

Antenna Specifications

Record for version modification

Date	Revision	Modify Content	Author
2025-6.17	V1.0	1 st Version	Tan Zhigang

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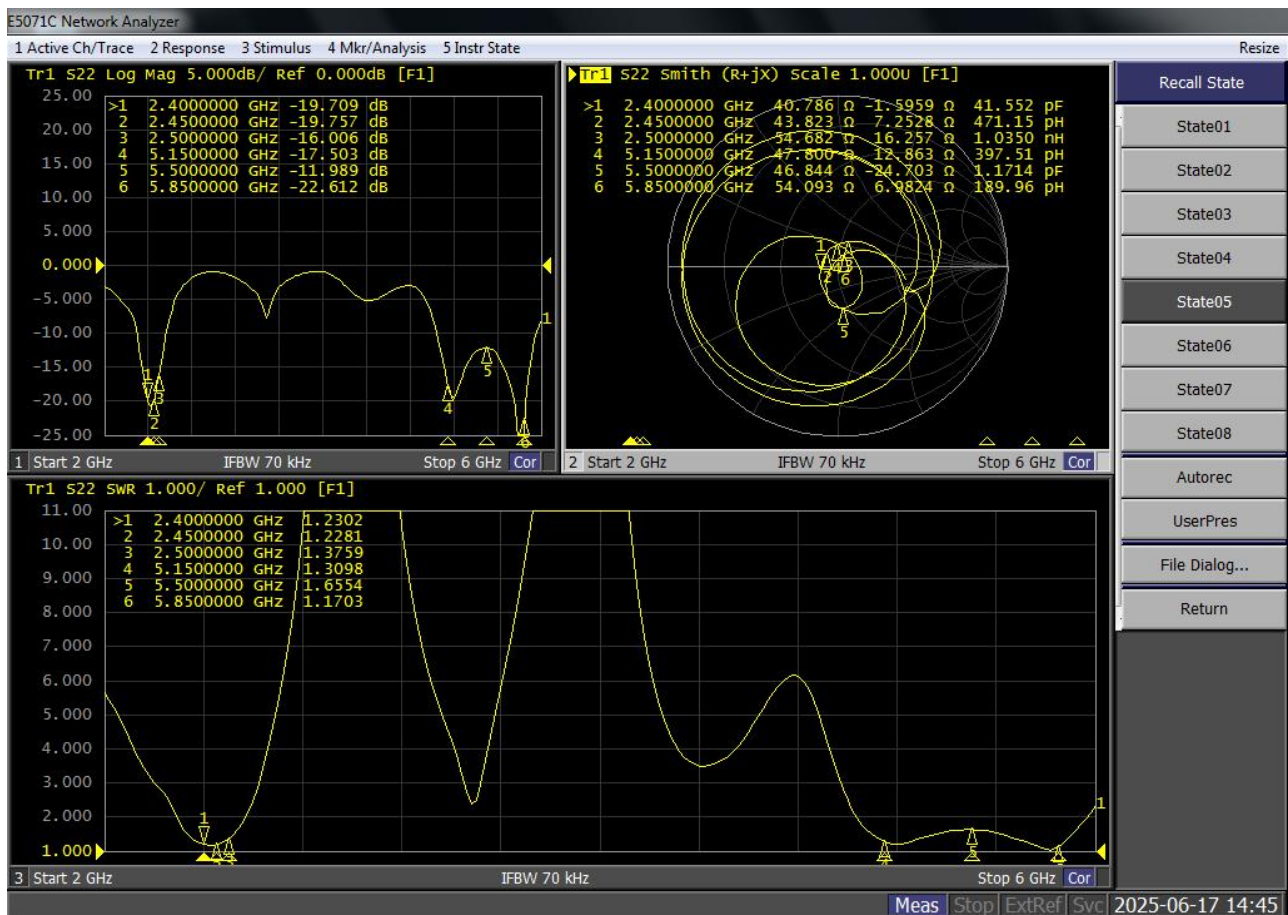
Mobile: 17607477971

1. Project information

Model No.	WWXL-SN6BTM
HW Version	
SW Version	
Antenna type	FPC, Ceramics Antenna, PCB
Installation mode	
WIFI Model	
Antenna supplier	
Tester	Tan Zhigang
Acceptance	
Reviewer	
Date	2025/6/17

2.1.1 Reflection loss&V.S.W.R

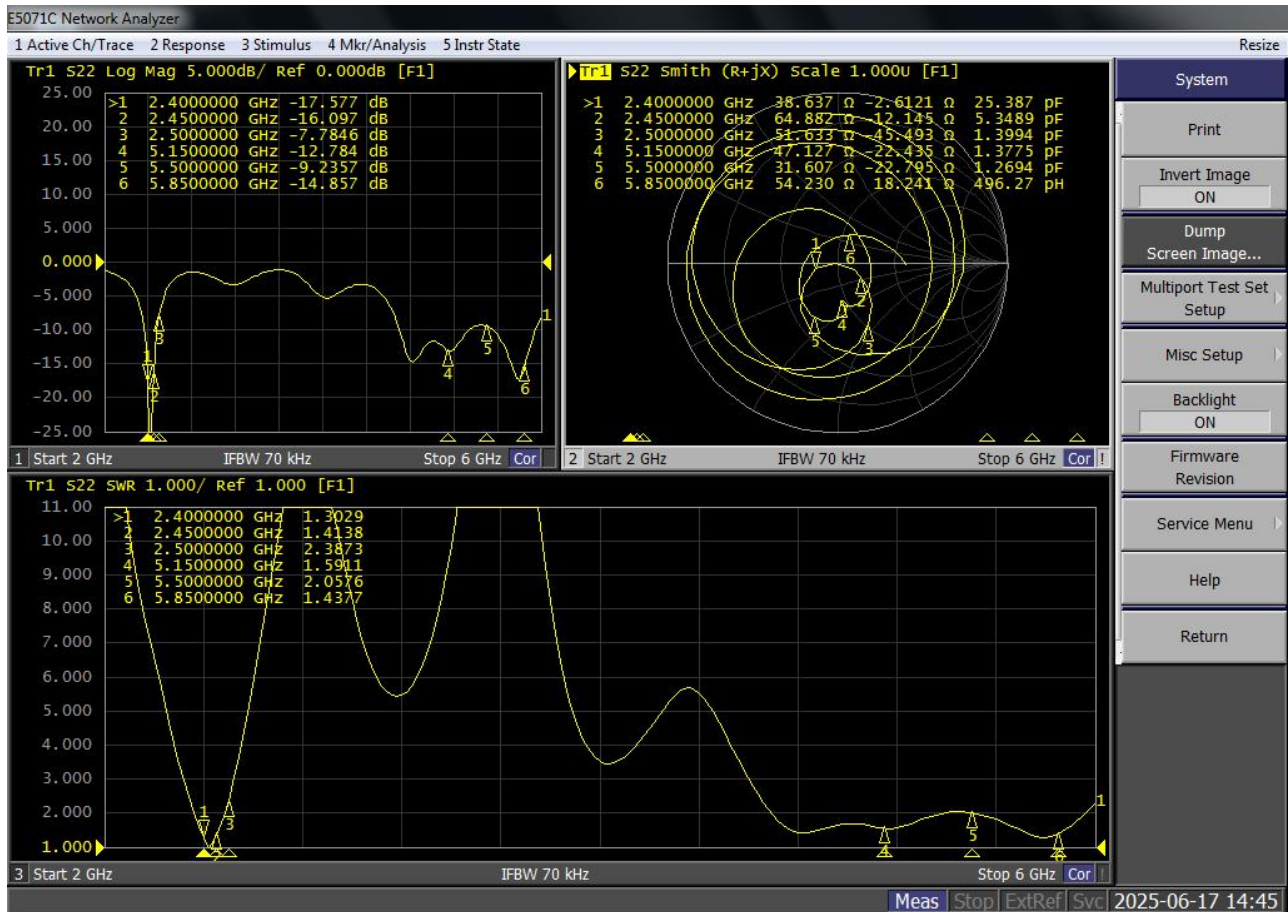
Antenna-WiFi FPC



V.S.W.R

Freq/GHz	2.4	2.45	2.5	5.15	5.5	5.85
VSWR	1.2	1.2	1.3	1.3	1.6	1.1

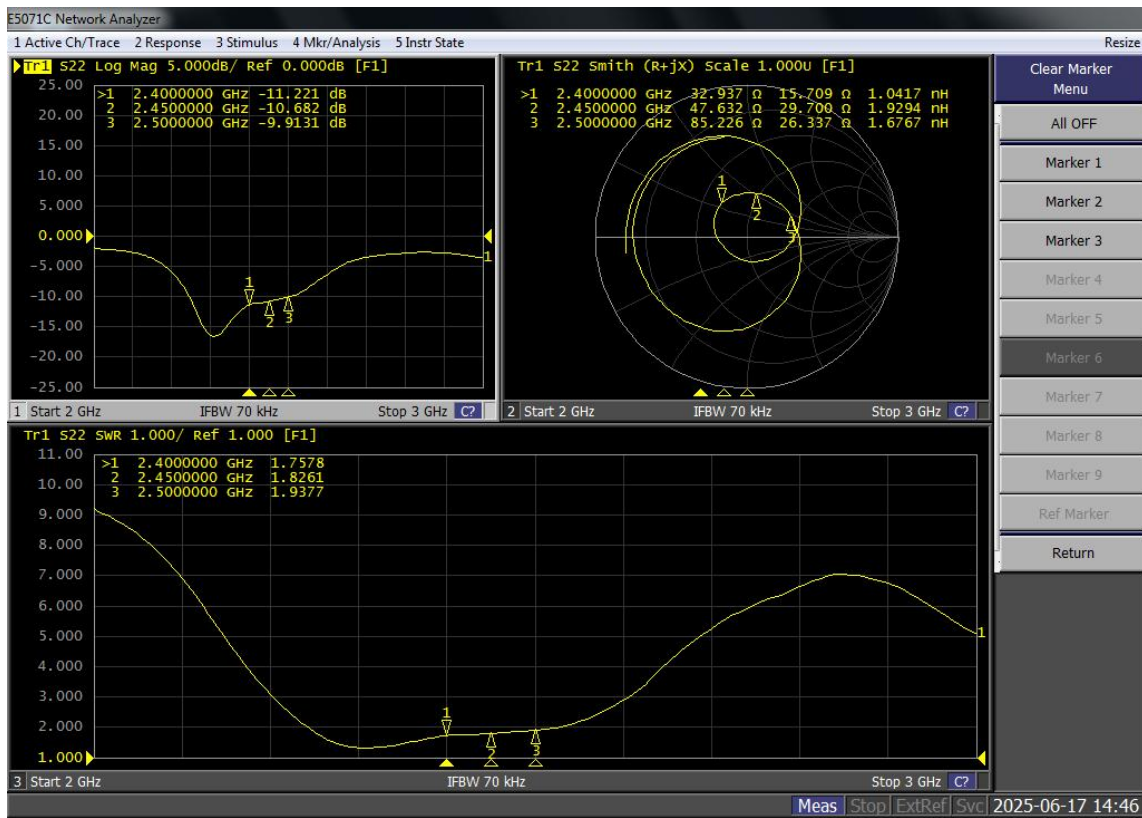
Antenna-WiFi Ceramics Antenna



V.S.W.R

Freq/GHz	2.4	2.45	2.5	5.15	5.5	5.85
VSWR	1.3	1.4	2.3	1.5	2.0	1.4

Antenna-BT



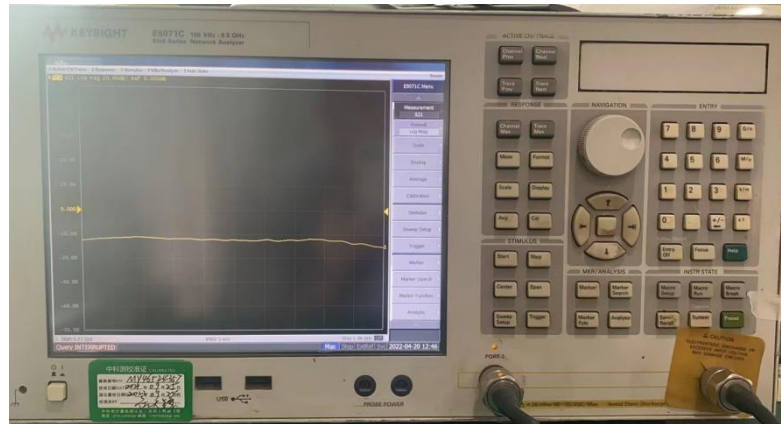
V.S.W.R

Freq/GHz	2.4	2.45	2.5
VSWR	1.7	1.8	1.9

2.1.2 Gain & Efficiency

Test tools: Microwave Anechoic Chamber+Agilent Technologies E5071C

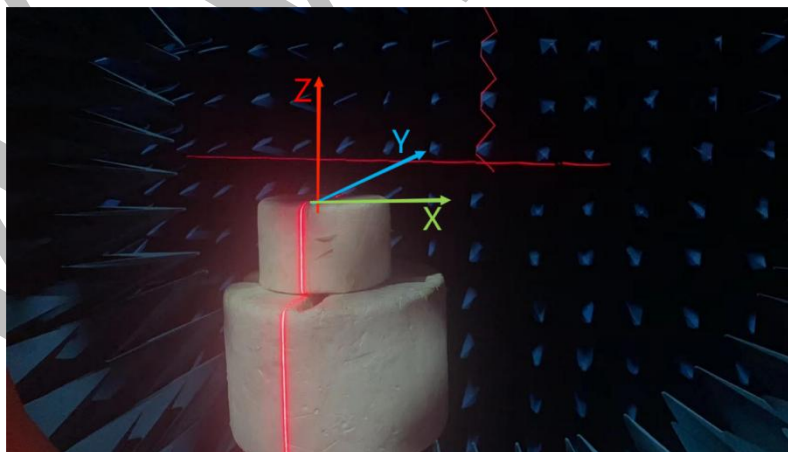
Testing Environment: As shown in the figure



Agilent Technologies E5071C



ROHDE&SCHWARZ CMW500



Microwave Anechoic Chamber

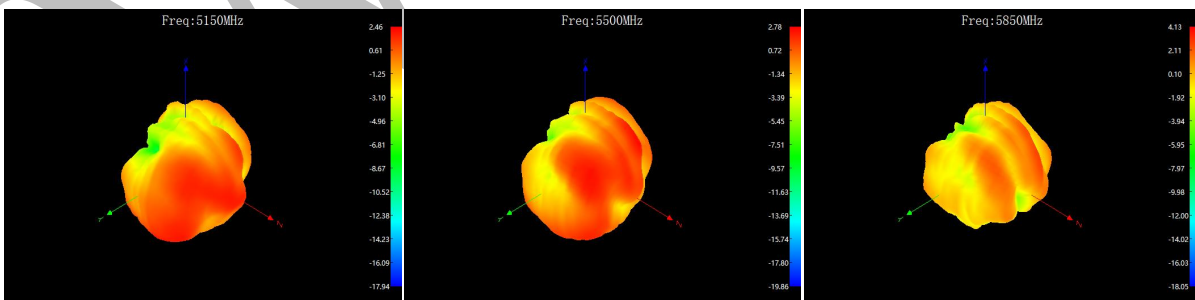
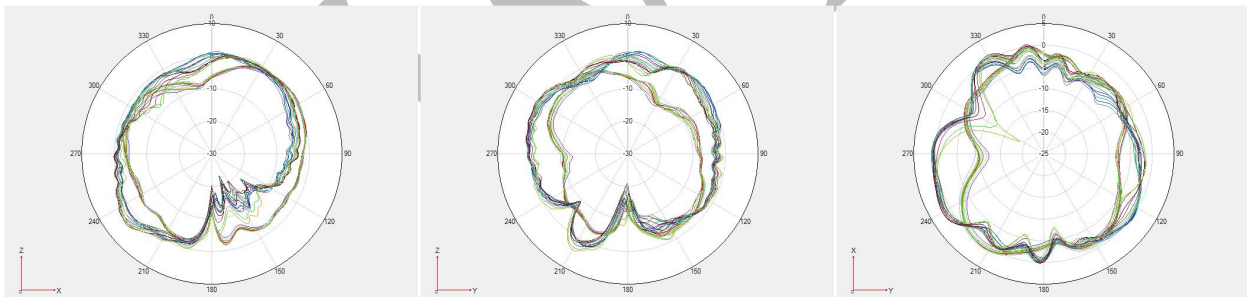
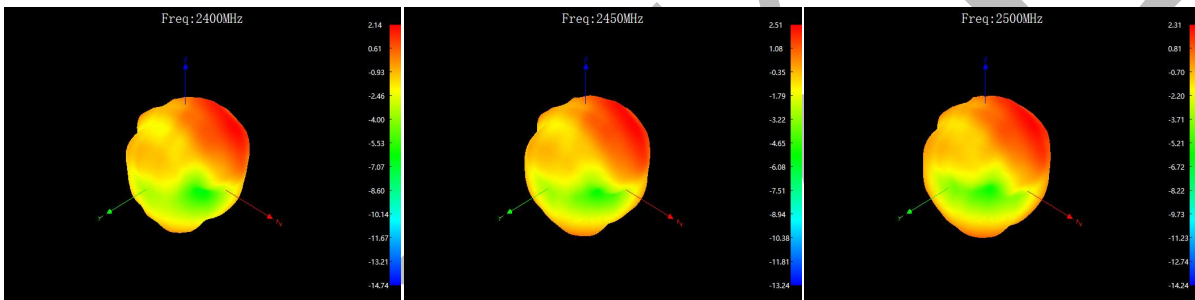
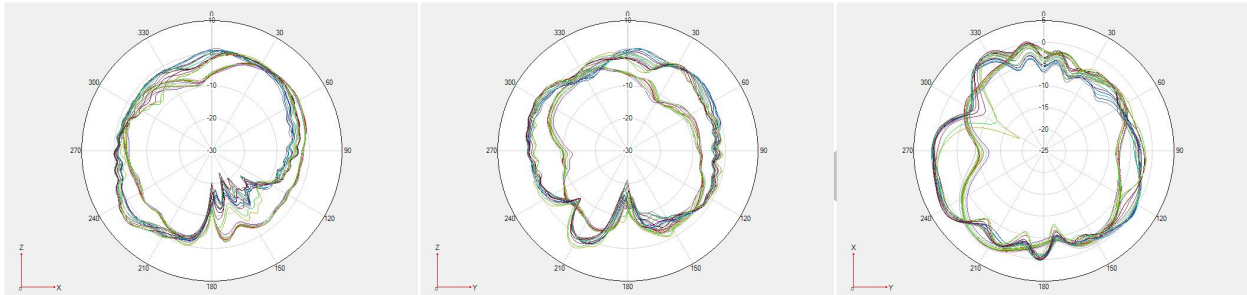
FPC					
2.4G			5G		
Frequency / MHz	Gain/ dBi	Efficiency / %	Frequency / MHz	Gain/ dBi	Efficiency / %
2400	2.14	52.88	5150	2.46	67.45
2410	2.32	53.46	5200	2.1	67.14
2420	2.34	53.17	5250	2.34	68.39
2430	2.15	54.75	5300	2.4	67.92
2440	2.5	55.98	5350	2.5	68.71
2450	2.51	55	5400	2.42	68.71
2460	2.58	54.52	5450	2.43	69.02
2470	2.3	55.12	5500	2.78	70.47
2480	2.07	55.24	5550	2.94	69.02
2490	2.16	55.12	5600	3.49	68.55
2500	2.31	55.97	5650	3.51	67.3
			5700	4.16	67.3
			5750	4.55	65.77
			5800	4.24	65.31
			5850	4.13	66.37

Ceramics Antenna					
2.4G			5G		
Frequency / MHz	Gain/ dBi	Efficiency / %	Frequency / MHz	Gain/ dBi	Efficiency / %
2400	6.22	53.21	5150	4.91	53.95
2410	6.35	54.08	5200	4.9	54.08
2420	6.56	54.08	5250	5.16	54.95
2430	6.39	52.84	5300	5.27	54.83
2440	6.2	53.7	5350	5.42	55.46
2450	6	53.46	5400	5.47	54.33
2460	5.82	52.36	5450	5.58	53.46
2470	5.79	49.09	5500	5.51	52.72
2480	5.58	45.5	5550	5.58	50.82
2490	5.35	43.15	5600	5.32	49.66
2500	5.06	42.36	5650	5.15	48.19
			5700	4.75	46.88
			5750	4.71	45.92
			5800	4.45	44.16
			5850	4.05	42.36

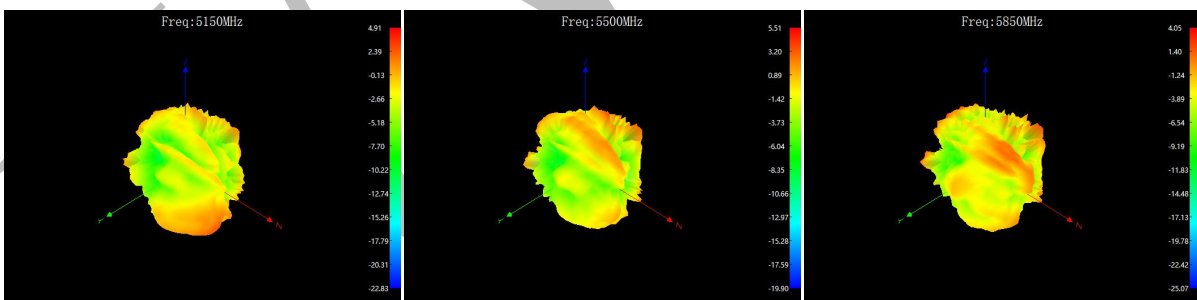
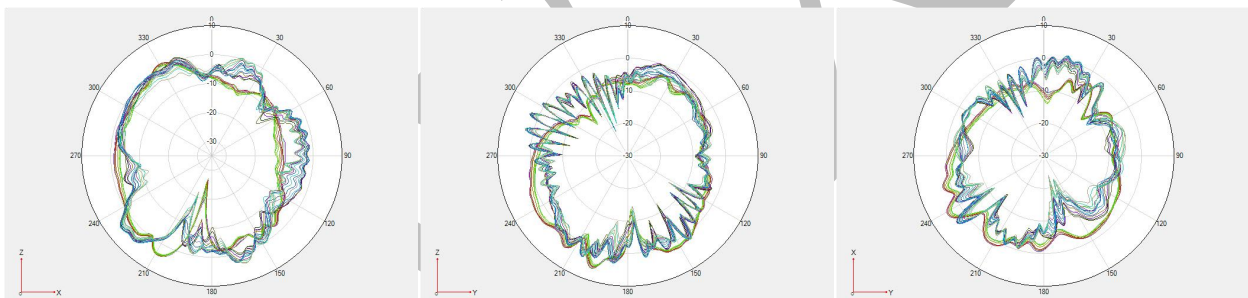
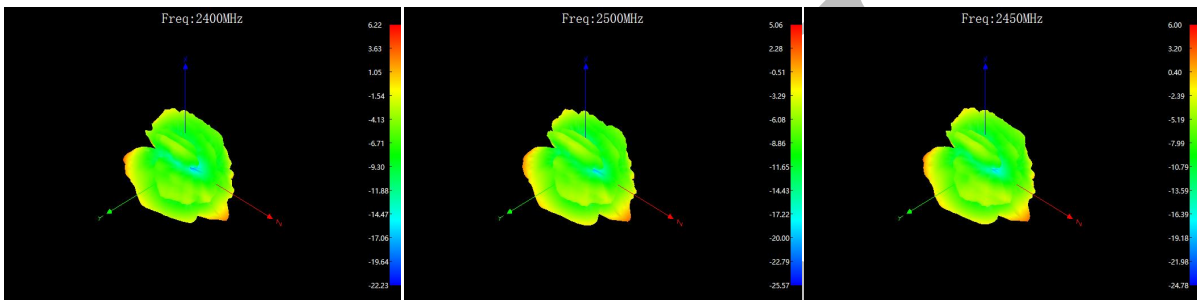
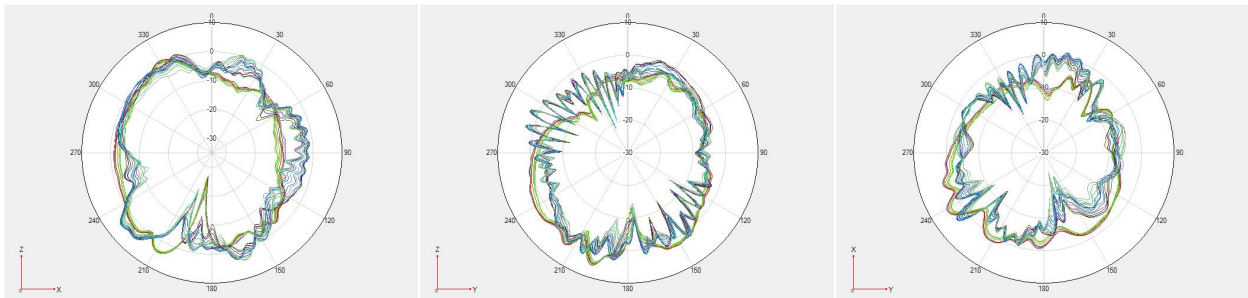
BT		
Frequency / MHz	Gain/ dBi	Efficiency / %
2400	1.91	53.46
2410	1.7	52
2420	1.49	50.47
2430	1.47	48.64
2440	1.82	49.89
2450	1.96	49.43
2460	1.54	46.34
2470	0.55	38.9
2480	-0.65	30.2
2490	-1.9	21.43
2500	-2.74	15.92

2.1.3 2D&3D Directional diagrams

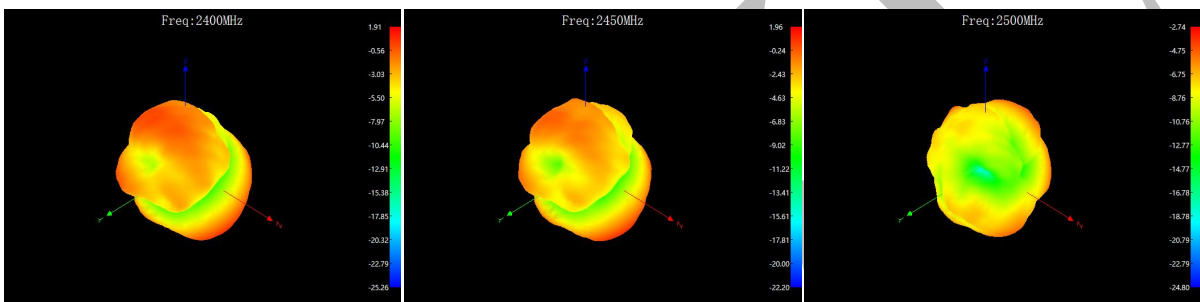
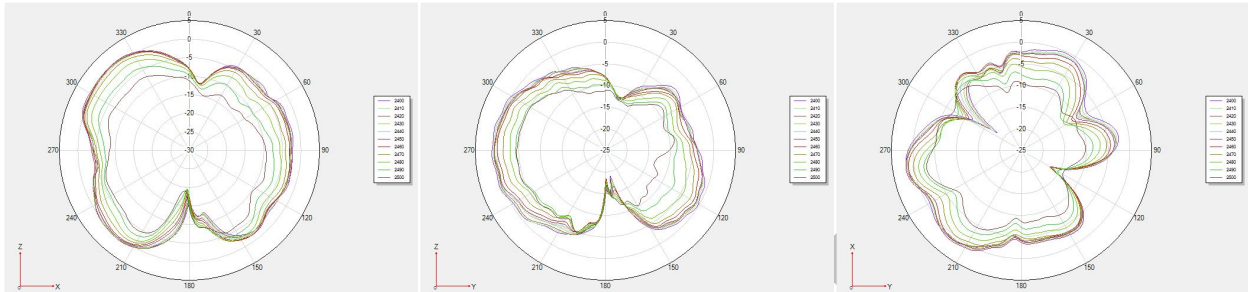
Antenna pattern-WiFi FPC



Antenna pattern-WiFi Ceramics Antenna



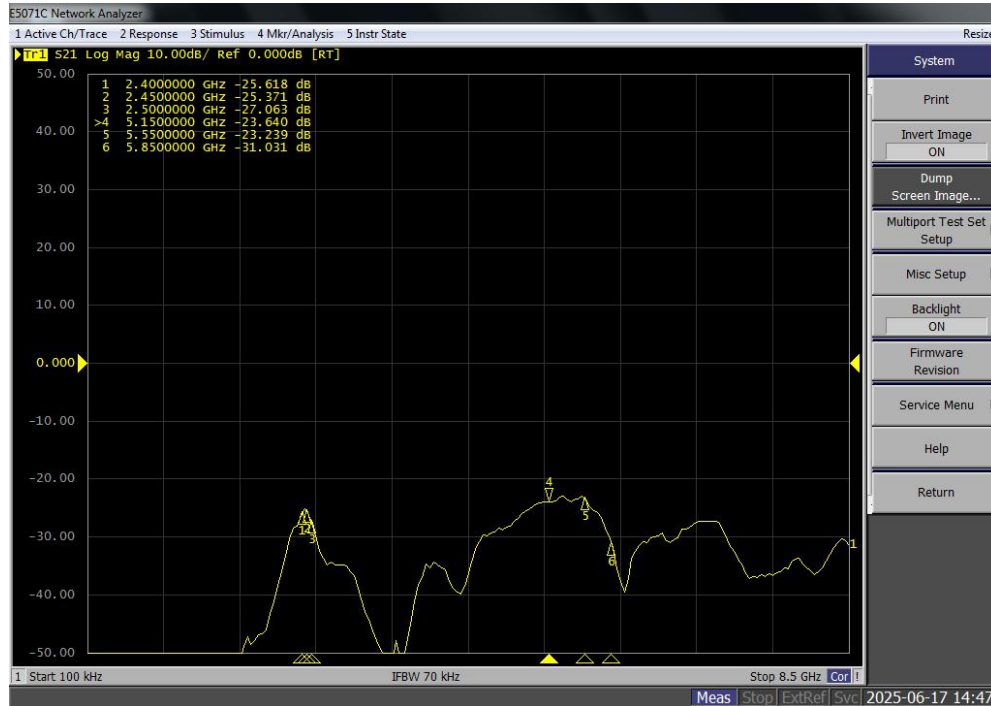
Antenna pattern-BT



2.1.4 Antenna isolation

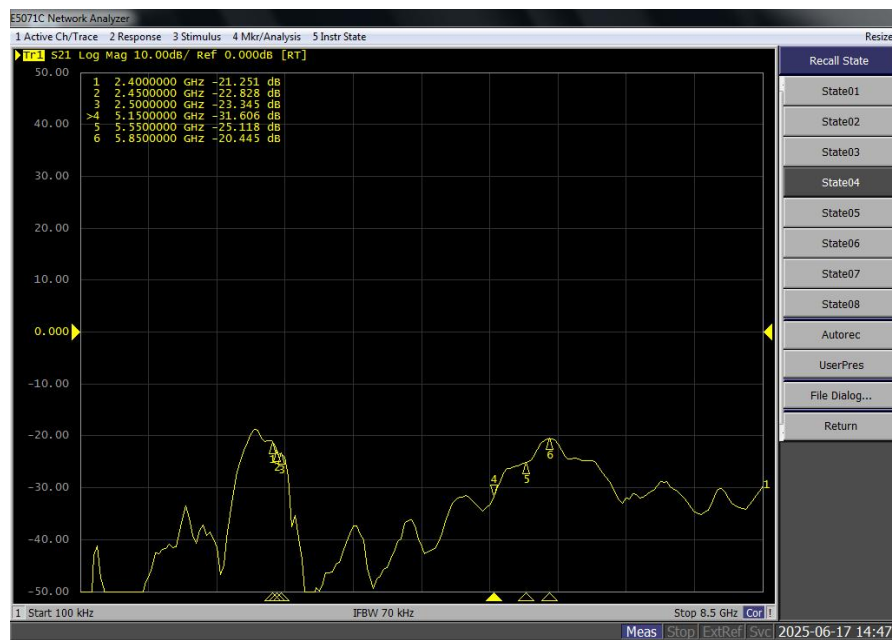
Test tools: [network analyzer](#)

Standard: Isolation ≤ -20 dB



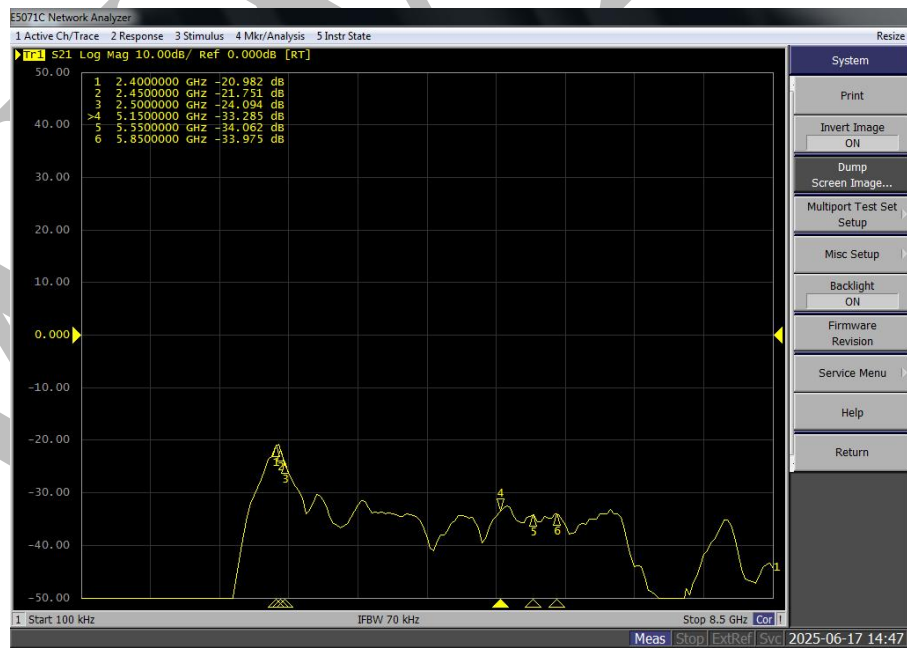
Isolation of antenna FPC and antenna Ceramics Antenna

Freq/GHz	2.4	2.45	2.5	5.15	5.5	5.85
Log Mag	-25.6	-25.3	-27	-23.6	-23.2	-31



Isolation of antenna FPC and antenna BT

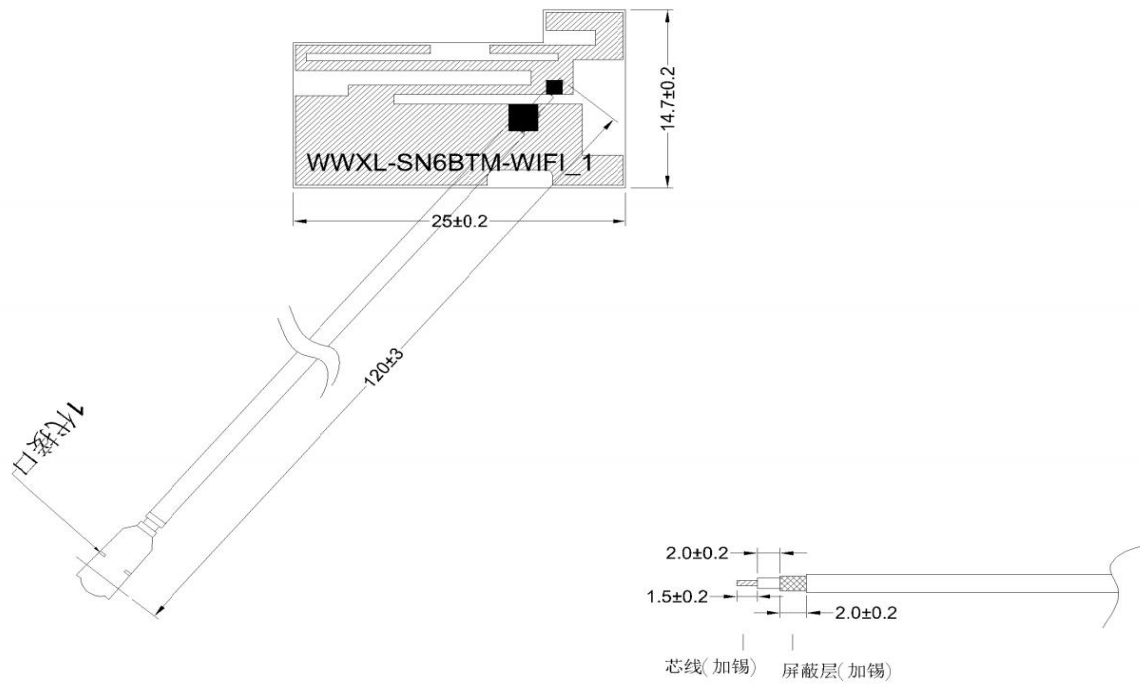
Freq/GHz	2.4	2.45	2.5	5.15	5.5	5.85
Log Mag	-21.2	-22.8	-23.3	-31.6	-25.1	-20.4



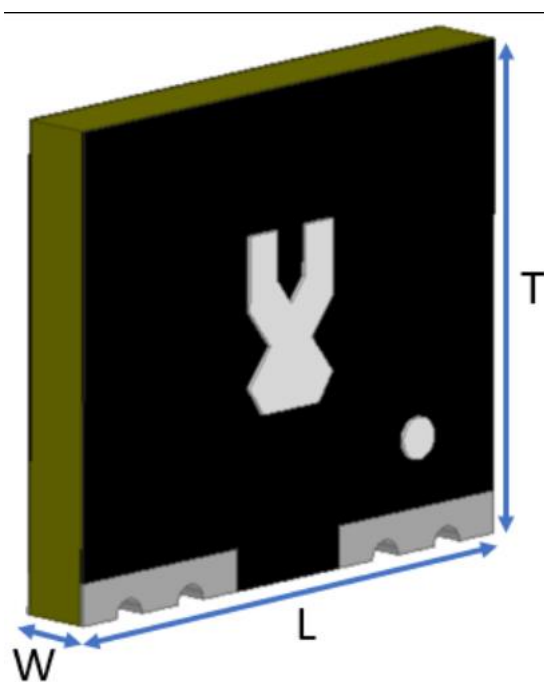
Isolation of antenna Ceramics Antenna and antenna BT

Freq/GHz	2.4	2.45	2.5	5.15	5.5	5.85
Log Mag	-20.9	-21.7	-24	-33.2	-34	-33.9

FPC Antenna



Ceramics Antenna



	Dimension (mm)
L	8.00 ± 0.20
W	1.65 ± 0.20
T	7.00 ± 0.20

BT Antenna

