INPAQ

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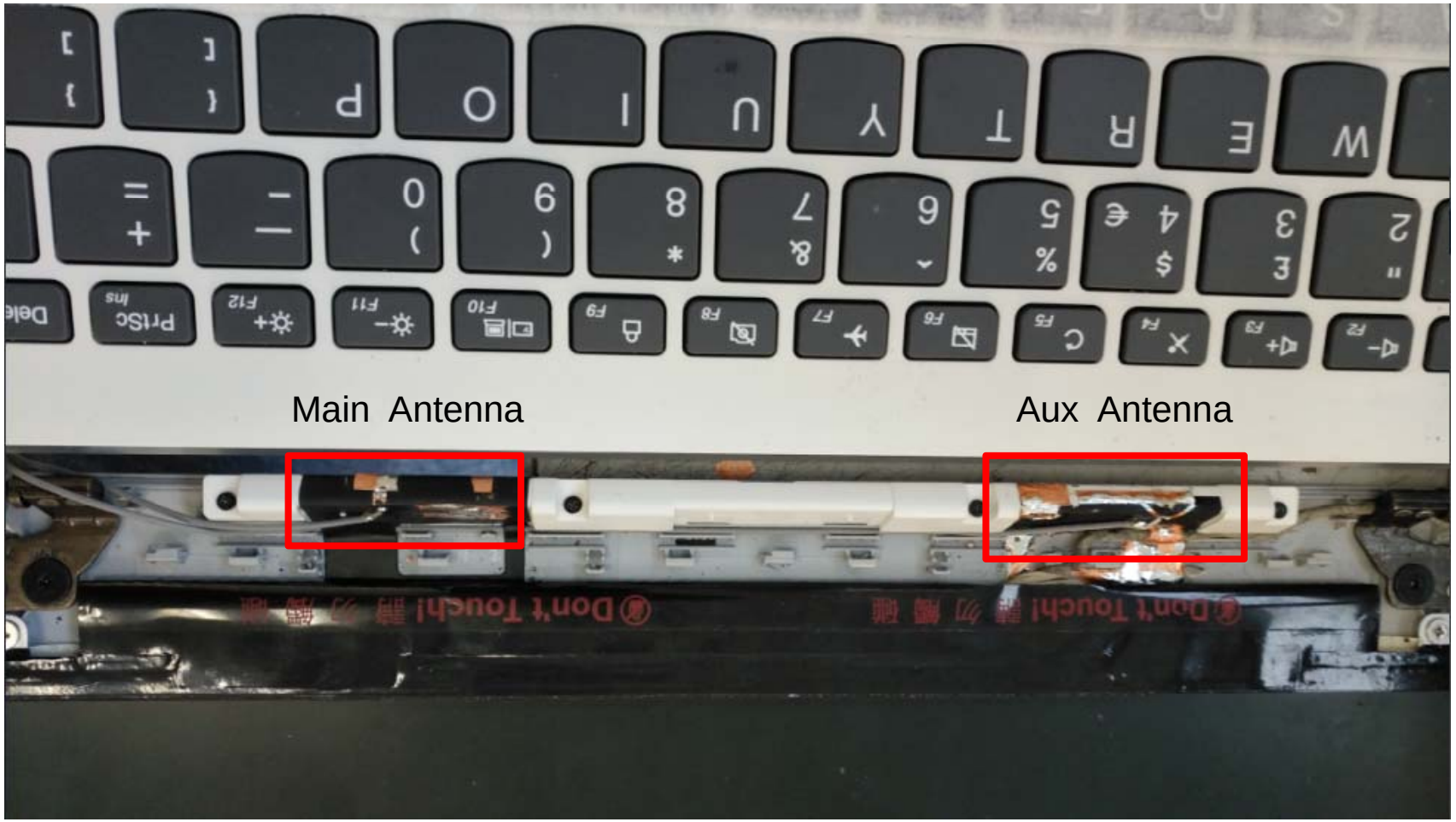
3 Nod-120S WiFi Antenna Test Report

Report Date	**2017/02/16**	Prepared by	**Apple_zhao**
Report Version	**V2**	Checked by	**Youqing_he**
Request Form No.		Approved by	**Youqing_he**

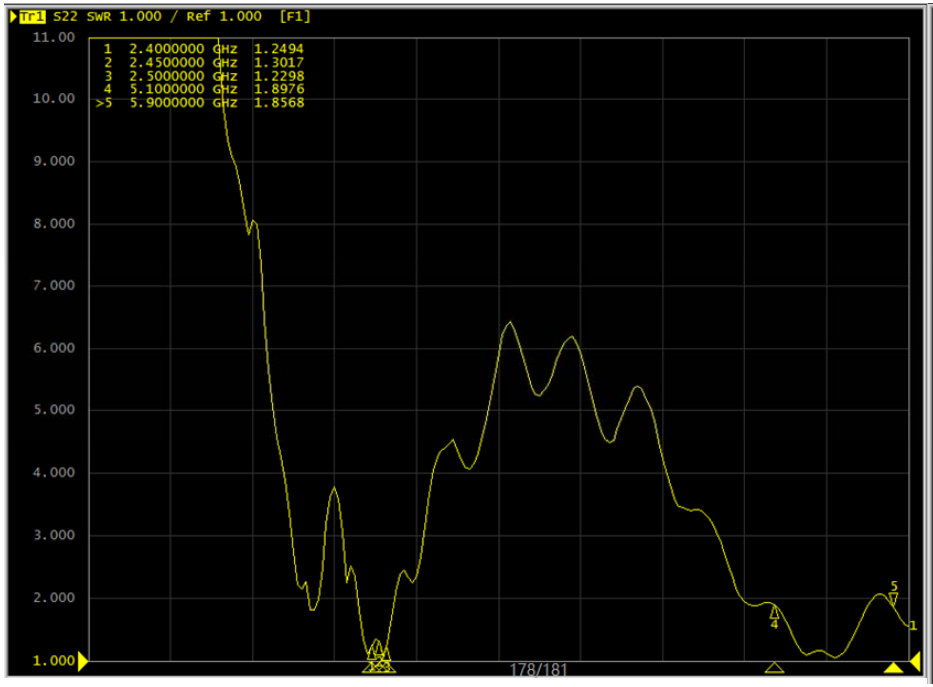
Introduction

1. Test Condition
2. Main/AUX Antenna----VSWR
3. Test Results
    1. Main/Aux Efficiency And Peak Gain
    2. 3D/2D Gain Pattern
4. Conclusion

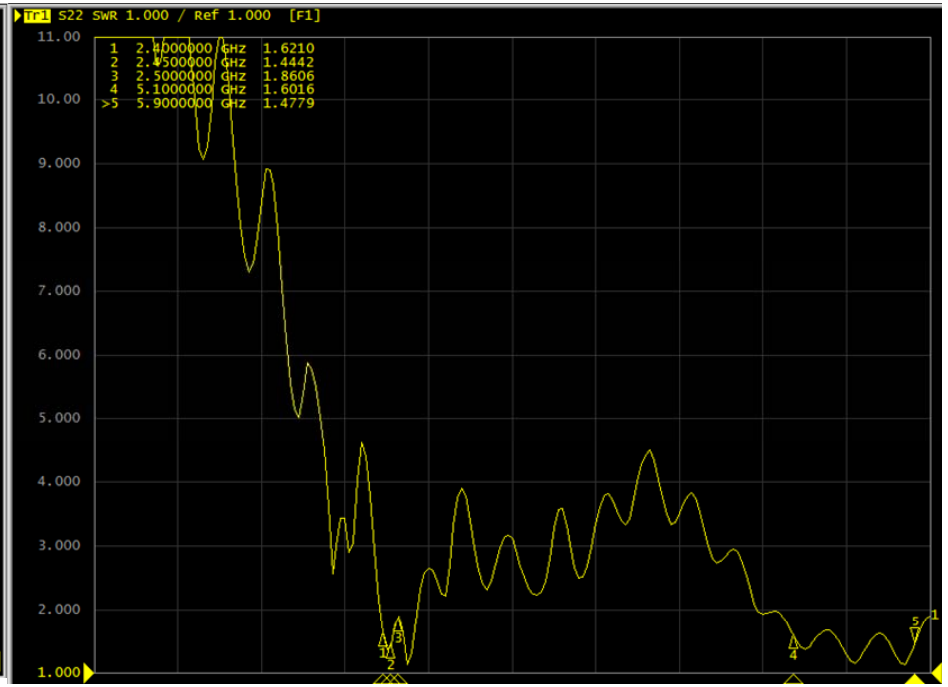
1. Test Condition



2.Main/AUX Antenna----VSWR（open mode）



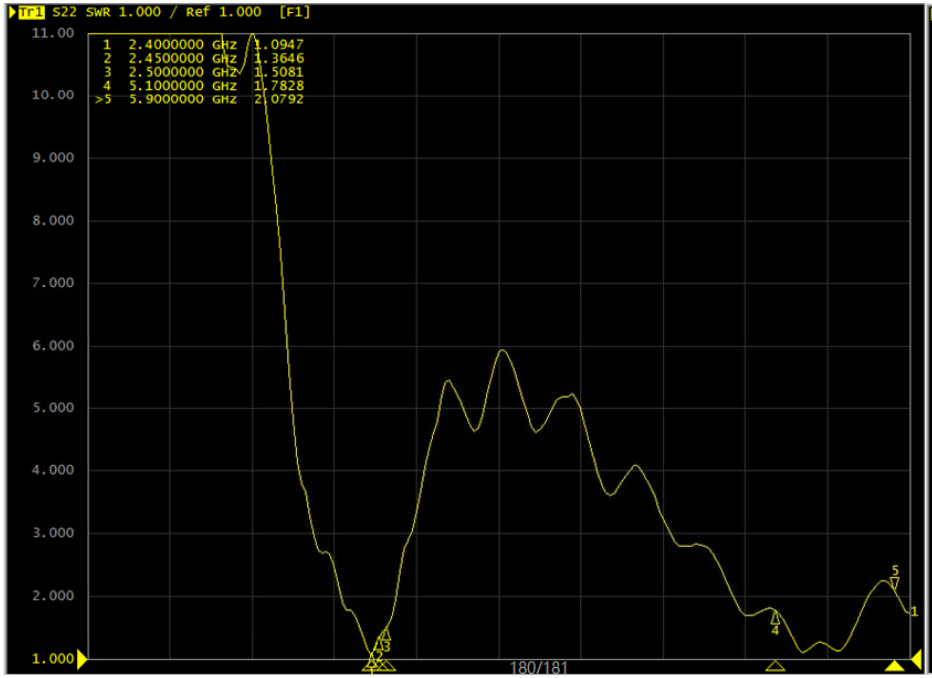
Main



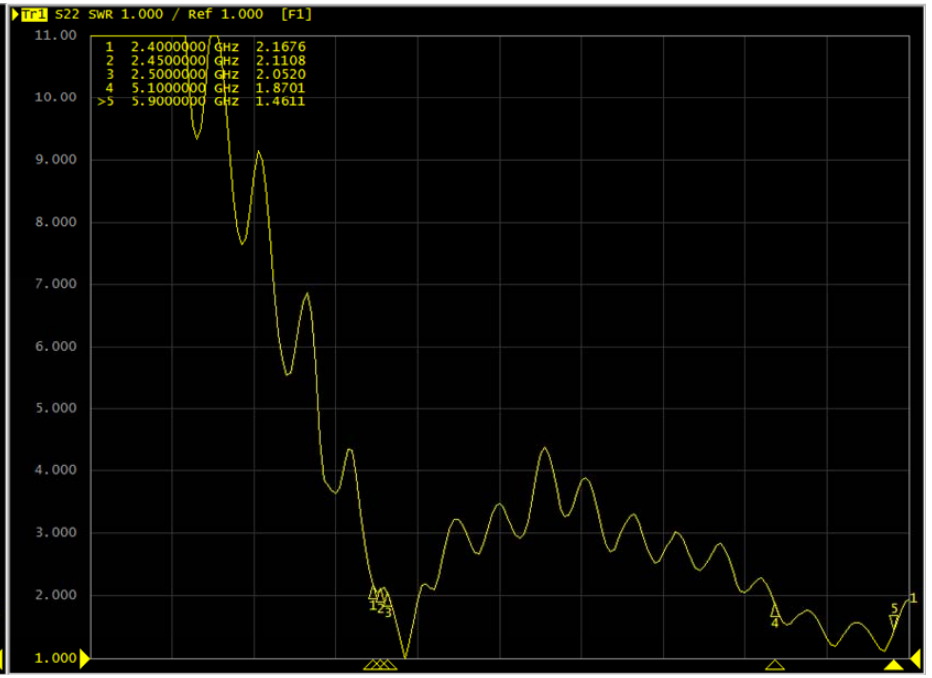
Aux

MAIN	Frequency (MHz)	2400	2450	2500	5100	5900
	VSWR	1.24	1.30	1.22	1.89	1.85
AUX	Frequency (MHz)	2400	2450	2500	5100	5900
	VSWR	1.62	1.44	1.86	1.60	1.47

2.Main/AUX Antenna----VSWR（close mode）



Main



Aux

MAIN	Frequency (MHz)	2400	2450	2500	5100	5900
	VSWR	1.09	1.36	1.50	1.78	2.07
AUX	Frequency (MHz)	2400	2450	2500	5100	5900
	VSWR	2.16	2.11	2.05	1.87	1.46

3.Test Results

1. Main/Aux Efficiency And Peak Gain（open mode）

Frequency (MHz)	Main Antenna		AUX Antenna	
	Efficiency (%)	Gain (dBi)	Efficiency (%)	Gain (dBi)
2400	56.54	2.88	48.3	3.02
2420	52.64	1.84	47.85	2.76
2440	52.29	2.32	45.84	2.3
2450	51.3	2.36	44.96	2.15
2460	50.56	2.51	44.08	1.96
2480	48.77	2.73	44.48	2.42
2500	48.46	2.64	43.03	2.13
AVG	51.5	2.46	45.5	2.39
5100	47.59	2.92	44.42	2.67
5200	45.96	2.73	45.5	2.32
5300	45.06	2.8	44.1	2.75
5400	44.74	2.79	46.84	2.8
5450	50.61	3.05	46.97	2.51
5500	49.64	2.76	46.12	2.11
5600	45.49	2.86	39.57	0.74
5700	49.76	2.77	45.05	1.62
5800	46.46	2.22	43.96	1.74
5900	44.52	2.54	40.11	0.53
AVG	46.98	2.74	44.26	1.97

3.Test Results

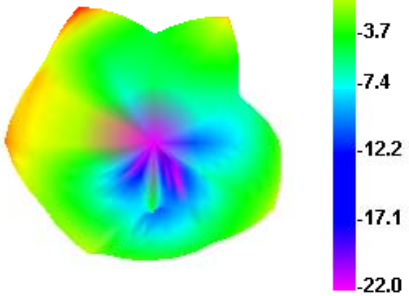
1. Main/Aux Efficiency And Peak Gain（close mode）

Frequency (MHz)	Main Antenna		AUX Antenna	
	Efficiency (%)	Gain (dBi)	Efficiency (%)	Gain (dBi)
2400	46.07	2.66	42.13	1.52
2420	42.38	2.39	42.35	1.95
2440	41.22	2.21	41.16	2.08
2450	40.33	2.03	38.5	1.67
2460	39.97	1.86	36.4	1.34
2480	38.98	1.69	34.04	0.75
2500	39.48	1.65	33.91	1.15
AVG	41.2	2.07	38.35	1.49
5100	43.62	2.87	35.62	2.06
5200	43.83	2.09	34.75	1.38
5300	40.78	2.21	37.72	1.35
5400	41.35	2.23	38.76	1.26
5450	46.16	2.79	40.29	1.3
5500	45.78	2.99	43.72	2.35
5600	40.49	1.25	39.05	1.13
5700	36.23	2.67	40.56	2.12
5800	38.2	0.66	37.13	1.93
5900	34.85	-0.88	35.88	1.66
AVG	41.12	1.88	38.34	1.65

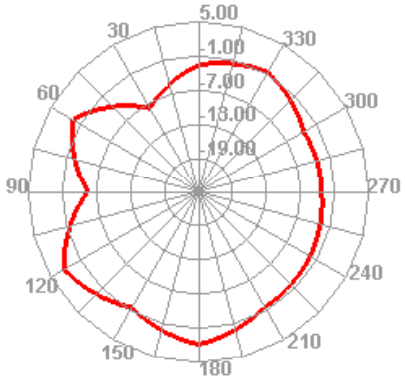
3.Test Results

2. Main 3D/2D Gain Pattern（open mode）

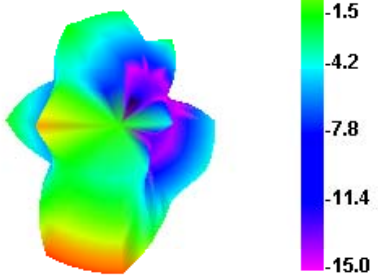
2450.000MHz



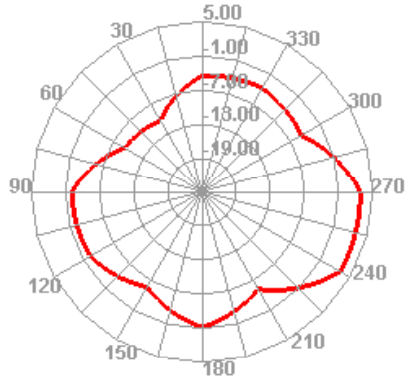
2450.000MHz H



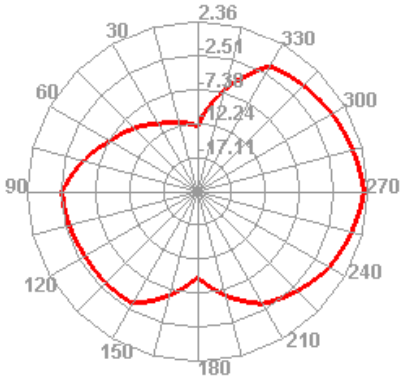
5450.000MHz



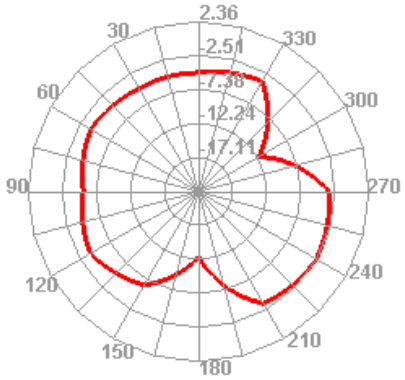
5450.000MHz H



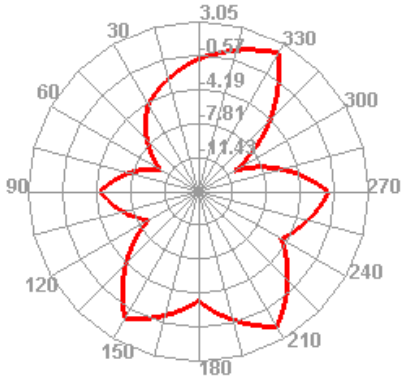
2450.000MHz E1



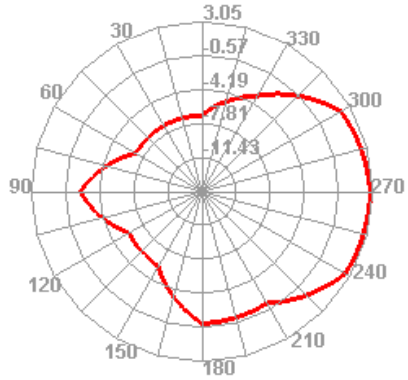
2450.000MHz E2



5450.000MHz E1



5450.000MHz E2



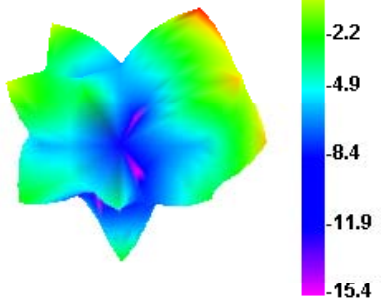
MAIN 2450MHz

MAIN 5450MHz

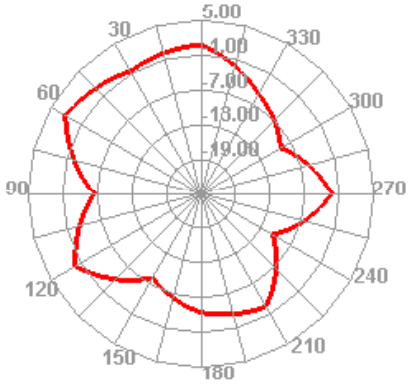
3.Test Results

2. Aux 3D/2D Gain Pattern（open mode）

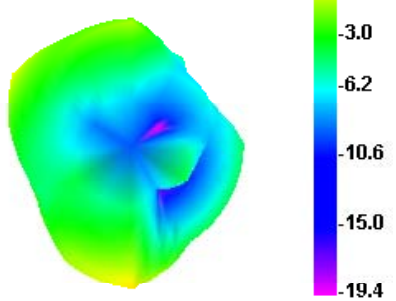
2450.000MHz



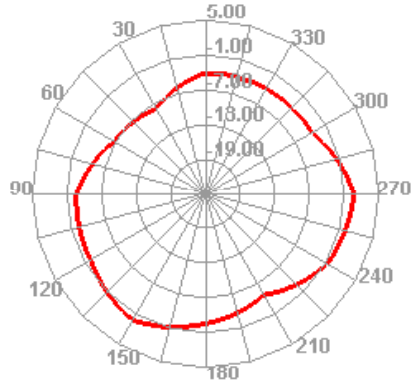
2450.000MHz H



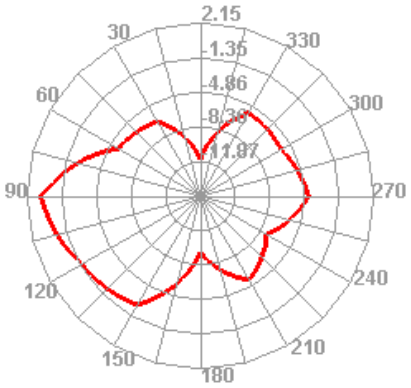
5450.000MHz



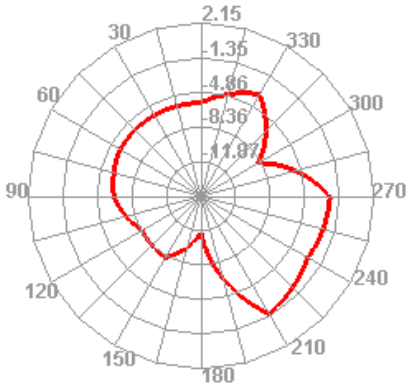
5450.000MHz H



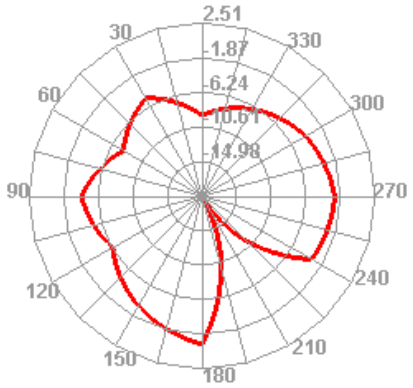
2450.000MHz E1



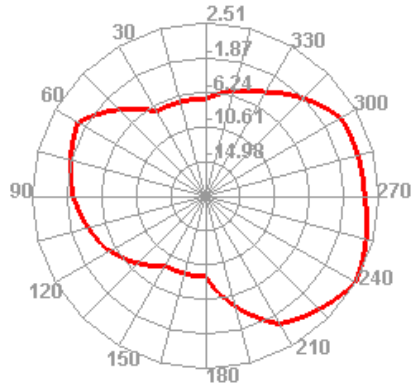
2450.000MHz E2



5450.000MHz E1



5450.000MHz E2

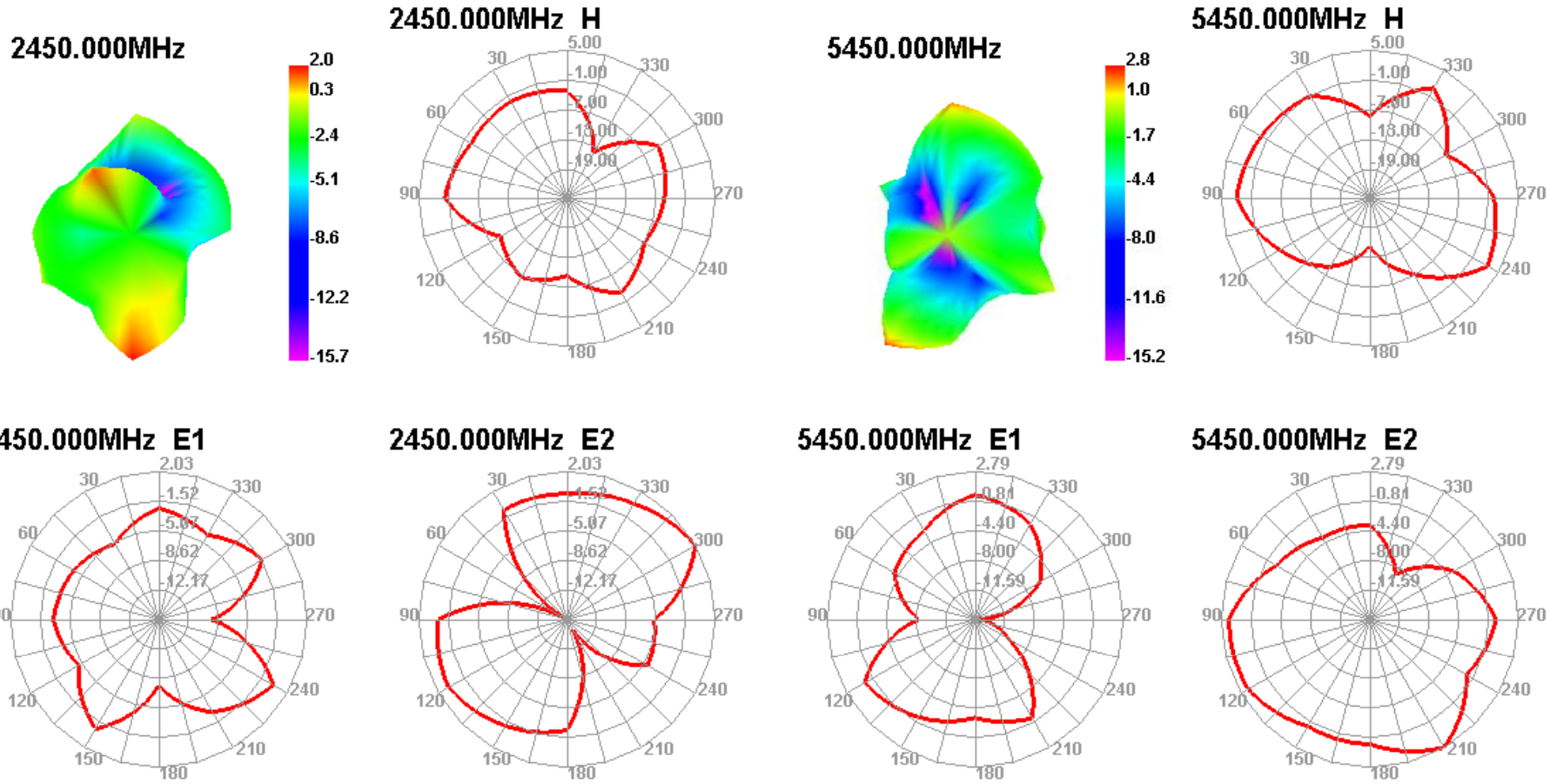


Aux 2450MHz

Aux 5450MHz

3.Test Results

2. Main 3D/2D Gain Pattern（close mode ）

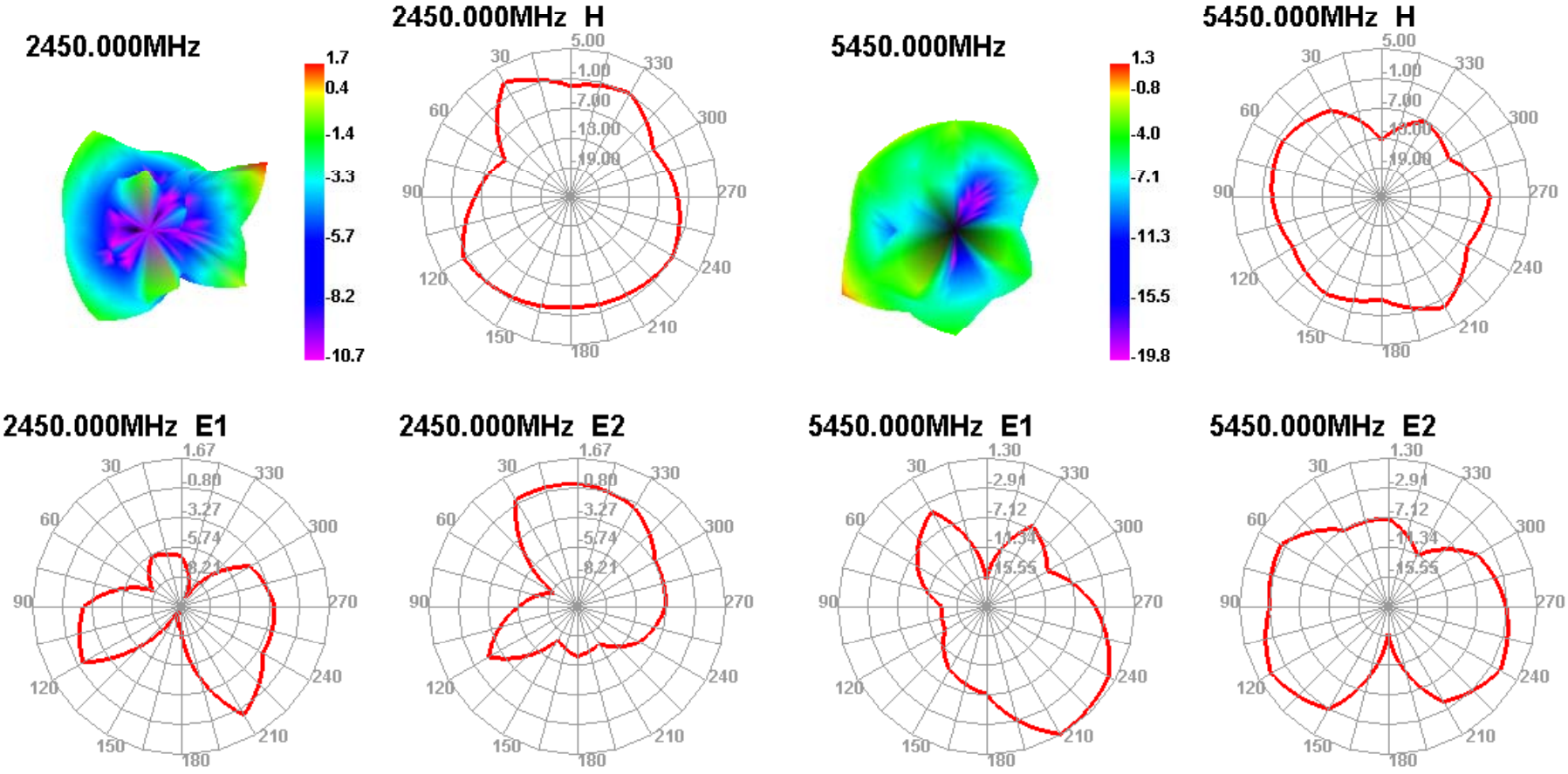


Main 2450MHz

Main 5450MHz

3.Test Results

2. Aux 3D/2D Gain Pattern（close mode）



AUX 2450MHz

AUX 5450MHz

4. Conclusion

通过调整天线pattern，改变cable为普通线材，改变天线GND以改善天线场型等试验进行降低天线增益的实验。因整机环境所致，在保证天线VSWR和效率的前提下很难将增益降的很低，建议先以这版天线进行后续测试，同步我会继续尝试通过改变天线走线进行降增益的实验。
感谢~~