Directional Panel Antenna Data Sheet

APPROVAL SHEET

客户名称 Customer Name	
产品型号 Product Model	定向天线/**Directional Panel Antenna**
客户料号 Customer P/N	
规格描述 Specifications	**Multi-frequency eight-port, φ390*390*50mm，+Cable N-J*8**
KEESUN 料号 P/N	**KSANT-12130-A**
制作日期 Date Prepared	**2026.02.10**
制作版本 Revision	**1.0**

KEESUN		
制作（Prepare）	品质（DQE）	研发（R&D）
客户（Customer）		
采　购（PUR）	品质（QC）	研发（R&D）

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产品规格 Product Specification

A. 电性能 Electrical Characteristics

端口 Port	Port 1	Port 2	Port 3	Port 4	Port 5	Port 6	Port 7	Port 8
频率（MHz） Frequency	420-450	800-950	1150-1300	1300-1450	1500-1650	2400-2500	5150-5350	5700-5900
电压驻波比 VSWR	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
增益（dBi） Peak Gain	1-4	6.5-9.5	5.5-6.5	7.5-8.5	6-8	14-14.6	9-11	13.5-14.5
阻抗 Impedance	50 Ohm	50 Ohm	50 Ohm	50 Ohm	50 Ohm	50 Ohm	50 Ohm	50 Ohm
极化 Polarization	V	V	V	V	V	V	V	V
水平波瓣宽度 Horizontal Beamwidth	110-205°	54-68°	63-90°	56-68°	63-77°	25-28°	51-60°	31-42°
垂直波瓣宽度 Vertical Beamwidth	54-83°	52-92°	61-71°	62-72°	55-65°	22-25°	12-17°	11-13°
前后比 F/B	7-12dB	14-23dB	10-15dB	20-24dB	13-22dB	27-34dB	26-31dB	27-33dB
最大功率 Max Power	100W	100W	100W	100W	100W	100W	100W	100W

B. 材料&物理性能 Material & Mechanical

接头类型 Connector Type	引线 RG58 线，L=400mm，末端 N-J
天线尺寸 Dimension	φ390*390*50±2mm
重量 Weight	2.41Kg
天线外罩材料 Radome material	ABS（黑色）

C. 环境 Environmental

工作温度 Operation Temperature	- 45˚C ~ +85 ˚C
存放温度 Storage Temperature	- 45˚C ~ +85 ˚C
工作湿度 Operation Humidity	＜95%
抗风强度 Rated Wind Velocity	36.9m/s
防雷保护 Lighting Protection	直流接地

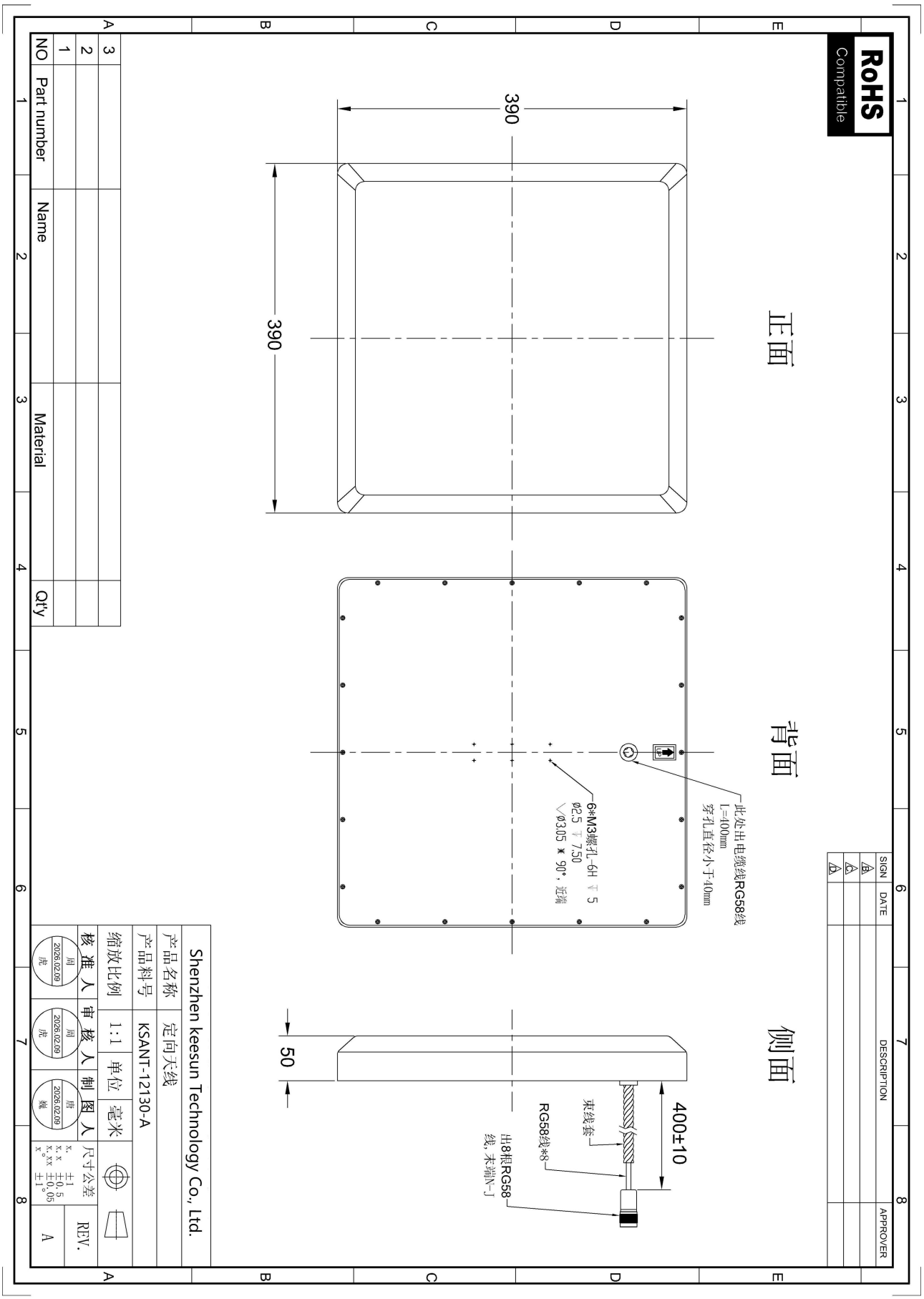
D. 产品照片 Photo



可靠性测试 Reliability Test

Item	Test Condition		Specification
Storage Environment	In the absence of specified conditions, the test temperature, humidity, and air pressure are as follows: 1. Temperature: -45°C ~ +85°C 2. Relative humidity: 45%–85% 3. Air pressure: 86 kPa–106 kPa		Normal electrical and mechanical performance
High-Low Temperature Test	Place the sample in 85°C and -45°C environments for 5 cycles (2 hours per cycle), then leave it under normal conditions for 1–2 hours, and inspect the appearance and quality.		Dimensions shall meet specifications, and mechanical & electrical performance shall be satisfied
Constant Damp Heat Test	After exposure to 95±3% relative humidity at 40°C for 2 hours, measure the electrical performance of the sample within 5 minutes after removal, then leave it under normal conditions for 1–2 hours and inspect the appearance and quality.		Dimensions shall meet specifications, and mechanical & electrical performance shall be satisfied
Vibration Test	Vibration frequency range: 10–55 Hz, displacement amplitude: 0.35 mm, acceleration amplitude: 50.0 m/s², number of sweep cycles: 30		Normal electrical and mechanical performance
Drop Test	Free fall from 1 m height; select different drop positions for different products (preferentially select directions prone to damage), 1 drop per position.		Normal electrical and mechanical performance
Pull Force Test	Test the withstand force using a push-pull force gauge: ≥ 20 N		Normal electrical and mechanical performance
Withstand Voltage Test	1. Insulation spark voltage: 1.5 kV 2. Sheath spark voltage: 1.5 kV 3. Insulation-to-sheath withstand voltage: 0.5 kV		Normal electrical and mechanical performance
Attenuation Value	2.0(nominal) 2.9(nominal) 3.2(nominal) 3.7(nominal) 4.3(nominal) 4.8(nominal) 5.3(nominal)	1GHz 2GHz 2.4GHz 3.0GHz 4.0GHz 5.0GHz 6.0GHz	3.3dB/m (at20°C)

产品图纸Product Drawing

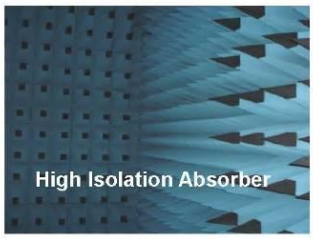


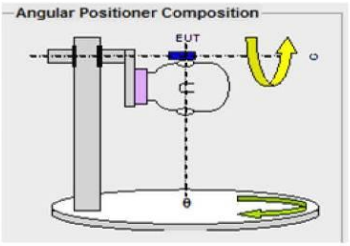
测试设备及条件Test Equipment & Conditions

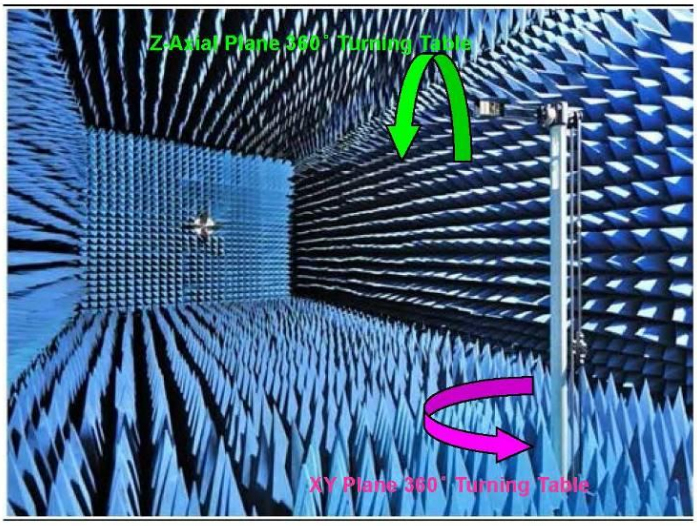
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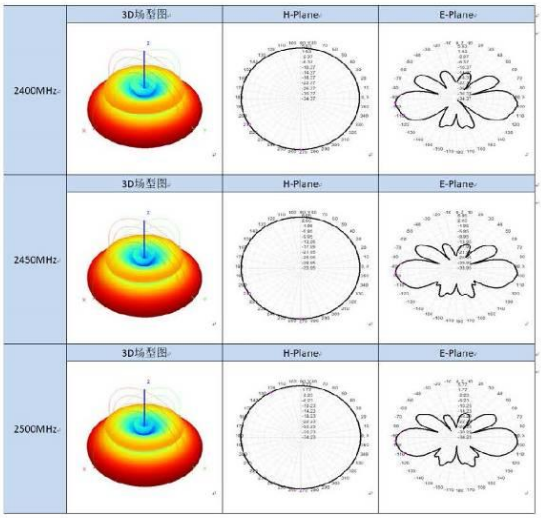
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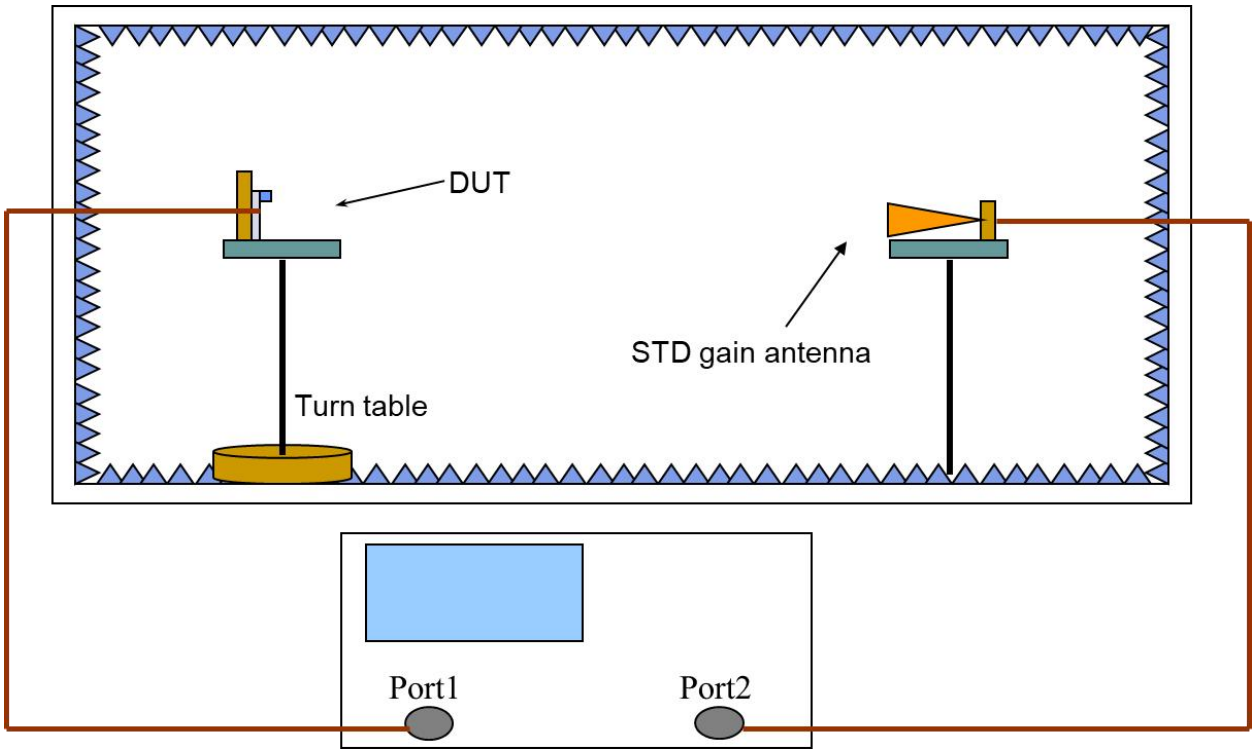
.Chamber Size: 9 x 5 x 4 m³
.Freq. Range: 0.4 ~ 18.0 GHz
.Double Ridge Horn Antenna
.VNA: Agilent E5071C
.3D Turning Table and Positioner
.ADT Solution 3D Testing Software





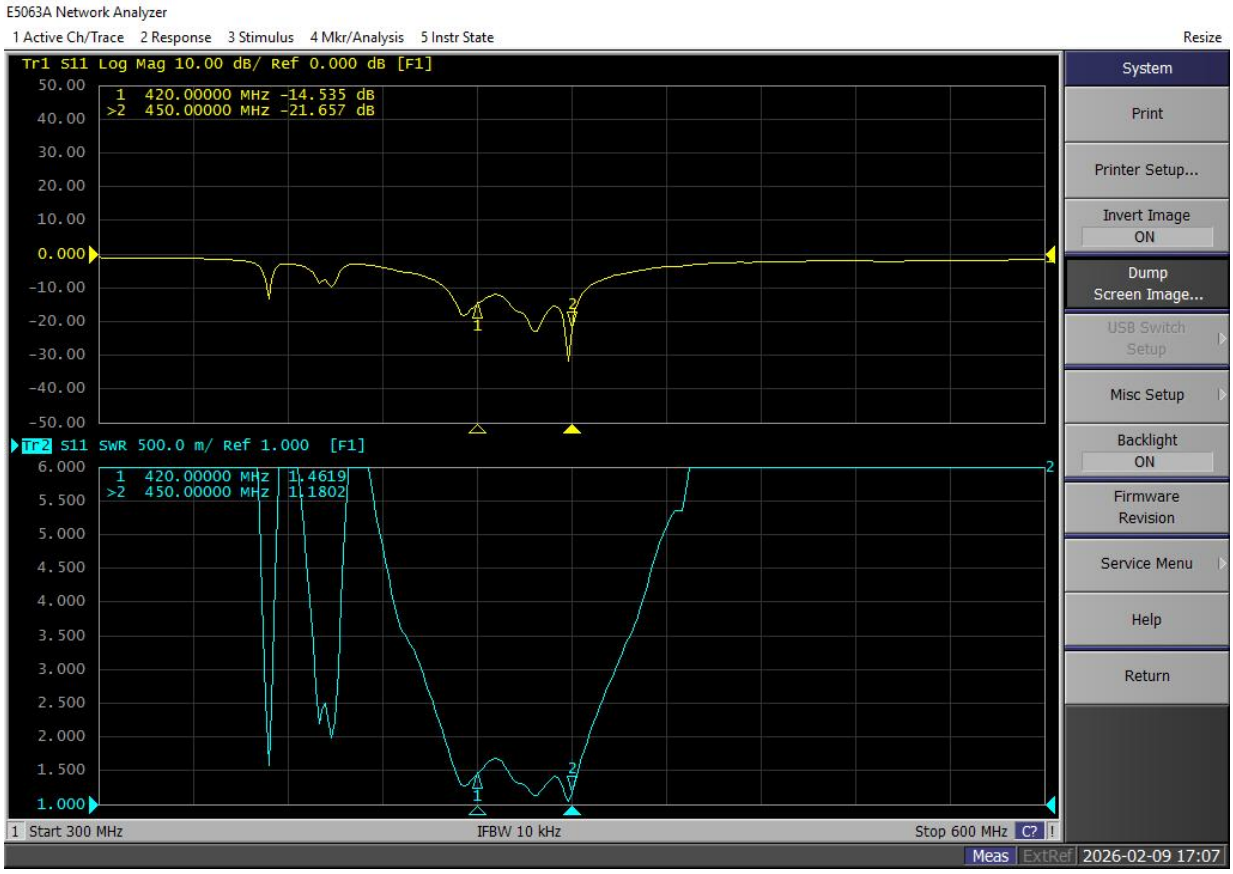




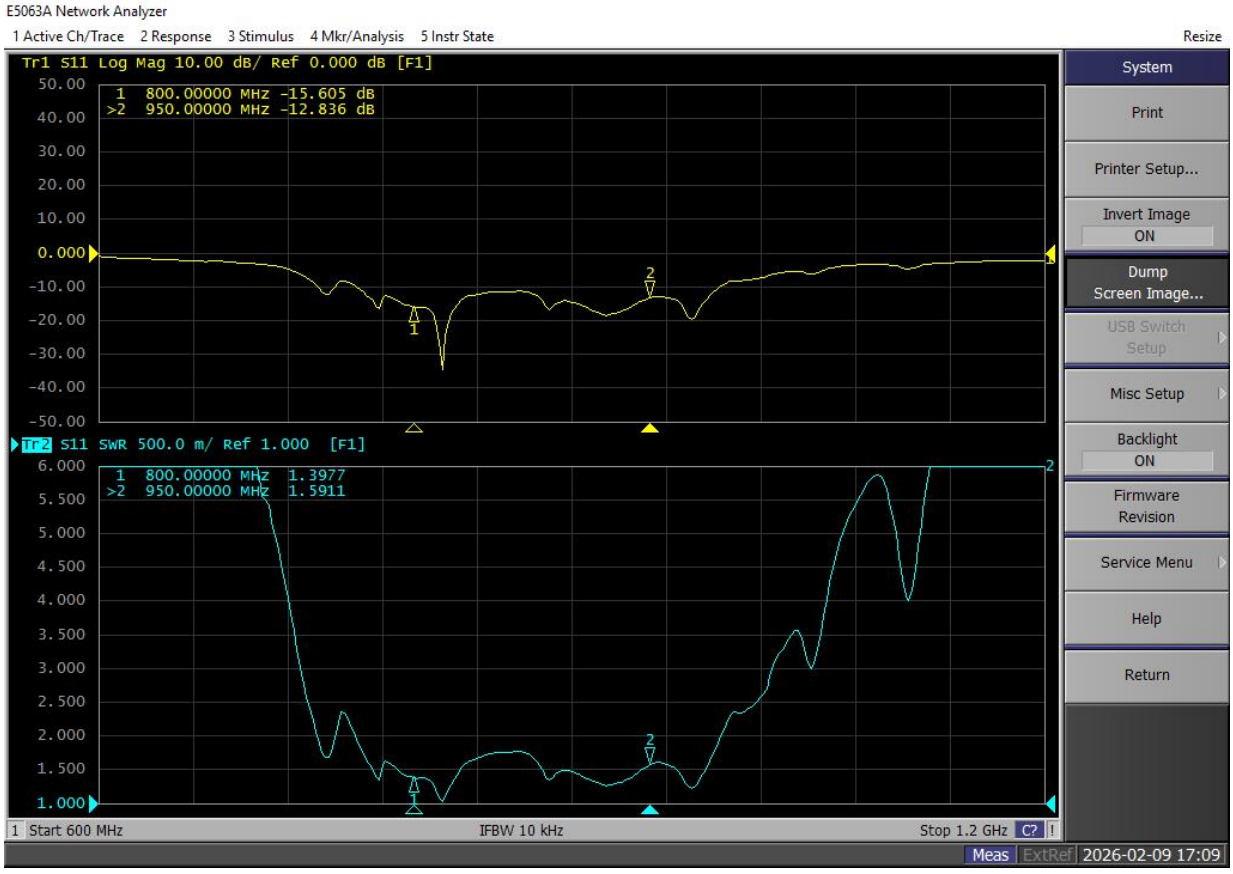


电压驻波比 VSWR

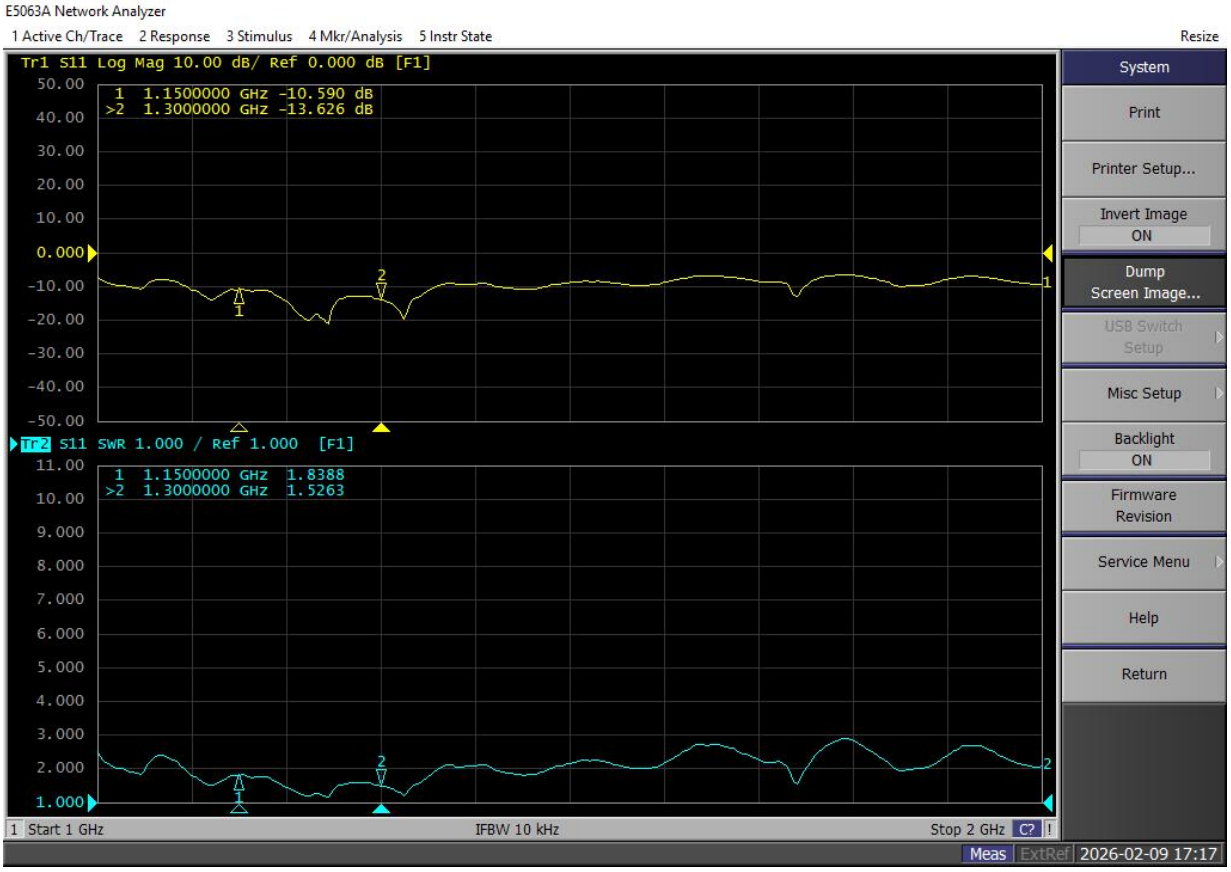
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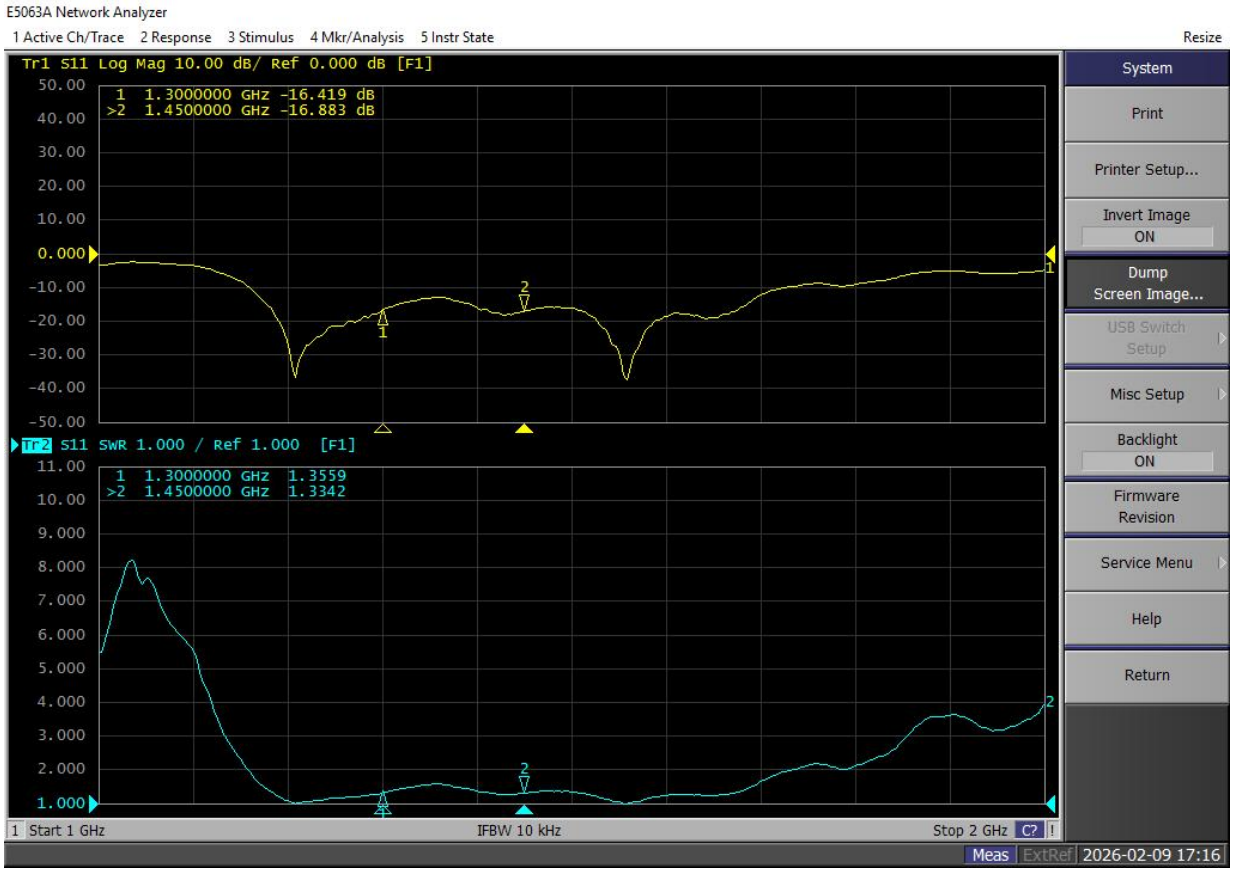
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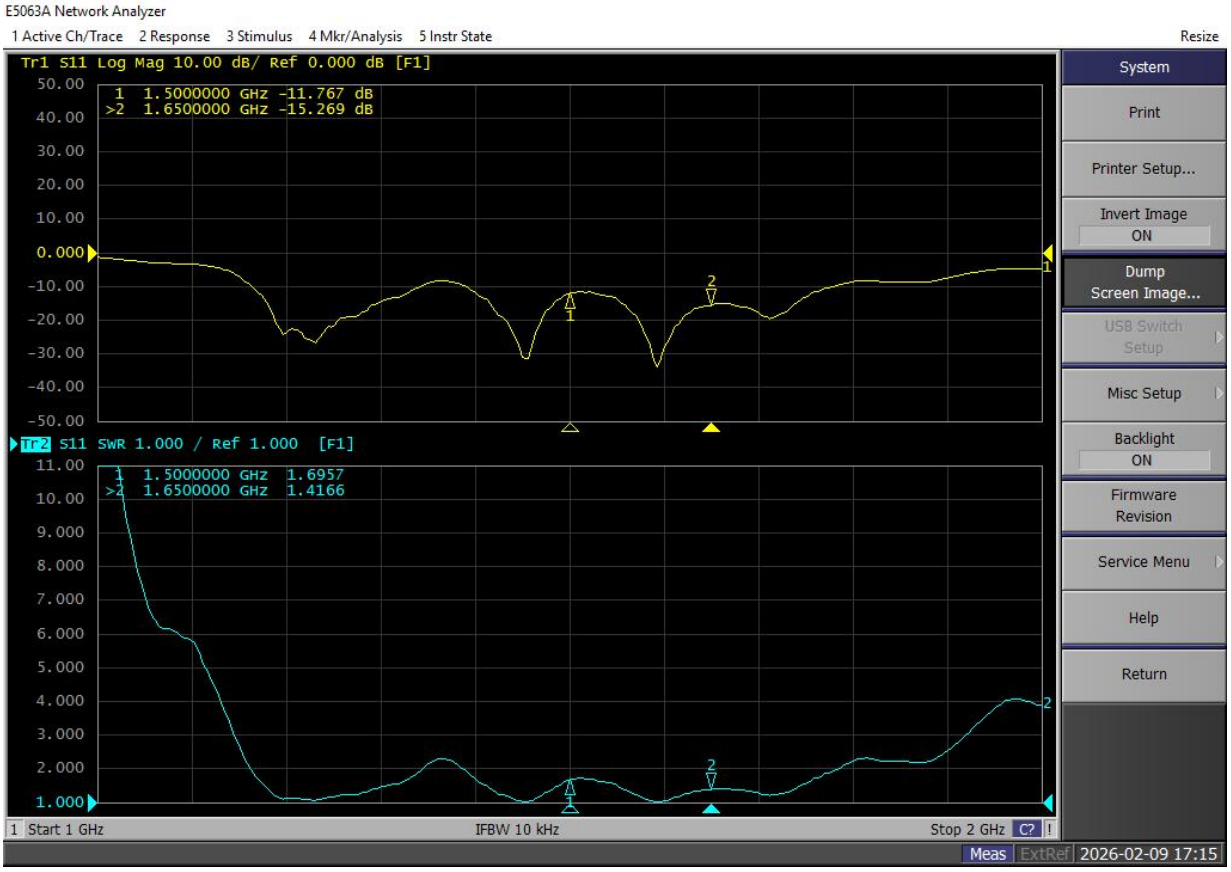
Port 3


E5063A Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Resize
Tr1 S11 Log Mag 10.00 dB/ Ref 0.000 dB [F1]
1 1.1500000 GHz -10.590 dB
>2 1.3000000 GHz -13.626 dB
Tr2 S11 SWR 1.000 / Ref 1.000 [F1]
1 1.1500000 GHz 1.8388
>2 1.3000000 GHz 1.5263
1 Start 1 GHz
IFBW 10 kHz
Stop 2 GHz
Meas ExtRef 2026-02-09 17:17
System
Print
Printer Setup...
Invert Image ON
Dump Screen Image...
USB Switch Setup
Misc Setup
Backlight ON
Firmware Revision
Service Menu
Help
Return

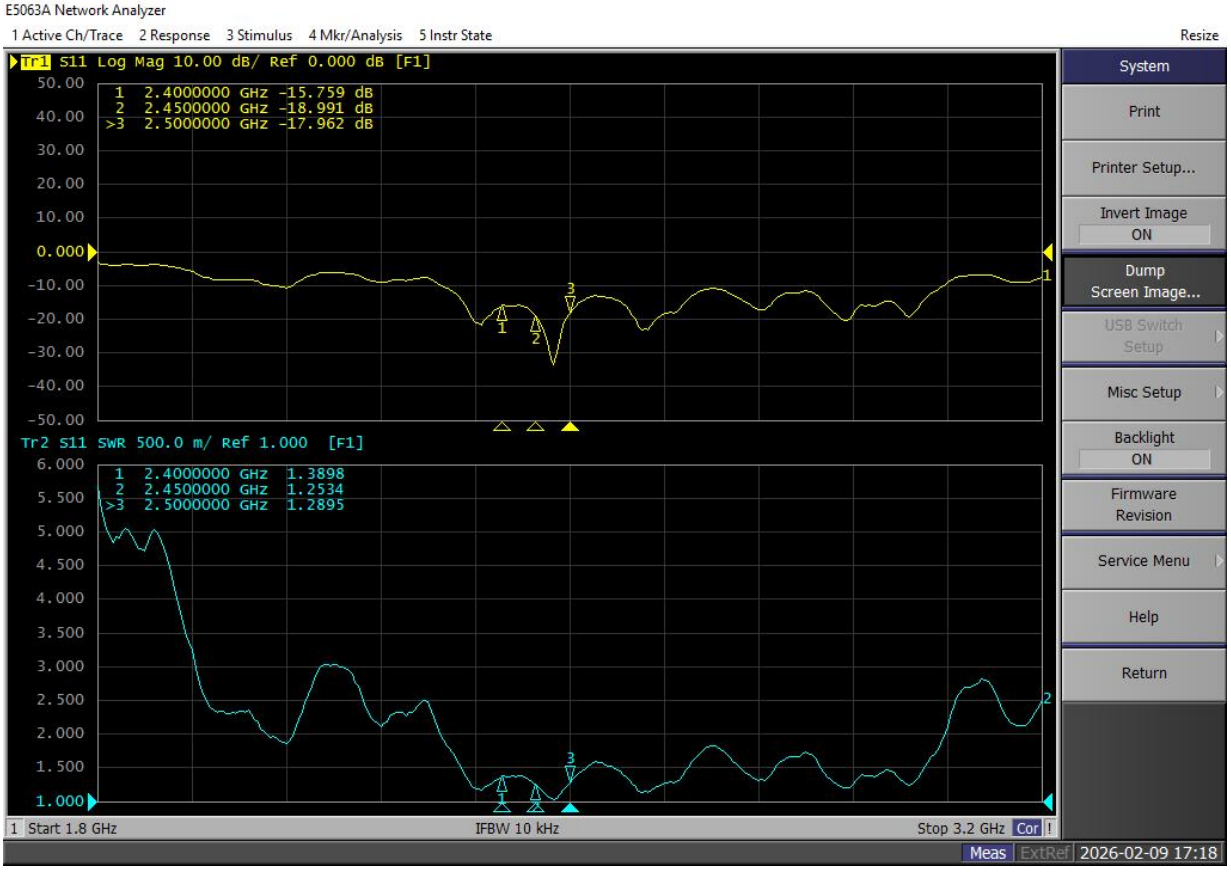
Port 4


E5063A Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Resize
Tr1 S11 Log Mag 10.00 dB/ Ref 0.000 dB [F1]
1 1.3000000 GHz -16.419 dB
>2 1.4500000 GHz -16.883 dB
Tr2 S11 SWR 1.000 / Ref 1.000 [F1]
1 1.3000000 GHz 1.3559
>2 1.4500000 GHz 1.3342
1 Start 1 GHz
IFBW 10 kHz
Stop 2 GHz
Meas ExtRef 2026-02-09 17:16
System
Print
Printer Setup...
Invert Image ON
Dump Screen Image...
USB Switch Setup
Misc Setup
Backlight ON
Firmware Revision
Service Menu
Help
Return

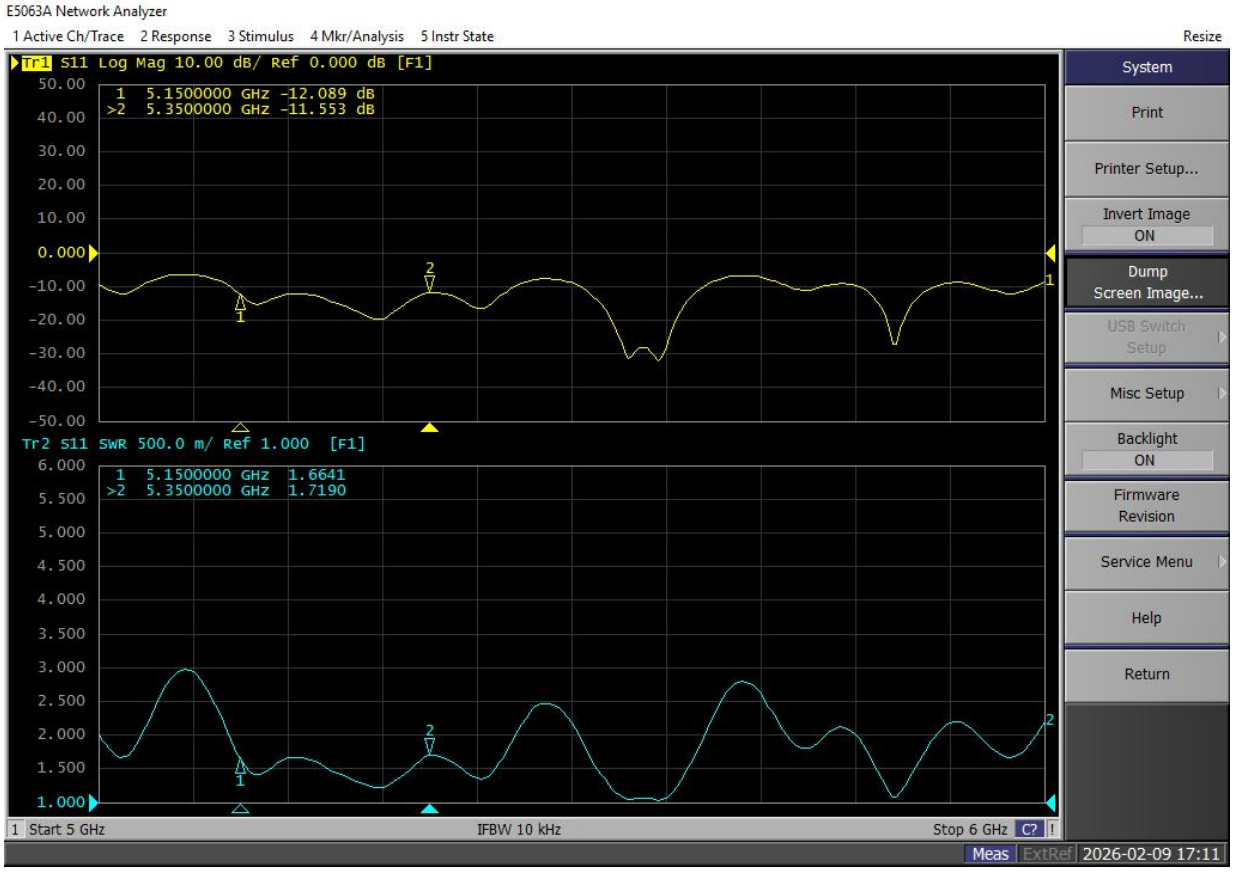
Port 5


E5063A Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Resize
Tr1 S11 Log Mag 10.00 dB/ Ref 0.000 dB [F1]
1 1.5000000 GHz -11.767 dB
>2 1.6500000 GHz -15.269 dB
Tr2 S11 SWR 1.000 / Ref 1.000 [F1]
1 1.5000000 GHz 1.6957
>2 1.6500000 GHz 1.4166
1 Start 1 GHz
IFBW 10 kHz
Stop 2 GHz
Meas ExtRef 2026-02-09 17:15
System
Print
Printer Setup...
Invert Image ON
Dump Screen Image...
USB Switch Setup
Misc Setup
Backlight ON
Firmware Revision
Service Menu
Help
Return

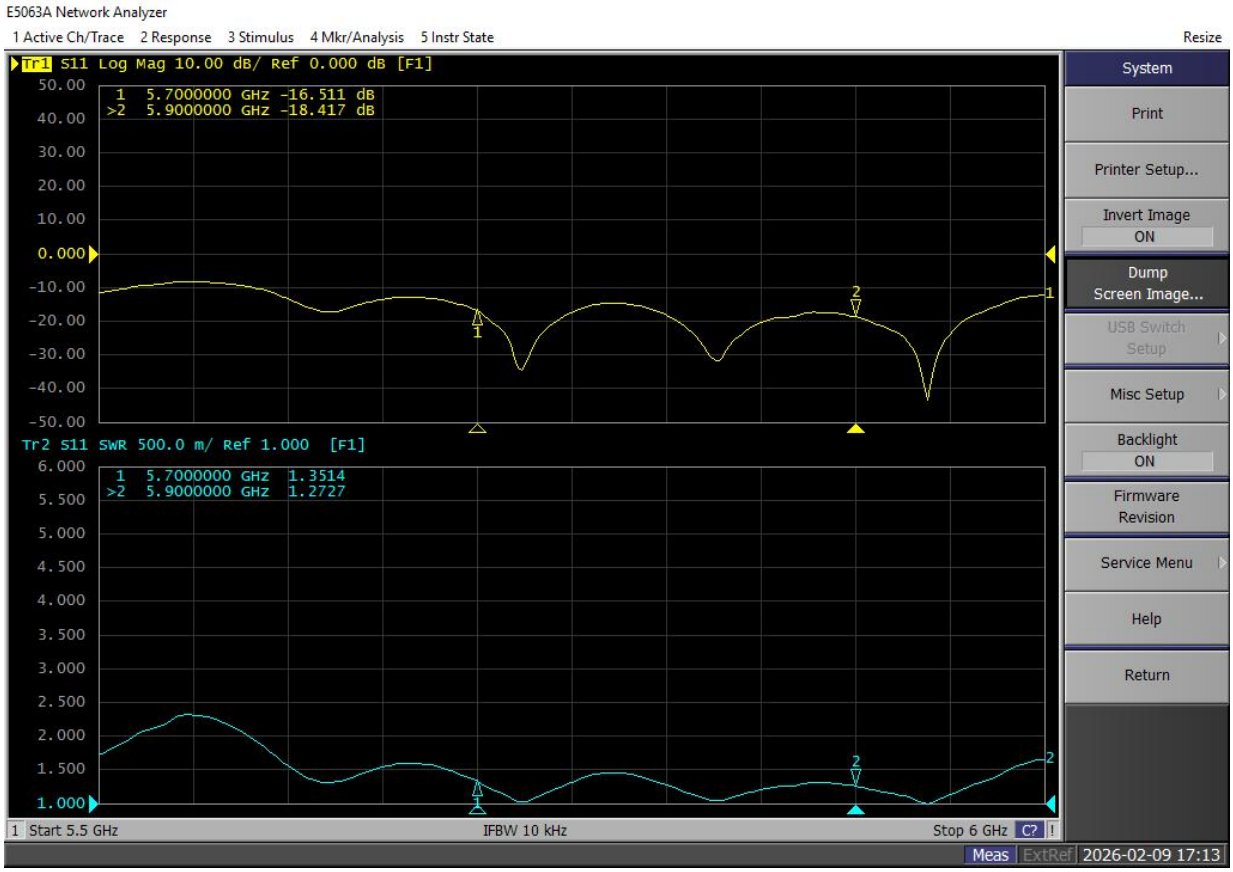
Port 6


E5063A Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Resize
Tr1 S11 Log Mag 10.00 dB/ Ref 0.000 dB [F1]
1 2.4000000 GHz -15.759 dB
2 2.4500000 GHz -18.991 dB
>3 2.5000000 GHz -17.962 dB
Tr2 S11 SWR 500.0 m/ Ref 1.000 [F1]
1 2.4000000 GHz 1.3898
2 2.4500000 GHz 1.2534
>3 2.5000000 GHz 1.2895
1 Start 1.8 GHz
IFBW 10 kHz
Stop 3.2 GHz
Meas ExtRef 2026-02-09 17:18
System
Print
Printer Setup...
Invert Image ON
Dump Screen Image...
USB Switch Setup
Misc Setup
Backlight ON
Firmware Revision
Service Menu
Help
Return

Port 7



Port 8



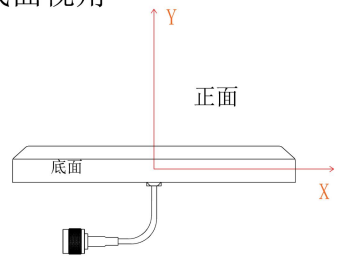
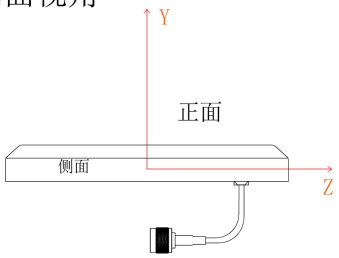
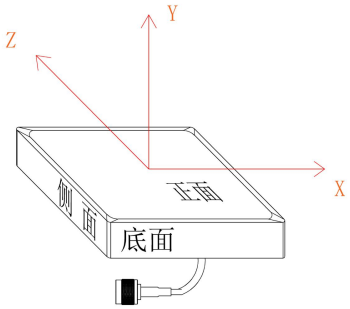
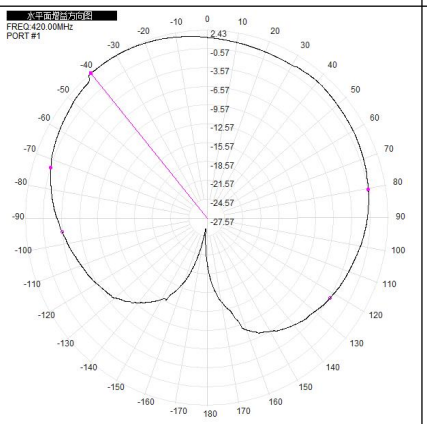
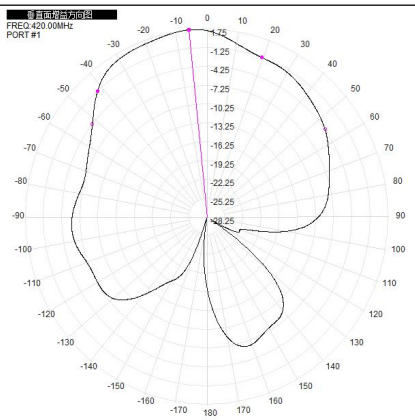
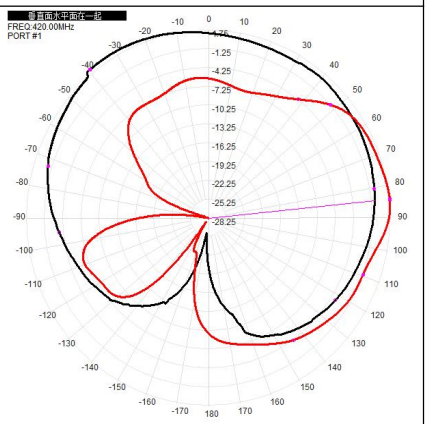
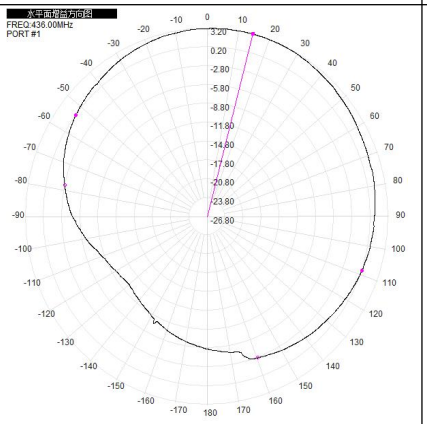
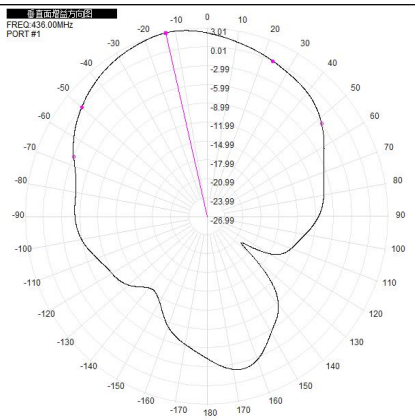
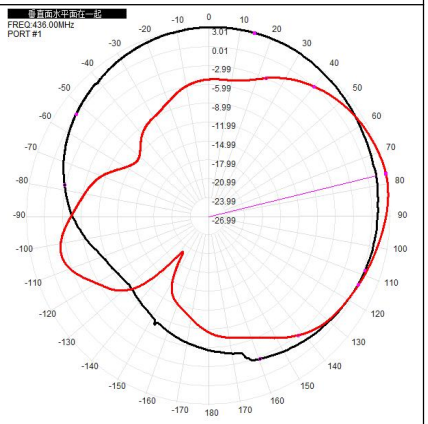
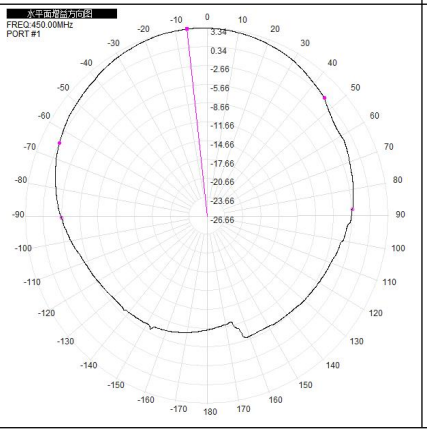
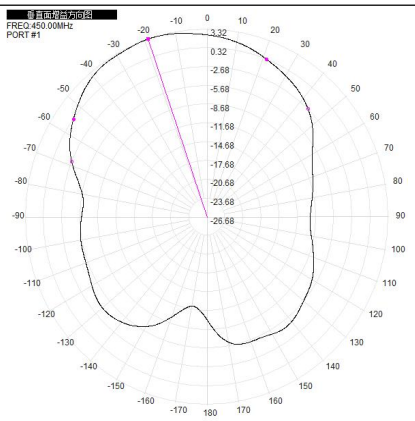
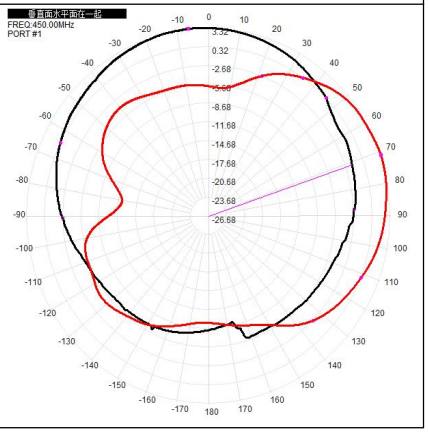
效率&增益Total Efficiency& Gain:

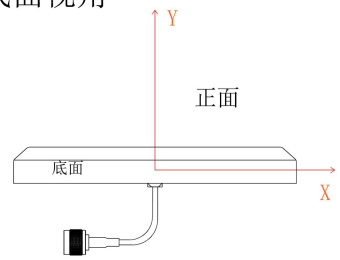
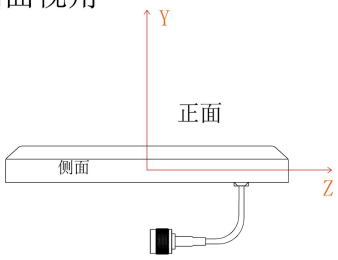
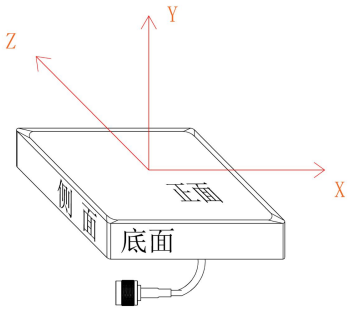
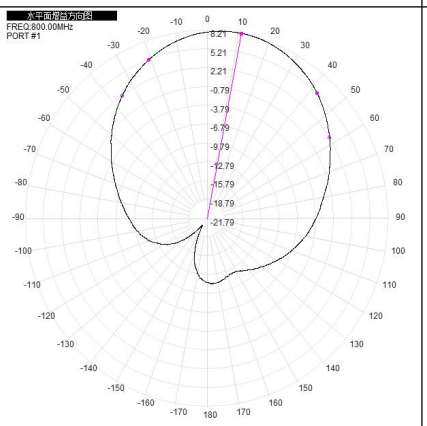
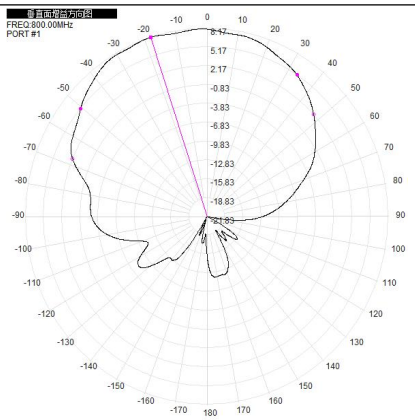
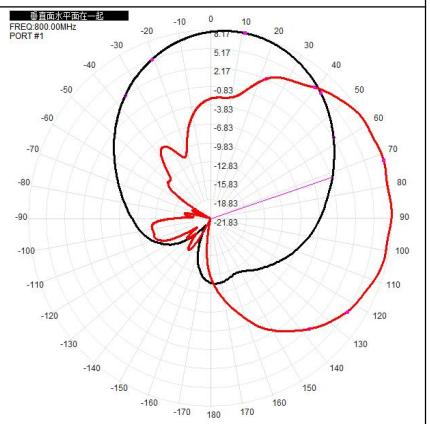
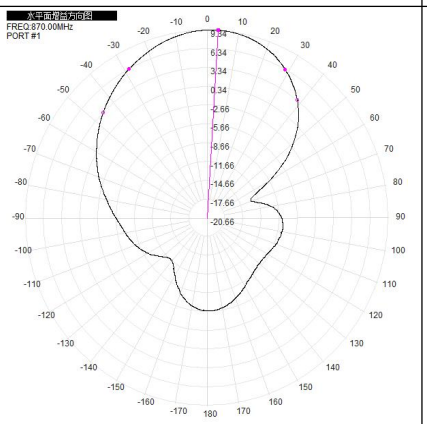
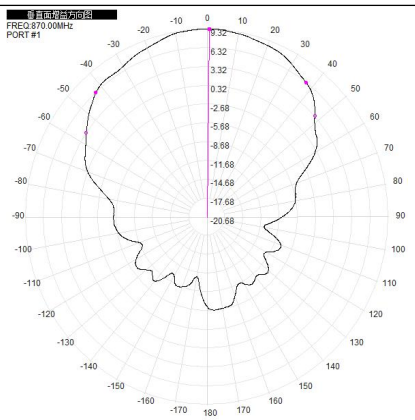
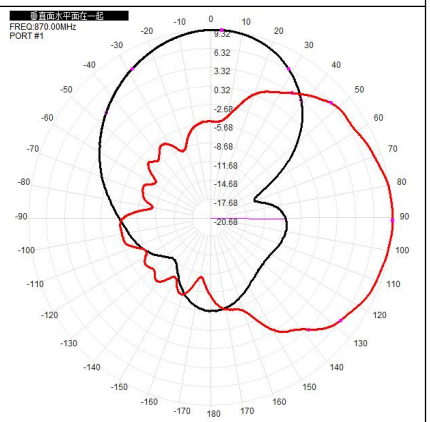
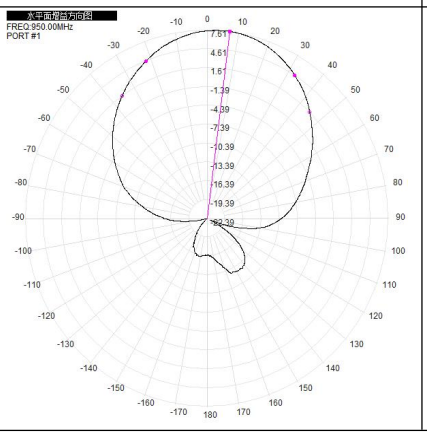
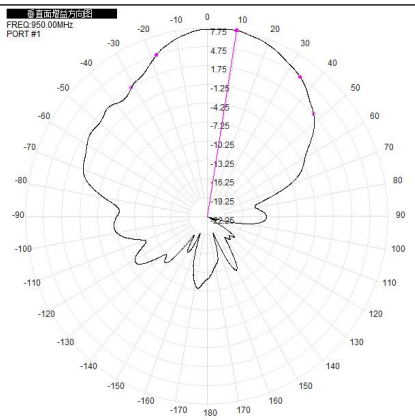
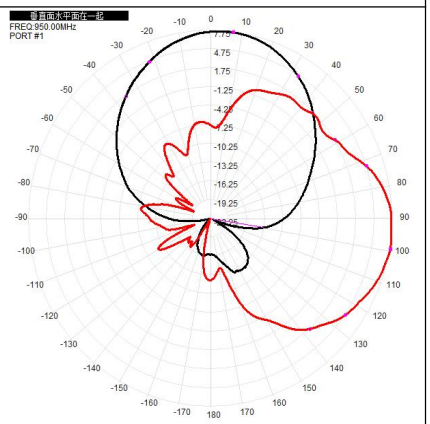
Port 1	Port 2	Port 3	Port 4

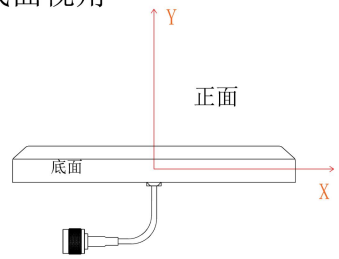
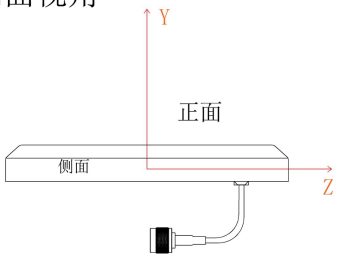
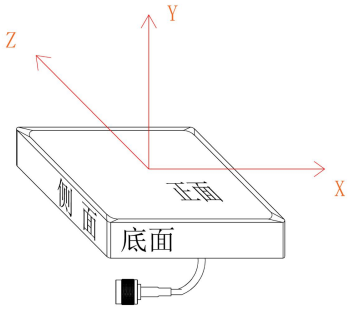
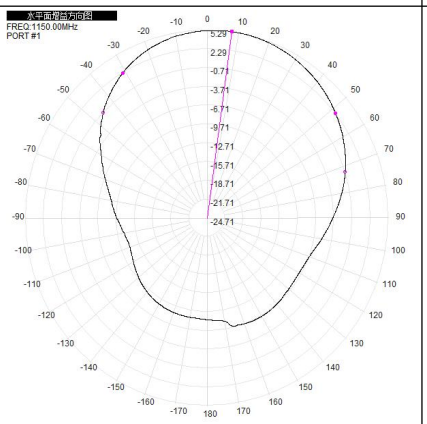
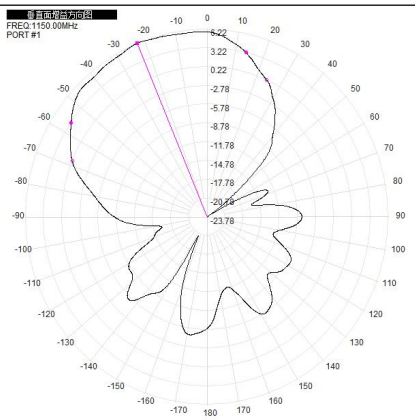
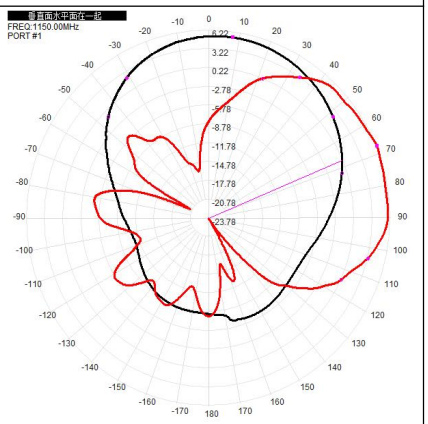
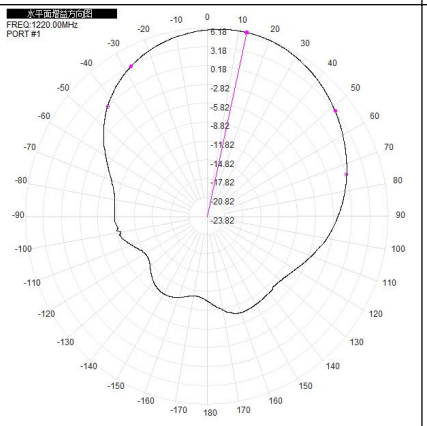
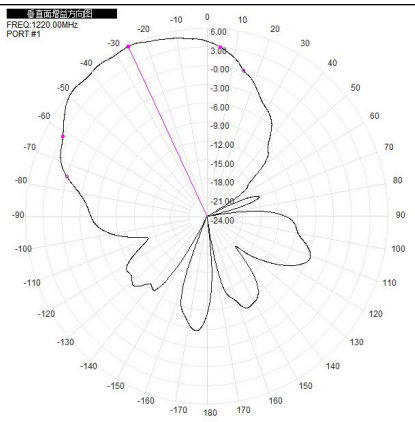
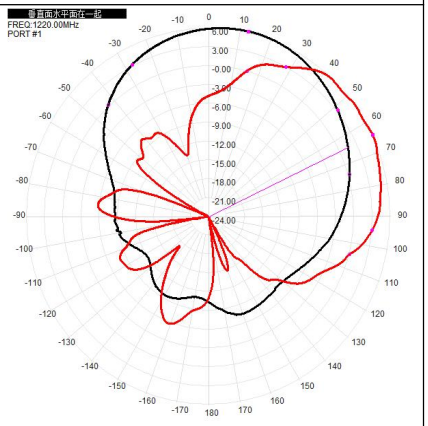
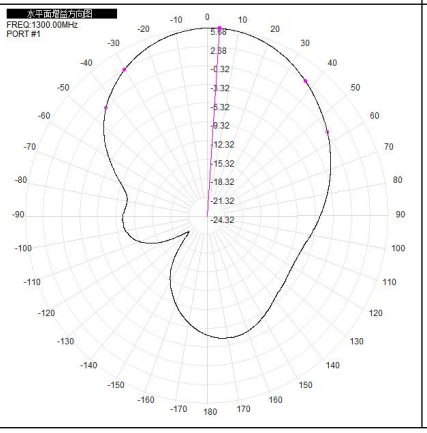
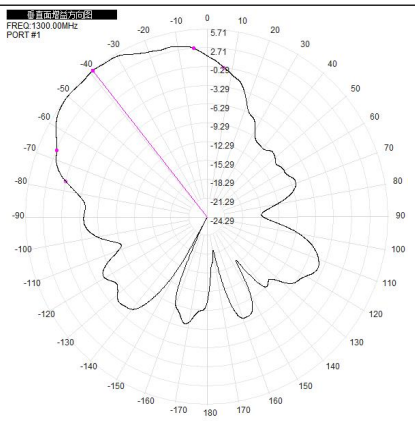
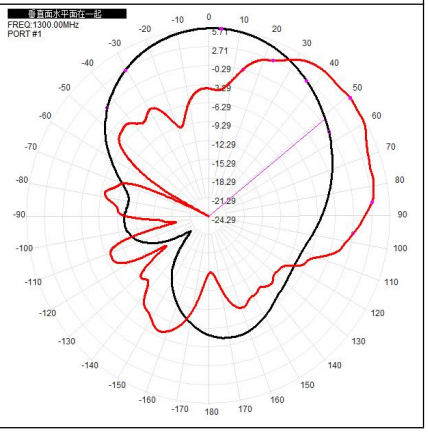
Frequency(MHz)	Gain(dBi)	Frequency(MHz)	Gain(dBi)	Frequency(MHz)	Gain(dBi)	Frequency(MHz)	Gain(dBi)
420	2.4	800	8.2	1150	6.2	1300	7.5
422	1.9	810	7.1	1160	6.3	1310	7.6
424	1.2	820	6.9	1170	5.8	1320	7.8
426	1.5	830	7.6	1180	6.1	1330	7.5
428	1.9	840	8.7	1190	5.8	1340	7.5
430	2.3	850	9.2	1200	5.9	1350	7.8
432	2.4	860	9.3	1210	6.0	1360	8.1
434	2.4	870	9.3	1220	6.2	1370	7.6
436	3.2	880	9.3	1230	5.8	1380	7.7
438	3.6	890	7.6	1240	5.6	1390	7.7
440	3.6	900	8.2	1250	6.4	1400	7.6
442	3.6	910	8.4	1260	6.1	1410	8.1
444	3.6	920	8.1	1270	6.0	1420	7.9
446	3.8	930	7.5	1280	5.8	1430	7.6
448	3.6	940	7.5	1290	6.1	1440	7.9
450	3.3	950	7.7	1300	5.7	1450	8.0

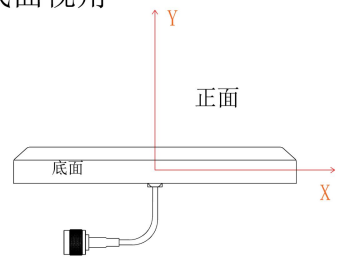
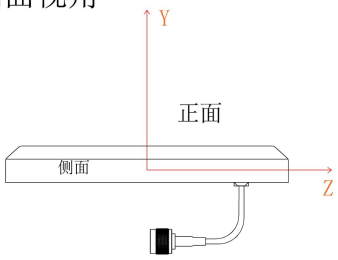
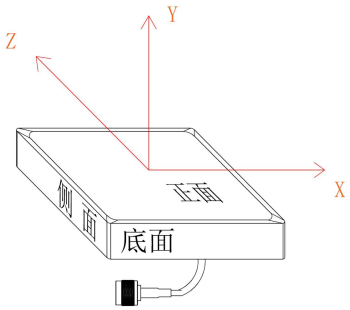
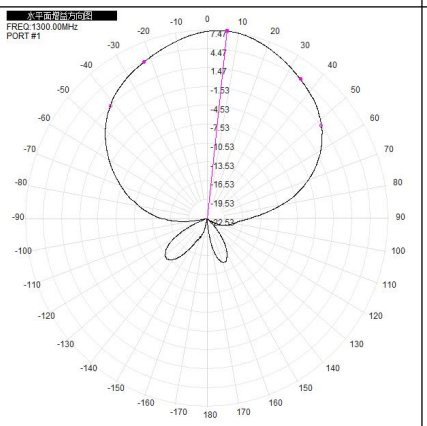
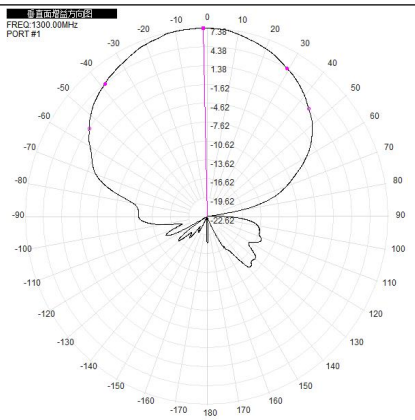
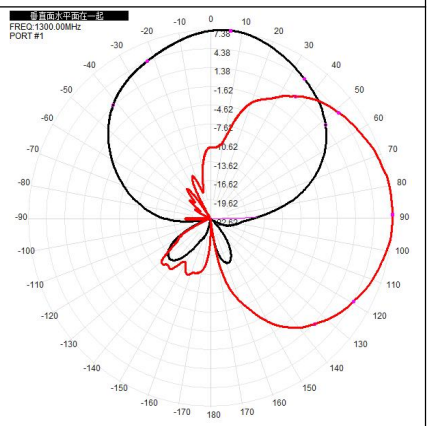
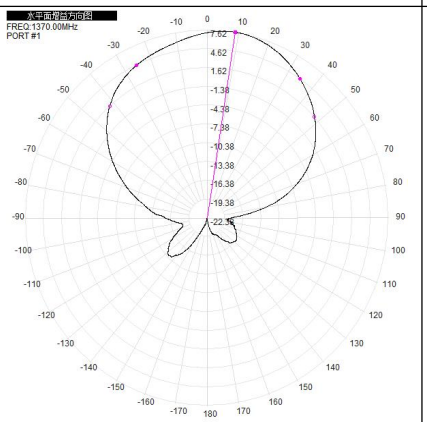
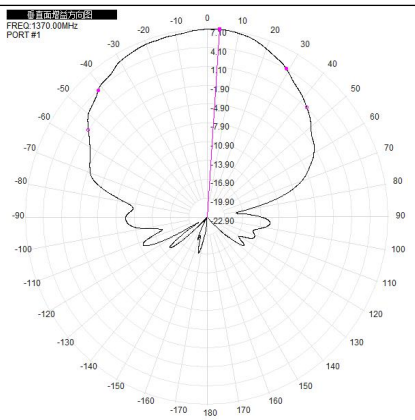
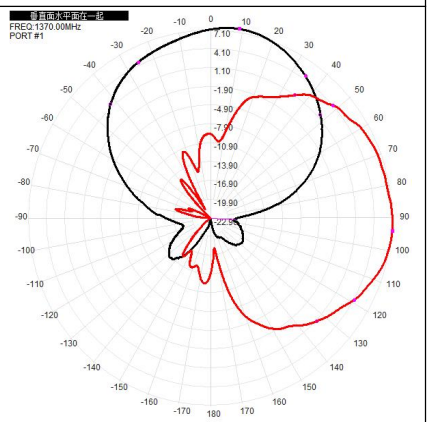
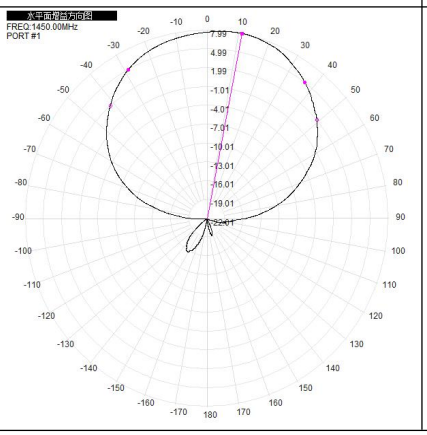
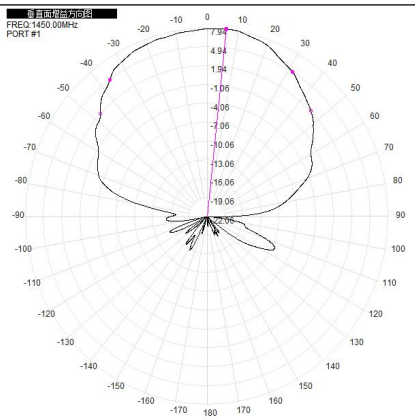
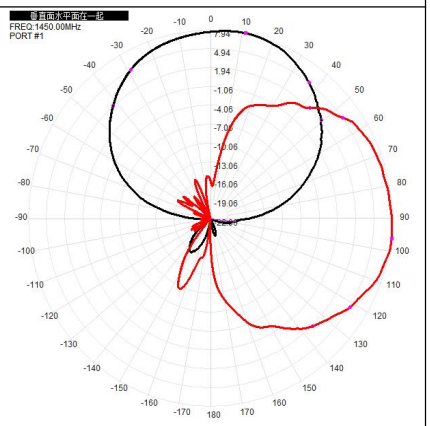
Port 5		Port 6		Port 7		Port 8	
Frequency(MHz)	Gain(dBi)	Frequency(MHz)	Gain(dBi)	Frequency(MHz)	Gain(dBi)	Frequency(MHz)	Gain(dBi)
1500	6.1	2400	14.3	5150	11.0	5700	13.6
1510	7.0	2410	14.4	5175	10.6	5720	13.6
1520	6.4	2420	14.5	5200	10.3	5740	13.9
1530	6.3	2430	14.5	5225	9.5	5760	14.1
1540	6.4	2440	14.5	5250	9.6	5780	13.9
1550	7.1	2450	14.4	5275	9.0	5800	14.3
1560	7.0	2460	14.6	5300	10.0	5820	13.9
1570	7.2	2470	14.6	5325	9.8	5840	14.1
1580	7.3	2480	14.5	5350	10.1	5860	13.5
1590	7.4	2490	14.2			5880	14.5
1600	7.4	2500	14.2			5900	14.0
1610	7.4						
1620	7.5						
1630	7.4						
1640	7.6						
1650	7.8						

场型图

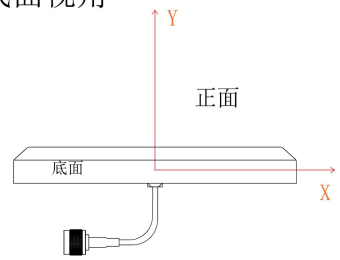
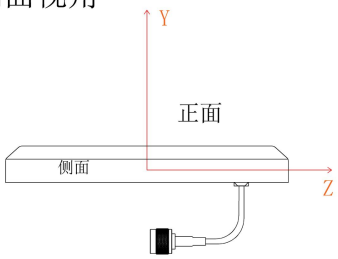
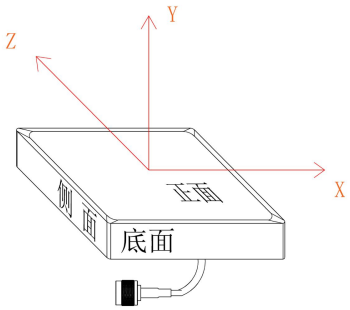
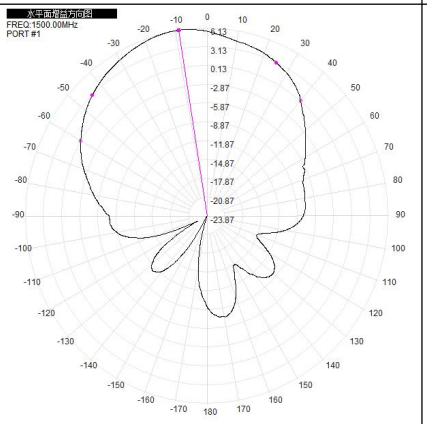
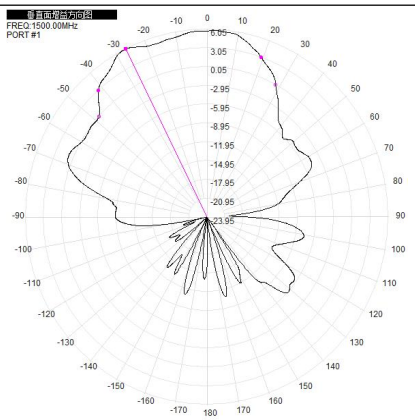
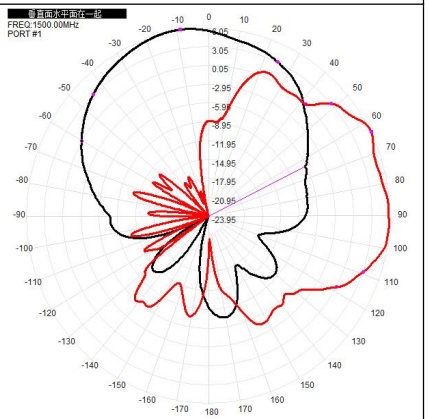
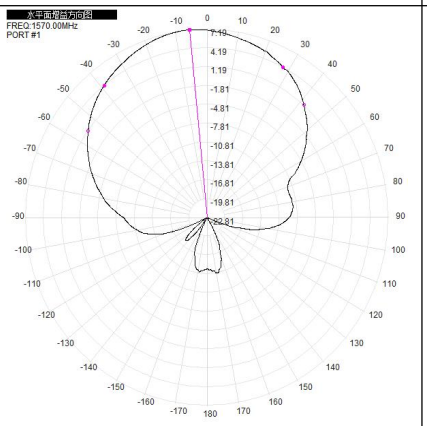
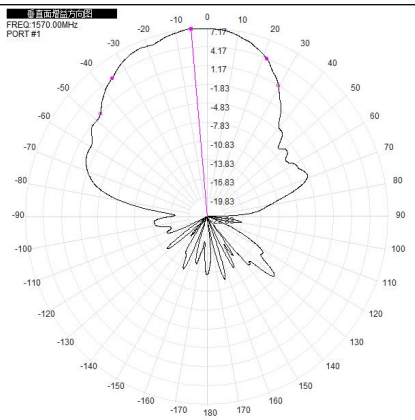
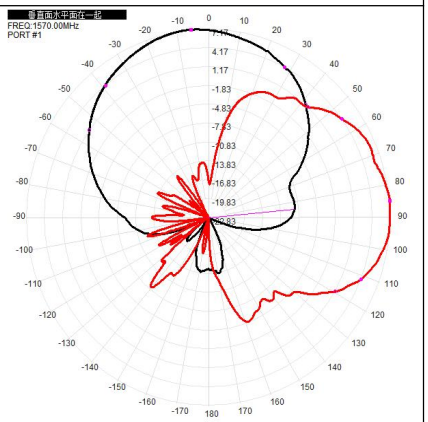
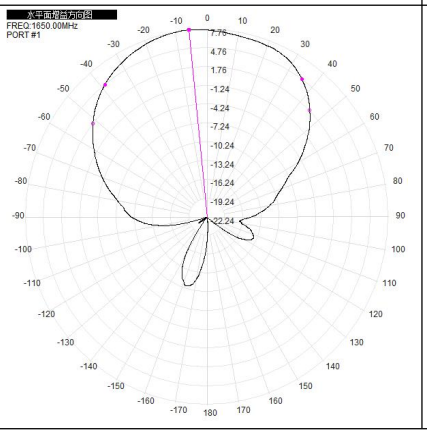
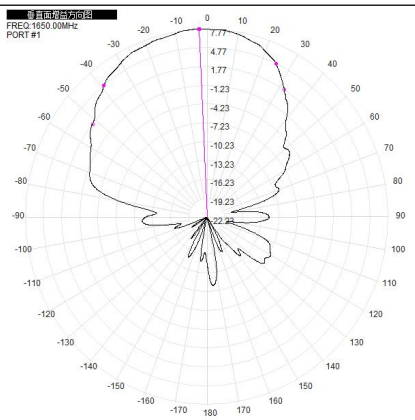
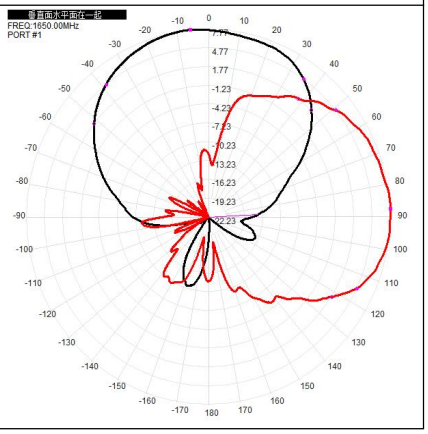
Port 1	2D-水平面 H	2D-垂直面 V	两个面放一起看
轴的定义	底面视角 	侧面视角 	立体视角 
420MHz			
436MHz			
450MHz			

Port 2	2D-水平面 H	2D-垂直面 V	两个面放一起看
轴的定义	底面视角 	侧面视角 	立体视角 
800MHz			
870MHz			
950MHz			

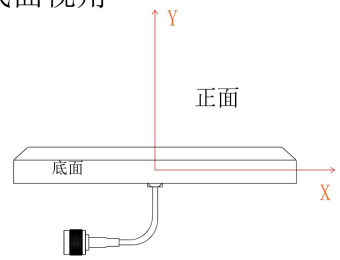
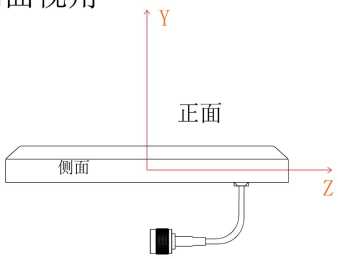
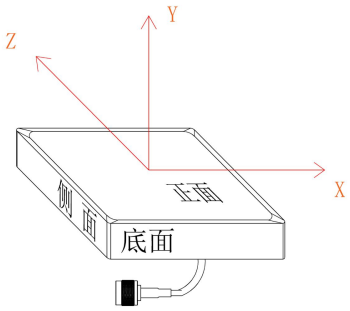
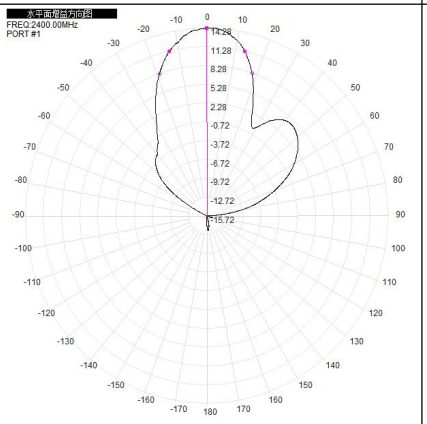
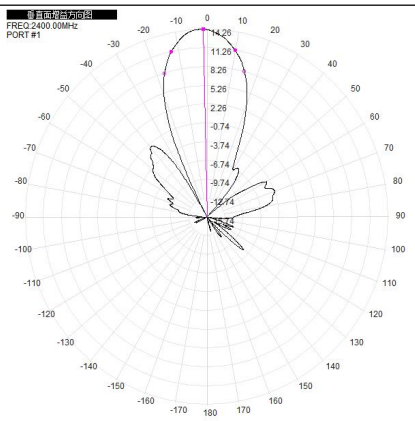
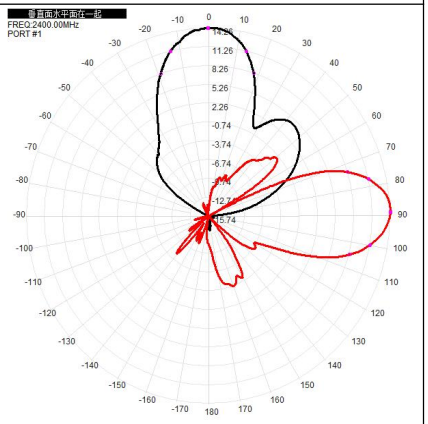
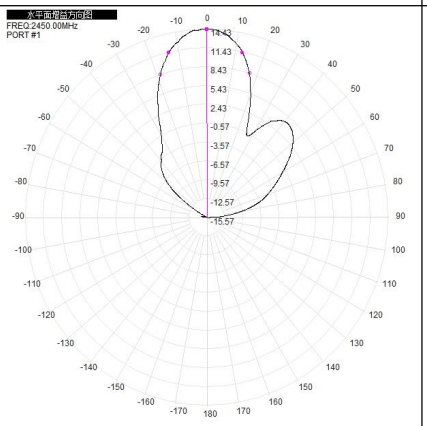
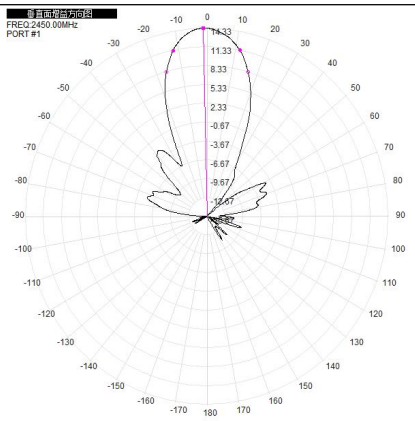
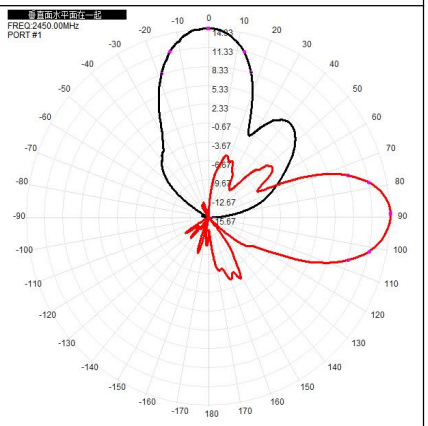
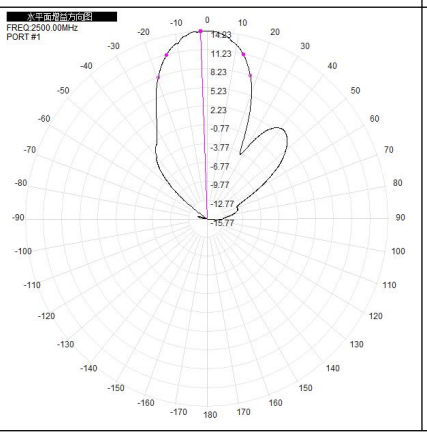
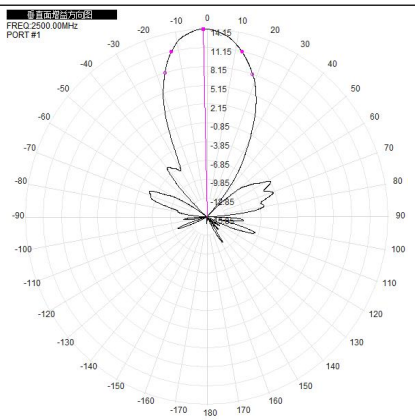
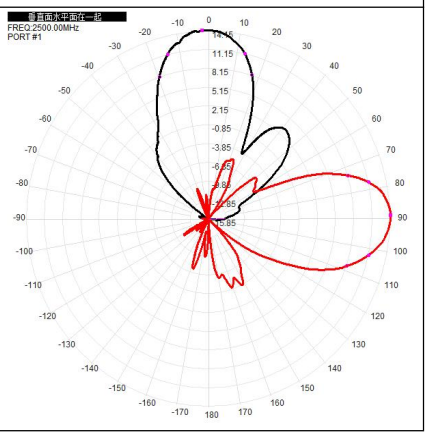
Port 3	2D-水平面 H	2D-垂直面 V	两个面放一起看
轴的定义	底面视角 	侧面视角 	立体视角 
1150MHz			
1220MHz			
1300MHz			

Port 4	2D-水平面 H	2D-垂直面 V	两个面放一起看
轴的定义	底面视角 	侧面视角 	立体视角 
1300MHz			
1370MHz			
1450MHz			

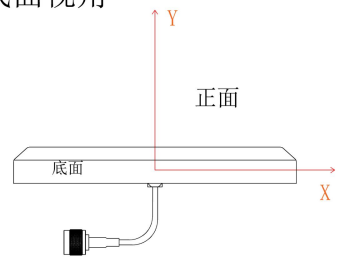
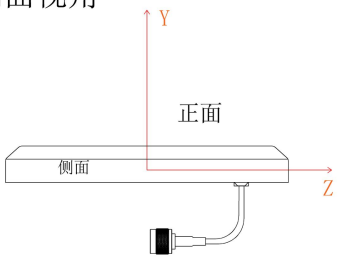
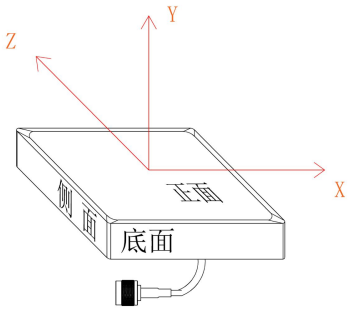
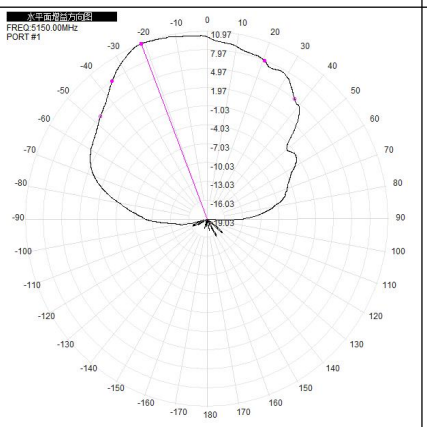
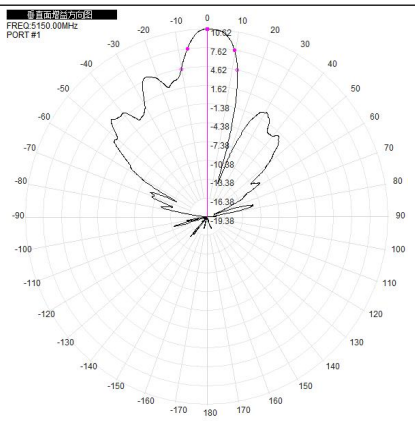
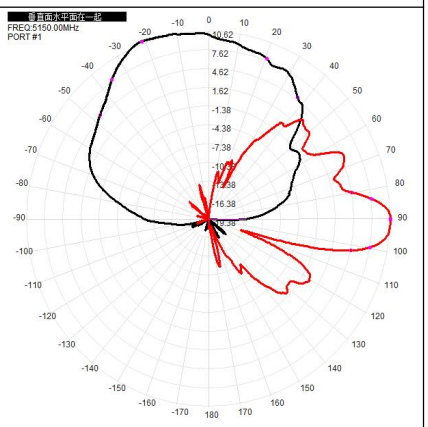
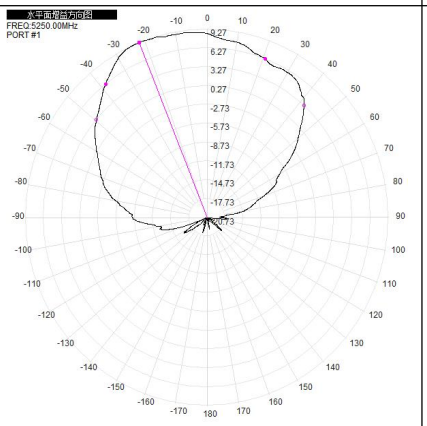
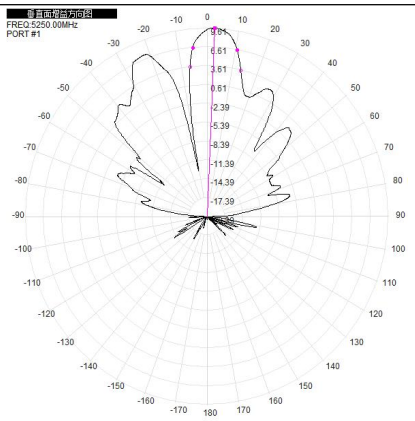
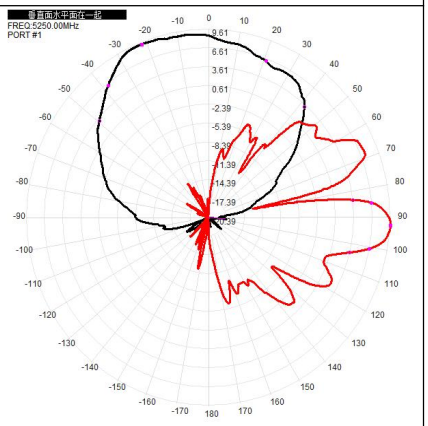
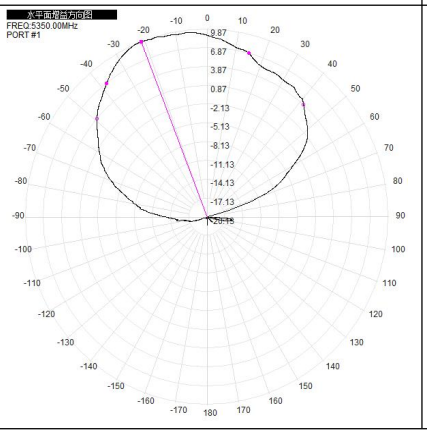
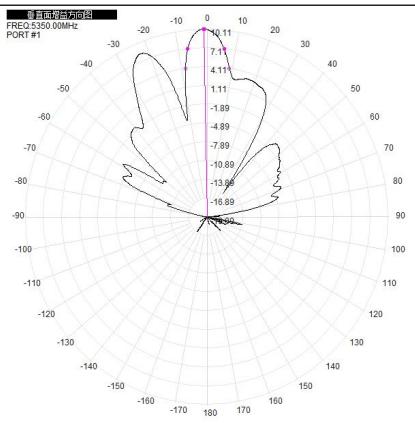
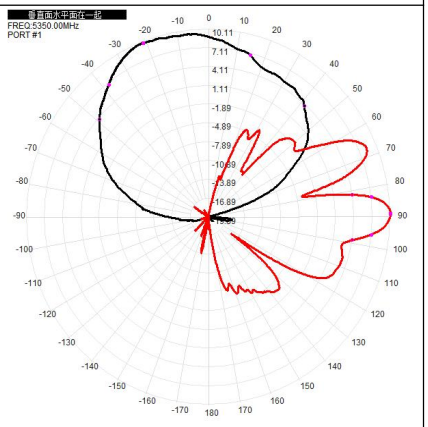
Port 5	2D-水平面 H	2D-垂直面 V	两个面放一起看

轴的定义	底面视角	侧面视角	立体视角
			
1500MHz			
1570MHz			
1650MHz			

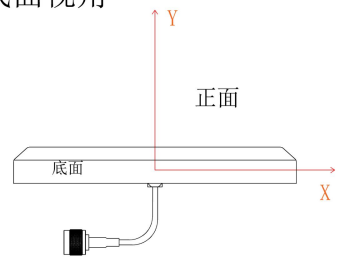
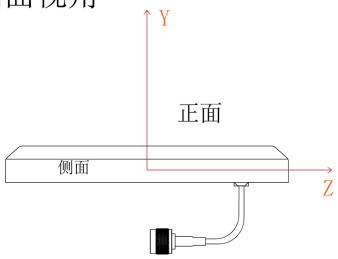
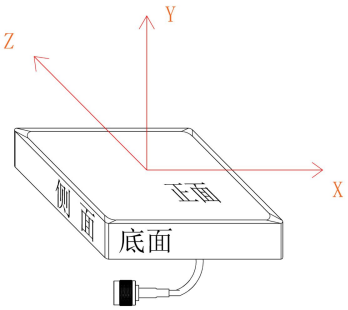
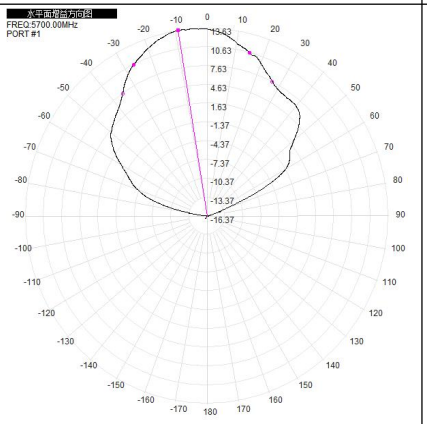
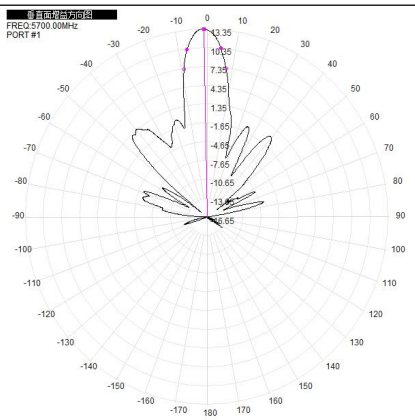
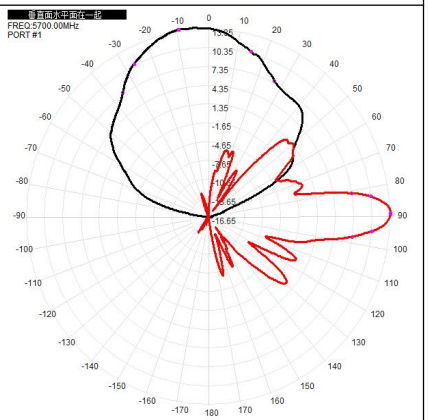
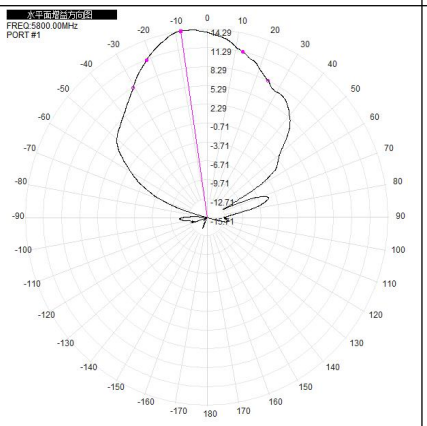
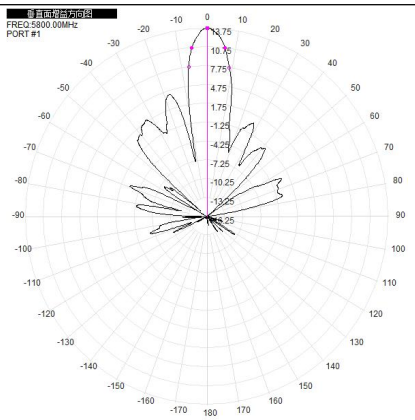
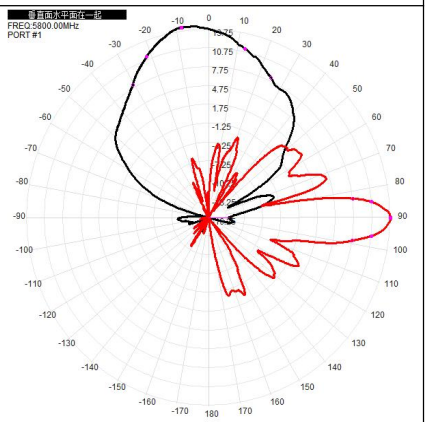
Port 6	2D-水平面 H	2D-垂直面 V	两个面放一起看

轴的定义	底面视角	侧面视角	立体视角
			
2400MHz			
2450MHz			
2500MHz			

Port 7	2D-水平面 H	2D-垂直面 V	两个面放一起看

轴的定义	底面视角	侧面视角	立体视角
			
5150MHz			
5250MHz			
5350MHz			

Port 8	2D-水平面 H	2D-垂直面 V	两个面放一起看

轴的定义	底面视角	侧面视角	立体视角
			
5700MHz			
5800MHz			
5900MHz	