



TEST REPORT

Prepared for	ShenZhen Sheng Run Technology Co.,Ltd.
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Prepared by	Shenzhen LCS Compliance Testing Laboratory Ltd.
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Test lab	Dongguan UB Electronics Co., Ltd
Address	Xinzheng Industrial Park, No. 57 Liuxian 2nd Road, Baoan District, Shenzhen, China
sample name	HY-234004P V1 B
Model	HY-234004P V1 B
Antenna	PCB Antenna
Date of Test	July 05 2023 ~ July 13, 2023





Date Of Issue	July 13, 2023
Applicant's Name	ShenZhen Sheng Run Technology Co.,Ltd.
Address	Unit505,Block C, Phase 1,Smart Home,NO. 76 Baohe Avenue,Baolong Street,Longgang District,Shenzhen, China
Manufacturer	ShenZhen Sheng Run Technology Co.,Ltd.
Address	Unit505,Block C, Phase 1,Smart Home,NO. 76 Baohe Avenue,Baolong Street,Longgang District,Shenzhen, China
Standard	IEEE149-1979 IEEE Standard Test Procedures for Antennas





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1. GENERAL INFORMATION

1.1 Description of Device (EUT)

EUT	HY-234004P V1 B
Test Model	HY-234004P V1 B
Additional Model No. /	
Antenna Type	PCB Antenna
Dimensions	50mm
Remark: For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.	

1.2 Technical Information

Frequency Range	2400-2500MHz
Test Frequency	2400-2500MHz

1.3 Test Condition

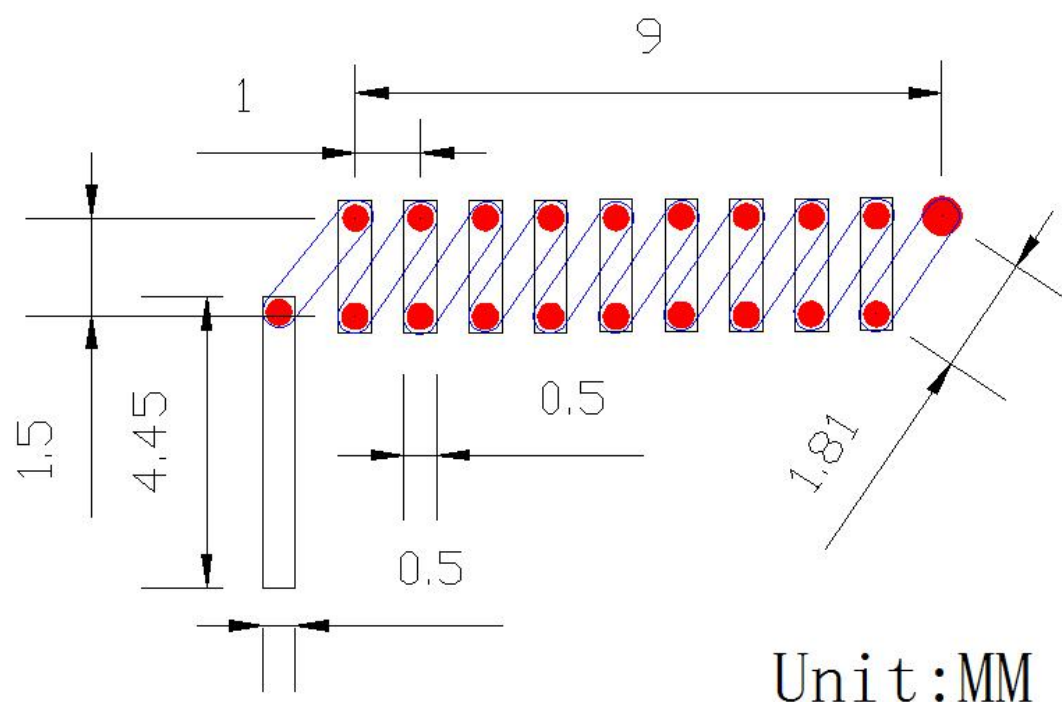
Environment Parameter	Ambient Pressure (KPa)	Temperature (°C)	Voltage	Relative Humidity (%)
Normal Temperature, NO RM AL Voltage	100.13	23.2	/	58

1.4 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

Item	Uncertainty
Gain	± 0.72dB
Efficiency	± 0.72dB







2. GAIN AND EFFICIENCY

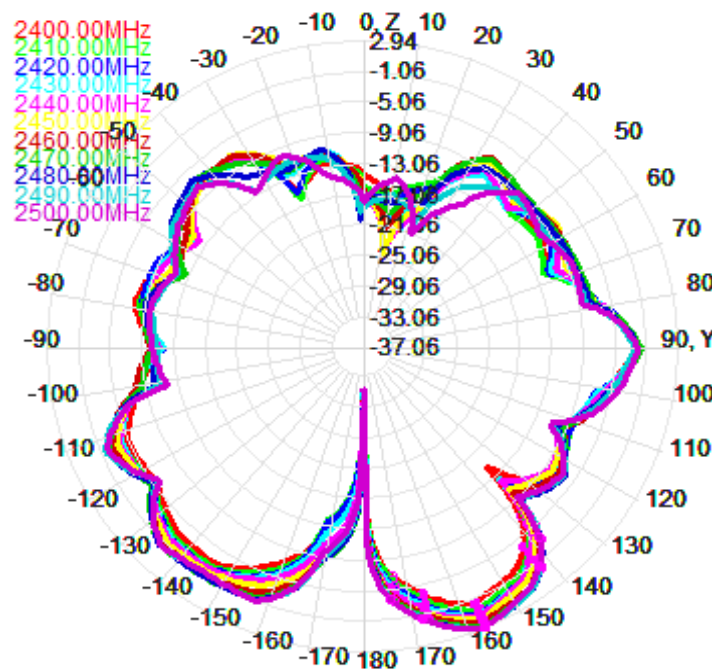
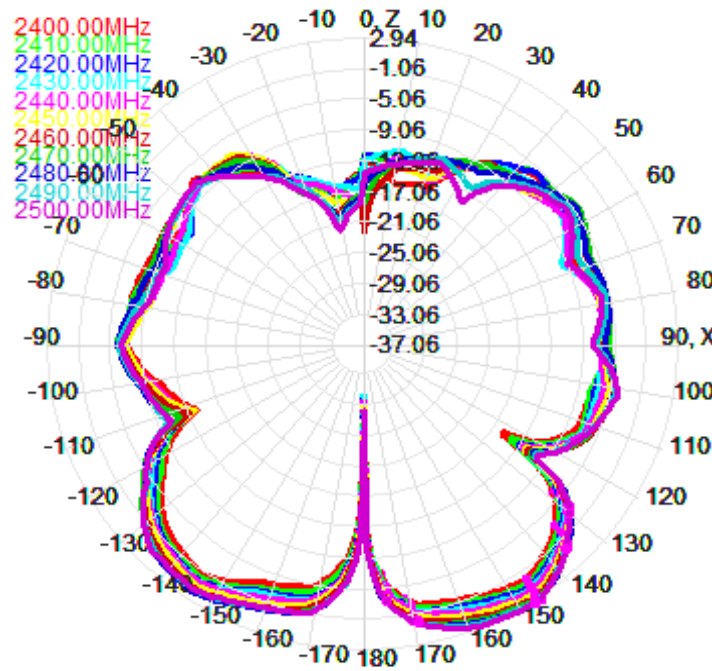
2.1 Test Results

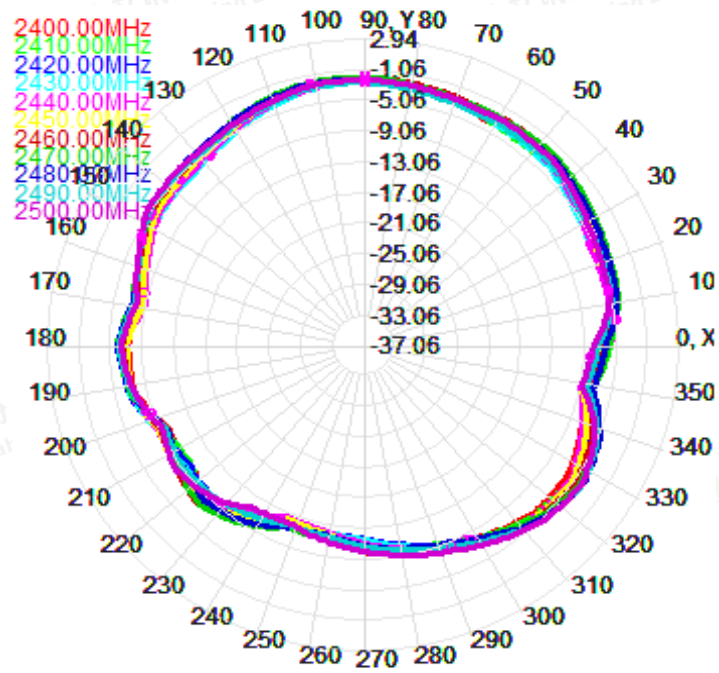
Frequency(MHz)	Peak Gain(dBi)	Efficiency(%)
2400	0.86	24.66
2410	1.45	26.76
2420	1.98	29.20
2430	2.20	31.65
2440	2.31	33.53
2450	2.77	35.76
2460	3.37	38.59
2470	3.59	40.50
2480	3.77	41.20
2490	3.76	41.20
2500	3.69	41.49





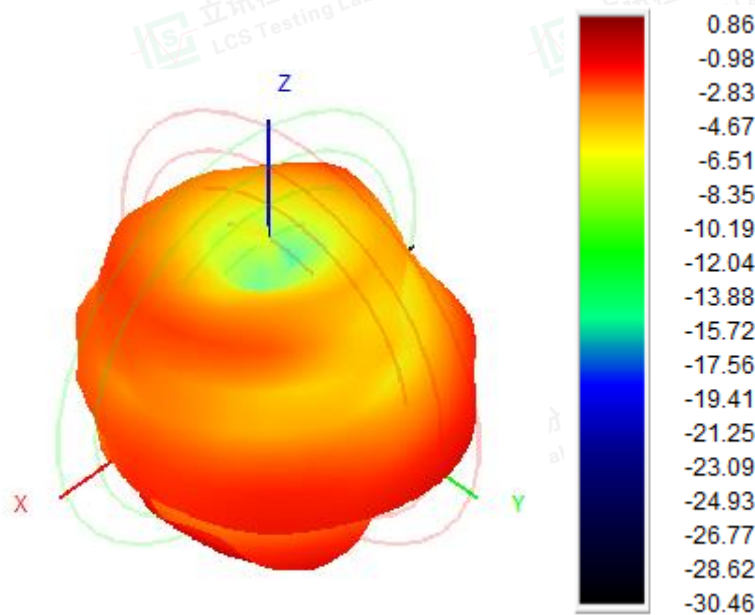
2.2 Direction map

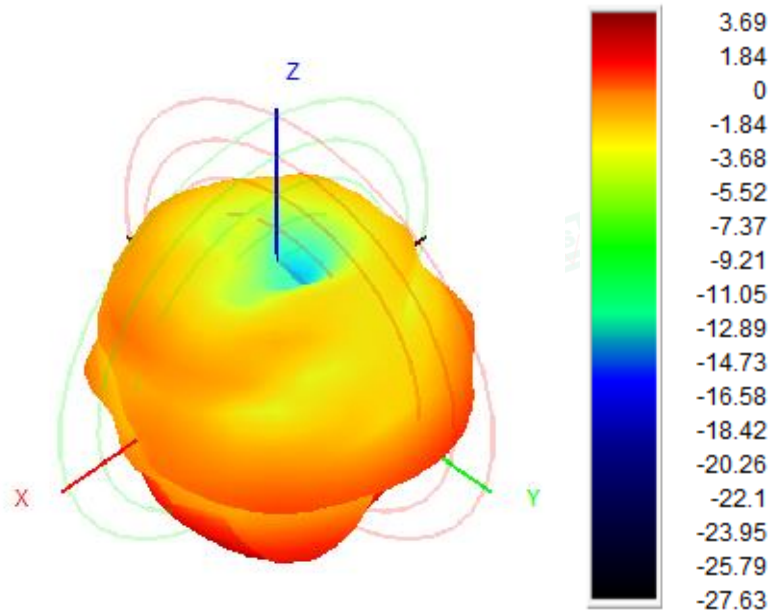
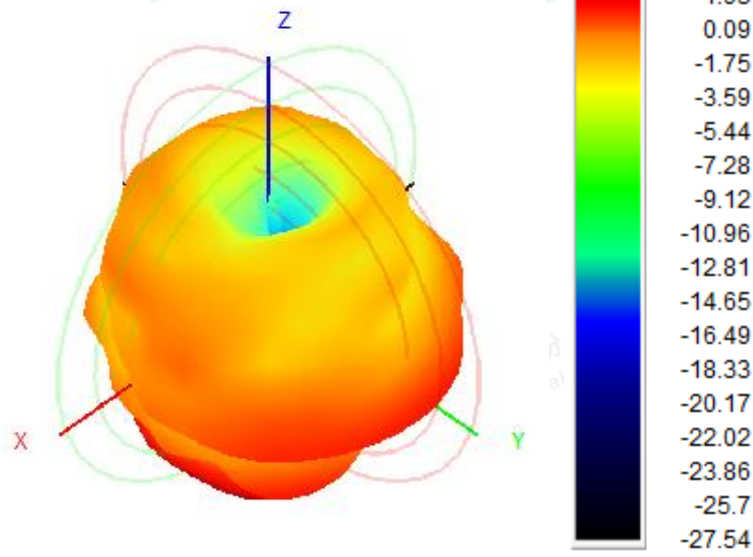




2.3 3D Patterns

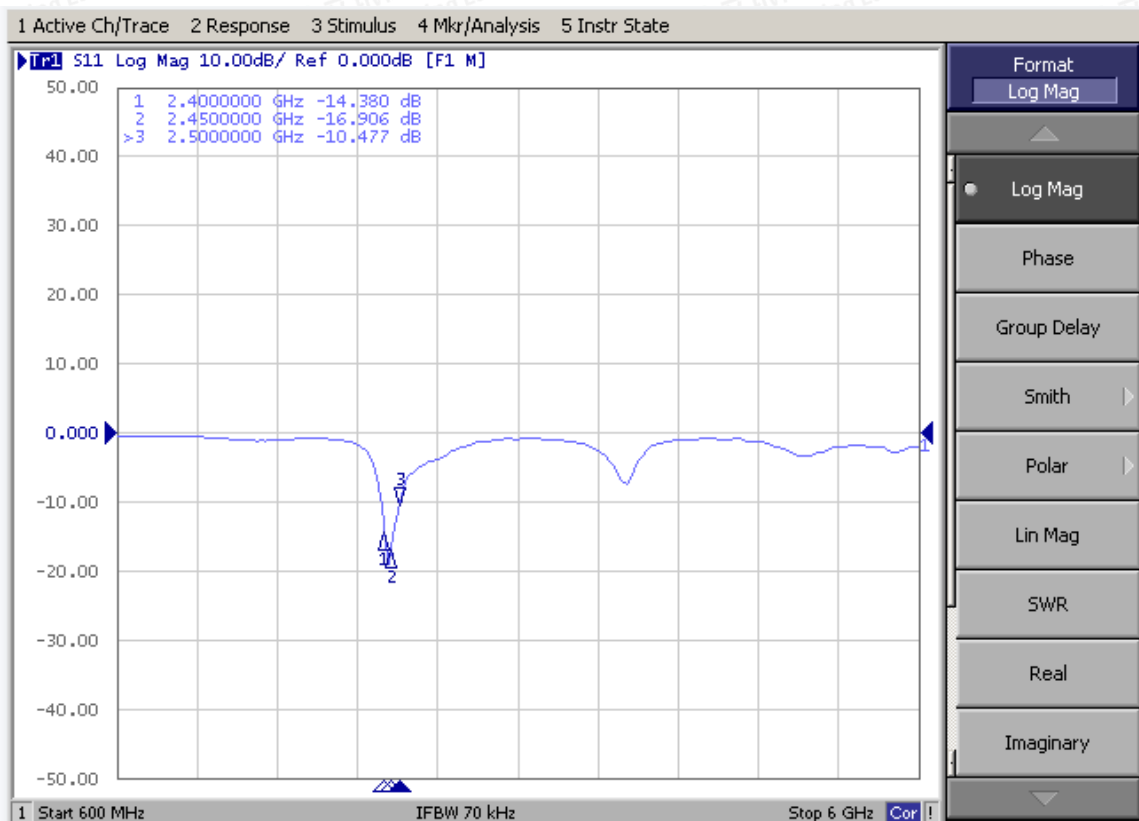
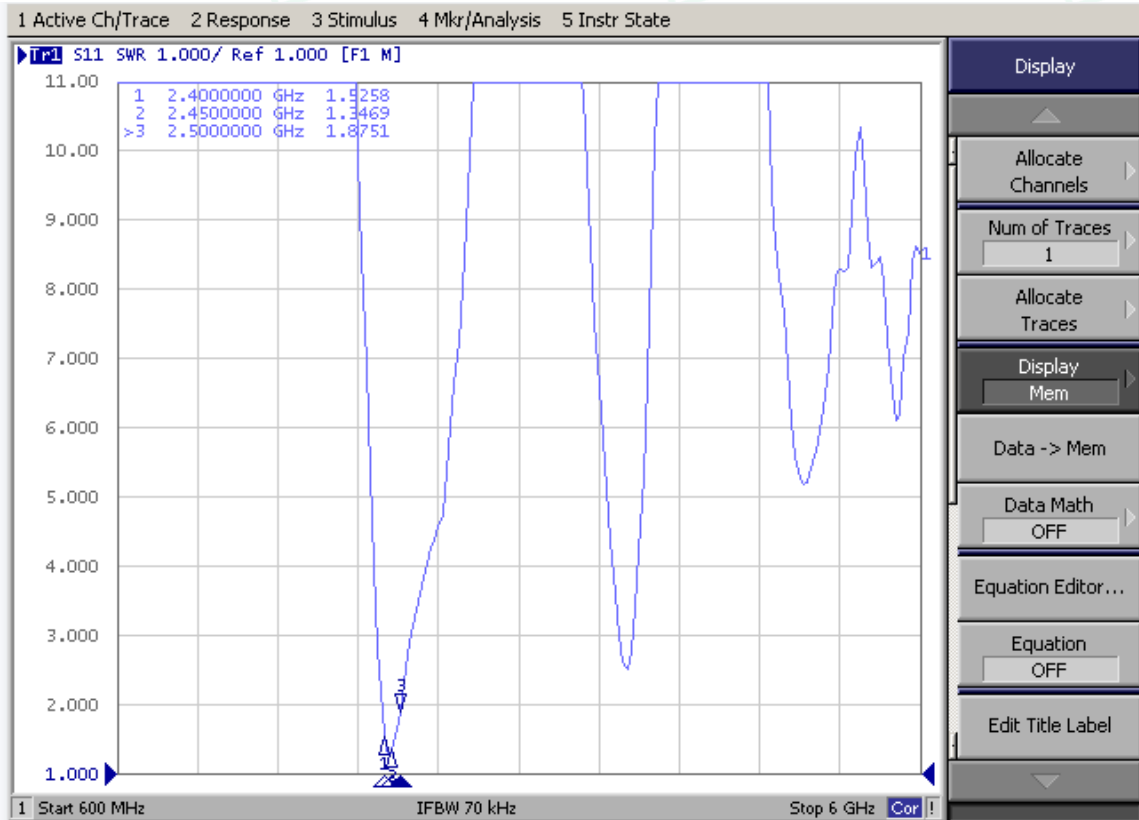
2400-2500MHz

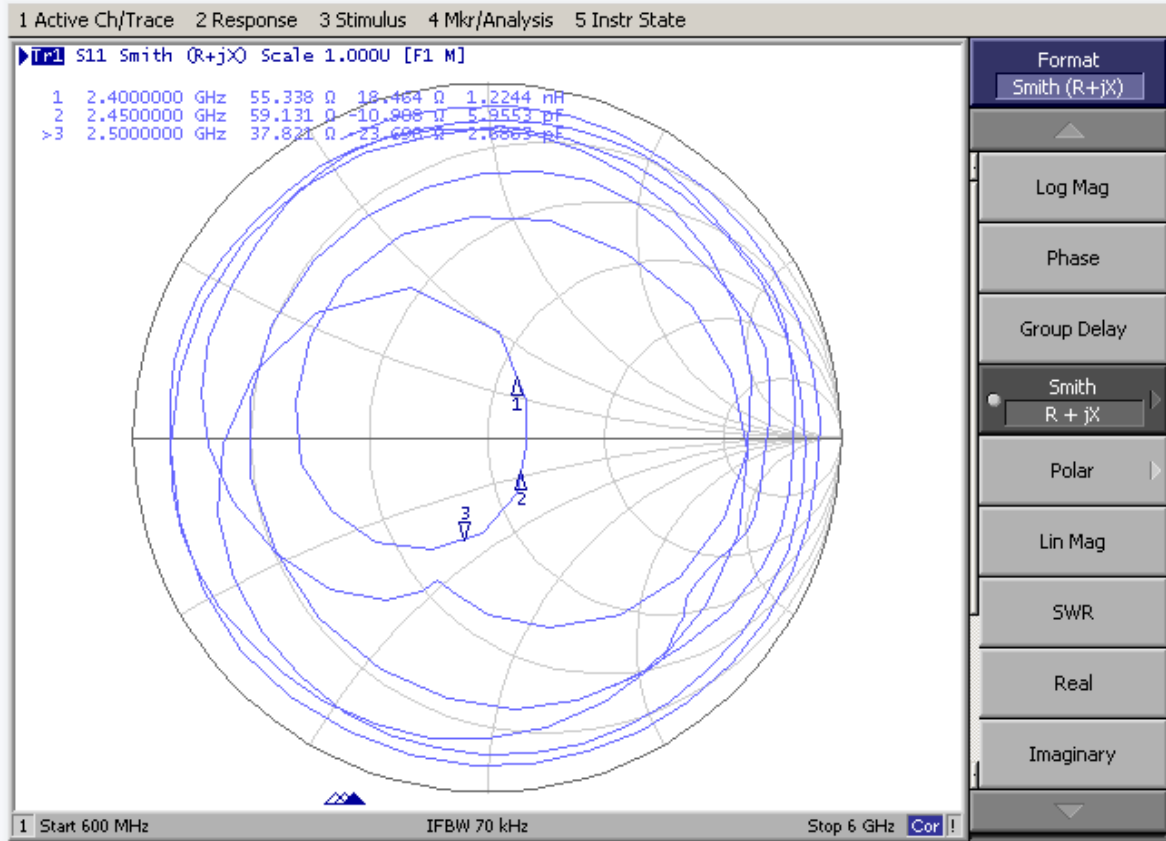






2.4 VSWR





Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (dBi)	-6.08	-5.73	-5.35	-5.00	-4.75	-4.47	-4.14	-3.93	-3.85	-3.85	-3.82
Gain (dBi)	0.86	1.45	1.98	2.20	2.31	2.77	3.37	3.59	3.77	3.76	3.69
Efficiency (%)	24.66	26.76	29.20	31.65	33.53	35.76	38.59	40.50	41.20	41.20	41.49
Directivity (dB)	6.94	7.18	7.33	7.19	7.06	7.24	7.51	7.51	7.62	7.61	7.51
Peak Gain Position (Theta)	146.00	146.00	146.00	146.00	146.00	146.00	146.00	146.00	146.00	146.00	146.00
Peak Gain Position (Phi)	146.00	146.00	135.00	146.00	146.00	146.00	146.00	135.00	135.00	135.00	135.00
Efficiency ThetaPol (%)	17.72	18.99	20.51	21.85	22.96	24.30	26.17	27.23	27.60	27.55	27.59
Efficiency PhiPol (%)	6.94	7.77	8.70	9.80	10.57	11.46	12.43	13.27	13.60	13.65	13.90
Upper Hem. Efficiency (%)	7.60	7.49	7.84	7.95	8.25	8.61	8.95	9.21	8.96	8.31	8.19
Lower Hem. Efficiency (%)	17.06	19.27	21.37	23.70	25.28	27.14	29.64	31.30	32.24	32.90	33.29





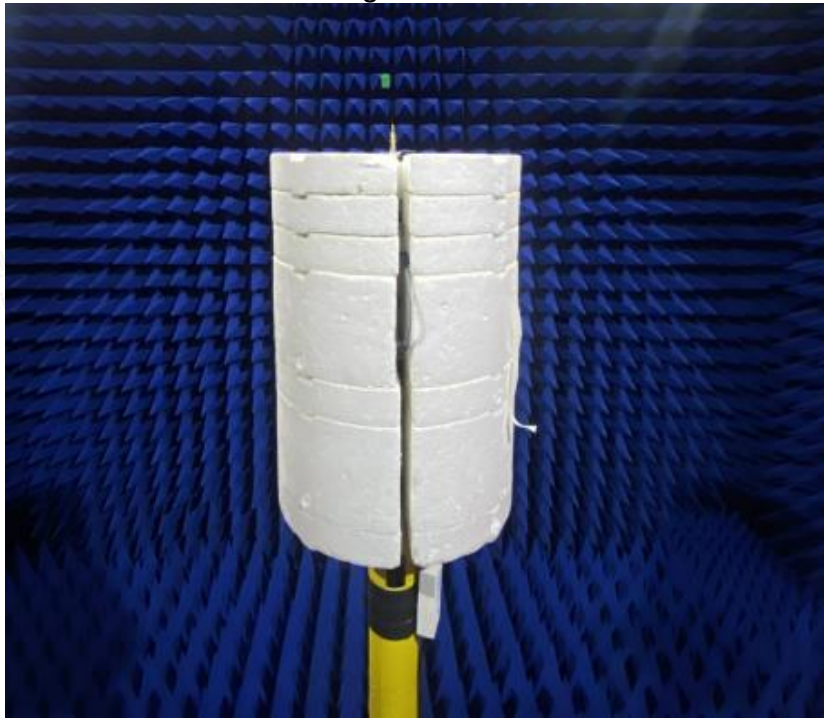
3. PHOTOGRAPH OF EUT



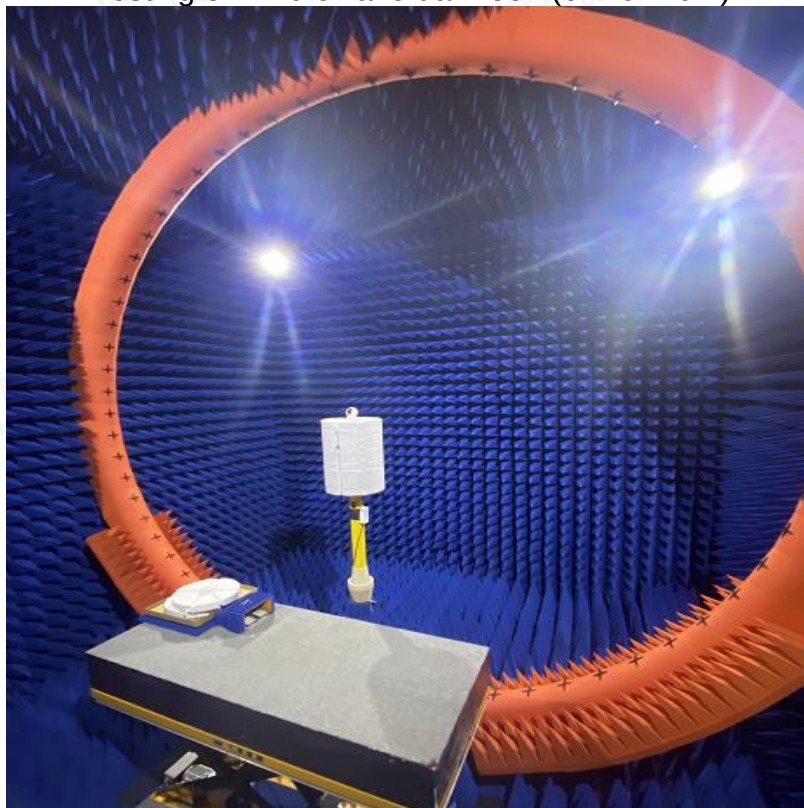


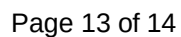
4. PHOTOGRAPH OF TEST SET UP

Testing environment

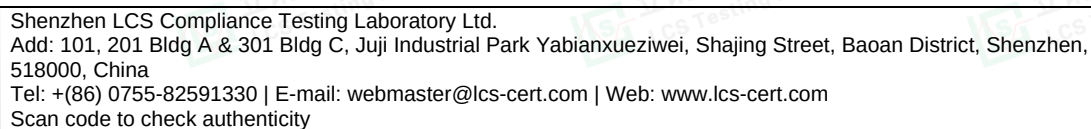


Testing 3D microwave darkroom(6m*6m*6m)





5. TEST PRINCIPLE





6. TEST EQUIPMENT

Test Equipment	Type/Mode	Equipment No.	Manufacturer	Cal Date	Due Date
OTA test system	RayZone-5000	RFI-LAB-RF-D00	GTS	2023.3.21	2025.3.20
Network Analyzer	E5071C	RFI-LAB-RF-D01	KEYSIGHT	2023.5.12	2024.5.11

-----THE END OF REPORT-----

