



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

Report No.: SZOA2506000122HS01  
Rev.: 01  
Page: 1 of 21

# ANTENNA PASSIVE TEST REPORT

Application No. SZOA2506000122HS  
Applicant Xiamen Weiyu Intelligent Technology Co., Ltd.  
Manufacturer Xiamen Weiyu Intelligent Technology Co., Ltd.  
Product Name BLE200\_ANT  
Model No. BLE\_PBE020  
Standards ANSI/IEEE Std 149-2021  
Date Initial Sample(s) Received Jun. 11, 2025  
Testing Start Date Jun. 11, 2025  
Testing Finish Date Jun. 11, 2025  
Report Issue Date Jul. 3, 2025

\* 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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Shenzhen Branch, Wireless Laboratory

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### Revision History

Revision	Issue Date	Description
01	Jul. 3, 2025	Initial creation of report



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### TABLE OF CONTENTS

<b>1</b>	<b>GENERAL INFORMATION .....</b>	<b>4</b>
1.1	Testing Laboratory.....	4
1.2	Details of Applicant .....	4
1.3	Details of Manufacturer .....	4
1.4	General Description of EUT.....	5
1.5	Test Procedure .....	5
1.6	Test Specification .....	6
1.7	Laboratory Environment.....	6
<b>2</b>	<b>OTA MEASUREMENTS SYSTEM CONFIGURATION .....</b>	<b>7</b>
2.1	Test Configuration .....	7
<b>3</b>	<b>TEST EQUIPMENT LIST.....</b>	<b>8</b>
<b>4</b>	<b>MEASUREMENT UNCERTAINTY .....</b>	<b>9</b>
<b>5</b>	<b>TEST RESULTS.....</b>	<b>10</b>
<b>6</b>	<b>PATTERN PLOTS .....</b>	<b>14</b>
6.1	Return Loss.....	14
6.2	VSWR .....	15
6.3	Stimulus .....	16
<b>7</b>	<b>2-D ANTENNA PATTERN(THETA=90°) .....</b>	<b>17</b>
<b>8</b>	<b>3-D ANTENNA PATTERN .....</b>	<b>18</b>
<b>9</b>	<b>THE EUT AND TEST CONFIGURATION.....</b>	<b>20</b>



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Report No.: SZOA2506000122HS01

Rev.: 01

Page: 4 of 21

### 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	Xiamen Weiyou Intelligent Technology Co., Ltd.
Applicant's Address	Unit 3 No. 6 Xianghong Road, Torch Hi-Tech Zone Industrial Park, Xiang' an, Xiamen, China
Contact	Yanming Su
Tel.	15985830939
Fax	/
E-mail	suym@weuiit.com

#### 1.3 Details of Manufacturer

Manufacturer's Name	Xiamen Weiyou Intelligent Technology Co., Ltd.
Manufacturer's Address	Unit 3 No. 6 Xianghong Road, Torch Hi-Tech Zone Industrial Park, Xiang' an, Xiamen, China
Contact	Yanming Su
Tel.	15985830939
Fax	/
E-mail	suym@weuiit.com



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### 1.4 General Description of EUT

Device Description:	BLE200 ANT
Device Manufacturer:	Xiamen Weiyou Intelligent Technology Co., Ltd.
Device Model:	BLE_PBE020
Hardware Version:	V3.3
Software Version:	N/A
Air Interface Supported	2.4G

### 1.5 Test Procedure

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



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Report No.: SZOA2506000122HS01

Rev.: 01

Page: 6 of 21

### 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

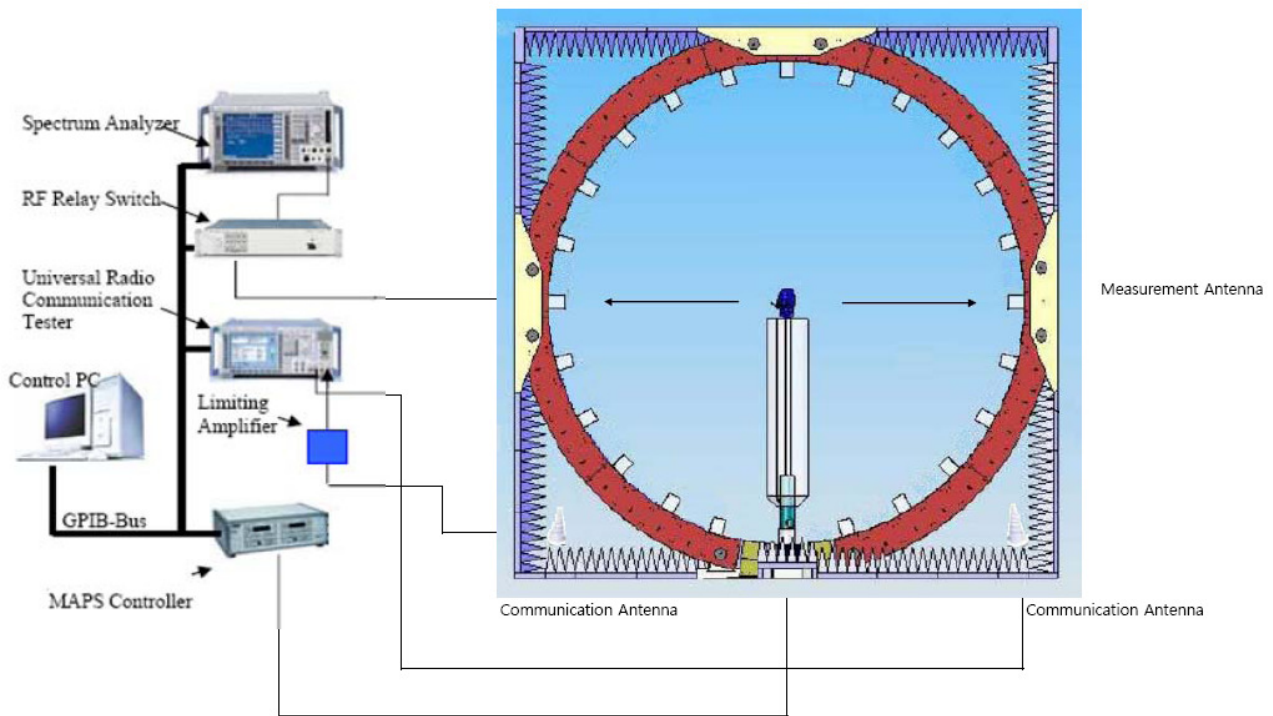
### 2.1 Test Configuration

#### 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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Report No.: SZOA2506000122HS01  
Rev.: 01  
Page: 8 of 21

3 Test Equipment List

Type of Equipment	Model Number	Manufacture	Calibration Date	Valid Period
Network Analyzer	E5071C S/N MY46523591	Keysight	2024/12/19	2025/12/18
Quad-Ridge Horn Antenna 700 MHz-10 GHz	EMCO 3164-08 S/N 161915	ETS-Lindgren L.P.	N/A	N/A
MAPS Controller	EMCENTER S/N 160485	ETS-Lindgren L.P.	N/A	N/A
SAM V4.5BS Head Phantom	Head Phantom S/N 3609	SPEAG	NCR	NCR

Definition of Acronyms:  
NCR: No Calibration Requirement.



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 Rev.: 01  
 Page: 9 of 21

### 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

Free Space #1			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
2350	-10.87	8.19	-3.97
2355	-11.47	7.12	-4.68
2360	-11.70	6.76	-4.82
2365	-12.19	6.03	-5.44
2370	-12.54	5.57	-5.71
2375	-12.78	5.27	-6.00
2380	-13.04	4.96	-6.20
2385	-13.10	4.90	-6.32
2390	-13.38	4.60	-6.56
2395	-13.39	4.58	-6.65
2400	-13.80	4.17	-6.99
2402	-14.00	3.98	-7.17
2405	-14.21	3.80	-7.32
2410	-14.50	3.55	-7.59
2415	-14.97	3.19	-7.91
2420	-15.19	3.02	-8.14
2425	-15.58	2.77	-8.49
2430	-15.94	2.54	-8.96
2435	-16.08	2.47	-9.11
2440	-16.14	2.43	-9.36
2441	-16.10	2.45	-9.34
2445	-16.01	2.51	-9.11



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Report No.: SZOA2506000122HS01  
Rev.: 01  
Page: 11 of 21

2450	-16.21	2.39	-9.60
2455	-16.52	2.23	-9.70
2460	-17.06	1.97	-10.49
2465	-17.38	1.83	-10.68
2470	-17.70	1.70	-11.09
2475	-17.86	1.64	-11.23
2480	-18.07	1.56	-11.41
2485	-18.24	1.50	-11.53
2490	-18.37	1.46	-11.63
2495	-18.37	1.45	-11.52
2500	-18.43	1.44	-11.64
2505	-18.31	1.48	-11.48
2510	-18.39	1.45	-11.66
2515	-18.78	1.32	-12.13
2520	-19.37	1.16	-12.88
2525	-19.93	1.02	-13.59
2530	-20.30	0.93	-14.03
2535	-20.41	0.91	-14.16
2540	-20.30	0.93	-14.13
2545	-20.06	0.99	-13.97
2550	-20.00	1.00	-13.97
2555	-20.21	0.95	-14.13
2560	-20.60	0.87	-14.34
2565	-20.95	0.80	-14.75
2570	-21.15	0.77	-14.65
2575	-21.18	0.76	-14.68
2580	-21.00	0.79	-14.47



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Report No.: SZOA2506000122HS01

Rev.: 01

Page: 12 of 21

Free Space #2			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
2350	-11.60	6.92	-5.23
2355	-12.13	6.13	-5.89
2360	-12.42	5.73	-6.20
2365	-12.95	5.07	-6.56
2370	-13.19	4.80	-6.99
2375	-13.55	4.41	-7.08
2380	-13.66	4.31	-7.58
2385	-13.84	4.13	-7.52
2390	-14.04	3.94	-7.82
2395	-14.12	3.87	-7.94
2400	-14.59	3.47	-8.31
2402	-14.69	3.39	-8.42
2405	-14.91	3.23	-8.72
2410	-15.32	2.94	-8.76
2415	-15.65	2.72	-9.16
2420	-15.90	2.57	-9.25
2425	-16.32	2.33	-9.81
2430	-16.64	2.17	-10.19
2435	-16.93	2.03	-10.71
2440	-16.92	2.03	-10.72
2441	-16.85	2.06	-10.69
2445	-16.93	2.03	-10.91
2450	-17.09	1.95	-11.05



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Report No.: SZOA2506000122HS01

Rev.: 01

Page: 13 of 21

2455	-17.37	1.83	-11.30
2460	-17.92	1.61	-11.87
2465	-18.16	1.53	-12.04
2470	-18.57	1.39	-12.48
2475	-18.65	1.37	-12.45
2480	-18.89	1.29	-12.73
2485	-19.04	1.25	-12.95
2490	-19.25	1.19	-13.10
2495	-19.32	1.17	-13.04
2500	-19.44	1.14	-13.23
2505	-19.33	1.17	-13.06
2510	-19.39	1.15	-13.34
2515	-19.73	1.06	-13.73
2520	-20.22	0.95	-14.57
2525	-20.84	0.82	-15.22
2530	-21.20	0.76	-15.79
2535	-21.34	0.73	-15.79
2540	-21.23	0.75	-15.58
2545	-21.05	0.78	-15.27
2550	-20.98	0.80	-15.07
2555	-21.26	0.75	-15.53
2560	-21.68	0.68	-15.68
2565	-22.02	0.63	-16.46
2570	-22.29	0.59	-16.51
2575	-22.20	0.60	-16.70
2580	-22.16	0.61	-16.27



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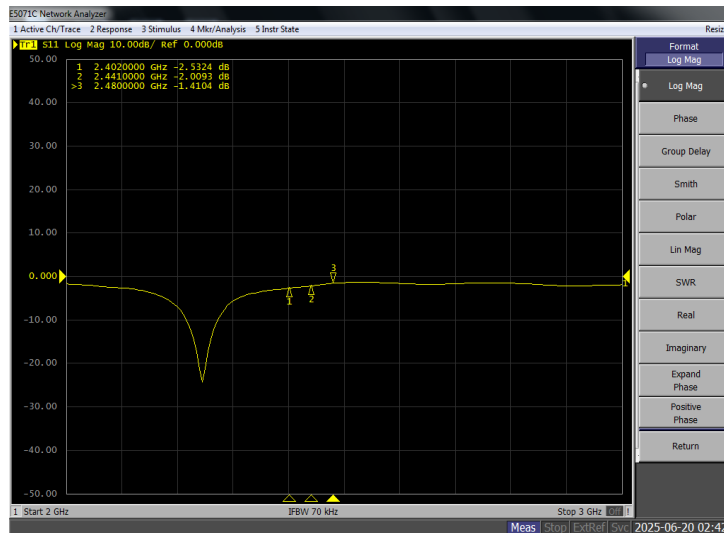
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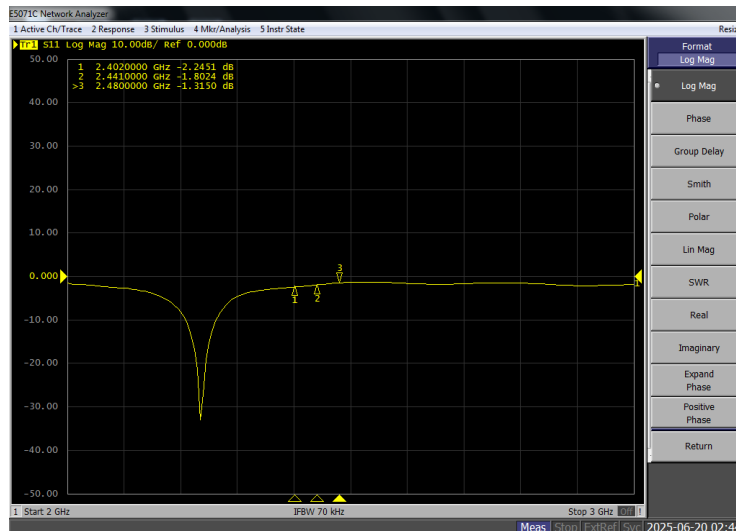
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## 6 Pattern Plots

### 6.1 Return Loss



Free Space #1



Free Space #2



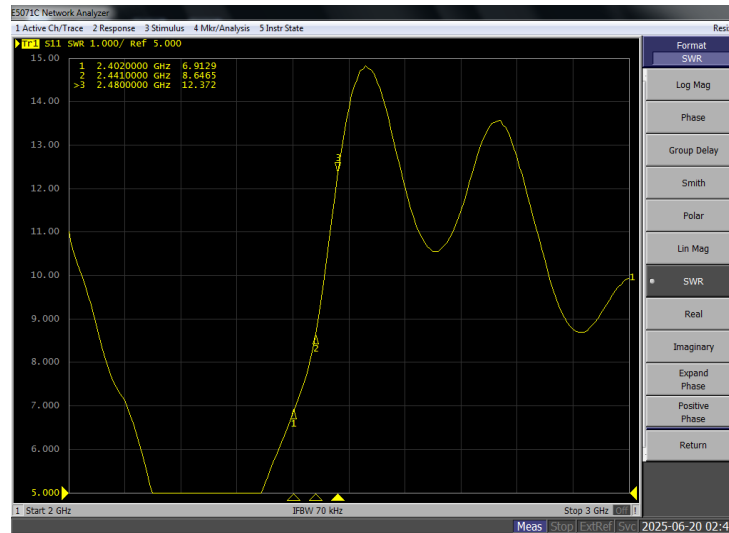
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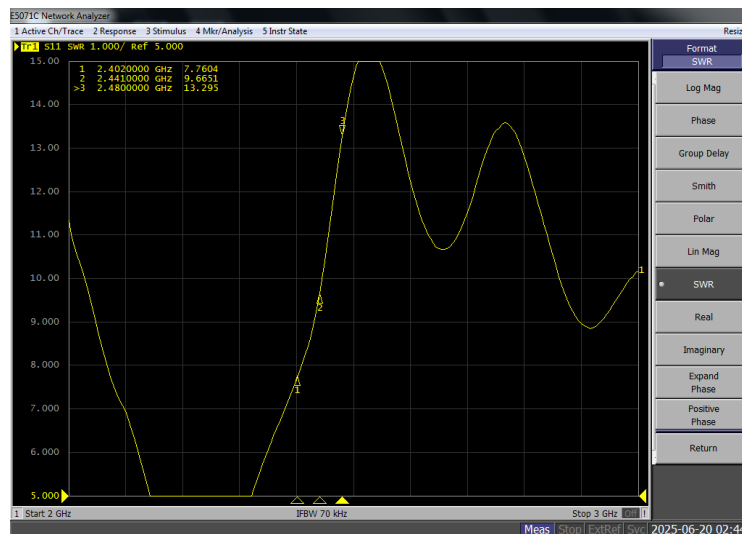
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### 6.2 VSWR



Free Space #1



Free Space #2

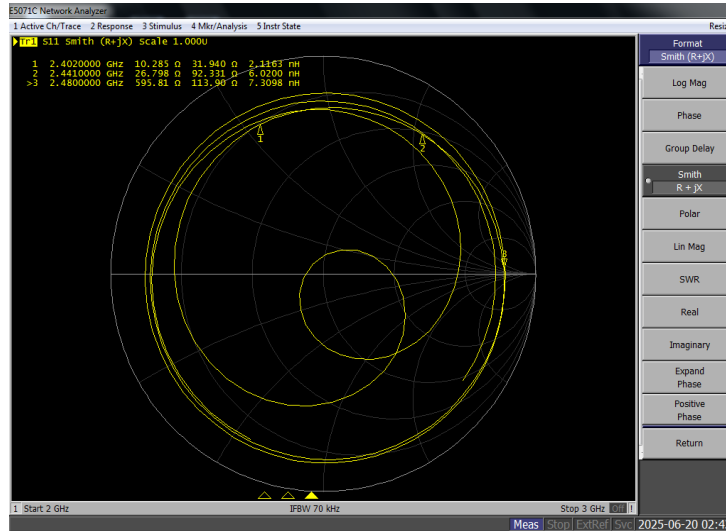


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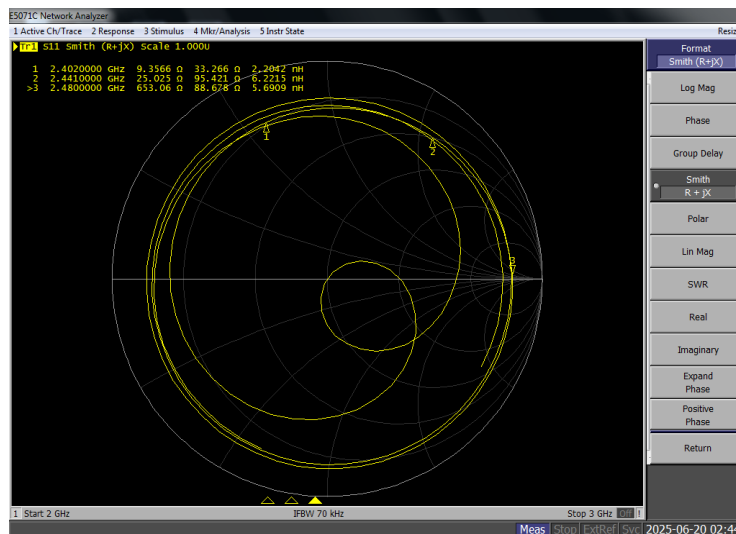
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### 6.3 Stimulus



Free Space #1



Free Space #2

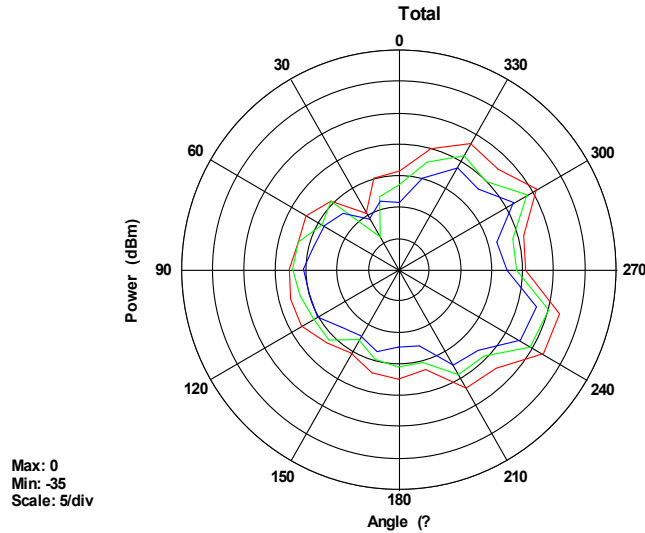


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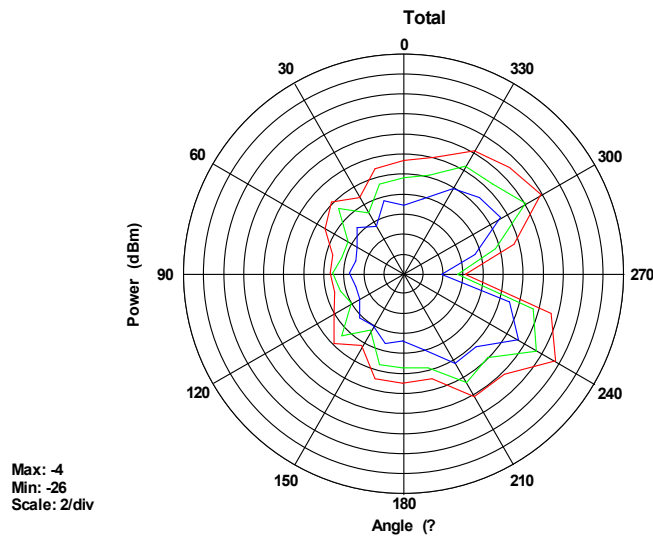
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### 7 2-D Antenna Pattern(Theta=90°)



Free Space #1



Free Space #2

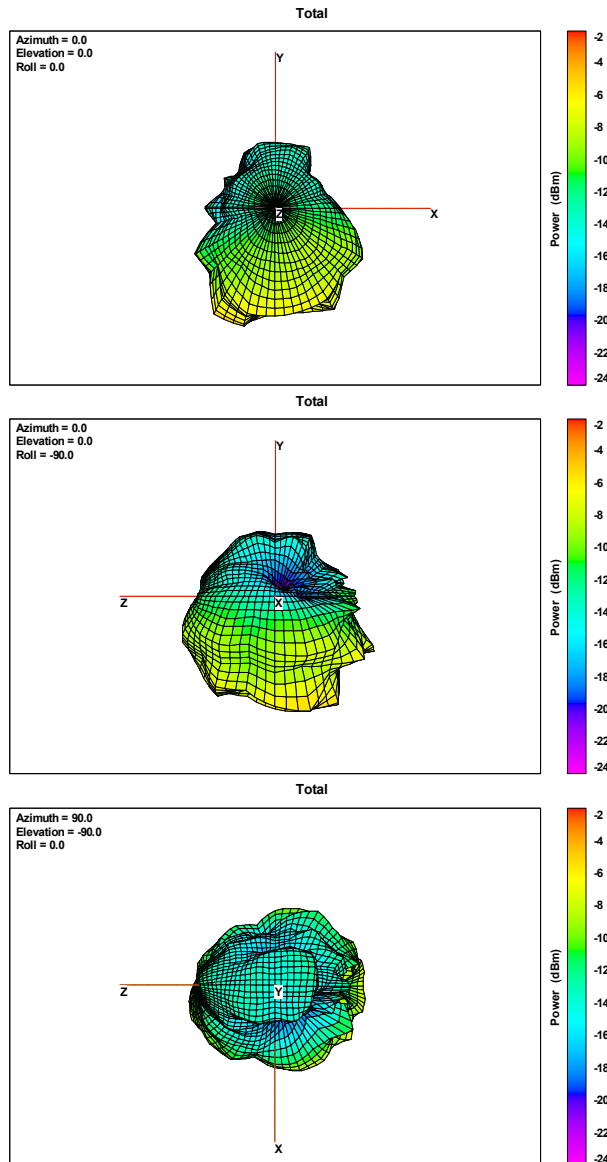


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### 8 3-D Antenna Pattern



Free Space #1



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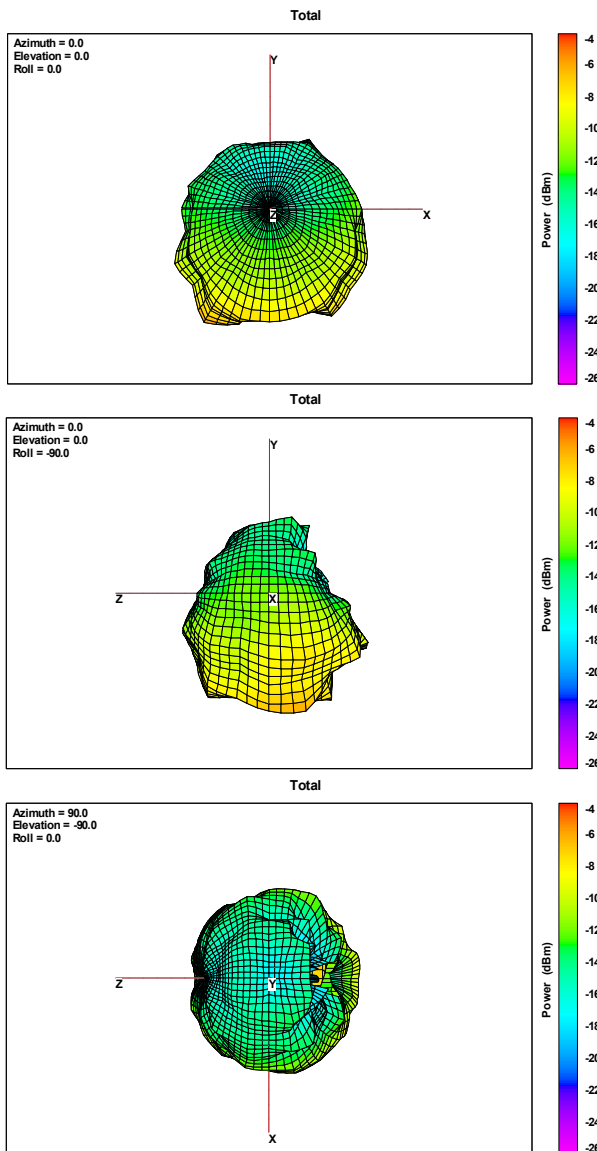
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## 9 The EUT and Test Configuration

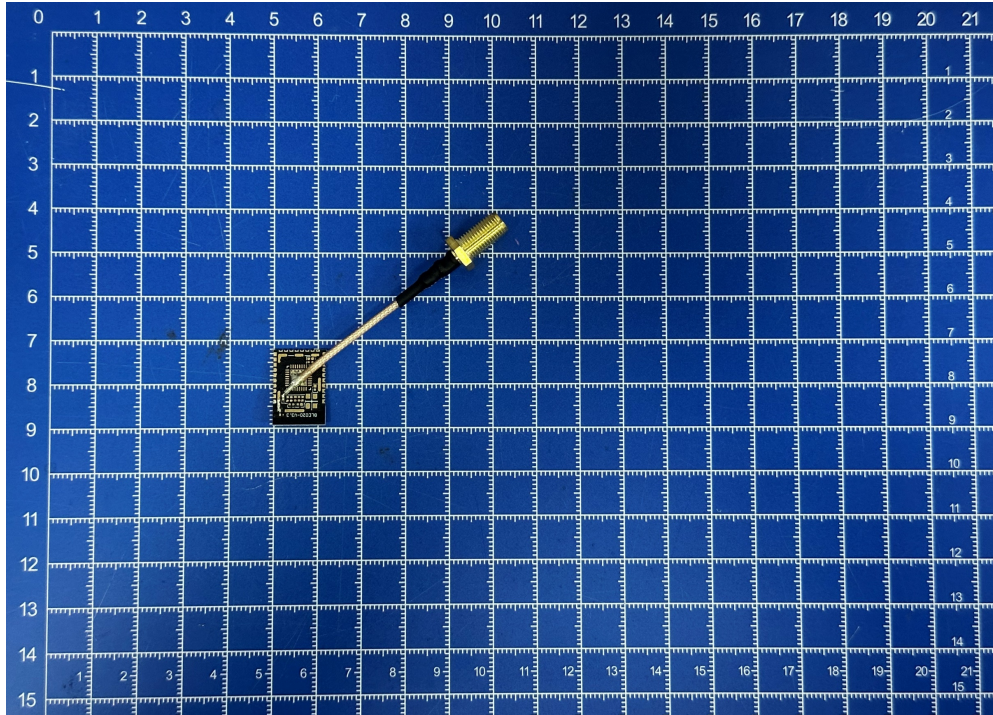
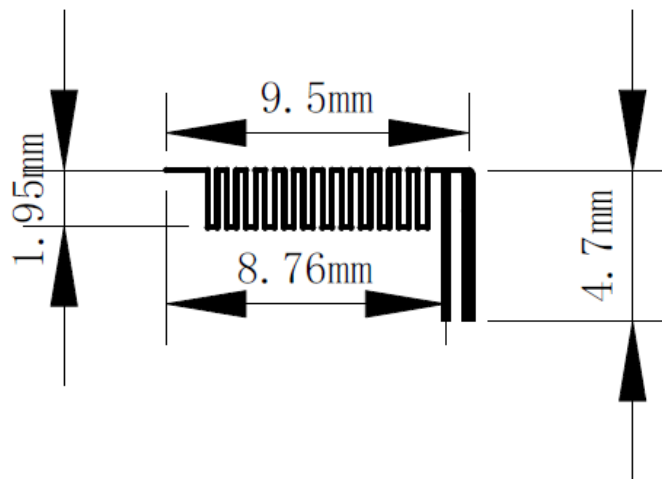


Photo of EUT



Antenna Dimensions



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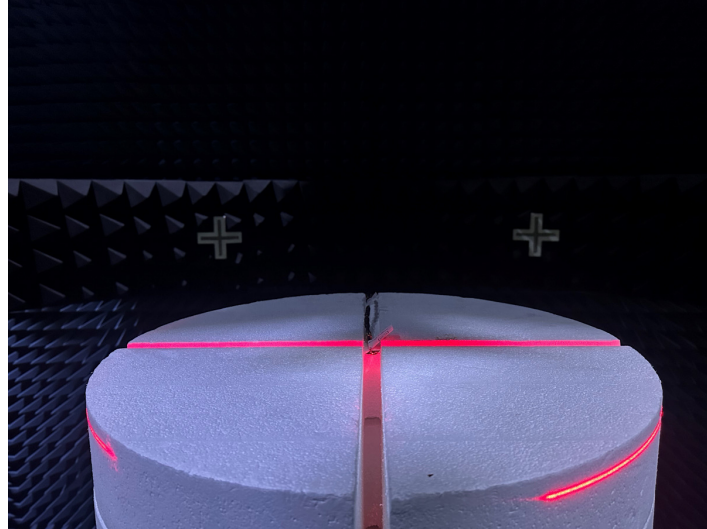
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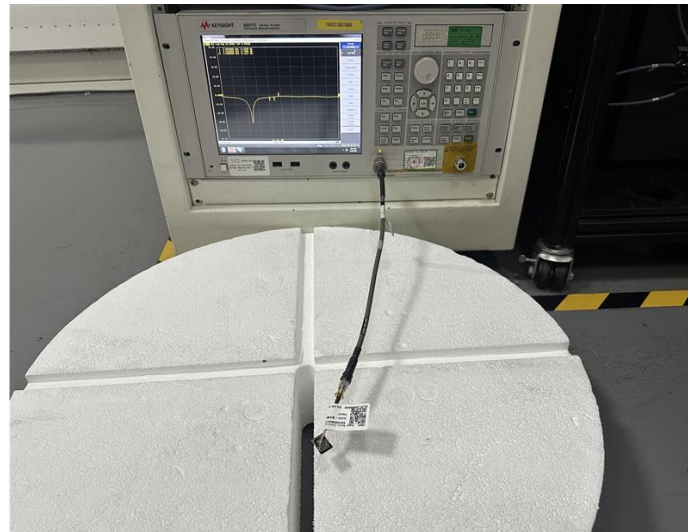
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Free Space View



Free Space Setup

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