

Manufacturer	/
Antenna type	Internal antenna
Antenna Gain	2.0dBi for 2.4G, 2.0dBi for 5G

## 1. Test equipment and conditions:

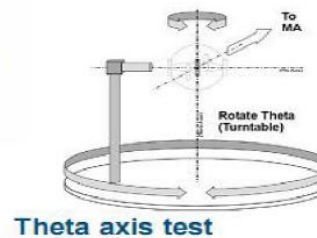
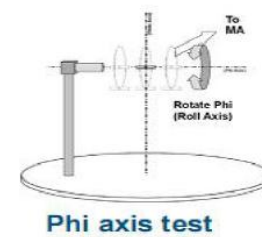
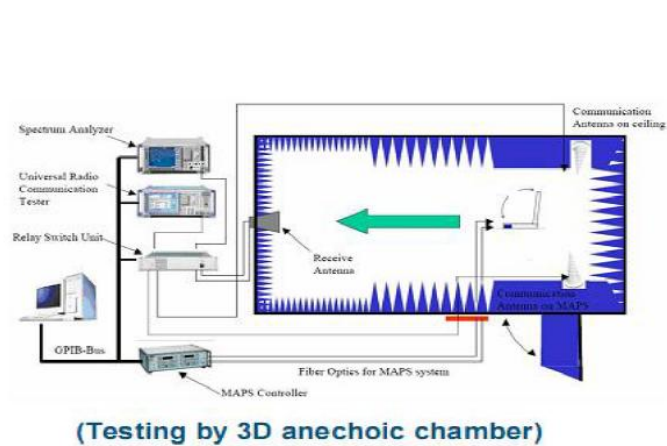
### 1.1. Network Analyzer

Agilent 8753D Agilent 5071B

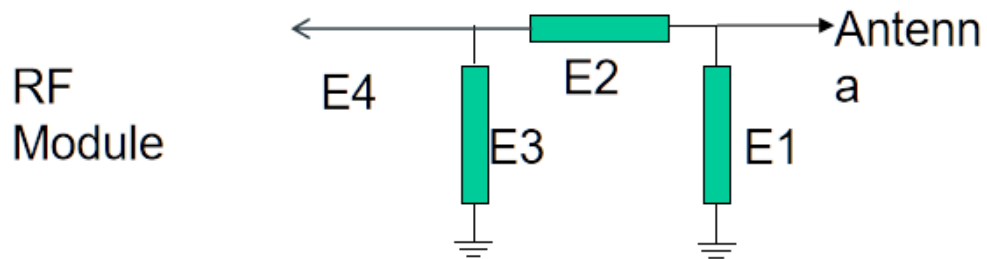
### 1.2. Communication test equipment

Agilent E5515C R&S CMW500

### 1.3. Test system

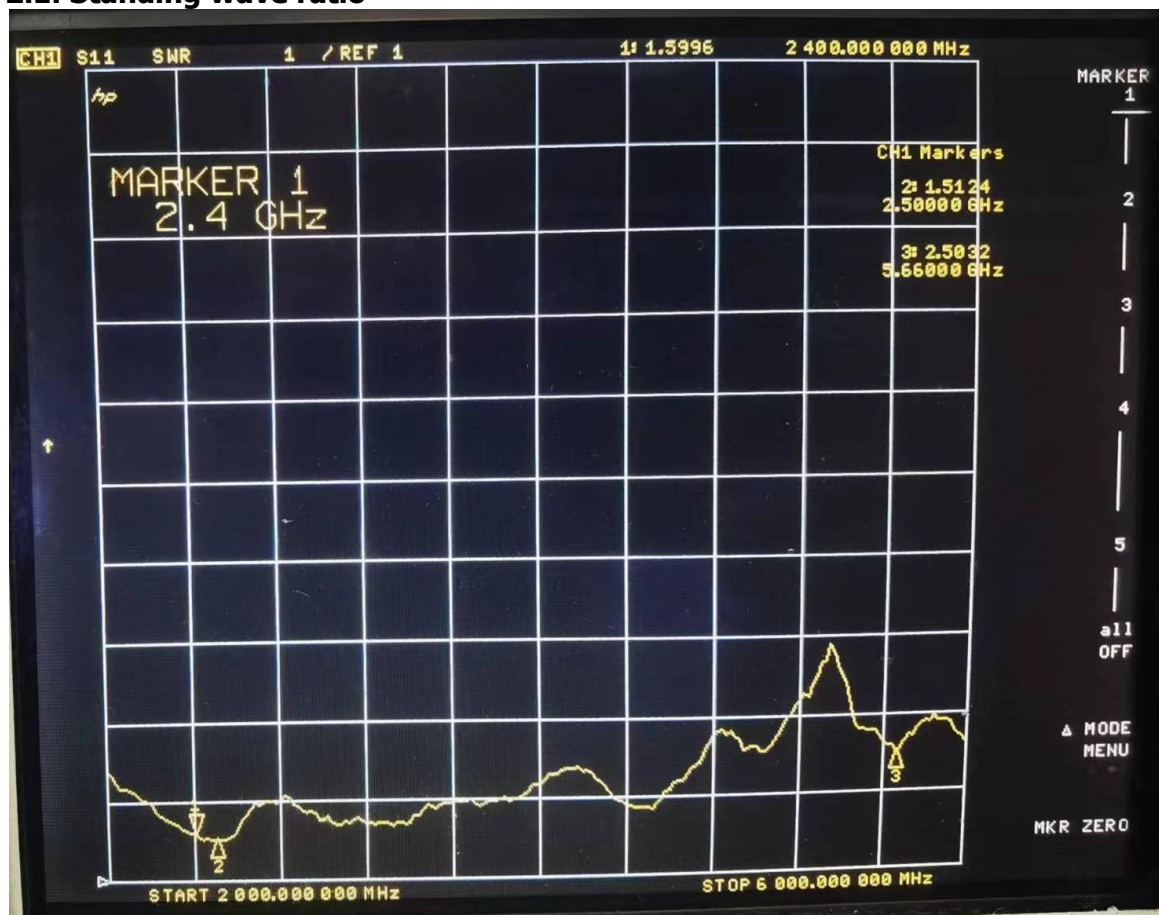


## 1.4. Matching circuit



## 2. Test Data:

### 2.1. Standing wave ratio



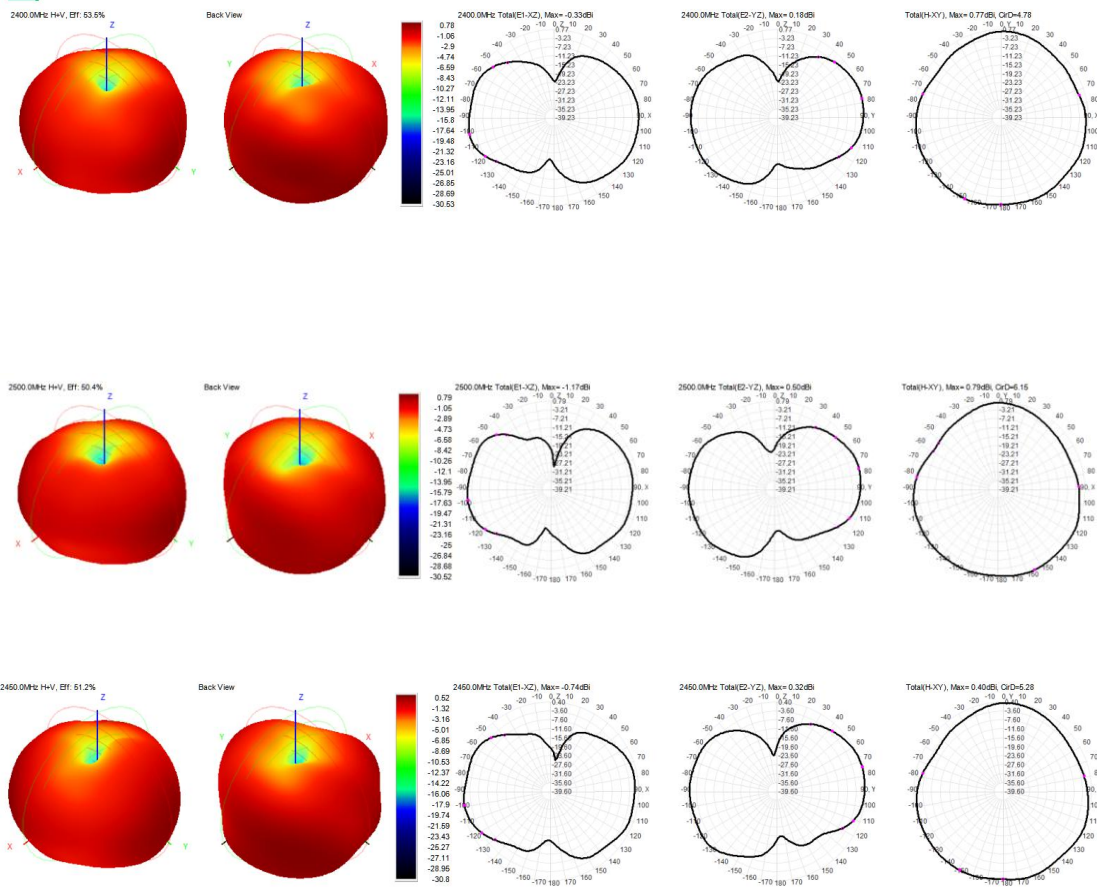
## 2.2.Efficiency

Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (dBi)	-2.72	-2.83	-2.89	-2.95	-3.06	-2.91	-3.01	-3.18	-3.47	-3.29	-2.97
Gain (dBi)	1.78	1.57	1.51	1.55	1.46	1.52	1.26	1.14	1.16	1.51	1.99
Efficiency (%)	53.49	52.10	51.35	50.66	49.40	51.22	50.01	48.03	44.93	46.87	50.43
Directivity (dB)	3.50	3.40	3.40	3.50	3.52	3.43	3.27	3.33	3.64	3.80	3.76
Peak Gain Position (Theta)	92.00	75.00	81.00	79.00	77.00	77.00	77.00	91.00	91.00	91.00	91.00
Peak Gain Position (Phi)	247.00	227.00	236.00	232.00	228.00	224.00	223.00	292.00	293.00	294.00	295.00
Efficiency ThetaPol (%)	51.75	50.36	49.52	48.81	47.53	49.30	48.24	46.24	43.16	45.07	48.59
Efficiency PhiPol (%)	1.74	1.74	1.83	1.85	1.87	1.92	1.77	1.79	1.77	1.80	1.83
Upper Hem. Efficiency (%)	27.91	27.45	27.44	27.34	26.75	27.60	26.56	25.25	23.65	24.98	27.52
Lower Hem. Efficiency (%)	25.59	24.65	23.91	23.32	22.65	23.62	23.45	22.78	21.29	21.89	22.90

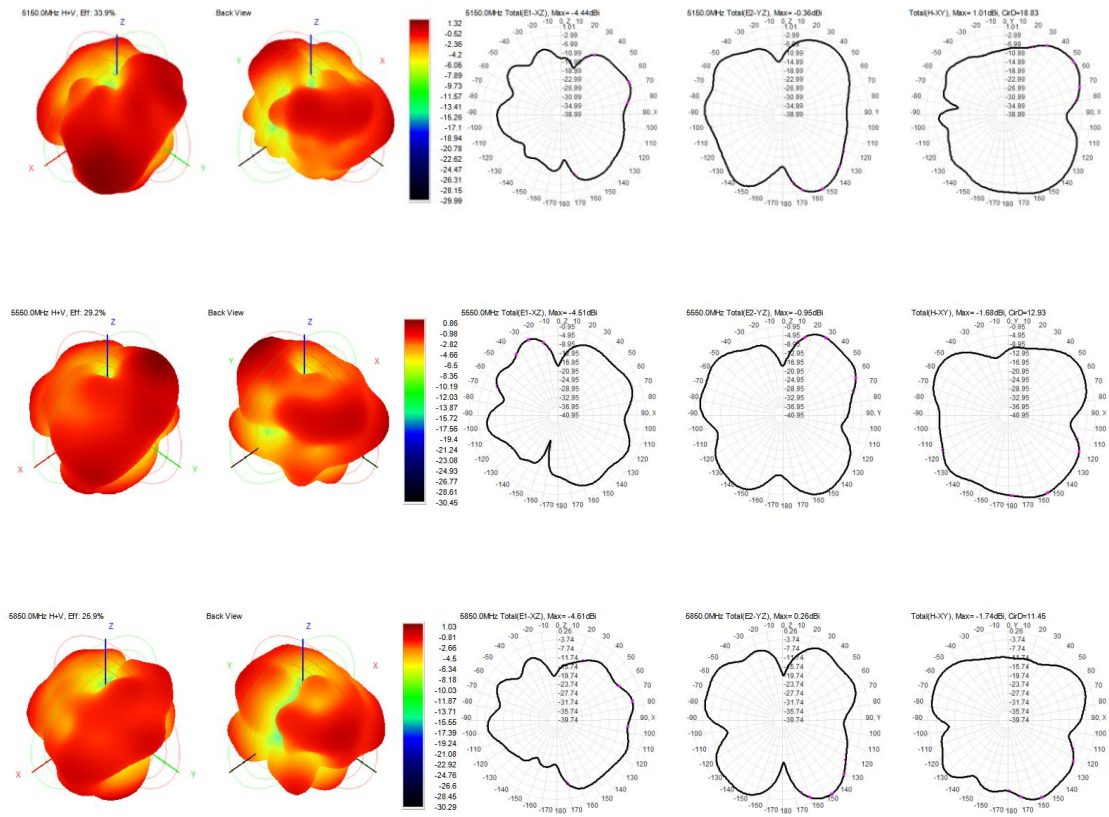
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
5150.0	5200.0	5250.0	5300.0	5350.0	5400.0	5450.0	5500.0	5550.0	5600.0	5650.0	5700.0	5750.0	5800.0	5850.0
-4.70	-4.70	-4.75	-4.61	-4.65	-4.86	-4.96	-5.48	-5.35	-5.61	-6.07	-5.95	-6.20	-6.16	-5.86
1.32	1.37	1.20	1.46	1.97	1.10	0.88	0.68	0.86	0.51	0.07	0.19	0.24	0.42	1.03
33.87	33.90	33.51	34.56	34.29	32.63	31.94	28.30	29.20	27.50	24.71	25.39	23.98	24.23	25.92
6.03	6.07	5.94	6.07	6.10	5.97	5.84	6.16	6.21	6.11	6.14	6.14	6.45	6.58	6.89
80.00	146.00	146.00	146.00	146.00	146.00	143.00	32.00	29.00	144.00	145.00	144.00	144.00	144.00	144.00
35.00	69.00	67.00	69.00	71.00	69.00	45.00	121.00	117.00	46.00	48.00	49.00	52.00	54.00	59.00
23.21	23.18	22.92	23.80	23.44	22.02	21.19	18.49	18.70	17.18	15.12	15.39	14.43	14.48	15.44
10.66	10.71	10.60	10.76	10.85	10.61	10.76	9.81	10.50	10.32	9.59	10.00	9.55	9.75	10.49
18.32	18.38	18.57	19.27	19.42	18.63	18.46	16.47	16.86	15.60	13.95	14.23	13.09	13.03	13.62
15.55	15.52	14.94	15.29	14.87	14.00	13.48	11.83	12.34	11.90	10.76	11.16	10.89	11.20	12.30

## 2.3. Directivity diagram

### 2.4G



5G



3. Antenna drawing (MM):

