



ANTENNA PASSIVE TEST REPORT

Applicant: Grandsun
Product Name: ARC 5 标准版充电盒
Model No.(EUT): ARC 5 标准版充电盒
Date of Receipt: 2024-02-14
Date of Test: 2024-02-14

Tested by: Max.Chen
Made by: Max.Chen
Checked by: Noki.Ho



REVISION HISTORY

Revision Record		
Version	Date	Reason for change
V0.1	2025-02-14	First edition





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1. GENERAL INFORMATION

1.1 Test Location

Company: Shenzhen Grandsun Electronics Co.,Ltd.
Address: Gaoqiao Industry Zone,Pingdi Town,Longgang District,Shenzhen,China
Post code: 518117
Telephone: +86-755-89234568

1.2 Test item and results

Test detailed items/section as below:

NO	Items
1	Gain
2	Efficiency
3	2-D/3-D pattern

1.3 Laboratory Environment

Temperature	Min.=18℃ Max.=24℃	
Relative humidity	Min.=30% Max.=70℃	
Shield effect	0.5-10GHZ	> 100dB
Ground resistance	<0.4 Ω	

1.4 Test Equipments List

Equipment Name	Model NO.	Manufacture	Calibration	Valid Period
Network Analyzer	E5071C	Keysight	2023-04-20	One year
Chamber	AMS-8923-195	EST-LINDGERN	2023-04-20	One year

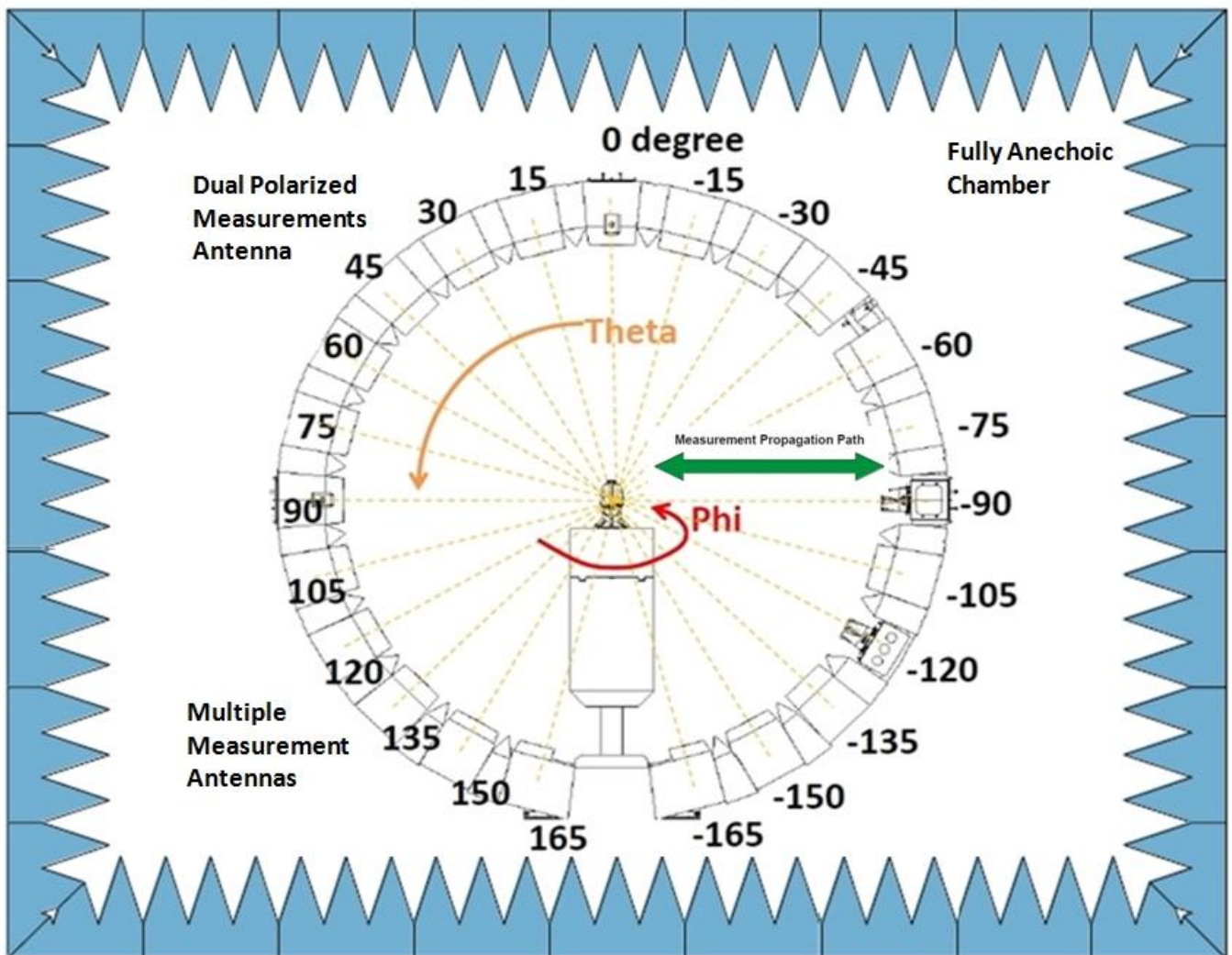
1.5 Measurement Uncertainty

Item	2.4GHZ-2.5GHZ(dB)
Gain	0.3
Efficiency	0.3



2. OTA MEASUREMENTS SYSTEM CONFIGURATION

The system is designed for fully-compliant radiated wireless antenna measurements over the frequency range from 700 MHz to 6 GHz with a 1.95-meter path length. The system includes a multi-antenna array with twenty-three (23) dual-polarized measurement antennas spaced every 15° , The chamber size is 5m*5m*5m



OTA measurement System Configuration

Note: Phi(The turntable) is from $0^\circ \sim 180^\circ$,Theta(the ring, multiple antennas) is from $-165^\circ \sim 165^\circ$, Rotate the AUT and multi-antenna array record the data ,the step of rotation is 15 degree.



3. TEST RESULTS

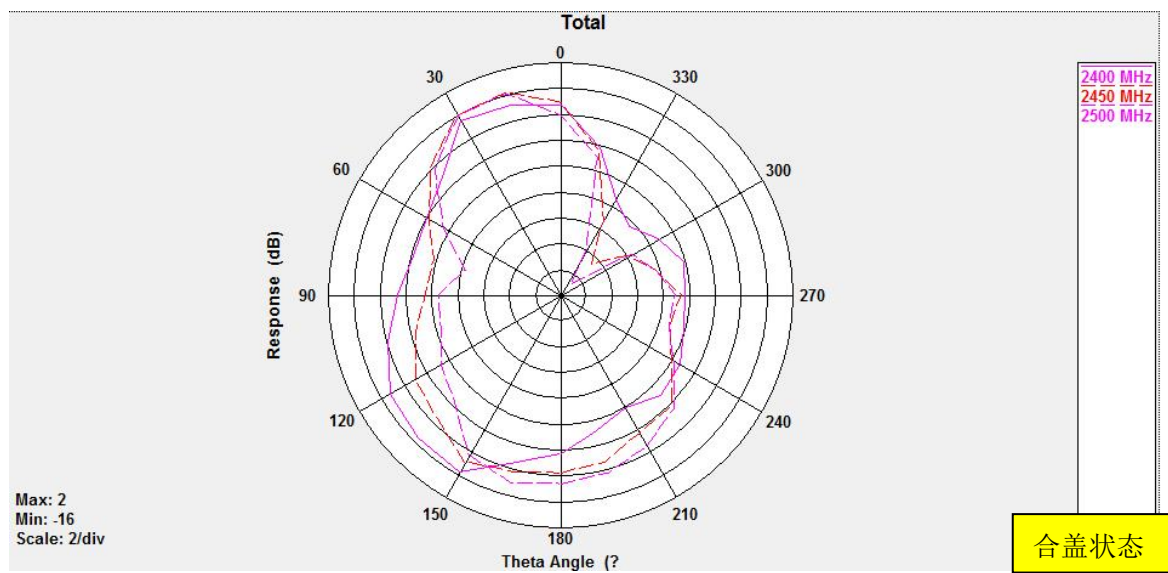
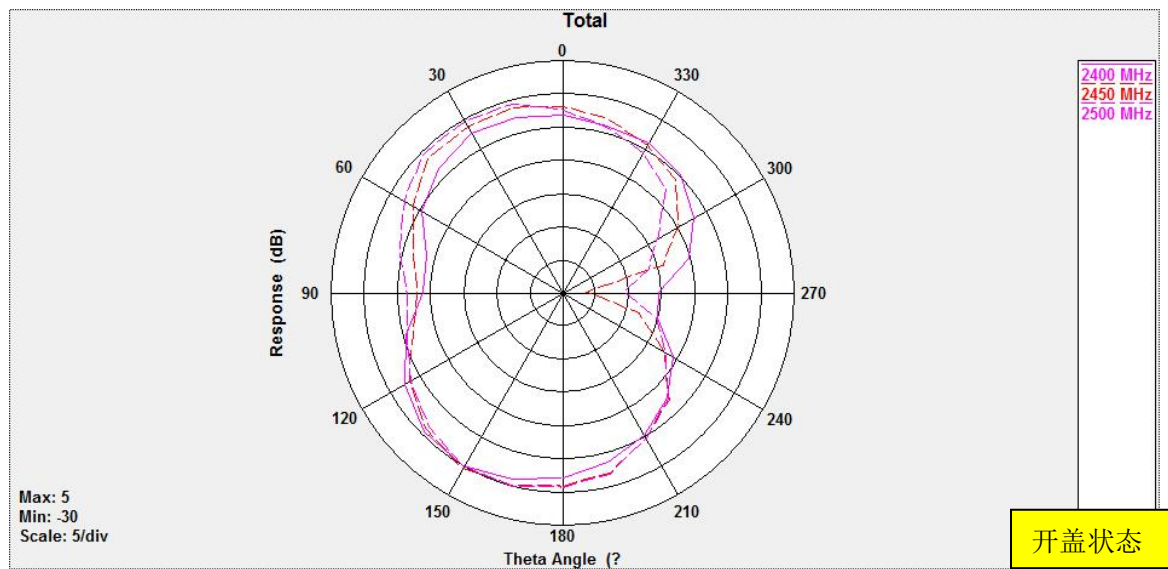
3.1 Efficiency & Gain

开盖状态			
Frequency (Mhz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
2400	-4.14	38.50	1.29
2410	-4.04	39.42	1.39
2420	-3.97	40.03	1.64
2430	-3.98	39.97	1.72
2440	-3.82	41.40	2.04
2450	-3.64	43.18	2.38
2460	-3.59	43.74	2.45
2470	-3.51	44.46	2.56
2480	-3.63	43.29	2.38
2490	-3.59	43.68	2.41
2500	-3.58	43.81	2.40

合盖状态			
Frequency (Mhz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
2400	-3.51	44.52	2.60
2410	-3.48	44.80	2.75
2420	-3.50	44.66	2.87
2430	-3.59	43.65	3.05
2440	-3.53	44.27	3.35
2450	-3.42	45.47	3.69
2460	-3.45	45.10	3.86
2470	-3.43	45.30	4.11
2480	-3.52	44.36	4.03
2490	-3.49	44.72	4.06
2500	-3.52	44.45	4.19

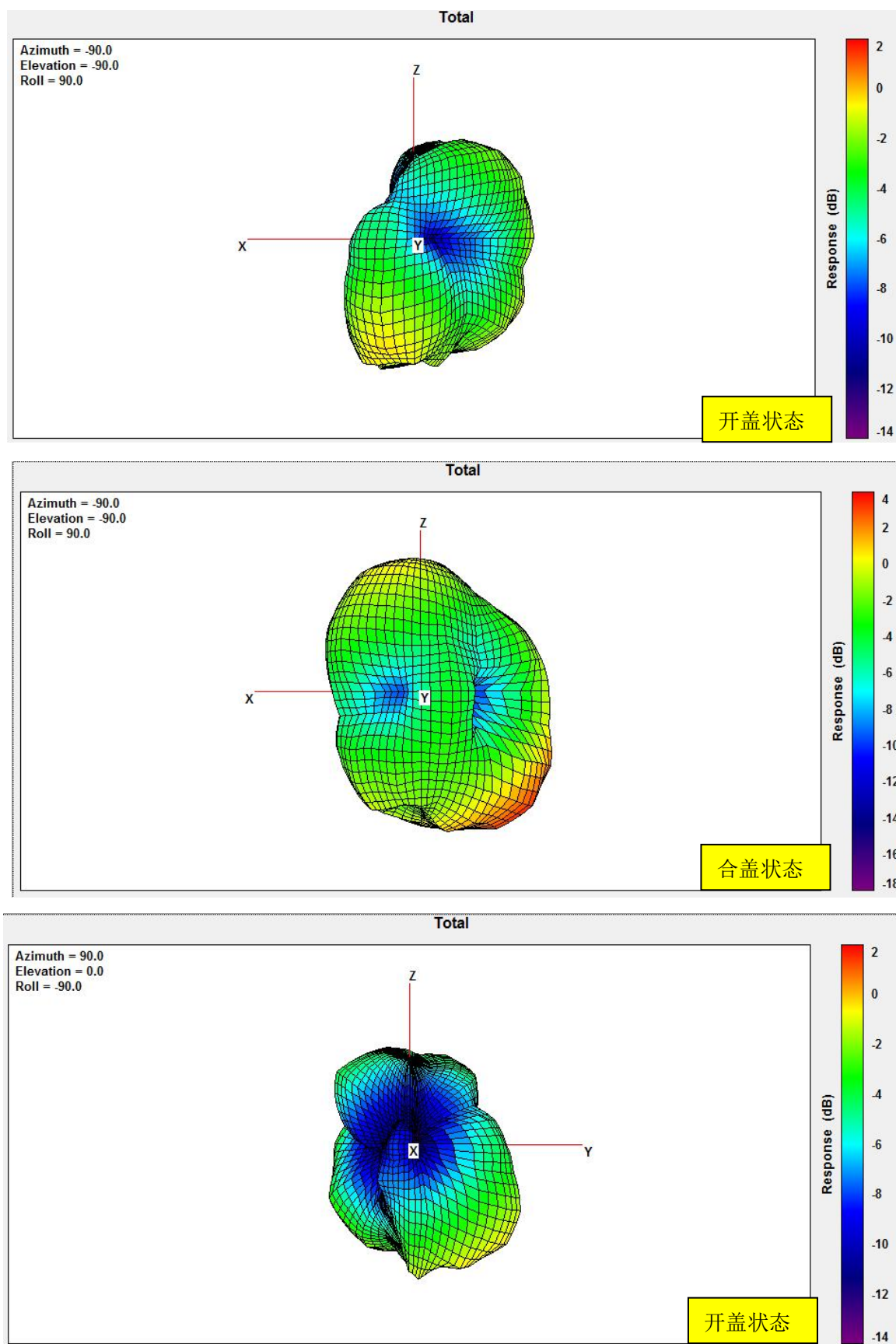


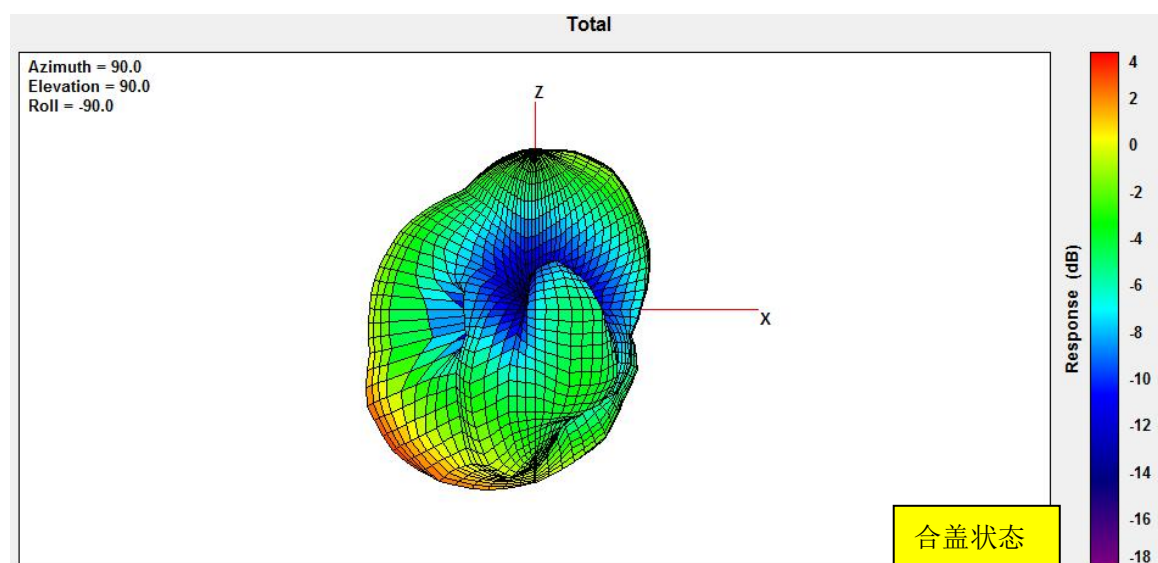
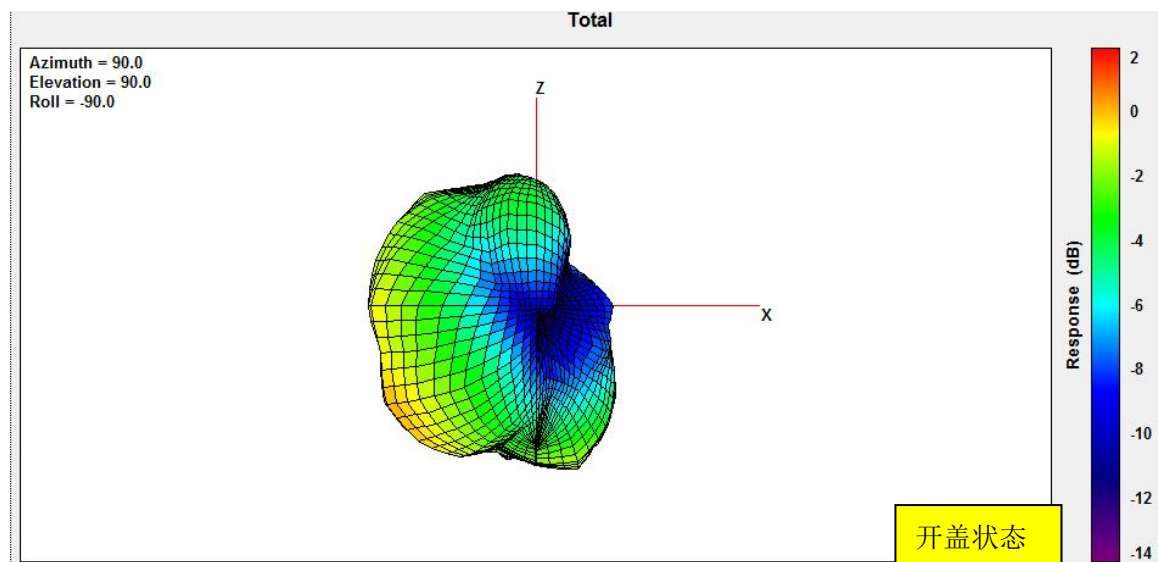
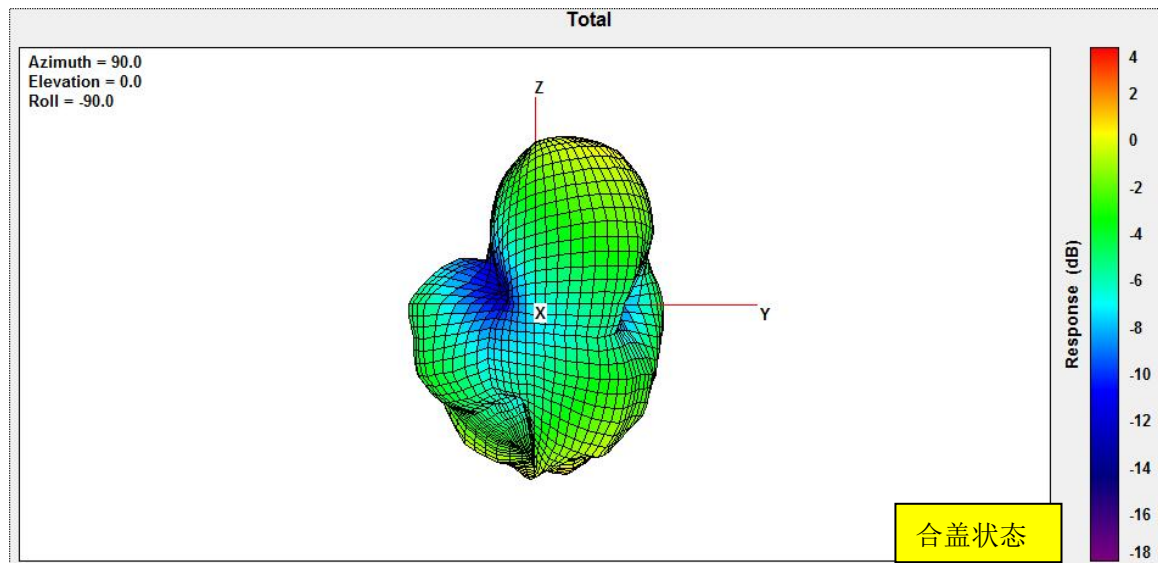
3.2 2-D antenna pattern (Phi=90°)

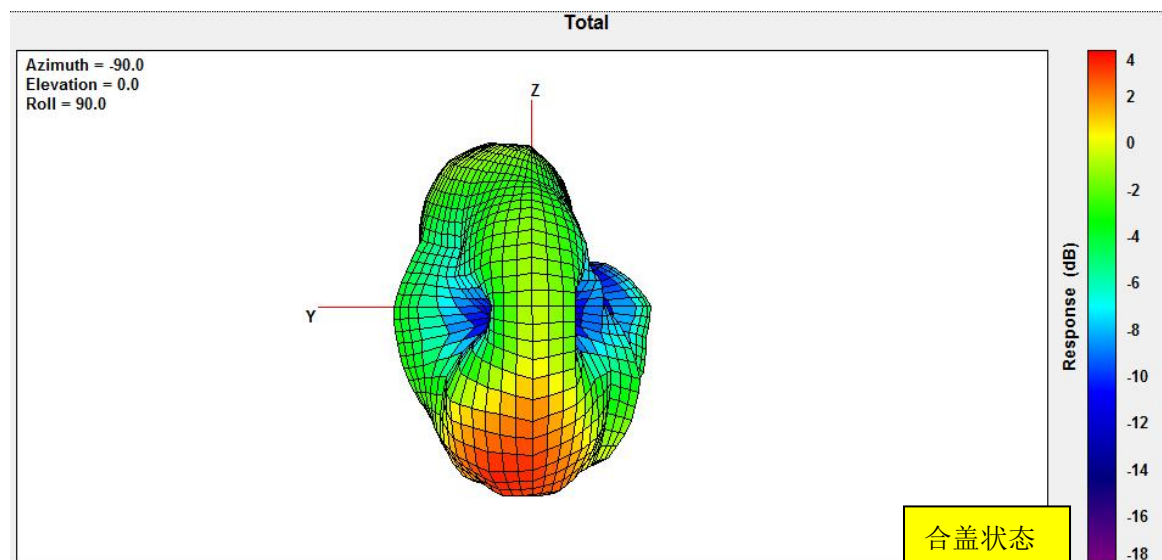
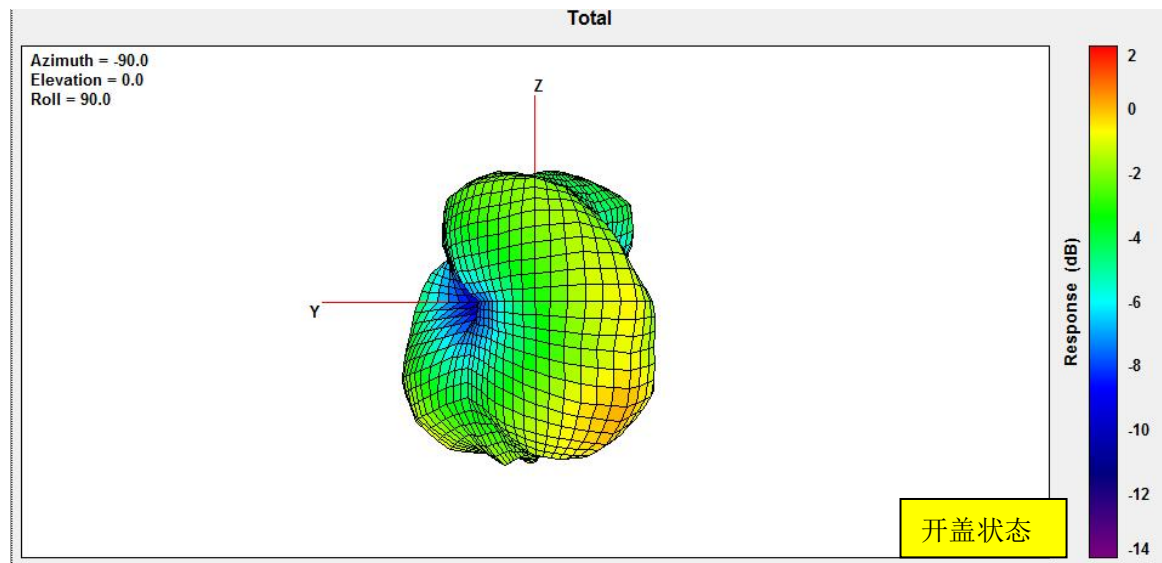




3.3 3-D antenna pattern (Frequency=2450Mhz)



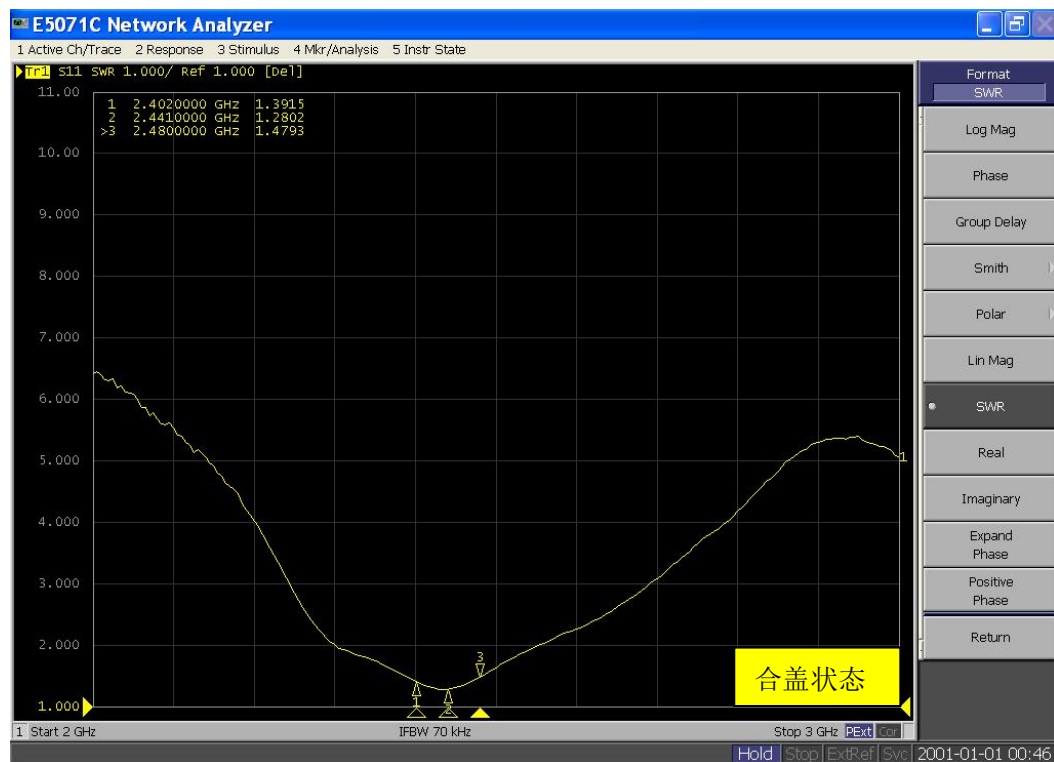
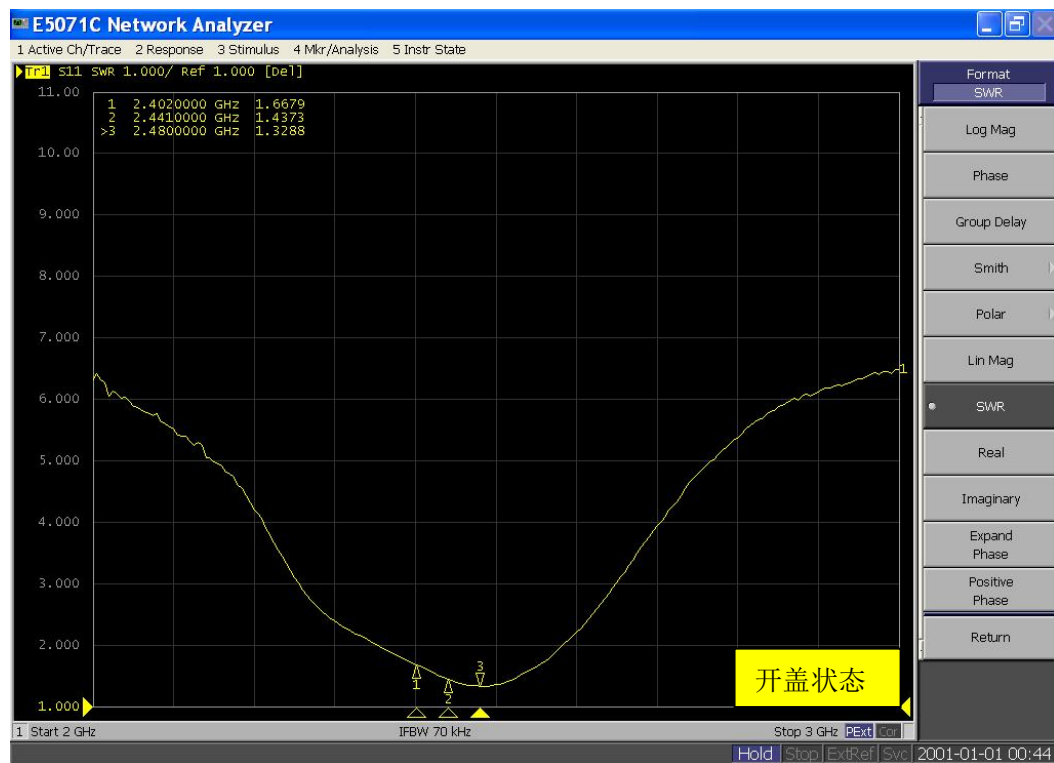






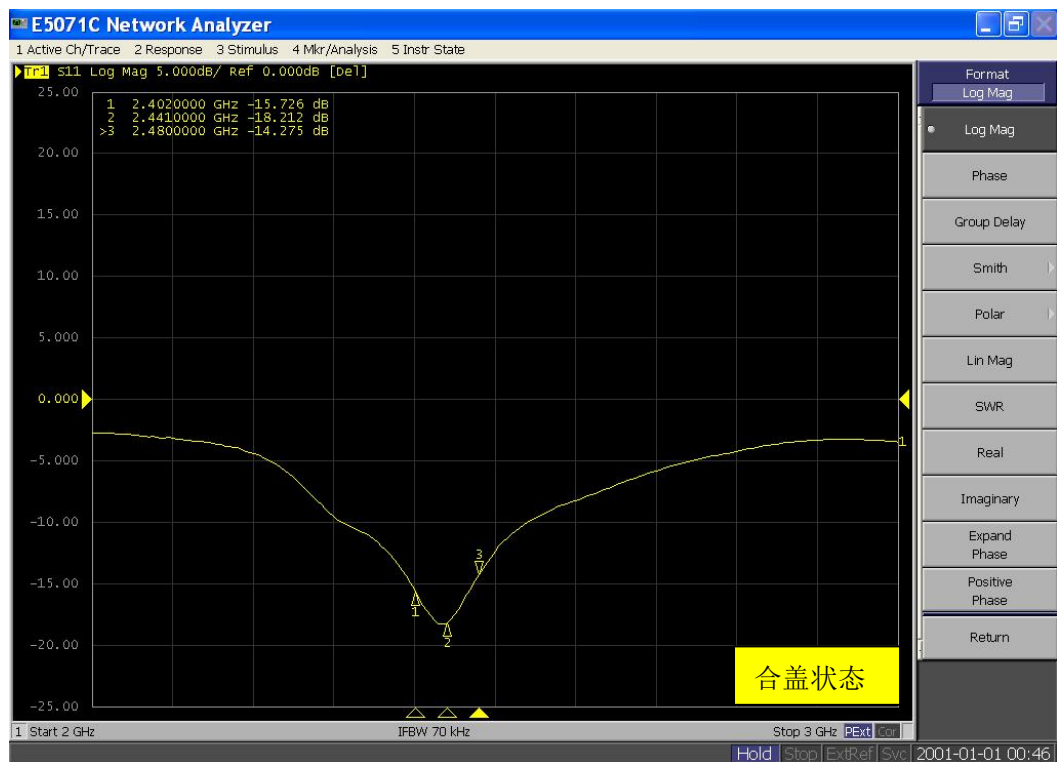
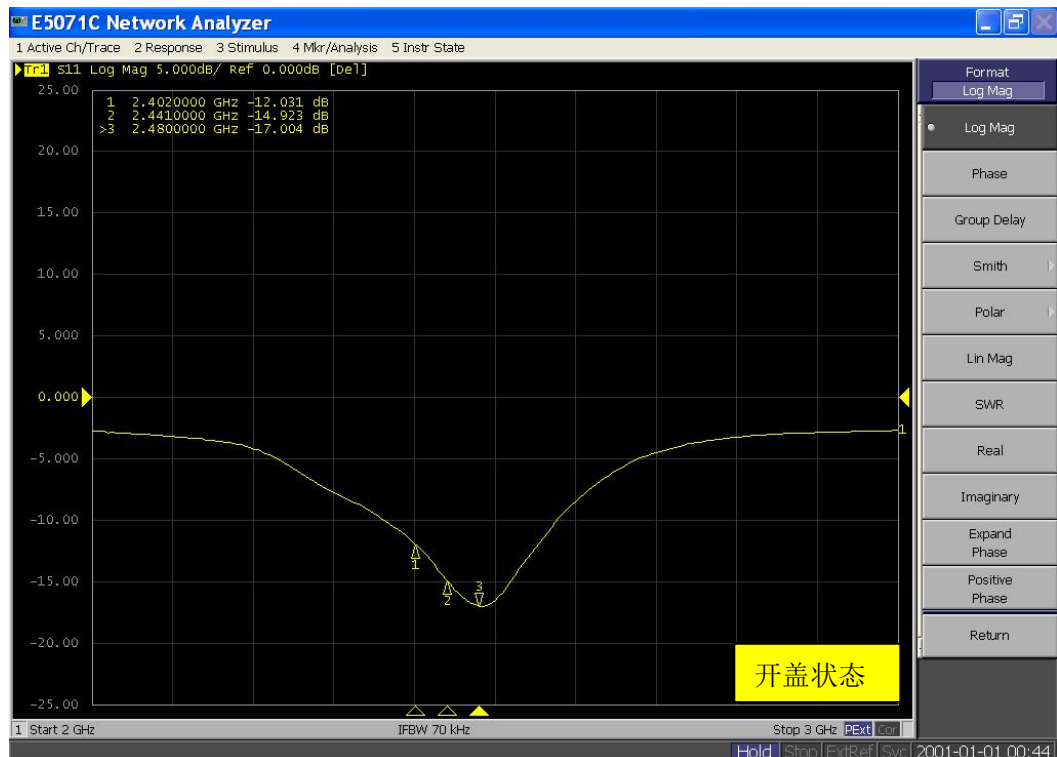
3.4 Passive pattern

3.4.1 VSWR



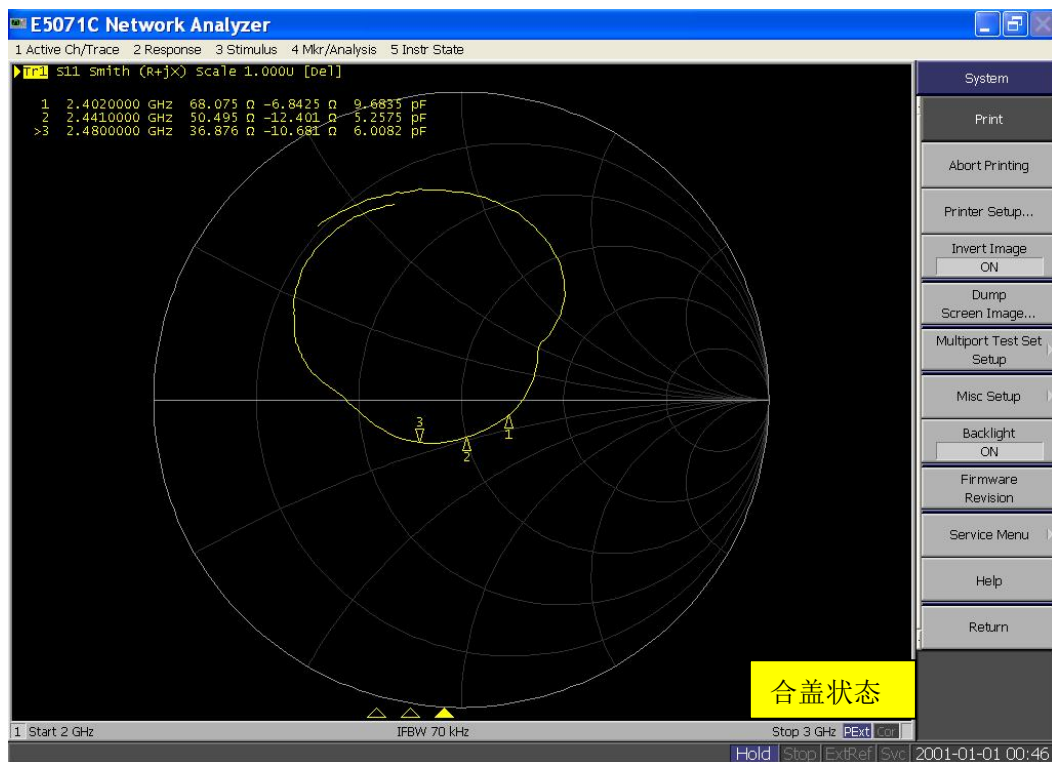
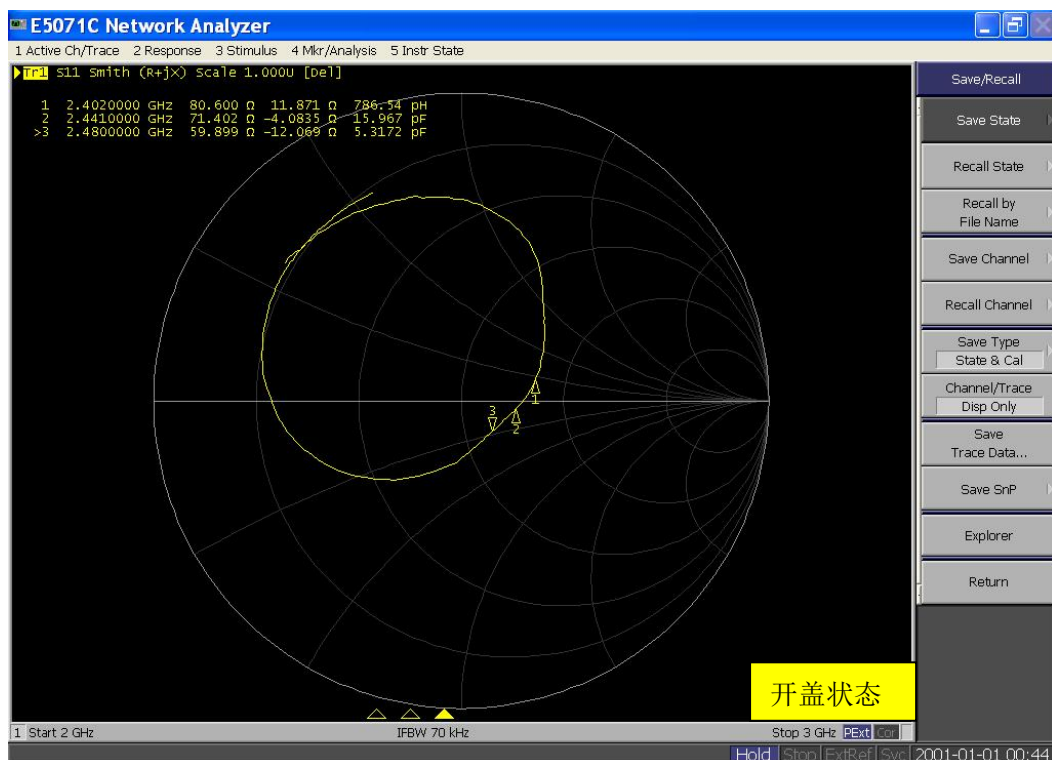


3.4.2 Return loss





3.4.3 Smith





4.APPENDIX A THE EUT AND TEST CONFIGURATION

