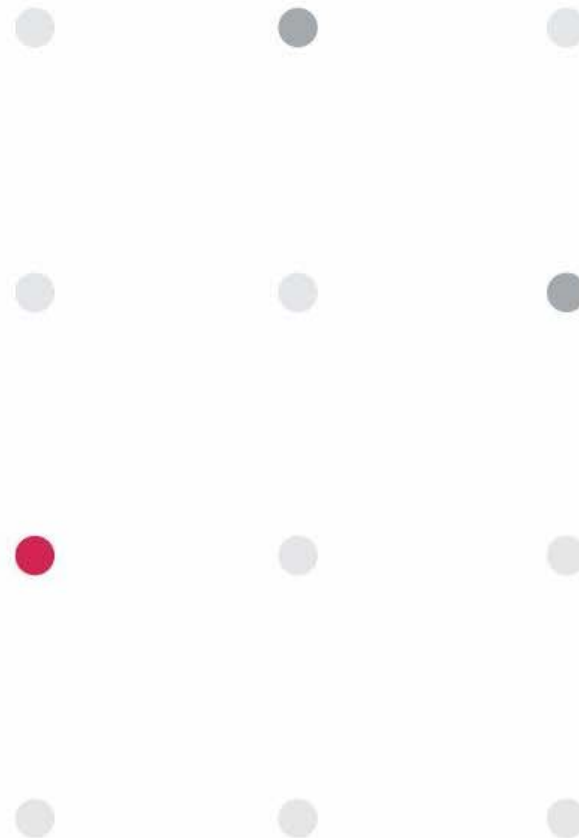


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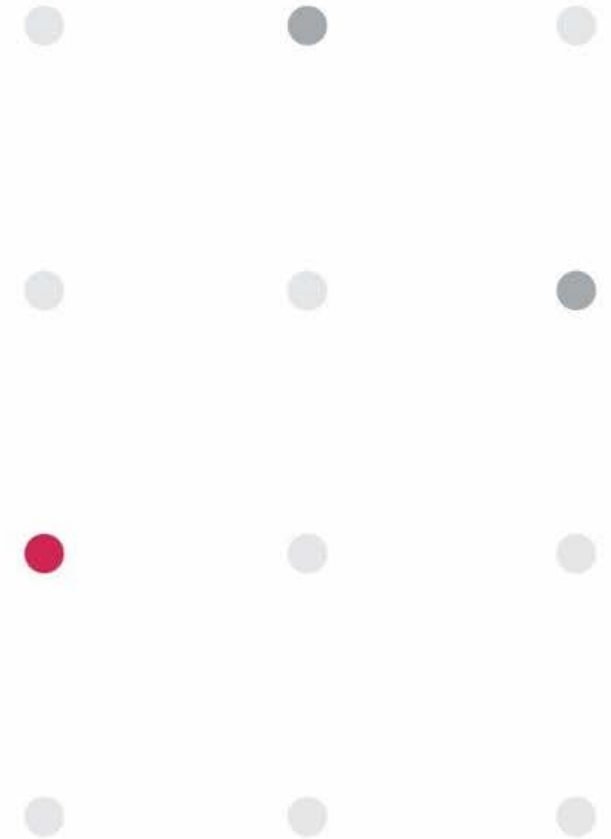
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PASSIVE SYSTEM ALLIANCE
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SP2W Antenna test Report

Presented by
Bergen Huang, RF R&D, Department
INPAQ Technology Co., Ltd.

Last updated in May 07, 2026

Name: 洪賢修 [Hong Xianxiu]
Email: HongXianXiu@inpaq.com.tw

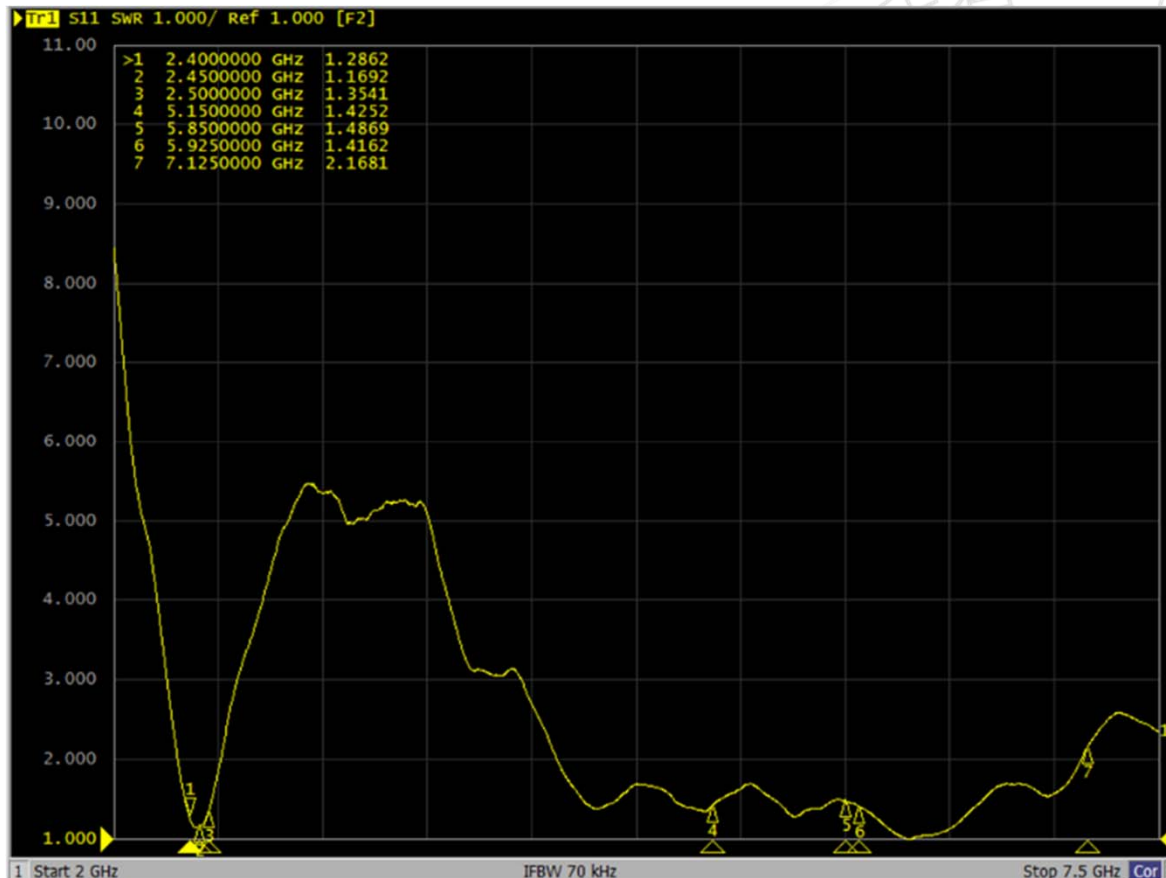
Outline

1. Experimental Setup
2. Configuration
3. Antenna Placement & Picture
4. Outline Drawing
5. Antenna Performance
6. Antenna 2D Radiation Pattern
7. Conclusion



5. Antenna Performance _ Efficiency & VSWR

WLAN Main / Black (NB mode)

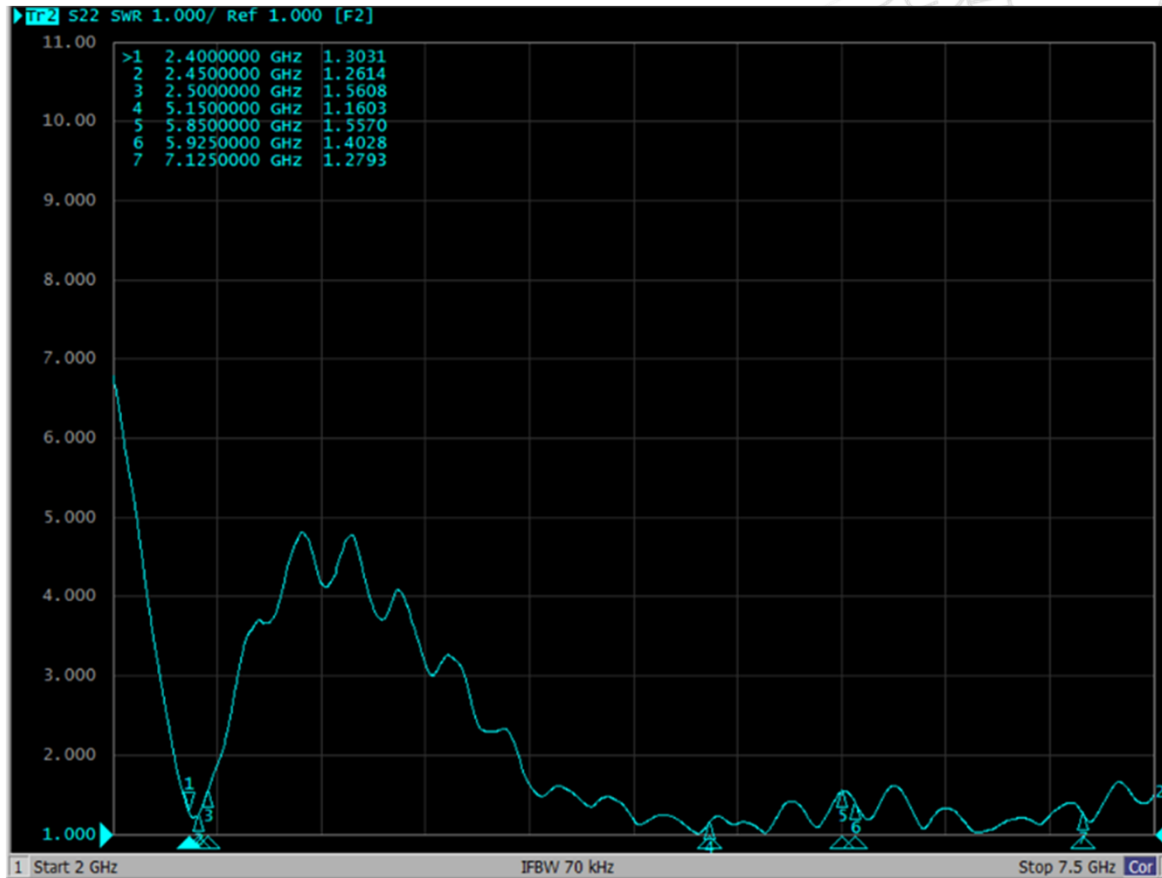


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Frequency (MHZ)	XY Plane Peak Gain (dBi)	3D PEAK Gain (dBi)	Efficiency (%/ dB)	
2412	-1	2.83	44.57	-3.51
2437	-0.56	2.83	46.45	-3.33
2462	-0.87	2.22	43.85	-3.58
5160	0.1	2.13	38.19	-4.18
5250	0.77	2.9	37.93	-4.21
5320	0.1	2.63	35.08	-4.55
5470	0.38	2.62	34.28	-4.65
5600	-0.24	2.82	37.84	-4.22
5725	-1.36	2.39	39.63	-4.02
5785	-1.01	2.39	35.40	-4.51
5850	-0.77	2.87	36.64	-4.36
5925	-0.21	2.6	33.81	-4.71
6085	0.15	2.8	38.99	-4.09
6125	0.73	2.83	36.81	-4.34
6225	1.34	2.51	34.59	-4.61
6325	0.61	2.47	37.24	-4.29
6425	0.69	2.56	35.56	-4.49
6565	0	2.27	33.42	-4.76
6625	0.82	2.35	36.73	-4.35
6725	0.58	2.47	34.28	-4.65
6885	-0.56	2.1	38.02	-4.2
6925	-0.72	1.7	33.19	-4.79
7000	-2.66	1.43	30.34	-5.18
7125	-1.41	0.45	27.29	-5.64

5. Antenna Performance _ Efficiency & VSWR

WLAN Aux / Gray (NB mode)



PASSIVE SYSTEM ALLIANCE
INPAQ TECHNOLOGY CO., LTD.

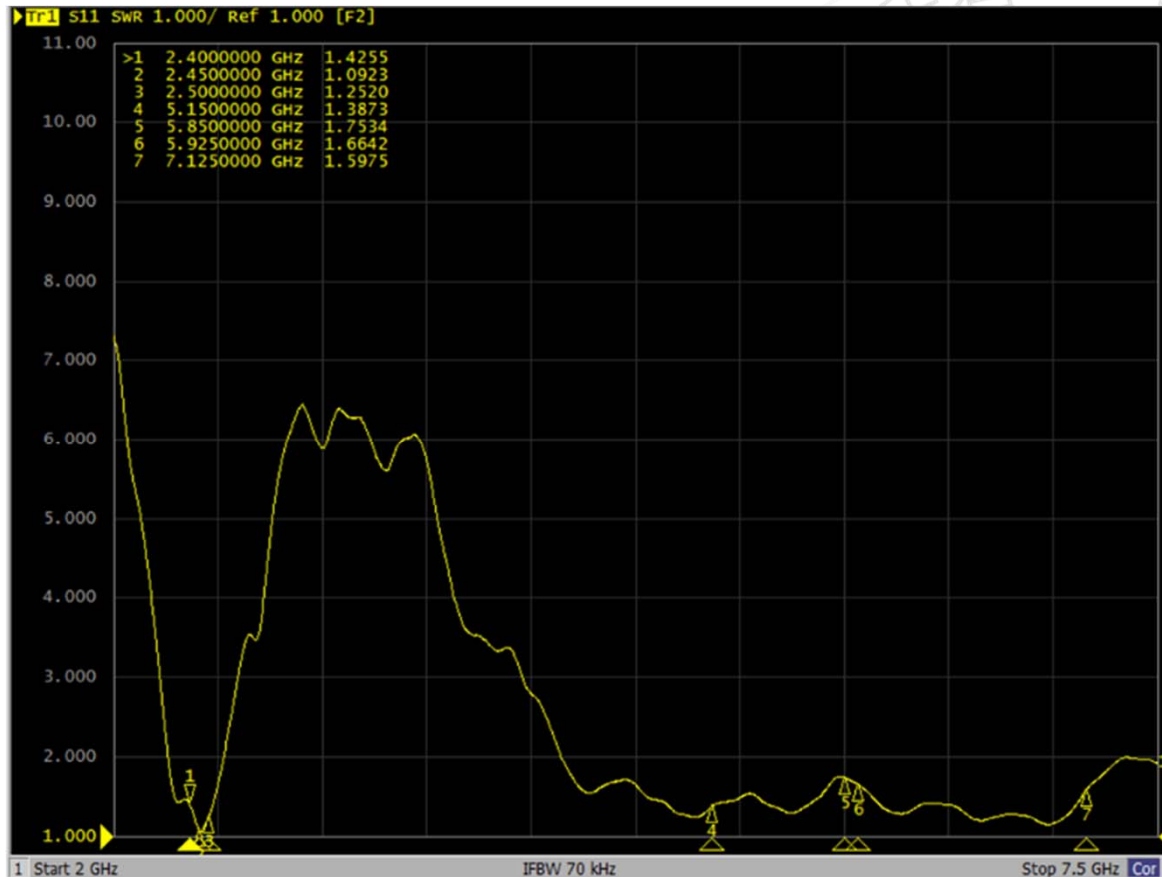
Frequency (MHZ)	XY Plane Peak Gain (dBi)	3D PEAK Gain (dBi)	Efficiency (%/ dB)	
2412	-1.6	2.88	41.78	-3.79
2437	-1.21	2.65	42.46	-3.72
2462	-1.57	2.54	40.74	-3.90
5160	-1.29	1.00	34.67	-4.60
5250	-0.64	1.41	36.22	-4.41
5320	-1.12	0.91	30.69	-5.13
5470	-0.27	0.98	29.65	-5.28
5600	0.07	1.17	32.51	-4.88
5725	-1.01	2.37	35.24	-4.53
5785	-0.47	2.67	34.59	-4.61
5850	-0.61	2.01	31.99	-4.95
5925	-0.54	1.78	32.06	-4.94
6085	-1.47	1.34	30.48	-5.16
6125	-1.82	0.61	27.35	-5.63
6225	-1.16	1.23	32.58	-4.87
6325	-1.46	0.61	29.38	-5.32
6425	-2.1	1.24	29.38	-5.32
6565	-2.55	0.66	24.55	-6.10
6625	-1.27	1.67	30.76	-5.12
6725	-1.62	0.95	34.59	-4.61
6885	-2.51	0.98	36.64	-4.36
6925	-2.07	0.88	28.58	-5.44
7000	-3.19	0.42	29.65	-5.28
7125	-2.04	0.38	26.18	-5.82

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5. Antenna Performance _ Efficiency & VSWR

WLAN Main / Black (TB mode)

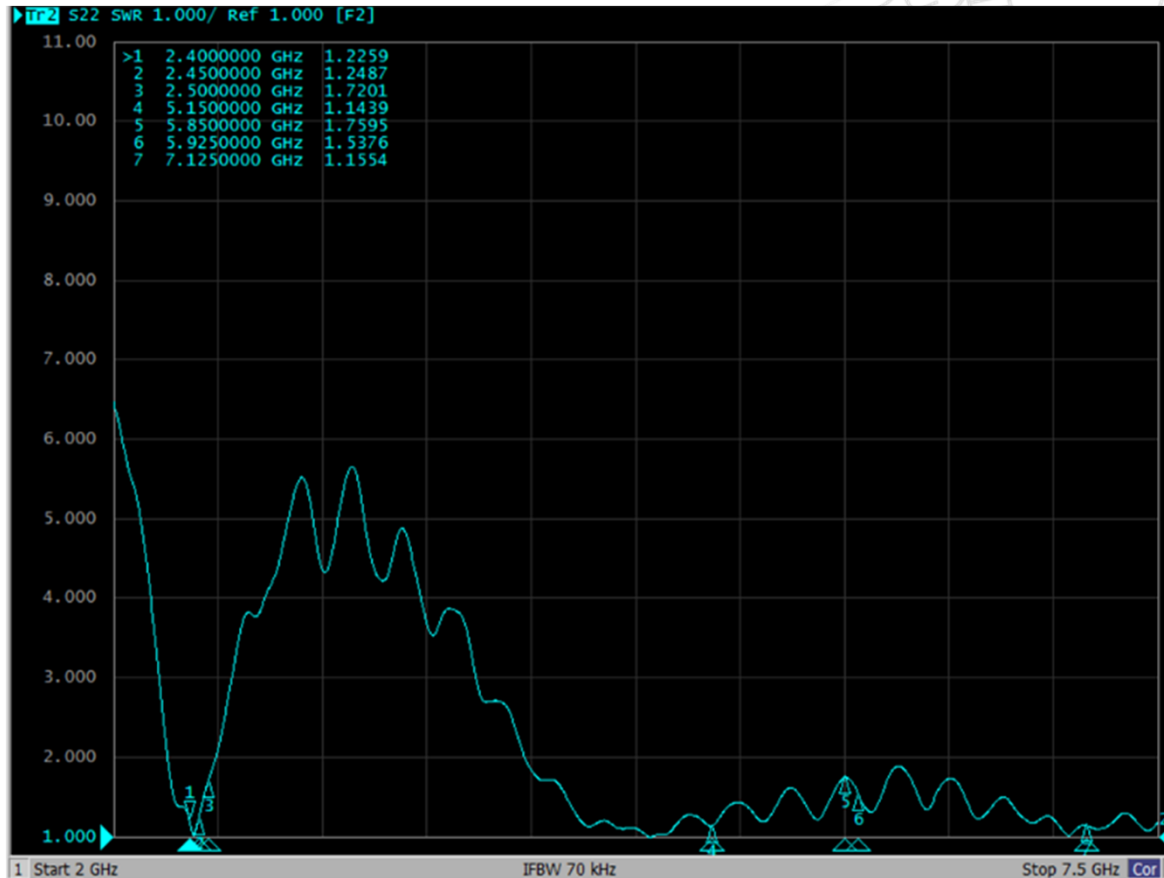


PASSIVE SYSTEM ALLIANCE
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Frequency (MHZ)	XY Plane Peak Gain (dBi)	3D PEAK Gain (dBi)	Efficiency (%/ dB)	
2412	-1.86	2.54	31.33	-5.04
2437	-0.98	2.68	30.83	-5.11
2462	-1.58	2.56	29.99	-5.23
5160	-1.39	2.14	28.91	-5.39
5250	-1.16	2.76	27.80	-5.56
5320	-1.22	1.7	25.47	-5.94
5470	-1.5	2.04	26.36	-5.79
5600	-1.54	2.48	27.35	-5.63
5725	-1.2	2.56	27.67	-5.58
5785	-0.87	2.47	26.12	-5.83
5850	-1.07	2.59	25.12	-6
5925	-0.92	2.19	28.91	-5.39
6085	-1.37	2.48	25.64	-5.91
6125	-1.38	2.01	24.04	-6.19
6225	-0.55	2.51	28.84	-5.4
6325	-0.41	2.91	26.85	-5.71
6425	0.39	2.44	31.48	-5.02
6565	-0.54	2.87	26.36	-5.79
6625	-0.73	2.49	33.19	-4.79
6725	-0.79	2.62	31.12	-5.07
6885	-1.67	2.39	28.51	-5.45
6925	-1	2.66	28.77	-5.41
7000	-2.93	2.29	25.88	-5.87
7125	-1.32	2.05	24.43	-6.12

5. Antenna Performance _ Efficiency & VSWR

WLAN Aux / Gray (TB mode)



PASSIVE SYSTEM ALLIANCE
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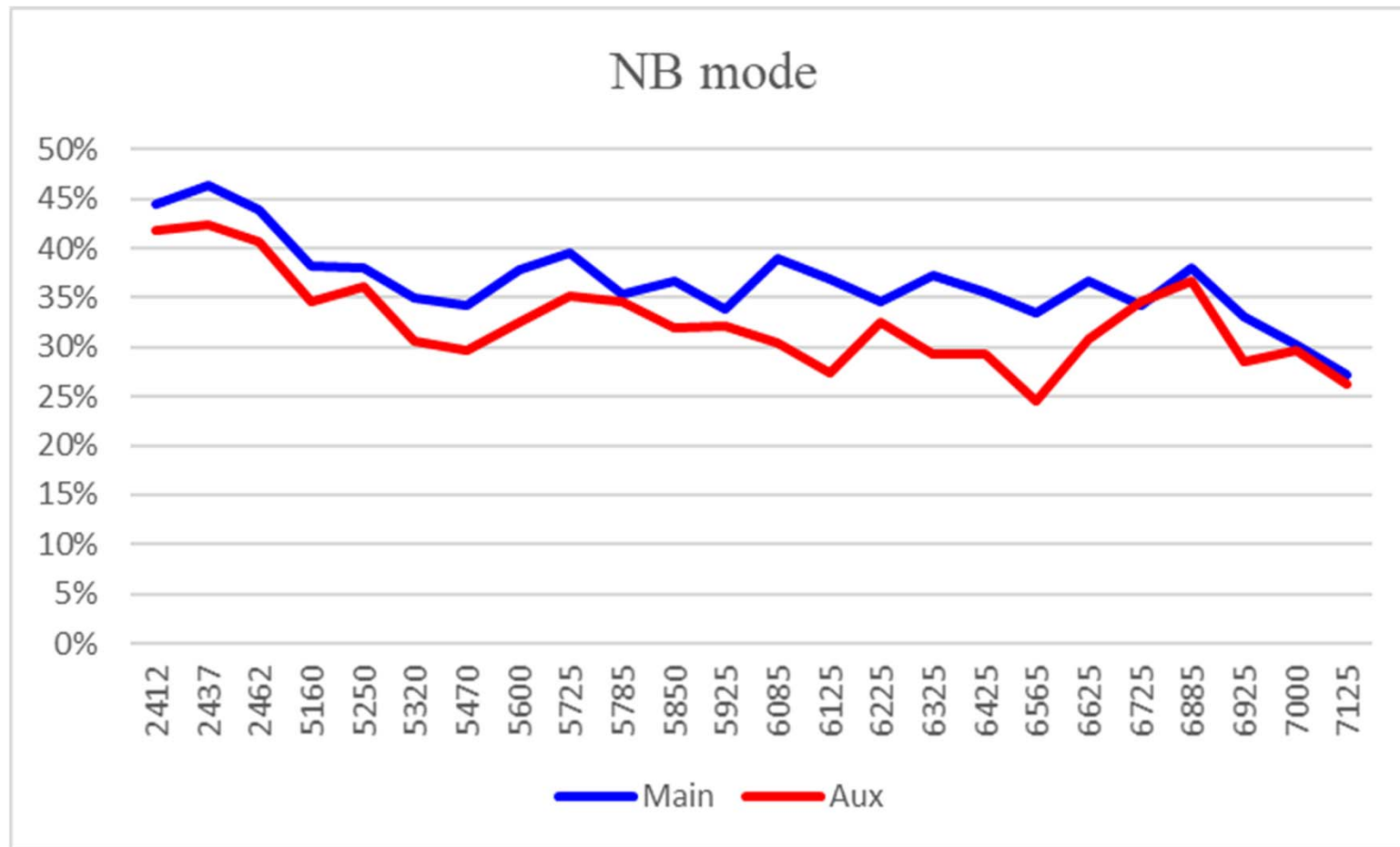
Frequency (MHZ)	XY Plane Peak Gain (dBi)	3D PEAK Gain (dBi)	Efficiency (%/ dB)	
2412	-2.61	2.69	25.88	-5.87
2437	-1.68	2.61	26.36	-5.79
2462	-2.16	2.05	25.64	-5.91
5160	-0.6	1.99	27.73	-5.57
5250	-1.11	1.12	26.36	-5.79
5320	-2.54	0.32	24.15	-6.17
5470	-1.75	0.83	23.60	-6.27
5600	-2.19	0.33	25.47	-5.94
5725	-2.7	1.12	26.12	-5.83
5785	-2.81	1.02	24.66	-6.08
5850	-2.72	0.77	25.18	-5.99
5925	-1.61	1.45	25.53	-5.93
6085	-1.71	1.05	22.96	-6.39
6125	-2.09	0.84	20.80	-6.82
6225	-1.02	1.28	25.53	-5.93
6325	-1.27	1.49	24.10	-6.18
6425	-1.36	2.26	25.70	-5.90
6565	-1.72	2.20	23.60	-6.27
6625	-0.95	2.59	28.51	-5.45
6725	-1.52	2.77	24.60	-6.09
6885	-2.05	2.33	27.29	-5.64
6925	-2.44	1.49	25.06	-6.01
7000	-3.5	1.76	22.96	-6.39
7125	-2.66	0.78	20.94	-6.79

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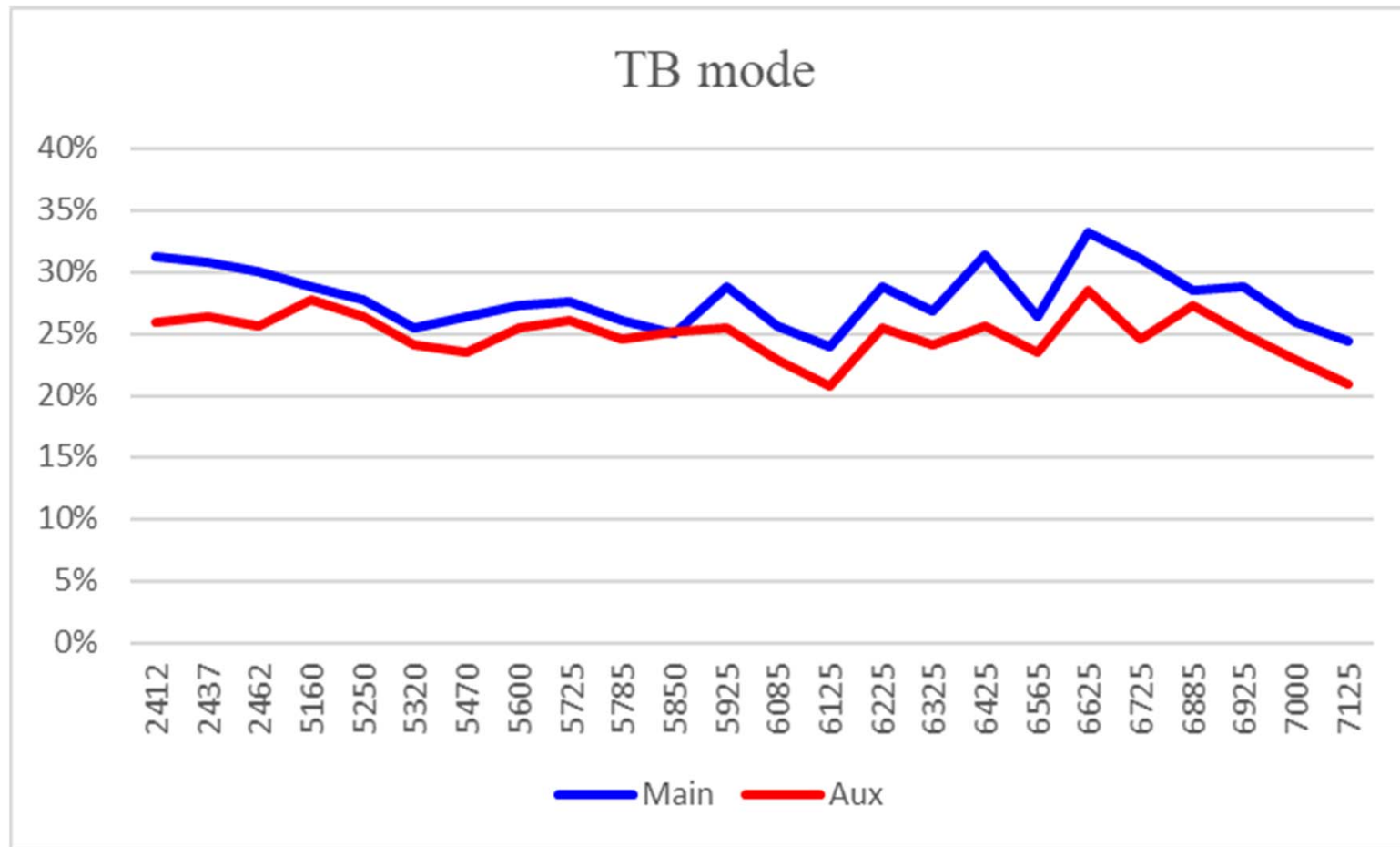
5. Antenna Performance _ Efficiency(WLAN)

NB mode



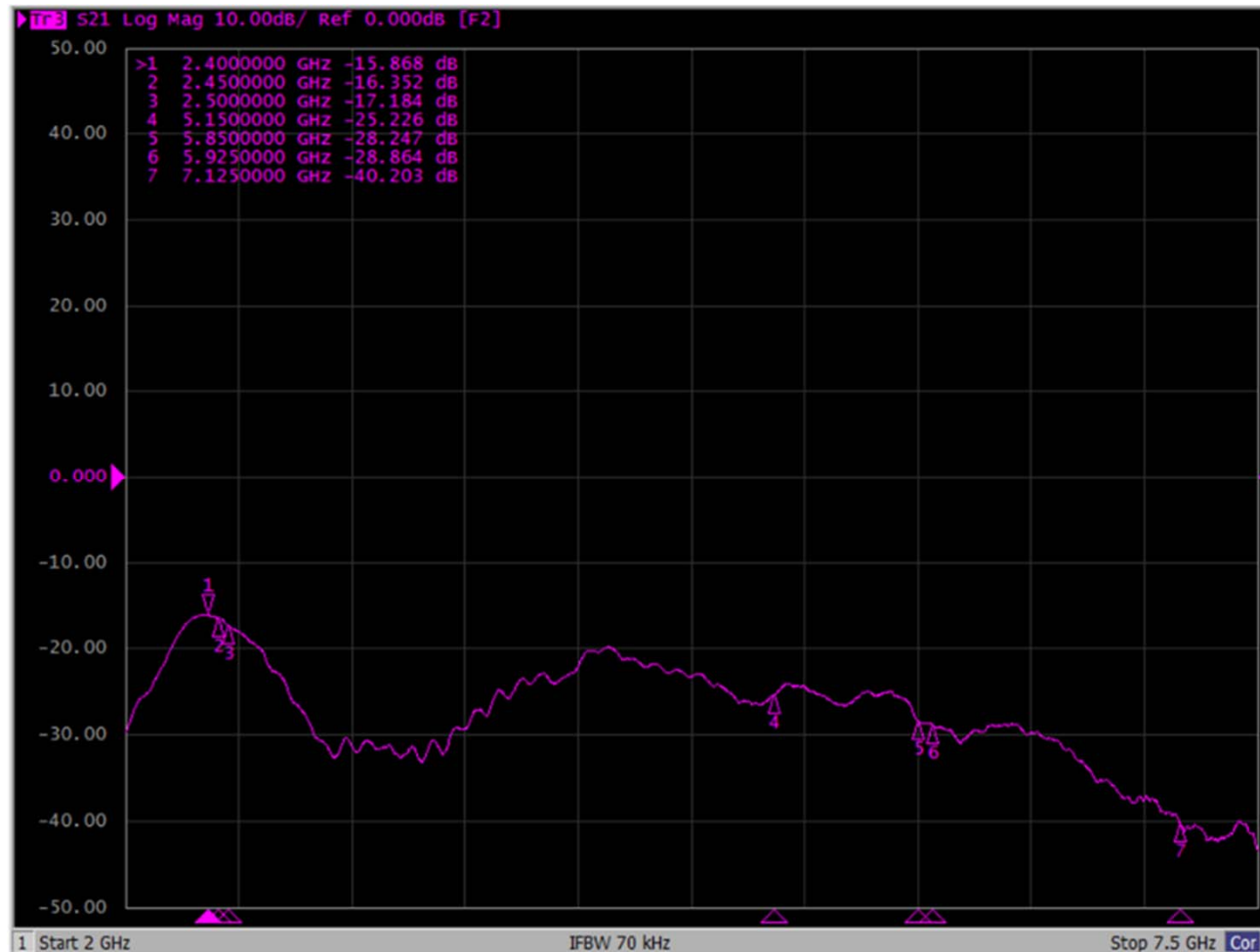
5. Antenna Performance _ Efficiency(WLAN)

TB mode



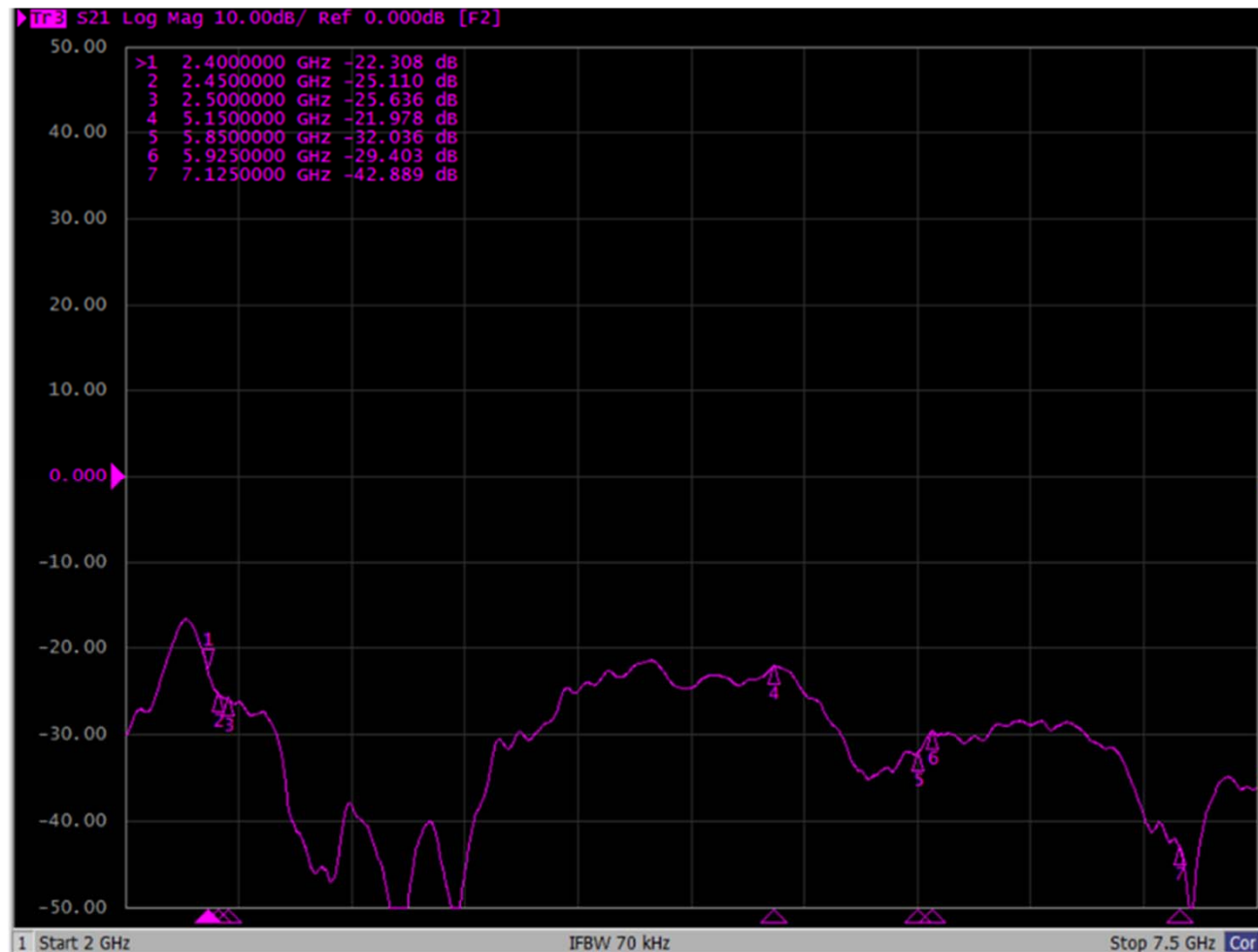
5. Antenna Performance _Isolation WLAN Main & Aux

NB mode



5. Antenna Performance _ Isolation WLAN Main & Aux

TB mode



7. Conclusion

NB mode

WLAN	VSWR	Efficiency (%)	3D Peak gain (dBi)	XY plane Peak gain (dBi)
Main	< 2.8 @ 2.4~2.5 GHz < 2.8 @ 5.15~7.125 GHz	44~46 @ 2.412~2.462GHz 27~40 @ 5.16~7.125 GHz	2.22~2.83 @ 2.412~2.462GHz 0.45~2.90 @ 5.16~7.125 GHz	-1.00~ -0.56 @ 2.412~2.462GHz -2.66~ -1.34 @ 5.16~7.125 GHz
Aux	< 2.8 @ 2.4~2.5 GHz < 2.8 @ 5.15~7.125 GHz	41~42 @ 2.412~2.462GHz 25~37 @ 5.16~7.125 GHz	2.54~2.88 @ 2.412~2.462GHz 0.38~2.67 @ 5.16~7.125 GHz	-1.60~ -1.21 @ 2.412~2.462GHz -3.19~ 0.07 @ 5.16~7.125 GHz

TB mode

WLAN	VSWR	Efficiency (%)	3D Peak gain (dBi)	XY plane Peak gain (dBi)
Main	< 2.8 @ 2.4~2.5 GHz < 2.8 @ 5.15~7.125 GHz	30~31 @ 2.412~2.462GHz 24~33 @ 5.16~7.125 GHz	2.54~2.68 @ 2.412~2.462GHz 1.70~2.91 @ 5.16~7.125 GHz	-1.86~ -0.98 @ 2.412~2.462GHz -2.93~ 0.39 @ 5.16~7.125 GHz
Aux	< 2.8 @ 2.4~2.5 GHz < 2.8 @ 5.15~7.125 GHz	26~36 @ 2.412~2.462GHz 21~29 @ 5.16~7.125 GHz	2.05~2.69 @ 2.412~2.462GHz 0.32~2.77 @ 5.16~7.125 GHz	-2.61~ -1.68 @ 2.412~2.462GHz -3.50~ -0.60 @ 5.16~7.125 GHz

Thank you for your attention

