

ANTENNA PASSIVE TEST REPORT

Application No. ZEWM2305000645OA
Applicant SHENZHEN HEALTHCARE ELECTRONIC TECHNOLOGY CO., LTD.
Manufacturer SHENZHEN HEALTHCARE ELECTRONIC TECHNOLOGY CO., LTD.
Product Name On-board Antenna
Model No. AT01
Standards ANSI/IEEE Std 149-2008
Date Initial Sample(s) Received 2023.05.15
Testing Start Date 2023.05.15
Testing Finish Date 2023.05.15
Report Issue Date 2023.07.25

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

YuanYu Luo

Prepared by

Max. Huang

Reviewed By

Yubin Li

Approved by



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

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Revision Version

Report No.	Version	Date	Memo
ZEWM2305000645OA01	00	2023.06.16	Initial creation of report
ZEWM2305000645OA01	01	2023.07.25	Added antenna dimensions information

***This report supersedes our previous report ZEWM2305000645OA01 Version 00, issued on 2023-06-16, which is hereby deemed null and void.**



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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	0755-33506585-824
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	0755-33506585-824
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1.4 General Description of EUT

Device Description:	On-board Antenna
Device Manufacturer:	SHENZHEN HEALTHCARE ELECTRONIC TECHNOLOGY CO., LTD.
Device Model:	AT01
Hardware Version:	N/A
Software Version:	N/A
Antenna dimensions	14.1 x 5.3 x 0.2 mm

1.5 Test Procedure

Testing is performed according to the **ANSI/IEEE Std 149-2008**.



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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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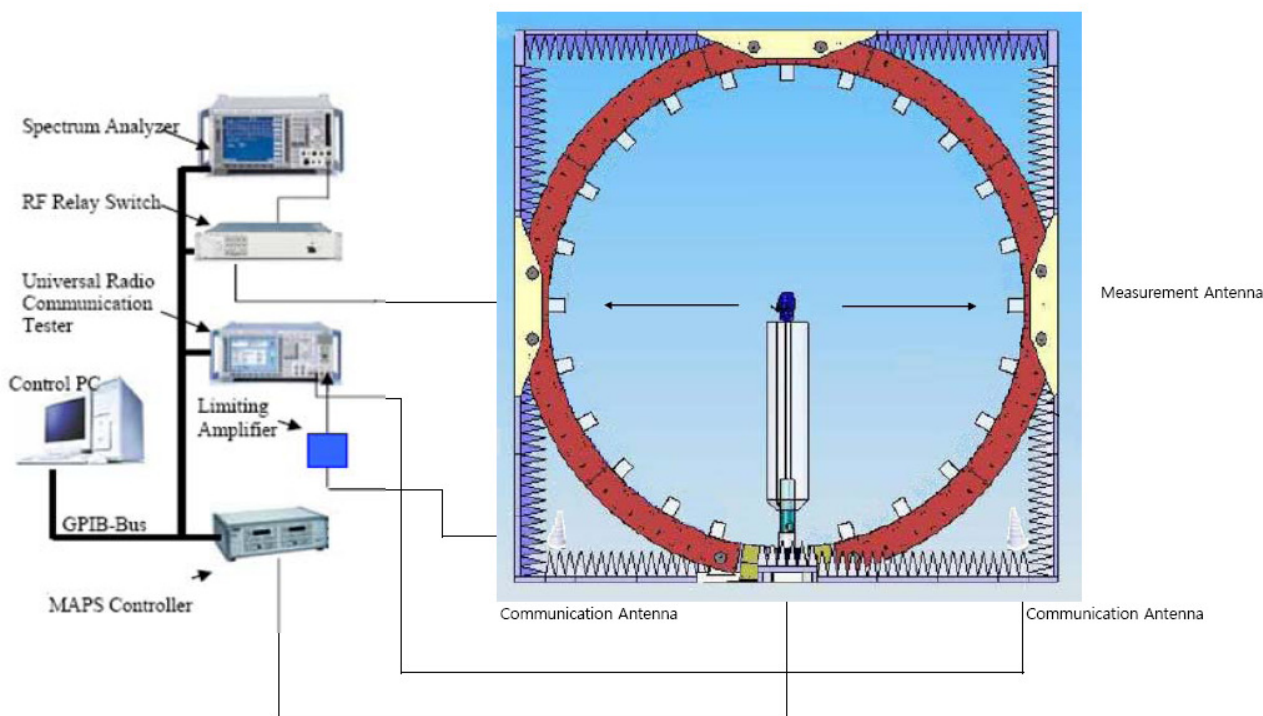
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2 OTA Measurements System Configuration

2.1 Test Configuration

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 5m



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 S/N MY46523591	Keysight	2023/2/16	2024/2/15
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



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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

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Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
2350	-8.30	14.79	-1.57
2355	-8.41	14.41	-1.87
2360	-8.37	14.55	-1.79
2365	-8.58	13.85	-2.13
2370	-8.82	13.13	-2.39
2375	-9.07	12.38	-2.79
2380	-9.21	11.99	-2.96
2385	-9.33	11.68	-3.16
2390	-9.38	11.54	-3.36
2395	-9.35	11.62	-3.12
2400	-9.53	11.15	-3.43
2402	-9.59	10.98	-3.59
2405	-9.65	10.83	-3.51
2410	-9.92	10.18	-3.82
2415	-10.13	9.69	-4.11
2420	-10.38	9.17	-4.43
2425	-10.52	8.86	-4.66
2430	-10.73	8.46	-4.77
2435	-10.83	8.25	-5.02
2440	-10.88	8.16	-5.06
2441	-10.91	8.11	-5.10
2445	-11.02	7.90	-5.33
2450	-11.11	7.74	-5.32
2455	-11.24	7.52	-5.43
2460	-11.31	7.39	-5.41



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2465	-11.30	7.41	-5.37
2470	-11.44	7.18	-5.49
2475	-11.38	7.27	-5.45
2480	-11.45	7.16	-5.54
2482	-11.38	7.28	-5.34
2485	-11.24	7.51	-5.34
2490	-11.09	7.78	-5.06
2495	-10.79	8.34	-4.70
2500	-10.73	8.45	-4.57
2505	-10.69	8.53	-4.43
2510	-10.65	8.62	-4.31
2515	-10.69	8.53	-4.27
2520	-10.59	8.73	-4.01
2525	-10.69	8.52	-4.16
2530	-10.73	8.46	-4.13
2535	-10.80	8.32	-4.25
2540	-10.74	8.43	-4.27
2545	-10.59	8.73	-4.11
2550	-10.60	8.72	-4.21
2555	-10.50	8.91	-4.04
2560	-10.61	8.68	-4.22
2565	-10.53	8.86	-4.08
2570	-10.54	8.83	-4.12
2575	-10.41	9.09	-3.95
2580	-10.23	9.48	-3.66



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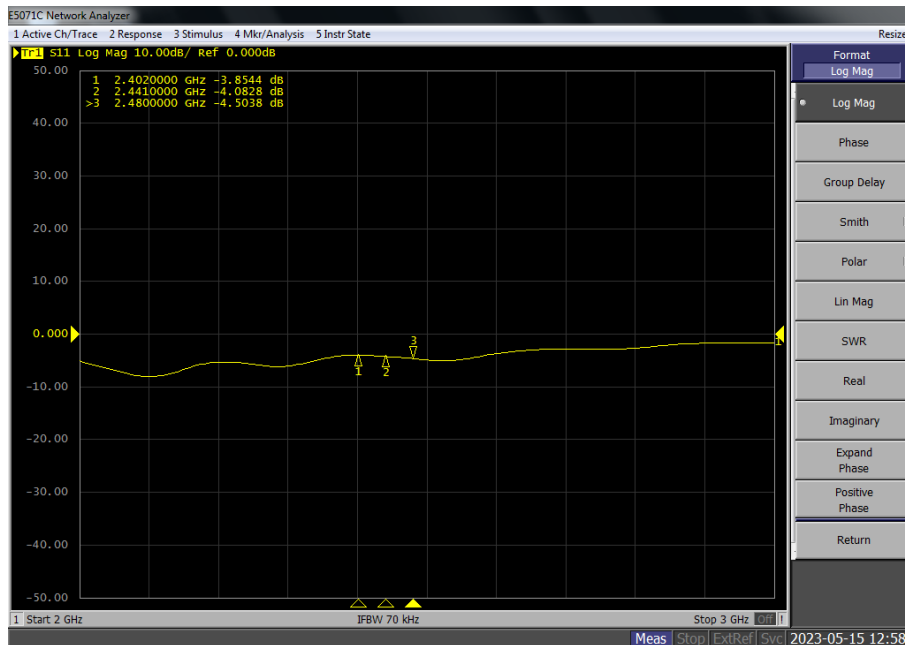
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6 Pattern Plots

6.1 Return Loss



Free Space

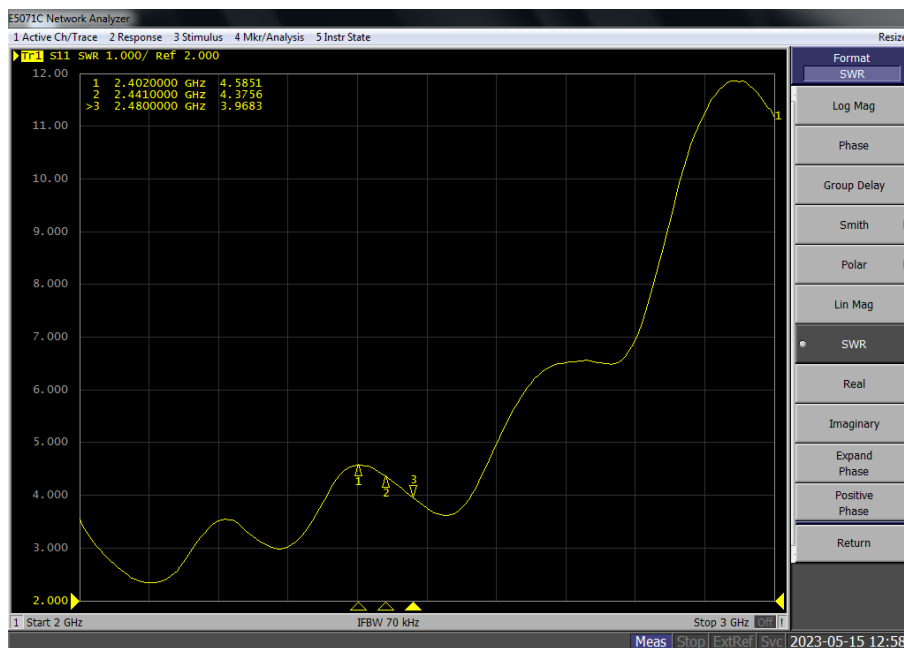


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6.2 VSWR



Free Space

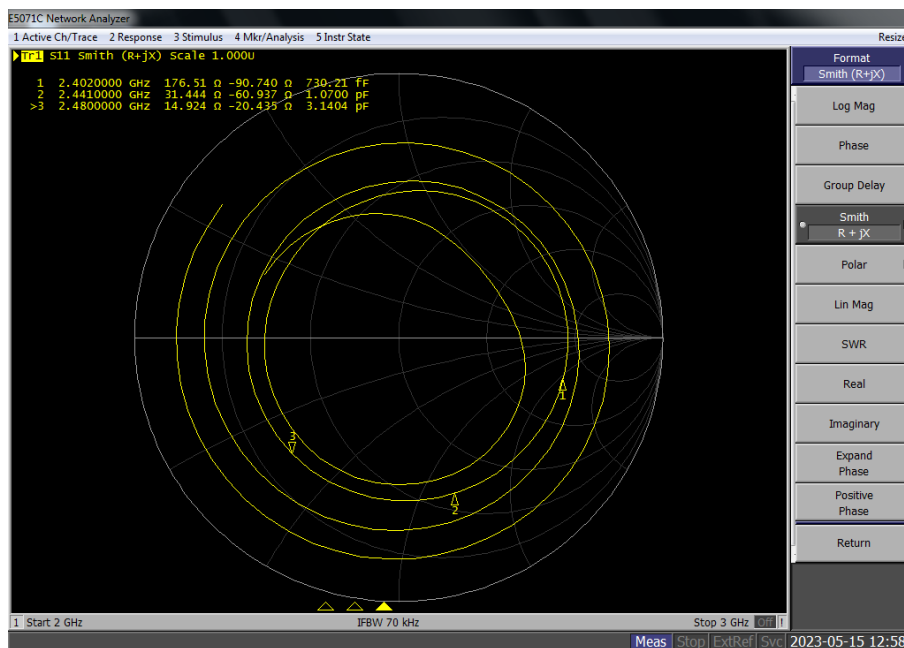


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6.3 Stimulus



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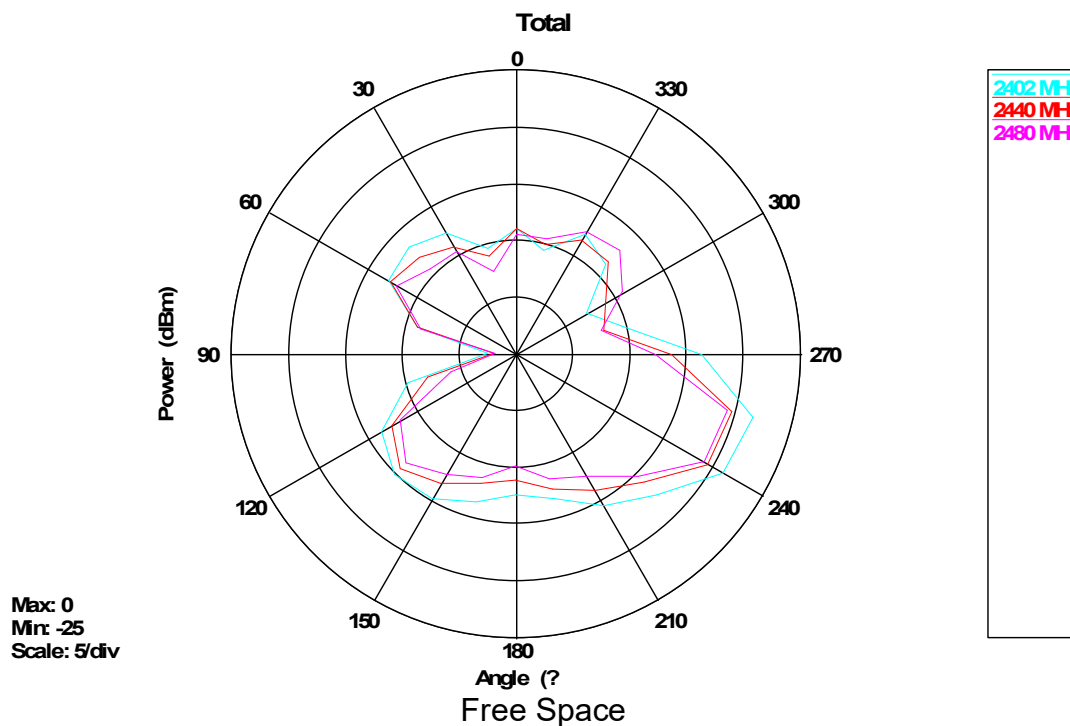
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7 2-D Antenna Pattern(Theta=90°)



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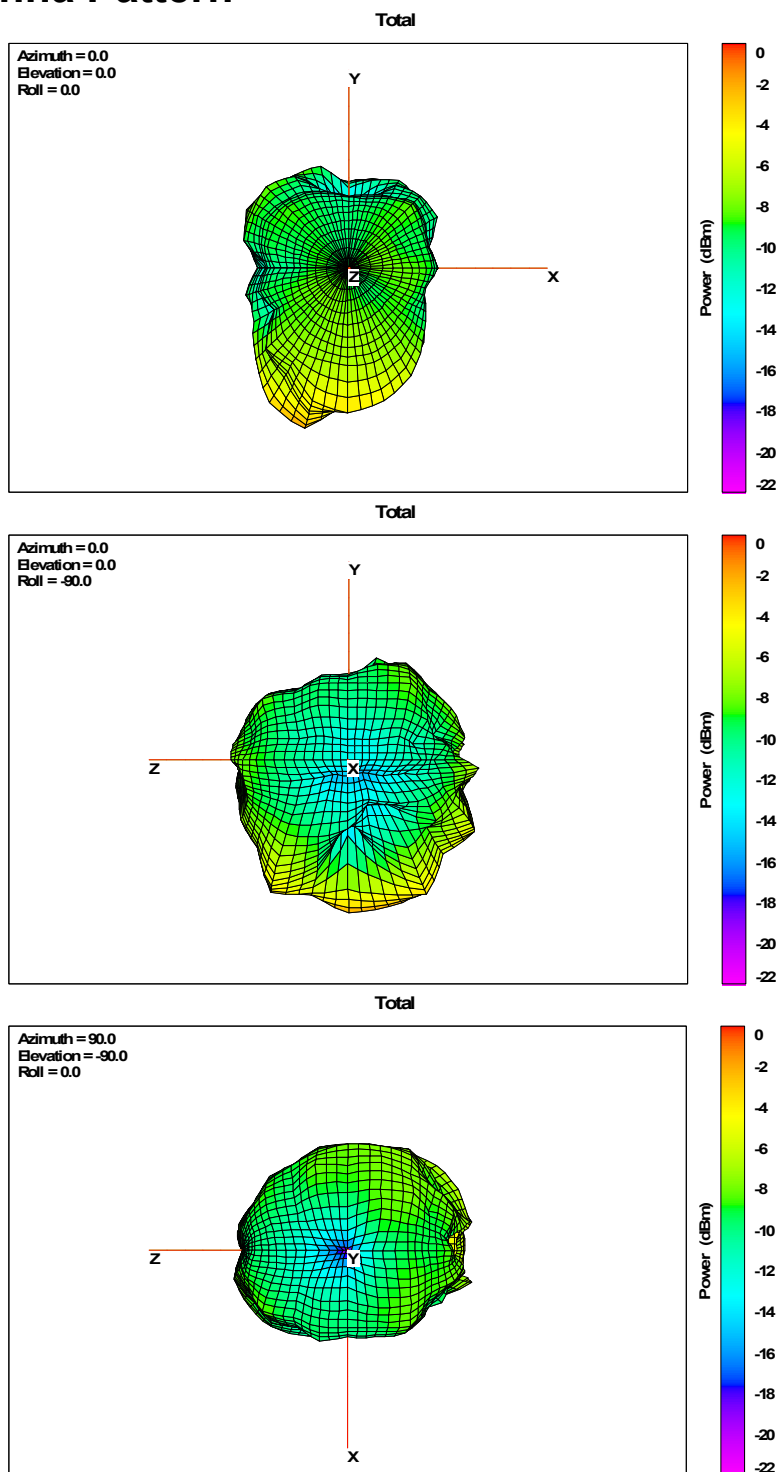
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8 3-D Antenna Pattern



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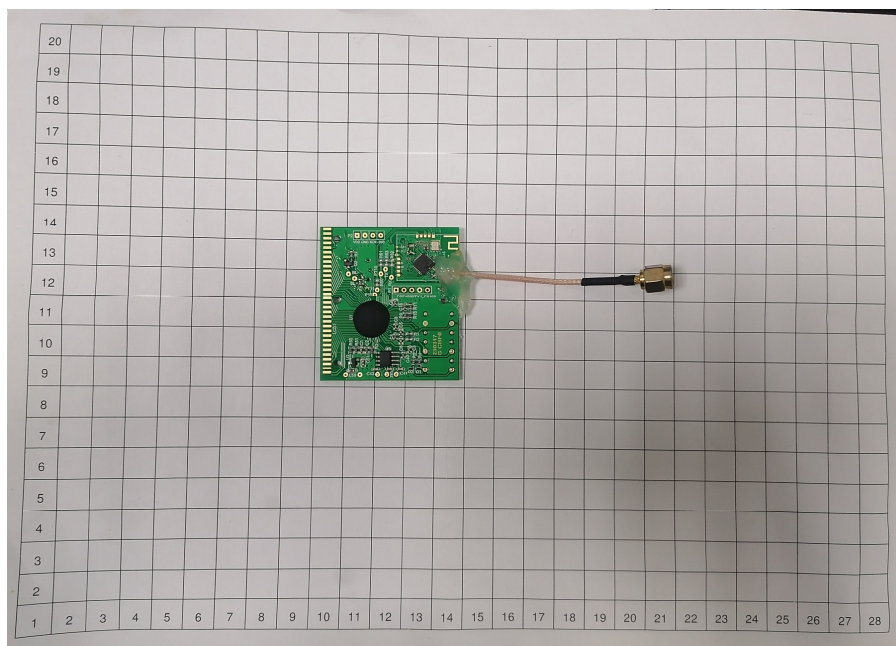
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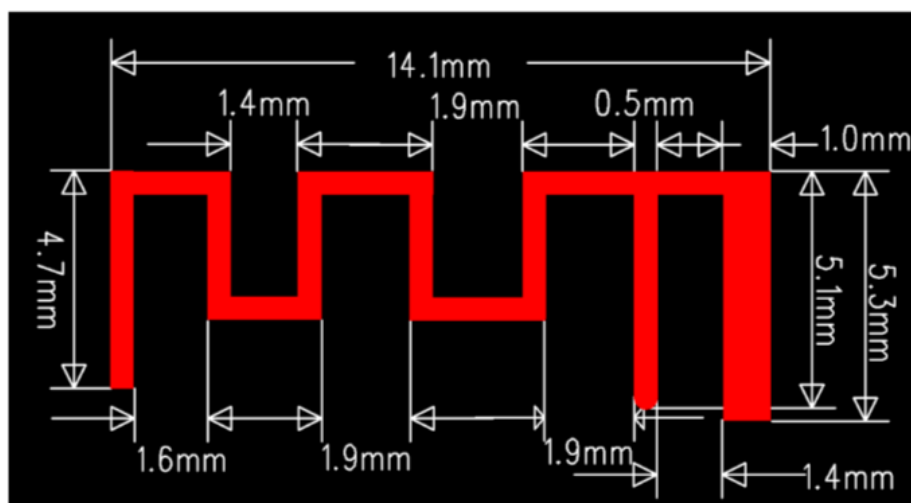
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9 The EUT and Test Configuration



Front Side EUT



Antenna Dimensions Information Of EUT

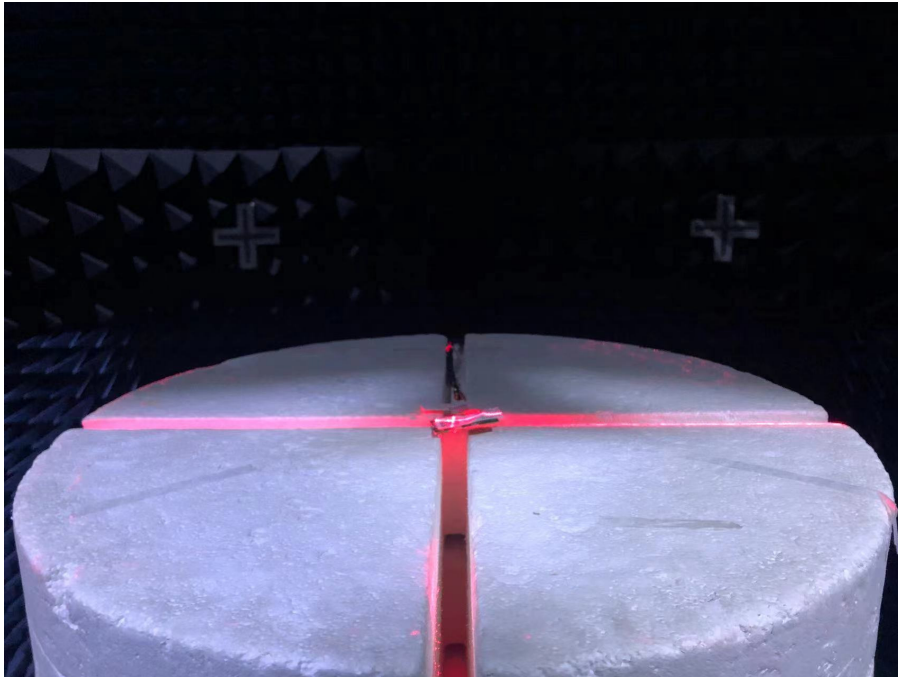


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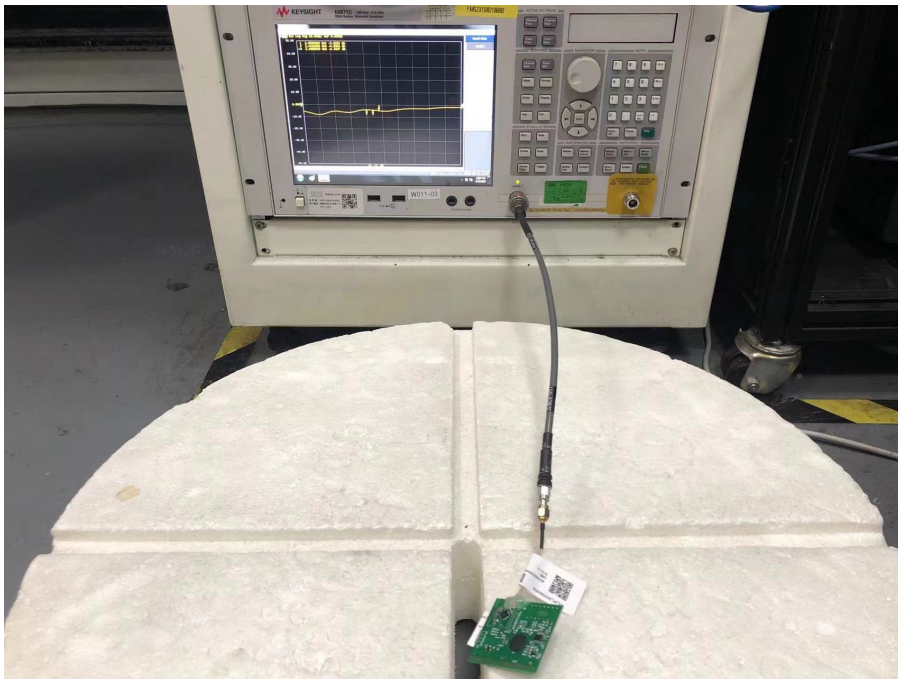
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Free Space View



Free Space Impedance Setup

---END---