

# Antenna Specification

|                                  |                                                                                                                                                              |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Antenna Type                     | PCB IFA antenna                                                                                                                                              |
| Antenna Peak Gain                | 1.47 dBi                                                                                                                                                     |
| Operating Band                   | 2400 MHz ~ 2483.5 MHz                                                                                                                                        |
| Test laboratory name and Address | IoT Antenna Test Laboratory, 3 / A, LEEDARSON LIGHTING CO., LTD.<br>Xingtai Industrial Park, Changtai Economic Development Zone,<br>Zhangzhou, 363900, China |
| Antenna Manufacturer             | LEEDARSON LIGHTING CO., LTD.                                                                                                                                 |
| Model name                       | Keypad Dimmer                                                                                                                                                |
| Test Date                        | 2024-07-09                                                                                                                                                   |
| Test Conductor                   | Xiuweisong                                                                                                                                                   |

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            | 1.47       | -2.58           | 55.20          |
| 2410            | 1.42       | -2.51           | 55.99          |
| 2420            | 1.24       | -2.61           | 54.75          |
| 2430            | 1.30       | -2.66           | 54.10          |
| 2440            | 1.30       | -2.58           | 55.18          |
| 2450            | 1.31       | -2.79           | 52.53          |
| 2460            | 1.22       | -2.91           | 51.12          |
| 2470            | 1.14       | -2.63           | 50.46          |
| 2480            | 1.30       | -3.00           | 50.03          |
| 2490            | 1.29       | -3.17           | 48.09          |
| 2500            | 1.47       | -2.58           | 55.20          |

## Radiation Pattern

Table 4 Product coordinates

| Product Coordinates                      |
|------------------------------------------|
| Please refer to the antenna setup photo. |

Table 5 3D radiation pattern

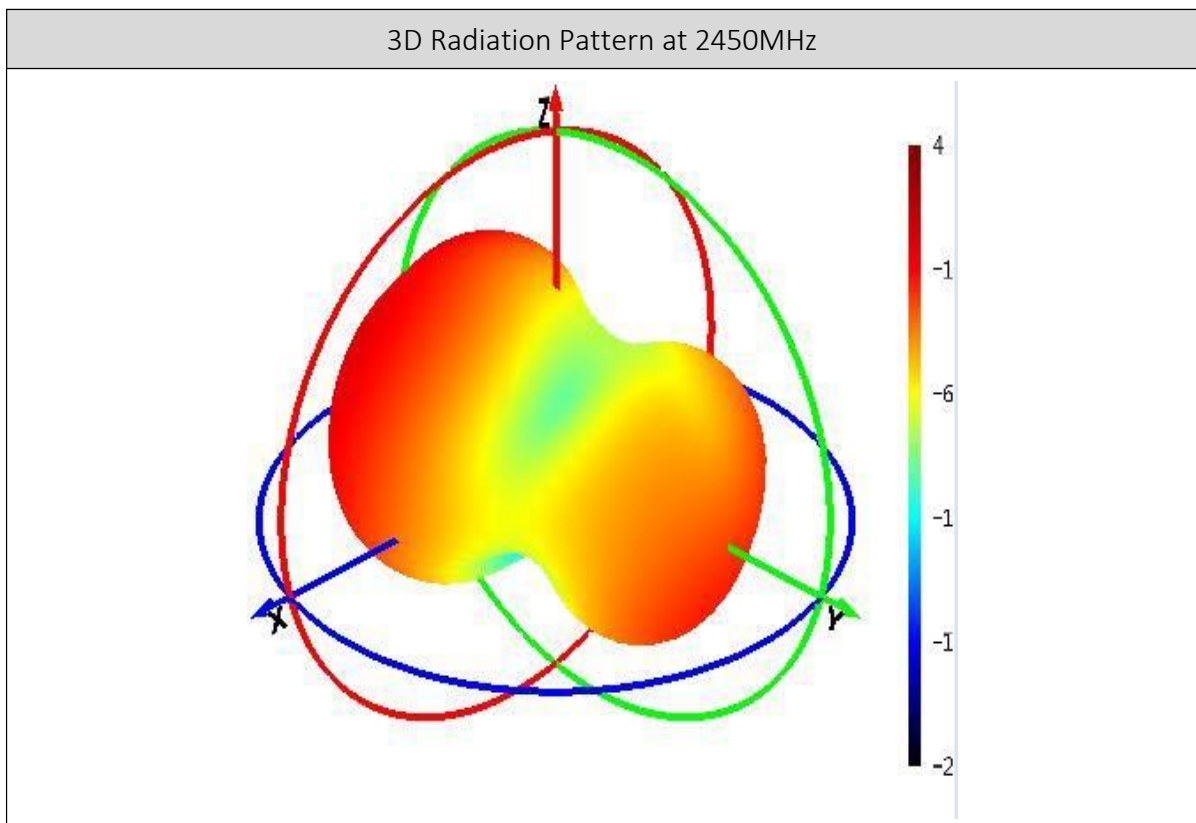


Table 6 Radiation pattern in XY Plane

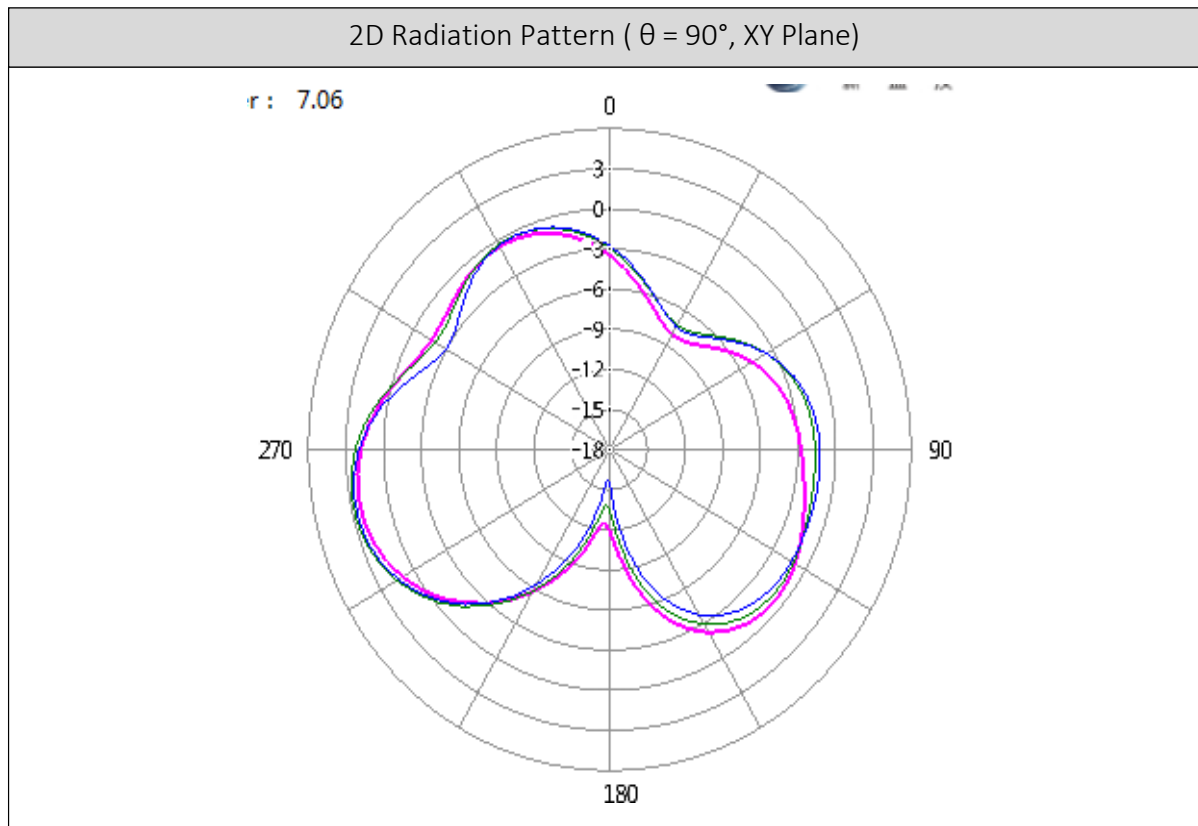


Table 7 Radiation pattern in XZ Plane

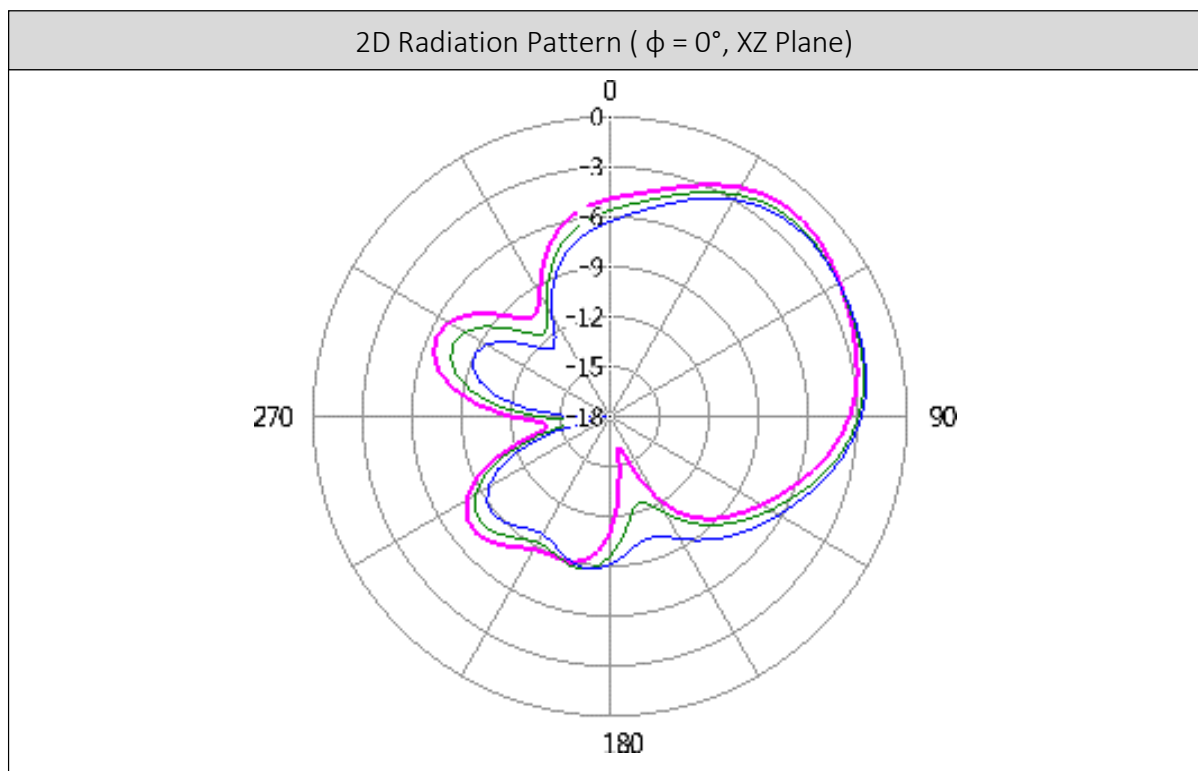


Table 8 Radiation pattern in YZ Plane

