

Test Environment

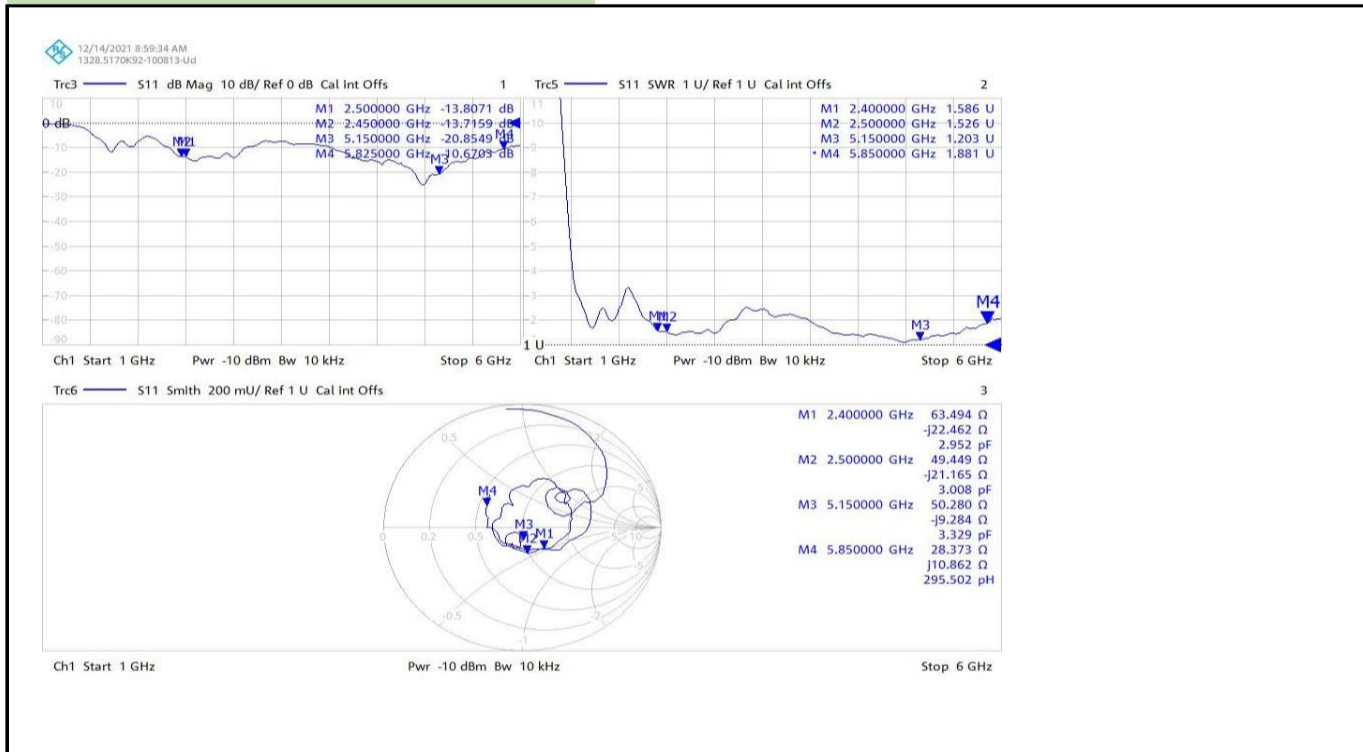
SY-16M Test System



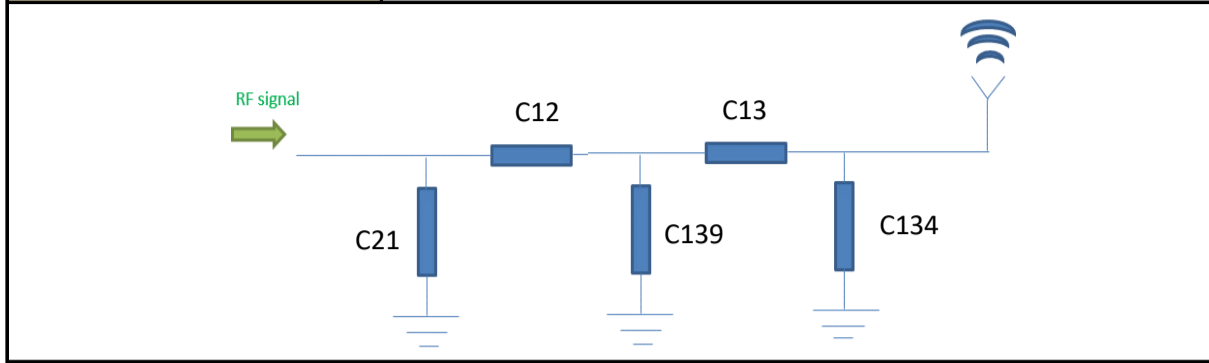
WiFi Left Test Result

VNA Data

VSWR & Return Loss & Smith Chart



Antenna Matching

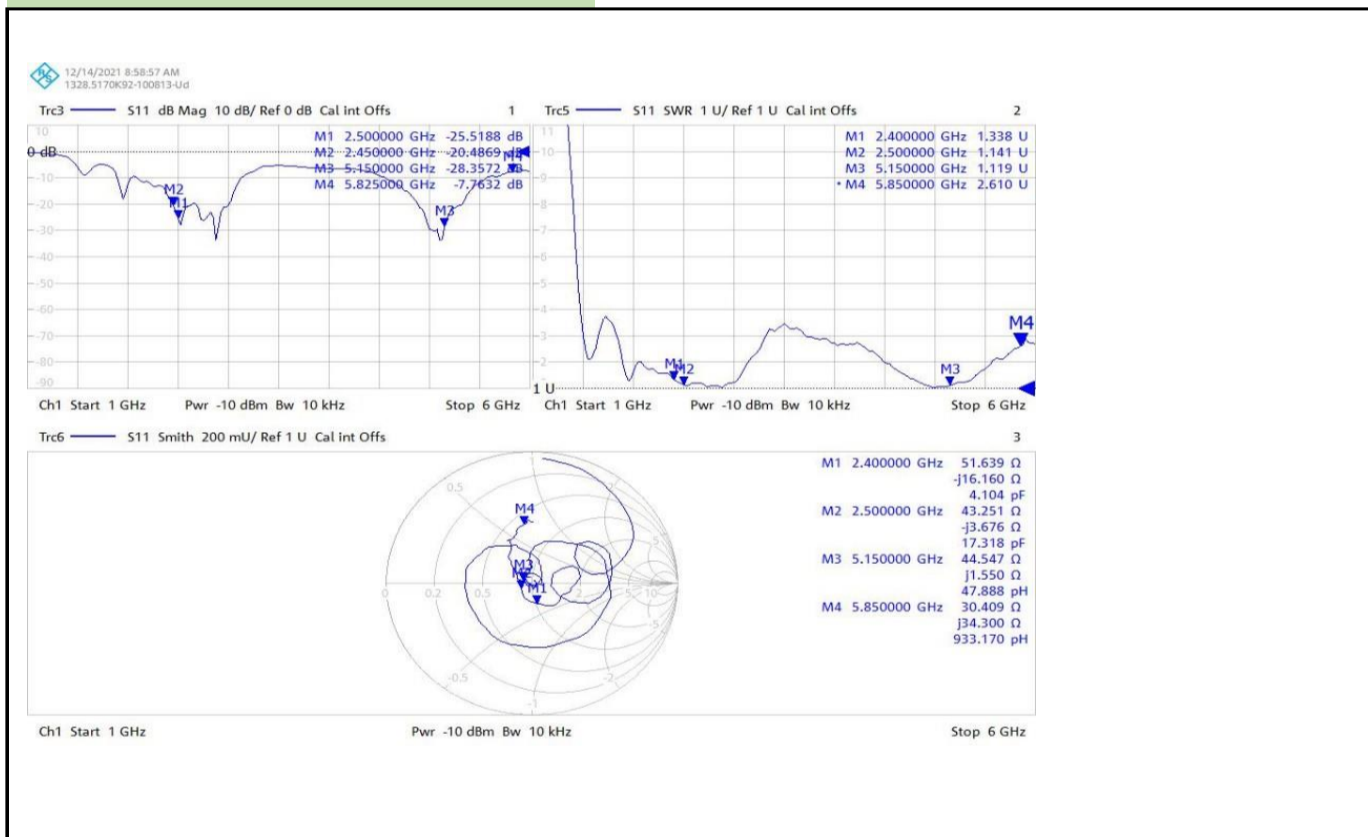


Item num.	C134	C13	C139	C12	C21
Value	NP	0Ω	NP	0Ω	2.7nH
Metrial ID	-	-	-	-	2.023E+09
Comment	NC: no component NP: no pad				

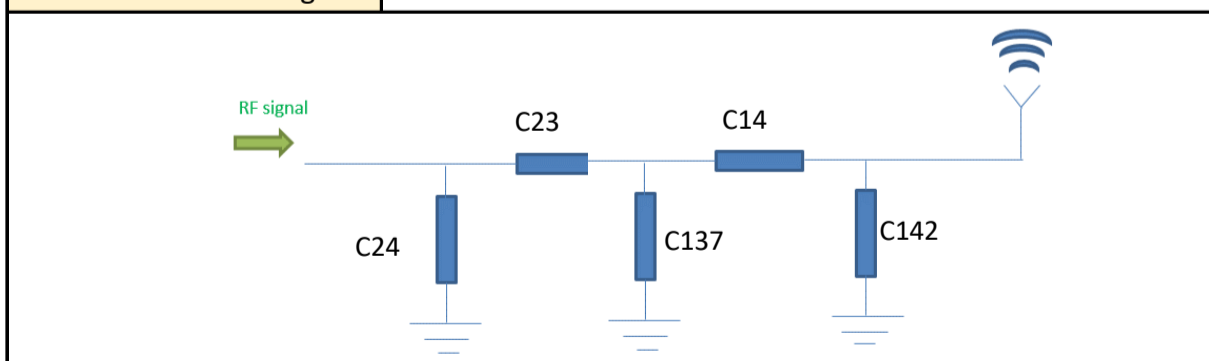
WiFi Right Test Result

VNA Data

VSWR & Return Loss & Smith Chart



Antenna Matching

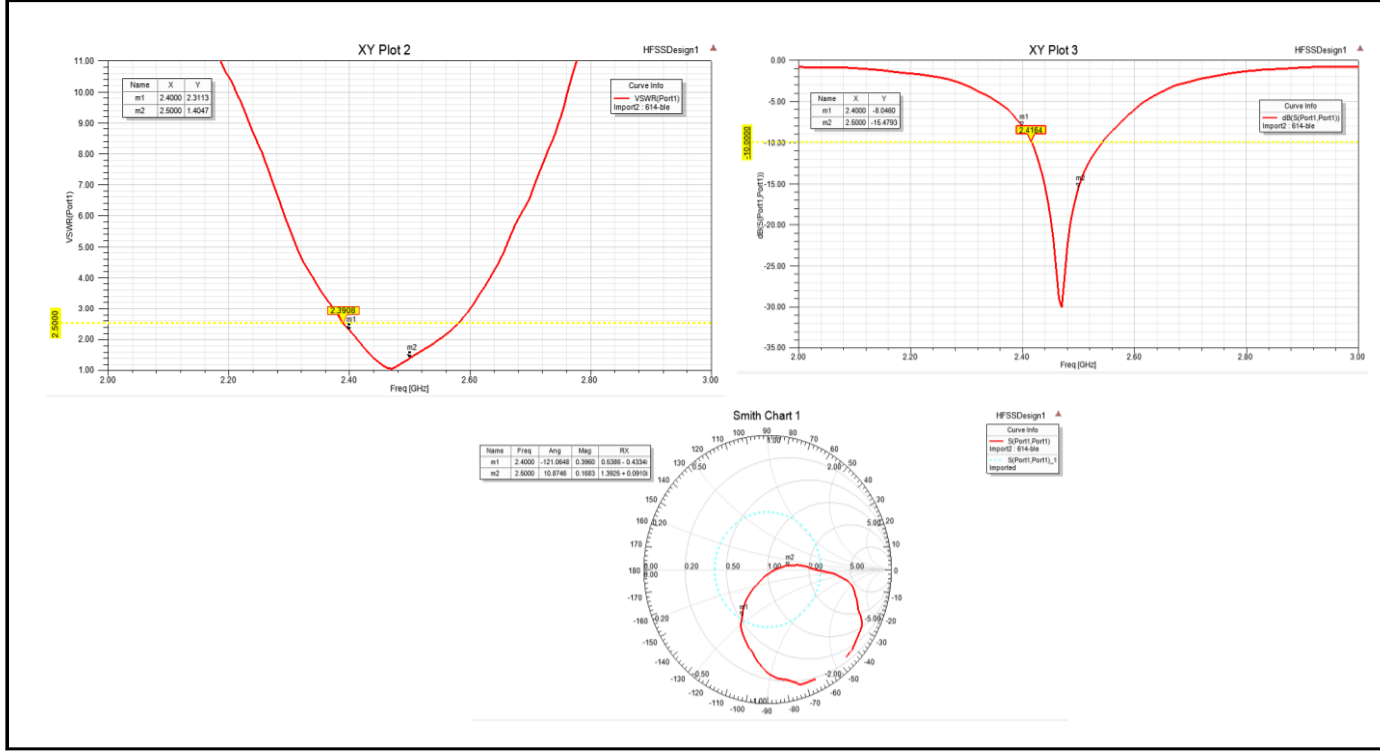


Item num.	C134	C13	C139	C12	C24
Value	NP	0Ω	NP	0Ω	2.7nH
Metrial ID	-	-	-	-	2.023E+09
Comment	NC: no component NP: no pad				

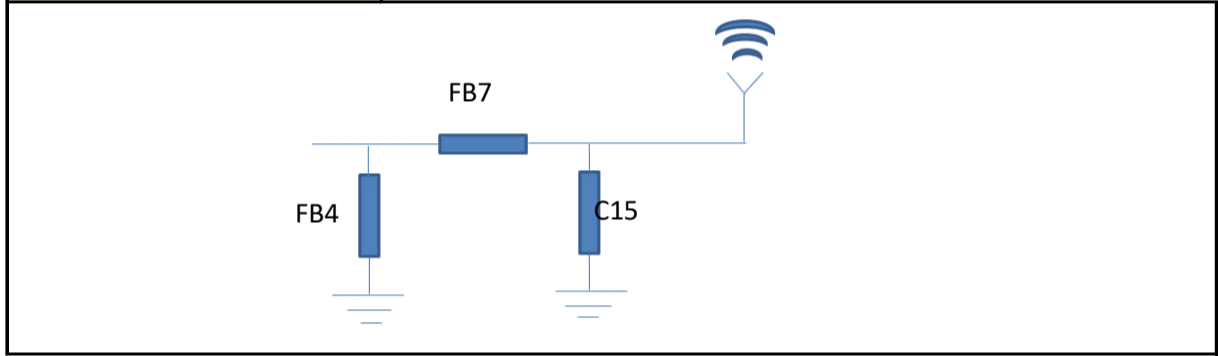
BLE Test Result

VNA Data

VSWR & Return Loss & Smith Chart

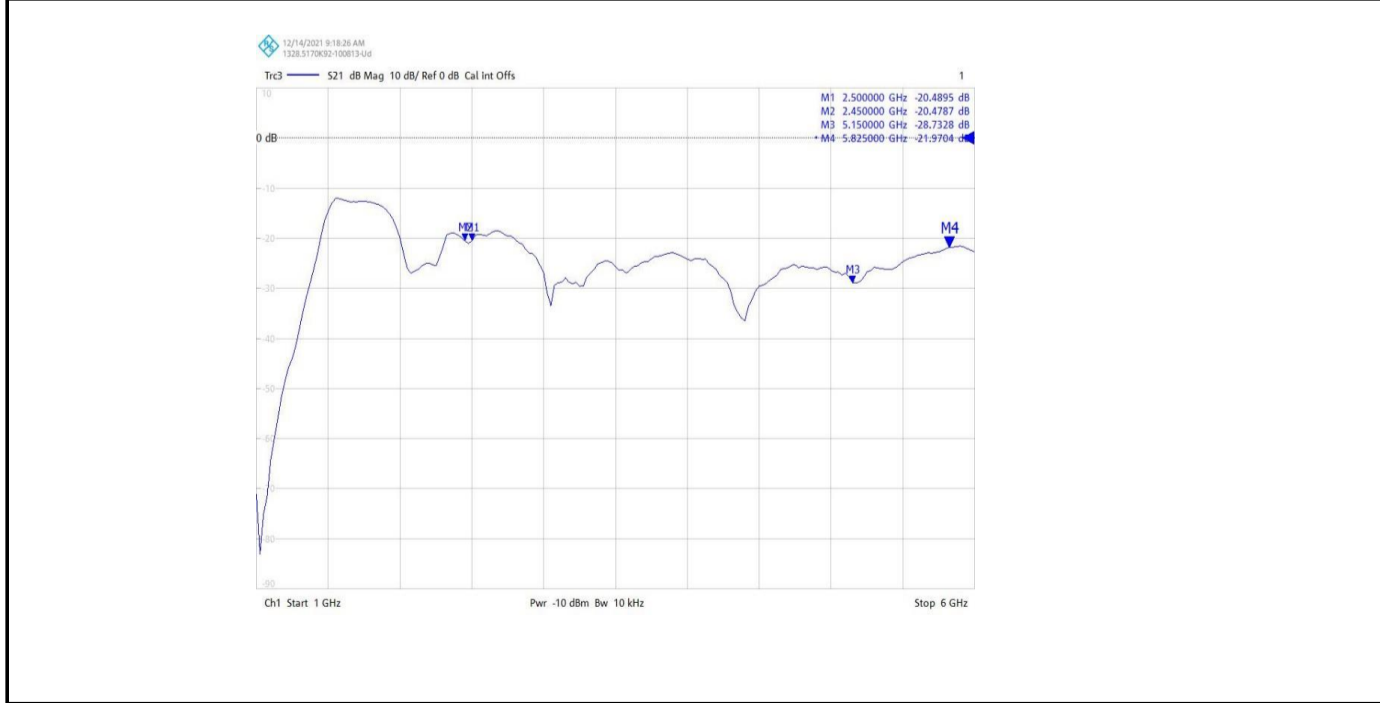


Antenna Matching

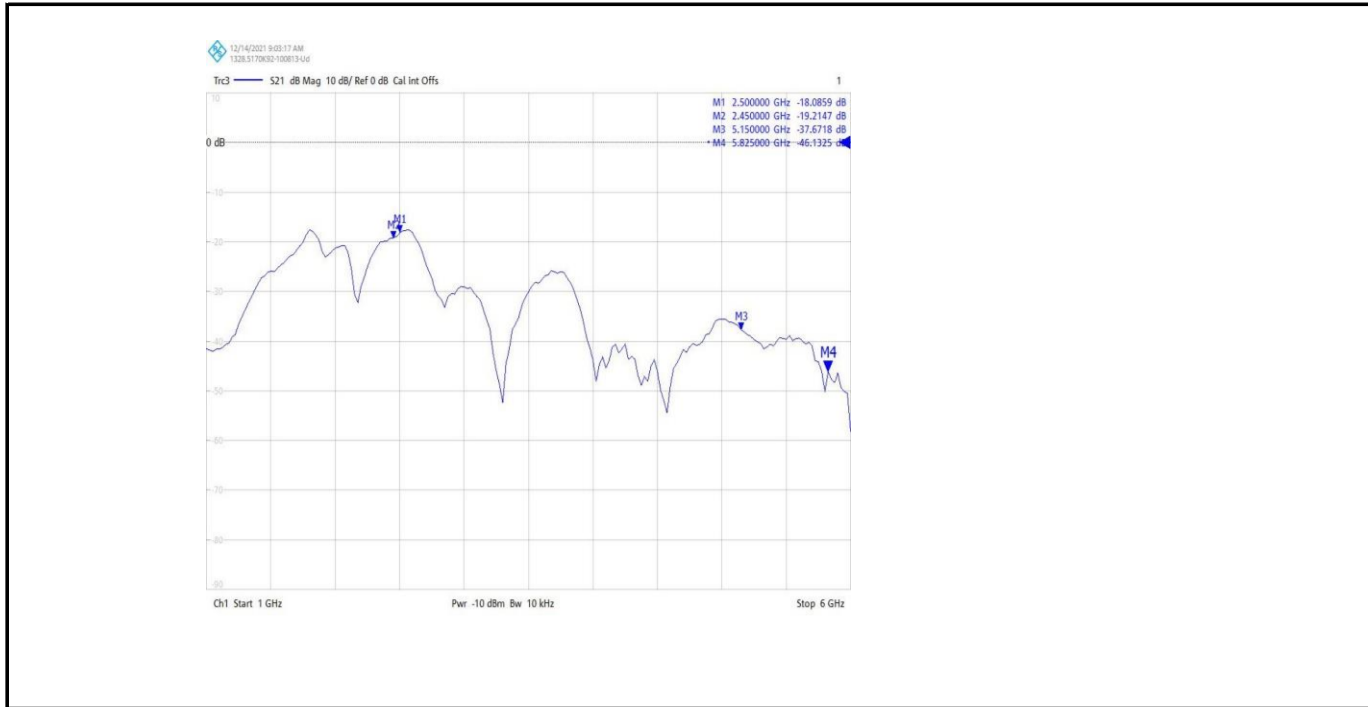


Item num.	C15	FB7	FB4	
Value	NP	0.8pF	NP	
Metrial ID	-	2020310424	2020310198	-
Comment	NC: no component NP: no pad			

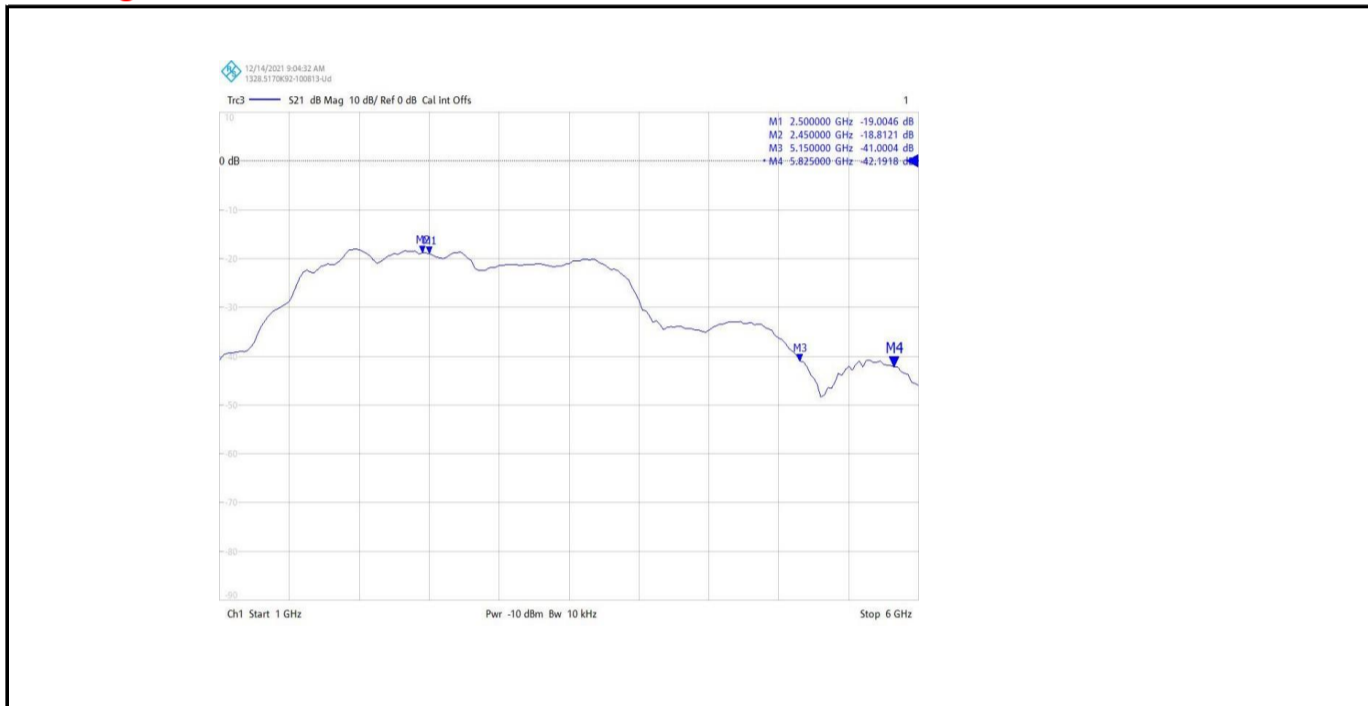
WiFi Left & WiFi Right Isolation



WiFi Left & BLE Isolation



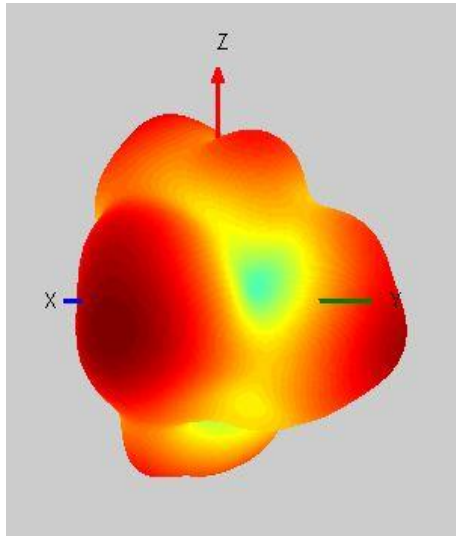
WiFi Right & BLE Isolation



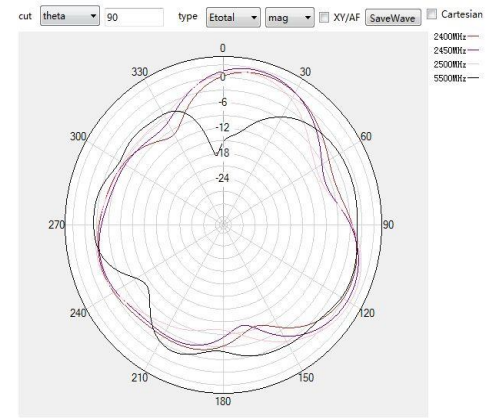
Chamber Data

Gain & Efficiency			
Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
2400	2.21	-2.81	52.36
2410	2.43	-2.76	52.97
2420	2.54	-2.63	54.58
2440	2.63	-2.60	54.95
2450	2.79	-2.45	56.89
2460	2.87	-2.37	57.94
2470	2.58	-2.54	55.72
2480	2.42	-2.62	54.70
2490	2.26	-2.59	55.08
2500	2.54	-2.41	57.41
MIN	2.21	-2.81	52.36
Max	2.87	-2.37	57.94
AVG	2.53	-2.58	55.26

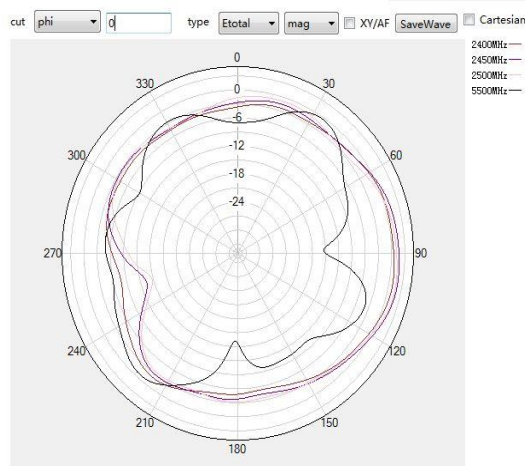
3D



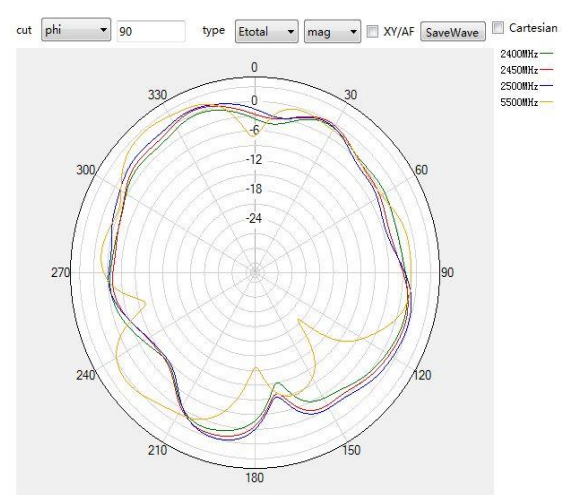
$\theta = 90^\circ$ (XY Plane)



$\phi = 0^\circ$ (XZ Plane)



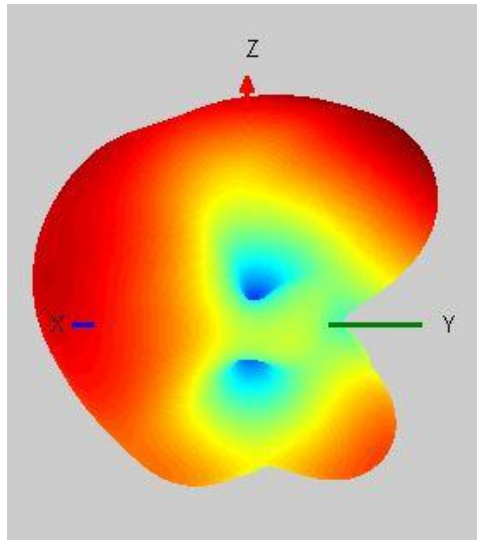
$\phi = 90^\circ$ (YZ Plane)



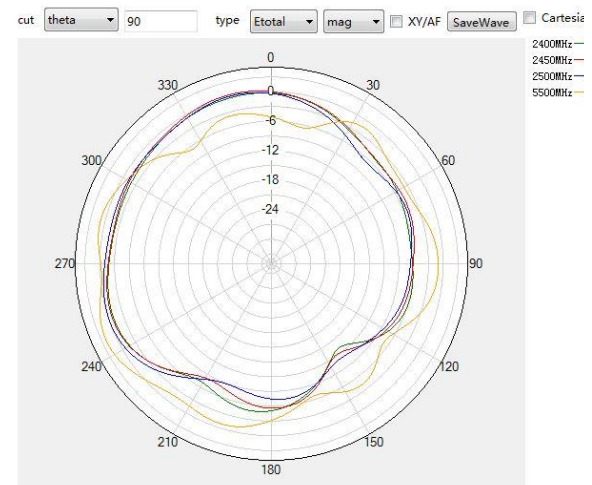
Chamber Data

Gain & Efficiency			
Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
2400	1.15	-2.90	51.30%
2410	1.11	-2.88	51.52%
2420	1.31	-2.77	52.82%
2430	1.37	-2.80	52.46%
2440	1.62	-2.69	53.85%
2450	1.95	-2.59	55.13%
2460	2.04	-2.76	53.03%
2470	2.05	-2.91	51.19%
2480	2.13	-2.93	50.97%
2490	2.33	-2.75	53.03%
2500	2.39	-2.67	54.04%
MIN	1.11	-2.93	51%
Max	2.39	-2.59	55.13%
AVG	1.77	-2.79	52.67%

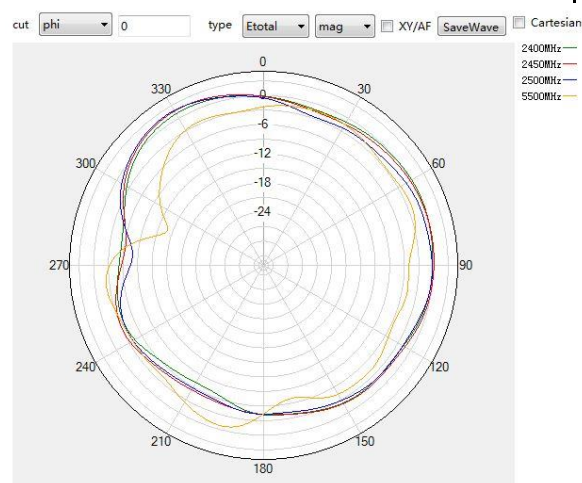
3D



$\theta = 90^\circ$ (XY Plane)



$\phi = 0^\circ$ (XZ Plane)

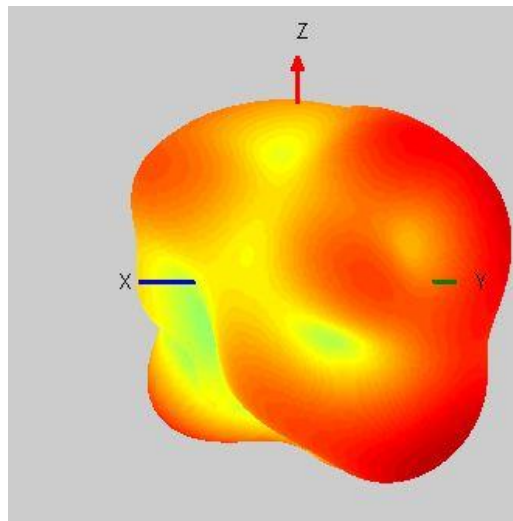


$\phi = 90^\circ$ (YZ Plane)

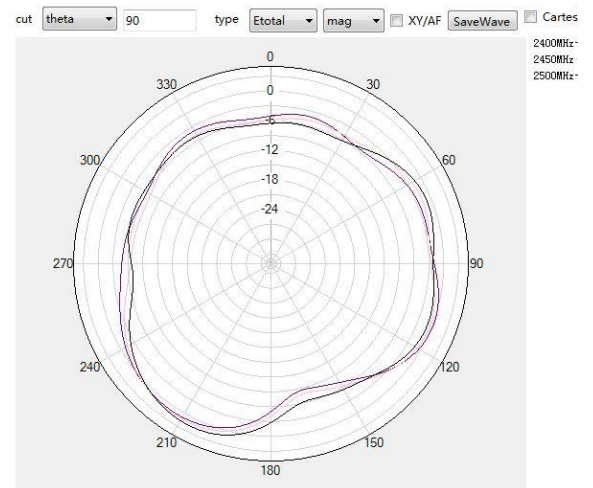


Gain & Efficiency			
Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
2400	1.37	-3.02	49.89
2410	1.34	-3.13	48.64
2420	1.65	-2.91	51.17
2430	1.74	-2.85	51.88
2440	1.97	-2.68	53.95
2450	1.79	-2.77	52.84
2460	1.73	-2.79	52.60
2470	1.70	-2.80	52.48
2480	1.69	-2.85	51.88
2490	1.97	-2.68	53.95
2500	2.22	-2.53	55.85
MIN	1.34	-3.13	48.64
Max	2.22	-2.53	55.85
AVG	1.74	-2.82	52.28

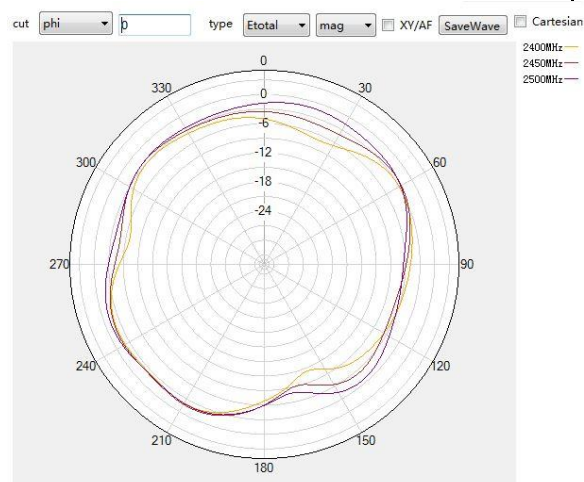
3D



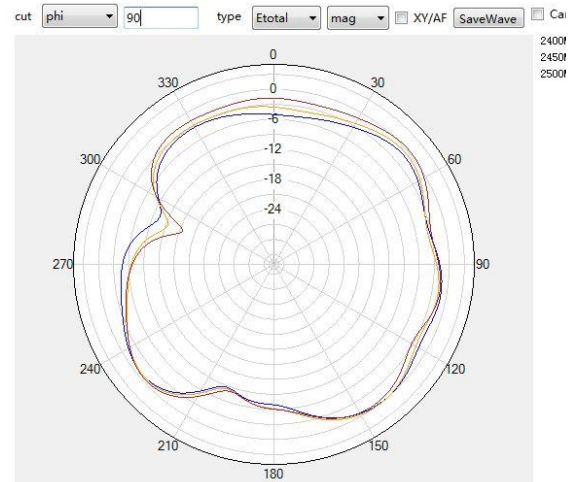
$\theta = 90^\circ$ (XY Plane)



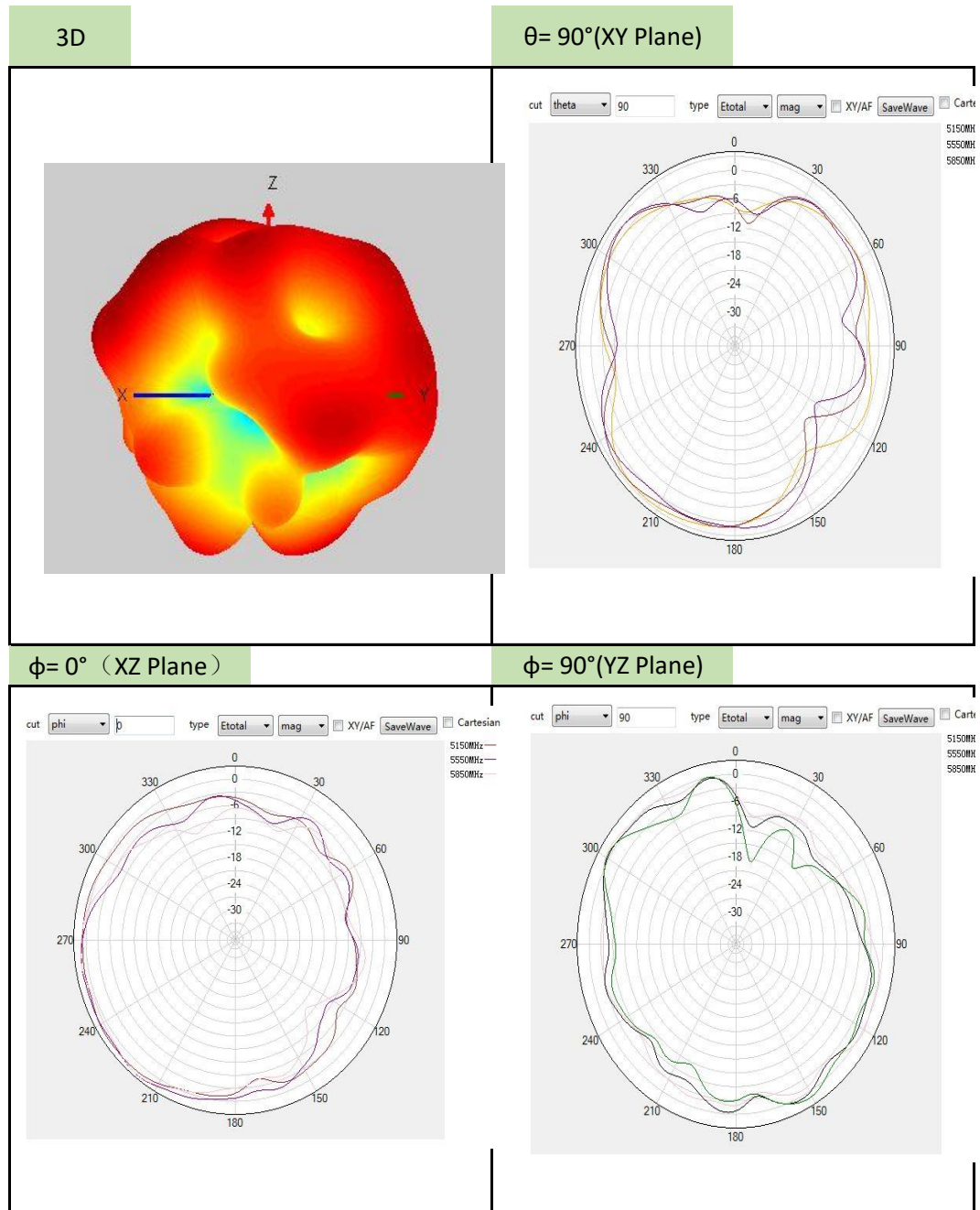
$\phi = 0^\circ$ (XZ Plane)



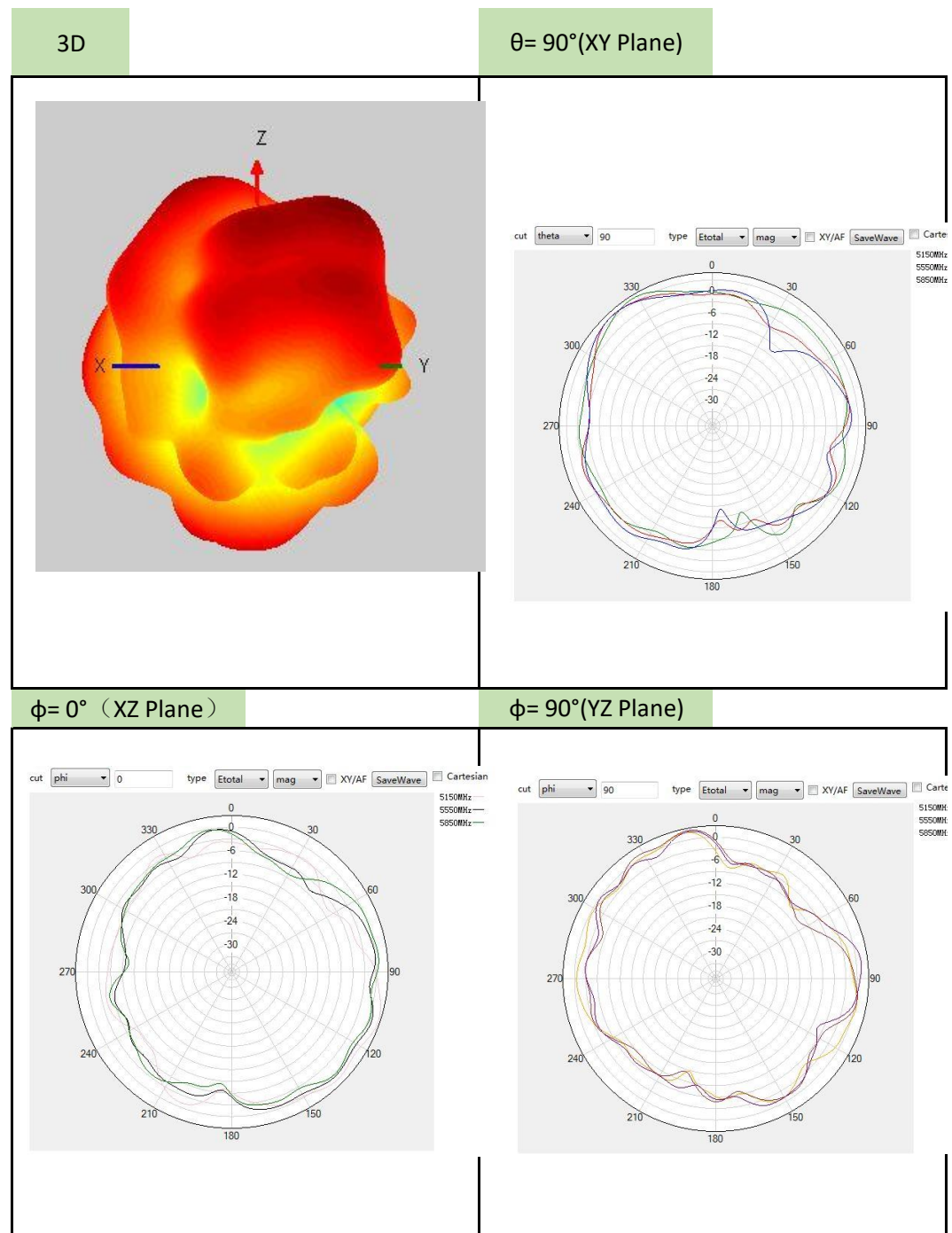
$\phi = 90^\circ$ (YZ Plane)



Gain & Efficiency			
Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
5150	3	-2.67	54.08
5200	3.08	-2.55	55.59
5250	2.97	-2.37	57.94
5300	2.6	-2.44	57.02
5350	2.77	-2.43	57.15
5400	2.63	-2.47	56.62
5450	2.57	-2.66	54.20
5500	2.56	-2.69	53.83
5550	2.24	-2.46	56.75
5600	2.40	-2.67	54.08
5650	2.70	-2.38	57.81
5700	2.92	-2.68	53.95
5750	3.10	-2.66	54.20
5800	3.12	-2.57	55.34
5850	2.93	-2.45	56.89
MIN	2.24	-2.69	53.83
Max	3.12	-2.37	57.94
AVG	2.77	-2.54	55.70



Gain & Efficiency			
Frequency f (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
5150	3.26	-1.84	65.54
5200	3.25	-2.61	54.83
5250	3.15	-2.46	56.75
5300	3.16	-2.58	55.21
5350	2.75	-2.54	55.72
5400	2.79	-2.11	61.52
5450	3.17	-2.59	55.08
5500	2.41	-2.02	62.81
5550	2.28	-2.16	60.81
5600	2.13	-2.39	57.68
5650	2.47	-2.36	58.08
5700	2.43	-2.40	57.54
5750	2.57	-2.35	58.21
5800	2.94	-2.23	59.84
5850	2.46	-2.39	57.68
MIN	2.13	-2.56	55.46
Max	3.26	-1.84	65.54
AVG	2.75	-2.34	58.49



Antenna photo please refer to the appendix-Antenna Photo