97	15.96
922	-3.61	-7.6	17.38

924	-3.63	-7.27	18.77
926	-3.42	-7.05	19.71
928	-3.30	-6.98	20.05
2400	-0.20	-3.94	40.36
2410	-0.31	-4	39.85
2420	-0.68	-4.23	37.76
2430	-0.69	-4.07	39.16
2440	-0.73	-3.94	40.37
2450	-1.11	-4.3	37.14
2460	-1.33	-4.24	37.63
2470	-1.31	-3.98	39.99
2480	-1.37	-4.02	39.62
2490	-1.18	-4.01	39.71
2500	-0.70	-3.71	42.52

Table 5 3D radiation pattern @ 915 MHz

3D Radiation Pattern at 915 MHz

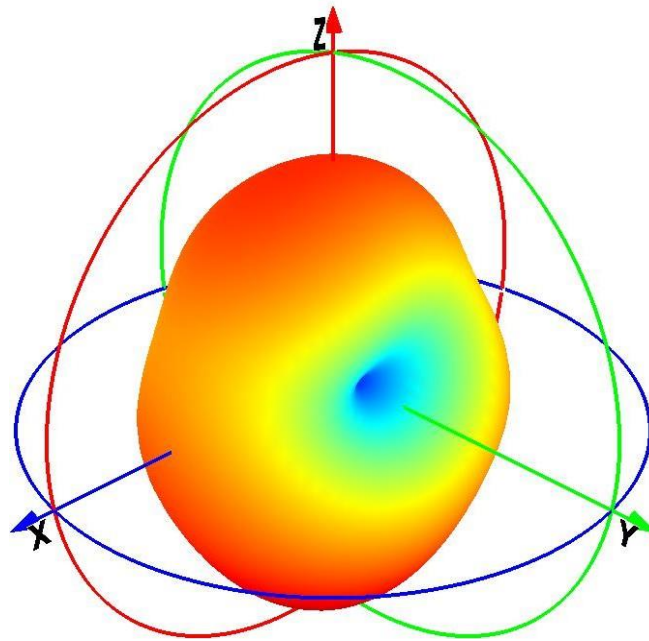


Table 6 Radiation pattern in XY Plane

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

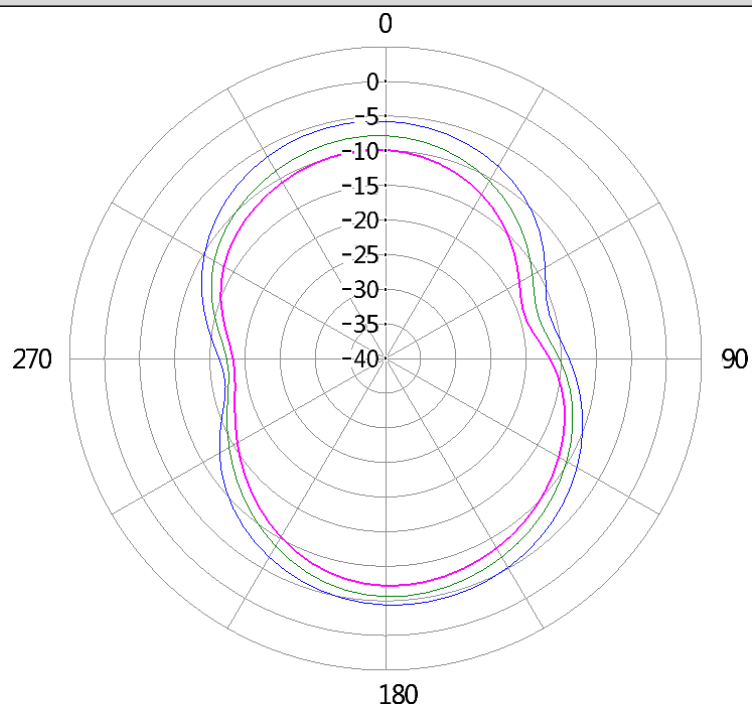


Table 7 Radiation pattern in XZ Plane

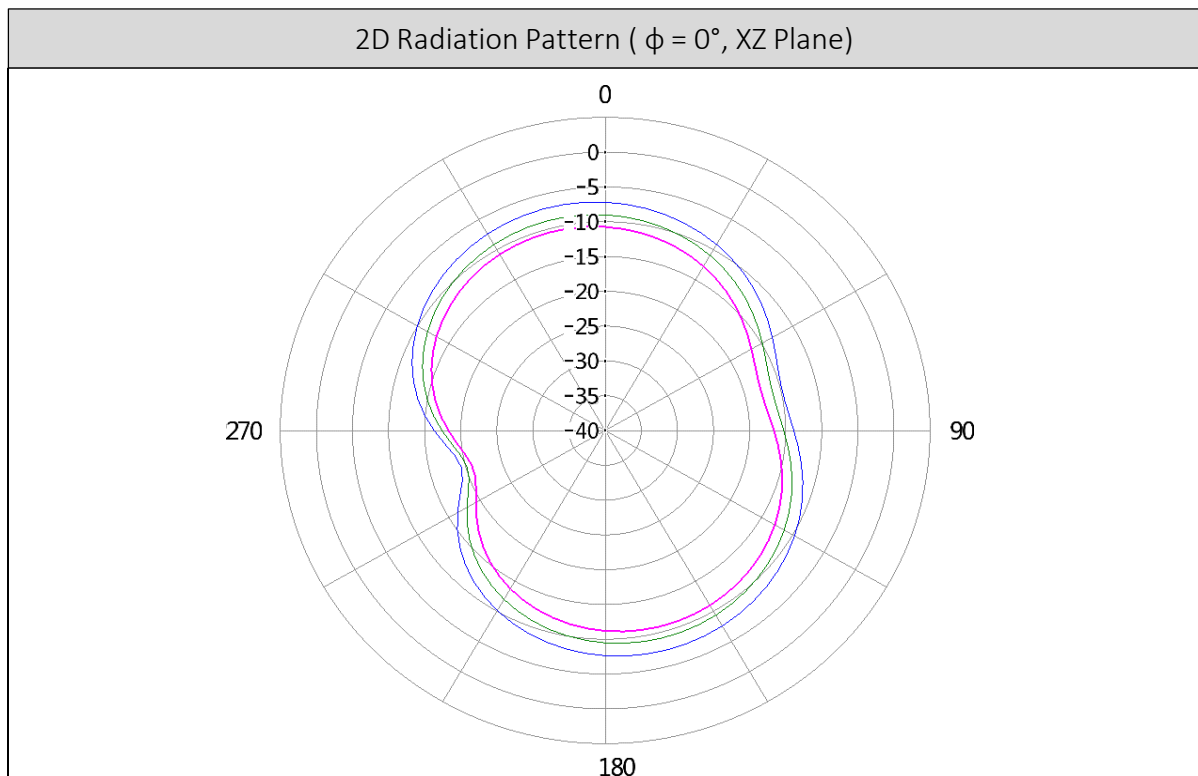


Table 8 Radiation pattern in YZ Plane

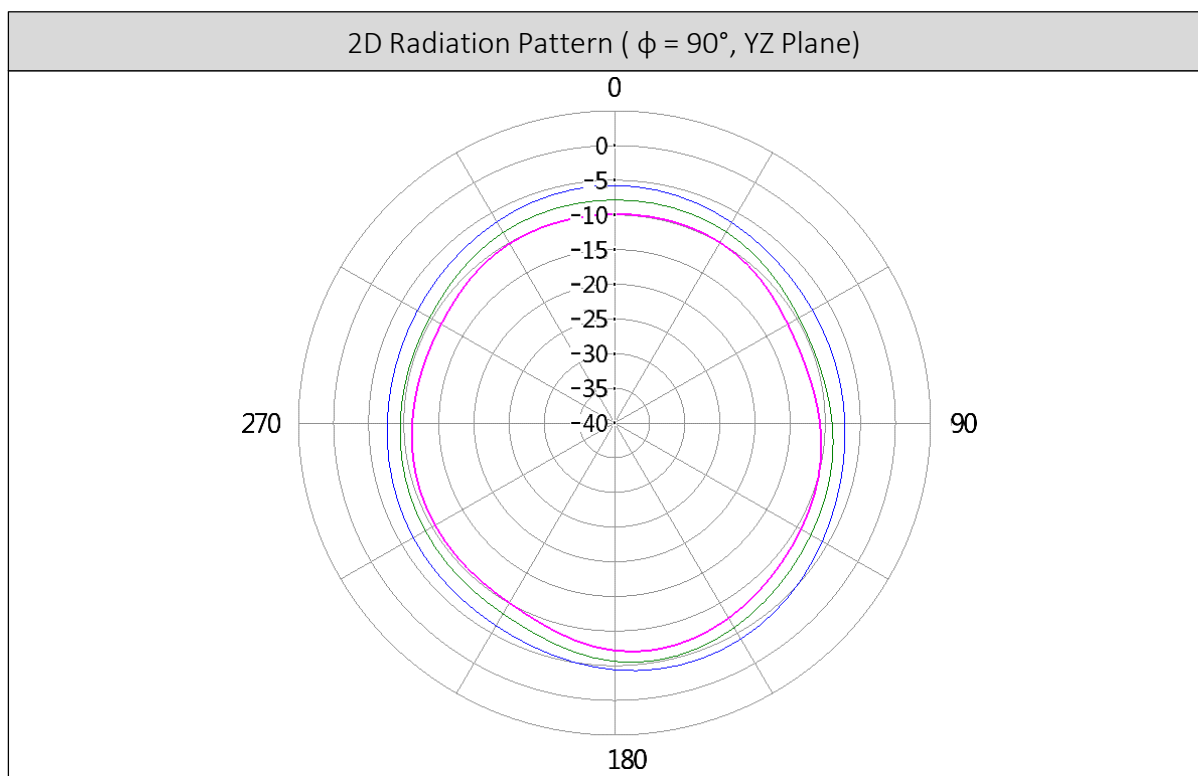


Table 9 3D radiation pattern @ 2450 MHz

3D Radiation Pattern at 2450MHz

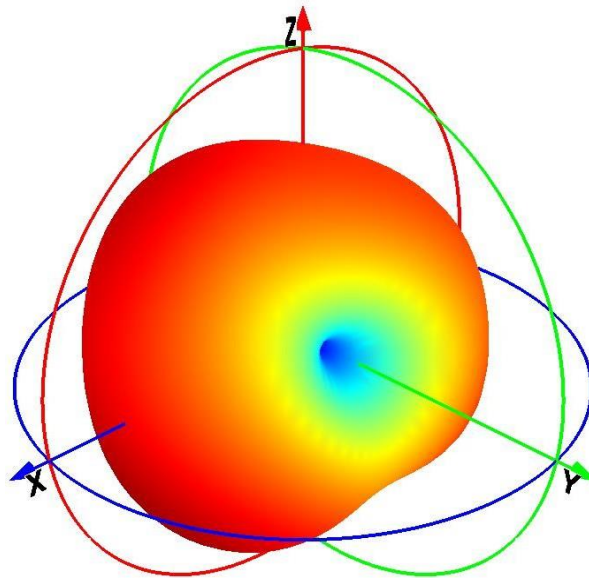


Table 10 Radiation pattern in XY Plane

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

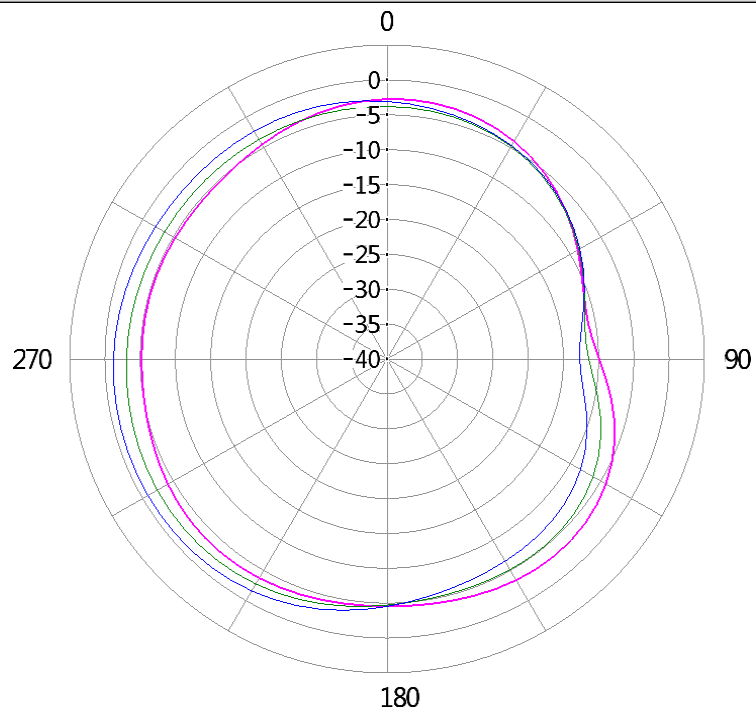


Table 11 Radiation pattern in XZ Plane

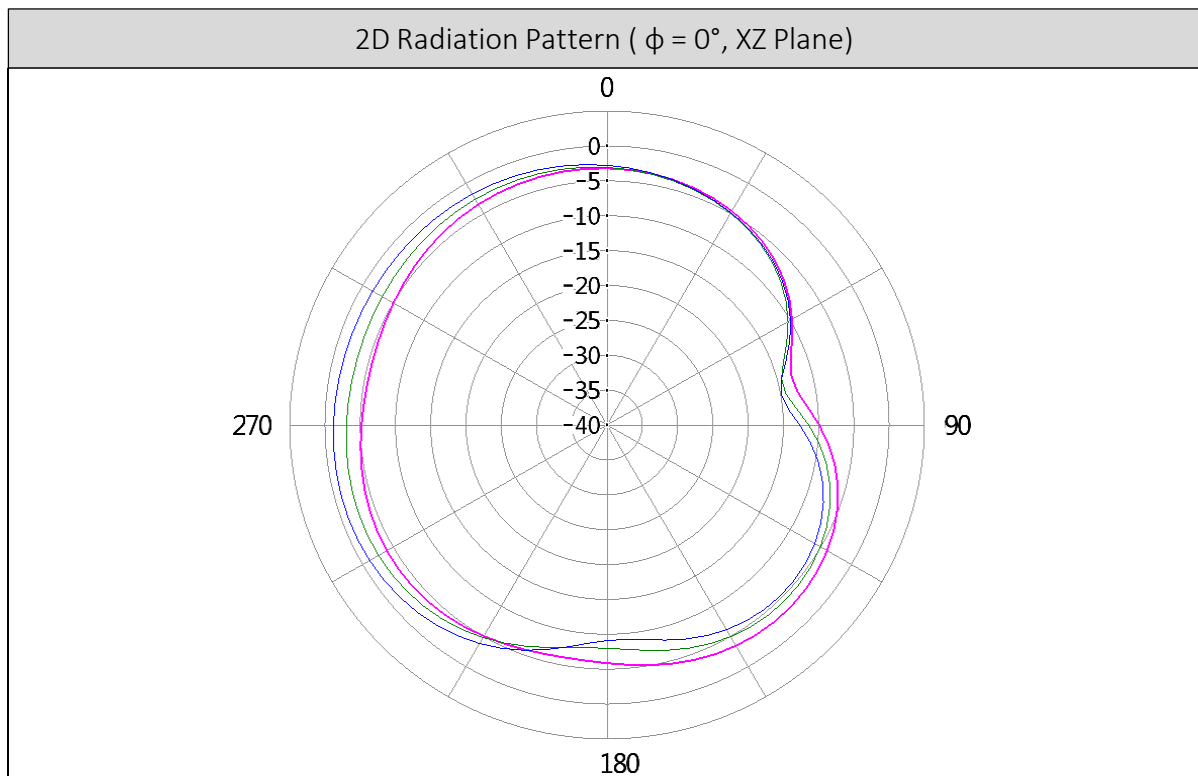


Table 12 Radiation pattern in YZ Plane

