Testing Report

Customer Name: SHENZHENSHIXINZHONGXIN TECHNOLOGY. CO. , LTD

Product Name: WIFI Antenna

Sample Model: CUB

Reference Standard: *GB/T9410-2008; ANSI/IEEE Std 149-1979*

Issue Date: 2024.07. 24

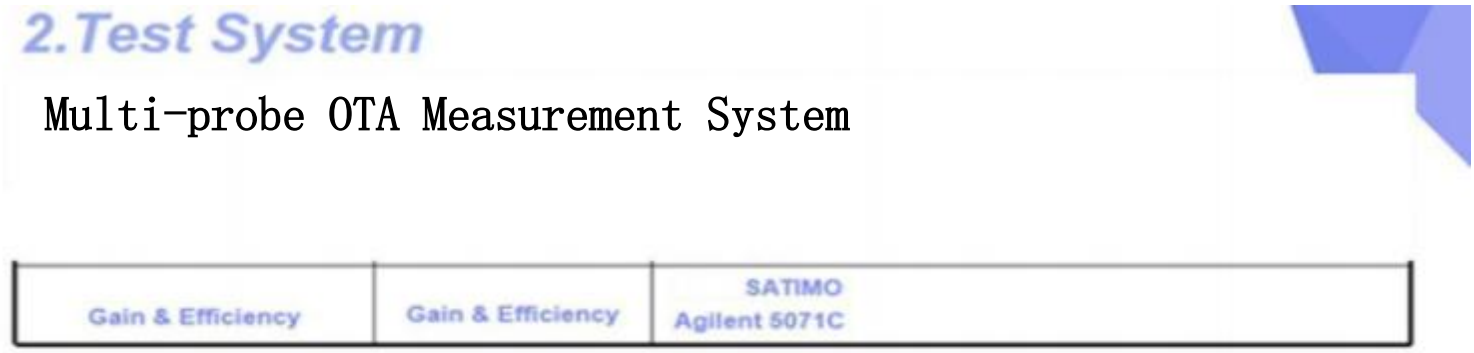
Engineer:	Date: 2024.07. 24
Auditor:	Date: 2024.07. 24
Approver:	Date: 2024.07. 24

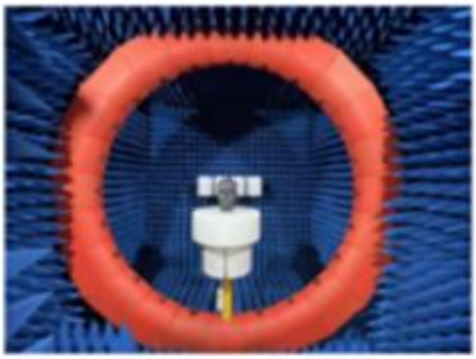
1. General Information

1.1 General Information of testing institutions

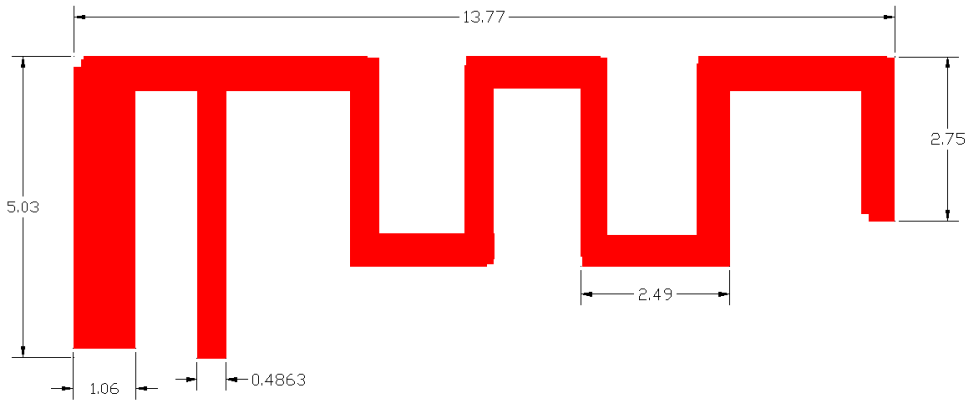
Name	Shenzhen Hetuo Technology Co. ,Ltd.
Addres s	Room 1202 B, Building C6, Hengfeng Industrial City, Xixiang, Ba oan District, Shenzhen
Tel	18665849001
E-mail	18665849001@163.com
Equipm ent	Agilent 5071C

1.2 Testing principle





Antenna Photo & Lenght(mm)



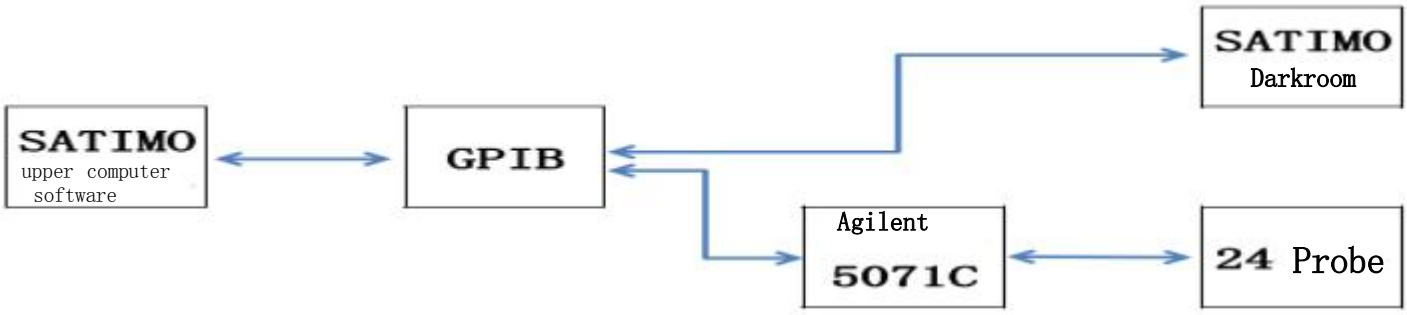
1.3 Test equipment

Equipment	Model No.	Serial No.	Manufacturer	Calibration date	Next calibration date
24 probe microwave chamber	4*3*3	NA	SATIMO	2024.05.29	2024.08.29
Network Analyzer	5071C	NA	Agilent	2024.05.29	2019.08.29

1.4 Test environment

Temperature	24C± 1.5C
Humidity	45%RH
Pressure	101kPa

1.5 Brief summary of Procedure



1. SATIMO turn on the Upper Computer Software, Name: VeryView99.exe, Version No.: V1.10;
2. VeryView99 via GPIB (General Purpose Interface Bus) to control the shielding room (darkroom)'s SATIMO;
3. Meanwhiel, GPIB control the Agilent 5071C to read the Antenna data by 24 Probe;
4. Agilent 5071C will analyse the data and generate the result;
5. Agilent 5071C will feedback to VeryView99 software to generate the test report.

2. Sample Information

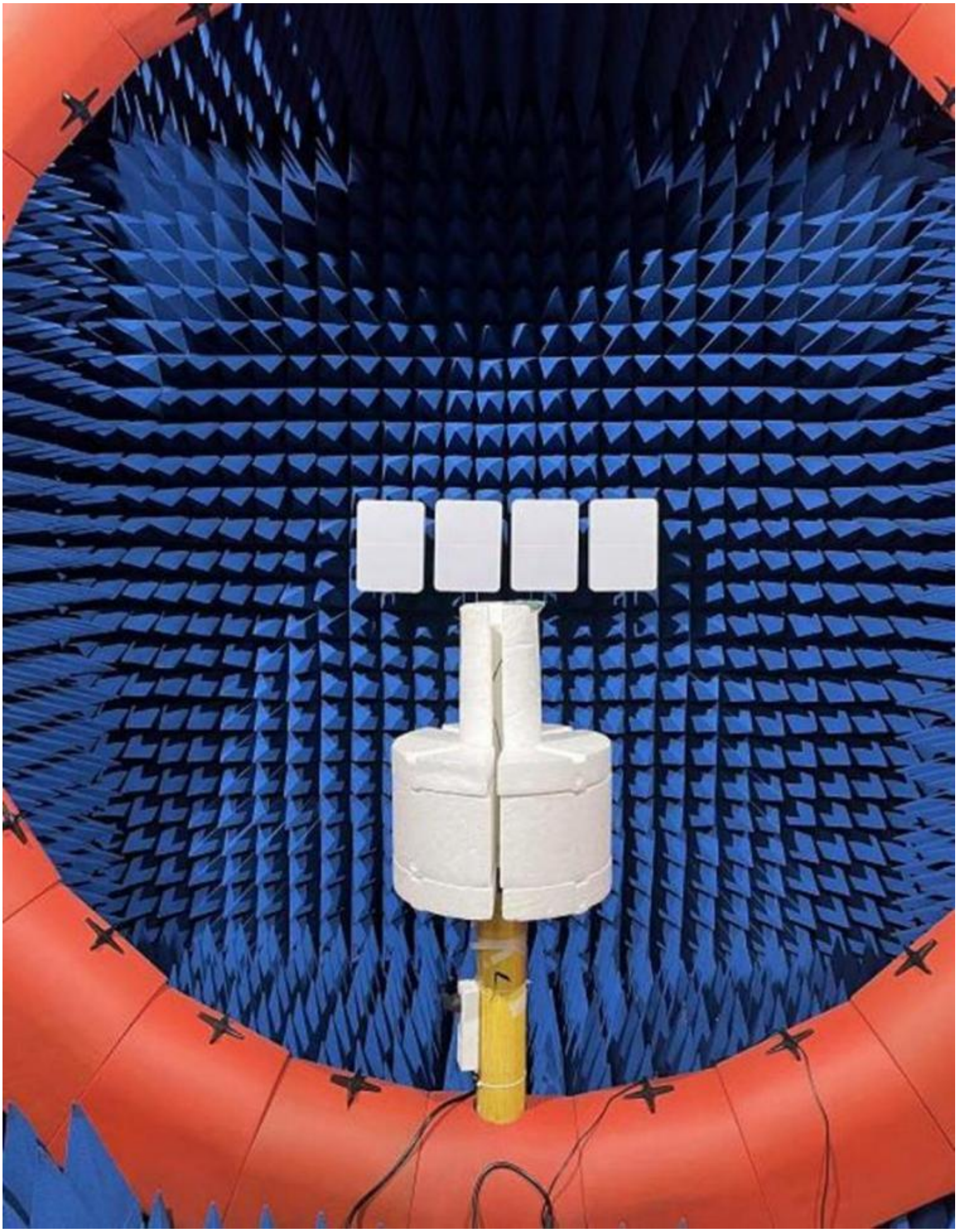
2.1 Client information

Name	SHENZHENSHIXINZHONGXIN TECHNOLOGY .CO .,LTD
Address	A1 , Shajing Donghuan Industrial Zone , Bao ' an District , Shenzhen
Contacts	Ma Chao
Tel	18218809918
E-mail	machao@ c- chip. com. cn

2.2 Description of EUT(S)

Product Name	BT Antenna
Sample Model	CUB
Antenna Size	4.6*10.4mm
Antenna Type	PCB antenna
Serial No.	/
Test Item	Antenna Gain, Radiation pattern
Frequency Range	2400-2500MHz
Received Date	2019.07.08
Test Date	2019.07. 10
Remark	The length of the RF cable is 50mm

The test photos

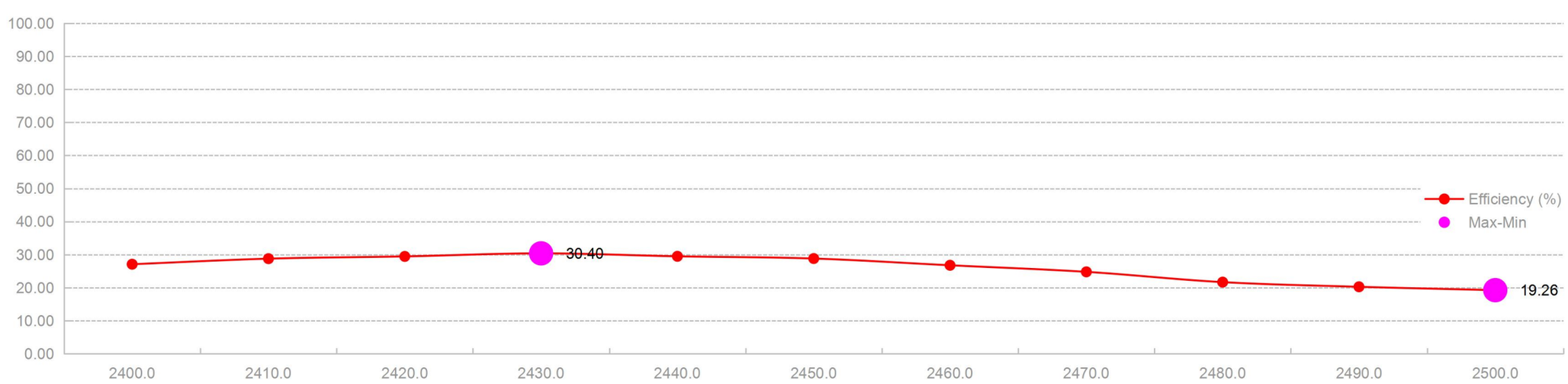


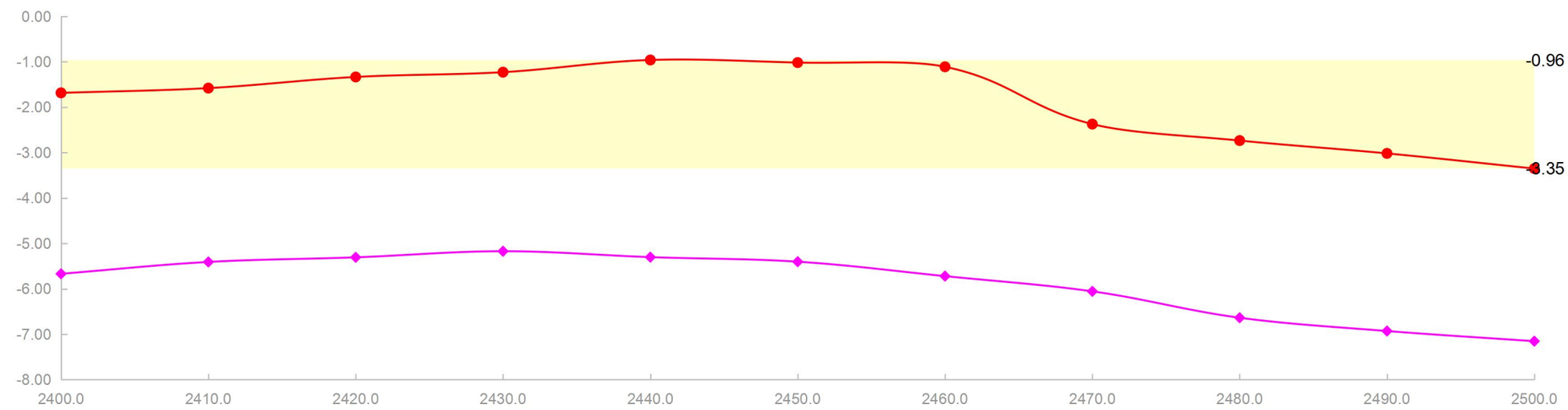
Test data

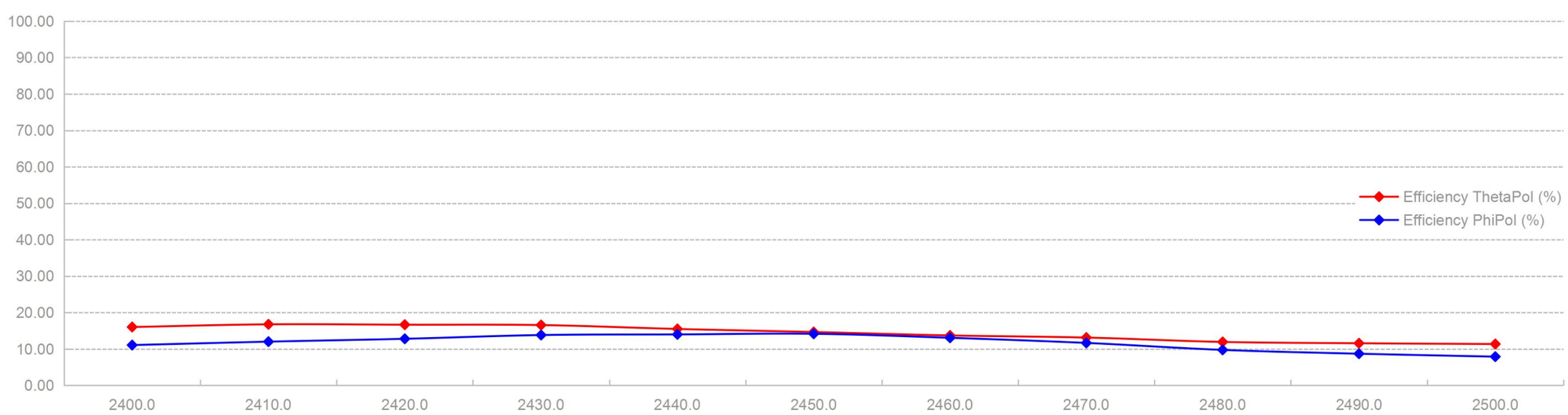
深圳市合拓科技有限公司

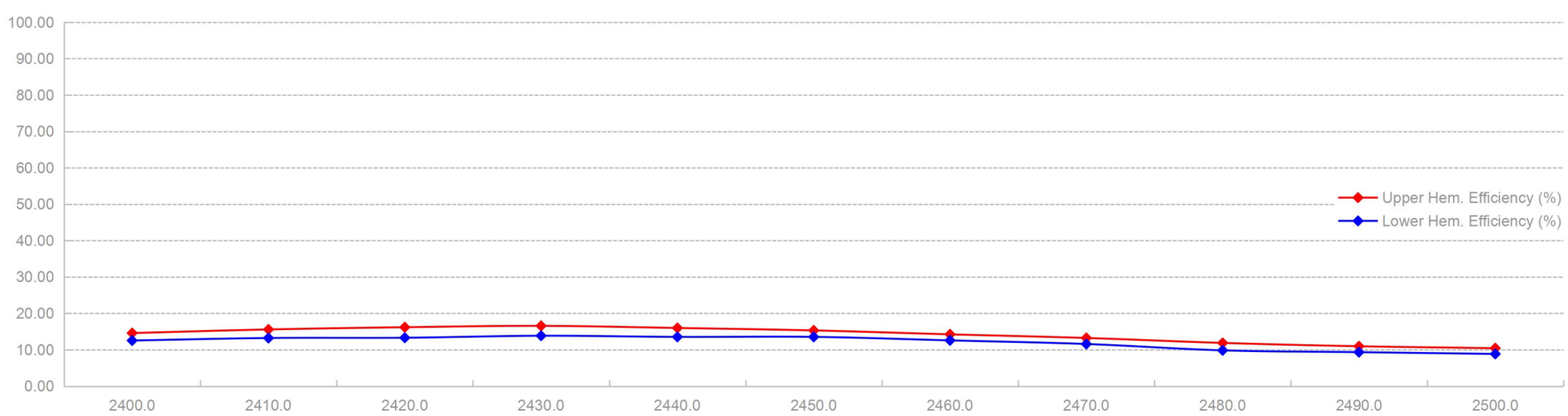
Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (dBi)	-5.67	-5.41	-5.31	-5.17	-5.30	-5.40	-5.72	-6.06	-6.64	-6.93	-7.15
Gain (dBi)	-1.68	-1.58	-1.33	-1.23	-0.96	-1.02	-1.11	-2.37	-2.73	-3.02	-3.35
Efficiency (%)	27.11	28.79	29.47	30.40	29.50	28.83	26.79	24.80	21.69	20.28	19.26
Directivity (dB)	3.98	3.83	3.97	3.94	4.34	4.38	4.61	3.68	3.90	3.91	3.80
Peak Gain Position (Theta)	0.00	135.00	90.00	0.00	0.00	90.00	90.00	135.00	30.00	45.00	135.00
Peak Gain Position (Phi)	75.00	60.00	330.00	150.00	150.00	0.00	330.00	315.00	90.00	330.00	330.00
Efficiency ThetaPol (%)	16.03	16.77	16.67	16.57	15.50	14.66	13.72	13.14	11.94	11.58	11.36
Efficiency PhiPol (%)	11.07	12.02	12.80	13.83	14.00	14.17	13.07	11.67	9.75	8.71	7.90
Upper Hem. Efficiency (%)	14.58	15.57	16.18	16.56	15.98	15.30	14.22	13.23	11.87	10.95	10.42
Lower Hem. Efficiency (%)	12.53	13.22	13.29	13.84	13.52	13.52	12.57	11.57	9.83	9.33	8.84

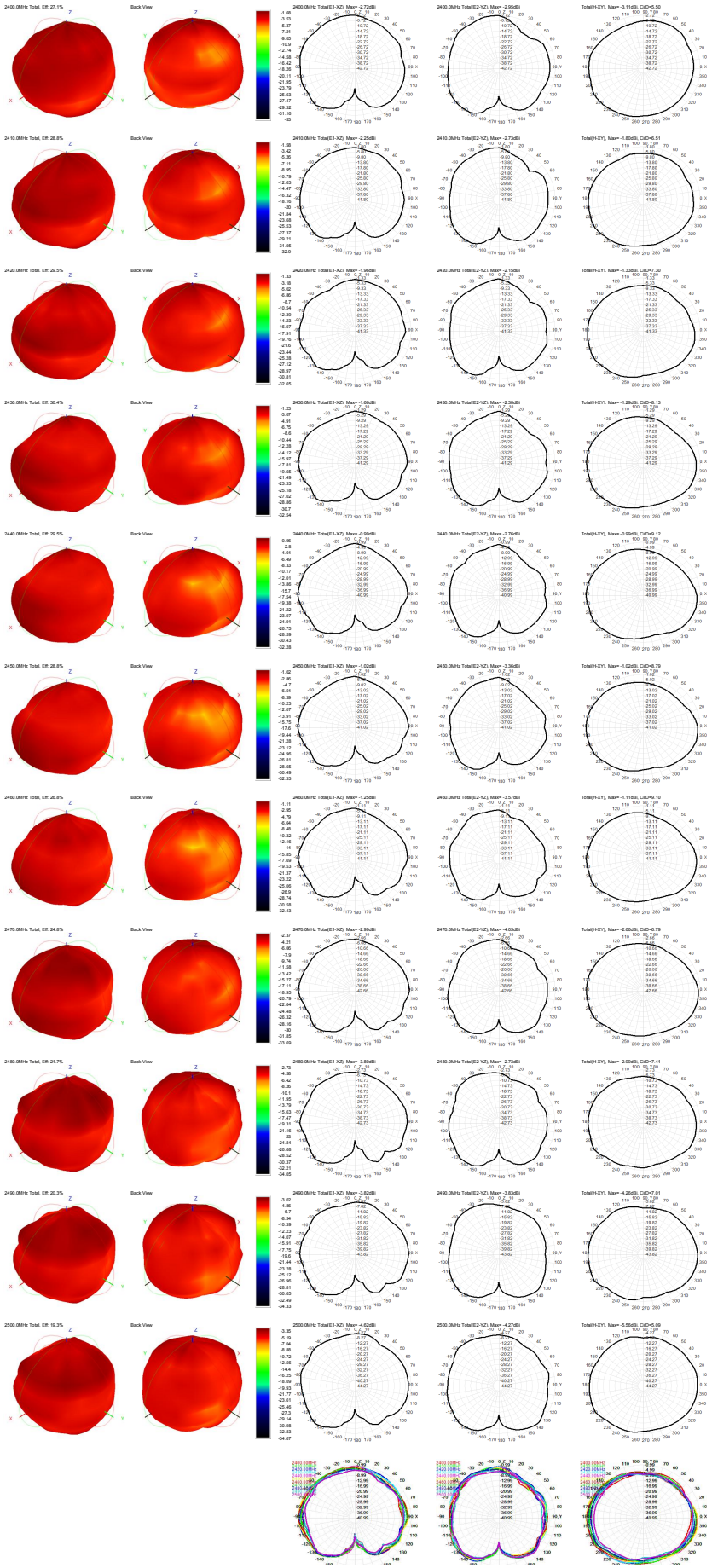
T90(H)圆度	5.50	6.51	7.30	8.13	9.12	8.79	9.10	6.79	7.41	7.01	5.09
Gain 15deg (dBi)											
E1(XZ)波瓣宽度	174.36	183.85	82.53	81.77	66.41	64.37	60.66	136.01	186.01	173.52	173.75
E1(XZ)前后比	5.14	6.48	6.42	6.70	7.09	6.76	6.66	4.36	4.12	4.85	3.96
E2(YZ)波瓣宽度	72.81	78.50	83.38	38.74	51.65	65.99	34.02	64.53	57.70	57.68	75.96
E2(YZ)前后比	0.99	1.09	1.67	2.28	2.25	1.45	2.03	1.68	3.04	3.04	2.16
最大增益处轴比(P)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
顶点(Theta=0)处轴比(P)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
仰角10度最差(大)轴比(P)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Hc(XY)波瓣宽度	111.66	91.60	99.48	104.80	95.46	99.52	90.63	116.32	100.16	120.87	286.60
Hc(XY)前后比	1.59	2.06	2.51	2.66	3.59	4.06	4.72	3.77	4.10	3.80	3.03
Empty											










2400.0MHz Total, Eff: 27.1%
Back View
2400.0MHz Total(E1-XZ), Max= -2.72dB
2400.0MHz Total(E2-YZ), Max= -2.95dB
Total(H-XY), Max= -3.11dB, CxD=5.50
2410.0MHz Total, Eff: 28.8%
Back View
2410.0MHz Total(E1-XZ), Max= -2.25dB
2410.0MHz Total(E2-YZ), Max= -2.73dB
Total(H-XY), Max= -1.80dB, CxD=6.51
2420.0MHz Total, Eff: 29.5%
Back View
2420.0MHz Total(E1-XZ), Max= -1.98dB
2420.0MHz Total(E2-YZ), Max= -2.15dB
Total(H-XY), Max= -1.33dB, CxD=7.30
2430.0MHz Total, Eff: 30.4%
Back View
2430.0MHz Total(E1-XZ), Max= -1.66dB
2430.0MHz Total(E2-YZ), Max= -2.30dB
Total(H-XY), Max= -1.29dB, CxD=6.13
2440.0MHz Total, Eff: 29.5%
Back View
2440.0MHz Total(E1-XZ), Max= -0.99dB
2440.0MHz Total(E2-YZ), Max= -2.76dB
Total(H-XY), Max= -0.99dB, CxD=6.12
2450.0MHz Total, Eff: 28.8%
Back View
2450.0MHz Total(E1-XZ), Max= -1.02dB
2450.0MHz Total(E2-YZ), Max= -3.35dB
Total(H-XY), Max= -1.02dB, CxD=6.79
2460.0MHz Total, Eff: 26.8%
Back View
2460.0MHz Total(E1-XZ), Max= -1.25dB
2460.0MHz Total(E2-YZ), Max= -3.57dB
Total(H-XY), Max= -1.11dB, CxD=6.10
2470.0MHz Total, Eff: 24.8%
Back View
2470.0MHz Total(E1-XZ), Max= -2.99dB
2470.0MHz Total(E2-YZ), Max= -4.05dB
Total(H-XY), Max= -2.66dB, CxD=6.79
2480.0MHz Total, Eff: 21.7%
Back View
2480.0MHz Total(E1-XZ), Max= -3.80dB
2480.0MHz Total(E2-YZ), Max= -2.73dB
Total(H-XY), Max= -2.99dB, CxD=7.41
2490.0MHz Total, Eff: 20.3%
Back View
2490.0MHz Total(E1-XZ), Max= -3.82dB
2490.0MHz Total(E2-YZ), Max= -3.83dB
Total(H-XY), Max= -4.26dB, CxD=7.01
2500.0MHz Total, Eff: 19.3%
Back View
2500.0MHz Total(E1-XZ), Max= -4.62dB
2500.0MHz Total(E2-YZ), Max= -4.27dB
Total(H-XY), Max= -5.56dB, CxD=5.09