



求是 价值 双赢

Shenzhen Qianmu Communication Technology Co., Ltd.

No. 425.443, 4th Floor, Block A, Huafeng Zhigu-Hangcheng High-tech Industrial

Park, Hangcheng Street, Sanwei Community, Baoan District, Shenzhen

专注天线方案、设计与生产

客 户：新智联

项 目：5H106-A16

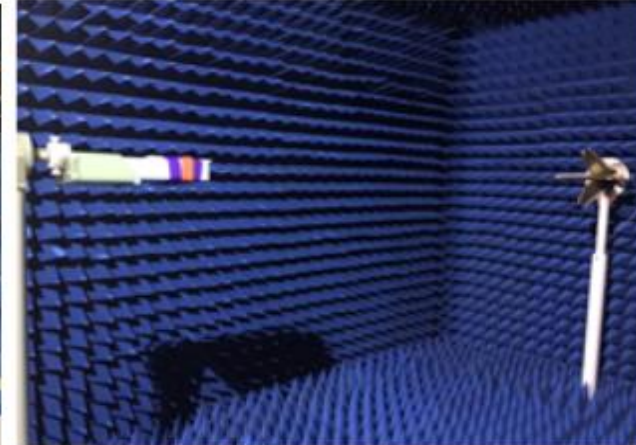
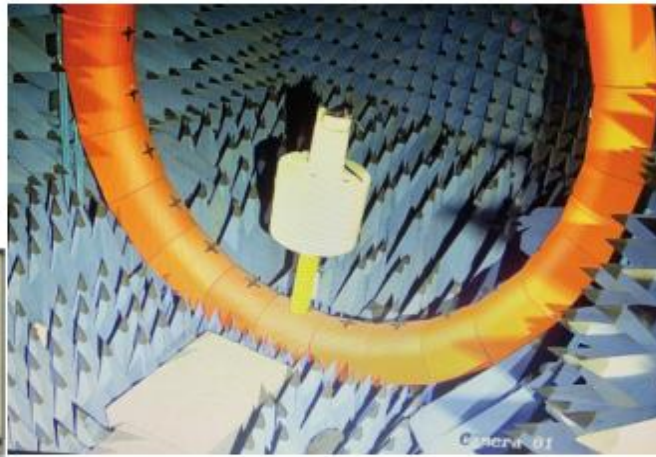
日 期：2024.4.2

射 频：QIU ZHI YUAN



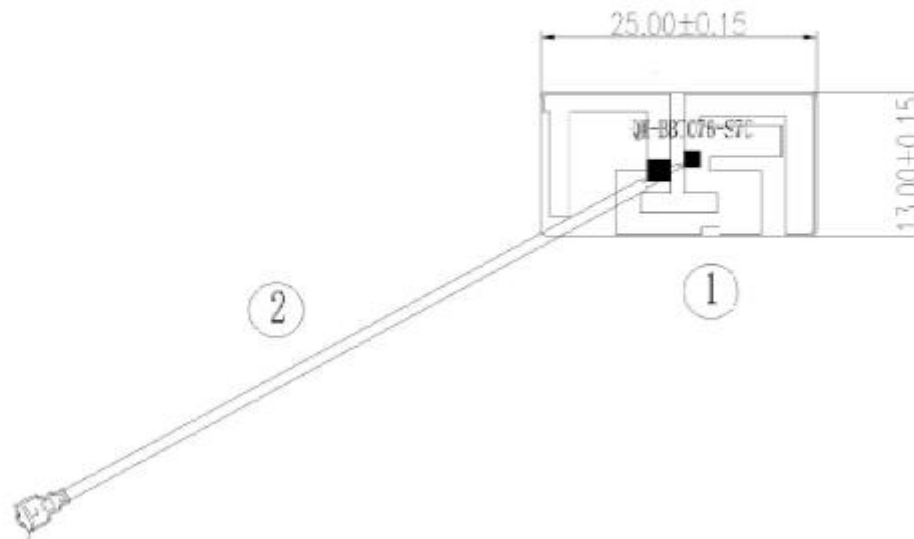
测试环境

	测试项目	设备
1. S参数 (S-parameter)	1. 回波损耗 (Return Loss) 2. 电压驻波比 (VSWR)	网络分析仪: Agilent E5071B ×2 HP 8753D PROTEK A338
2. 有源测试 (Active)	1. 发射功率 (TRP) 2. 接收灵敏度 (TIS) 3. 频率误差 4. 屏灭、屏亮	1. 暗室: 飞图 7x4x3 m (24探头 3D) Chamber ETS 5x3x3 m (3D) Chamber 2. 综合测试仪: Agilent 8960 ×2 CMW500 ×3/CMU200
3. 无源测试 (Passive)	1. 天线增益 (Gain) 2. 天线效率 (Efficiency)	1. 暗室: 飞图 7x4x3 m (24探头 3D) Chamber ETS 5x3x3 m (3D) Chamber 2. 网络分析仪: Agilent E5071B



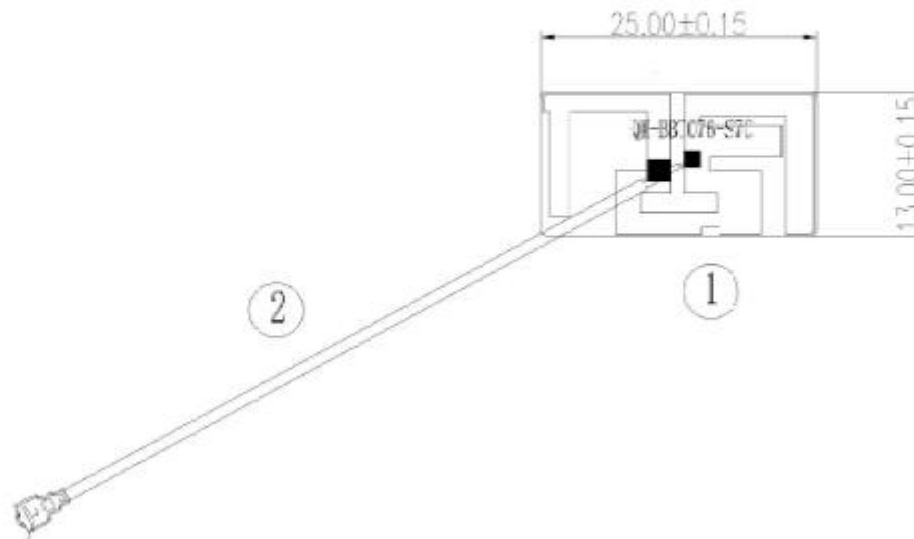


Antenna size (mm)





Antenna size (mm)





有源功率测试数据

天线状态	FPC样品		
	WIFI 2400~2500MHz 802.11b 11Mbps		
Channel	1	6	11
TRP	15.74	15.39	15.69
TIS	-78.47	-81.51	-81.52

天线状态	FPC样品		
	WIFI 5000~5800MHz 802.11a 54Mbps		
Channel	36	161	165
TRP	11.5	11.19	11.26
TIS	-68.47	-68.23	-68.05



ANT 2





ANT 2

FEITUKEJI											
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
Point Values											
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-4.88	-4.68	-4.55	-4.41	-4.33	-4.16	-4.06	-4.01	-4.02	-3.97	-3.95
Peak EIRP (dBm)	0.55	0.70	0.68	0.66	0.52	0.44	0.29	0.14	0.09	0.06	0.13
Directivity (dBi)	5.43	5.39	5.23	5.07	4.85	4.61	4.35	4.15	4.12	4.03	4.08
Efficiency (dB)	-4.88	-4.68	-4.55	-4.41	-4.33	-4.16	-4.06	-4.01	-4.02	-3.97	-3.95
Efficiency (%)	32.50	34.00	35.10	36.20	36.90	38.30	39.20	39.70	39.60	40.10	40.30
Gain (dBi)	0.55	0.70	0.68	0.66	0.52	0.44	0.29	0.14	0.09	0.06	0.13
NHPRP $\pm\pi/4$ (dBm)	-7.09	-6.90	-6.76	-6.59	-6.48	-6.27	-6.13	-6.05	-6.05	-5.97	-5.94
NHPRP $\pm\pi/6$ (dBm)	-9.02	-8.86	-8.73	-8.57	-8.46	-8.22	-8.05	-7.93	-7.89	-7.79	-7.75
NHPRP $\pm\pi/8$ (dBm)	-10.52	-10.40	-10.30	-10.15	-10.02	-9.74	-9.49	-9.31	-9.23	-9.08	-9.02
Upper Hem. PRP (dBm)	-6.60	-6.32	-6.12	-5.93	-5.81	-5.62	-5.52	-5.48	-5.54	-5.56	-5.60
Lower Hem. PRP (dBm)	-9.74	-9.71	-9.73	-9.71	-9.74	-9.62	-9.52	-9.41	-9.32	-9.11	-8.97
Upper Hem. PRP (%)	21.88	23.32	24.43	25.54	26.26	27.43	28.07	28.29	27.90	27.79	27.57
Lower Hem. PRP (%)	10.63	10.69	10.65	10.68	10.62	10.91	11.17	11.45	11.69	12.29	12.68

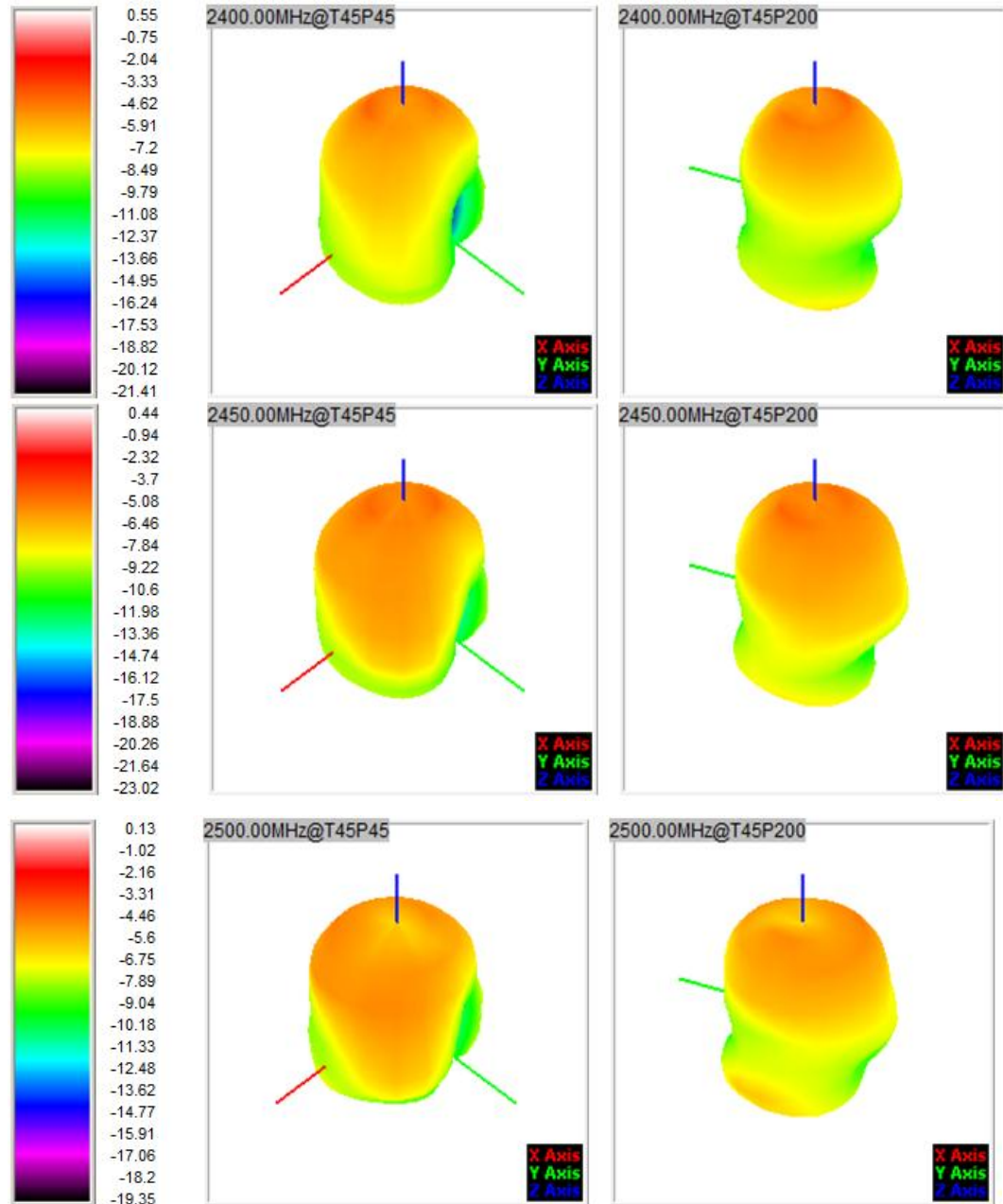


ANT 2

FEITUKEJI															
Frequency ID	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Frequency (MHz)	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
Point Values															
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-4.08	-4.18	-4.06	-3.79	-4.07	-4.24	-3.93	-4.13	-4.04	-3.73	-4.02	-4.05	-3.88	-4.18	-4.05
Peak EIRP (dBm)	3.55	2.54	3.03	3.24	2.40	2.31	2.43	2.23	2.19	2.49	2.01	1.91	2.45	2.71	3.21
Directivity (dBi)	7.64	6.72	7.10	7.04	6.47	6.55	6.37	6.35	6.23	6.22	6.03	5.96	6.32	6.89	7.26
Efficiency (dB)	-4.08	-4.18	-4.06	-3.79	-4.07	-4.24	-3.93	-4.13	-4.04	-3.73	-4.02	-4.05	-3.88	-4.18	-4.05
Efficiency (%)	39.10	38.20	39.20	41.70	39.20	37.60	40.40	38.70	39.40	42.40	39.70	39.40	41.00	38.20	39.30
Gain (dBi)	3.55	2.54	3.03	3.24	2.40	2.31	2.43	2.23	2.19	2.49	2.01	1.91	2.45	2.71	3.21
NHPRP $\pm\pi/4$ (dBm)	-5.54	-5.62	-5.56	-5.18	-5.43	-5.69	-5.25	-5.39	-5.26	-4.84	-5.13	-5.17	-4.99	-5.34	-5.26
NHPRP $\pm\pi/6$ (dBm)	-6.95	-7.11	-7.18	-6.78	-7.03	-7.29	-6.69	-6.78	-6.70	-6.19	-6.47	-6.53	-6.34	-6.75	-6.73
NHPRP $\pm\pi/8$ (dBm)	-7.95	-8.20	-8.36	-8.03	-8.34	-8.56	-7.84	-7.92	-7.89	-7.32	-7.63	-7.70	-7.47	-7.91	-7.90
Upper Hem. PRP (dBm)	-7.96	-7.86	-7.62	-7.25	-7.25	-7.53	-7.46	-7.71	-7.78	-7.60	-7.73	-7.65	-7.43	-7.56	-7.52
Lower Hem. PRP (dBm)	-6.37	-6.60	-6.59	-6.40	-6.92	-6.99	-6.48	-6.63	-6.43	-6.02	-6.42	-6.54	-6.40	-6.85	-6.65
Upper Hem. PRP (%)	16.00	16.37	17.28	18.82	18.81	17.64	17.95	16.96	16.68	17.37	16.85	17.17	18.07	17.56	17.71
Lower Hem. PRP (%)	23.06	21.85	21.95	22.92	20.34	20.00	22.48	21.71	22.74	25.01	22.82	22.19	22.90	20.66	21.64

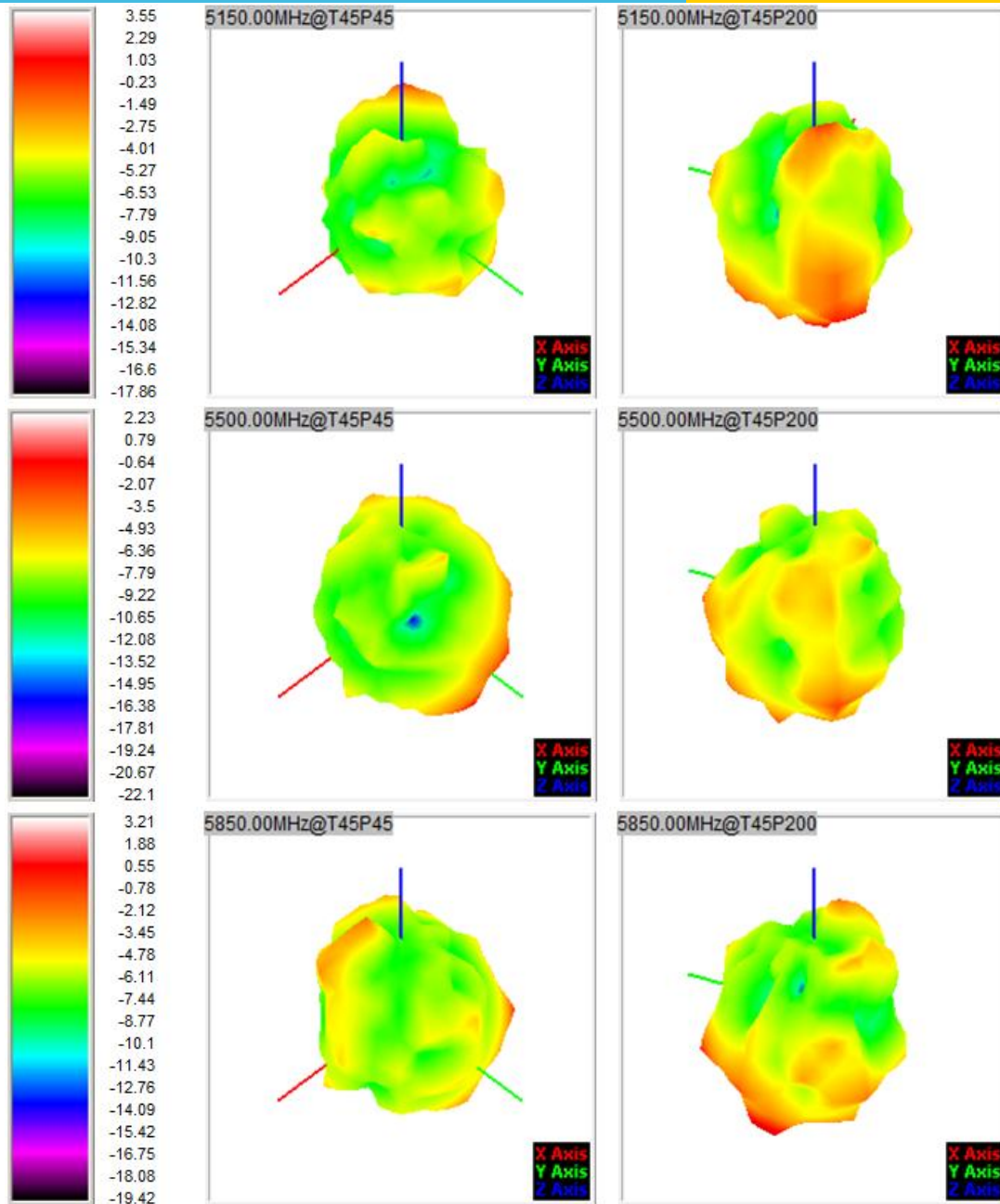


2.4G方向图 ANT 2





5.8G方向图 ANT 2





ANT 1





ANT 1

FEITUKEJI											
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
Point Values											
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-4.90	-4.77	-4.68	-4.57	-4.51	-4.37	-4.31	-4.30	-4.31	-4.23	-4.19
Peak EIRP (dBm)	-0.04	0.03	0.07	0.25	0.36	0.62	0.79	0.92	1.08	1.35	1.57
Directivity (dBi)	4.86	4.80	4.75	4.82	4.87	4.99	5.09	5.22	5.38	5.58	5.76
Efficiency (dB)	-4.90	-4.77	-4.68	-4.57	-4.51	-4.37	-4.31	-4.30	-4.31	-4.23	-4.19
Efficiency (%)	32.30	33.30	34.00	35.00	35.40	36.60	37.10	37.20	37.10	37.80	38.10
Gain (dBi)	-0.04	0.03	0.07	0.25	0.36	0.62	0.79	0.92	1.08	1.35	1.57
NHPRP $\pm\pi/4$ (dBm)	-6.36	-6.23	-6.15	-6.05	-6.01	-5.88	-5.84	-5.84	-5.84	-5.74	-5.68
NHPRP $\pm\pi/6$ (dBm)	-7.81	-7.67	-7.60	-7.50	-7.47	-7.36	-7.31	-7.31	-7.32	-7.21	-7.14
NHPRP $\pm\pi/8$ (dBm)	-8.92	-8.79	-8.71	-8.62	-8.60	-8.48	-8.43	-8.42	-8.42	-8.30	-8.24
Upper Hem. PRP (dBm)	-7.26	-7.06	-6.92	-6.77	-6.69	-6.56	-6.52	-6.57	-6.65	-6.63	-6.61
Lower Hem. PRP (dBm)	-8.68	-8.65	-8.63	-8.56	-8.54	-8.40	-8.29	-8.19	-8.11	-7.95	-7.89
Upper Hem. PRP (%)	18.80	19.67	20.33	21.02	21.43	22.09	22.27	22.01	21.62	21.72	21.82
Lower Hem. PRP (%)	13.54	13.65	13.70	13.93	13.99	14.46	14.81	15.17	15.46	16.04	16.26



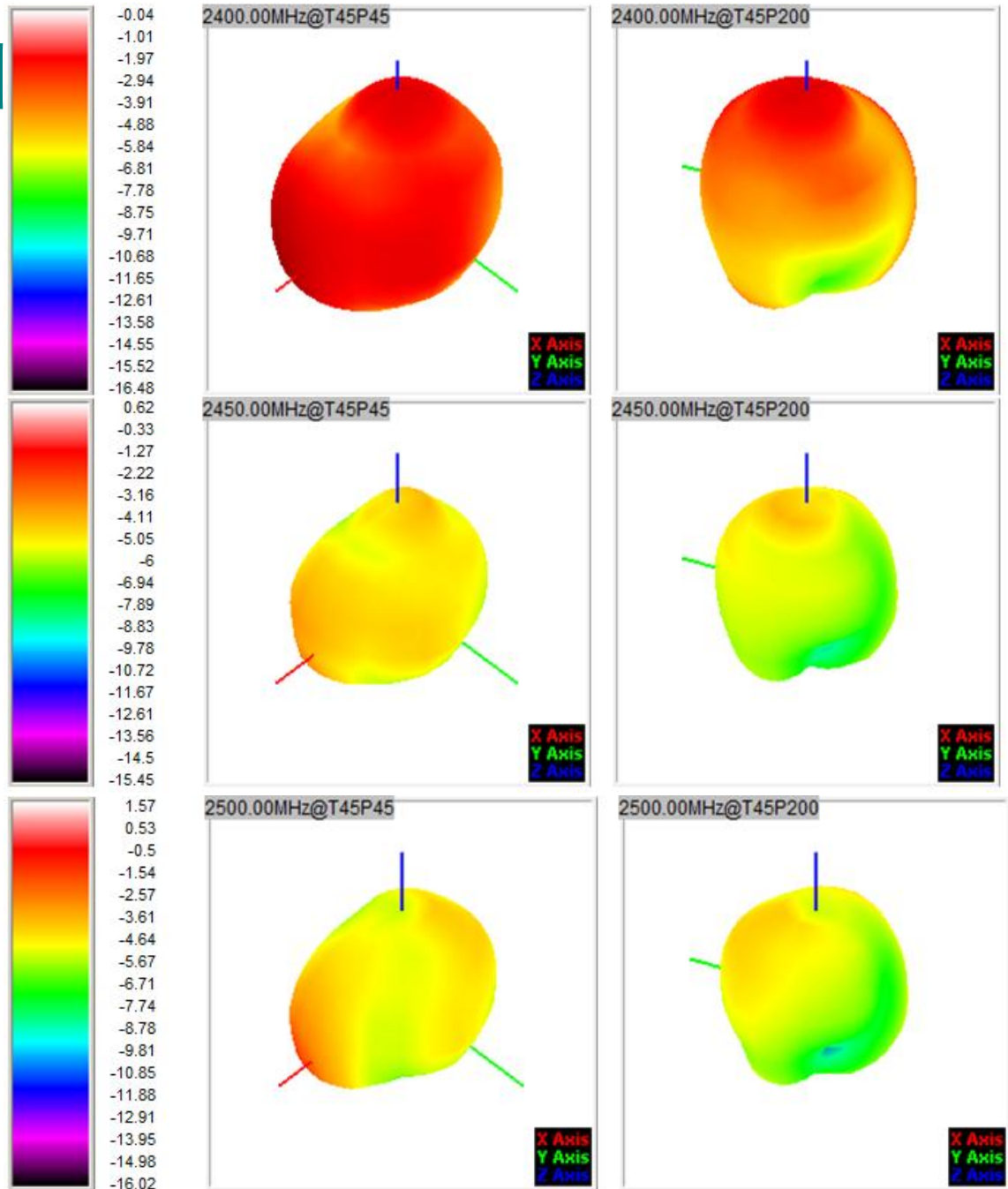
ANT 1

FEITUKEJI

Frequency ID	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Frequency (MHz)	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
Point Values															
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-4.22	-4.45	-4.46	-4.33	-5.05	-5.40	-5.21	-5.35	-4.91	-4.23	-4.47	-4.66	-4.77	-5.20	-4.98
Peak EIRP (dBm)	1.42	2.24	3.38	4.32	3.85	3.16	2.95	2.93	3.54	3.95	3.39	3.28	2.75	1.80	2.22
Directivity (dBi)	5.64	6.69	7.84	8.65	8.90	8.56	8.16	8.28	8.45	8.18	7.86	7.94	7.52	7.00	7.19
Efficiency (dB)	-4.22	-4.45	-4.46	-4.33	-5.05	-5.40	-5.21	-5.35	-4.91	-4.23	-4.47	-4.66	-4.77	-5.20	-4.98
Efficiency (%)	37.90	35.90	35.80	36.90	31.30	28.80	30.20	29.20	32.30	37.80	35.70	34.20	33.40	30.20	31.80
Gain (dBi)	1.42	2.24	3.38	4.32	3.85	3.16	2.95	2.93	3.54	3.95	3.39	3.28	2.75	1.80	2.22
NHPRP $\pm\pi/4$ (dBm)	-5.44	-5.71	-5.79	-5.61	-6.32	-6.70	-6.37	-6.45	-5.98	-5.19	-5.48	-5.74	-5.96	-6.52	-6.37
NHPRP $\pm\pi/6$ (dBm)	-7.02	-7.28	-7.41	-7.21	-7.92	-8.35	-7.83	-7.85	-7.34	-6.39	-6.68	-6.97	-7.23	-7.85	-7.72
NHPRP $\pm\pi/8$ (dBm)	-8.36	-8.61	-8.75	-8.52	-9.25	-9.69	-9.03	-9.04	-8.52	-7.42	-7.72	-8.03	-8.28	-8.92	-8.80
Upper Hem. PRP (dBm)	-8.68	-9.01	-9.28	-9.34	-9.94	-10.57	-10.53	-10.56	-10.21	-9.43	-9.27	-9.27	-9.42	-9.71	-9.49
Lower Hem. PRP (dBm)	-6.14	-6.33	-6.19	-5.98	-6.75	-6.98	-6.71	-6.90	-6.43	-5.79	-6.22	-6.50	-6.59	-7.09	-6.87
Upper Hem. PRP (%)	13.55	12.56	11.79	11.65	10.14	8.77	8.85	8.79	9.53	11.40	11.84	11.83	11.42	10.69	11.24
Lower Hem. PRP (%)	24.31	23.30	24.02	25.26	21.14	20.06	21.31	20.40	22.76	26.38	23.87	22.39	21.93	19.54	20.56

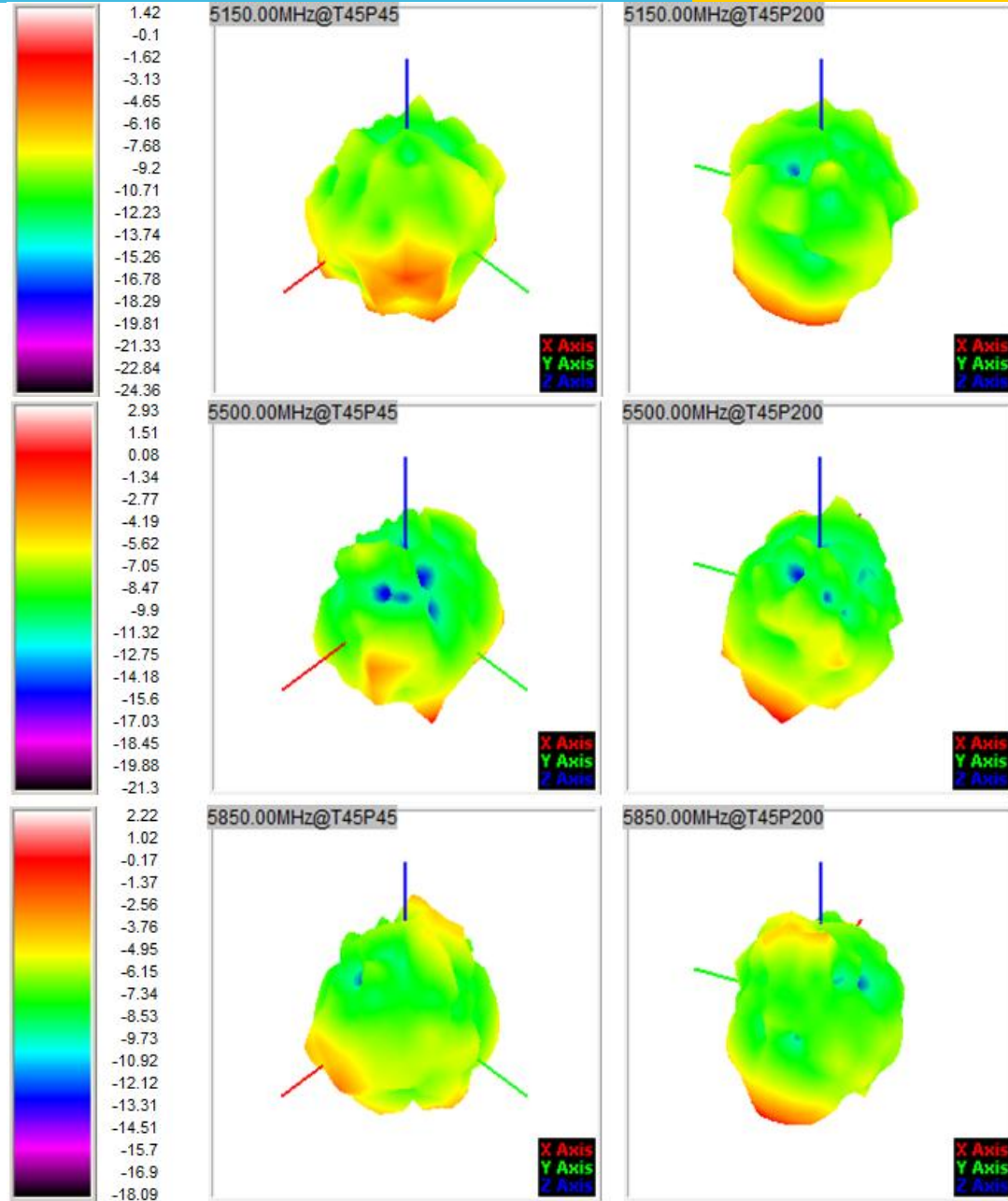


2.4G方向图 ANT 1





5.8G方向图 ANT 1





谢谢!

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