

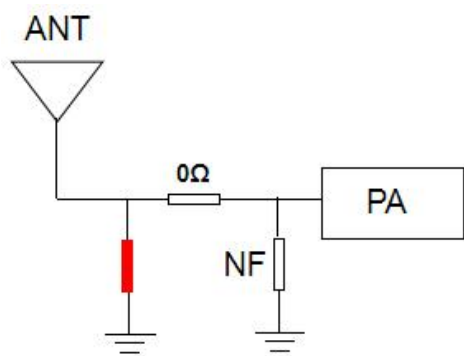
Shenzhen Qianmu Communication Technology Co.,Ltd.

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Antenna acknowledgment

Model	P13		
Manufacturer	Shenzhen Qianmu Communication Technology Co.,Ltd.		
Specification description			
	Product content	Specification	Material code
	Antenna	FPC/ Black/character QFPC/QM-P13-GWB-VI.1	
Number	Date	Versions	Sketch
1	2024-07-20	V1.0	New item
2			
3			

1, matching circuit -WIFI antenna



The original matching circuit has not changed

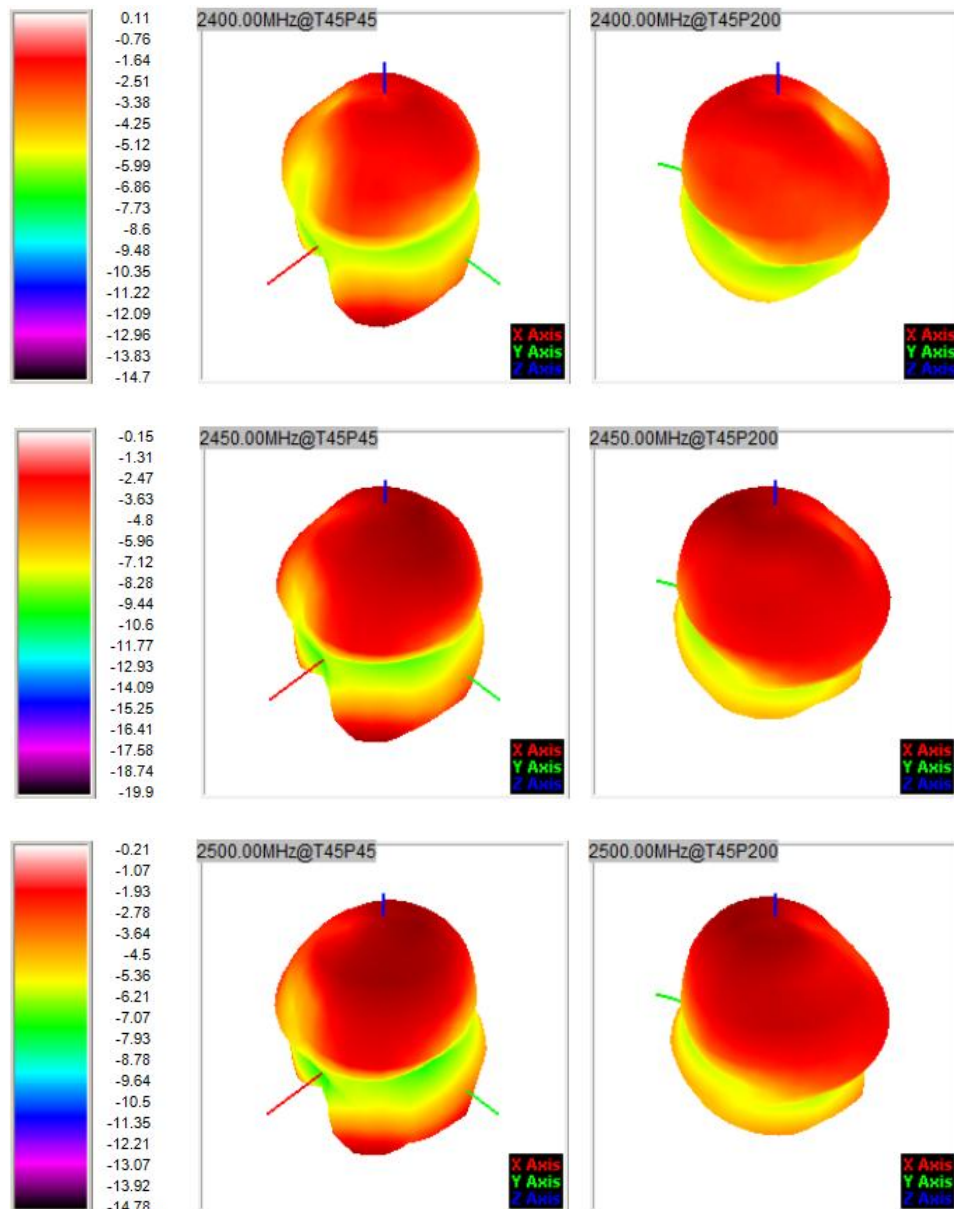
2. Active antenna data

	WIFI 2400~2500MHz 802.11b 11Mbps		
Channel	1	6	11
TRP	13.92	13.19	13.56
TIS	-80.15	-81.23	-81.33

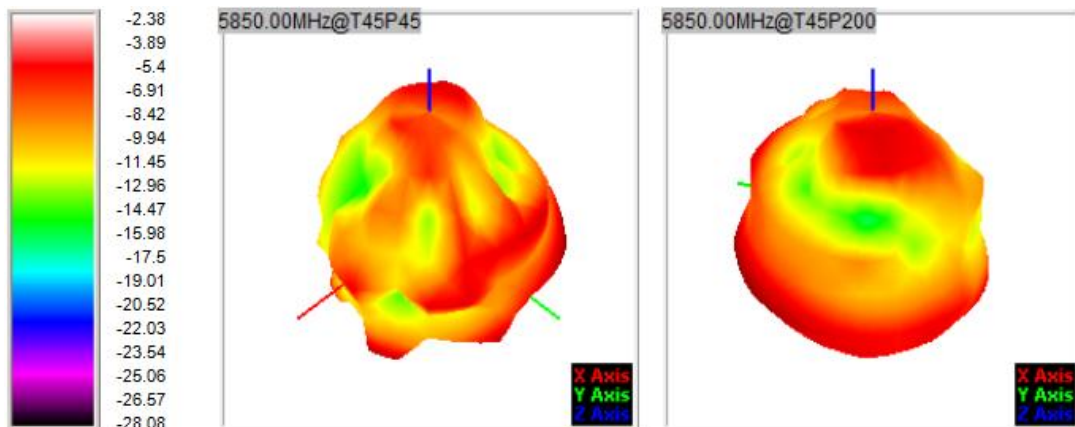
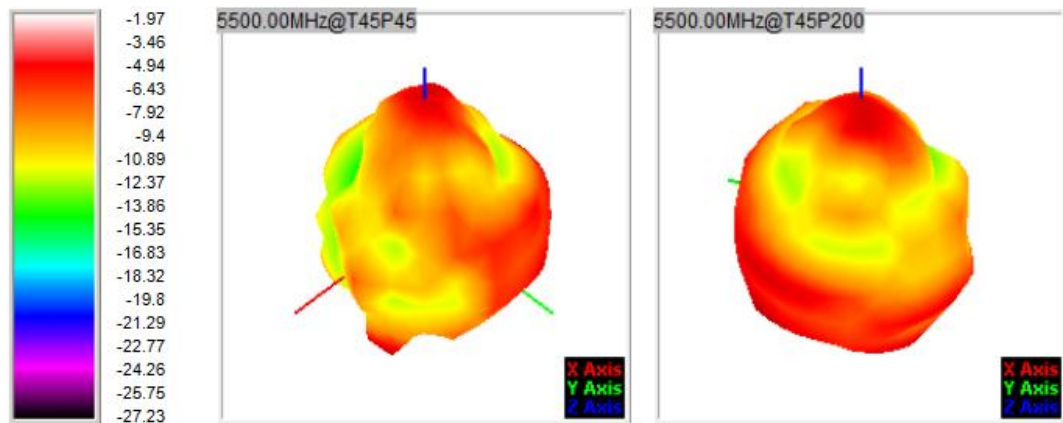
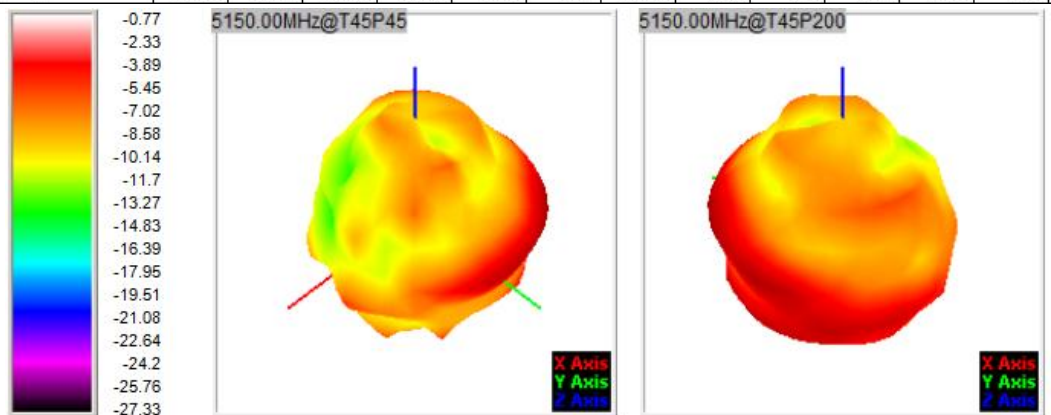
	WIFI 5000~5800MHz 802.11a 54Mbps		
Channel	36	161	165
TRP	8.99	8.64	8.6
TIS	-68.07	-68.34	-68.4

3. Antenna efficiency

Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Ant. Port Input Pwr. (dBm)	0	0	0	0	0	0	0	0	0	0	0
Tot. Rad. Pwr. (dBm)	-4.9	-4.89	-4.84	-4.96	-4.93	-4.94	-4.87	-4.95	-5.03	-5.07	-5.06
Peak EIRP (dBm)	0.11	-0.17	-0.22	-0.29	-0.23	-0.15	0.08	0.1	0.05	-0.1	-0.21
Directivity (dBi)	5.01	4.72	4.62	4.67	4.7	4.79	4.95	5.05	5.09	4.97	4.85
Efficiency (dB)	-4.9	-4.89	-4.84	-4.96	-4.93	-4.94	-4.87	-4.95	-5.03	-5.07	-5.06
Efficiency (%)	32.4	32.4	32.8	31.9	32.1	32.1	32.6	32	31.4	31.1	31.2
Gain (dBi)	0.11	-0.17	-0.22	-0.29	-0.23	-0.15	0.08	0.1	0.05	-0.1	-0.21
NHPRP $\pm\pi/4$ (dBm)	-6.79	-6.82	-6.8	-6.93	-6.9	-6.9	-6.83	-6.92	-7.01	-7.05	-7.06
NHPRP $\pm\pi/6$ (dBm)	-8.77	-8.79	-8.78	-8.91	-8.89	-8.88	-8.79	-8.87	-8.95	-8.98	-8.98
NHPRP $\pm\pi/8$ (dBm)	-10.5	-10.5	-10.48	-10.62	-10.61	-10.6	-10.49	-10.53	-10.59	-10.61	-10.58
Upper Hem. PRP (dBm)	-7.01	-6.93	-6.84	-6.92	-6.86	-6.86	-6.77	-6.86	-6.94	-6.97	-6.94
Lower Hem. PRP (dBm)	-9.04	-9.16	-9.19	-9.36	-9.38	-9.42	-9.37	-9.45	-9.53	-9.57	-9.62
Upper Hem. PRP (%)	19.9	20.25	20.72	20.31	20.59	20.62	21.02	20.62	20.25	20.08	20.25
Lower Hem. PRP (%)	12.46	12.15	12.06	11.6	11.53	11.44	11.56	11.34	11.14	11.03	10.91



Frequency ID	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Frequency (MHz)	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700	5750	5800	5850
Ant. Port Input Pwr. (dBm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tot. Rad. Pwr. (dBm)	-5.88	-6.17	-6.19	-5.87	-6.5	-6.81	-6.58	-7.12	-7.19	-7.28	-7.95	-7.81	-7.88	-8.12	-7.8
Peak EIRP (dBm)	-0.77	-0.89	-0.77	-0.21	-1.22	-1.74	-1.23	-1.97	-2.04	-2.4	-2.93	-2.64	-2.67	-2.85	-2.38
Directivity (dBi)	5.11	5.27	5.42	5.66	5.28	5.07	5.35	5.15	5.14	4.89	5.02	5.17	5.21	5.27	5.42
Efficiency (dB)	-5.88	-6.17	-6.19	-5.87	-6.5	-6.81	-6.58	-7.12	-7.19	-7.28	-7.95	-7.81	-7.88	-8.12	-7.8
Efficiency (%)	25.8	24.2	24	25.9	22.4	20.8	22	19.4	19.1	18.7	16	16.5	16.3	15.4	16.6
Gain (dBi)	-0.77	-0.89	-0.77	-0.21	-1.22	-1.74	-1.23	-1.97	-2.04	-2.4	-2.93	-2.64	-2.67	-2.85	-2.38
NHPRP $\pm\pi/4$ (dBm)	-6.65	-6.99	-7.02	-6.67	-7.41	-7.78	-7.45	-8.05	-8.12	-8.13	-8.83	-8.72	-8.77	-9.08	-8.76
NHPRP $\pm\pi/6$ (dBm)	-7.6	-8	-8	-7.59	-8.44	-8.85	-8.45	-9.08	-9.19	-9.13	-9.84	-9.73	-9.75	-10.09	-9.76
NHPRP $\pm\pi/8$ (dBm)	-8.35	-8.79	-8.76	-8.31	-9.24	-9.74	-9.3	-10.02	-10.2	-10.1	-10.83	-10.71	-10.69	-11.02	-10.7
Upper Hem. PRP (dBm)	-8.44	-8.64	-8.76	-8.55	-9.05	-9.41	-9.31	-9.72	-9.78	-9.94	-10.51	-10.39	-10.52	-10.71	-10.41
Lower Hem. PRP (dBm)	-9.39	-9.79	-9.69	-9.23	-10.02	-10.27	-9.89	-10.58	-10.66	-10.67	-11.45	-11.3	-11.3	-11.6	-11.25
Upper Hem. PRP (%)	14.33	13.67	13.31	13.96	12.44	11.44	11.72	10.66	10.52	10.13	8.89	9.13	8.87	8.5	9.1
Lower Hem. PRP (%)	11.51	10.51	10.73	11.93	9.94	9.39	10.25	8.76	8.6	8.56	7.16	7.41	7.42	6.93	7.51



Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	1570	1571	1572	1573	1574	1575	1576	1577	1578	1579	1580
Ant. Port Input Pwr. (dBm)	0	0	0	0	0	0	0	0	0	0	0
Tot. Rad. Pwr. (dBm)	-7.5	-7.51	-7.53	-7.56	-7.6	-7.63	-7.67	-7.71	-7.74	-7.76	-7.77
Peak EIRP (dBm)	-1.92	-1.93	-1.95	-1.98	-2.03	-2.08	-2.12	-2.17	-2.2	-2.23	-2.24
Directivity (dBi)	5.58	5.59	5.59	5.58	5.56	5.56	5.55	5.54	5.54	5.53	5.53
Efficiency (dB)	-7.5	-7.51	-7.53	-7.56	-7.6	-7.63	-7.67	-7.71	-7.74	-7.76	-7.77
Efficiency (%)	17.8	17.7	17.6	17.5	17.4	17.2	17.1	17	16.8	16.8	16.7
Gain (dBi)	-1.92	-1.93	-1.95	-1.98	-2.03	-2.08	-2.12	-2.17	-2.2	-2.23	-2.24
NHPRP $\pm\pi/4$ (dBm)	-9.36	-9.37	-9.4	-9.43	-9.47	-9.51	-9.55	-9.59	-9.62	-9.65	-9.66
NHPRP $\pm\pi/6$ (dBm)	-11.33	-11.35	-11.38	-11.41	-11.45	-11.48	-11.53	-11.56	-11.59	-11.61	-11.63
NHPRP $\pm\pi/8$ (dBm)	-12.85	-12.86	-12.89	-12.92	-12.95	-12.98	-13.02	-13.06	-13.08	-13.1	-13.11
Upper Hem. PRP (dBm)	-9.83	-9.82	-9.83	-9.85	-9.88	-9.92	-9.95	-9.99	-10.01	-10.02	-10.02
Lower Hem. PRP (dBm)	-11.32	-11.36	-11.4	-11.44	-11.48	-11.51	-11.55	-11.6	-11.63	-11.67	-11.7
Upper Hem. PRP (%)	10.4	10.42	10.41	10.35	10.27	10.18	10.1	10.03	9.98	9.95	9.95
Lower Hem. PRP (%)	7.37	7.31	7.24	7.18	7.12	7.06	6.99	6.92	6.86	6.81	6.76

