

Antenna Specification

Antenna Type	Internal inverted F antenna
Antenna Peak Gain	0.7 dBi @ Sub-G; 3.9 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	7AFYA3
Test Date	2025-10-17
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	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	0.6	-3.36	46.09
904	0.6	-3.34	46.39
906	0.53	-3.42	45.47
908	0.52	-3.48	44.86
910	0.63	-3.41	45.61
912	0.62	-3.41	45.57
914	0.56	-3.46	45.07
916	0.43	-3.59	43.74
918	0.33	-3.73	42.41
920	0.37	-3.73	42.37
922	0.55	-3.63	43.4

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924	0.7	-3.5	44.7
926	0.69	-3.49	44.79
928	0.64	-3.6	43.61
2400	3.87	-1.67	68.05
2410	3.9	-1.65	68.46
2420	3.74	-1.81	65.94
2430	3.41	-2.13	61.17
2440	3.48	-2.04	62.47
2450	3.48	-2.21	60.16
2460	3.02	-2.72	53.49
2470	2.68	-3.09	49.04
2480	2.82	-3.02	49.86
2490	2.56	-3.31	46.67
2500	2.17	-3.75	42.14

Table 5 3D radiation pattern @ 915 MHz

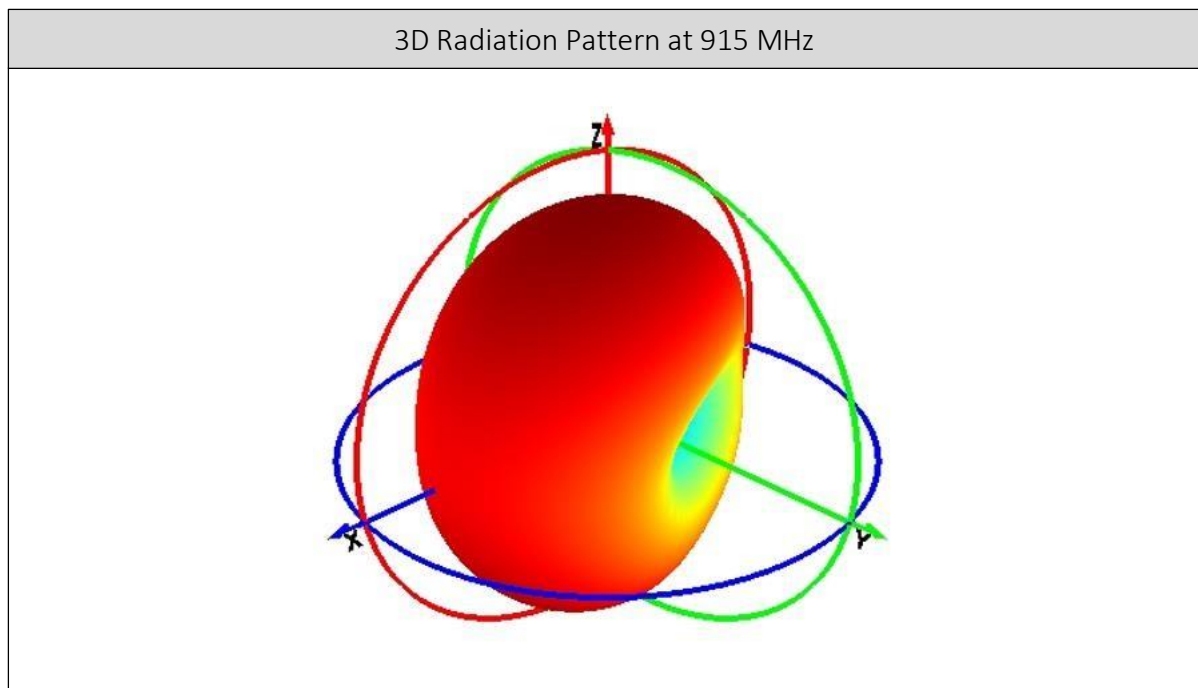


Table 6 Radiation pattern in XY Plane

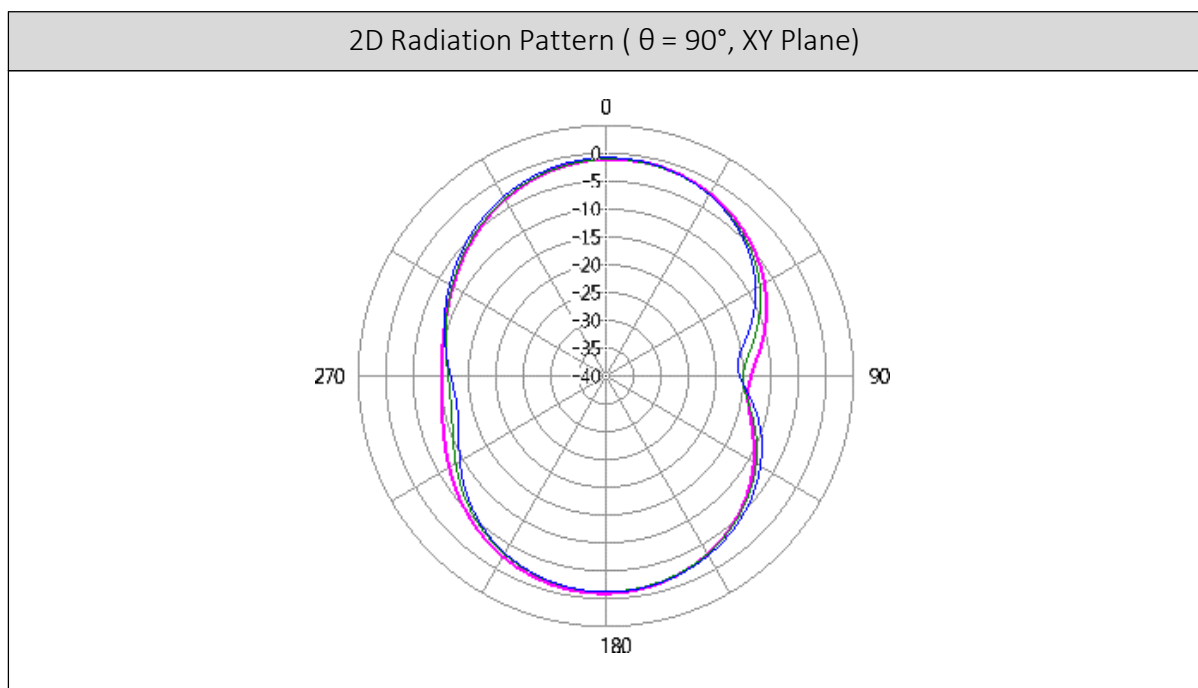
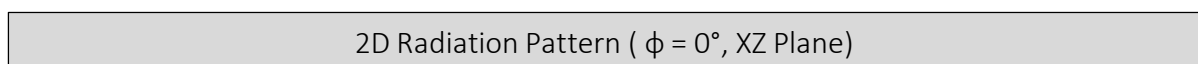


Table 7 Radiation pattern in XZ Plane



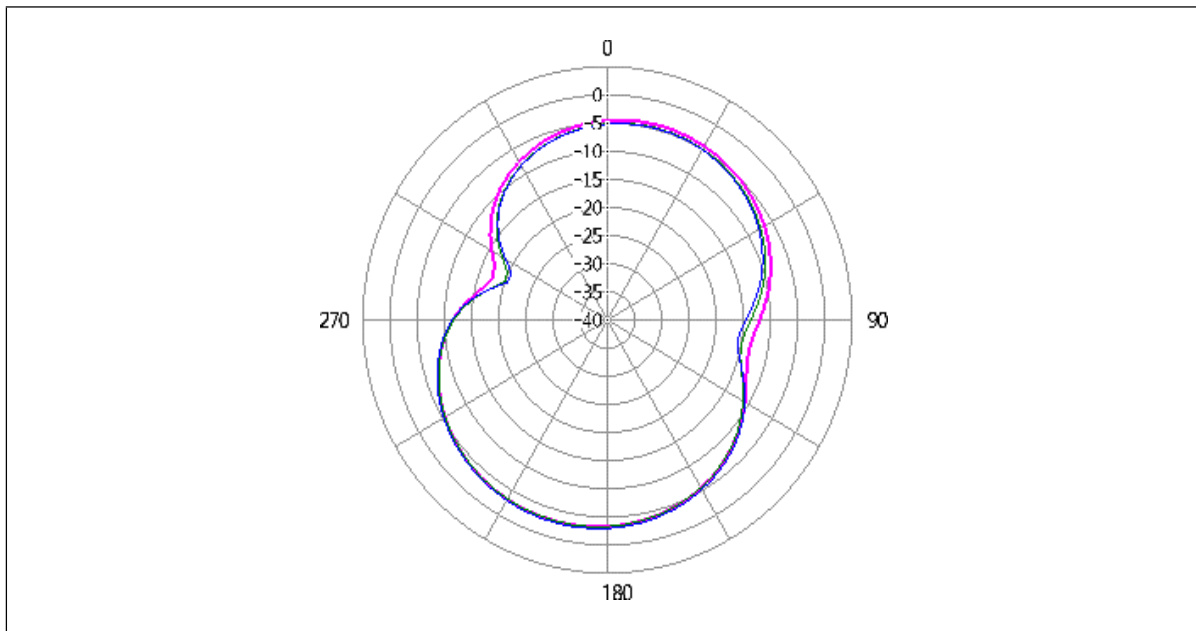


Table 8 Radiation pattern in YZ Plane

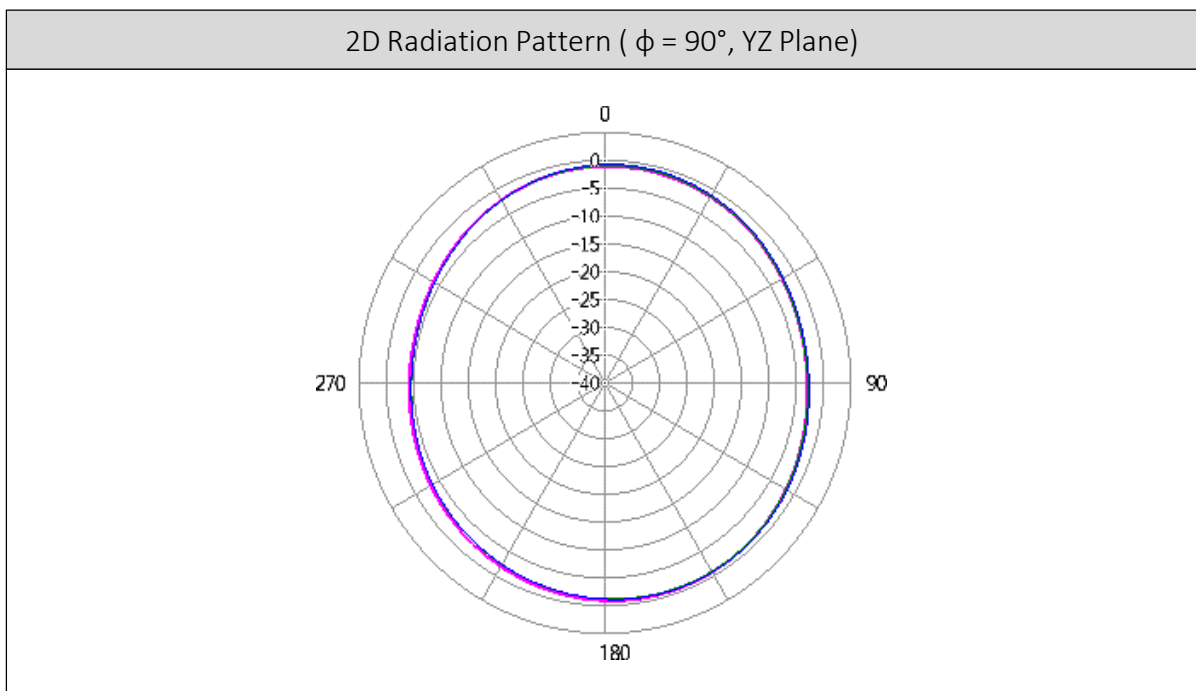


Table 9 3D radiation pattern @ 2450 MHz

3D Radiation Pattern at 2450MHz

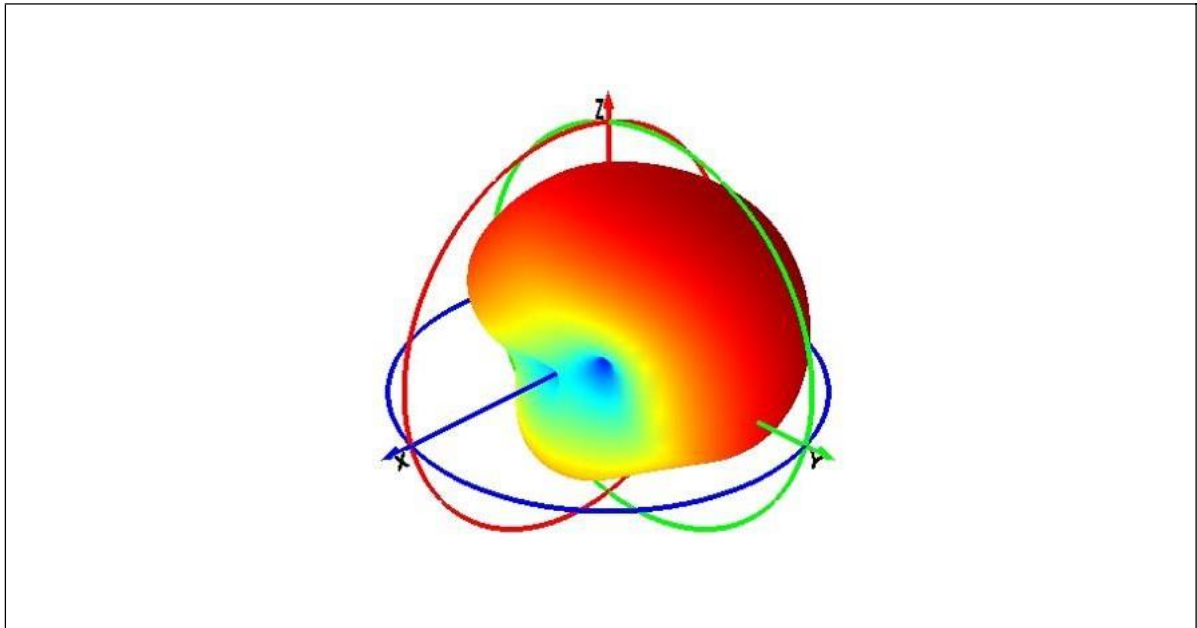


Table 10 Radiation pattern in XY Plane

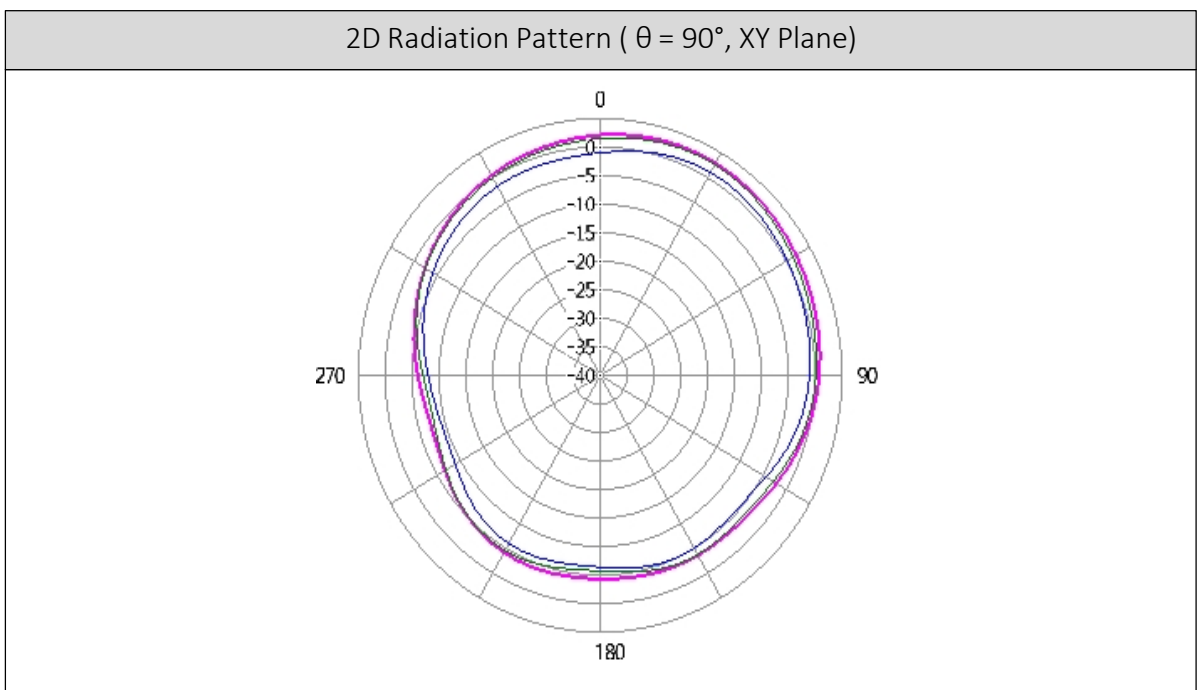


Table 11 Radiation pattern in XZ Plane



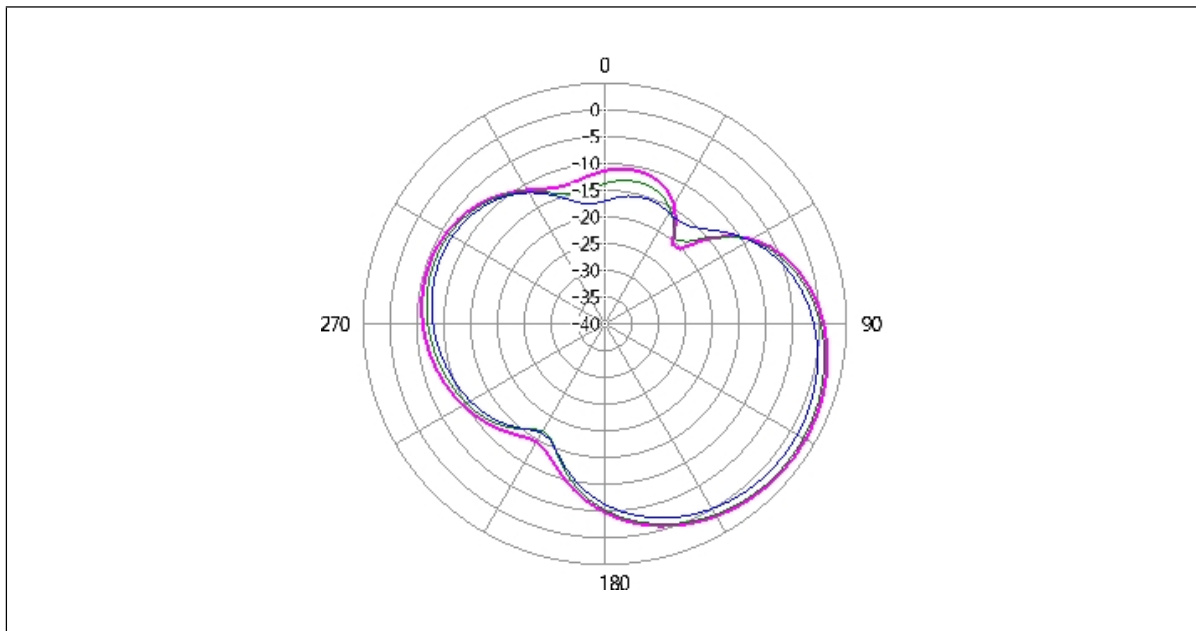


Table 12 Radiation pattern in YZ Plane

