Manufacturer	SWARD
Antenna type	Internal antenna
Antenna Gain	2.92dBi for 2.4G, 4.84dBi for 5G

1.Test equipment and conditions:

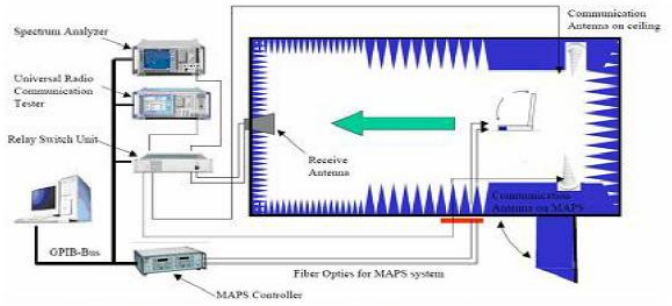
1.1.Network Analyzer

Agilent 8753D Agilent 5071B

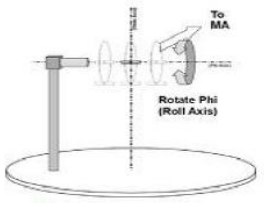
1.2.Communication test equipment

Agilent E5515C R&S CMW500

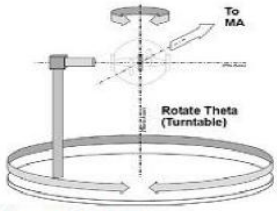
1.3.Test system



(Testing by 3D anechoic chamber)

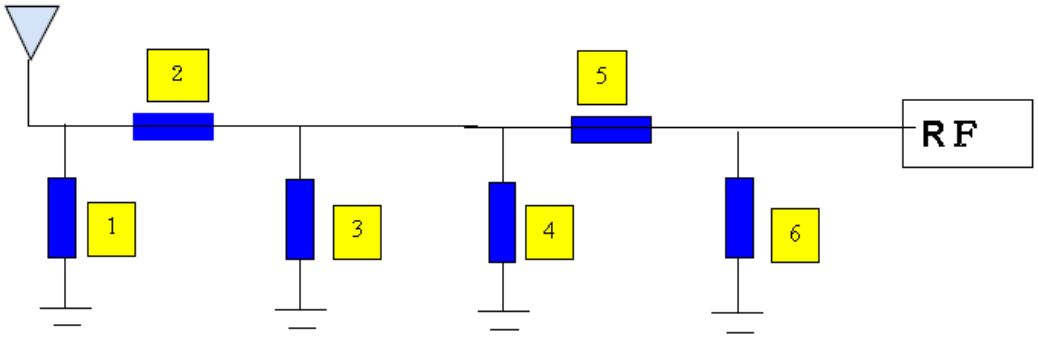


Phi axis test



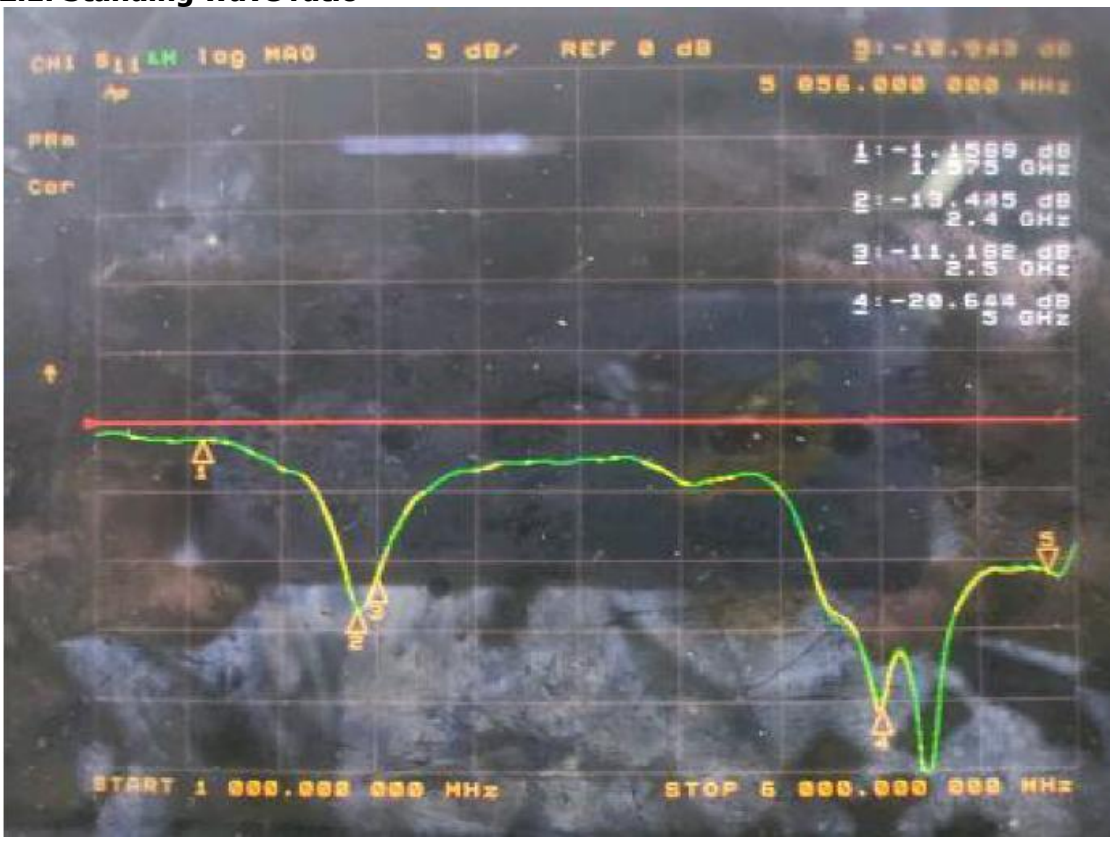
Theta axis test

1.4.Matching circuit



2.Test Data:

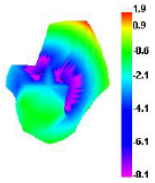
2.1. Standing wave ratio



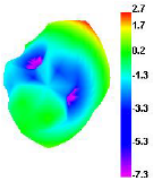
2.2.Efficiency and Directivity diagram

Passive Test For 2.4Gwifi								
Freq	Effi	Effi	Gain	Gain	UHIS	DHIS	Max	Min
(MHz)	(%)	(dB)	(dBi)	(dBd)	(%)	(%)	(dB)	(dB)
2400	45.83	-3.39	1.86	-0.29	18.235	27.596	1.86	-12.94
2410	47.26	-3.26	2.3	0.15	18.424	28.837	2.3	-13.91
2420	48.34	-3.16	2.45	0.3	18.331	30.007	2.45	-14.03
2430	48.5	-3.14	2.57	0.42	18.017	30.486	2.57	-13.64
2440	49.69	-3.04	2.54	0.39	18.025	31.661	2.54	-15.12
2450	51.59	-2.87	2.7	0.55	18.431	33.159	2.7	-17.73
2460	50.45	-2.97	2.4	0.25	17.726	32.728	2.4	-21.79
2470	50.16	-3	2.41	0.26	17.573	32.586	2.41	-22.54
2480	52.07	-2.83	2.48	0.33	18.105	33.966	2.48	-18.69
2490	57.08	-2.44	2.92	0.77	19.77	37.306	2.92	-15.3
2500	56.44	-2.48	2.77	0.62	19.394	37.049	2.77	-13.14

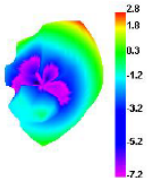
2400.000MHz



2450.000MHz

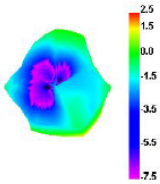


2500.000MHz

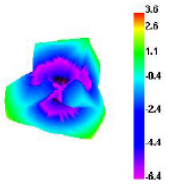


Passive Test For 5Gwifi								
Freq	Effi	Effi	Gain	Gain	UHIS	DHIS	Max	Min
(MHz)	(%)	(dB)	(dBi)	(dBd)	(%)	(%)	(dB)	(dB)
5000	40.24	-3.95	2.51	0.36	11.351	28.887	2.51	-18.1
5100	43.29	-3.64	2.92	0.77	12.288	31.004	2.92	-15.39
5200	43.3	-3.64	2.72	0.57	13.205	30.09	2.72	-16.38
5300	39.6	-4.02	2.95	0.8	12.904	26.701	2.95	-12.42
5400	54.33	-2.65	4.73	2.58	18.456	35.87	4.73	-14.57
5500	50.74	-2.95	3.63	1.48	16.711	34.028	3.63	-13.19
5600	55.21	-2.58	4.05	1.9	16.863	38.349	4.05	-12.19
5700	60.08	-2.21	4.05	1.9	18.388	41.689	4.05	-21.86
5800	58.08	-2.36	4.84	2.69	16.966	41.112	4.84	-12.14
5900	55.61	-2.55	4.54	2.39	16.451	39.163	4.54	-11.84
6000	62.69	-2.03	4.64	2.49	19.856	42.829	4.64	-12.45

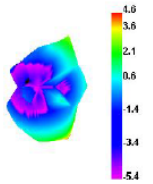
5000.000MHz



5500.000MHz



6000.000MHz



3.Antenna drawing: