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Rev.: 01  
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# ANTENNA PASSIVE TEST REPORT

Application No. SZOA2512000236AT  
Applicant IoTBank Co , Ltd  
Manufacturer Shenzhen Quantum wyse Technology Co , Ltd  
Product Name Bed sensor  
Model No. LCBS01  
Standards ANSI/IEEE Std 149-2021  
Date Initial Sample(s) Received Dec 26, 2025  
Testing Start Date Dec 26, 2025  
Testing Finish Date Dec 26, 2025  
Report Issue Date Jan 06, 2026

\* In the configuration tested, the EUT detailed in this report complied with the standards specified above.

Turner He

Ervin Li

Prepared by: Turner He/ Test Engineer

Approved by: Ervin Li/ Technical Manager



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Revision History

| Revision | Issue Date   | Description                |
|----------|--------------|----------------------------|
| 01       | Jan 06, 2026 | Initial creation of report |



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### 1 General Information

#### 1.1 Testing Laboratory

|          |                                                                                                                      |
|----------|----------------------------------------------------------------------------------------------------------------------|
| Test Lab | SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch                                                      |
| Address  | No. 1 Workshop, M-10, Middle section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 |
| Contact  | Ervin Li                                                                                                             |
| Tel.     | +86 18823369694                                                                                                      |
| Fax      | +86-755-25328600                                                                                                     |
| E-mail   | Ervin.Li@sgs.com                                                                                                     |

#### 1.2 Details of Applicant

|                     |                                                                      |
|---------------------|----------------------------------------------------------------------|
| Applicant's Name    | IoTBank Co , Ltd                                                     |
| Applicant's Address | 2-21-1 Shinjuku Front Tower 28F,Kitashinjuku,Shinjuku-ku,Tokyo,Japan |
| Contact             | Akifumi Okada                                                        |
| Tel.                | 03-5989-1153                                                         |
| Fax                 | N/A                                                                  |
| E-mail              | Okada_akifumi@iotbank.co.jp                                          |

#### 1.3 Details of Manufacturer

|                        |                                                                                                                                                  |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Manufacturer's Name    | Shenzhen Quantum wyse Technology Co , Ltd                                                                                                        |
| Manufacturer's Address | C803,Yinxing Technology Building,No. 1301 Guangguan Road,Xinlan Community,Guanlan Street,Longhua District,Shenzhen City,Guangdong Province,China |
| Contact                | N/A                                                                                                                                              |
| Tel.                   | N/A                                                                                                                                              |
| Fax                    | N/A                                                                                                                                              |
| E-mail                 | N/A                                                                                                                                              |



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### 1.4 General Description of EUT

|                         |                                           |
|-------------------------|-------------------------------------------|
| Device Description:     | Bed sensor                                |
| Device Manufacturer:    | Shenzhen Quantum wyse Technology Co , Ltd |
| Device Model:           | LCBS01                                    |
| Hardware Version:       | N/A                                       |
| Software Version:       | N/A                                       |
| Air Interface Supported | BLE                                       |
| Antenna type:           | 13.0mm * 5.1mm * 0.10mm                   |

### 1.5 Test Procedure

Testing is performed according to the **ANSI/IEEE Std 149-2021**.



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### 1.6 Test Specification

| Identity               | Document Title                             |
|------------------------|--------------------------------------------|
| ANSI/IEEE Std 149-2008 | IEEE Standard Test Procedures for Antennas |

### 1.7 Laboratory Environment

|                   |                          |         |
|-------------------|--------------------------|---------|
| Temperature       | Min. =19°C , Max. = 25°C |         |
| Relative humidity | Min. =40% , Max. =72%    |         |
| Shield effect     | 0.7-6GHz                 | > 100dB |
| Ground resistance | <0.5Ω                    |         |



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## 2 OTA Measurements System Configuration

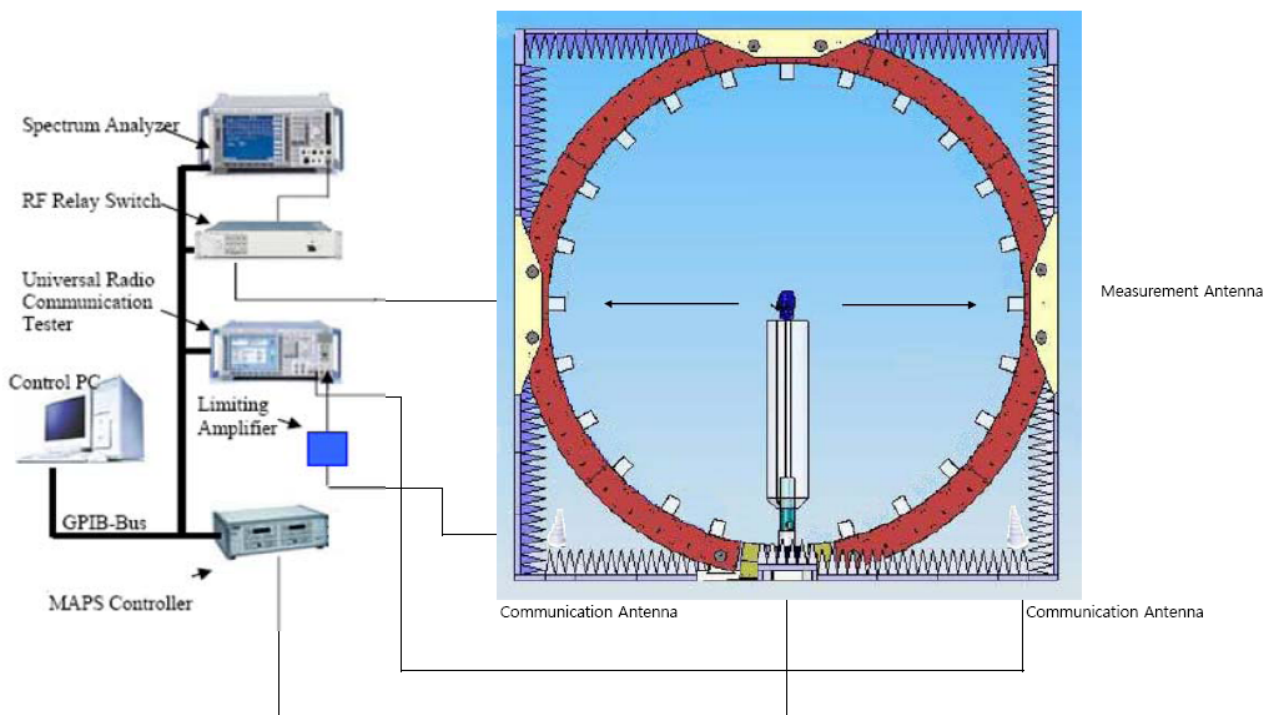
### 2.1 Test Configuration

#### Testing Condition:

- Temperature:  $22 \pm 3^\circ\text{C}$
- Humidity:  $< 80\%$

#### Measurement Facility:

Great-Circle-Cut method is used to measure the antenna 3D GAIN of EUT in OTA qualified anechoic chamber. Equipment Under Test (EUT) geometry centre vertical projection at the centre of platform, the distance from EUT to measurement antenna is 1.95m



F-1. OTA Measurement System Configuration



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### 3 Test Equipment List

| Type of Equipment                         | Model Number               | Manufacture       | Calibration Date | Valid Period |
|-------------------------------------------|----------------------------|-------------------|------------------|--------------|
| Network Analyzer                          | E5071C<br>S/N MY46523591   | Keysight          | 2025/12/15       | 2026/12/14   |
| Quad-Ridge Horn Antenna<br>700 MHz-10 GHz | EMCO 3164-08<br>S/N 161915 | ETS-Lindgren L.P. | N/A              | N/A          |
| MAPS Controller                           | EMCENTER<br>S/N 160485     | ETS-Lindgren L.P. | N/A              | N/A          |
| SAM V4.5BS Head Phantom                   | Head Phantom<br>S/N 3609   | SPEAG             | NCR              | NCR          |

#### Definition of Acronyms:

NCR: No Calibration Requirement.



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### 4 Measurement Uncertainty

| Item                                                  | 2400-2500 MHz (dB) |
|-------------------------------------------------------|--------------------|
| Gain                                                  | 0.88               |
| Efficiency                                            | 0.88               |
| Measurement Uncertainty (95% CONFIDENCE INTERVAL) K=2 |                    |



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### 5 Test Results

| #1 FS           |                 |                |            |
|-----------------|-----------------|----------------|------------|
| Frequency (MHz) | Efficiency (dB) | Efficiency (%) | Gain (dBi) |
| 2350            | -4.29           | 37.26          | 0.11       |
| 2355            | -4.65           | 34.25          | 0.07       |
| 2360            | -4.49           | 35.58          | 0.28       |
| 2365            | -4.60           | 34.69          | 0.09       |
| 2370            | -4.70           | 33.86          | 0.38       |
| 2375            | -4.93           | 32.12          | -0.15      |
| 2380            | -5.23           | 29.97          | 0.06       |
| 2385            | -5.33           | 29.30          | -0.30      |
| 2390            | -5.48           | 28.30          | -0.25      |
| 2395            | -5.31           | 29.42          | -0.31      |
| 2400            | -5.49           | 28.26          | -0.73      |
| 2405            | -5.70           | 26.95          | -0.96      |
| 2410            | -5.86           | 25.95          | -1.52      |
| 2415            | -6.24           | 23.76          | -1.65      |
| 2420            | -6.35           | 23.17          | -1.81      |
| 2425            | -6.67           | 21.51          | -2.01      |
| 2430            | -6.88           | 20.50          | -2.02      |
| 2435            | -6.87           | 20.54          | -2.01      |
| 2440            | -6.90           | 20.43          | -1.72      |
| 2445            | -6.84           | 20.69          | -1.70      |
| 2450            | -7.07           | 19.64          | -1.72      |
| 2455            | -7.14           | 19.34          | -1.66      |
| 2460            | -7.30           | 18.60          | -1.77      |
| 2465            | -7.21           | 18.99          | -1.42      |
| 2470            | -7.29           | 18.65          | -1.54      |
| 2475            | -7.33           | 18.50          | -1.38      |
| 2480            | -7.54           | 17.64          | -1.59      |
| 2485            | -7.78           | 16.67          | -1.76      |
| 2490            | -7.90           | 16.20          | -1.97      |
| 2495            | -7.82           | 16.51          | -1.98      |
| 2500            | -7.60           | 17.37          | -1.82      |
| 2505            | -7.35           | 18.41          | -1.59      |
| 2510            | -7.36           | 18.38          | -1.48      |
| 2515            | -7.78           | 16.65          | -1.85      |
| 2520            | -8.33           | 14.70          | -2.22      |
| 2525            | -8.77           | 13.27          | -2.75      |
| 2530            | -8.96           | 12.72          | -2.91      |
| 2535            | -8.90           | 12.87          | -2.89      |
| 2540            | -8.73           | 13.41          | -2.66      |
| 2545            | -8.56           | 13.94          | -2.44      |
| 2550            | -8.70           | 13.49          | -2.50      |
| 2555            | -8.97           | 12.67          | -2.76      |
| 2560            | -9.24           | 11.90          | -3.05      |
| 2565            | -9.21           | 11.99          | -3.02      |
| 2570            | -9.05           | 12.43          | -2.91      |
| 2575            | -8.80           | 13.19          | -2.58      |
| 2580            | -8.65           | 13.66          | -2.68      |



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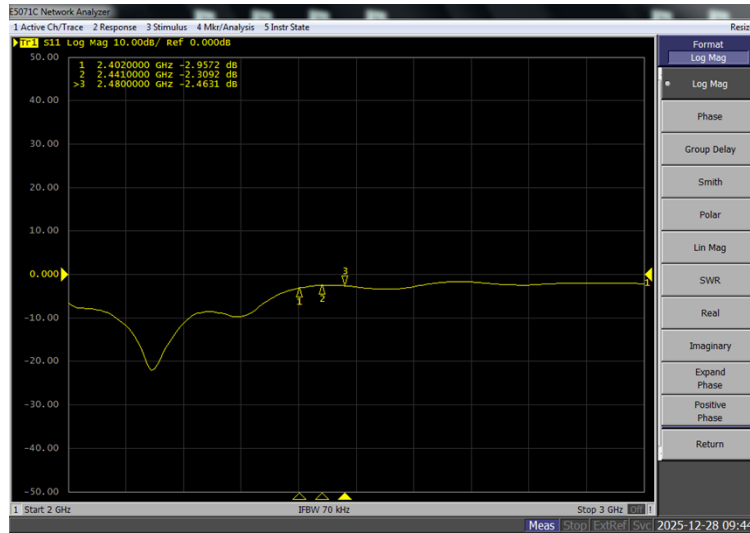
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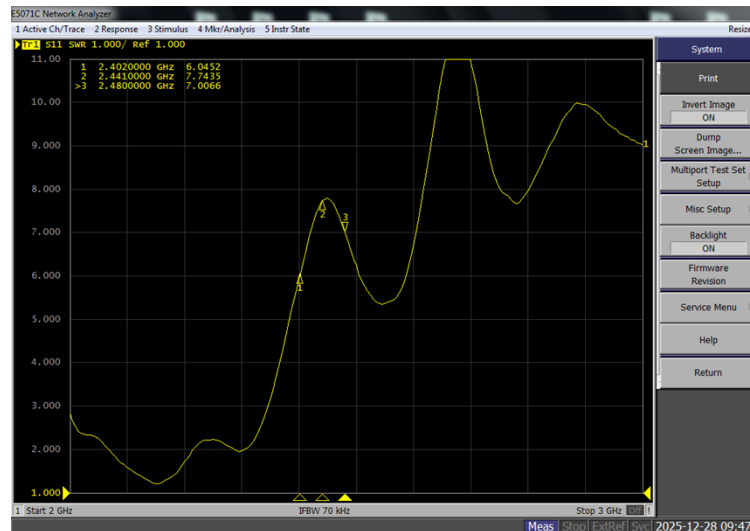
## 6 Pattern Plots

### 6.1 Return Loss



#1 Free Space

### 6.2 VSWR



#1 Free Space



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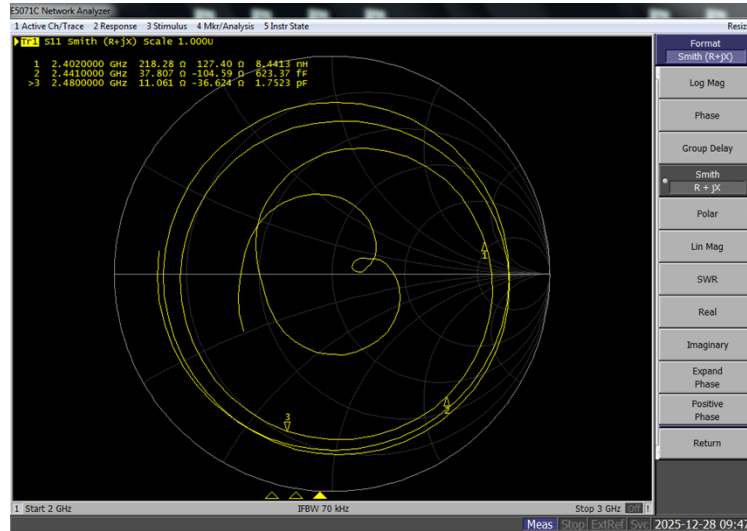
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Shenzhen Branch

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### 6.3 Stimulus



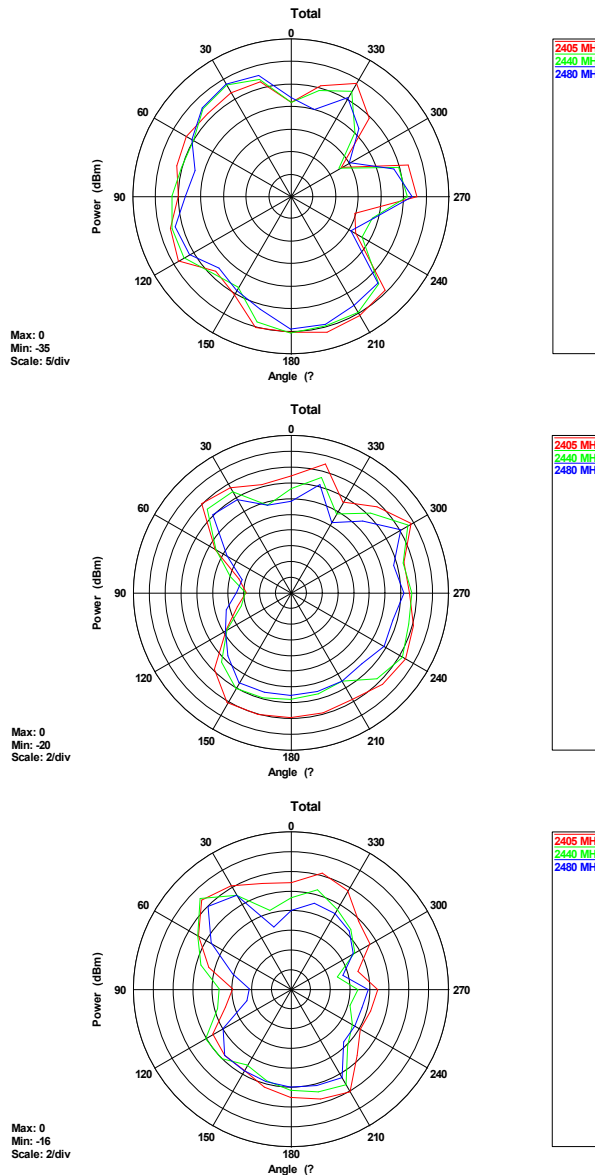
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### 7 2-D Antenna Pattern



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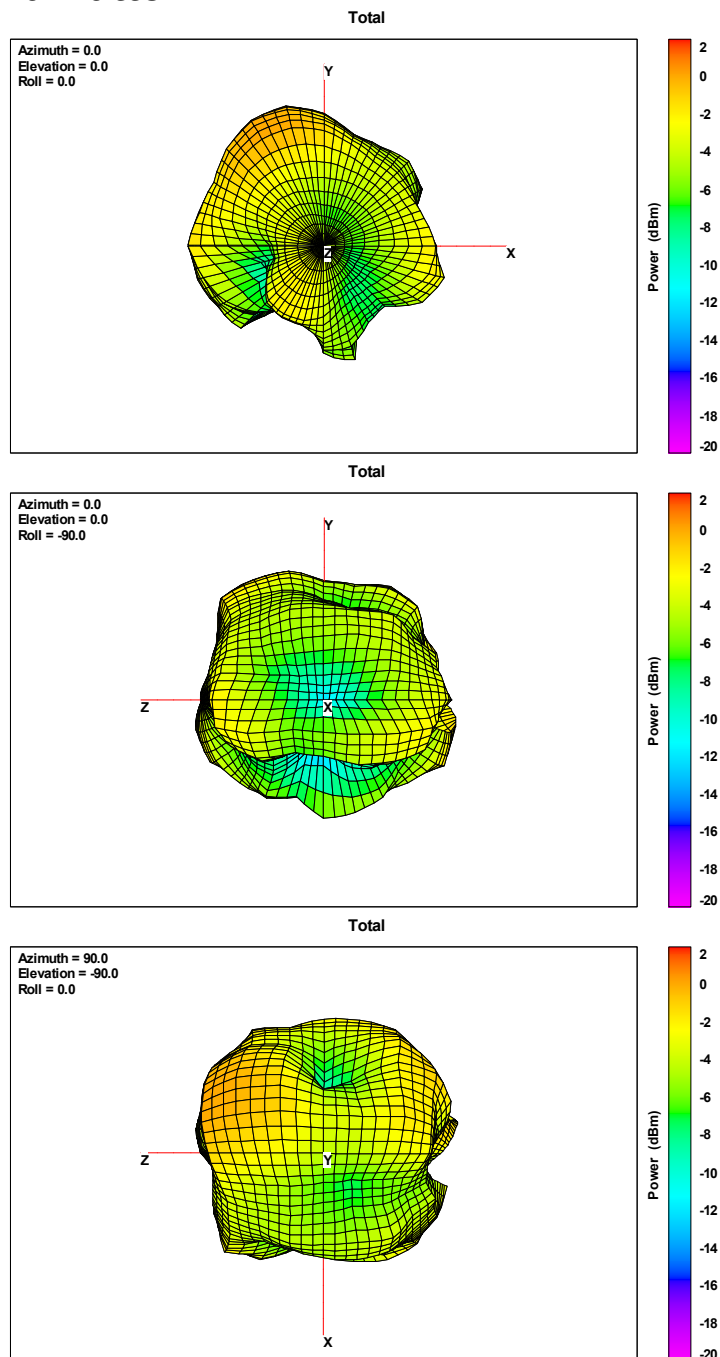
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### 8 3-D Antenna Pattern



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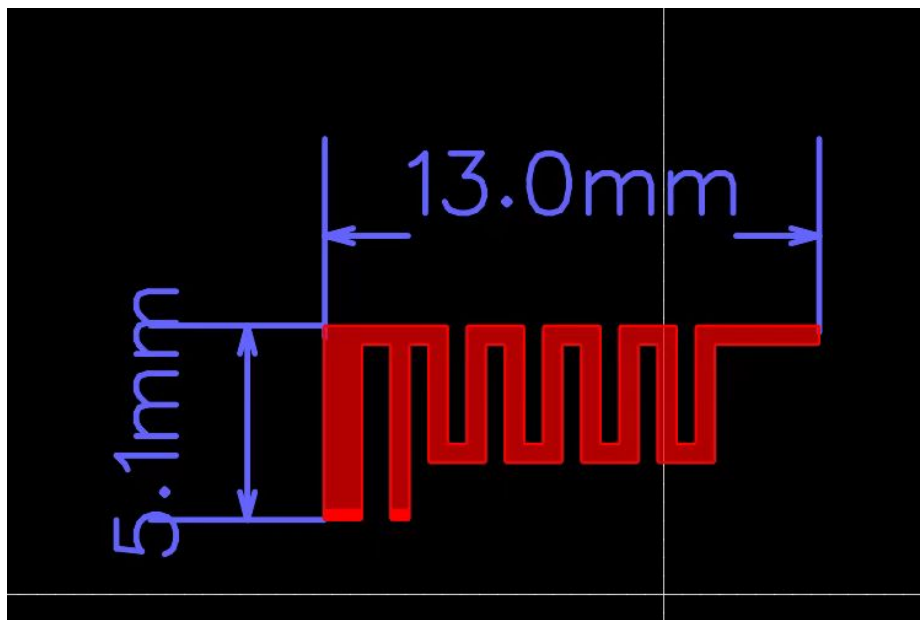
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## 9 The EUT and Test Configuration



Photo of EUT



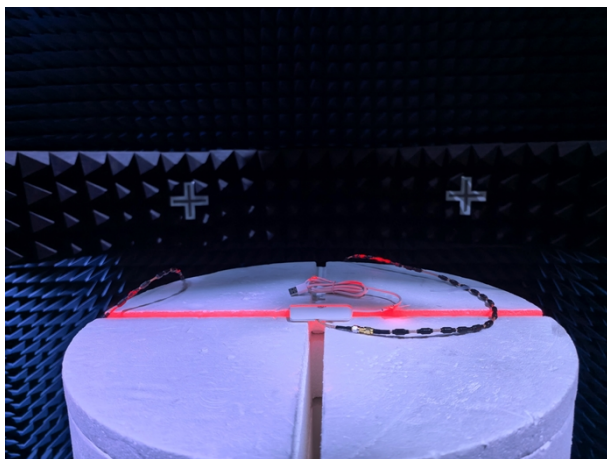
Antenna Dimensions



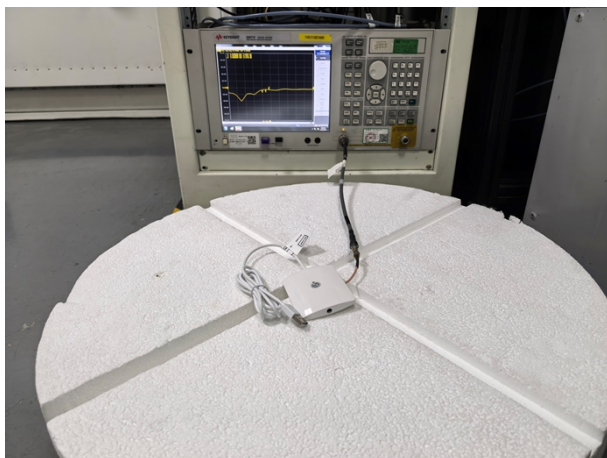
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Free Space View



Free Space Impedance Setup

---END---



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