

# Antenna Specification

|                                  |                                                                                                                                                              |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Antenna Type                     | Dipole Antenna                                                                                                                                               |
| Antenna Peak Gain                | 2.22 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                       | VAC-A20-C-WB-A650                                                                                                                                            |
| Test Date                        | 2024.05.30                                                                                                                                                   |
| Test Conductor                   | Niu Jiale                                                                                                                                                    |

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<br>System | RayZone2800 | CT10121244<br>B5079 | 2024/5/10 | 2025/5/09 |

## 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            | 2.22       | -1.79           | 66.16          |
| 2410            | 2.22       | -1.79           | 66.28          |
| 2420            | 1.99       | -1.96           | 63.65          |
| 2430            | 2.00       | -1.86           | 65.17          |
| 2440            | 2.14       | -1.65           | 68.41          |
| 2450            | 1.96       | -1.96           | 63.71          |
| 2460            | 1.85       | -2.13           | 61.30          |
| 2470            | 1.95       | -1.97           | 63.51          |
| 2480            | 2.11       | -1.90           | 64.52          |
| 2490            | 1.95       | -2.10           | 61.62          |
| 2500            | 2.03       | -2.08           | 61.96          |

## Radiation Pattern

Table 4 Product coordinates

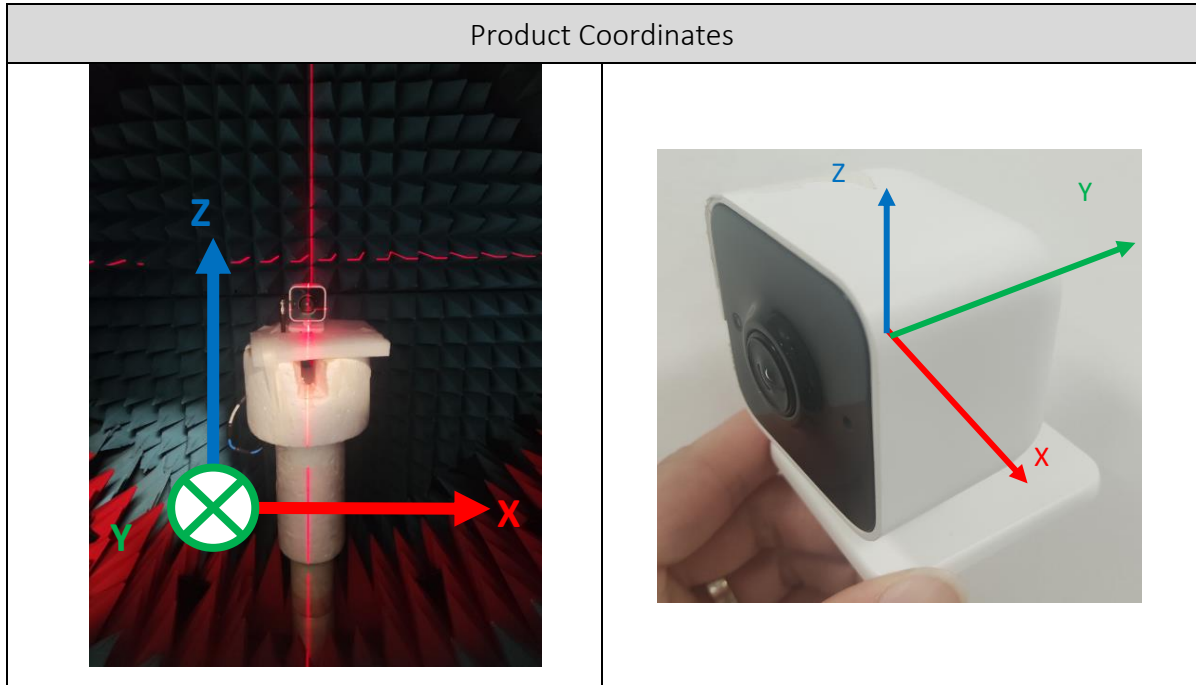


Table 5 3D radiation pattern

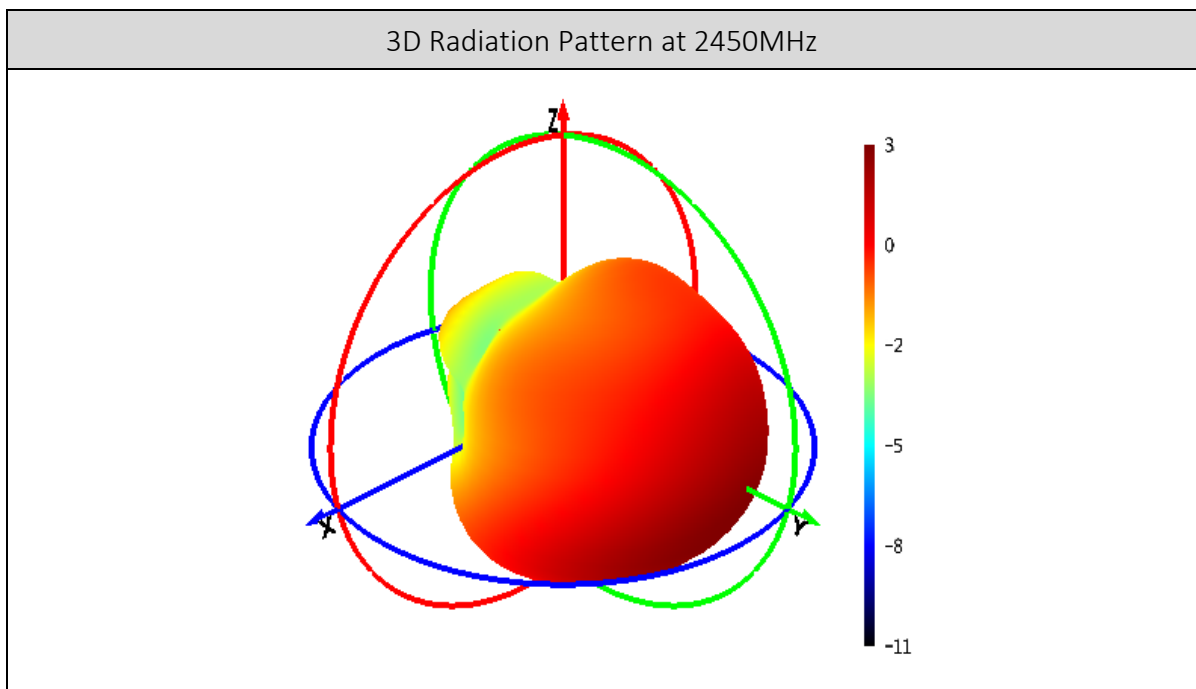


Table 6 Radiation pattern in XY Plane

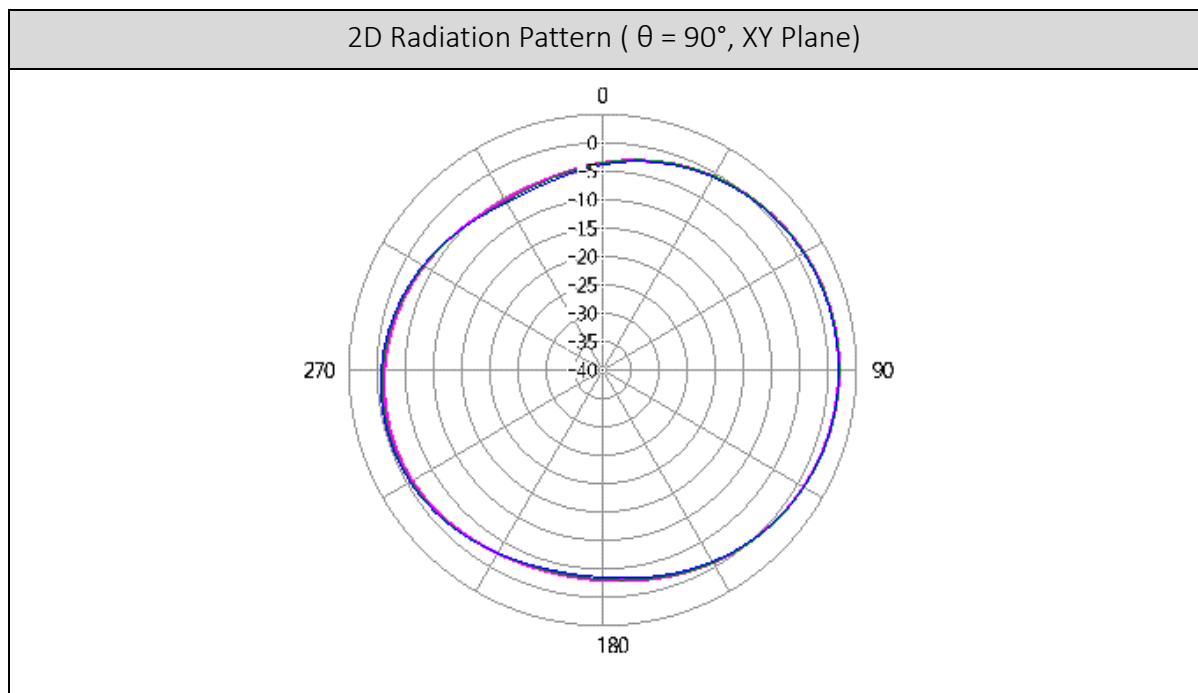


Table 7 Radiation pattern in XZ Plane

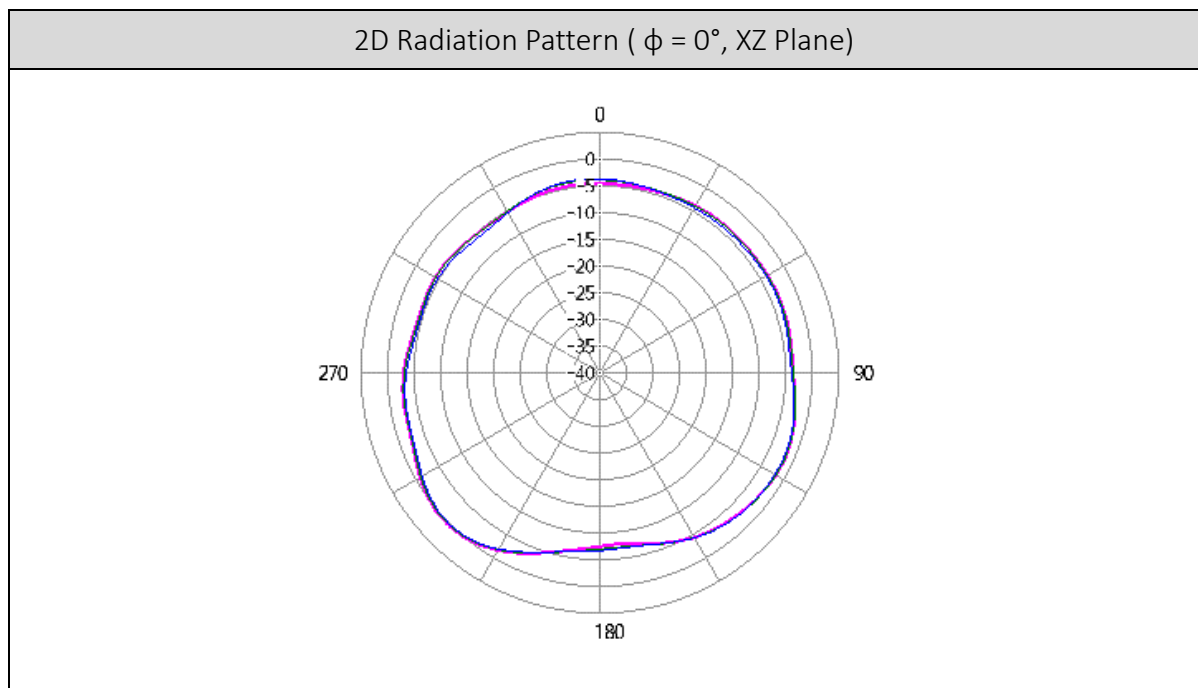


Table 8 Radiation pattern in YZ Plane

