

Antenna Specification

Antenna Type	Internal inverted F antenna
Antenna Peak Gain	-4.11 dBi @ Sub-G; 1.65 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	7AFYA2
Test Date	2025-11-05
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	-6.84	-9.72	10.67
904	-6.49	-9.32	11.69
906	-6.24	-9.05	12.43
908	-5.97	-8.79	13.22
910	-5.59	-8.4	14.46
912	-5.27	-8.07	15.61
914	-5.06	-7.82	16.51
916	-4.97	-7.69	17
918	-4.88	-7.58	17.45
920	-4.71	-7.39	18.26
922	-4.37	-7.08	19.58

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924	-4.15	-6.84	20.69
926	-4.11	-6.76	21.07
928	-4.2	-6.86	20.63
2400	1.57	-3.1	48.98
2410	1.65	-3.02	49.88
2420	1.29	-3.32	46.55
2430	0.95	-3.58	43.85
2440	1.06	-3.39	45.8
2450	0.72	-3.81	41.55
2460	0.09	-4.41	36.22
2470	0.00	-4.45	35.91
2480	0.14	-4.34	36.79
2490	-0.26	-4.87	32.59
2500	-0.42	-5.04	31.35

Table 5 3D radiation pattern @ 915 MHz

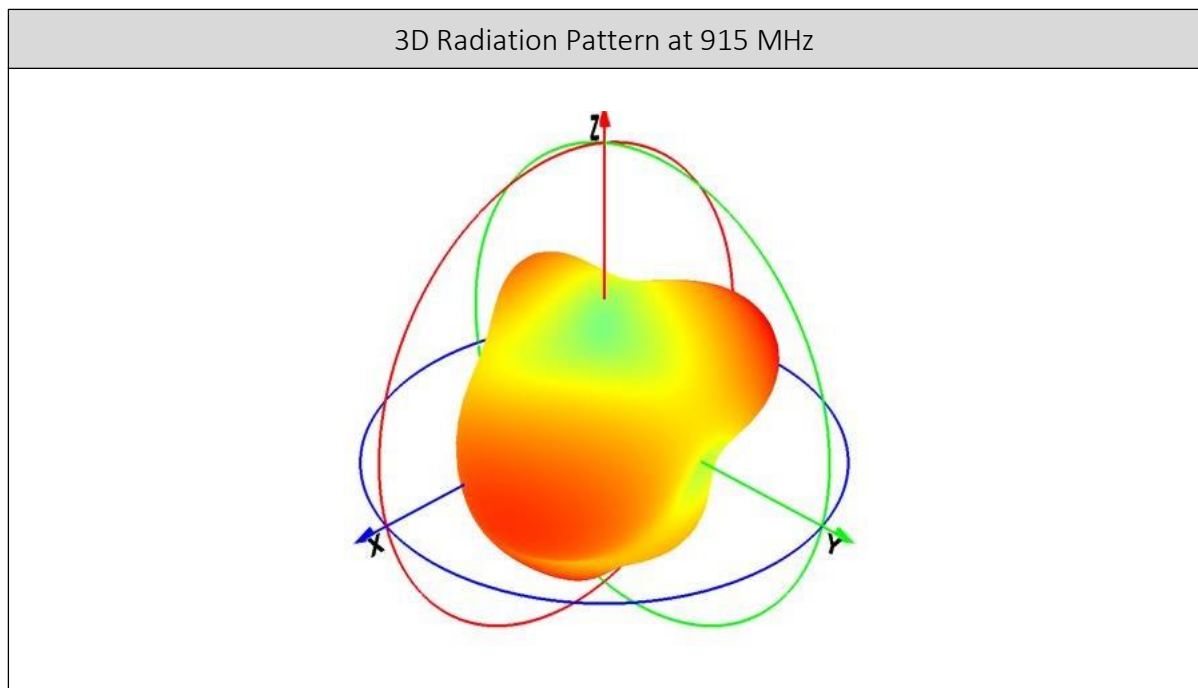


Table 6 Radiation pattern in XY Plane

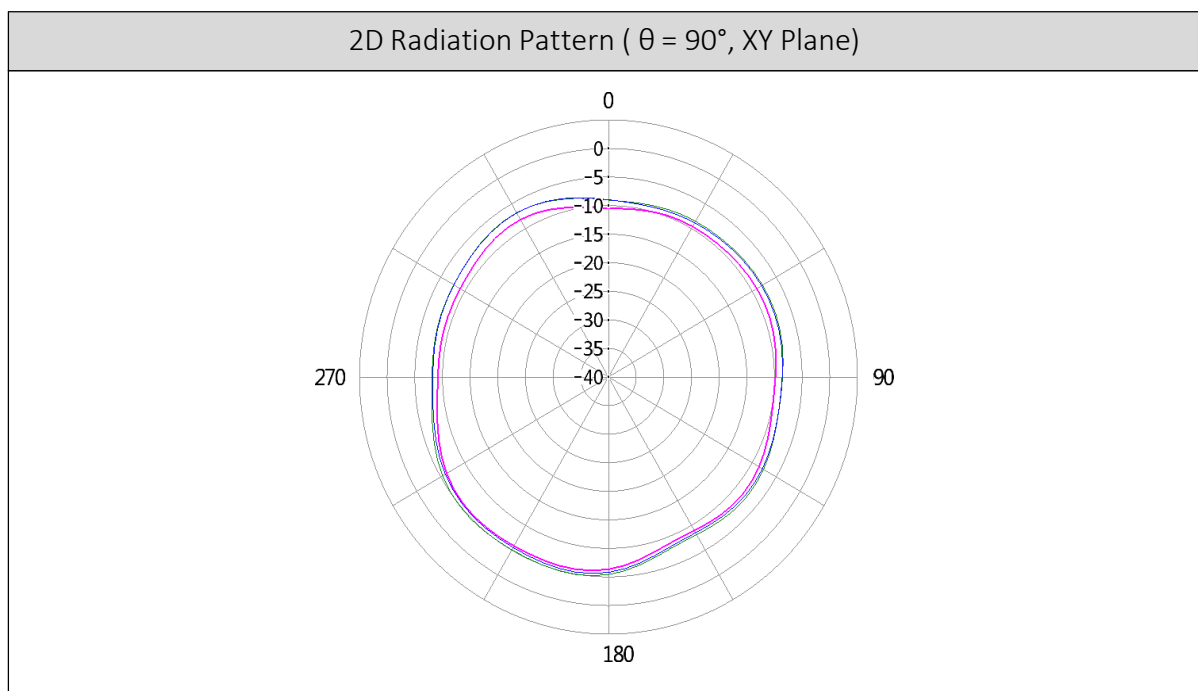
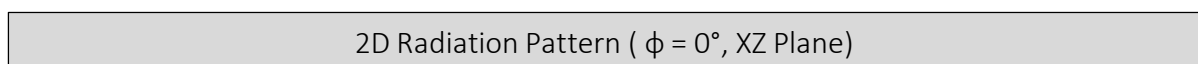


Table 7 Radiation pattern in XZ Plane



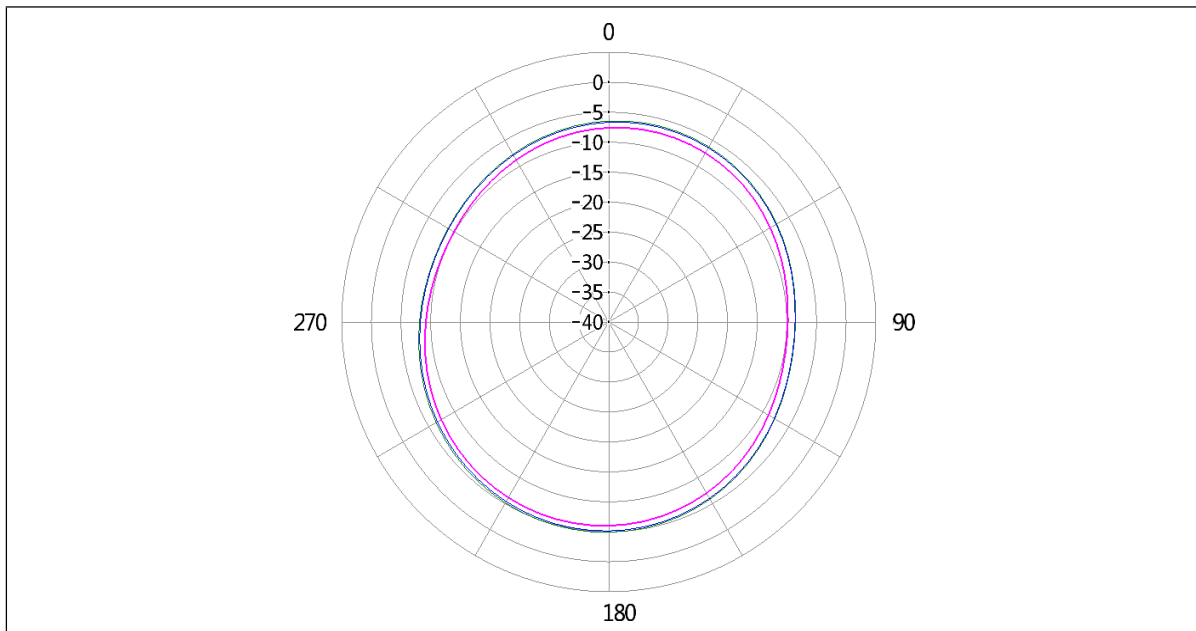


Table 8 Radiation pattern in YZ Plane

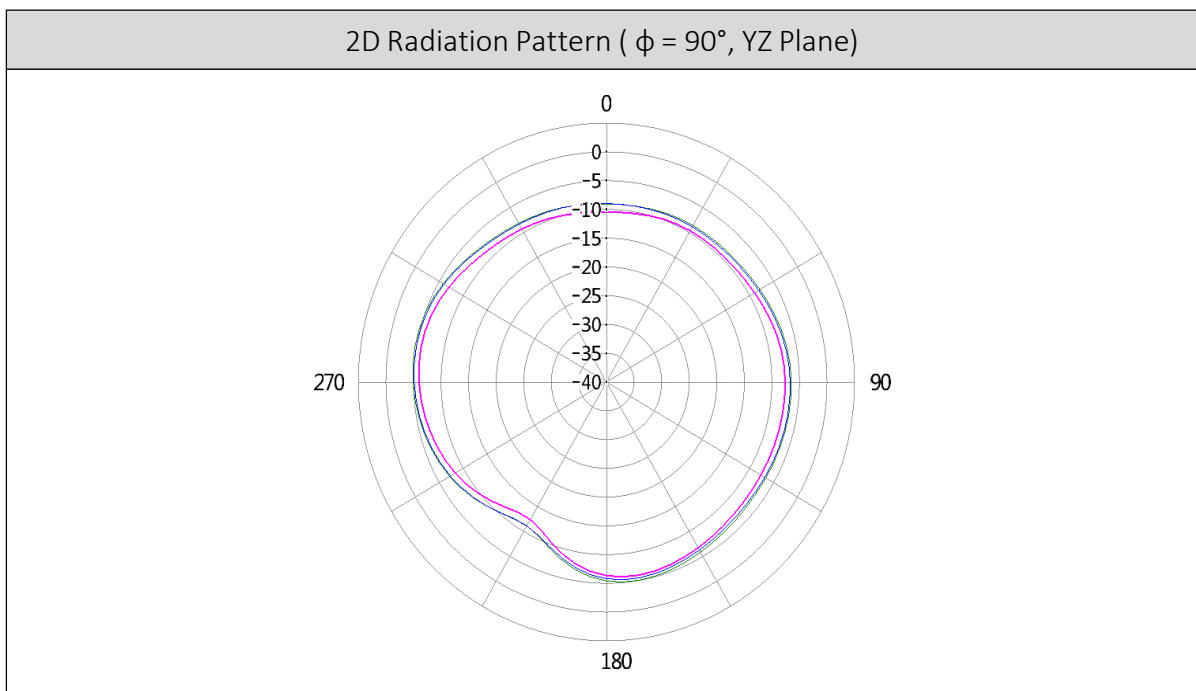


Table 9 3D radiation pattern @ 2450 MHz

3D Radiation Pattern at 2450MHz

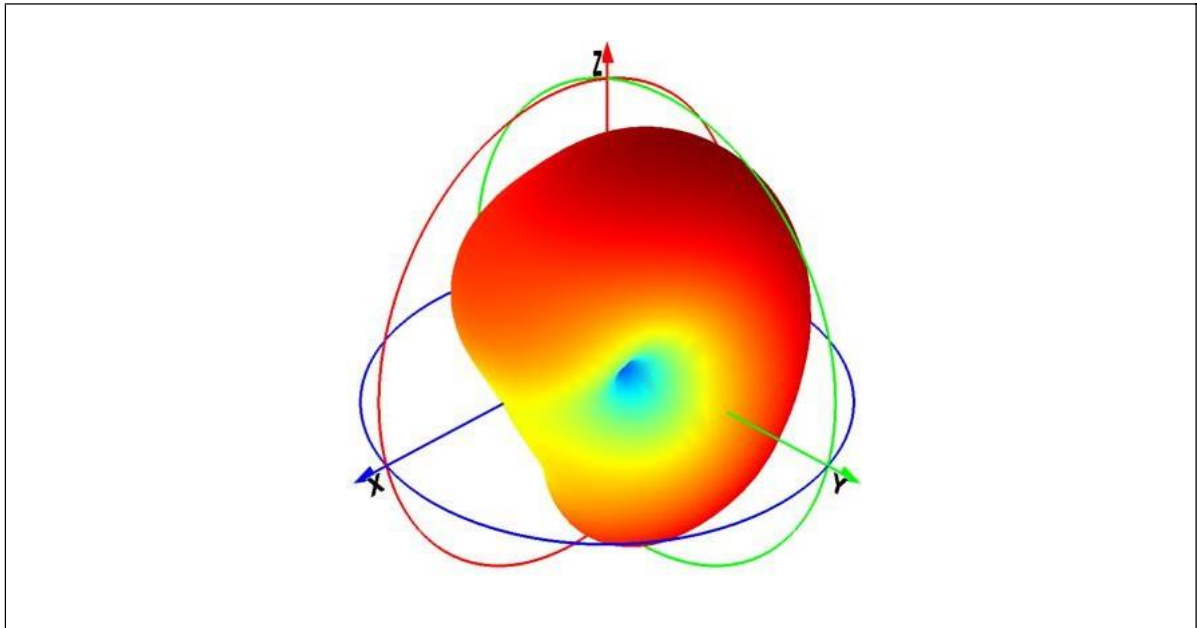


Table 10 Radiation pattern in XY Plane

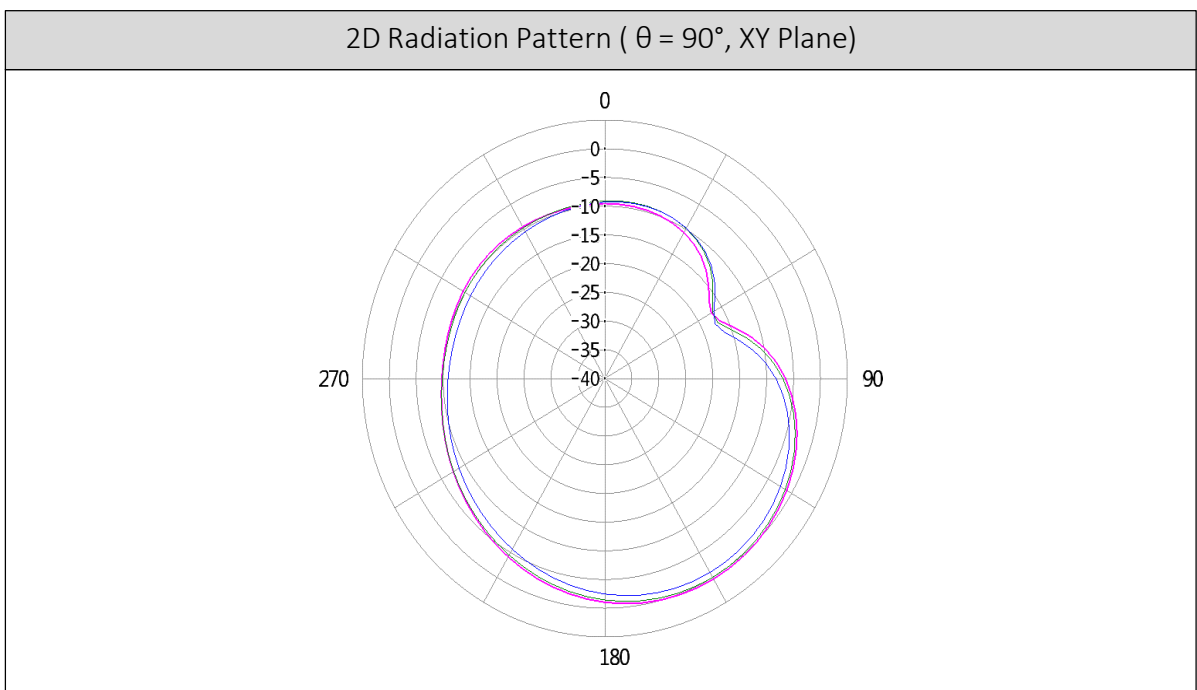


Table 11 Radiation pattern in XZ Plane



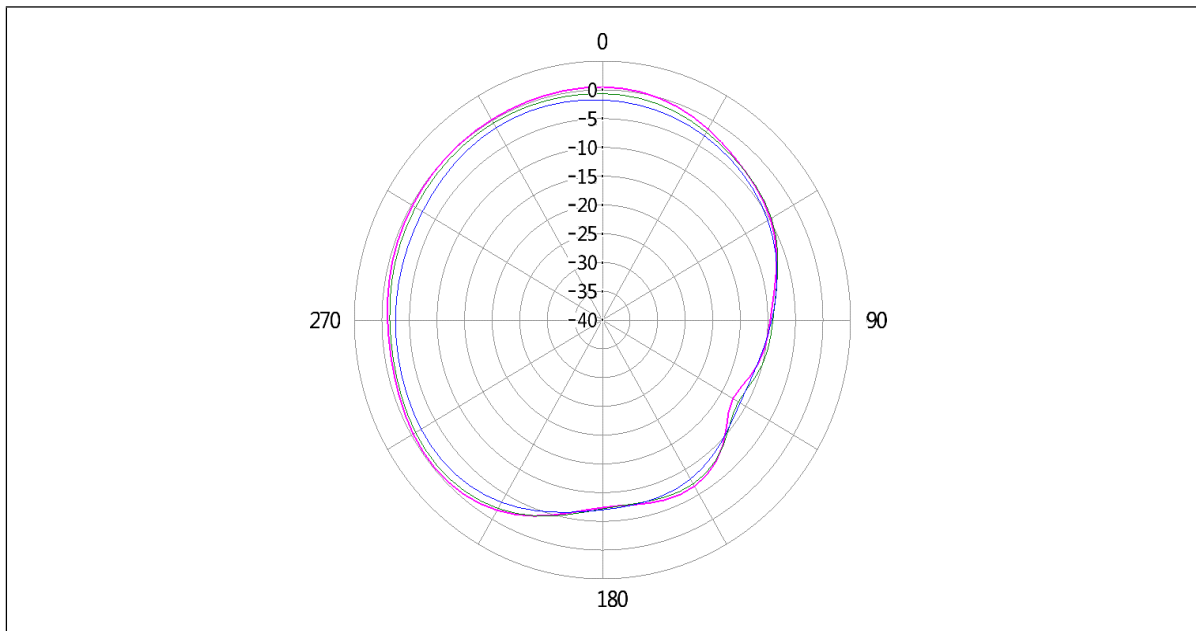


Table 12 Radiation pattern in YZ Plane

