



DK079 Antenna Test Report

Date: 2023.07.15

CONTENTS

01

Project Overview

02

Test Environment

03

Matching Circuit

04

Environmental
Treatment

05

Passive Report

06

Active Report

07

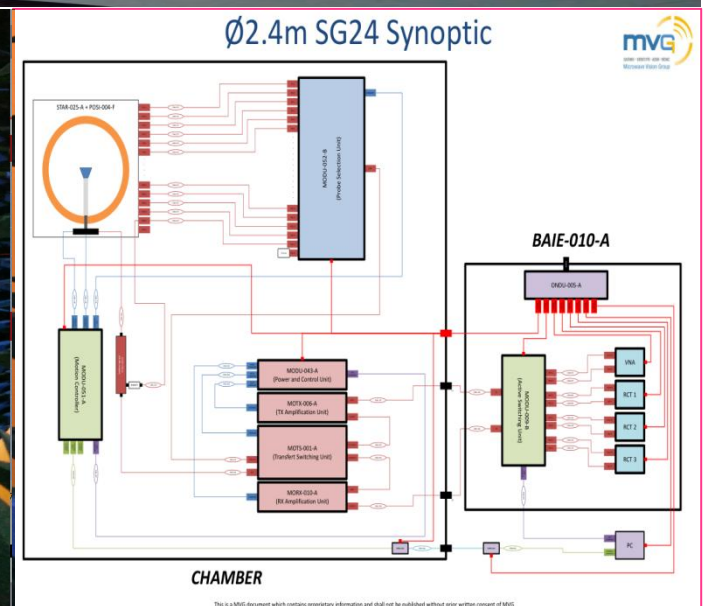
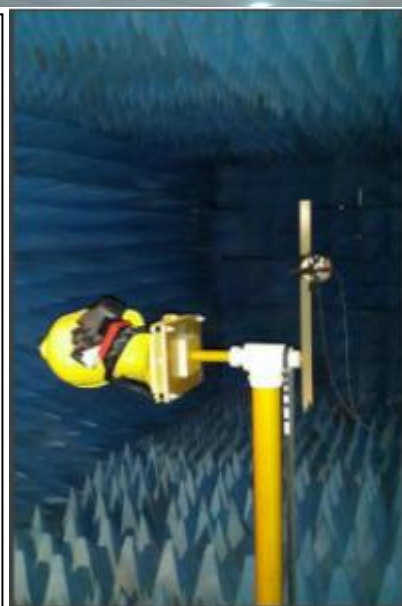
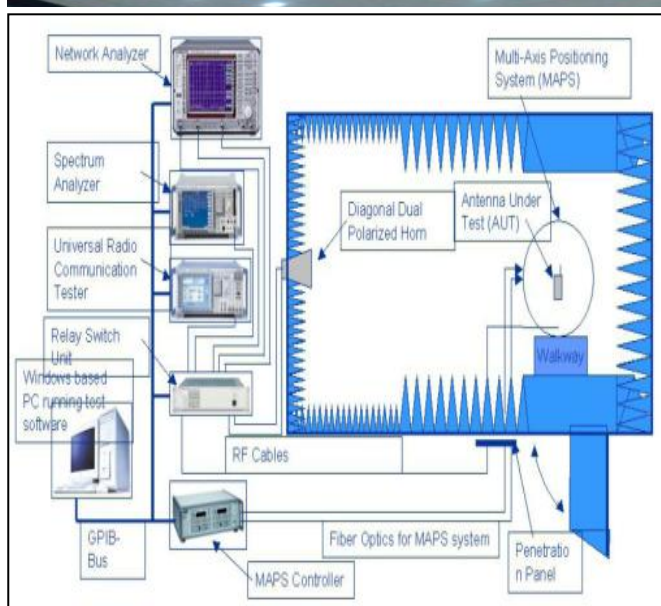
Conclusion

Project Overview



Main antenna design spectrum	5G global network
Type of antenna	PIFA
Deputy antenna design spectrum	WIFI/GPS/BT
Type of antenna	PIFA
Frequency diversity antenna	5G global network
Type of antenna	PIFA

Report version	Date	Content
V5.0	2023.12.29	Antenna test report

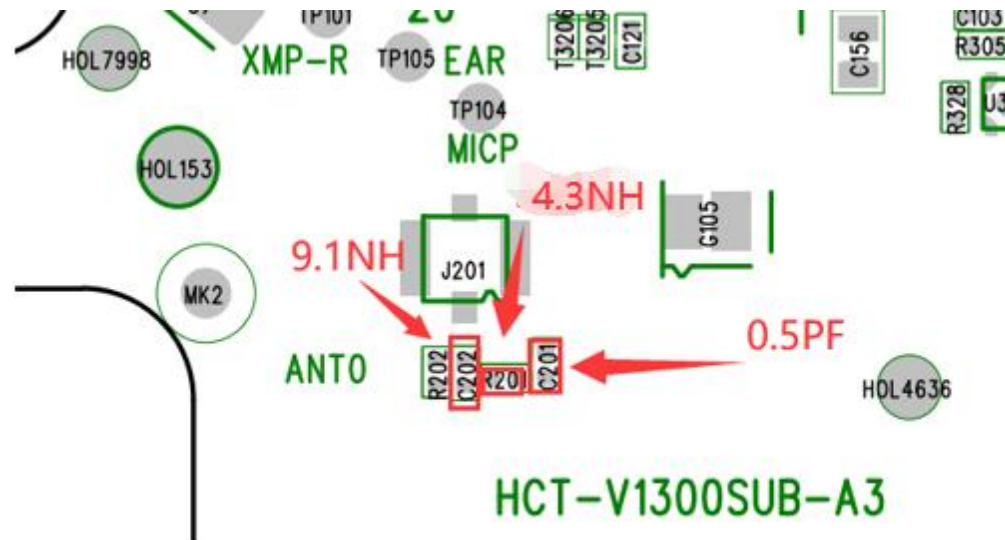
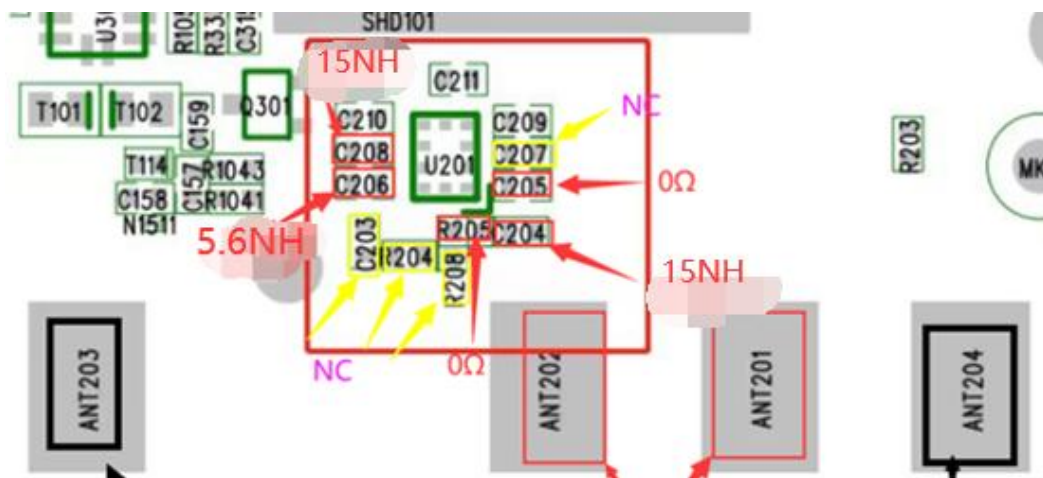
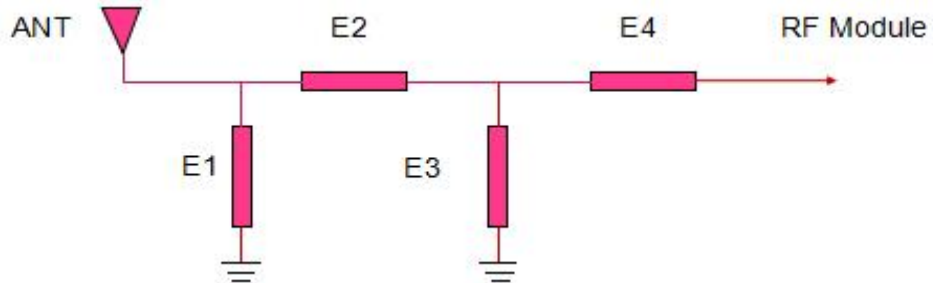


3座远场3D全电波微波暗室实验室系统，1座MVG SG24LT (Satmio) 近场3D微波暗室实验室系统（与国家相关实验室同步）

Matching Circuit

main antenna design

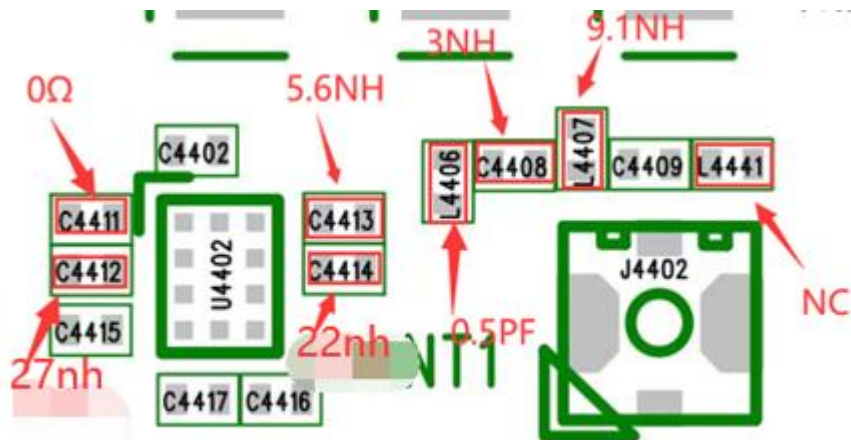
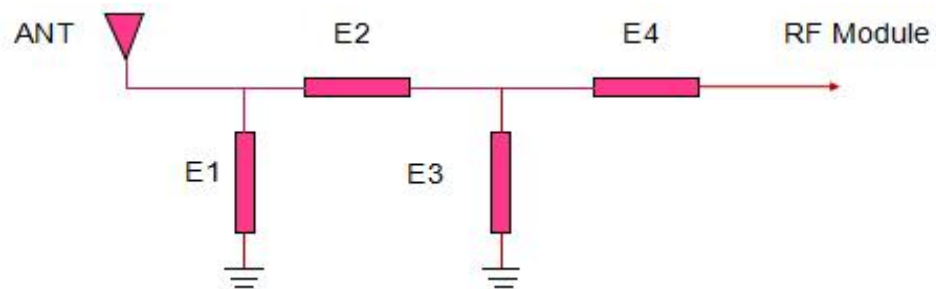
Element	Value
E1(0201):	0.5pF
E2(0201):	4.3nh
E3(0201):	9.1nh
E4(0201):	N/A



Matching Circuit

main antenna design

Element	Value
E1(0201):	0.5pF
E2(0201):	3nh
E3(0201):	9.1nh
E4(0201):	N/A





BAND	GSM900			DCS1800		
CHANNAL	1	62	124	512	699	885
TRP	25.4	26.2	26.2	23.2	23.4	23.5
TIS			-101.4			-103.3
BAND	GSM850			PCS1900		
CHANNAL	128	192	251	512	661	810
TRP	25.3	25.3	26.1	24.3	24.5	23.4
TIS			-102.2			-103.4



BAND	CDMA-BC0			CDMA-BC1		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	16.2	16.4	16.4	16.3	16.3	16.4
TIS			-102.4			-102.5
BAND	CDMA-BC10					
CHANNAL	Low	Medium	High			
TRP	16.3	16.4	16.4			
TIS			-102.5			



BAND	WCDMA-B1			WCDMA-B2		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	16.5	17.2	17.3	17.22	17.2	17.2
TIS			-105.3			-105.3
BAND	WCDMA-B4			WCDMA-B5		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	15.4	15.8	16.2	16.3	16.5	16.3
TIS			-104.3			-104.3



BAND	WCDMA-B6			WCDMA-B8		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	16.2	16.2	16.4	16.1	16.2	16.3
TIS			-104.3			-103.4
BAND	WCDMA-B19					
CHANNAL	Low	Medium	High			
TRP	15.5	16.2	16.3			
TIS			-102.5			



BAND	LTE-B1			LTE-B2		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	16.2	16.4	17.1	17.2	17.3	16.2
TIS			-93.3			-92.4
BAND	LTE-B3			LTE-B4		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	15.3	15.3	15.4	15.3	15.3	15.1
TIS			-92.2			-93.2



BAND	LTE-B5			LTE-B7		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	15.4	16.3	16.1	16.3	17.3	17.3
TIS			-91.1			-92.3
BAND	LTE-B8			LTE-B12		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	15.3	16.3	16.1	15.4	16.1	15.5
TIS			-90.4			-90.4



BAND	LTE-B13			LTE-B17		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	15.3	16.2	15.8	15.4	15.3	15.6
TIS			-90.5			-90.4
BAND	LTE-B18			LTE-B19		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	15.5	16.3	15.5	15.4	16.2	15.5
TIS			-90.5			-90.7



BAND	LTE-B20			LTE-B25		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	15.5	15.6	15.5	16.4	16.2	16.4
TIS			-90.3			-93.5
BAND	LTE-B26			LTE-B66		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	15.5	15.7	15.4	15.1	15.4	16.4
TIS			-91.4			-91.2



BAND	LTE-B34			LTE-B38		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	15.4	15.2	14.8	17.3	17.5	17.5
TIS			-93.1			-90.6
BAND	LTE-B39			LTE-B40		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	17.3	17.5	16.3	17.2	17.5	17.4
TIS			-91.3			-91.3



BAND	LTE-B41			LTE-B28		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	17.2	17.2	17.3	15.3	15.2	15.1
TIS			-91.3			-90.4
BAND	LTE-B30					
CHANNAL	Low	Medium	High			
TRP	16.7	16.5	16.4			
TIS			-91.3			



BAND	NR-N5			NR-N8		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	15.3	16.2	16.1	16.5	16.6	16.1
TIS			-89.4			-89.5
BAND	NR-N20			NR-N28		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	15.4	16.2	16.3	15.5	15.7	15.5
TIS			-89.4			-89.4



BAND	NR-N1			NR-N3		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	16.5	16.3	16.5	16.2	16.4	16.4
TIS			-90.4			-90.3
BAND	NR-N38			NR-N7		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	16.2	16.3	16.4	16.5	16.5	16.2
TIS			-89.3			-89.5



BAND	NR-N40			NR-N41		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	16.4	16.3	16.5	17.2	17.5	17.2
TIS			-88.5			-85.4



BAND	NR-N77			NR-N78		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	20.2	20.2	19.7	20.1	20.3	19.8
TIS			-86.5			-87.7
BAND	NR-N79					
CHANNAL	Low	Medium	High			
TRP	20.1	19.5	18.8			
TIS			-86.7			



BAND	WiFi-B			WiFi-G		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	11.2	12.1	11.5	11.5	11.6	11.5
TIS			-82.1			-71.3
BAND	WiFi-N			WiFi-A		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	11.4	11.3	10.5	12.2	10.7	11.4
TIS			-66.5			-71.4



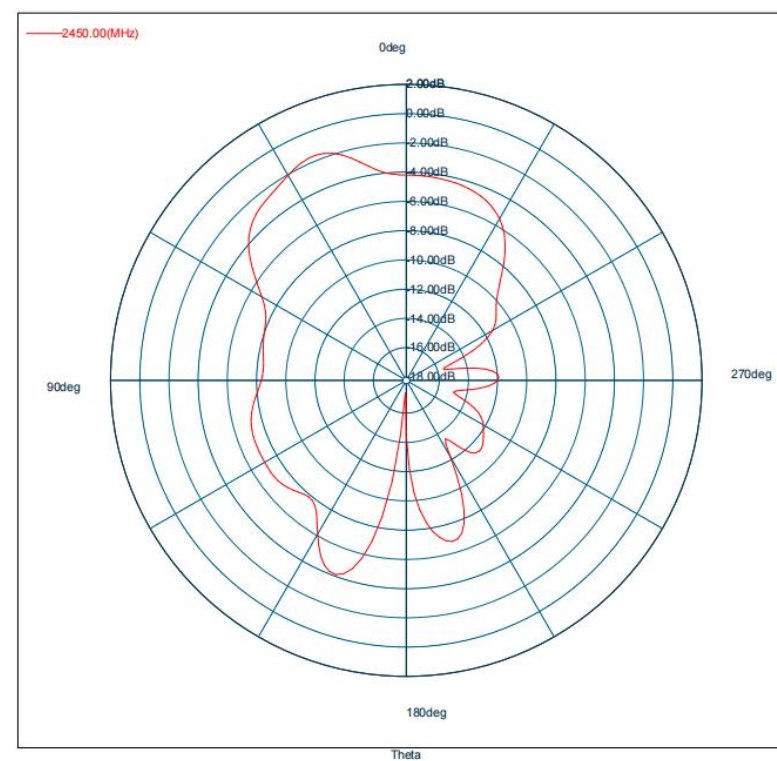
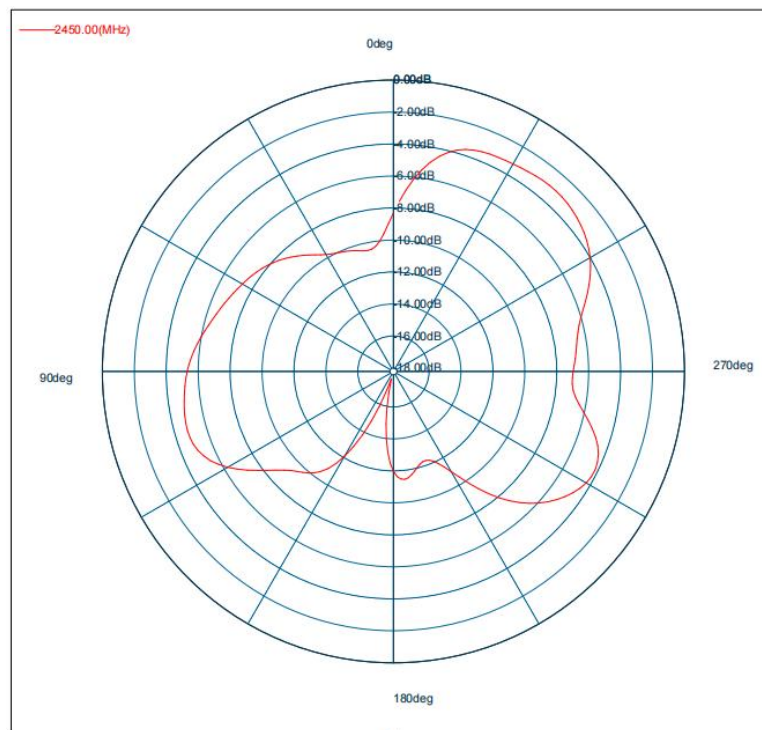
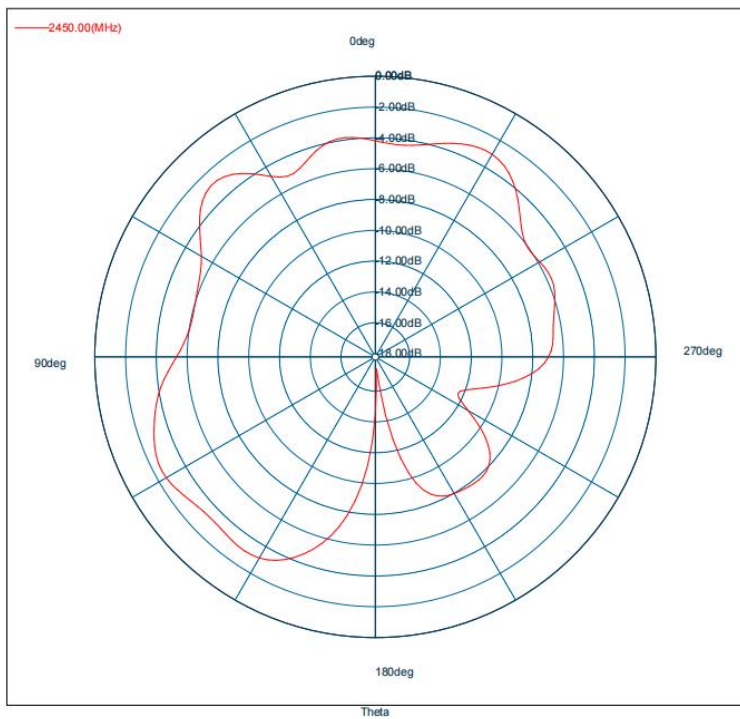
BAND	WiFi-AC			WiFi-AX		
CHANNAL	Low	Medium	High	Low	Medium	High
TRP	11.5	10.5	10.5	11.2	10.5	10.5
TIS			-65.6			-64.6



标准	BAND	WiFi-AC			WiFi-AX		
		Low	Medium	High	Low	Medium	High
SA	CHANNAL	Low	Medium	High	Low	Medium	High
	TRP	11.4	10.2	10.4	11.2	10.2	10.3
	TIS			-65.4			-64.7

2.4G Passive pattern

Gain: -1.2 dbi

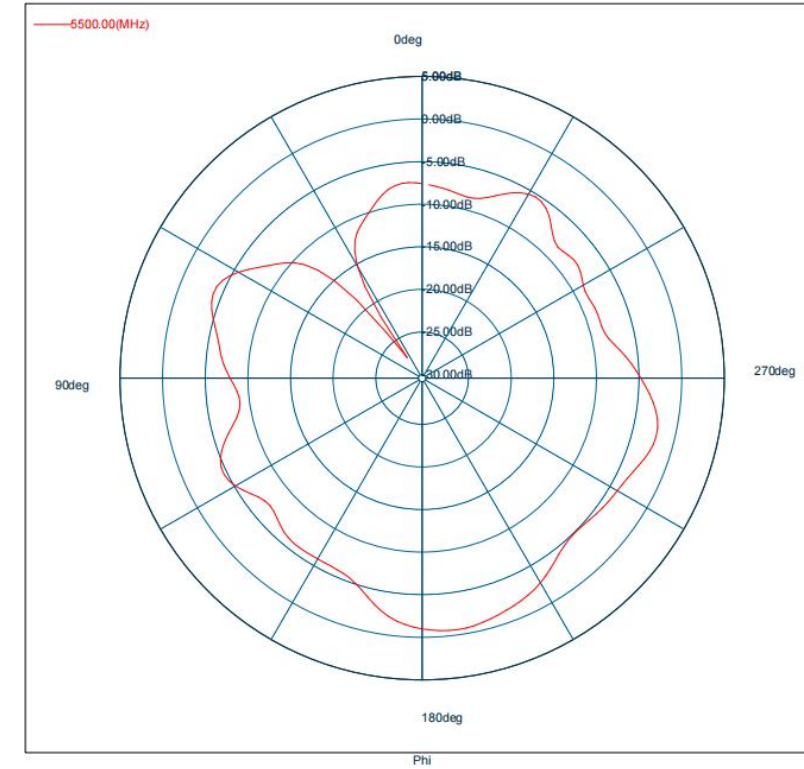
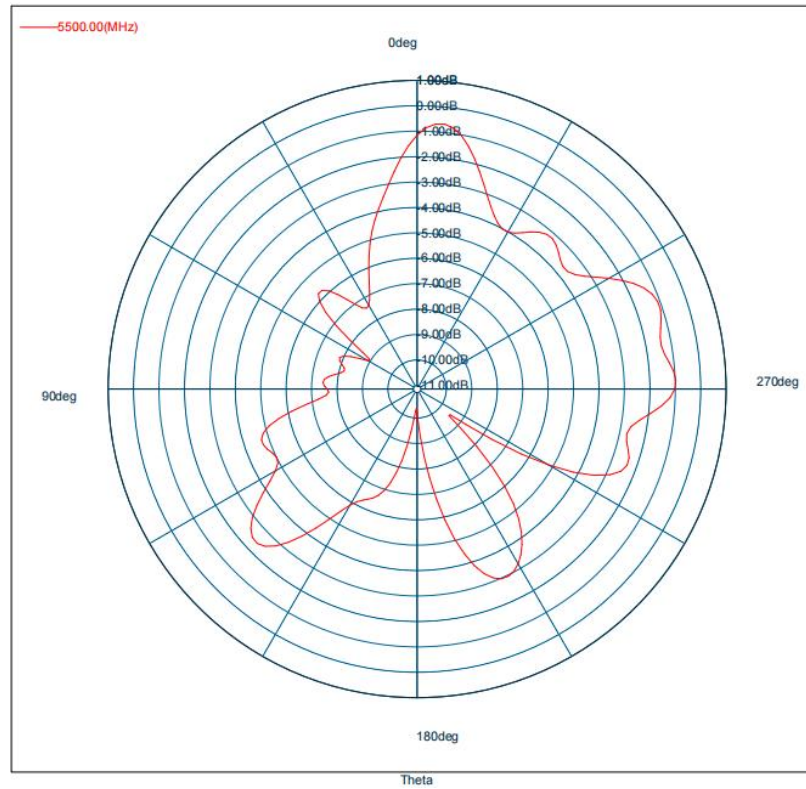
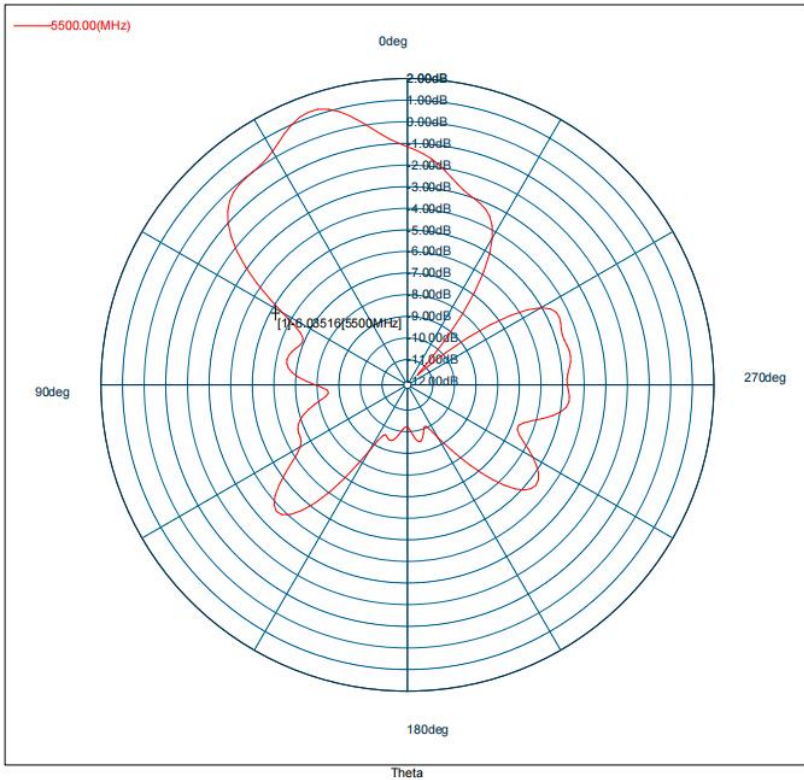


Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)



5.5G Passive pattern

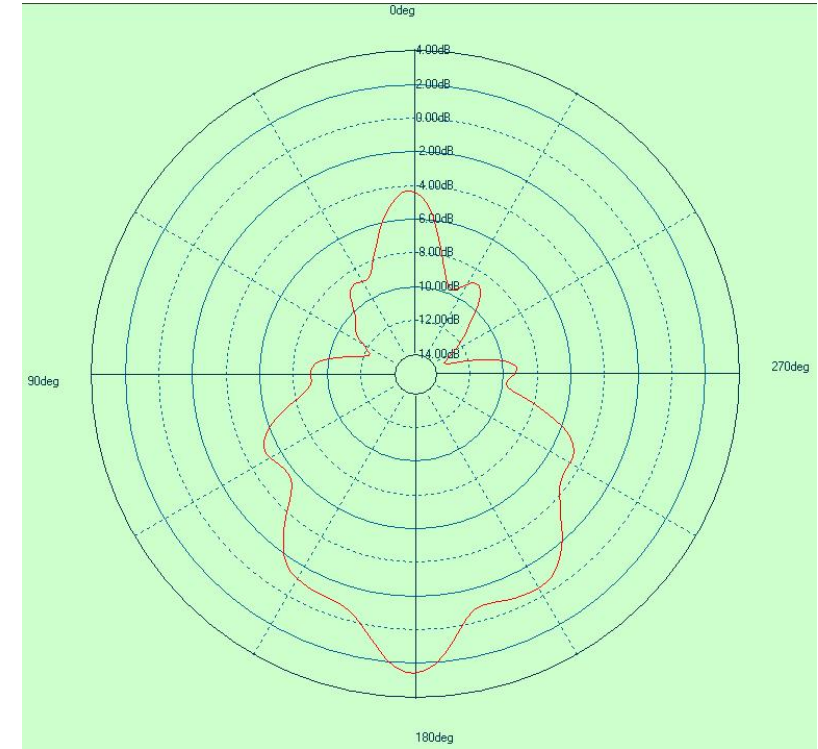
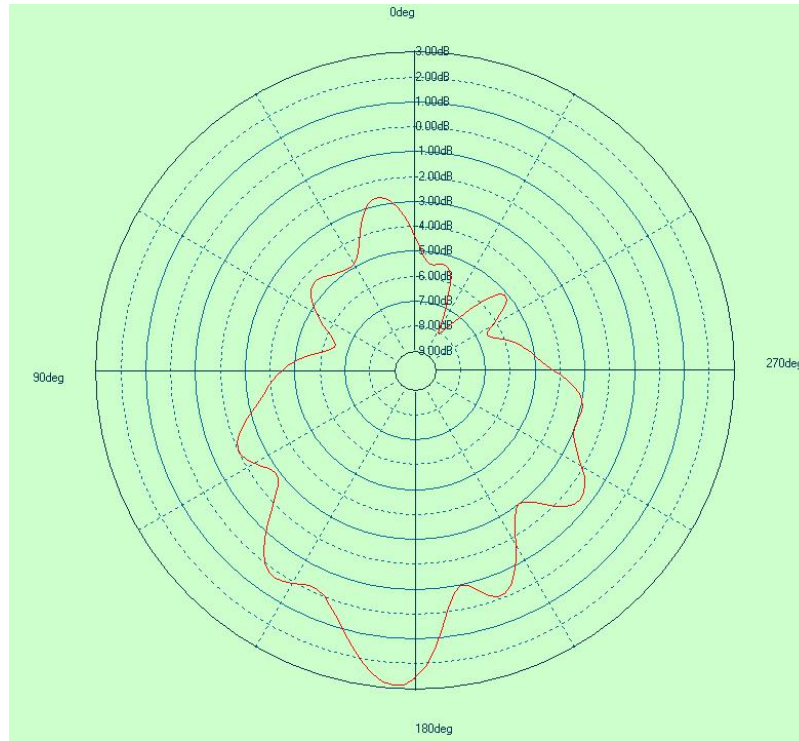
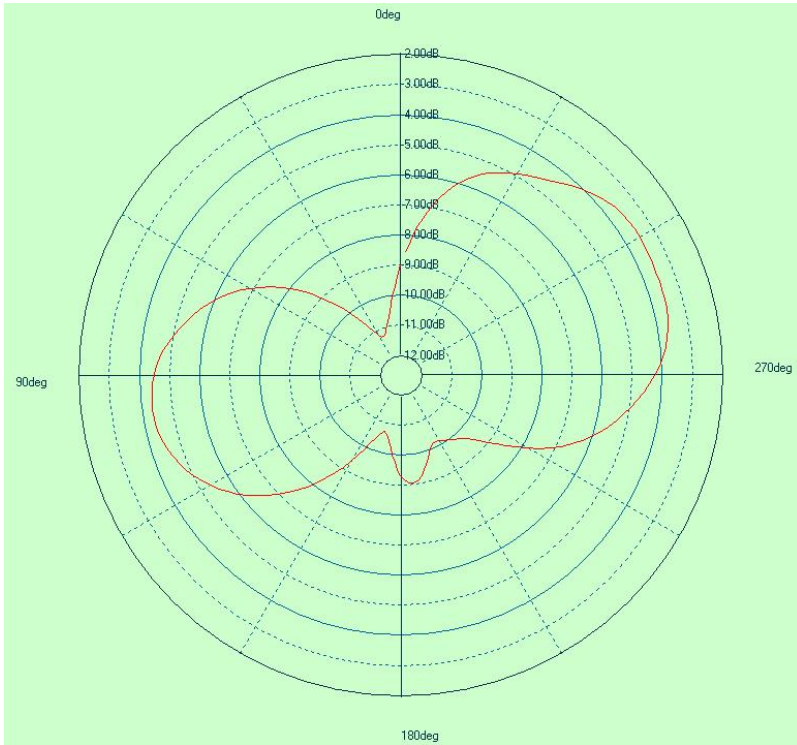
Gain: 0.6 dBi



Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

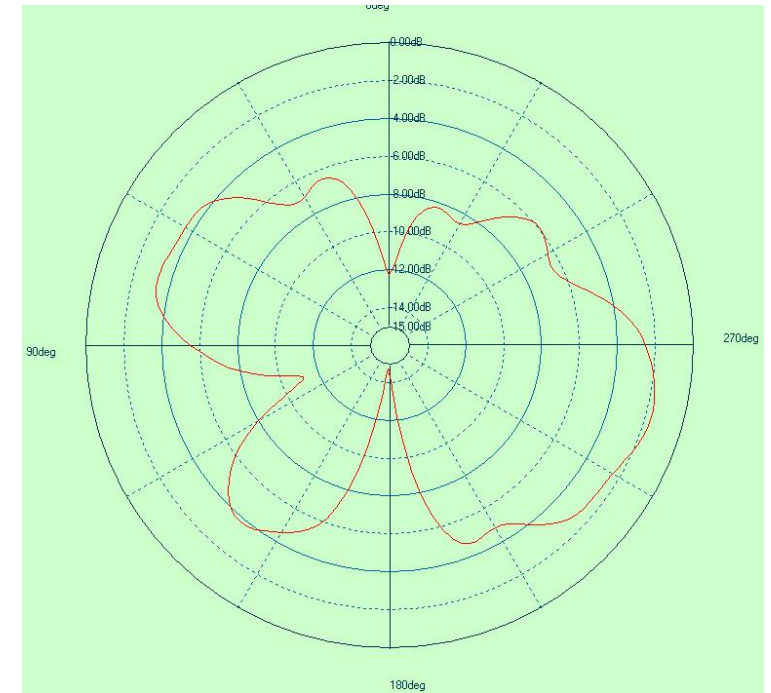
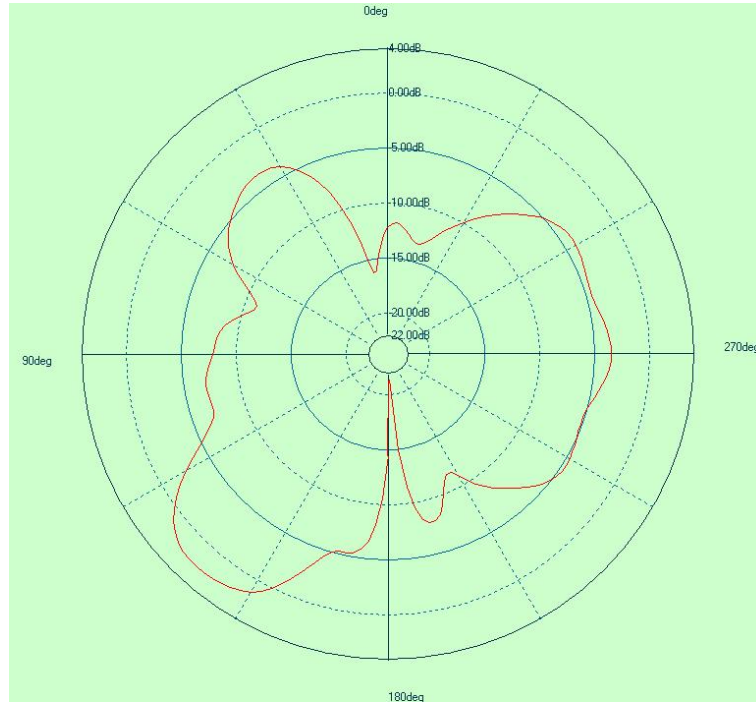
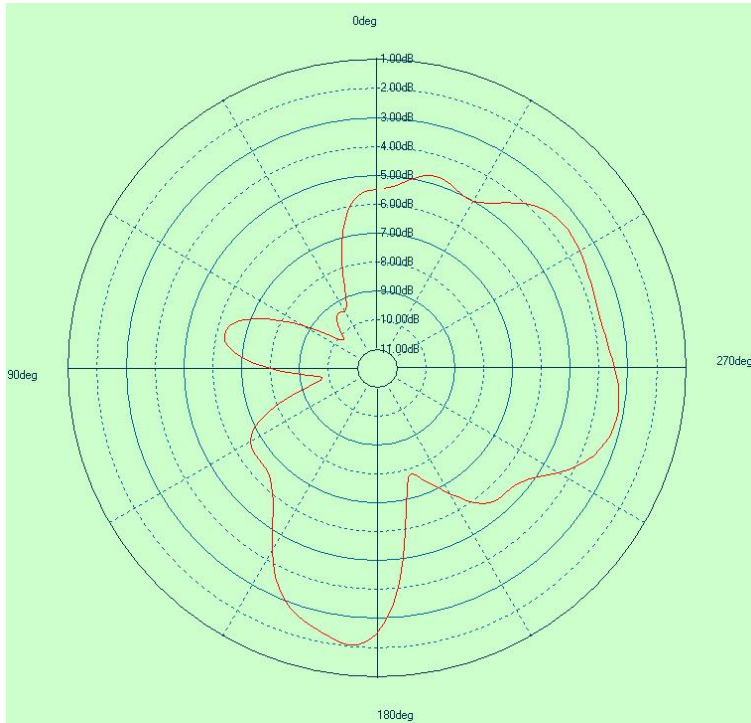
1175Mhz Passive pattern

Gain: -1.3 dbi



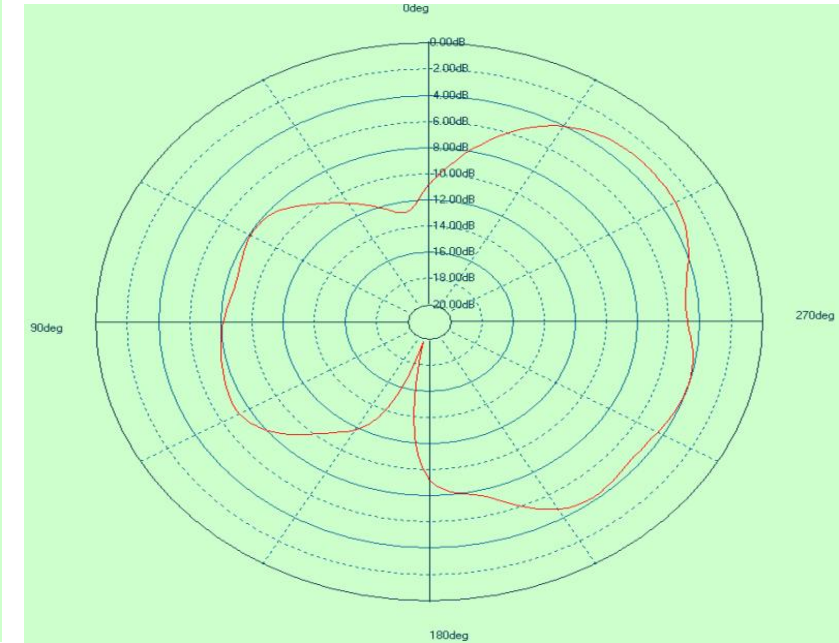
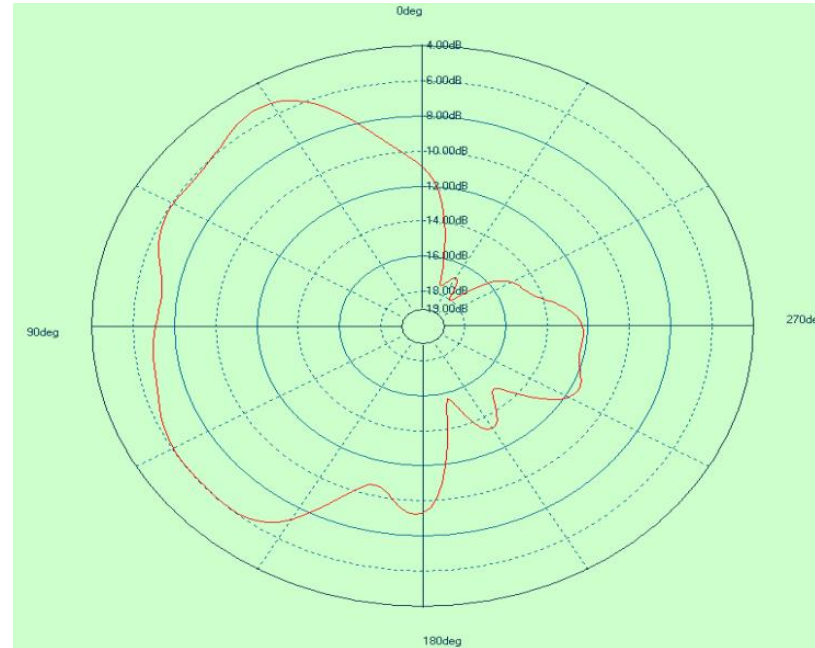
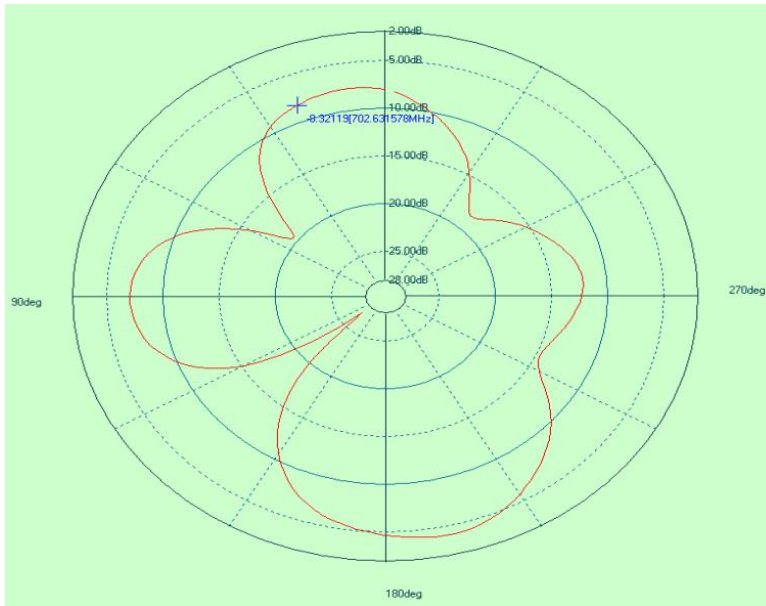
Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

1575Mhz Passive pattern Gain: 1.8 dbi



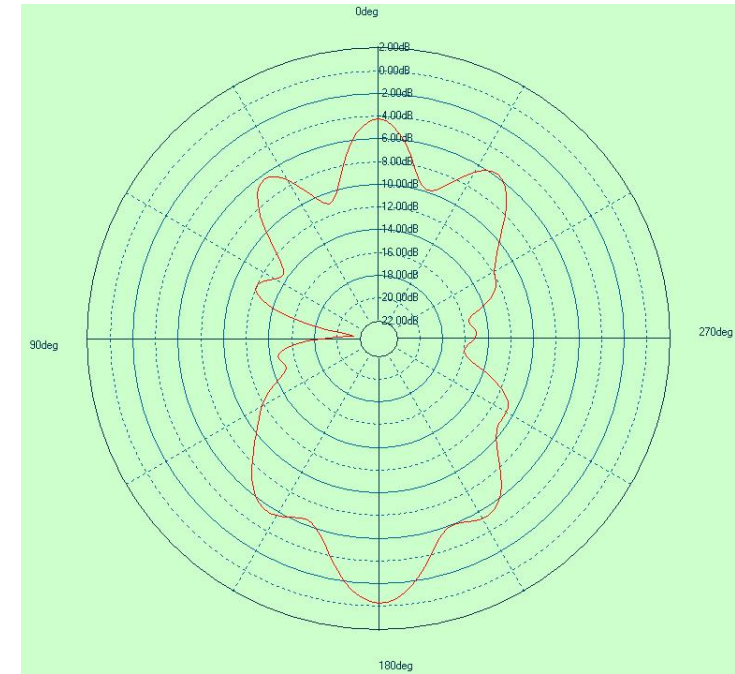
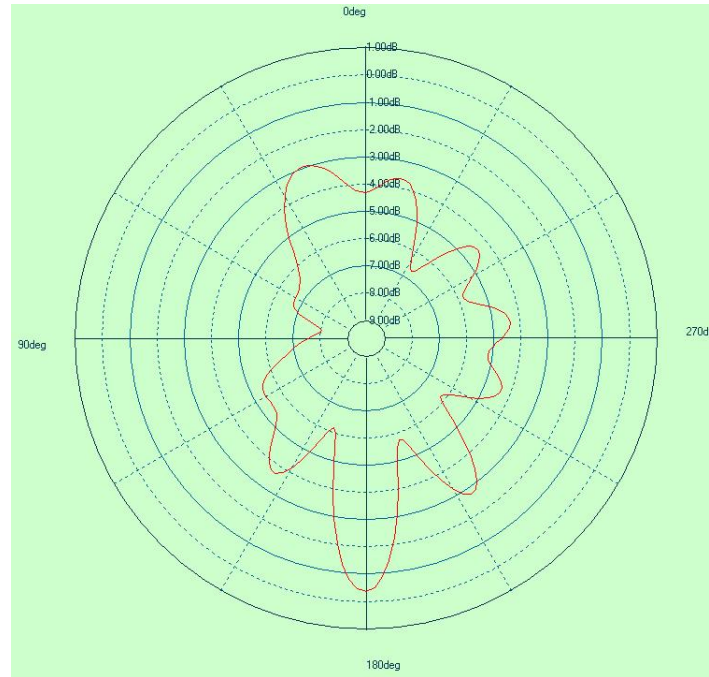
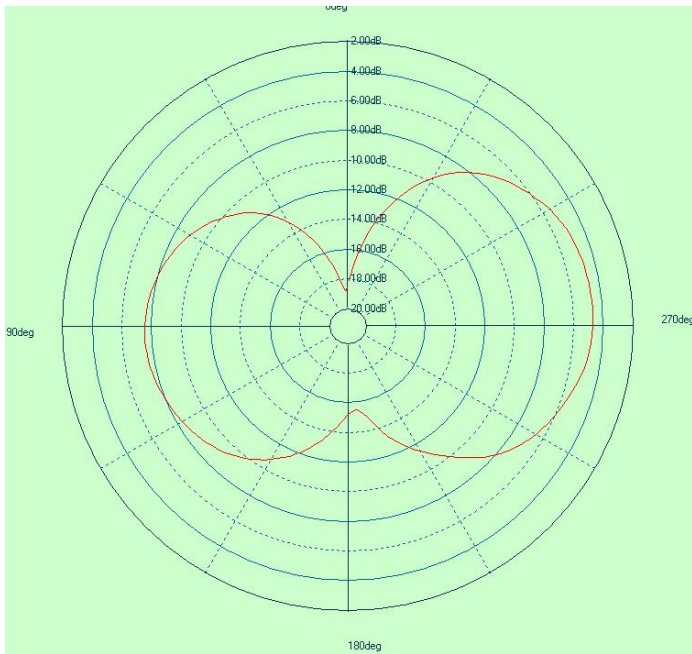
Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

702Mhz Passive pattern Gain: -1.8 dbi



Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

800Mhz Passive pattern Gain: -1.3 dbi

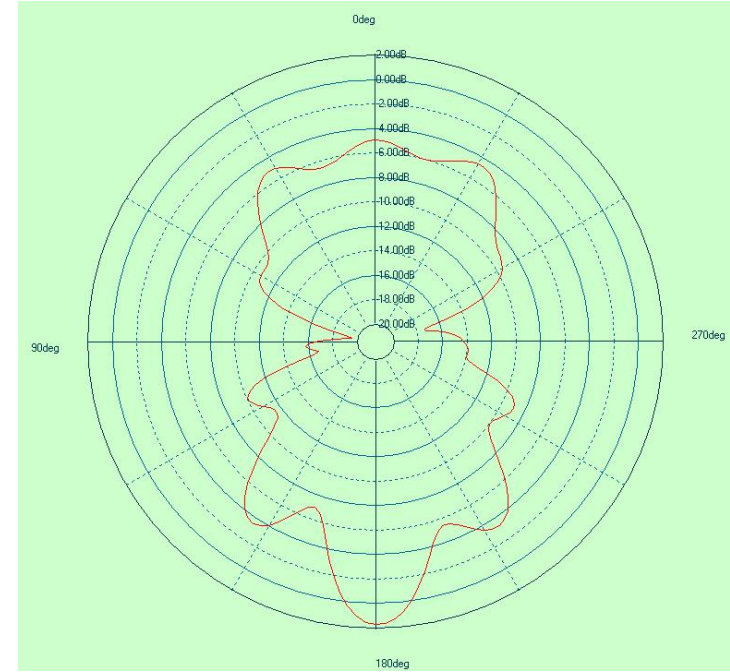
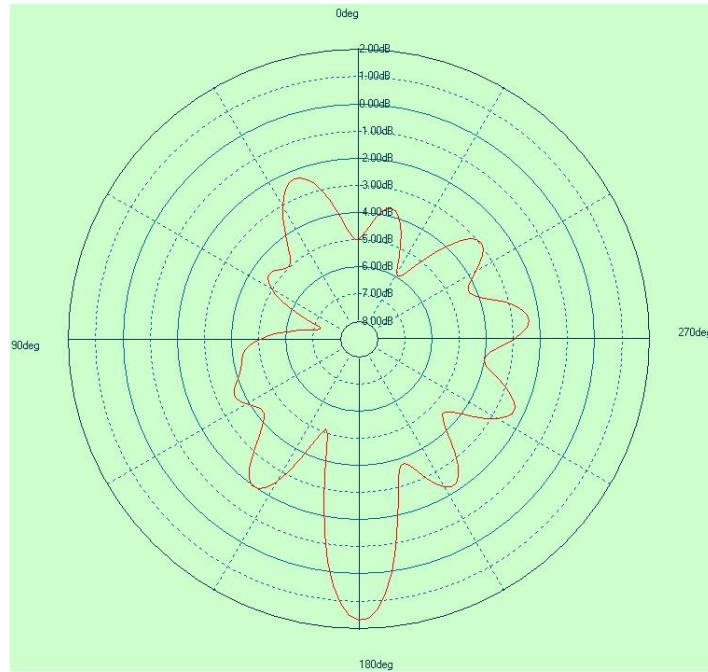
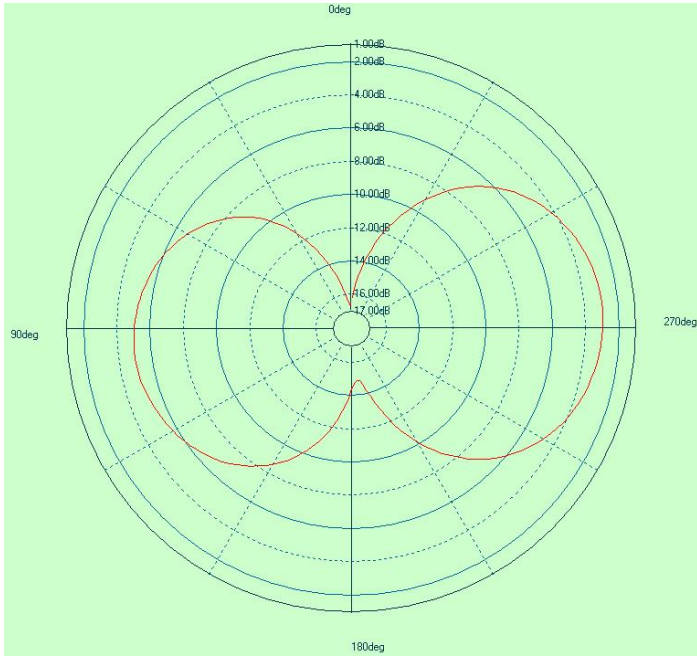


Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)



850Mhz Passive pattern

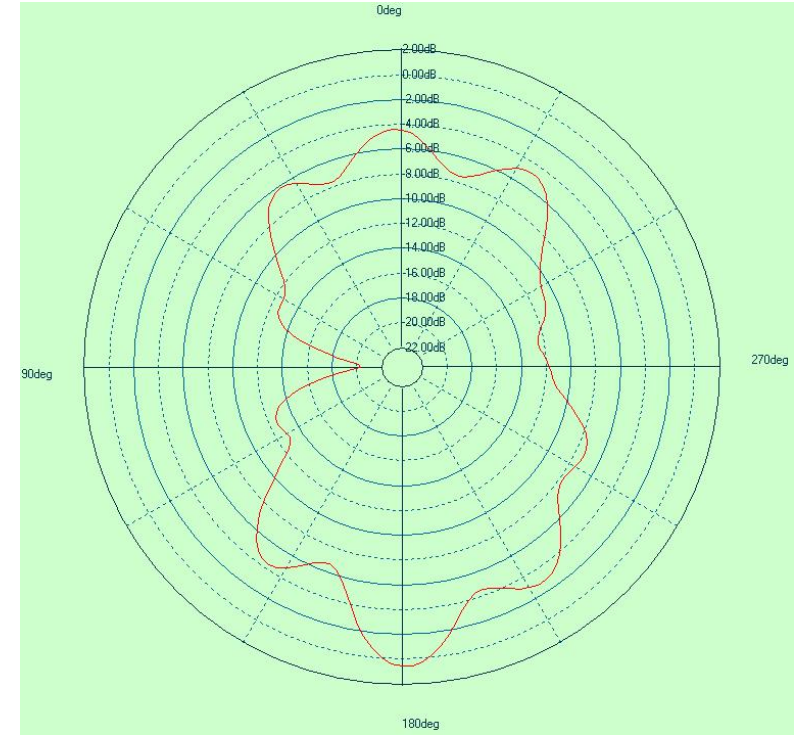
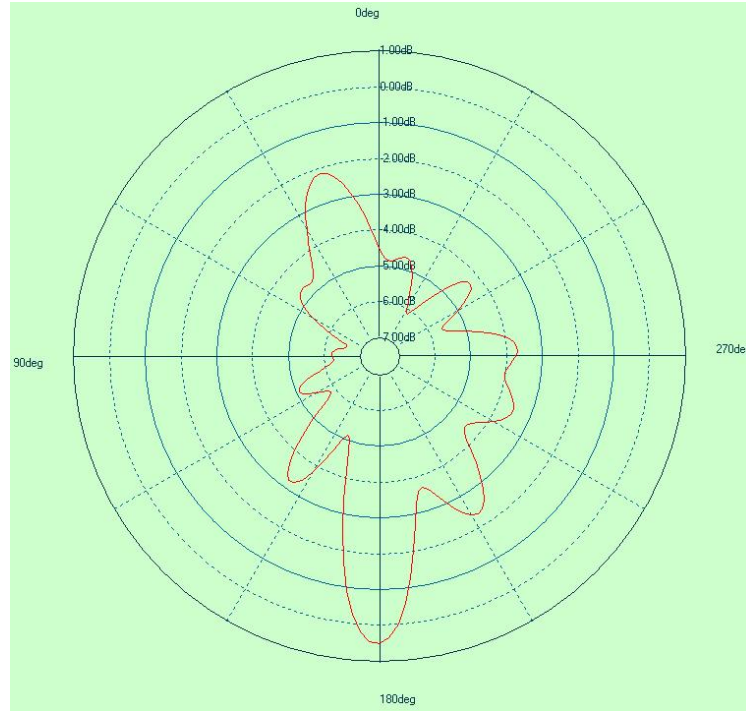
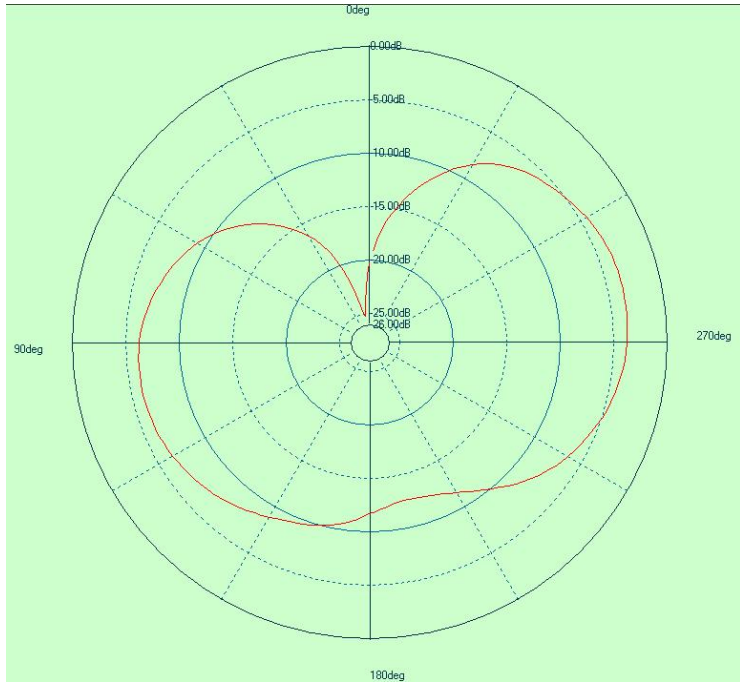
Gain: -0.2 dbi



Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

880Mhz Passive pattern

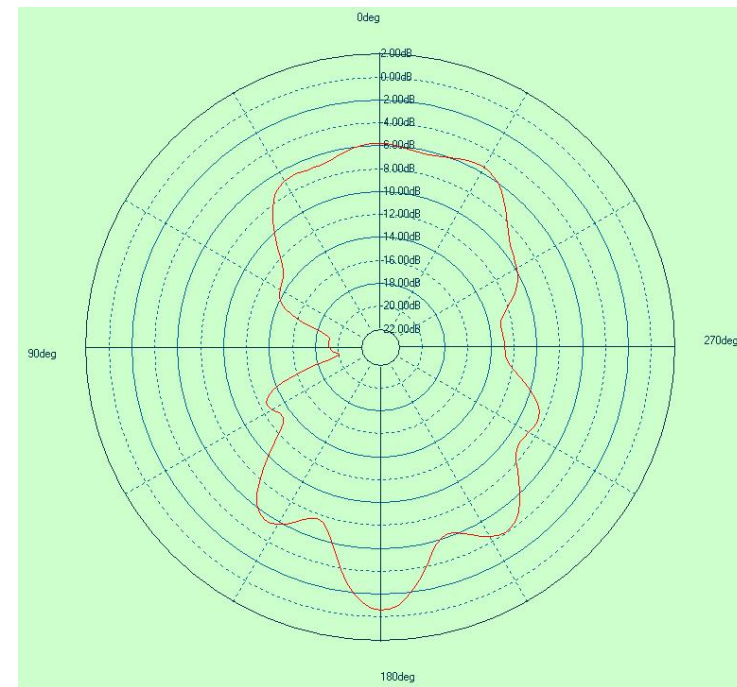
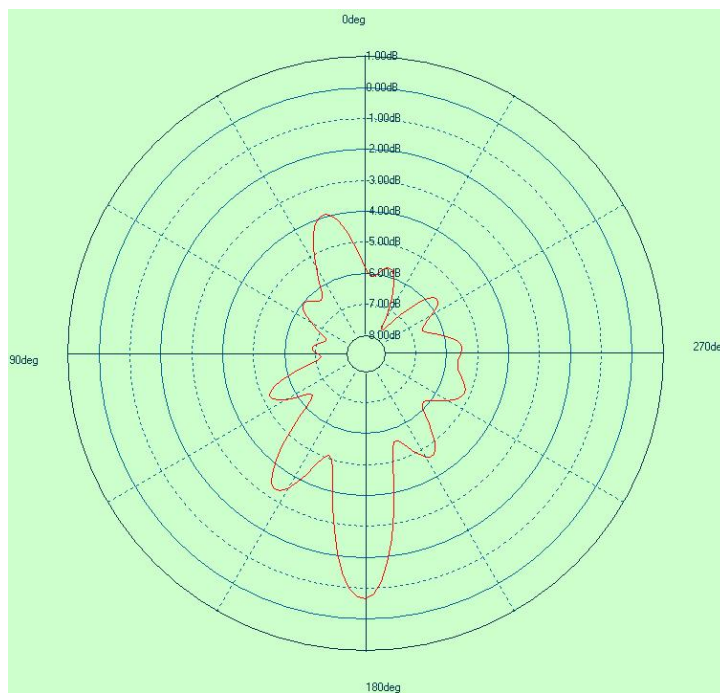
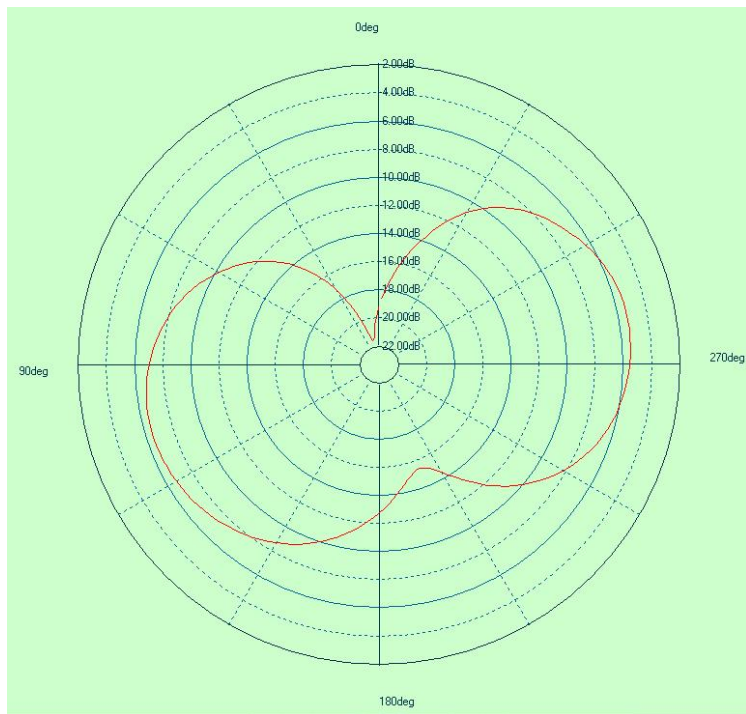
Gain: 0.2 dbi



Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

960Mhz Passive pattern

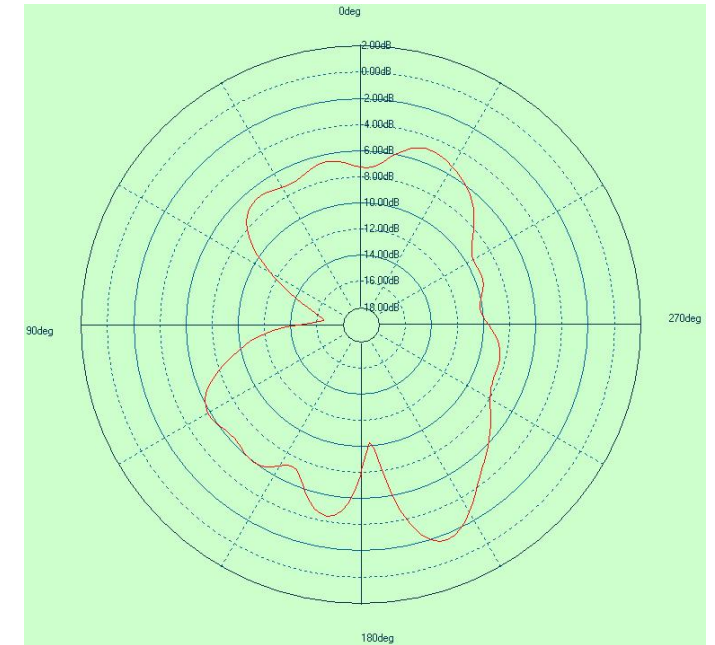
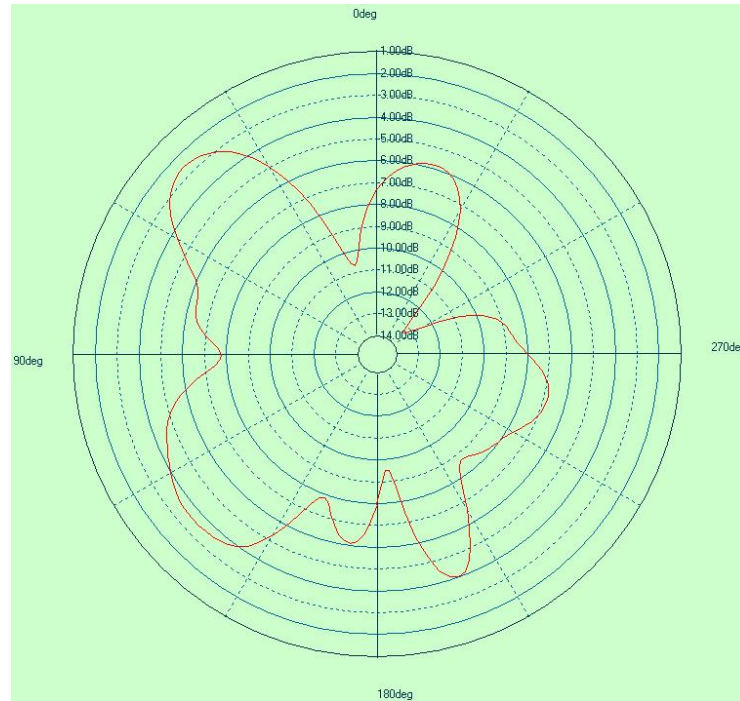
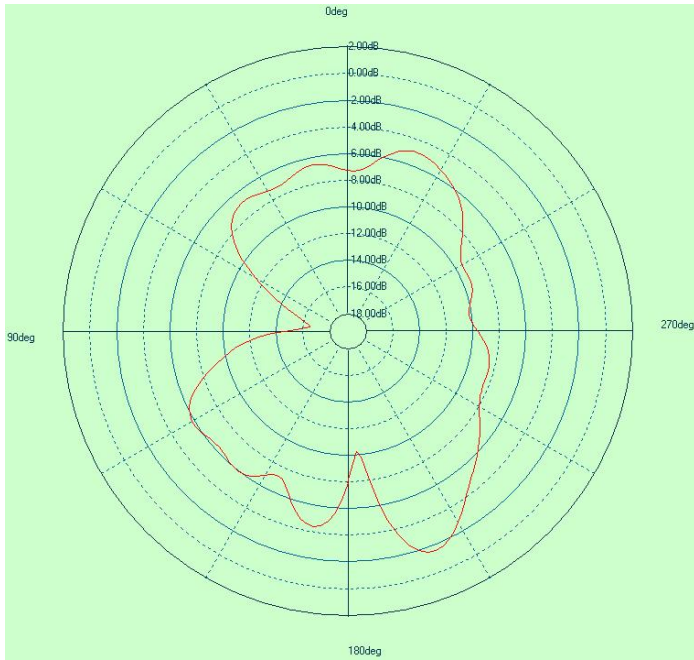
Gain: 0.6 dbi



Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

1800Mhz Passive pattern

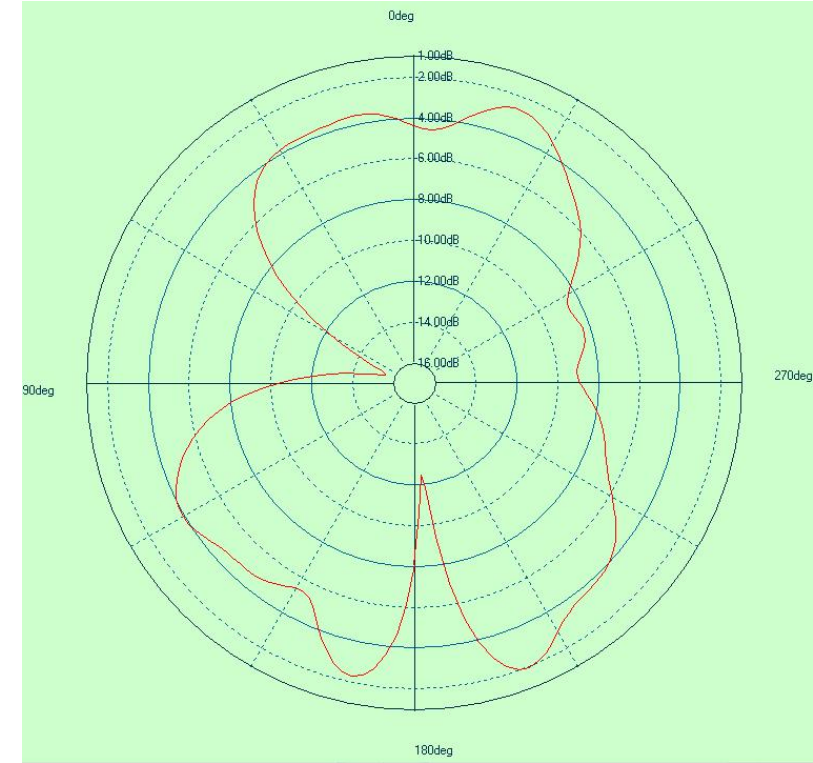
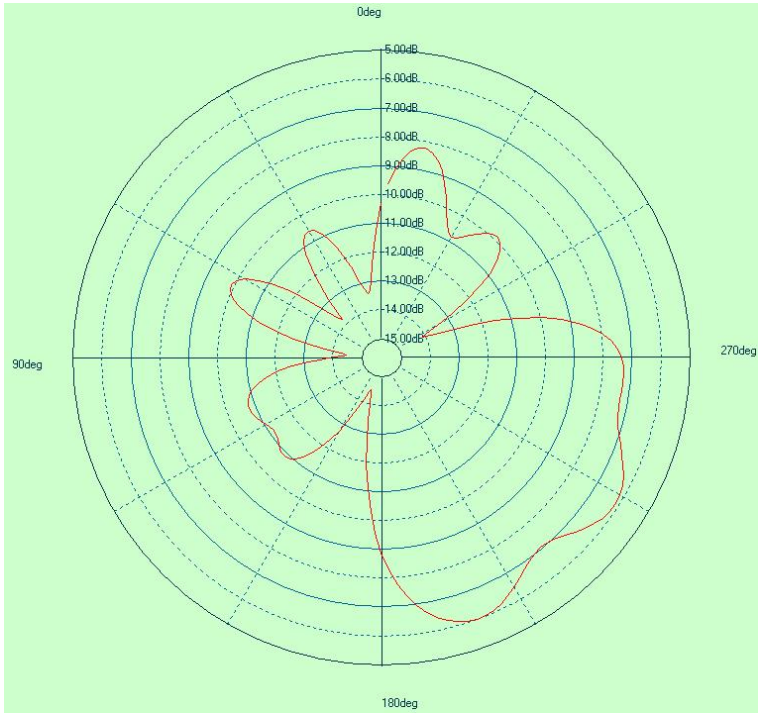
Gain: -0.8 dbi



Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

1900Mhz Passive pattern

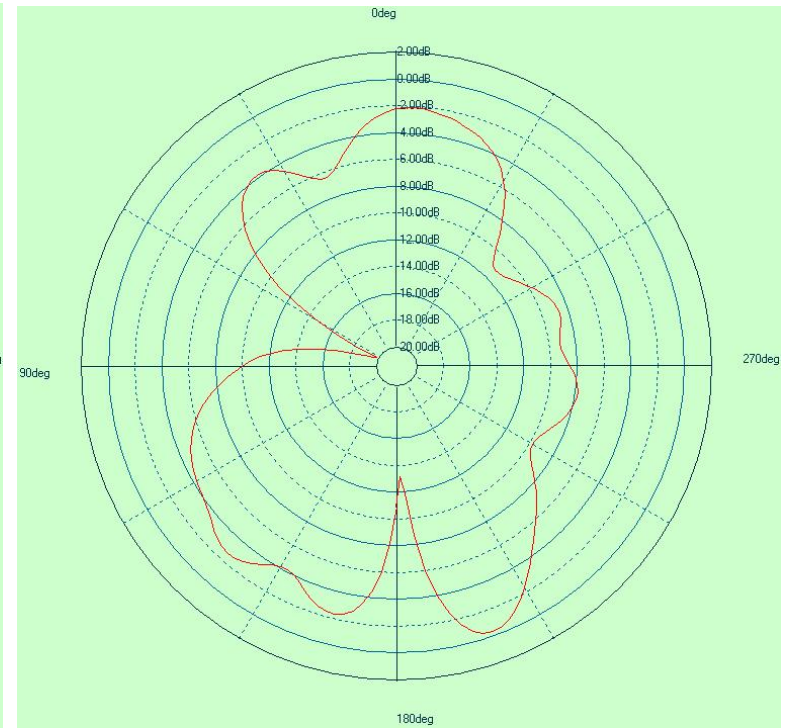
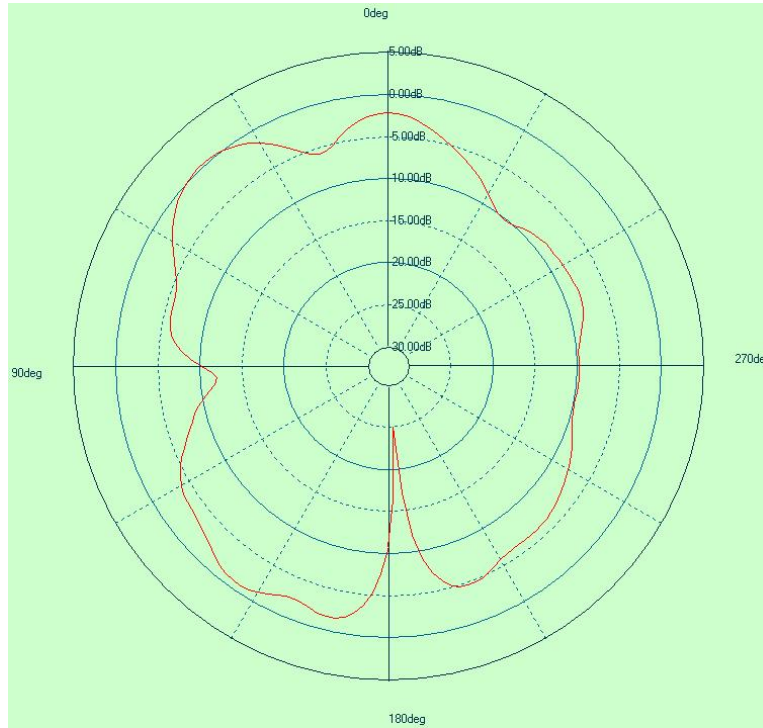
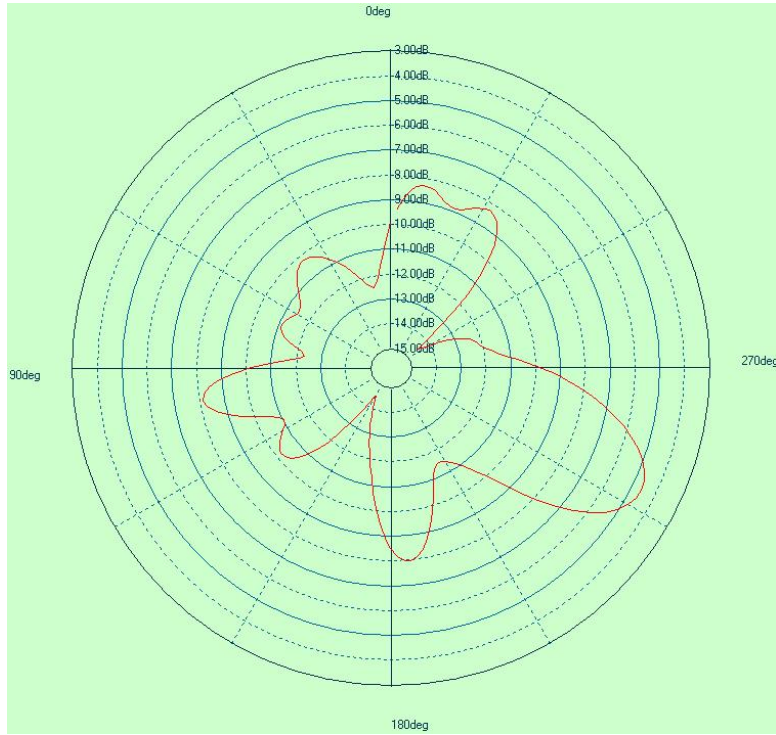
Gain: -0.7 dbi



Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)



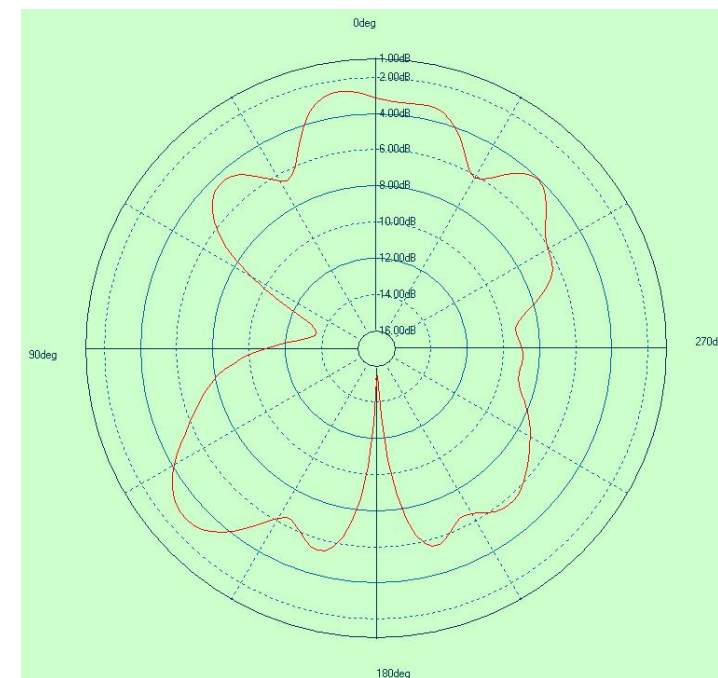
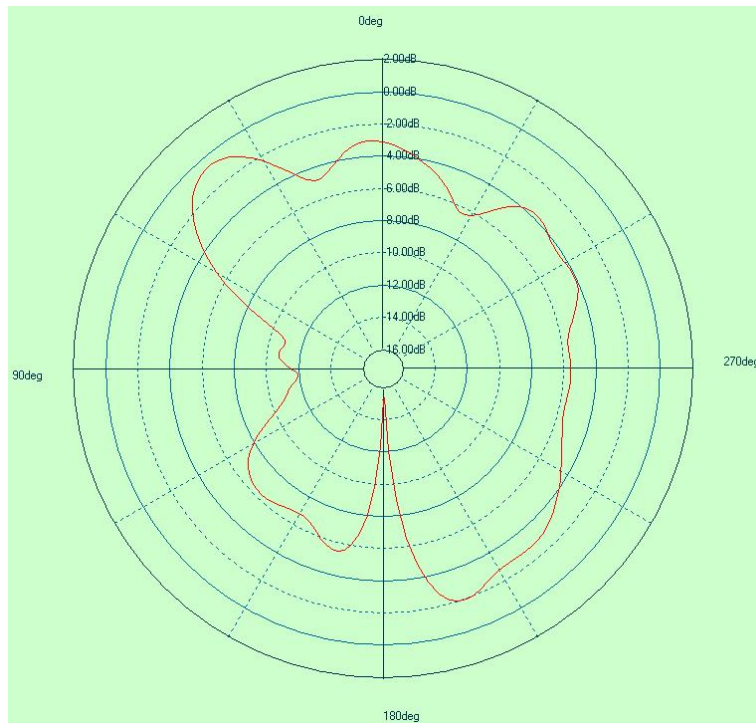
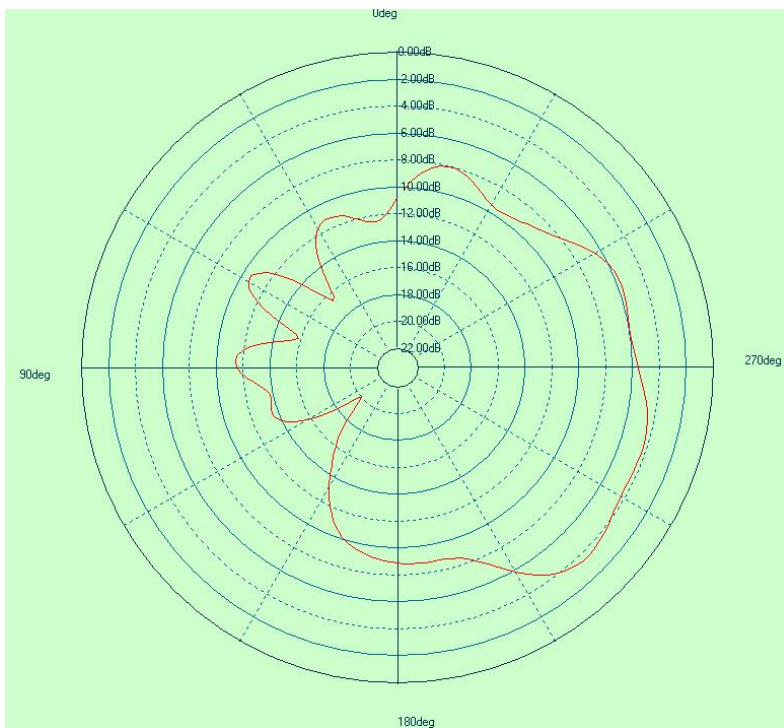
2100Mhz Passive pattern Gain: 0.7 dbi



Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

2300Mhz Passive pattern

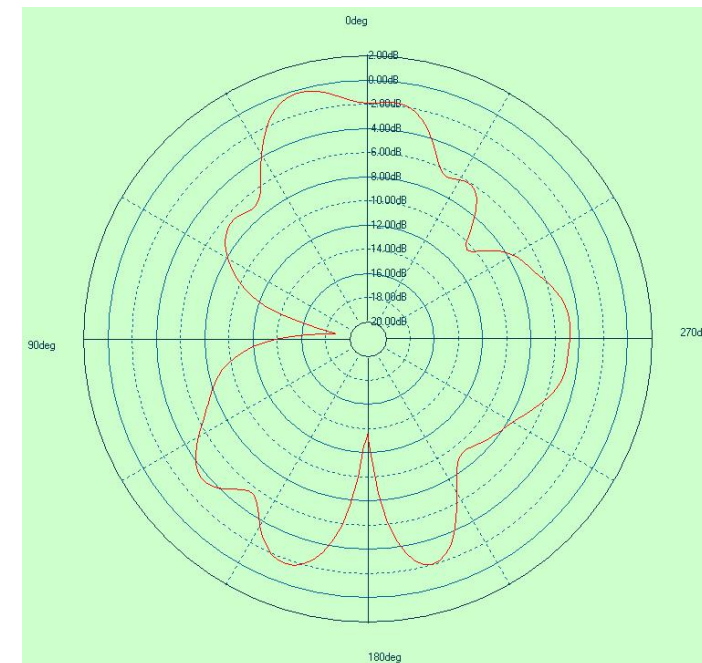
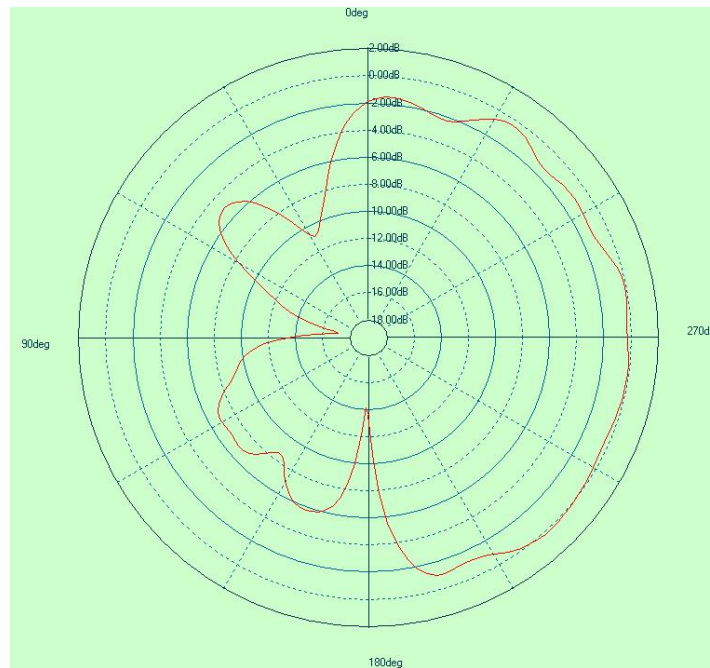
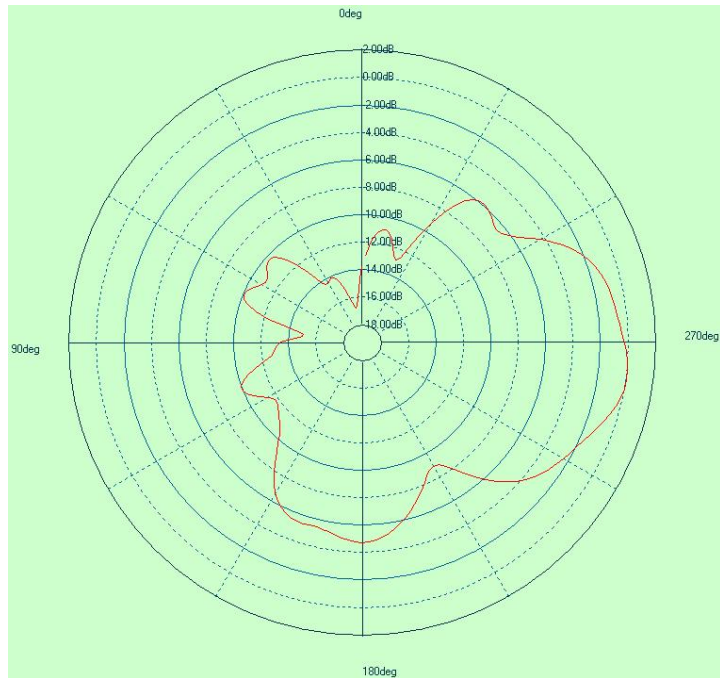
Gain: 0.4 dbi



Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

2650Mhz Passive pattern

Gain: 1 dbi

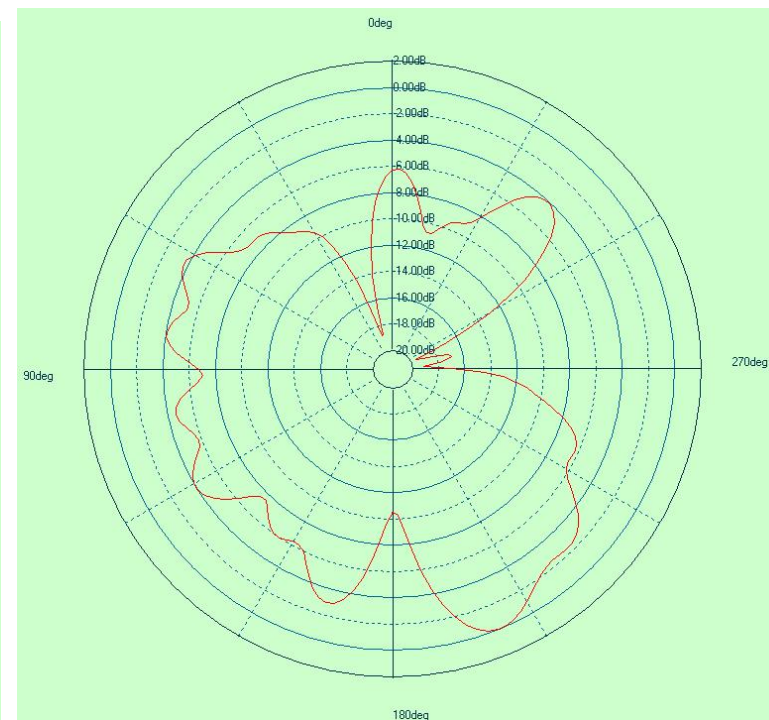
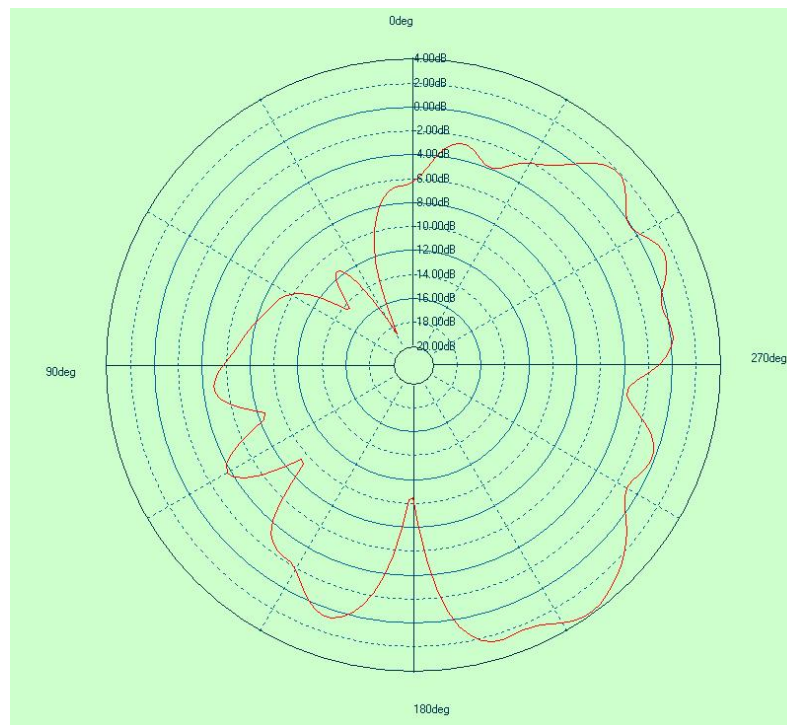
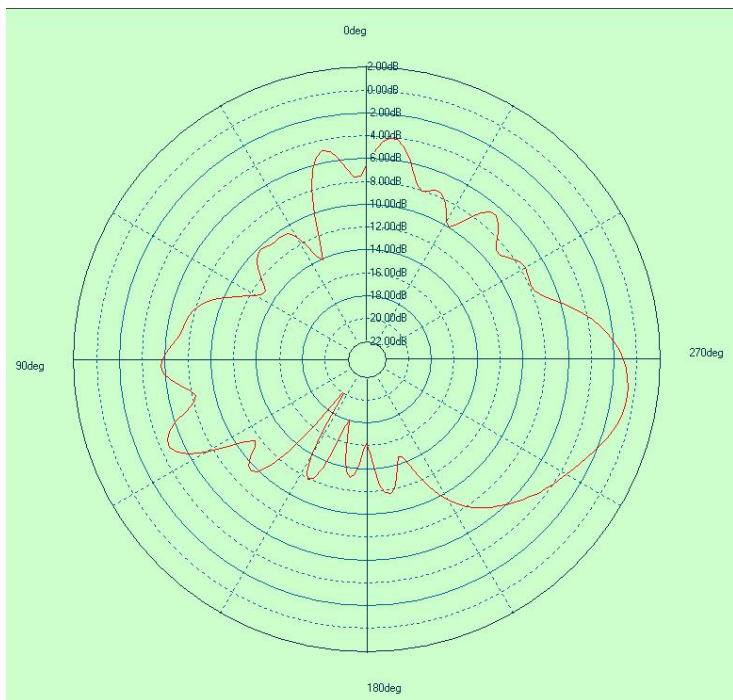


Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)



3300Mhz Passive pattern

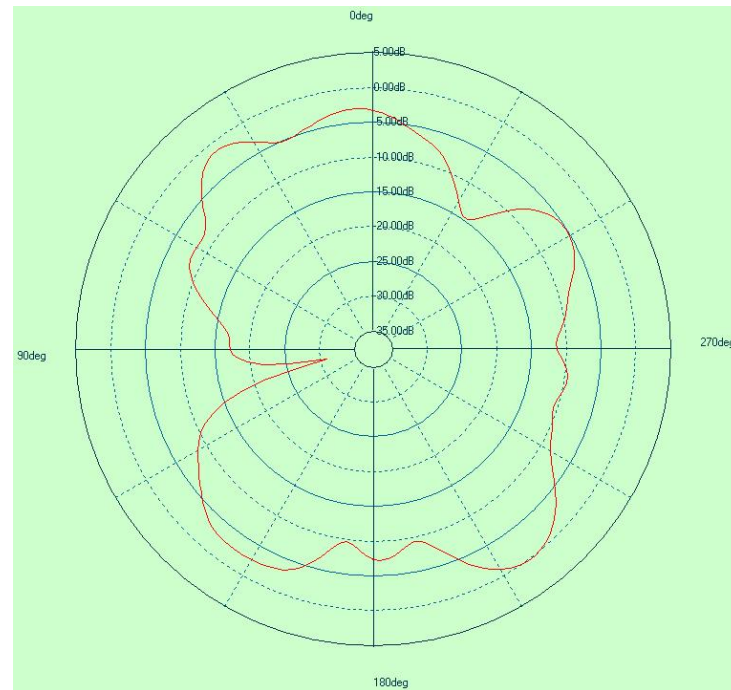
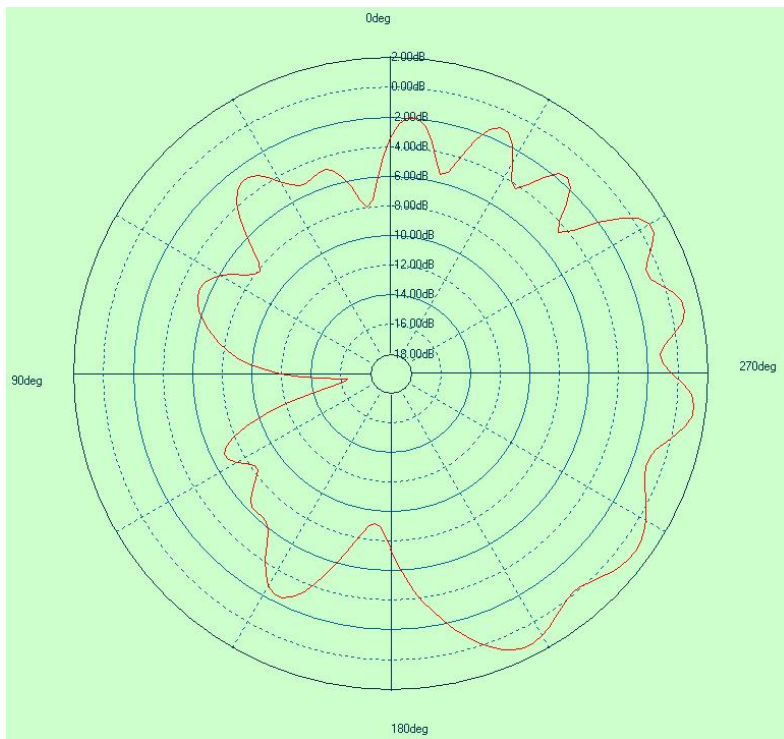
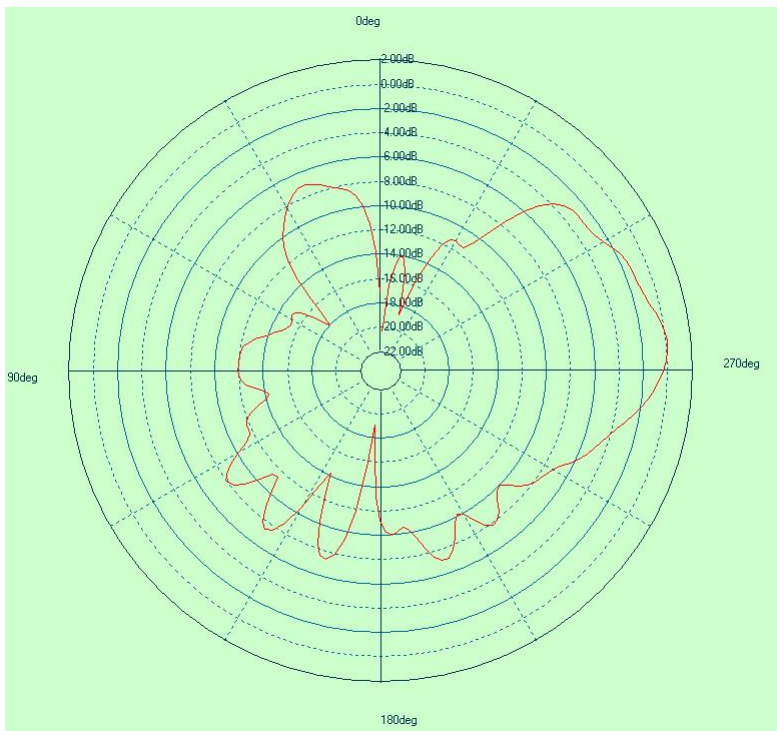
Gain: 0.2 dbi



Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

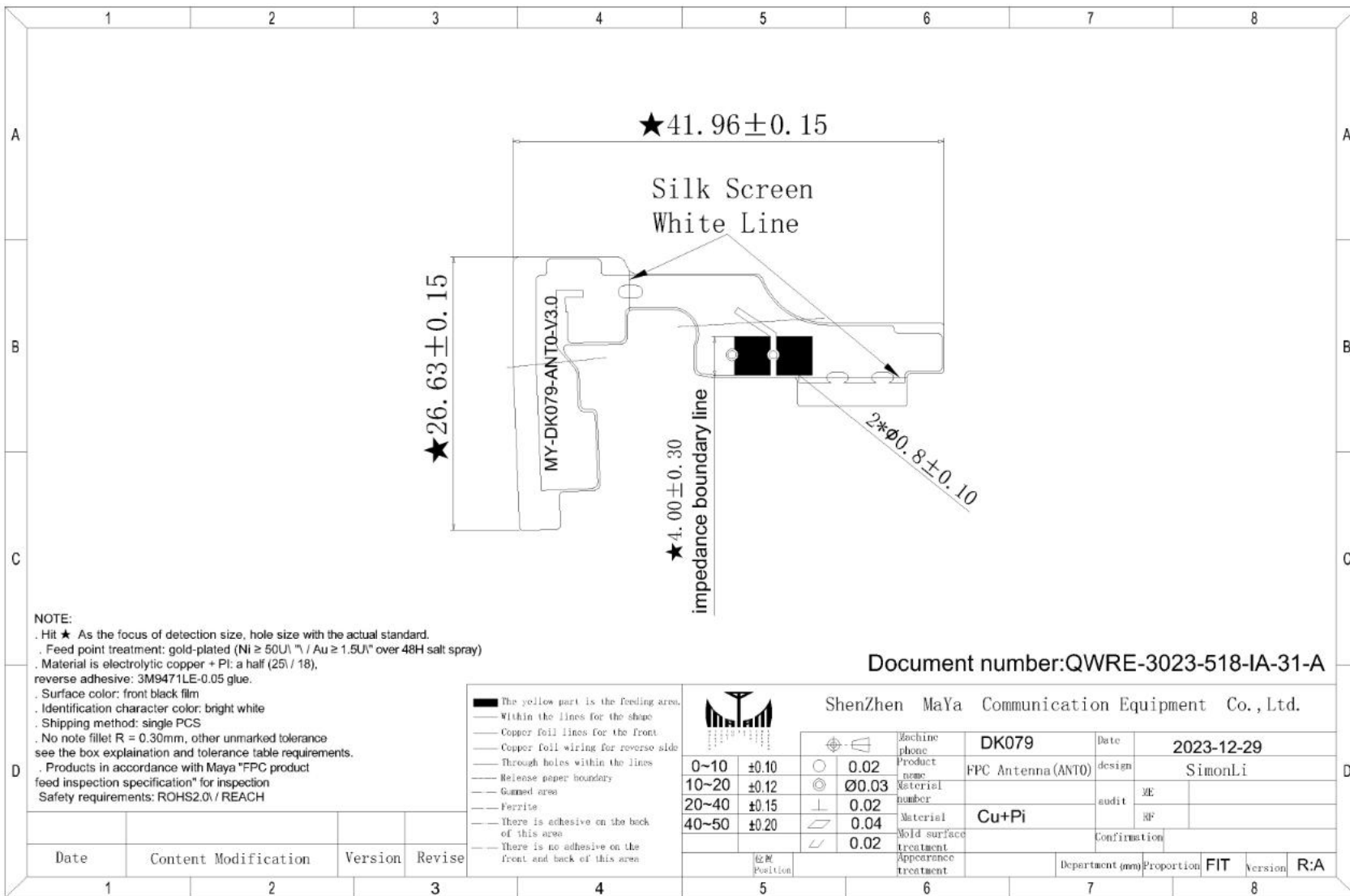
4800Mhz Passive pattern

Gain: 0.3 dbi

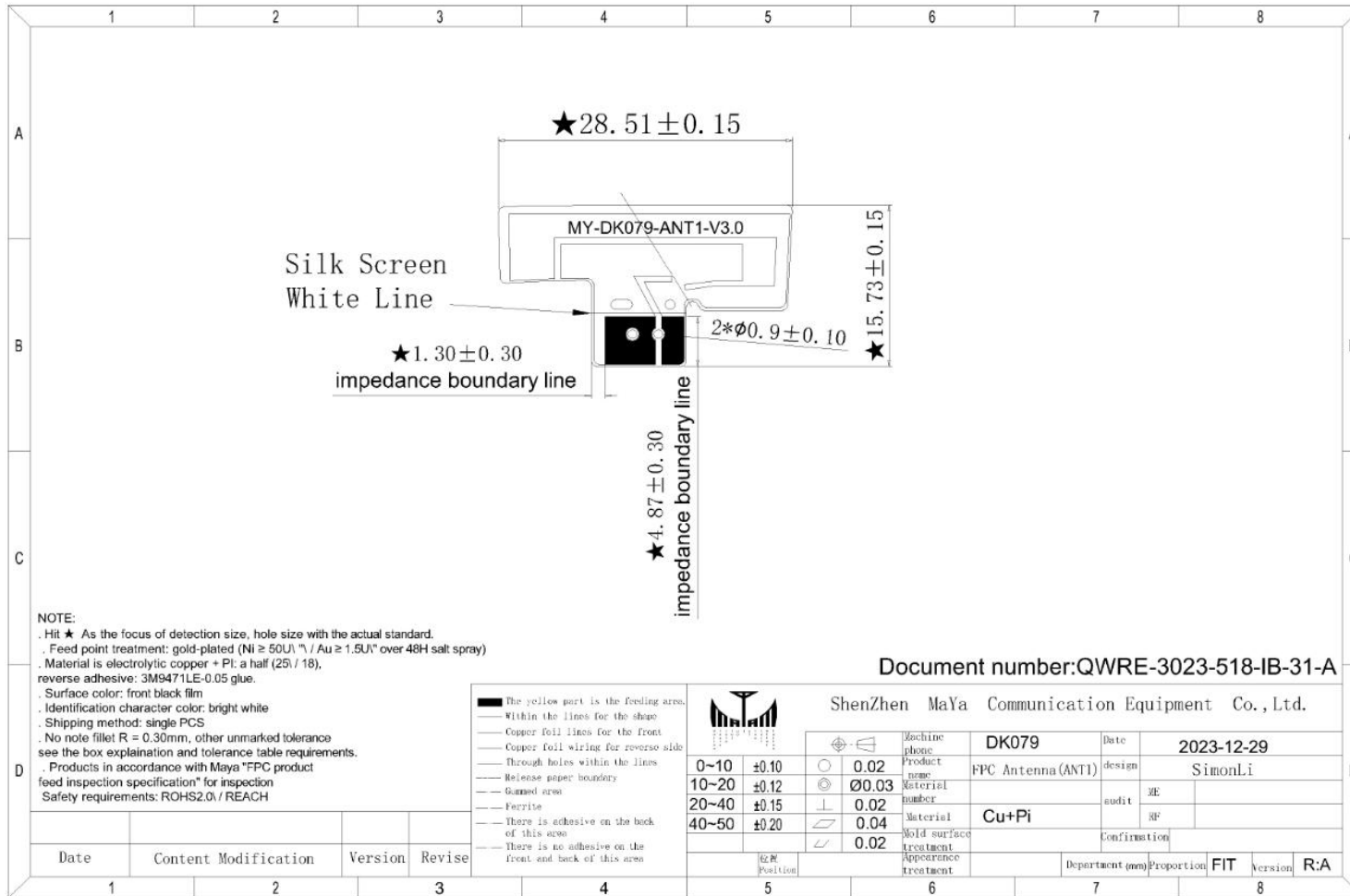


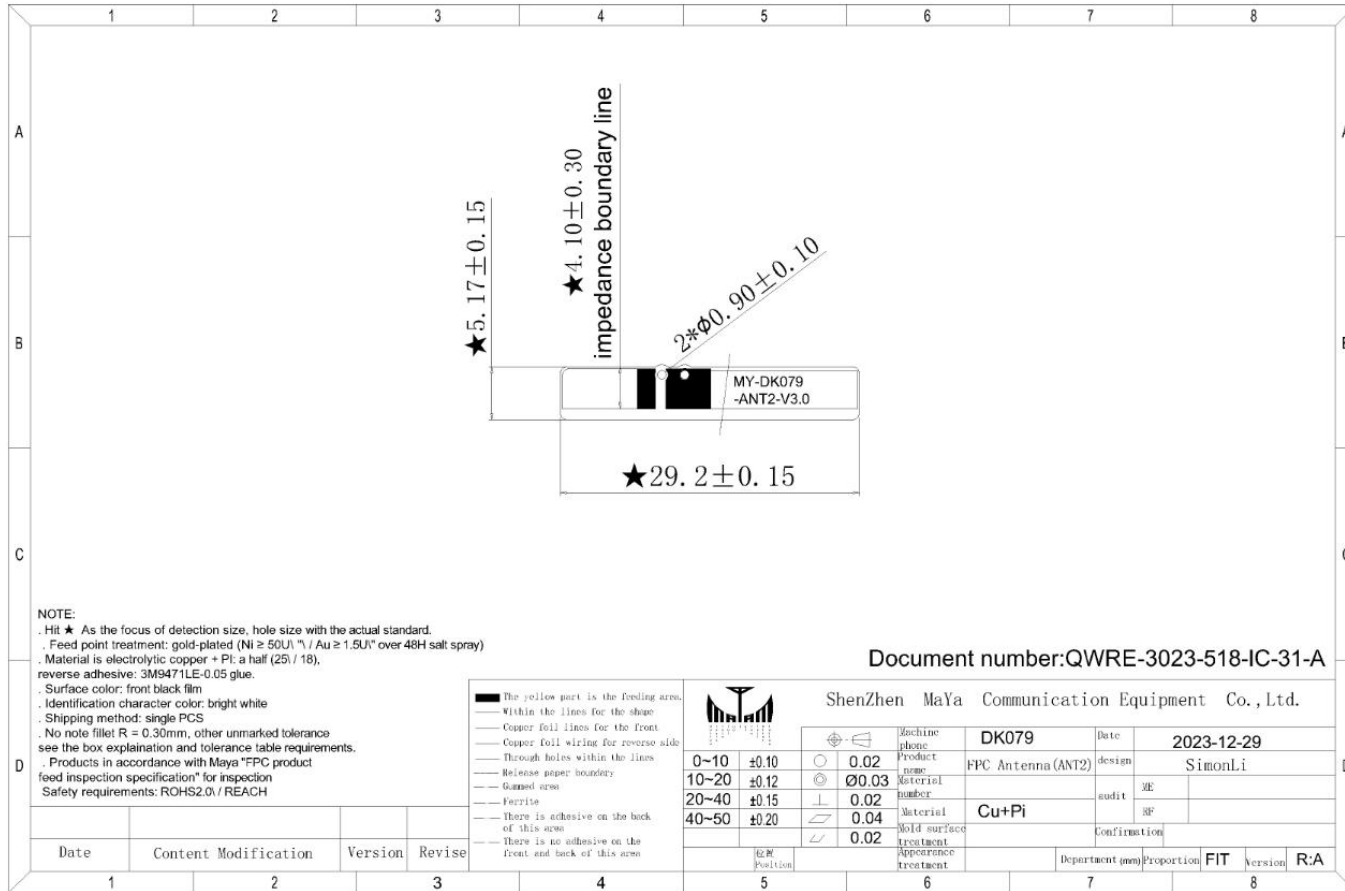
Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

Passive Report

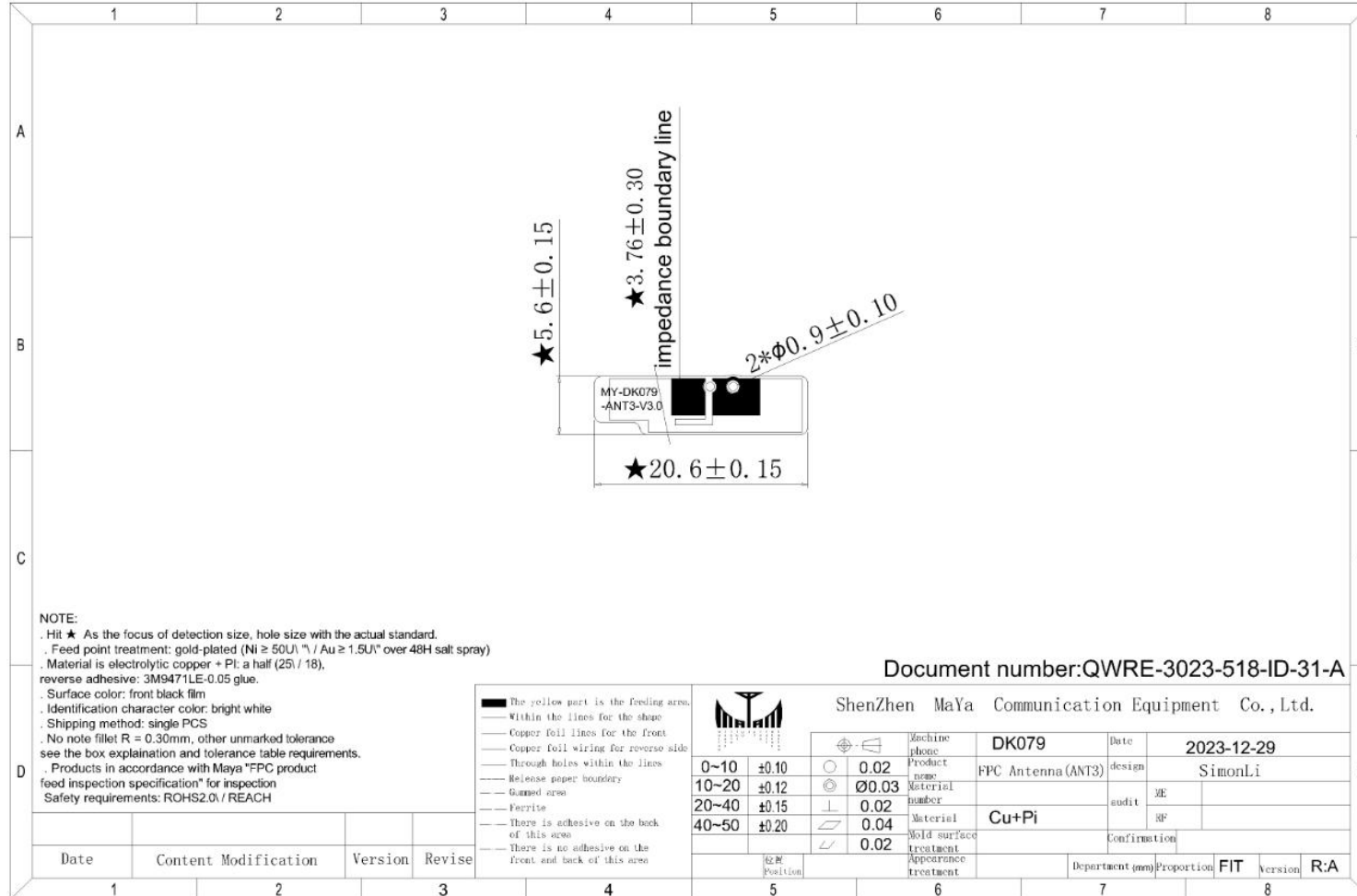


Passive Report

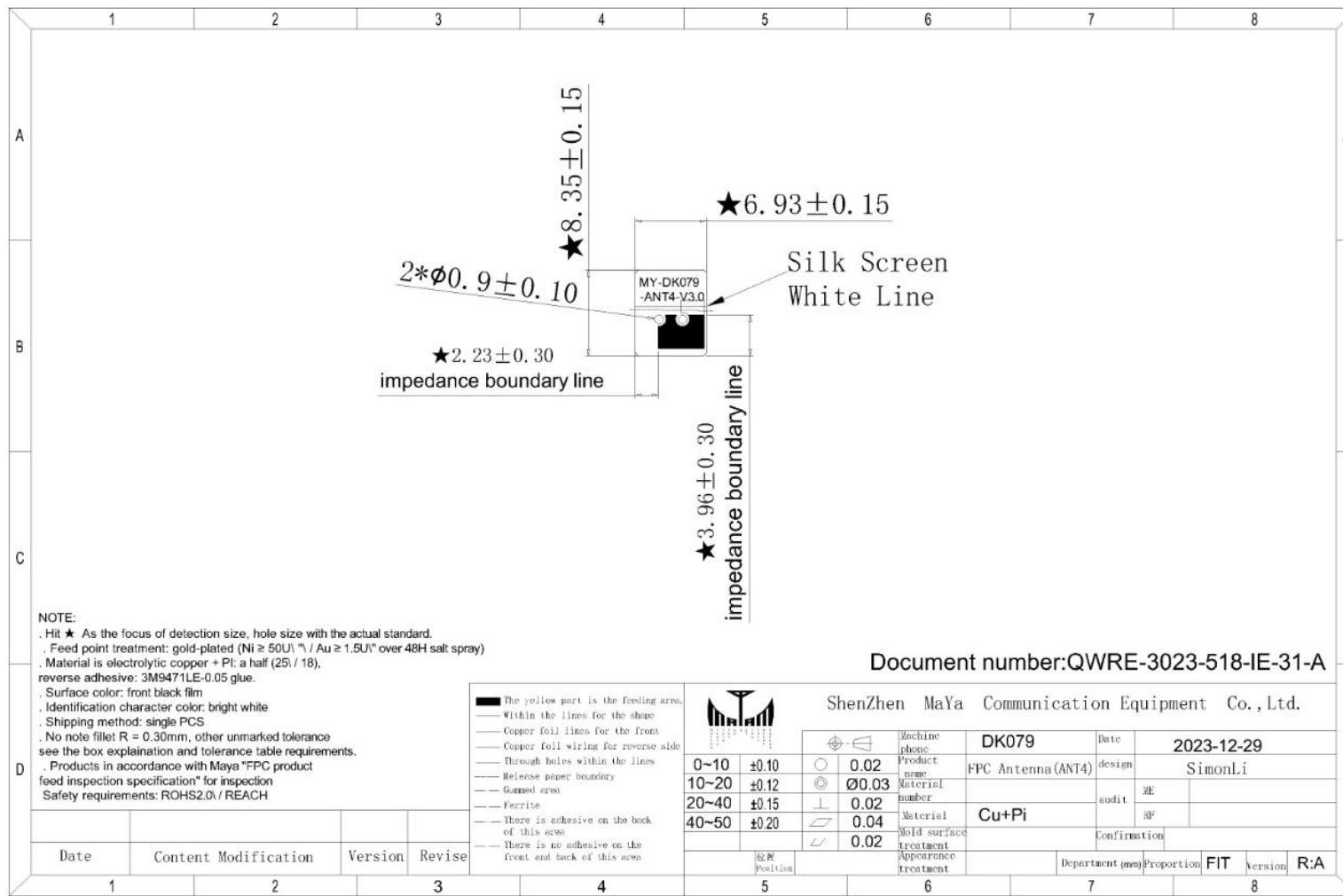


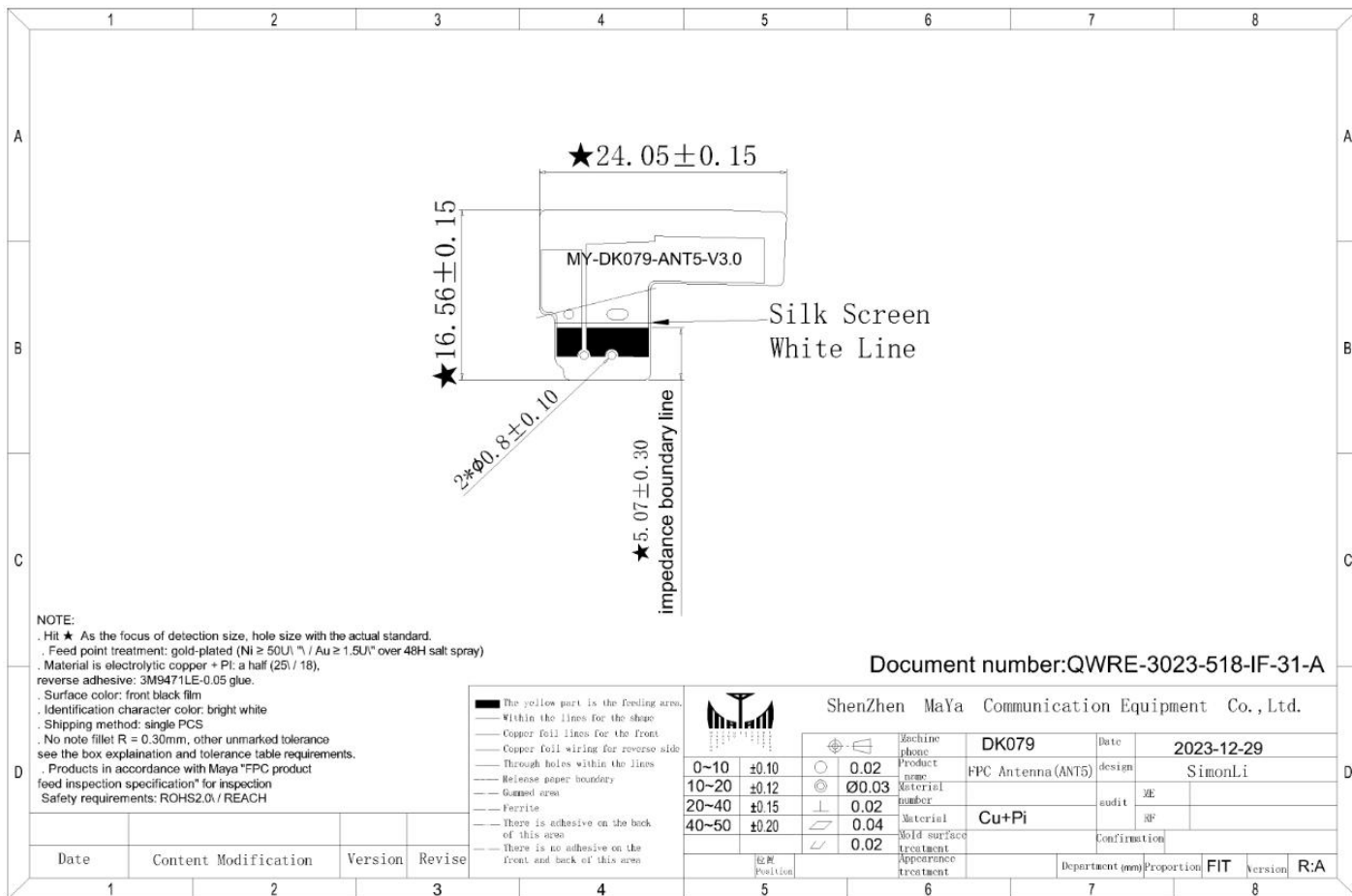


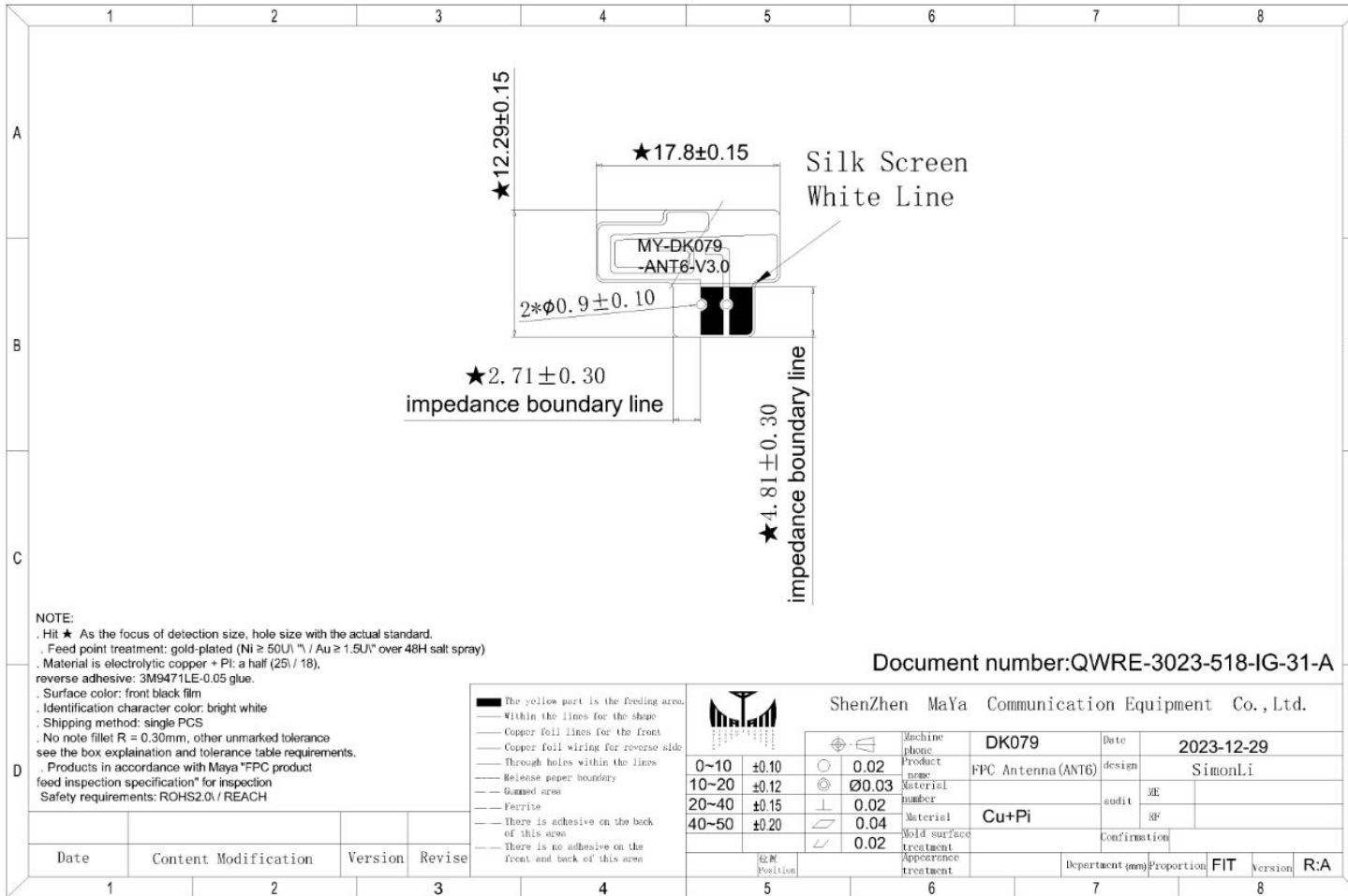
Passive Report



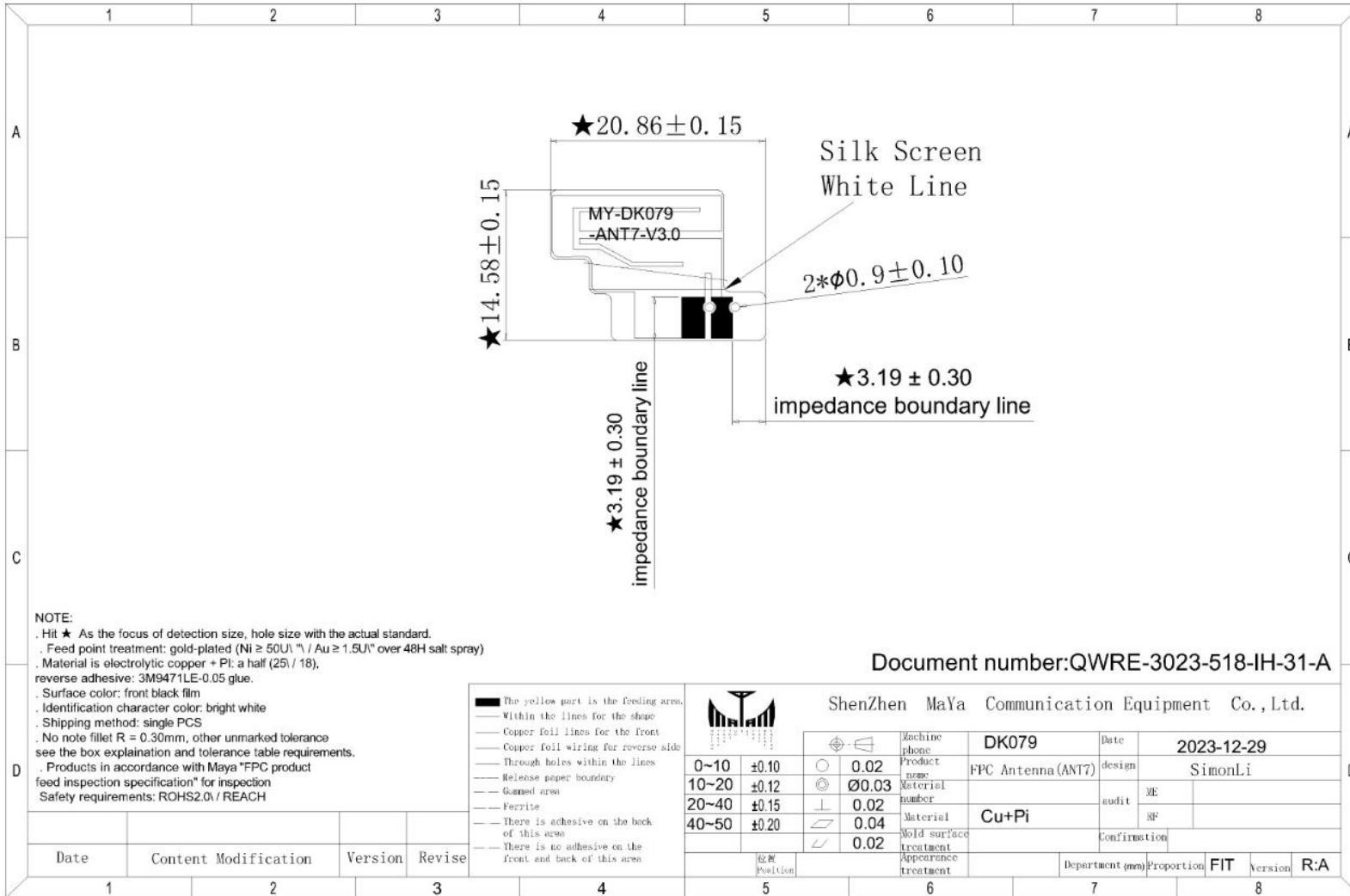
Passive Report



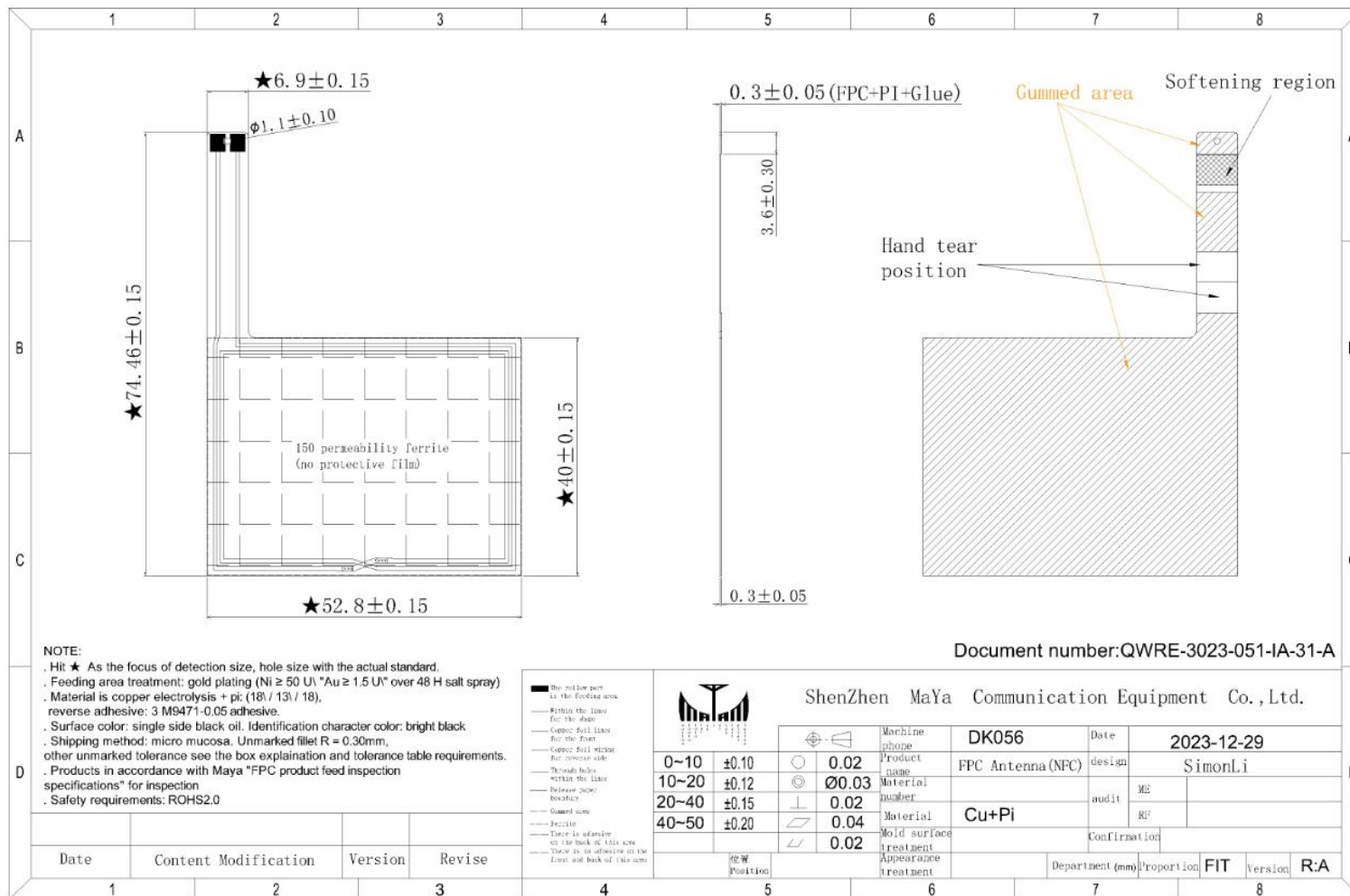




Passive Report



Passive Report

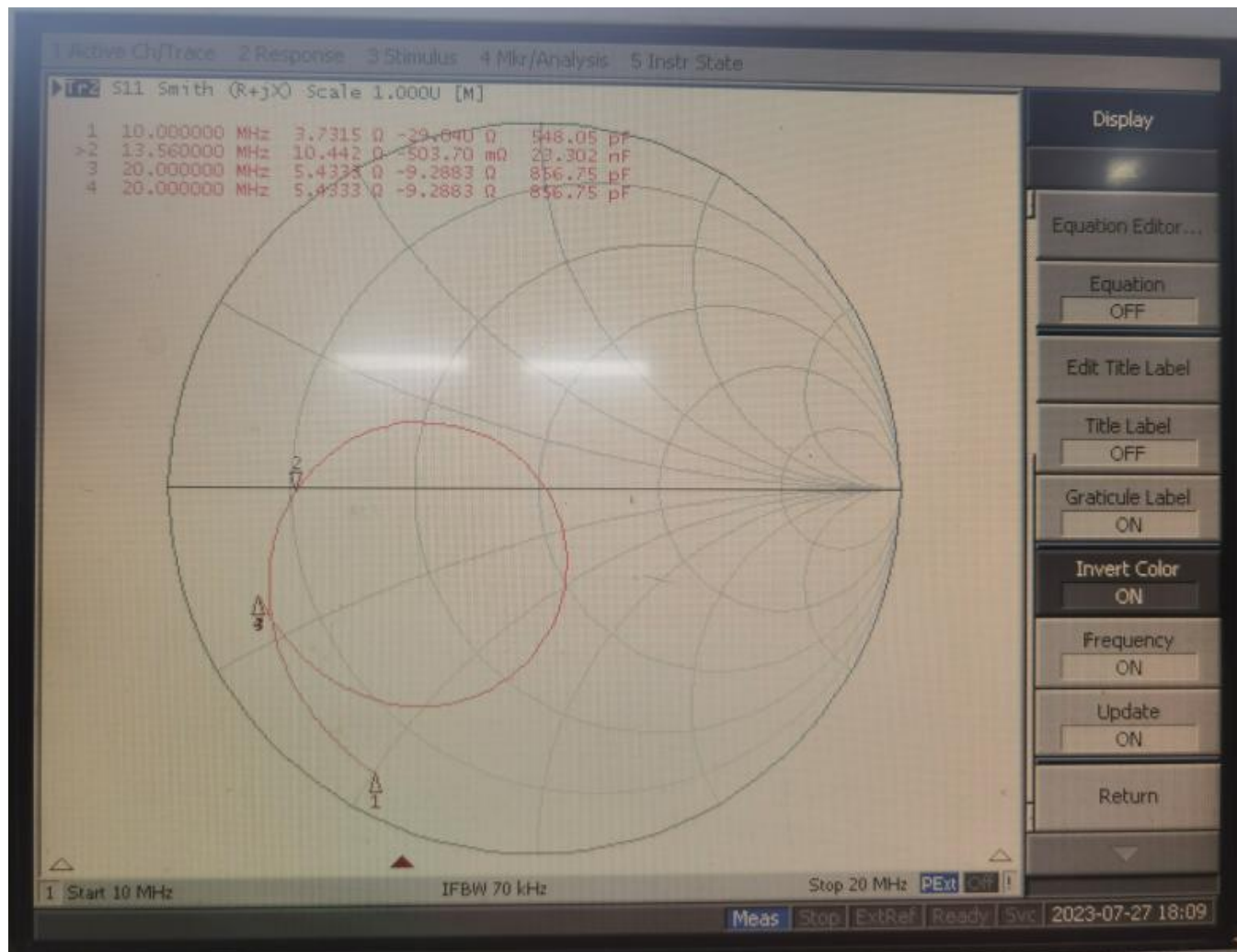




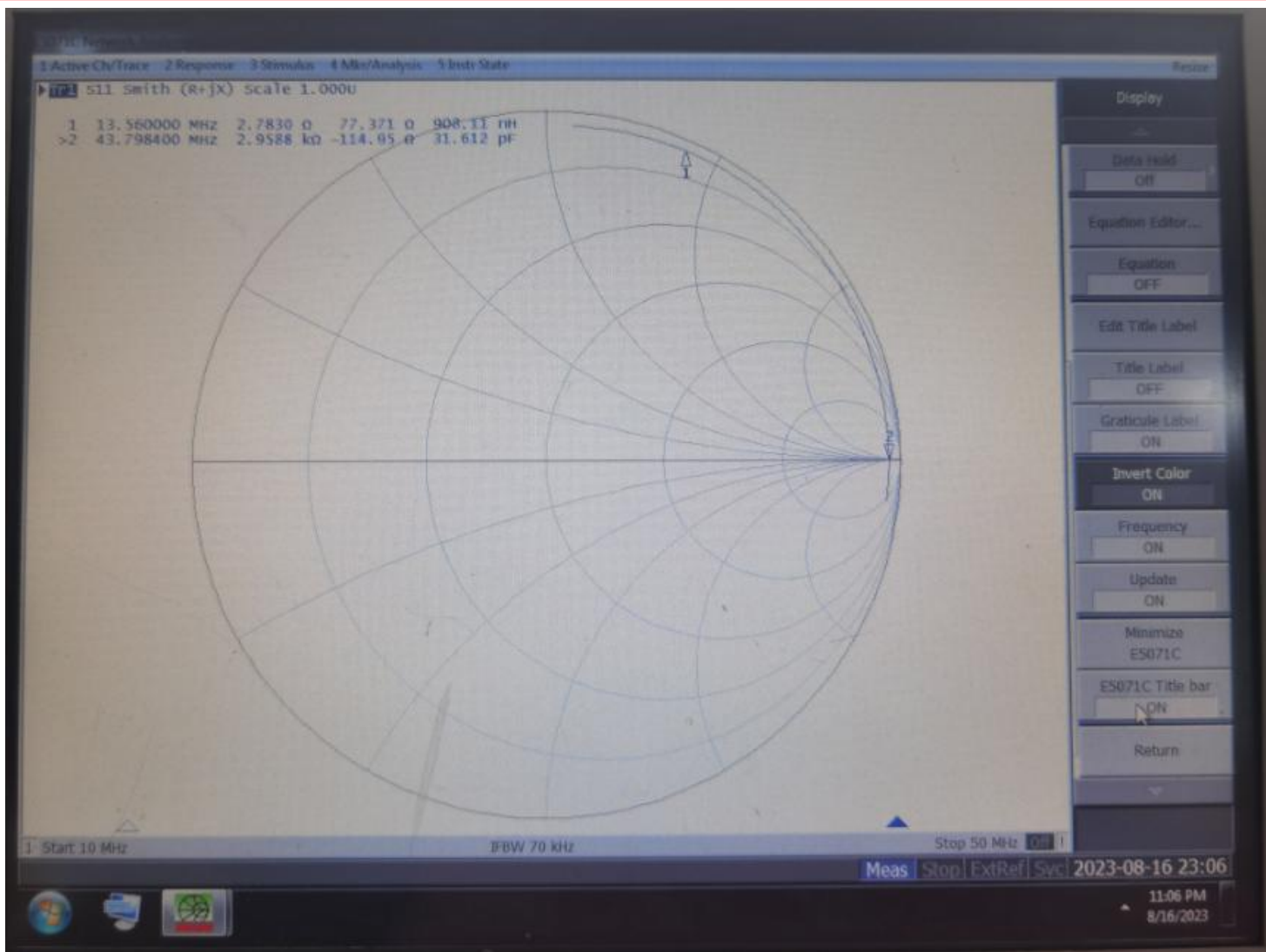
	distance
Type1	40mm
Type2	40mm
Type3	35mm
Type4	20mm



antenna impedance



antenna parameter



Lant@ (μH)	0.908
F0 (MHz)	43.79
X (Ω)	77.37
Rs@ (Ω)	2.78



G:GPS R:GLN B:BD E:GAL Q:QZS L:L1S I:IRNSS S:SBAS

Average CNR
 0.34.8/29.7/1111 R:34.5/1111 B:29.7/28.1/1111
 E:32.0/27.2/1111 Q:29.0/27.7/1111 L:11111 L1
 27.8/1111 S:22.0/1111

Show in single page

SVID	Fq	CNR	Elevation	Azimuth
5 L1	40.7		24.00	97.00
12 L1	35.5		9.00	146.00
13 L1	36.1		10.00	45.00
15 L1	30.2		42.00	28.00
18 L1	39.8		68.00	290.00
18 L5	24.4		68.00	290.00
23 L1	42.9		39.00	333.00
23 L5	28.4		39.00	333.00
24 L1	39.0		73.00	89.00
24 L5	36.4		73.00	89.00
29 L1	14.9		14.00	205.00
65 L1	37.8		16.00	51.00
66 L1	31.8		37.00	356.00
67 L1	38.6		22.00	298.00
75 L1	30.8		13.00	42.00
76 L1	33.1		35.00	99.00
77 L1	23.6		23.00	153.00

G:GPS R:GLN B:BD E:GAL Q:QZS L:L1S I:IRNSS S:SBAS

Average CNR
 0.36.4/36.8/1111 R:32.3/1111 B:29.7/27.7/1111
 E:32.7/26.8/1111 Q:25.7/28.7/1111 L:11111 L1
 30.7/1111 S:30.0/1111

Show in single page

SVID	Fq	CNR	Elevation	Azimuth
5 L1	35.3		24.00	97.00
12 L1	40.4		9.00	146.00
13 L1	33.7		0.00	0.00
15 L1	30.9		42.00	28.00
18 L1	32.5		68.00	290.00
18 L5	35.6		68.00	290.00
23 L1	42.2		39.00	333.00
23 L5	36.8		39.00	333.00
24 L1	40.3		73.00	89.00
24 L5	37.9		73.00	89.00
65 L1	37.3		16.00	50.00
66 L1	32.2		37.00	356.00
67 L1	25.0		22.00	297.00
75 L1	35.2		13.00	43.00
76 L1	30.8		0.00	0.00
77 L1	23.2		22.00	153.00
81 L1	31.8		54.00	268.00

G:GPS R:GLN B:BD E:GAL Q:QZS L:L1S I:IRNSS S:SBAS

Average CNR
 0.36.8/34.7/1111 R:35.3/1111 B:29.0/25.2/1111
 E:36.2/24.8/1111 Q:25.7/27.0/1111 L:11111 L1
 28.7/1111 S:34.0/1111

Show in single page

SVID	Fq	CNR	Elevation	Azimuth
24 L1	36.3		73.00	89.00
24 L5	41.0		73.00	89.00
29 L1	0.0		14.00	205.00
65 L1	42.0		16.00	50.00
66 L1	35.7		37.00	356.00
67 L1	36.7		22.00	297.00
75 L1	29.8		13.00	43.00
76 L1	35.6		35.00	100.00
77 L1	21.4		22.00	153.00
81 L1	36.0		54.00	268.00
82 L1	41.5		23.00	322.00
88 L1	38.2		32.00	192.00
1 L1	28.7		0.00	0.00
3 L1	29.1		65.00	190.00
6 L1	29.3		66.00	213.00
8 L1	27.3		0.00	0.00

SATE LLIT INFO NMEA GPS MPE
 LLIT ES RMAT LOG TEST STAT
 ES CNR ION LOG TEST US

Provider: gps enabled
 Status: SPS Fix
 TTFF: 41987 ms
 Date: GMT+08:00 2023/10/20
 Time: 10:58:27
 First Latitude: 22.657375000000002
 First Longitude: 114.04003333333334
 Latitude: 22.657441666666667
 Longitude: 114.040321666666666
 Altitude: 115.5
 Accuracy: 1.4
 Bearing: 133.38
 Speed: 0.0
 Distance: 0.0
 Chip version: 0x6877
 MNL version: default
 DSP version: UNKNOWN
 Clock type: Co-clock
 Clock buffer: 2


Enable EPO [Need Restart] Enable QEPO [Need Restart]
 Enable GPS.LOG

Delete GPS logs
 EPO.DAT QEPO.DAT
 QEPO_BD.DAT QEPO_GA.DAT

HOT WARM

L1	L5
42.9	37.9
42.2	36.8
41.5	36.4
41	35.6
40.4	32.6
40.3	30.1

THANK YOU

If you have any questions, please contact us
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 website : www.mayaant.com

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