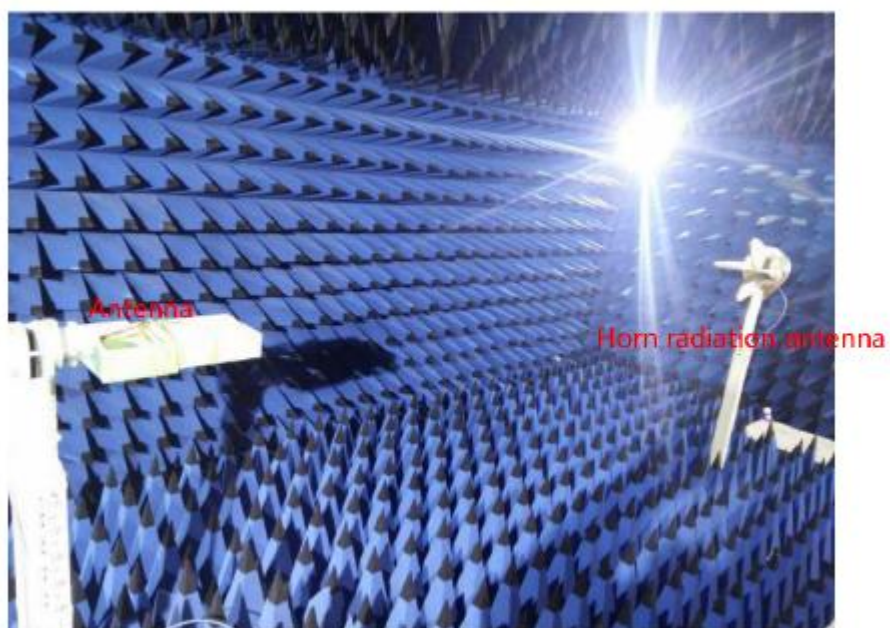


Manufacturer	Shenzhen Feng Rui Xiang Intelligent Technology Co., Ltd.
Model	FRX-M8822CU5
Antenna type	Internal antenna
Antenna Gain	3.0 dBi(Max.) for 2.4G Band and 3.0 dBi (Max.) for 5G Band

1.Test equipment and conditions:



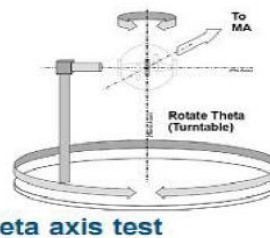
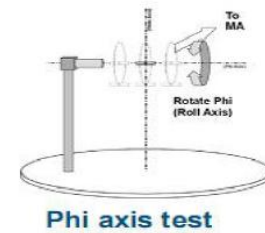
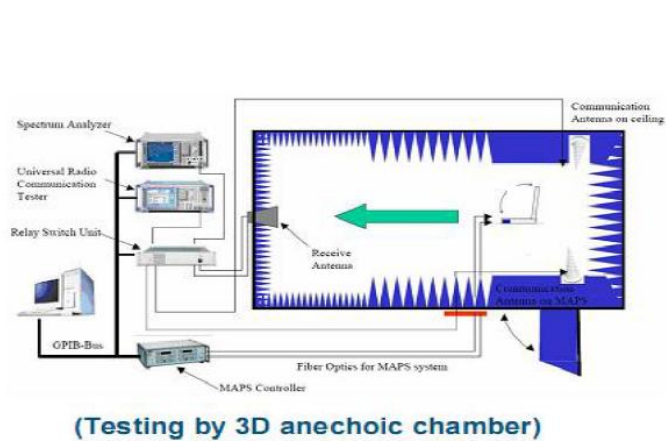
1.1.Network Analyzer

Agilent 8753D Agilent 5071B

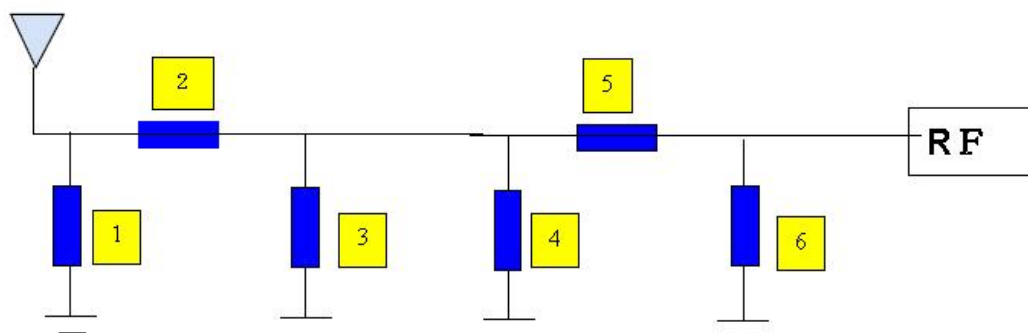
1.2.Communication test equipment

Agilent E5515C R&S CMW500

1.3.Test system

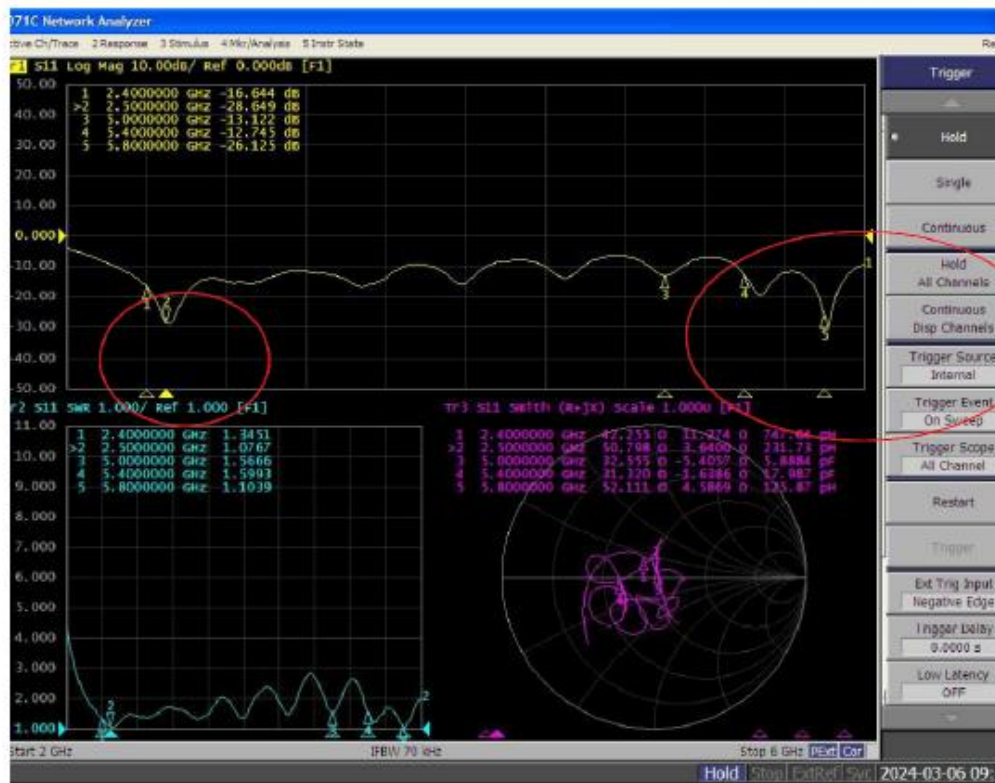


1.4.Matching circuit

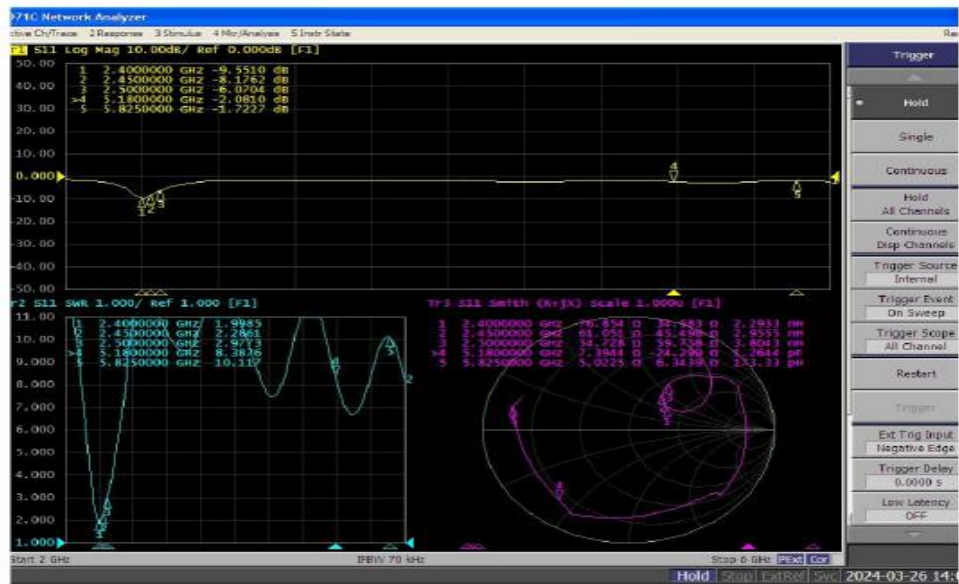


2.Test Data:

2.1. Standing wave ratio



Return loss: < -8dB
VSWR: < 3



Return loss: < -8dB
VSWR: < 3

2.2.Efficiency

WIFI

Passive Test For 2G				
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Directivity (dBi)
2400	60	-2.22	1.94	4.16
2410	60.95	-2.15	2.09	4.24
2420	61.97	-2.08	2.13	4.21
2430	60.36	-2.19	1.96	4.15
2440	62.17	-2.06	2.05	4.11
2450	63.47	-1.97	2.08	4.06
2460	64.17	-1.93	3.00	4.03
2470	62.32	-2.05	2.02	4.07
2480	58.93	-2.3	1.88	4.18
2490	60.02	-2.22	1.97	4.18
2500	60.66	-2.17	1.93	4.1

Passive Test For 5G				
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Directivity (dBi)
5100	37.78	-4.23	0.05	4.28
5110	35.62	-4.48	-0.12	4.36
5120	35.32	-4.52	-0.21	4.31
5130	34.64	-4.6	-0.23	4.37
5140	33.62	-4.73	-0.42	4.31
5150	28.79	-5.41	-1.06	4.35
5160	31.18	-5.06	-0.72	4.34
5170	33.82	-4.71	-0.36	4.35
5180	34.85	-4.58	-0.21	4.37
5190	32.85	-4.83	-0.31	4.53
5200	33.47	-4.75	-0.21	4.54
5210	36.45	-4.38	0.23	4.61
5220	37.04	-4.31	0.23	4.54
5230	39.78	-4	0.48	4.49
5240	35.48	-4.5	-0.1	4.4
5250	32.97	-4.82	-0.33	4.49
5260	32.89	-4.83	-0.31	4.52
5270	31.91	-4.96	-0.4	4.56
5280	31.61	-5	-0.47	4.53
5290	27.53	-5.6	-1.17	4.43
5300	30.01	-5.23	-0.76	4.47
5310	30.36	-5.18	-0.72	4.46
5320	38.54	-4.14	0.33	4.47
5330	35.76	-4.47	0	4.47
5340	45.23	-3.45	1.15	4.59
5350	39.73	-4.01	0.56	4.57
5360	37.93	-4.21	0.38	4.59
5370	39.24	-4.06	0.48	4.55
5380	42.18	-3.75	0.87	4.62
5390	34.38	-4.64	-0.14	4.5
5400	40.13	-3.97	0.65	4.62
5410	38.49	-4.15	0.44	4.59
5420	46.33	-3.34	1.3	4.64
5430	42.97	-3.67	0.99	4.65
5440	47.37	-3.24	1.47	4.72
5450	41.69	-3.8	0.9	4.7
5460	53.97	-2.68	3.00	4.74
5470	46.99	-3.28	1.4	4.68
5480	44.7	-3.5	1.24	4.73
5490	41.63	-3.81	0.86	4.67

5500	41.62	-3.81	0.87	4.67
5510	38.07	-4.19	0.48	4.67
5520	35.91	-4.45	0.33	4.78
5530	43.24	-3.64	1.09	4.74
5540	41.93	-3.77	1.01	4.78
5550	41.14	-3.86	0.8	4.65
5560	42.68	-3.7	1.01	4.71
5570	47.68	-3.22	1.38	4.6
5580	48.05	-3.18	1.6	4.78
5590	41.95	-3.77	1.03	4.8
5600	39.29	-4.06	0.88	4.94
5610	42.86	-3.68	1.2	4.88
5620	42.07	-3.76	1.03	4.79
5630	38.73	-4.12	0.65	4.77
5640	35.48	-4.5	0.23	4.73
5650	40.09	-3.97	0.79	4.76
5660	39.24	-4.06	0.85	4.91
5670	39.98	-3.98	0.92	4.9
5680	43.65	-3.6	1.28	4.88
5690	45.57	-3.41	1.28	4.7
5700	41.77	-3.79	0.92	4.71
5710	44.78	-3.49	1.13	4.62
5720	50.03	-3.01	1.76	4.77
5730	50.95	-2.93	1.84	4.76
5740	42.45	-3.72	1.04	4.76
5750	41.02	-3.87	0.9	4.77
5760	38.67	-4.13	0.59	4.72
5770	42.06	-3.76	0.88	4.64
5780	41.5	-3.82	0.84	4.66
5790	43.92	-3.57	1.19	4.76
5800	40	-3.98	0.7	4.68
5810	48.3	-3.16	1.49	4.66
5820	45.68	-3.4	1.13	4.53
5830	50.74	-2.95	1.63	4.58

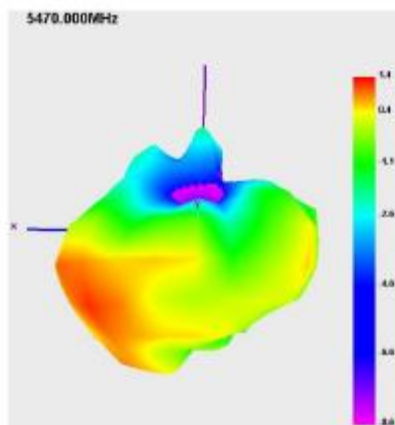
BT

Passive Test For 2G				
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Directivity (dBi)
2400	60.49	-2.18	2.31	2400
2410	61.84	-2.09	2.43	2410

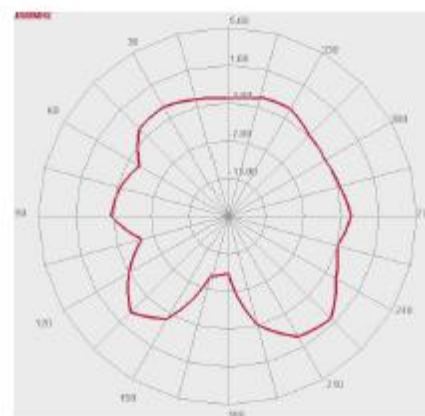
2420	68.85	-1.62	2.97	2420
2430	63.08	-2	2.62	2430
2440	62.37	-2.05	2.61	2440
2450	69.43	-1.58	3.00	2450
2460	67.13	-1.73	2.76	2460
2470	58.59	-2.32	2.19	2470
2480	59.17	-2.28	2.34	2480
2490	70.37	-1.53	3.17	2490
2500	60.08	-2.21	2.47	2500

2.3.Directivity diagram

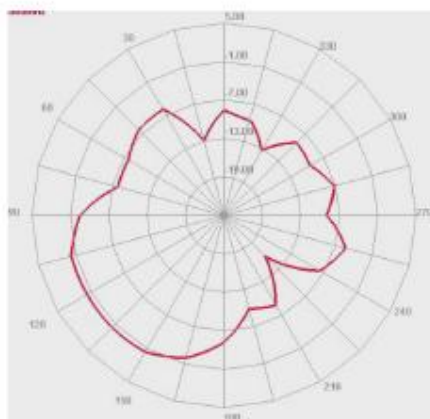
4.3 WIFI-5.47GHz Radiation Pattern



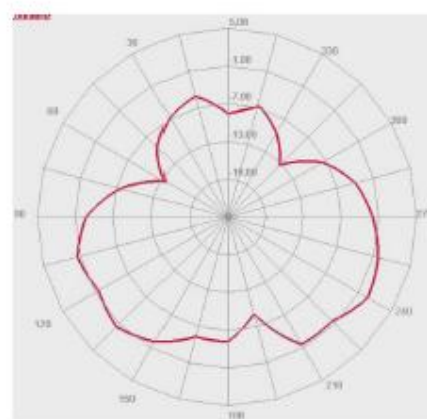
3D radiation



XY plane

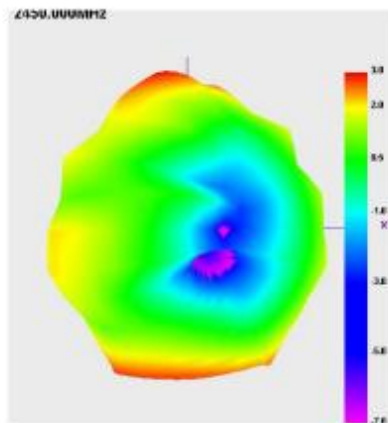


XZ plane

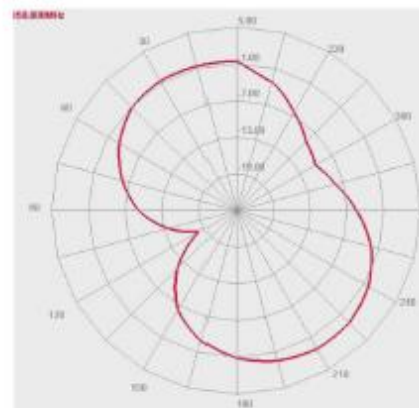


YZ plane

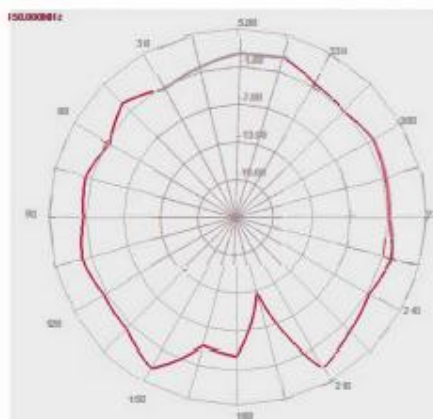
4.4 BT-2.45GHz Radiation Pattern



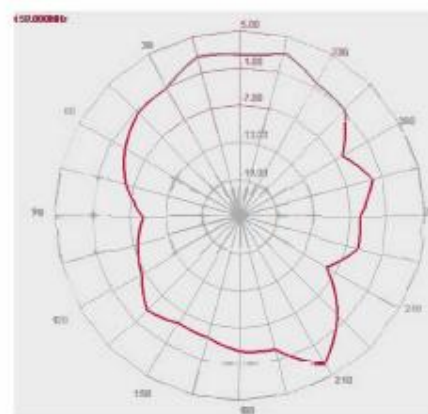
3D radiation



XY plane

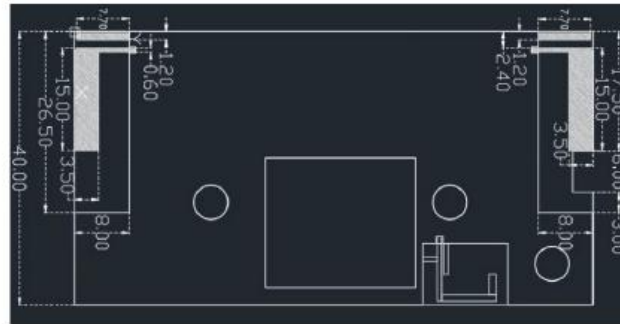


XZ plane



YZ plane

3. Antenna drawing (mm) :



Antenna onboard design, and size: 17.5*8mm