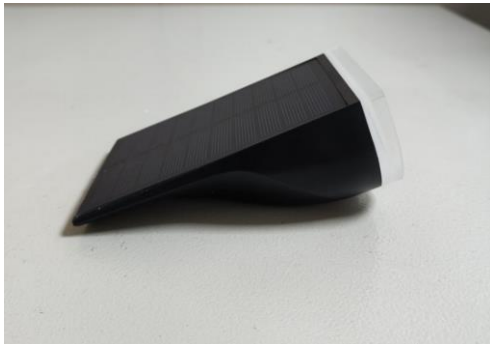


# Antenna Specification

|                                  |                                                                                                                                                               |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Antenna picture                  |                                                                             |
| Antenna Type                     | Internal inverted F Metal antenna                                                                                                                             |
| Antenna Peak Gain                | 0.91 dBi                                                                                                                                                      |
| Operating Band                   | 2400 MHz ~ 2483.5 MHz                                                                                                                                         |
| Test laboratory name and Address | IoT Antenna Test Laboratory, 11 / F, LEEDARSON LIGHTING CO., LTD.<br>Xingtai Industrial Park, Changtai Economic Development Zone,<br>Zhangzhou, 363900, China |
| Antenna Manufacturer             | LEEDARSON LIGHTING CO., LTD.                                                                                                                                  |
| Model name                       | SL5C 草坪灯                                                                                                                                                      |
| DUT photo                        |                                                                           |
| Test Date                        | 2024-10-28                                                                                                                                                    |
| Test Conductor                   | Xiaokun Lin                                                                                                                                                   |

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

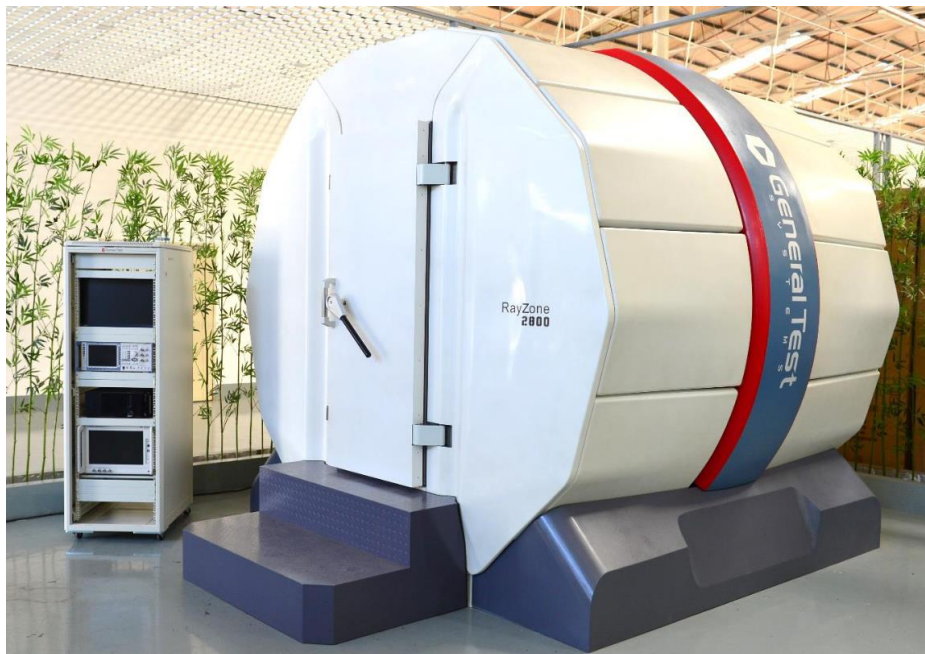


Figure 2 RayZone2800 OTA system

## Equipment List

Table 1 Equipment List

| Used                                | Equipment        | Manufacturer        | Model No.   | Serial No.          | Last Cal. | Due Date  |
|-------------------------------------|------------------|---------------------|-------------|---------------------|-----------|-----------|
| <input checked="" type="checkbox"/> | Network Analyzer | Keysight            | E5071C      | MY46527808          | 2024/1/9  | 2025/1/8  |
| <input type="checkbox"/>            | Network Analyzer | Keysight            | E5071C      | MY46108051          | 2024/4/19 | 2025/4/18 |
| <input checked="" type="checkbox"/> | Anechoic Chamber | Sunyield            | SY-16       | SI1727              | 2024/4/28 | 2025/4/27 |
| <input type="checkbox"/>            | Anechoic Chamber | General Test System | RayZone2800 | CT10121244<br>B5079 | 2024/5/10 | 2025/5/9  |

## 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                                 | <input checked="" type="checkbox"/> | MaxSign-V1.4.3 | <input type="checkbox"/> |

## Test Result

### Efficiency and Gain

Table 3 Antenna Efficiency and Gain

| Frequency (MHz) | Gain (dBi) | Efficiency (dB) | Efficiency (%) |
|-----------------|------------|-----------------|----------------|
| 2400            | 0.91       | -3.31           | 46.69          |
| 2410            | 0.59       | -3.62           | 43.50          |
| 2420            | 0.39       | -3.80           | 41.66          |
| 2430            | 0.37       | -3.79           | 41.79          |
| 2440            | 0.16       | -3.94           | 40.32          |
| 2450            | -0.21      | -4.26           | 37.53          |
| 2460            | -0.16      | -4.11           | 38.77          |
| 2470            | -0.07      | -3.95           | 40.26          |
| 2480            | -0.28      | -4.08           | 39.10          |
| 2490            | -0.40      | -4.14           | 38.55          |
| 2500            | -0.22      | -3.92           | 40.51          |

## Radiation Pattern

Table 4 Product coordinates

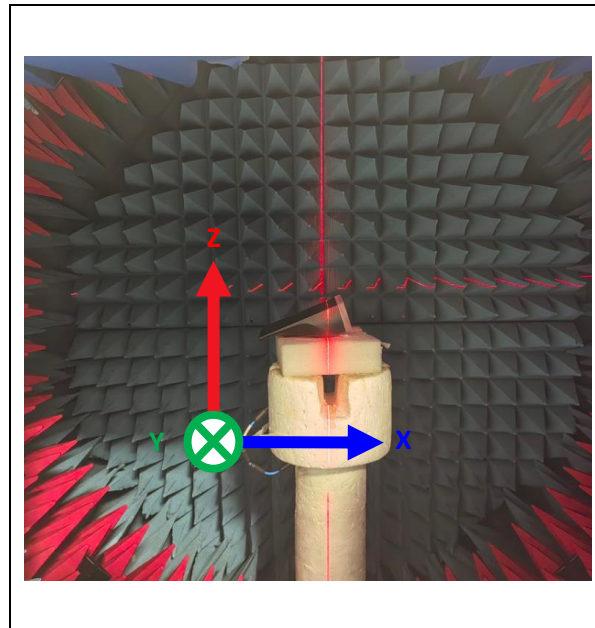


Table 5 3D radiation pattern

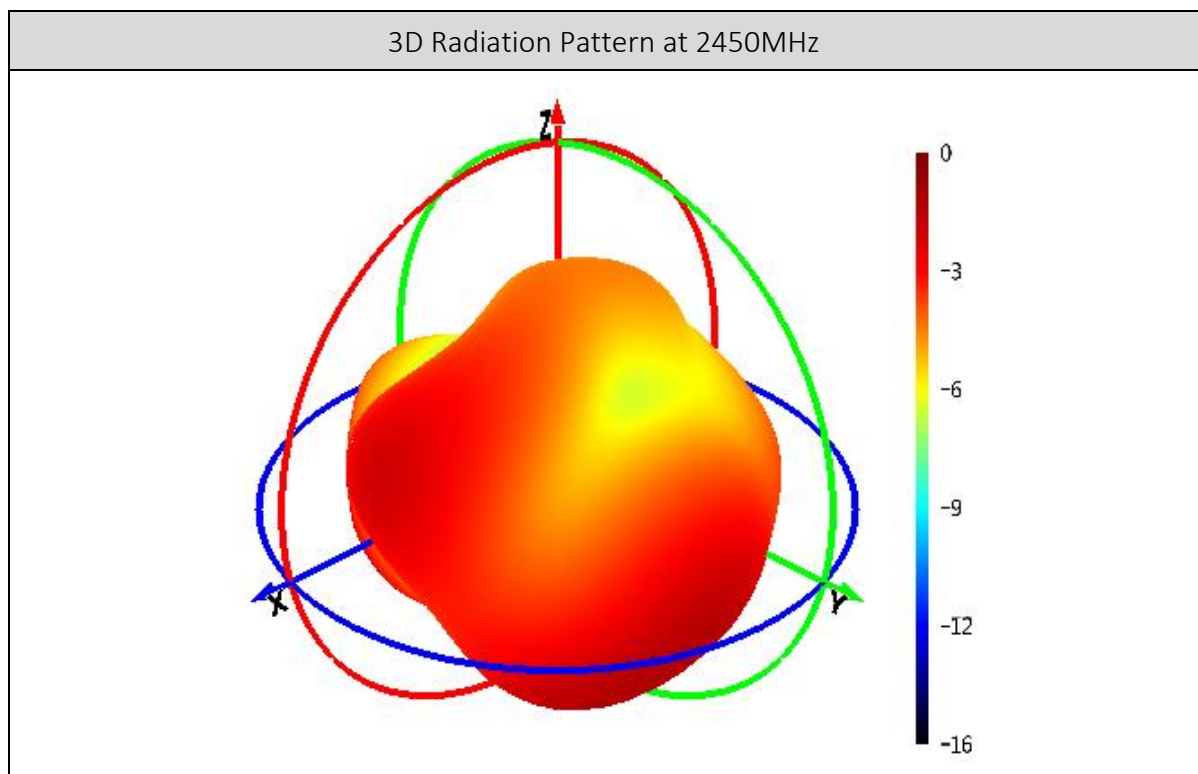


Table 6 Radiation pattern in XY Plane

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

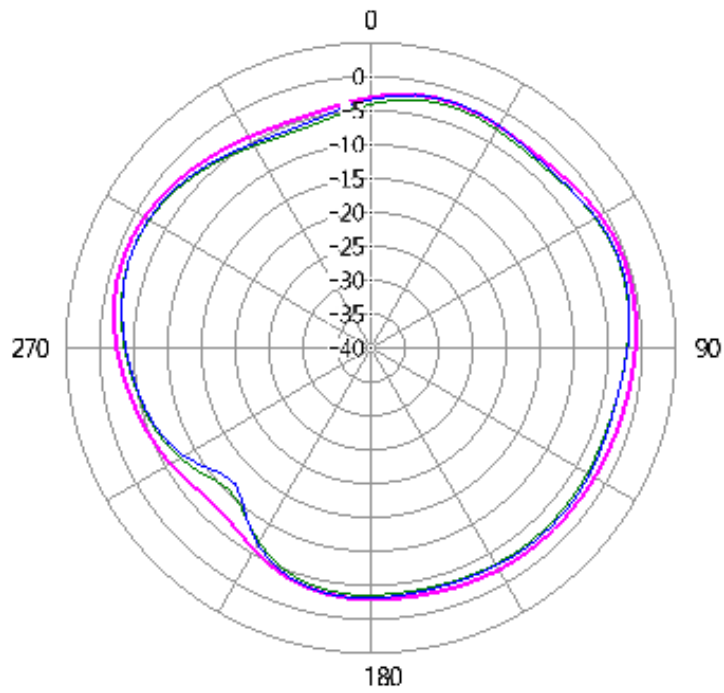


Table 7 Radiation pattern in XZ Plane

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

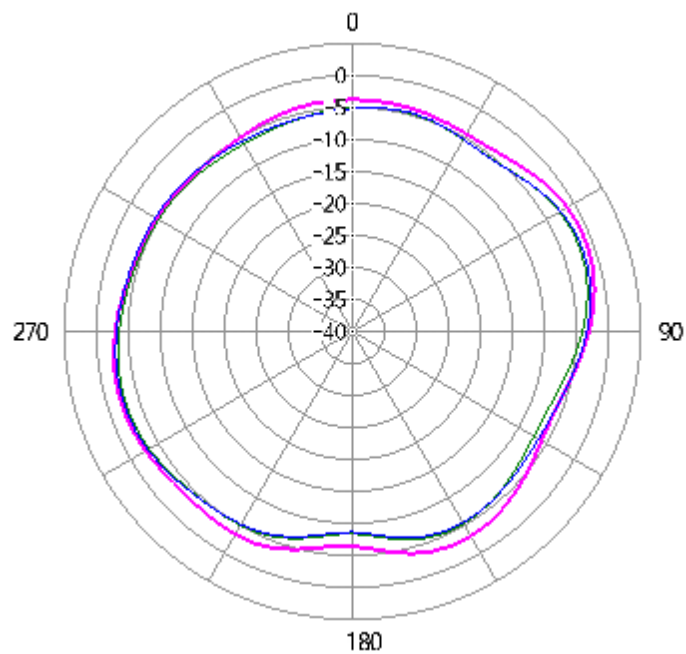


Table 8 Radiation pattern in YZ Plane

