Antenna Test Report

Project No	P23118B7B	PCB Version	LS016F7_V1.0
Tester	XuNing	Date	2024.11.28
Auditing		Date	
Approval		Date	

Contents

1. Project Information

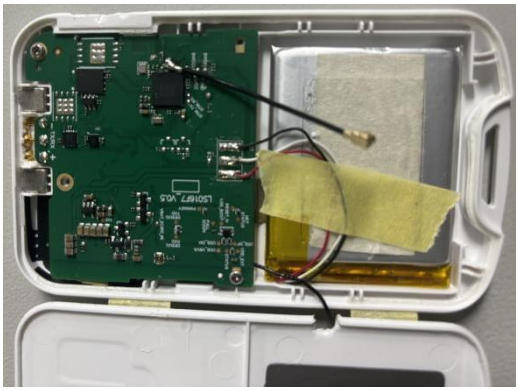
1.1. Antenna Coding：ANT-BBNCNC24005（BLE）

1.2. Antenna Type：On board PCB Antenna

1.3. Model of the DUT：MWC03

1.4. Test Data ：2024.11.28

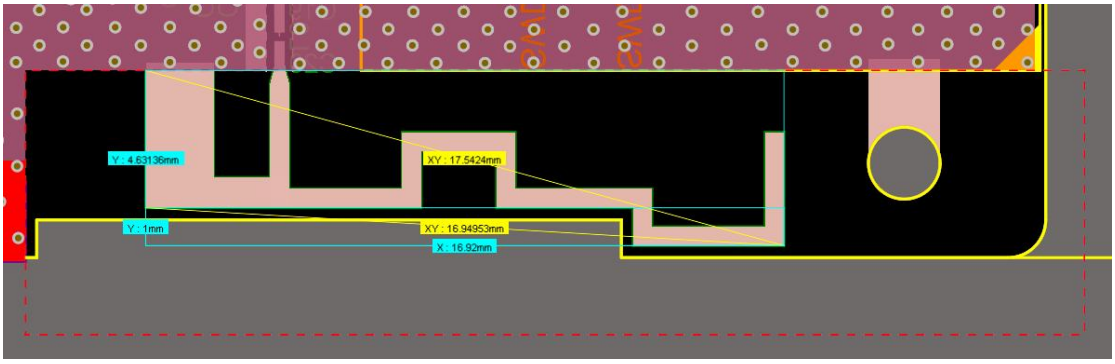
1.5. Product picture：

Product appearance	
PCB board and antenna	

2. Technical Specification

Electrical Specifications	
Frequency Range	2400-2480 MHz
Peak Gain	-0.12 dBi
Efficiency	32.97%
Return Loss	≤-10dB
VSWR	≤2.0
Bandwidth (S11≤-10dB)	80 MHz
Input Impedance	50Ω
Radiation direction	Omni
Polarization Type	Linear
Lightning Protection	DC grounding
Power Capacity	1000mW（30dBm）
Mechanical Specifications	
Antenna Size	16.92 x 4.63 mm
Core Radiator	Copper
Substrate material	FR4
Substrate thickness	0.8mm
Coaxial wire	Not Required
Connect Type	Not Required
Operating Temperature	-20 to +60℃
Storage Temperature	-10 to +60℃

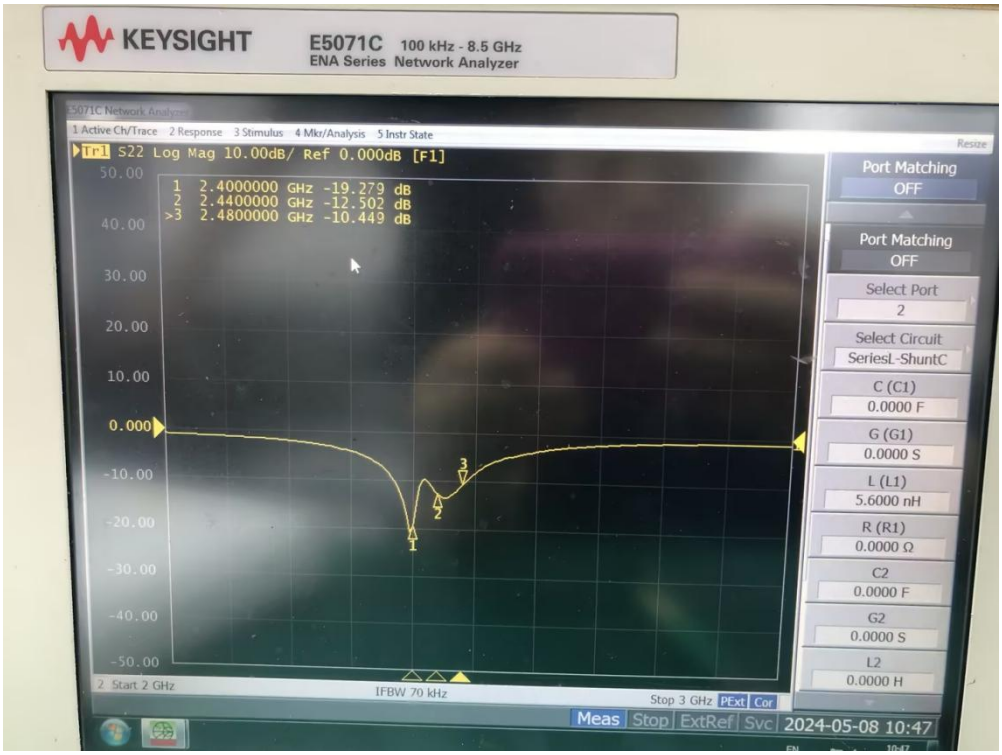
3. The shape and size of the antenna

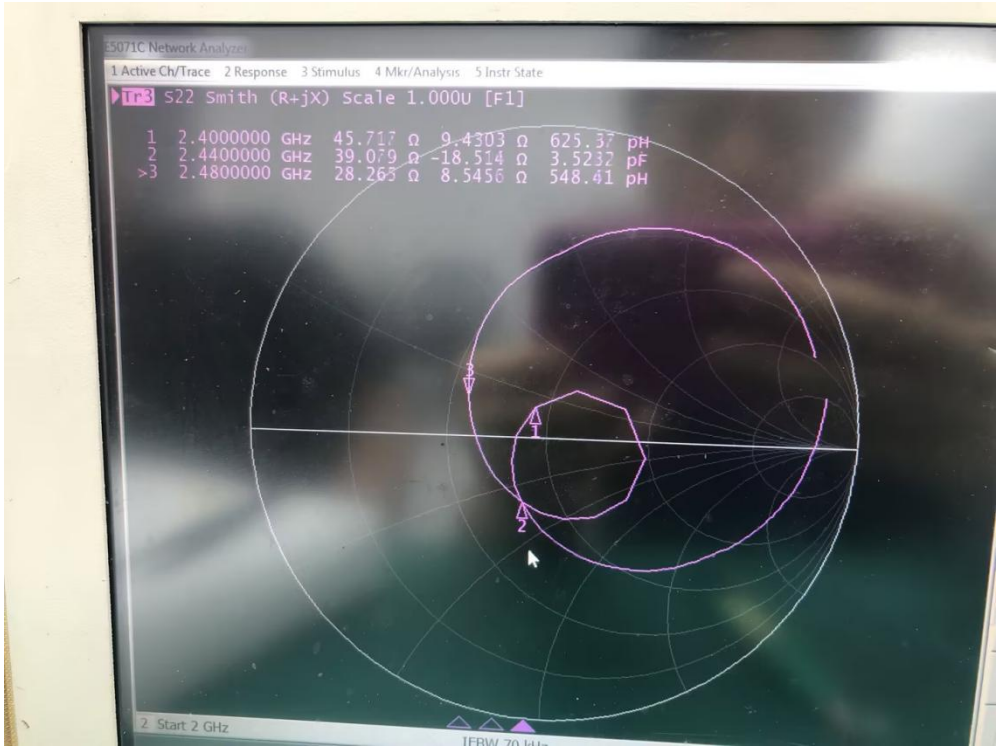


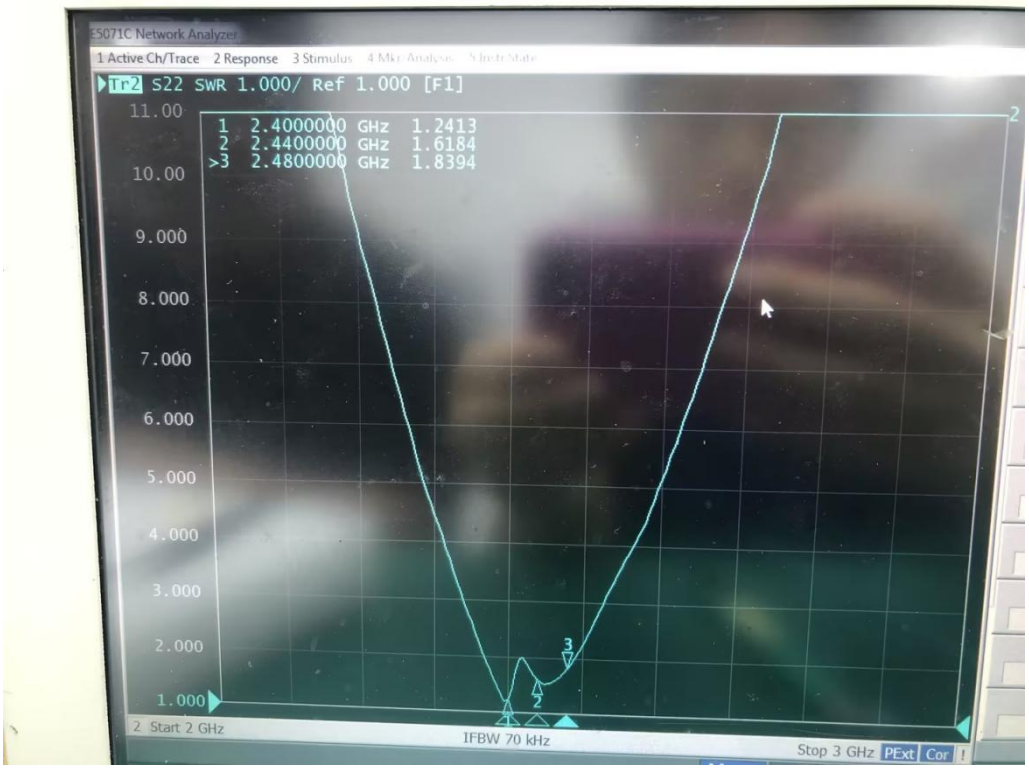
Unit：mm

4. The result of the test

4.1. VSWR & Return loss & Smith



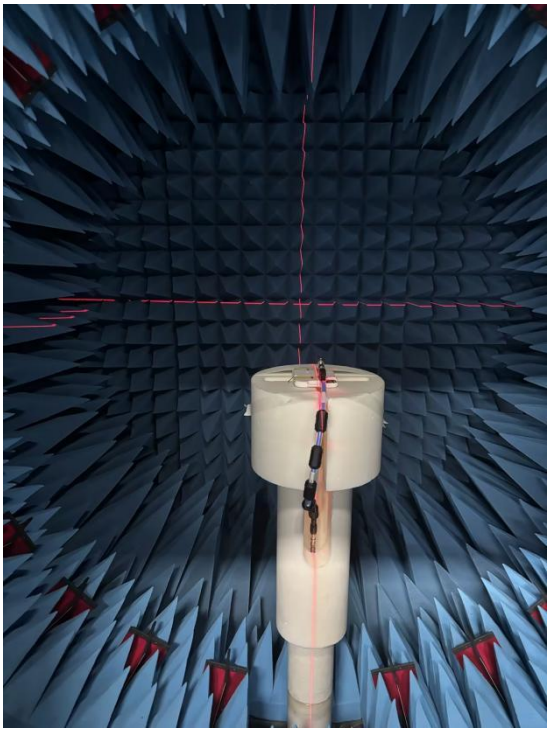
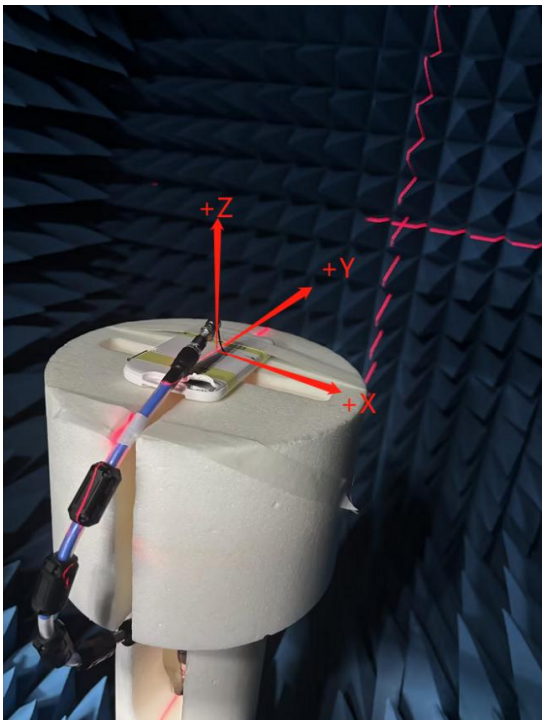




Frequency (MHz)	Return Loss (dB)	VSWR
2402	-19.28	1.24
2440	-12.5	1.62
2480	-10.45	1.84
Bandwidth (S11≤-10dB)	80	

4.2. Antenna Gain and Efficiency

4.2.1. Product coordinate axis position

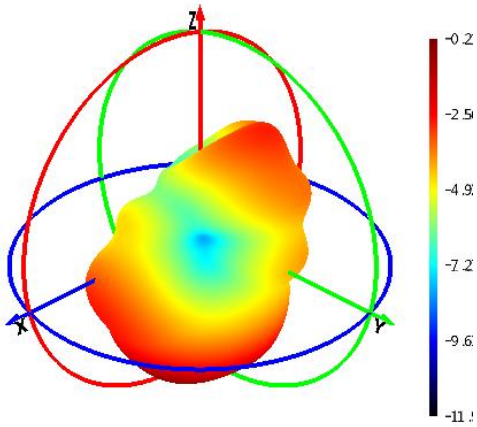
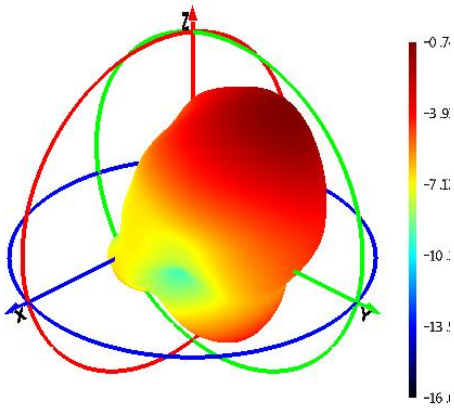
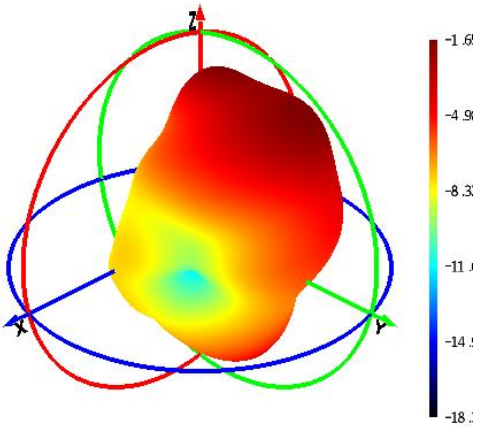
Inside the microwave anechoic chamber	Product coordinate axis position
	

4.2.2. Gain and Efficiency date sheet

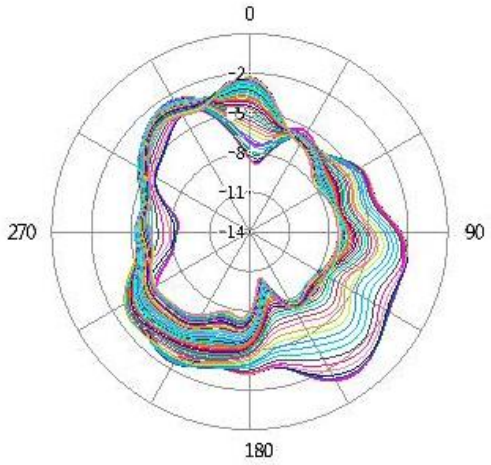
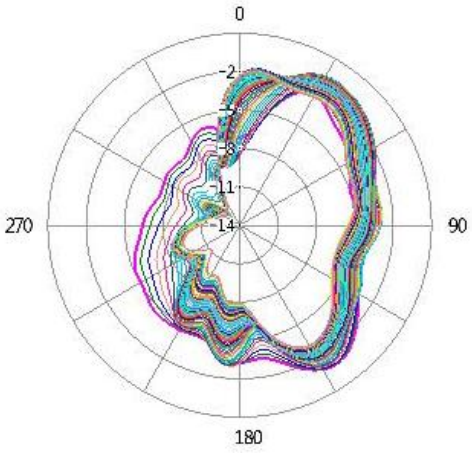
频率(MHz)	增益(dBi)	效率(dB)	效率(%)	PeakGain (dBi)
2400	-0.12	-4.82	32.97	-0.12
2402	-0.21	-4.83	32.85	
2404	-0.40	-4.84	32.84	
2406	-0.73	-4.84	32.84	
2408	-1.04	-4.84	32.82	
2410	-0.97	-4.85	32.74	
2412	-0.79	-4.88	32.54	
2414	-0.64	-4.90	32.39	
2416	-0.56	-4.92	32.18	
2418	-0.49	-4.95	31.99	
2420	-0.46	-4.99	31.70	
2422	-0.46	-5.01	31.53	
2424	-0.47	-5.04	31.32	
2426	-0.44	-5.07	31.15	
2428	-0.48	-5.09	30.96	
2430	-0.54	-5.12	30.73	
2432	-0.59	-5.15	30.55	
2434	-0.65	-5.19	30.29	
2436	-0.65	-5.23	30.00	
2438	-0.70	-5.26	29.80	
2440	-0.74	-5.28	29.65	
2442	-0.78	-5.28	29.65	
2444	-0.86	-5.30	29.49	
2446	-0.90	-5.35	29.17	
2448	-0.97	-5.38	28.98	
2450	-1.00	-5.38	28.98	
2452	-1.02	-5.40	28.85	
2454	-1.02	-5.41	28.78	
2456	-1.04	-5.44	28.55	
2458	-1.11	-5.50	28.20	
2460	-1.20	-5.57	27.72	
2462	-1.29	-5.64	27.32	
2464	-1.33	-5.66	27.14	
2466	-1.37	-5.68	27.04	
2468	-1.38	-5.70	26.94	
2470	-1.44	-5.75	26.63	
2472	-1.49	-5.79	26.36	
2474	-1.56	-5.84	26.04	
2476	-1.61	-5.89	25.73	
2478	-1.64	-5.92	25.61	
2480	-1.65	-5.93	25.52	

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°）