



## SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZOA2603000072HS01  
Rev.: 01  
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# ANTENNA PASSIVE TEST REPORT

Application No. SZOA2603000072HS  
Applicant SHENZHEN HEALTHCARE ELECTRONIC TECHNOLOGY CO., LTD.  
Manufacturer SHENZHEN HEALTHCARE ELECTRONIC TECHNOLOGY CO., LTD.  
Product Name On-board Antenna  
Model No. AT02  
Standards ANSI/IEEE Std 149-2021  
Date Initial Sample(s) Received Apr. 22, 2026  
Testing Start Date Apr. 22, 2026  
Testing Finish Date Apr. 23, 2026  
Report Issue Date May. 07, 2026

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

Yuanyu Luo

Prepared by: Yuanyu Luo/ Test  
Engineer

Ervin Li

Approved by: Ervin Li/ Technical  
Manager



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Shenzhen Branch Wireless Laboratory

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### Revision History

| Revision | Issue Date    | Description                |
|----------|---------------|----------------------------|
| 01       | May. 07, 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    | SHENZHEN HEALTHCARE ELECTRONIC TECHNOLOGY CO., LTD.                                                                                |
| Applicant's Address | Block 48, Changxing Industrial Zone, Changzhen Community, Yutang Street, Guangming District, Shenzhen, Guangdong, P.R.China 518132 |
| Contact             | Shang Xiaona                                                                                                                       |
| Tel.                | 13691988632                                                                                                                        |
| Fax                 | N/A                                                                                                                                |
| E-mail              | healthscale@healthscale.com                                                                                                        |

#### 1.3 Details of Manufacturer

|                        |                                                                                                                                    |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Manufacturer's Name    | SHENZHEN HEALTHCARE ELECTRONIC TECHNOLOGY CO., LTD.                                                                                |
| Manufacturer's Address | Block 48, Changxing Industrial Zone, Changzhen Community, Yutang Street, Guangming District, Shenzhen, Guangdong, P.R.China 518132 |
| Contact                | Shang Xiaona                                                                                                                       |
| Tel.                   | 13691988632                                                                                                                        |
| Fax                    | N/A                                                                                                                                |
| E-mail                 | healthscale@healthscale.com                                                                                                        |



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### 1.4 General Description of EUT

|                      |                                                    |
|----------------------|----------------------------------------------------|
| Device Description:  | On-board Antenna                                   |
| Device Manufacturer: | SHENZHENHEALTHCARE ELECTRONIC TECHNOLOGY CO., LTD. |
| Device Model:        | AT02                                               |
| Hardware Version:    | V1.0                                               |
| Software Version:    | V1.0                                               |
| Antenna Type:        | PCB                                                |
| Antenna Dimension:   | 9.35mm * 3.80mm * 0.5mm                            |

### 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

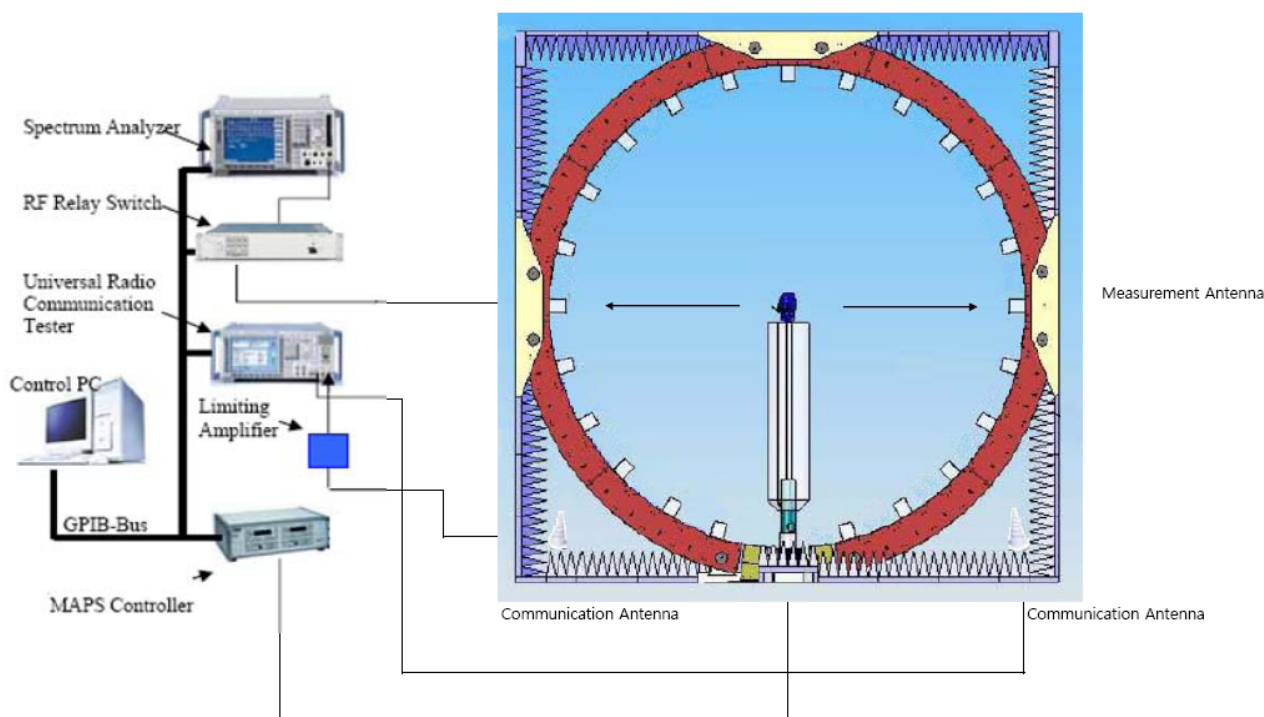
### 2.1 Test Configuration

#### 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

| AT02            |                 |                |            |
|-----------------|-----------------|----------------|------------|
| Frequency (MHz) | Efficiency (dB) | Efficiency (%) | Gain (dBi) |
| 2350            | -15.03          | 3.14           | -10.30     |
| 2355            | -15.47          | 2.84           | -10.75     |
| 2360            | -15.07          | 3.11           | -10.58     |
| 2365            | -15.28          | 2.96           | -10.72     |
| 2370            | -15.52          | 2.80           | -10.87     |
| 2375            | -15.77          | 2.65           | -11.10     |
| 2380            | -16.05          | 2.48           | -11.23     |
| 2385            | -15.98          | 2.52           | -11.22     |
| 2390            | -15.98          | 2.52           | -11.08     |
| 2395            | -15.70          | 2.69           | -10.91     |
| 2400            | -16.12          | 2.44           | -11.30     |
| 2402            | -16.33          | 2.33           | -11.56     |
| 2405            | -16.51          | 2.23           | -11.72     |
| 2410            | -16.95          | 2.02           | -12.19     |
| 2415            | -17.12          | 1.94           | -12.36     |
| 2420            | -17.33          | 1.85           | -12.82     |
| 2425            | -17.19          | 1.91           | -12.69     |
| 2430            | -17.19          | 1.91           | -12.47     |
| 2435            | -16.92          | 2.03           | -12.08     |
| 2440            | -17.26          | 1.88           | -12.36     |
| 2441            | -17.30          | 1.86           | -12.48     |
| 2445            | -17.33          | 1.85           | -12.73     |
| 2450            | -17.74          | 1.68           | -13.20     |
| 2455            | -17.86          | 1.63           | -13.37     |
| 2460            | -17.91          | 1.62           | -13.44     |
| 2465            | -17.68          | 1.70           | -13.17     |
| 2470            | -17.72          | 1.69           | -13.18     |
| 2475            | -17.98          | 1.59           | -13.60     |
| 2480            | -18.35          | 1.46           | -13.62     |
| 2482            | -18.43          | 1.44           | -13.60     |



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|      |        |      |        |
|------|--------|------|--------|
| 2485 | -18.54 | 1.40 | -14.00 |
| 2490 | -18.80 | 1.32 | -14.09 |
| 2495 | -18.66 | 1.36 | -14.10 |
| 2500 | -18.41 | 1.44 | -13.81 |
| 2505 | -18.21 | 1.51 | -13.51 |
| 2510 | -18.44 | 1.43 | -13.75 |
| 2515 | -18.78 | 1.33 | -13.92 |
| 2520 | -19.03 | 1.25 | -14.22 |
| 2525 | -19.14 | 1.22 | -14.46 |
| 2530 | -19.07 | 1.24 | -14.38 |
| 2535 | -18.87 | 1.30 | -13.98 |
| 2540 | -18.61 | 1.38 | -14.33 |
| 2545 | -18.74 | 1.34 | -13.96 |
| 2550 | -18.88 | 1.29 | -14.14 |
| 2555 | -19.10 | 1.23 | -14.14 |
| 2560 | -19.17 | 1.21 | -14.34 |
| 2565 | -19.18 | 1.21 | -14.18 |
| 2570 | -19.06 | 1.24 | -14.14 |
| 2575 | -19.07 | 1.24 | -14.22 |
| 2580 | -19.26 | 1.18 | -14.45 |



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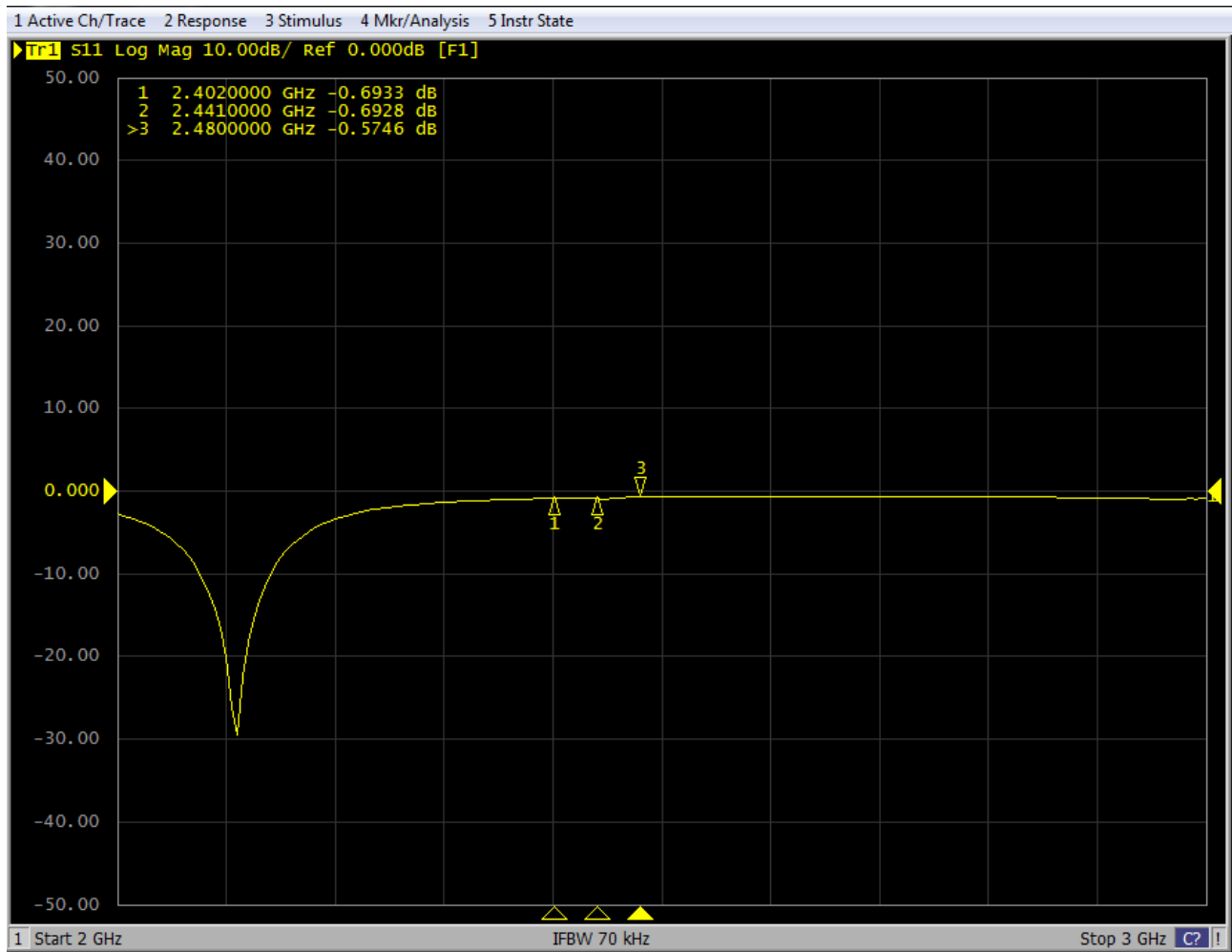
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## 6 Pattern Plots

### 6.1 Return Loss



#1 Free Space



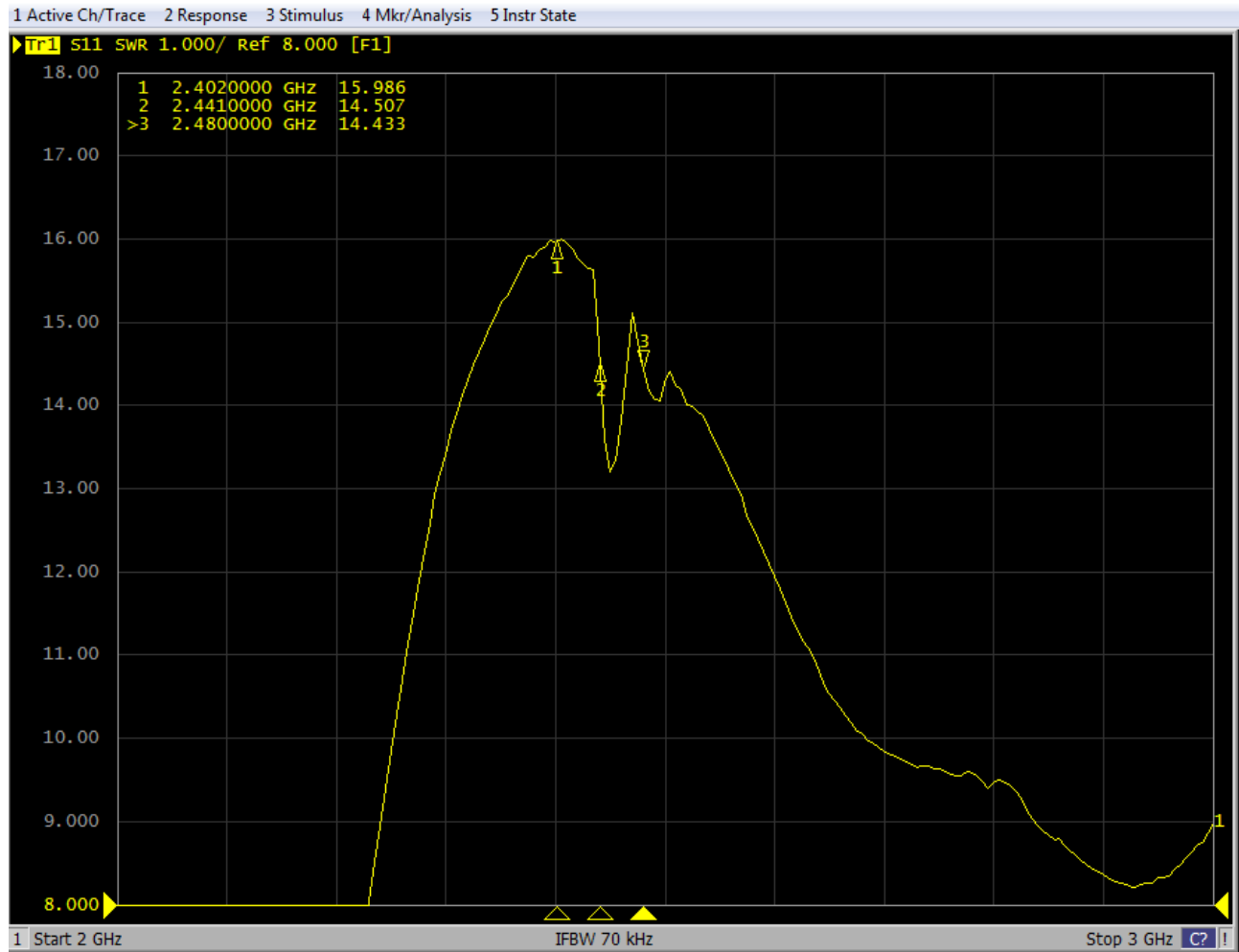
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### 6.2 VSWR



#1 Free Space



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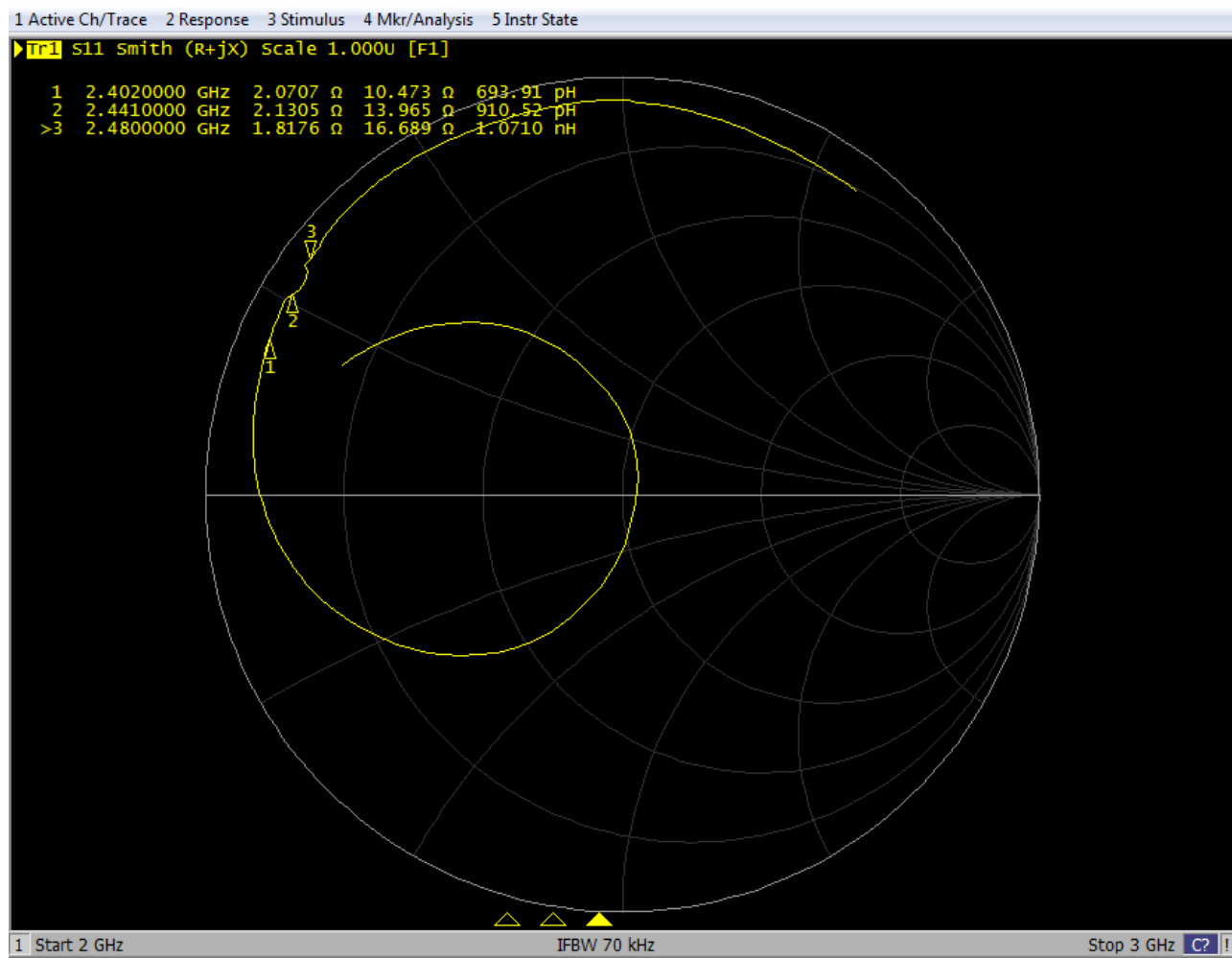
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### 6.3 Stimulus



#1 Free Space

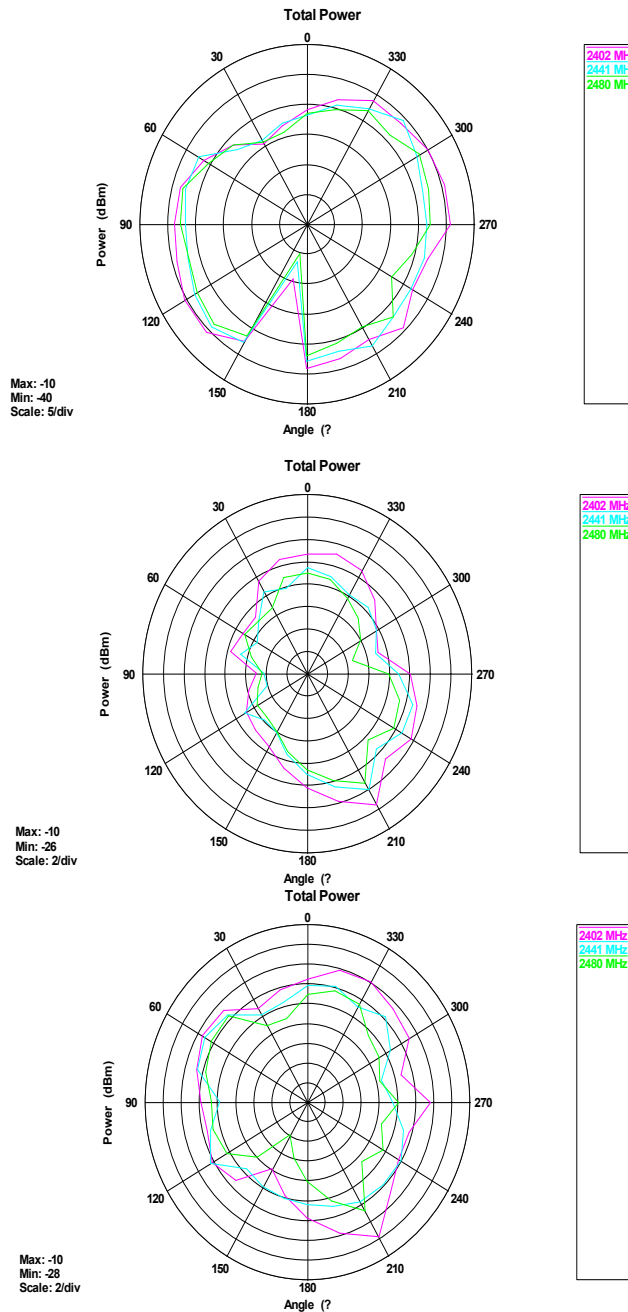


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### 7 2-D Antenna Pattern



#1 Free Space

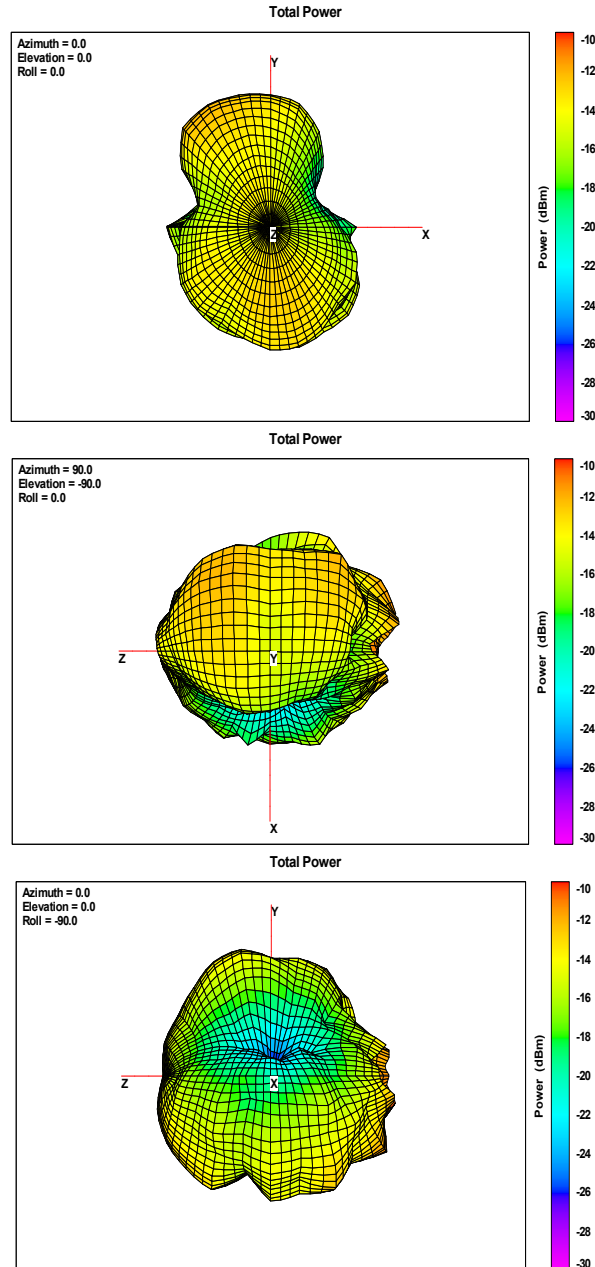


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### 8 3-D Antenna Pattern



#1 Free Space



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## 9 The EUT and Test Configuration

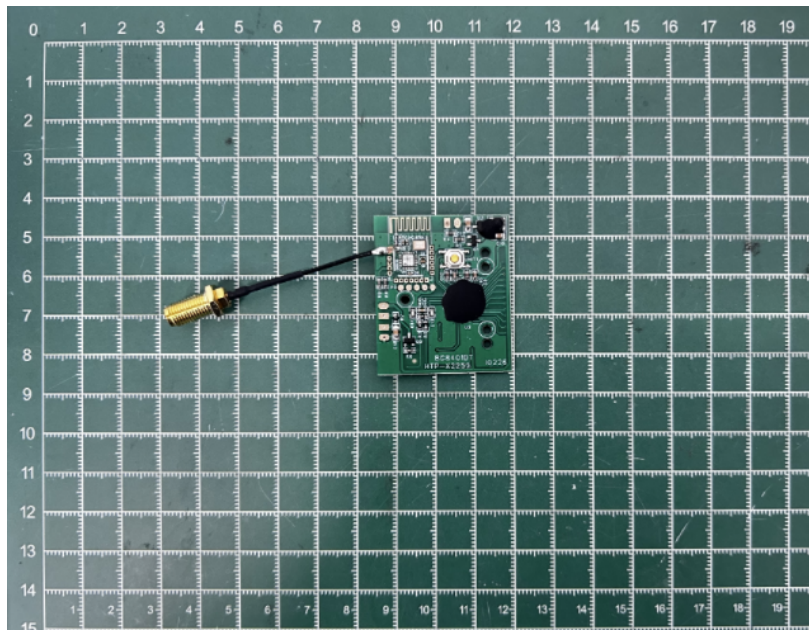
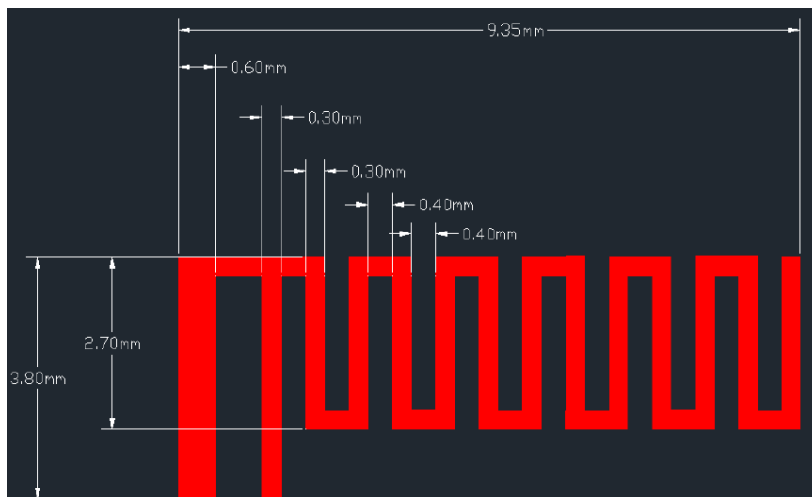


Photo of EUT



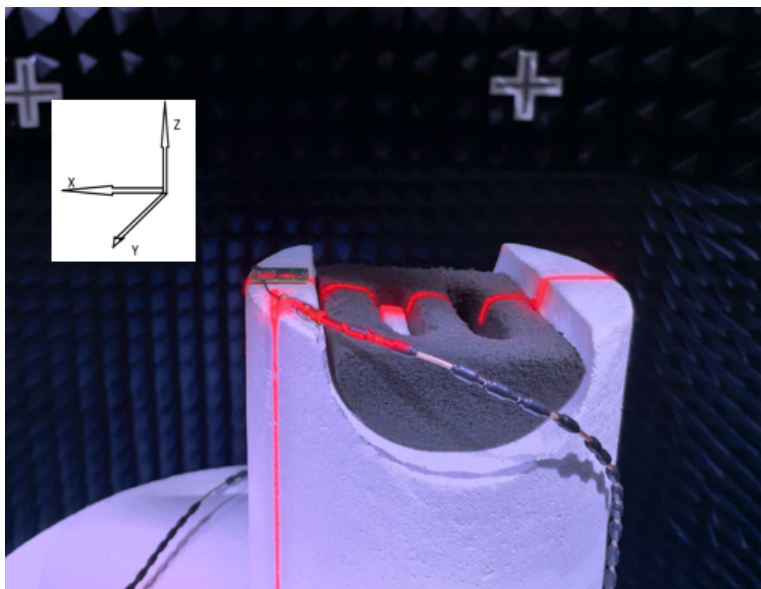
Antenna Dimensions



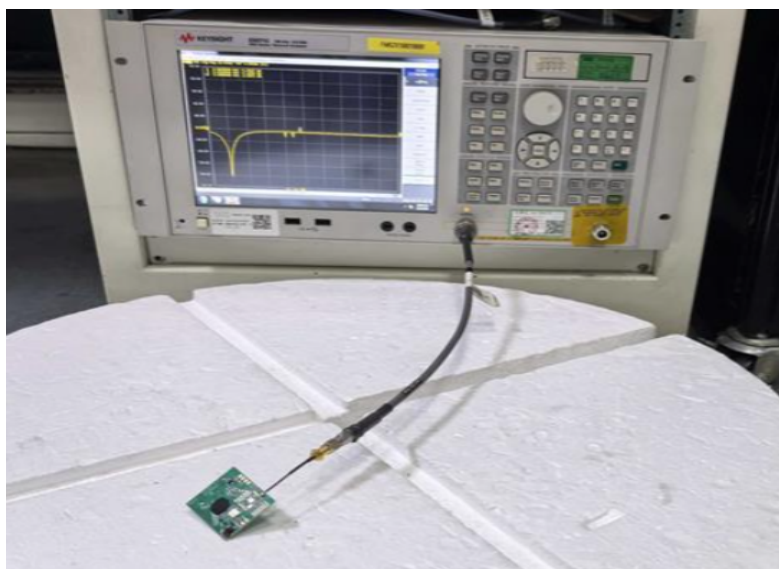
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Free Space View



Free Space Impedance Setup

---END---



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