Antenna Test Report

Project No	P25021B5D	PCB Version	LD023F6_V1.0
Tester	XuNing	Date	2025.4.22
Auditing		Date	
Approval		Date	

Contents

1. Project Information

1.1. Antenna Coding：ANT-BBNCNC25008

1.2. Antenna Type：On board PCB Antenna

1.3. Model of the DUT：KHWBC304F001

1.4. Test Data ：2025.4.22

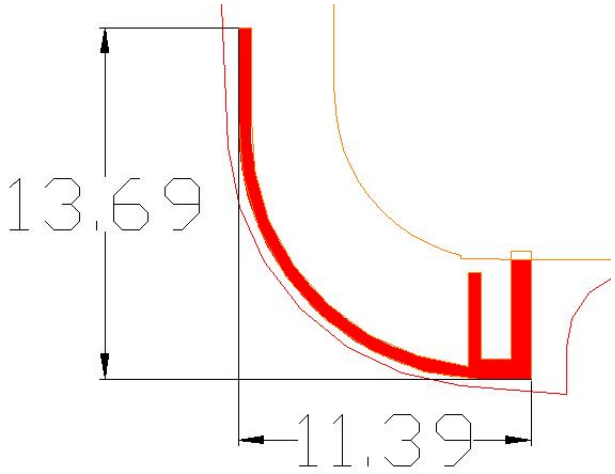
1.5. Product picture：

Product appearance	
PCB board and antenna	

2. Technical Specification

Electrical Specifications	
Frequency Range	2400-2480 MHz
Peak Gain	3.75 dBi
Efficiency	68.6%
S11	≤-14dB
VSWR	≤1.5
Bandwidth (S11≤-10dB)	150 MHz
Input Impedance	50Ω
Radiation direction	Omni
Polarization Type	Linear
Lightning Protection	DC grounding
Power Capacity	1000mW（30dBm）
Mechanical Specifications	
Antenna Size	13.69mm x11.39mm
Core Radiator	Copper
Substrate material	FR4
Coaxial wire	Not Required
Connect Type	Not Required
Operating Temperature	-20 to +60℃
Storage Temperature	-10 to +60℃

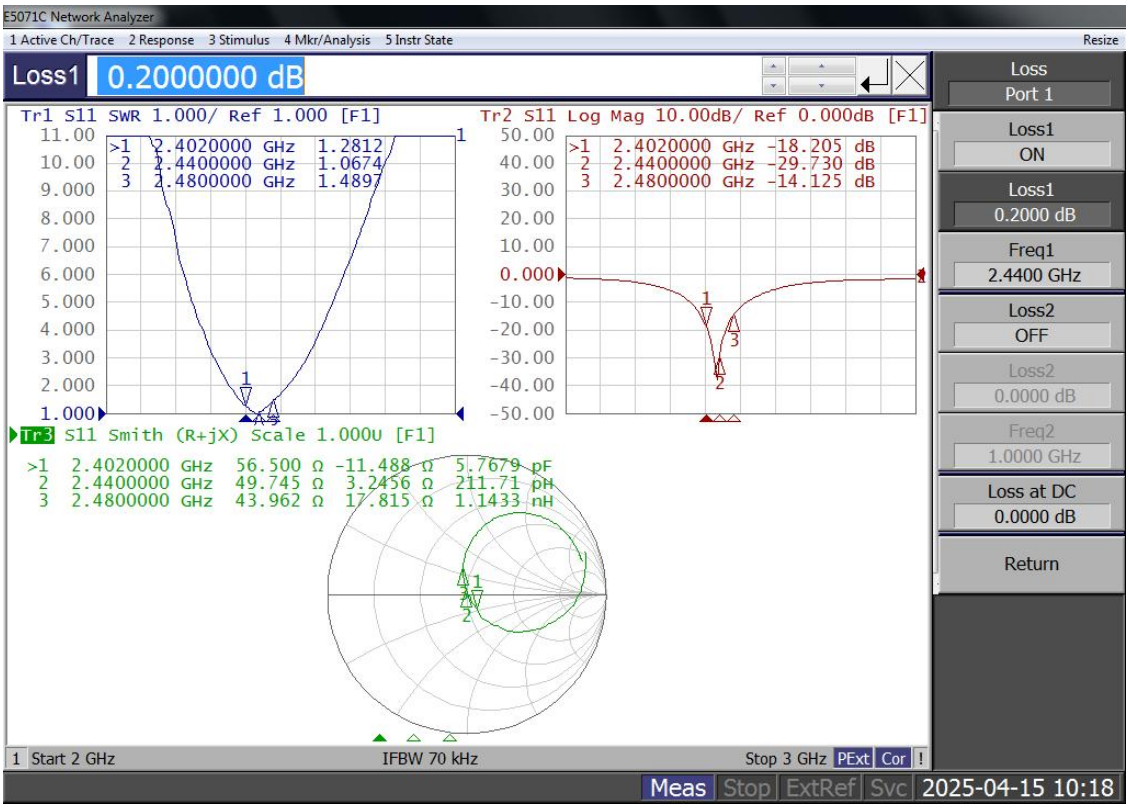
3. The shape and size of the antenna



Unit：mm

4. The result of the test

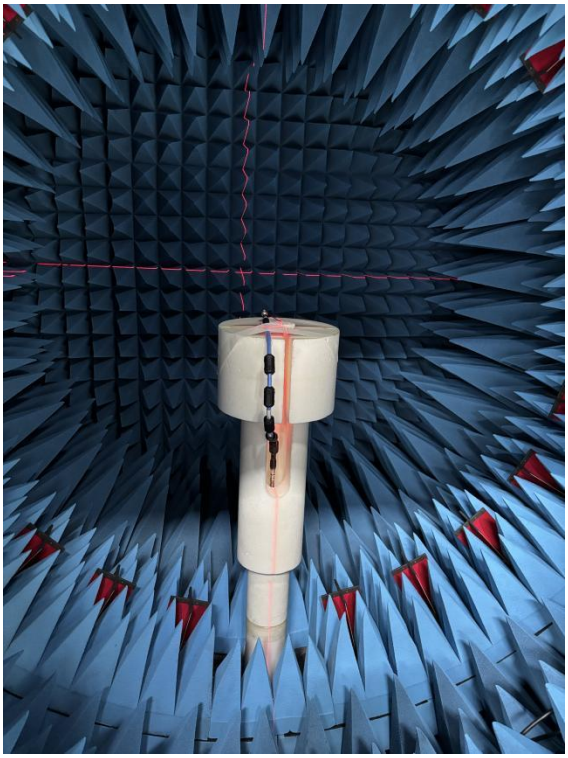
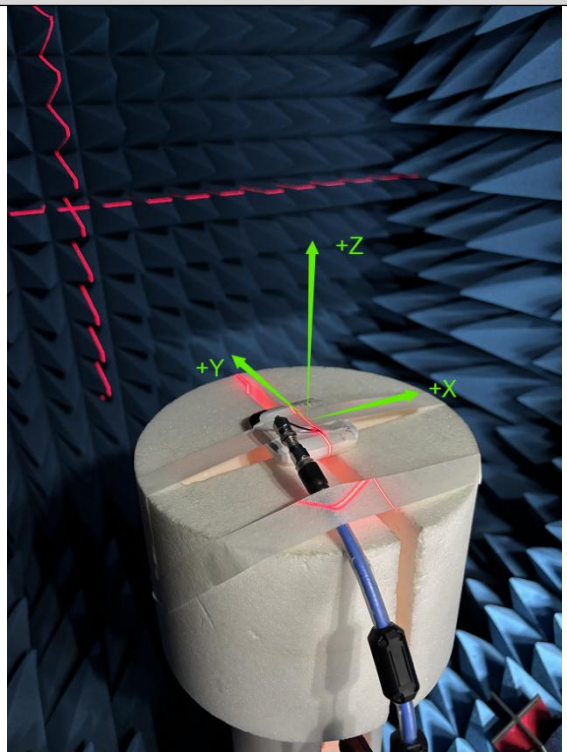
4.1. VSWR & Return loss & Smith



Frequency (MHz)	Return Loss (dB)	VSWR
2402	-18.2	1.28
2440	-29.7	1.06
2480	-14.1	1.48
Bandwidth (S11≤-10dB)	150	

4.2. Antenna Gain and Efficiency

4.2.1. Product coordinate axis position

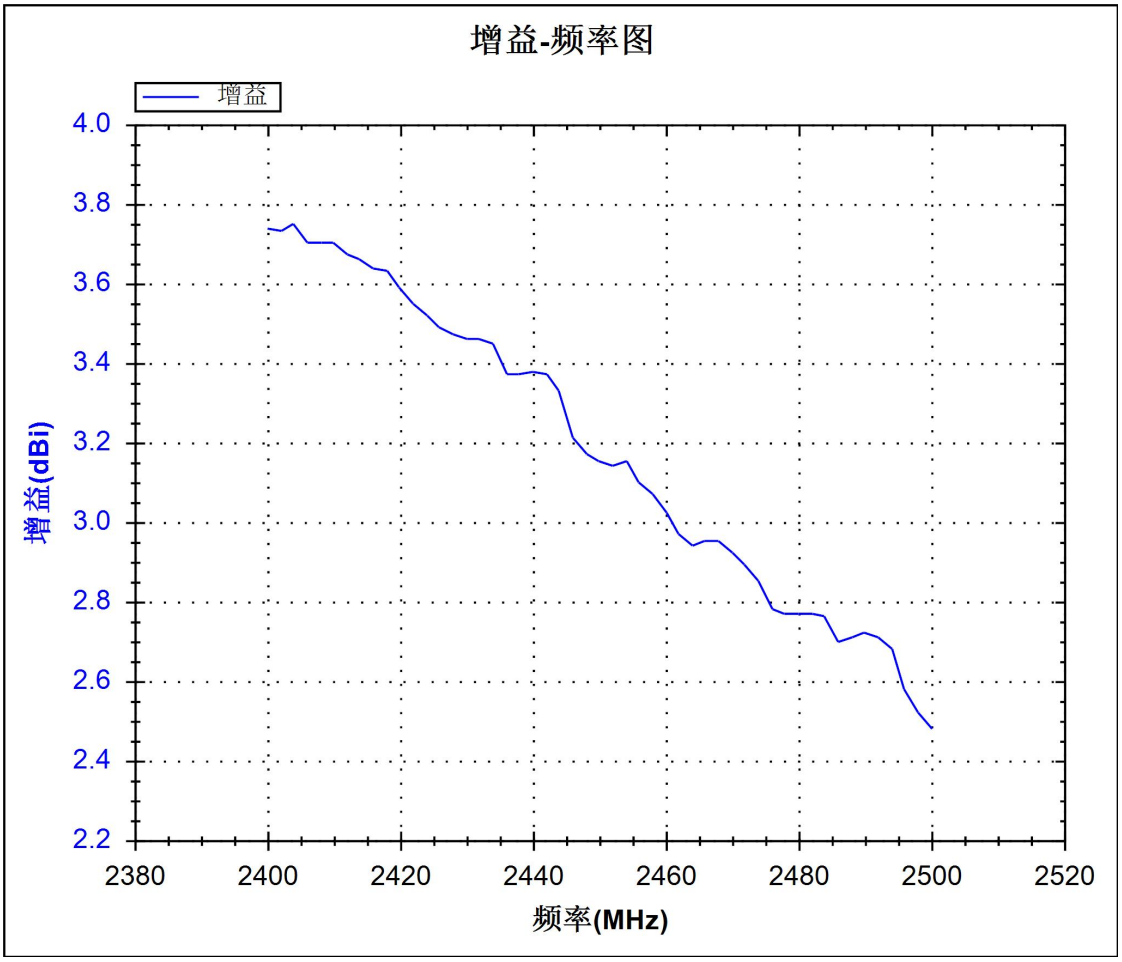
Inside the microwave anechoic chamber	Product coordinate axis position
	

Notes：The Antenna towards to -Y.

4.2.2. Gain and Efficiency date sheet

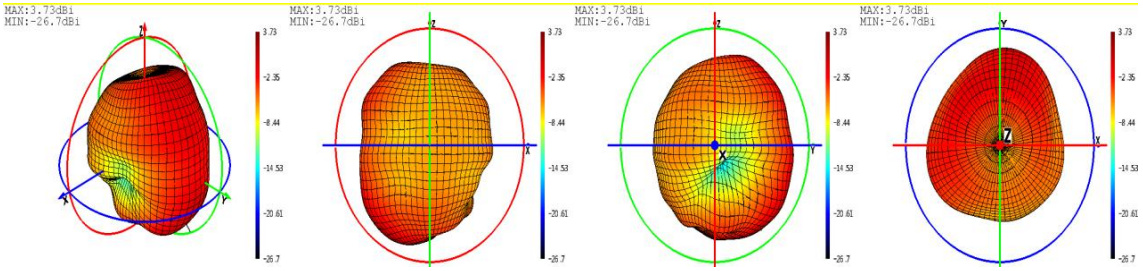
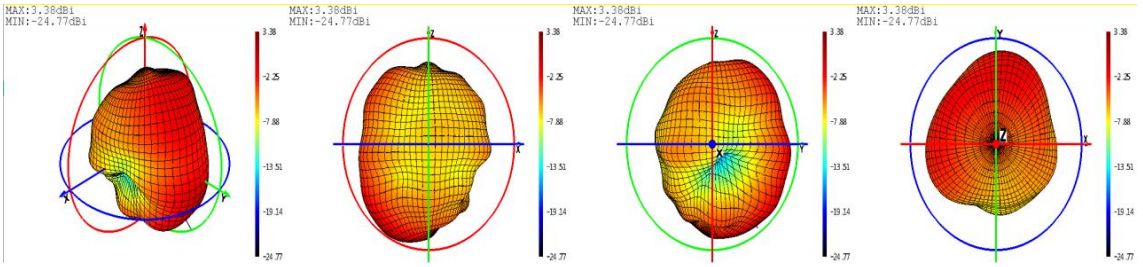
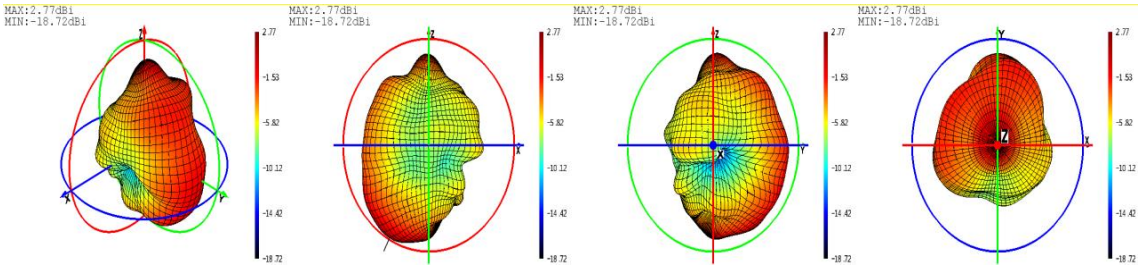
Frequency(MHz)	Gain(dBi)	Efficiency(%)	PeakGain (dBi)
2400	3.74	68.6	3.75
2402	3.73	68.32	
2404	3.75	68.17	
2406	3.7	67.95	
2408	3.7	67.65	
2410	3.7	67.31	
2412	3.67	66.79	
2414	3.66	66.52	
2416	3.64	66.32	
2418	3.63	66.01	
2420	3.59	65.38	
2422	3.55	64.87	
2424	3.52	64.49	
2426	3.49	64.07	
2428	3.47	63.7	
2430	3.46	63.27	
2432	3.46	63.03	
2434	3.45	62.73	
2436	3.37	62.2	
2438	3.37	62.11	
2440	3.38	62.08	
2442	3.37	62.28	
2444	3.33	62.26	
2446	3.21	61.58	
2448	3.17	61.48	
2450	3.15	61.79	
2452	3.14	61.68	
2454	3.15	61.78	
2456	3.1	61.35	
2458	3.07	60.87	
2460	3.02	60.17	
2462	2.97	59.57	
2464	2.94	59.3	
2466	2.95	59.31	
2468	2.95	59.27	
2470	2.92	58.84	
2472	2.89	58.66	
2474	2.85	58.34	
2476	2.78	57.93	
2478	2.77	57.97	
2480	2.77	58.12	

4.2.3. Graphs of Gain and Efficiency



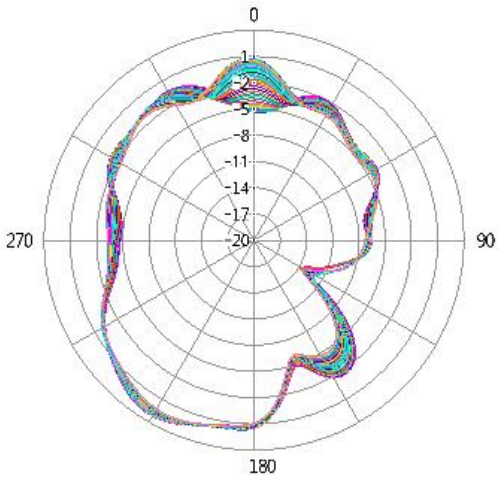
4.3.Radiation Pattern

4.3.1. 3D Radiation Pattern

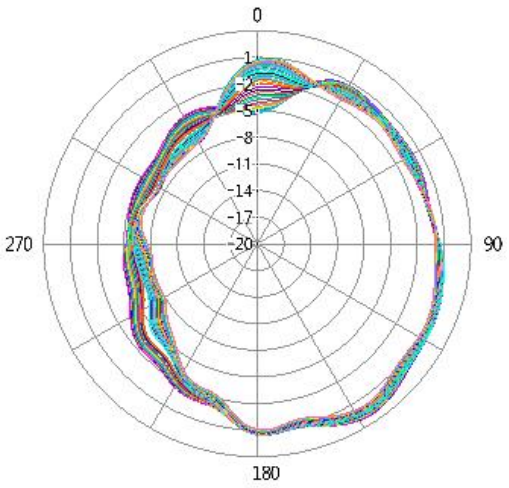
2402MHz

2440MHz

2480MHz


4.3.2. 2D Radiation Pattern

E1，XZ-Face，phi=0°；（E1，theta=0~360°，phi=0°）



E2，YZ-Face，phi=90°；（E2，theta=0~360°，phi=90°）



H，XY-Face，theta=90°；（H，phi=0~360°，theta=90°）