



Antenna Test Report

Project No	LD017F6_V0.2	PCB Version	LD017F6
Tester	MoQi	Date	2024.10.17
Auditing	XuNing	Date	2024.10.18
Approval		Date	

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一、Project Information

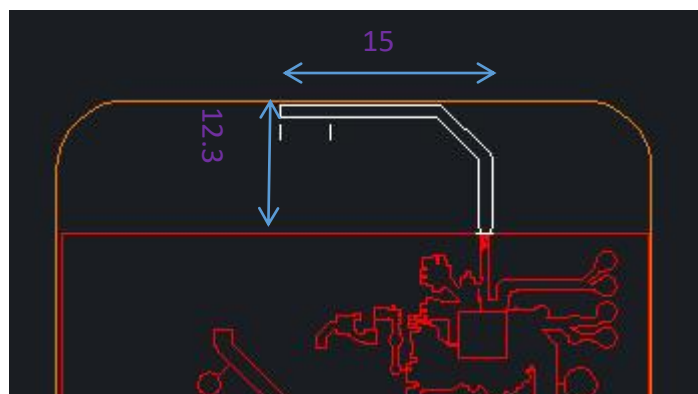
- 1. Antenna Coding: [ANT-BBNCNC24012](#)
- 2. Antenna Type: [Onboard Antenna](#)
- 3. Model of the DUT: [KHWPO300F002](#)
- 4. Test Data : [2024.10.17](#)
- 5. Product picture:

Product appearance	
PCB board and antenna	

二、Technical Specification

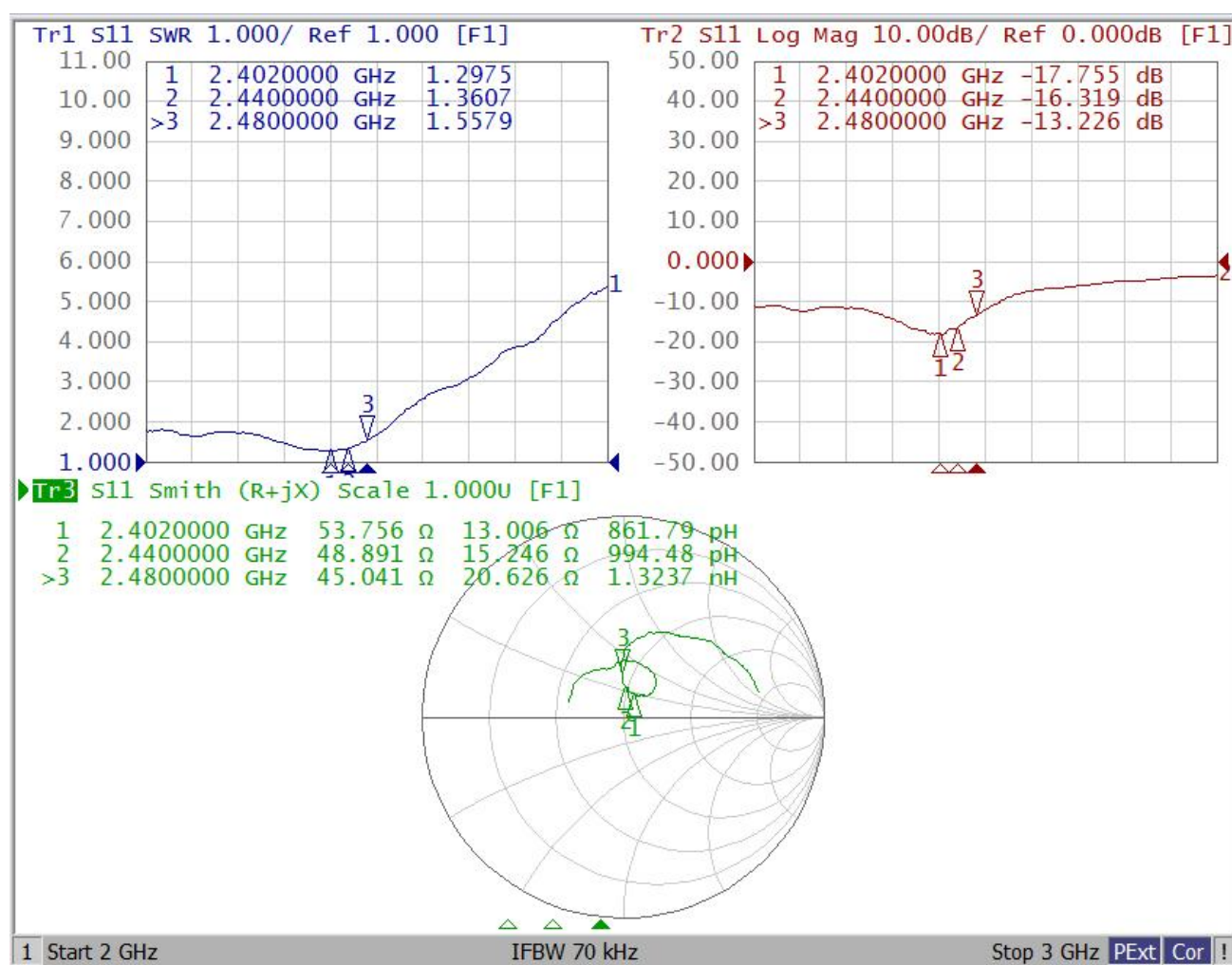
Electrical Specifications	
Frequency Range	2400-2480 MHz
Peak Gain	3.90 dBi
Efficiency	62.29%
Return Loss	≤-15.02 dB (MAX)
VSWR	≤1.4 (MAX)
Bandwidth (S11≤-10dB)	530MHz
Input Impedance	50 Ω
Radiation direction	Directional ANT
Polarization Type	Linear
Lightning Protection	DC grounding
Power Capacity	1000mW (30dBm)
Mechanical Specifications	
Antenna Size	15*12.3mm
Core Radiator	Copper
Coaxial wire	无
Connect Type	IPEX-4
Operating Temperature	-40 to +85° C
Storage Temperature	-40 to +85° C

三、The shape and size of the antenna



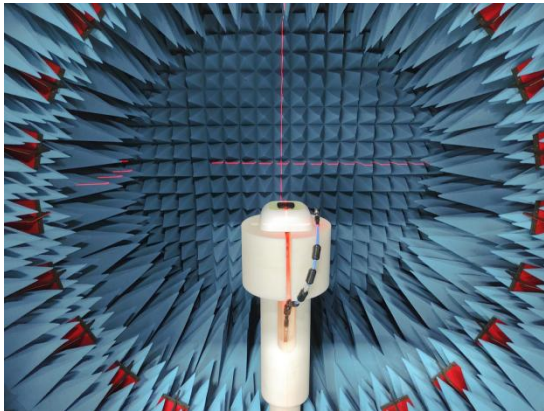
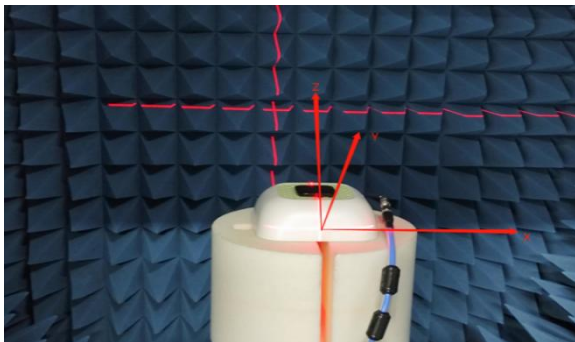
四、The result of the test

1. VSWR & Return loss & Smith



Frequency (MHz)	Return Loss (dB)	VSWR
2402	-17.7	1.29
2440	-16.3	1.36
2480	-13.2	1.55
Bandwidth ($S_{11} \leq -10\text{dB}$)	530	

2. Antenna Testing Environment

Inside the microwave anechoic chamber	Product coordinate axis position
	

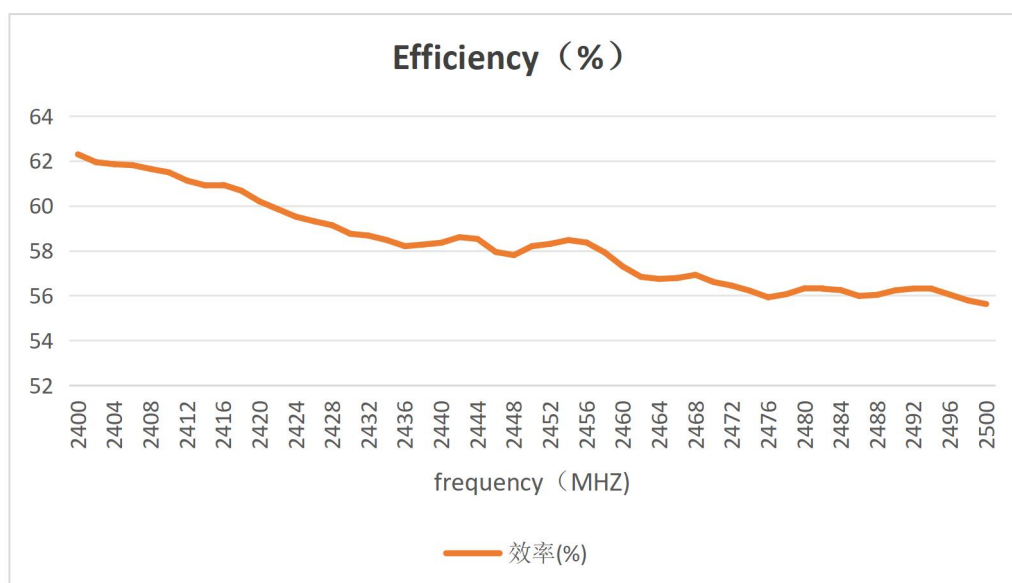
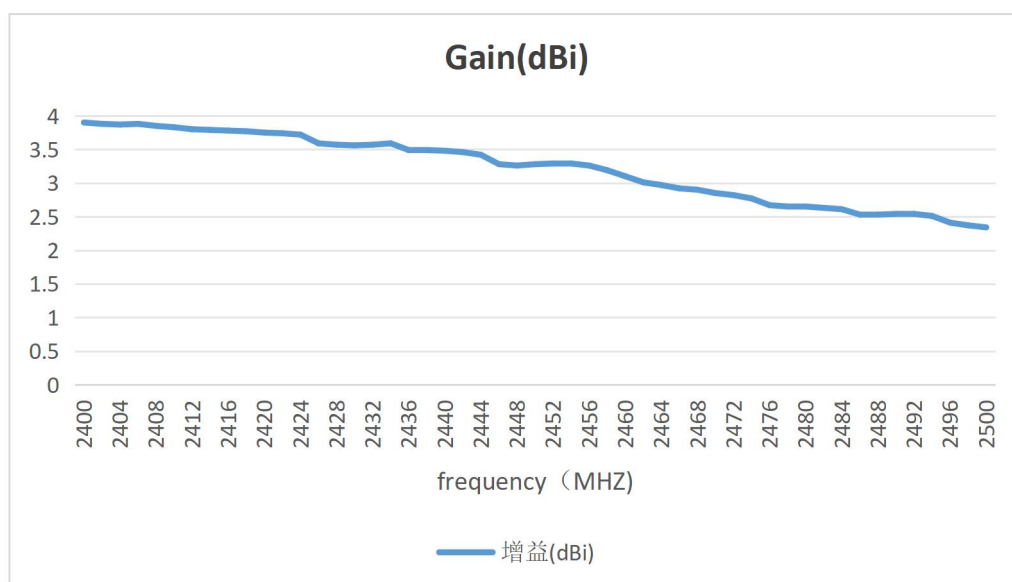
注：天线在+Y 方向。

3. Gain and Efficiency

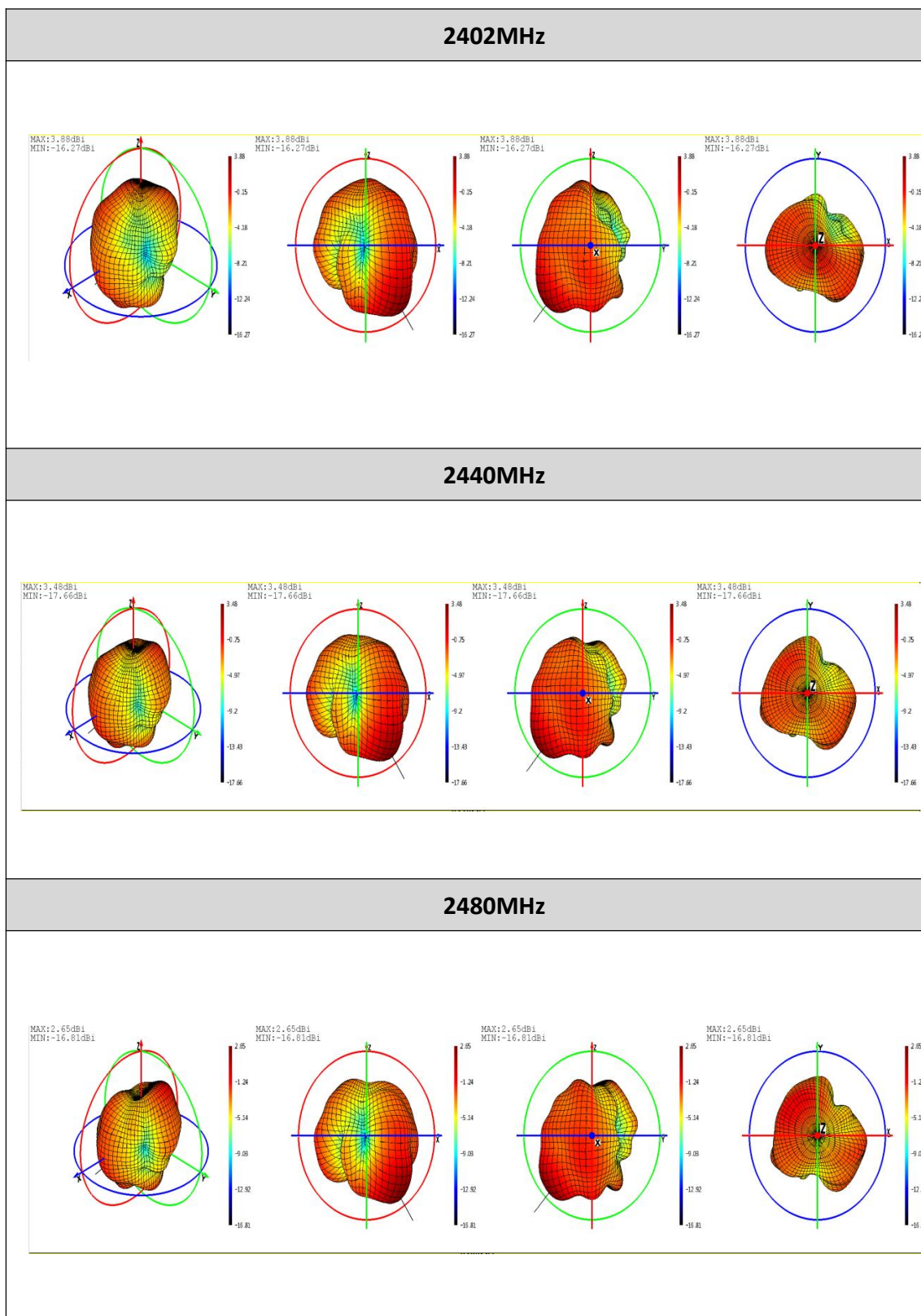
频率 (MHz)	增益 (dBi)	效率 (dB)	效率 (%)
2400	3.90	-2.06	62.29
2402	3.88	-2.08	61.94
2404	3.87	-2.09	61.85
2406	3.88	-2.09	61.81
2408	3.85	-2.10	61.64
2410	3.83	-2.11	61.49
2412	3.80	-2.14	61.12
2414	3.79	-2.15	60.91
2416	3.78	-2.15	60.93
2418	3.77	-2.17	60.67
2420	3.75	-2.20	60.19
2422	3.74	-2.23	59.85
2424	3.72	-2.25	59.51
2426	3.59	-2.27	59.31
2428	3.57	-2.28	59.13
2430	3.56	-2.31	58.75
2432	3.57	-2.32	58.67
2434	3.59	-2.33	58.47
2436	3.49	-2.35	58.20
2438	3.49	-2.35	58.27
2440	3.48	-2.34	58.35
2442	3.46	-2.32	58.60
2444	3.42	-2.33	58.52
2446	3.28	-2.37	57.94
2448	3.26	-2.38	57.80
2450	3.28	-2.35	58.20
2452	3.29	-2.34	58.30
2454	3.29	-2.33	58.47
2456	3.26	-2.34	58.36
2458	3.19	-2.37	57.92
2460	3.10	-2.42	57.29
2462	3.01	-2.45	56.83
2464	2.97	-2.46	56.74
2466	2.92	-2.46	56.78
2468	2.90	-2.45	56.92
2470	2.85	-2.47	56.60
2472	2.82	-2.48	56.44
2474	2.77	-2.50	56.21
2476	2.67	-2.52	55.92
2478	2.65	-2.51	56.06
2480	2.65	-2.49	56.32

2482	2.63	-2.50	56.30
2484	2.61	-2.50	56.24
2486	2.53	-2.52	55.98
2488	2.53	-2.52	56.03
2490	2.54	-2.50	56.23
2492	2.54	-2.49	56.31
2494	2.51	-2.50	56.30
2496	2.41	-2.51	56.04
2498	2.37	-2.54	55.78
2500	2.34	-2.55	55.62

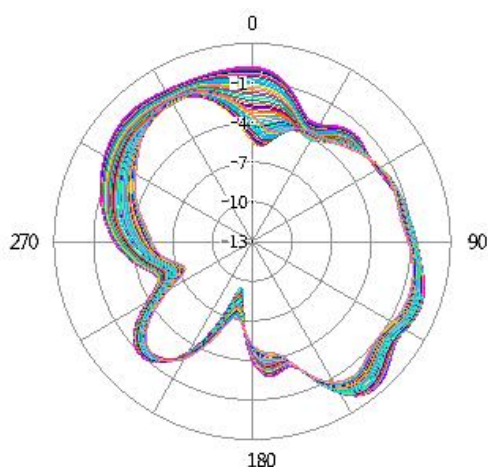
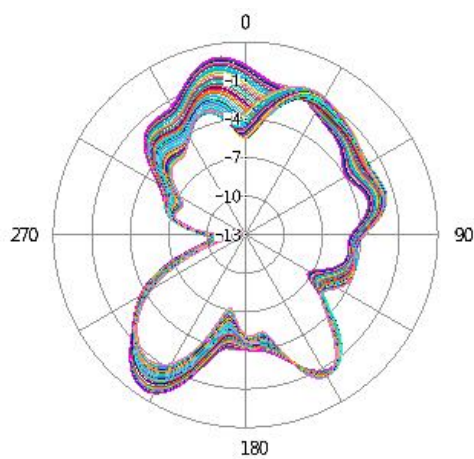
(1).Antenna Efficiency and Antenna Gain



4. 3D Radiation Pattern



5. 2D Radiation Pattern

E1, XZ-Face, $\phi=0^\circ$; (E1, $\theta=0^\circ\sim 360^\circ$, $\phi=0^\circ$)E2, YZ-Face, $\phi=90^\circ$; (E2, $\theta=0^\circ\sim 360^\circ$, $\phi=90^\circ$)H, XY-Face, $\theta=90^\circ$; (H, $\phi=0^\circ\sim 360^\circ$, $\theta=90^\circ$)