

Testing Report

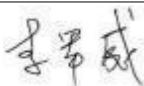
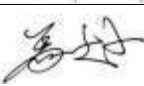
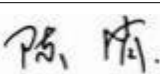
Customer Name: SHENZHEN SHIXINZHONGXIN TECHNOLOGY.CO.,LTD

Product Name: Antenna

Sample Model: F-6168

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

Issue Date: 2024.04. 28

Engineer:		Date: 2024.04. 28
Auditor:		Date: 2024.04. 28
Approver:		Date: 2024.04. 28

1. General Information

1.1 General Information of testing institutions

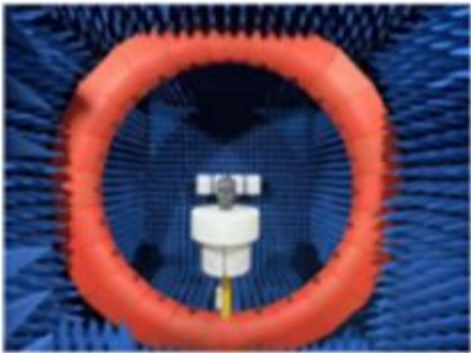
Name	Shenzhen Hetuo Technology Co., Ltd.
Address	Room 1202 B, Building C6, Hengfeng Industrial City, Xixiang, Baoan District, Shenzhen
Tel	18665849001
E-mail	18665849001@163.com
Equipment	Agilent 5071C

1.2 Testing principle

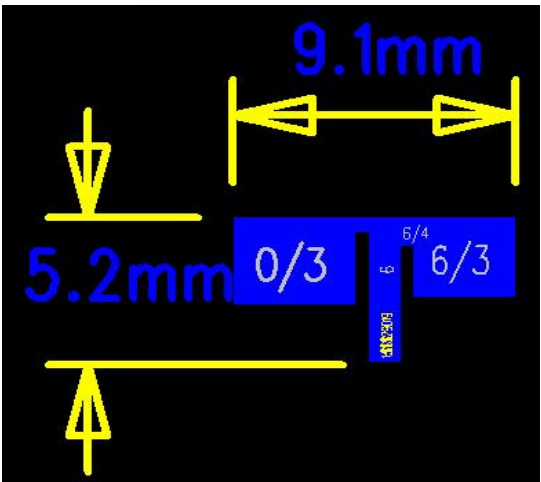
2. Test System

Multi-probe OTA Measurement System

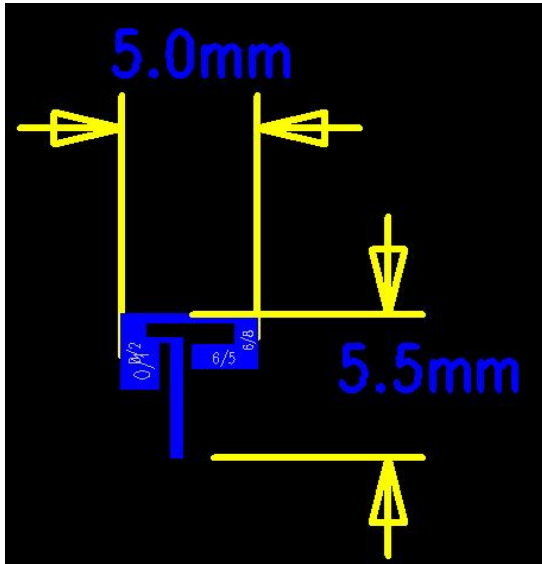
Gain & Efficiency	Gain & Efficiency	SATIMO Agilent 5071C
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Antenna Photo & Lenght(mm)_ANT1:PCB antenna



Antenna Photo & Lenght(mm)_ANT2:PCB antenna



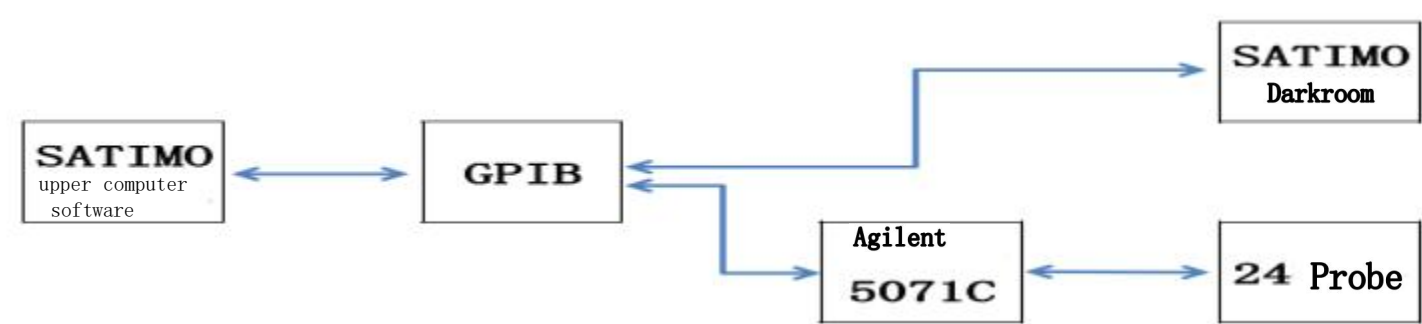
1.3 Test equipment

Equipment	Model No.	Serial No.	Manufacturer	Calibration date	Next calibration date
24 probe microwave chamber	4*3*3	NA	SATIMO	2024.03.29	2024.04.29
Network Analyzer	5071C	NA	Agilent	2024.03.29	2024.04.29

1.4 Test environment

Temperature	24 C ± 1.5 C
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

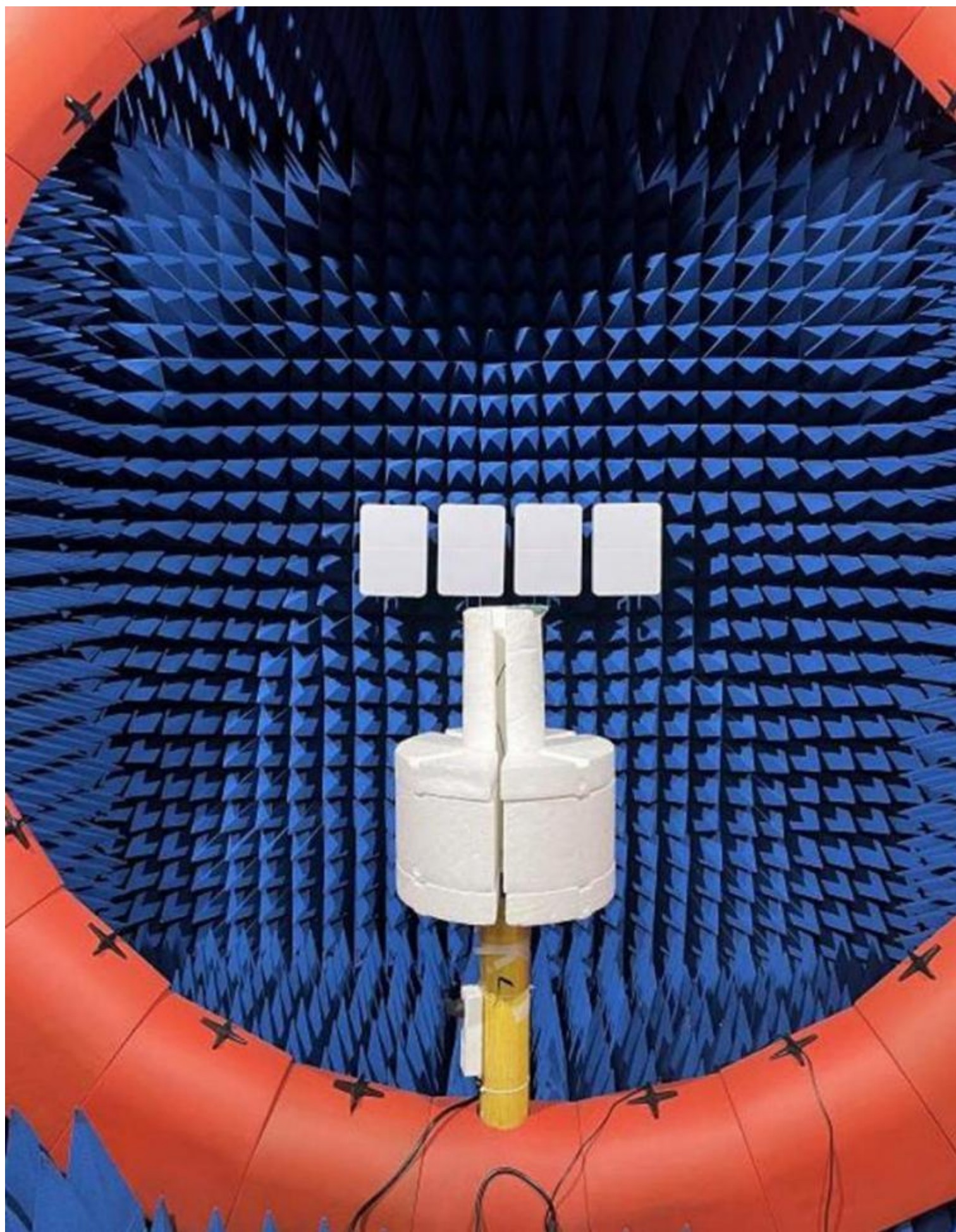
2.1 Client information

Name	SHENZHEN SHIXINZHONGXIN 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)

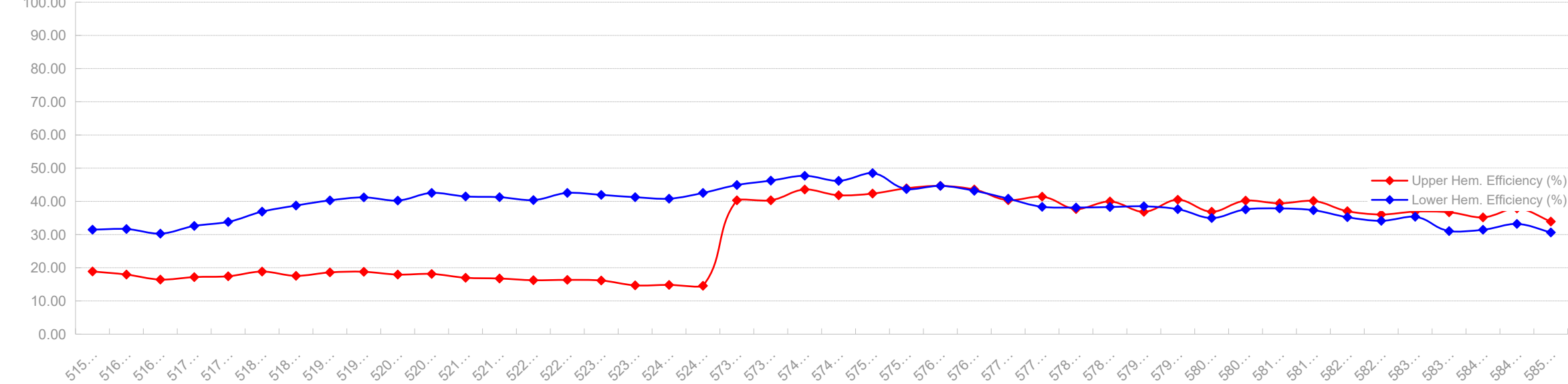
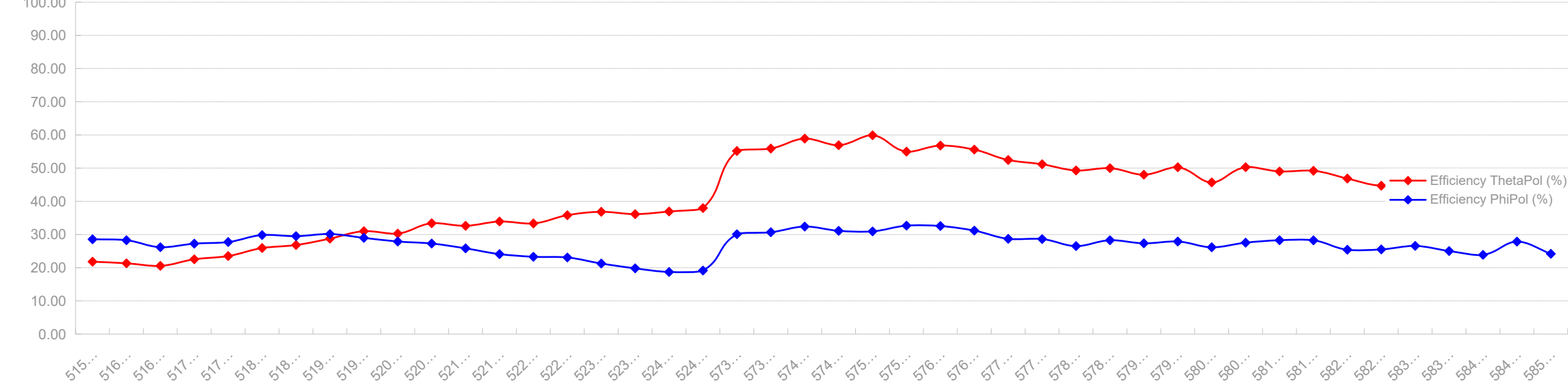
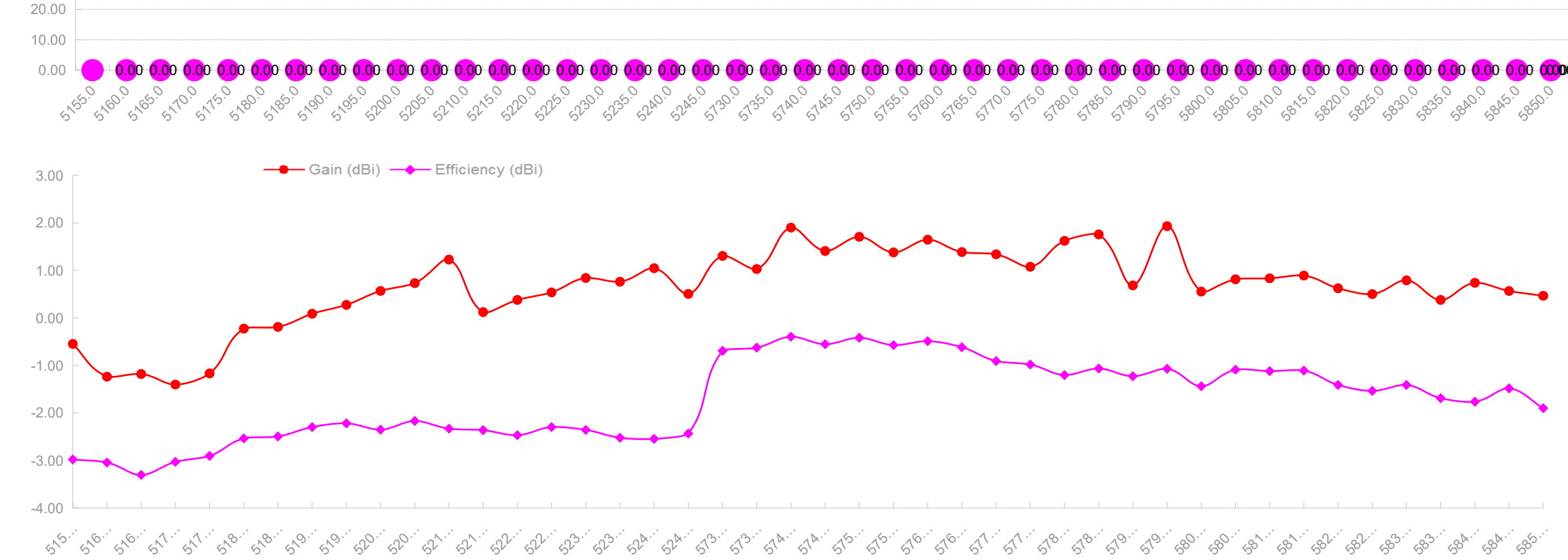
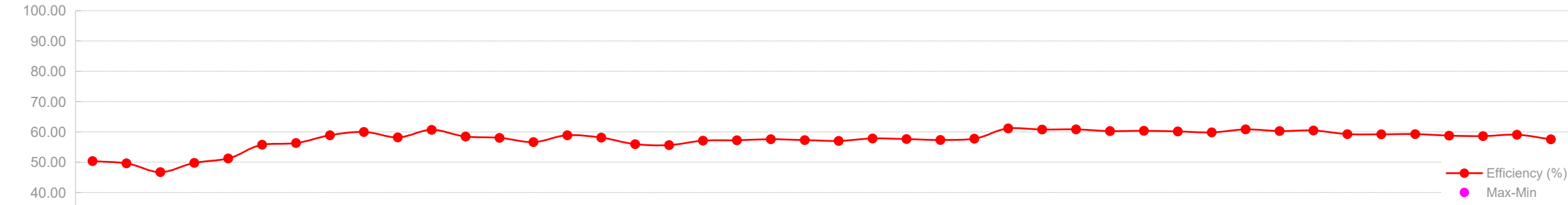
Product Name	5.2G/5.8G Antenna
Sample Model	F-6168
Antenna Size	ANT1:9.1*5.2mm
	ANT2:5.0*5.5mm
Antenna Type	PCB antenna
Serial No.	/
Test Item	Antenna Gain, Radiation pattern
Frequency Range	5155-5245MHz 5730-5848MHz
Received Date	2024.04.28
Test Date	2024.04. 28
Remark	The length of the RF cable is 50mm

The test photos

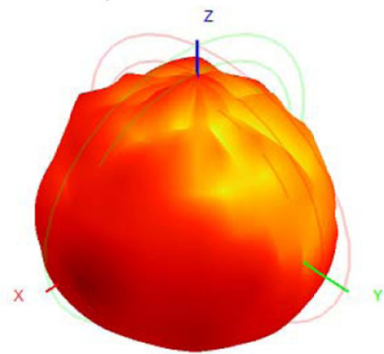


NT1

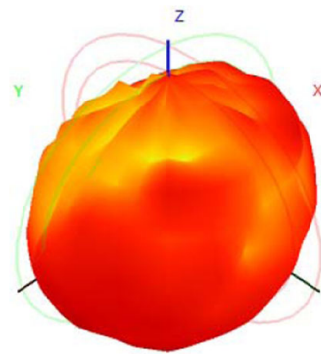
																																														
Frequency ID	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171		
Frequency (MHz)	5155.0	5160.0	5165.0	5170.0	5175.0	5180.0	5185.0	5190.0	5195.0	5200.0	5205.0	5210.0	5215.0	5220.0	5225.0	5230.0	5235.0	5240.0	5245.0	5230.0	5235.0	5240.0	5245.0	5250.0	5255.0	5260.0	5265.0	5270.0	5275.0	5280.0	5285.0	5290.0	5295.0	5300.0	5305.0	5310.0	5315.0	5320.0	5325.0	5330.0	5335.0	5340.0	5345.0	5350.0		
Efficiency (dBi)	-2.98	-3.04	-3.30	-3.03	-2.90	-2.54	-2.49	-2.30	-2.22	-2.35	-2.17	-2.33	-2.36	-2.47	-2.30	-2.36	-2.52	-2.55	-2.43	-0.69	-0.63	-0.40	-0.55	-0.42	-0.57	-0.49	-0.62	-0.91	-0.98	-1.20	-1.06	-1.23	-1.07	-1.44	-1.09	-1.12	-1.11	-1.41	-1.54	-1.41	-1.69	-1.76	-1.48	-1.90		
Gain (dBi)	-0.55	-1.24	-1.18	-1.40	-1.17	-0.22	-0.19	0.09	0.28	0.57	0.73	1.23	0.12	0.38	0.54	0.84	0.76	1.05	0.51	1.31	1.03	1.90	1.41	1.71	1.38	1.65	1.39	1.34	1.08	1.62	1.76	0.68	1.93	0.55	0.81	0.83	0.89	0.62	0.50	0.79	0.38	0.74	0.57	0.47		
Efficiency (%)	50.37	49.62	46.73	49.78	51.24	55.77	56.31	58.90	60.00	58.19	60.67	58.47	58.03	56.64	58.90	58.11	55.95	55.64	57.11	57.24	57.58	57.29	57.03	57.84	57.64	57.34	57.76	61.15	60.78	60.82	60.26	60.37	60.15	59.84	60.82	60.29	60.46	59.26	59.20	59.26	58.77	58.62	59.07	57.56		
Directivity (dB)	4.93	4.31	4.62	4.13	4.24	4.81	4.80	4.89	4.99	5.42	5.40	6.06	4.98	5.35	5.34	5.70	5.78	6.09	5.44	4.50	4.15	4.80	4.46	4.63	4.45	4.64	4.50	4.75	4.56	5.33	5.32	4.41	5.50	4.49	4.40	4.45	4.50	4.54	4.54	4.70	4.57	5.00	4.55	4.87		
Peak Gain Position (Theta)	75.00	90.00	105.00	90.00	135.00	135.00	135.00	90.00	135.00	90.00	90.00	135.00	120.00	135.00	135.00	90.00	135.00	135.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00		
Peak Gain Position (Phi)	15.00	30.00	45.00	30.00	210.00	180.00	180.00	30.00	90.00	30.00	30.00	90.00	90.00	105.00	105.00	30.00	105.00	105.00	105.00	225.00	240.00	255.00	330.00	270.00	330.00	255.00	225.00	315.00	330.00	300.00	225.00	315.00	225.00	330.00	300.00	330.00	345.00	345.00	0.00	255.00	240.00	345.00	285.00	0.00		
Efficiency ThetaPol (%)	21.80	21.33	20.55	22.53	23.51	25.93	26.82	28.75	31.00	30.29	33.39	32.63	33.93	33.34	35.82	36.85	36.14	36.92	37.95	55.15	55.90	58.90	56.91	59.90	54.97	56.79	55.59	52.44	51.16	49.30	49.99	48.02	50.26	45.69	50.28	49.00	49.21	46.85	44.70	45.70	42.74	42.73	43.20	40.37		
Efficiency PhiPol (%)	28.57	28.29	26.17	27.24	27.73	29.84	29.49	30.15	29.00	27.90	27.29	25.84	24.10	23.29	23.08	21.26	19.80	18.72	19.15	30.09	30.68	32.39	31.12	30.93	32.67	32.55	31.17	28.70	28.62	26.52	28.27	27.35	27.89	26.15	27.53	28.29	28.25	25.41	25.50	26.56	25.03	23.88	27.87	24.19		
Upper Hem. Efficiency (%)	18.89	17.95	16.44	17.19	17.43	18.86	17.56	18.61	18.79	17.94	18.13	16.99	16.77	16.24	16.35	16.16	14.70	14.82	14.56	40.31	40.33	43.58	41.84	42.34	43.94	44.68	43.57	40.34	41.43	37.69	39.96	36.85	40.50	36.87	40.23	39.41	40.13	37.04	36.06	36.90	36.72	35.16	37.87	33.92		
Lower Hem. Efficiency (%)	31.47	31.67	30.29	32.59	33.82	36.91	38.75	40.29	41.21	40.24	42.54	41.48	41.26	40.40	42.55	41.95	41.24	40.82	42.55	44.93	46.24	47.71	46.19	48.50	43.70	44.65	43.19	40.81	38.35	38.13	38.30	38.52	37.65	34.97	37.59	37.87	37.33	35.22	34.14	35.36	31.05	31.45	33.20	30.63		
T90(H)圆度	7.91	13.36	10.31	9.25	10.01	9.88	11.74	10.47	11.03	10.49	11.87	9.57	16.13	9.52	13.03	11.36	12.75	11.14	12.04	12.70	14.01	13.34	13.37	14.15	14.27	14.03	12.56	16.34	13.36	13.57	14.80	16.61	16.81	14.75	11.33	15.52	11.81	17.74	14.63	14.79	14.52	15.22	12.49	16.64		
Gain 15deg (dBi)	66.00	77.00	58.00	53.00	49.00	40.00	48.00	51.00	50.00	67.00	53.00	45.00	53.00	60.00	57.00	60.00	58.00	66.00	60.00	103.00	91.00	117.00	111.00	104.00	92.00	92.00	95.00	124.00	105.00	105.00	109.00	108.00	94.00	108.00	115.00	95.00	99.00	102.00	86.00	96.00	97.00	67.00	113.00	55.00		
E1(XZ)波瓣宽度	4.92	6.87	6.68	5.90	5.20	5.44	4.81	3.83	5.08	4.47	3.79	4.45	3.97	2.93	2.82	2.18	2.65	3.01	2.97	1.78	3.82	2.12	3.32	2.21	3.02	4.48	3.90	3.27	3.01	3.73	2.81	4.09	2.48	3.75	4.11	5.74	4.12	5.10	5.68	4.85	8.92	6.34	6.81	6.70		
E1(XZ)前后比	60.00	60.00	58.00	55.00	54.00	46.00	52.00	50.00	45.00	41.00	45.00	36.00	50.00	48.00	53.00	43.00	51.00	40.00	50.00	39.00	36.00	38.00	49.00	33.00	47.00	44.00	52.00	43.00	72.00	38.00	32.00	47.00	59.00	41.00	32.00	35.00	23.00	53.00	52.00	66.00	57.00	40.00	54.00			
E2(YZ)波瓣宽度	1.84	1.47	0.62	1.73	1.40	2.26	2.33	2.04	2.81	3.10	2.52	3.24	2.81	2.00	2.45	2.64	2.45	3.28	2.07	1.58	2.69	1.85	2.14	2.66	0.57	1.58	2.90	2.39	2.54	1.88	4.09	1.12	1.04	2.42	2.78	1.86	2.34	1.24	2.35	1.59	2.25	3.41	4.80	3.98		
E2(YZ)前后比	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50		
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	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	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	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	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	120.00	90.00	106.00	99.00	97.00	93.00	71.00	91.00	86.00	75.00	75.00	103.00	89.00	83.00	88.00	67.00	69.00	87.00	91.00	96.00	87.00	98.00	84.00	115.00	73.00	101.00	49.00	45.00	68.00	54.00	60.00	54.00	54.00	72.00	84.00	67.00	97.00	60.00	71.00	77.00	48.00	64.00	57.00			
Hc(XY)前后比	3.13	4.08	3.73	2.78	4.54	3.83	5.10	5.35	5.00	5.50	5.17	4.37	5.24	5.22	4.97	6.14	5.10	5.30	4.05	2.46	2.18	2.30	2.53	1.99	1.96	2.17	1.52	2.40	2.97	0.99	1.26	2.26	2.14	0.39	2.02	0.67	2.52	1.79	2.20	1.39	1.54	2.54	2.84	2.75		
Empty																																														



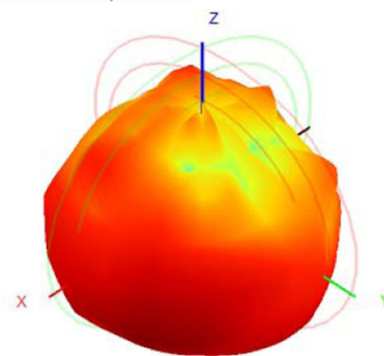
5155.0MHz H+V, Eff: 50.4%



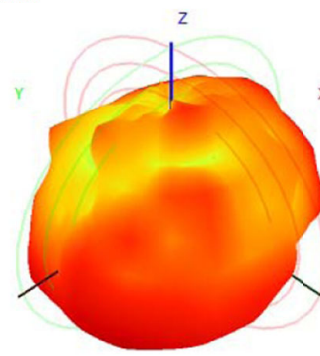
Back View



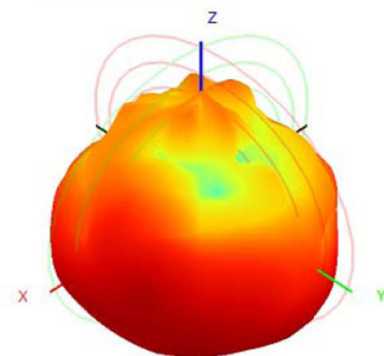
5200.0MHz H+V, Eff: 58.2%



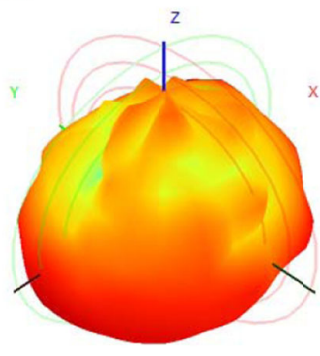
Back View



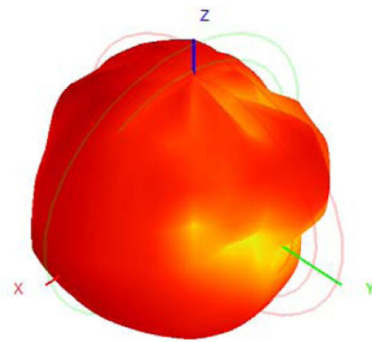
5245.0MHz H+V, Eff: 57.1%



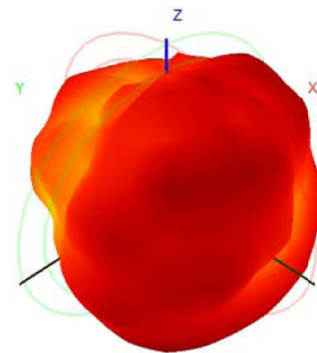
Back View



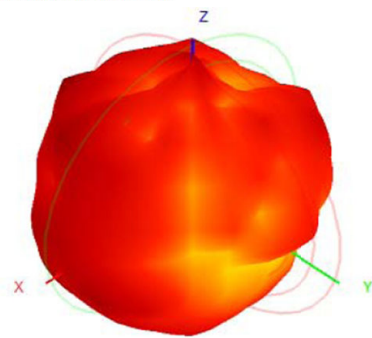
5730.0MHz H+V, Eff: 57.2%



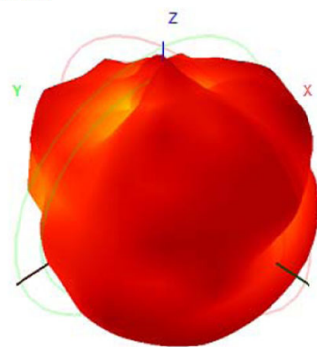
Back View



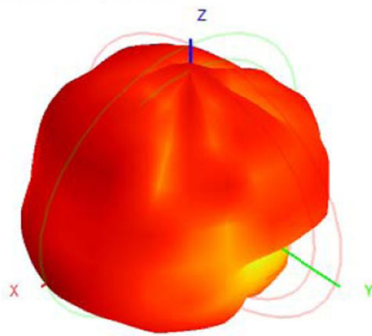
5790.0MHz H+V, Eff: 60.4%



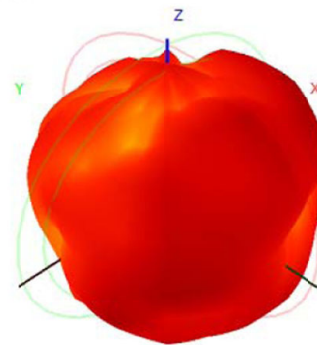
Back View



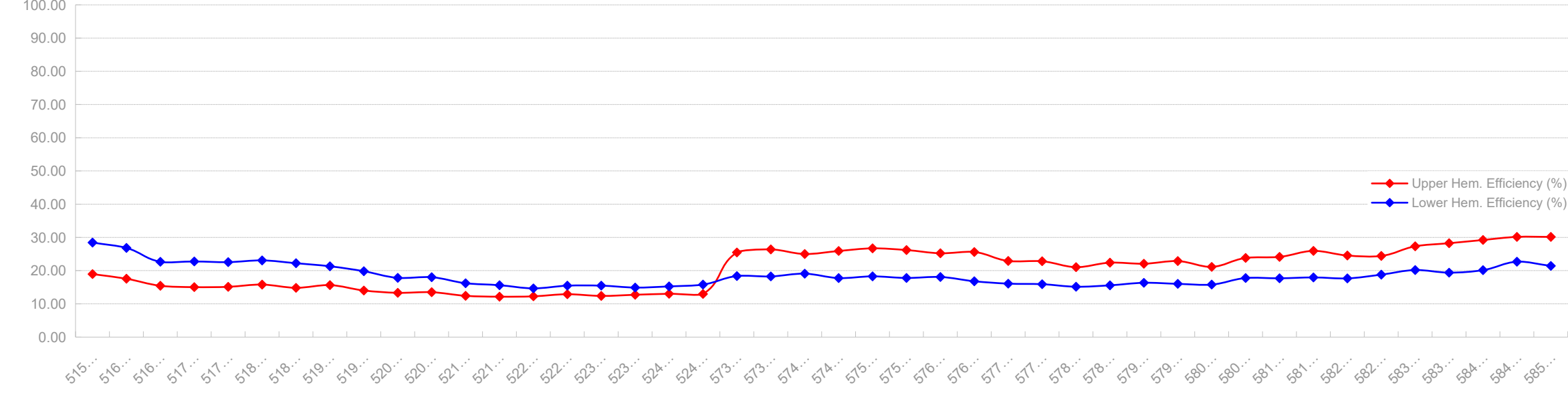
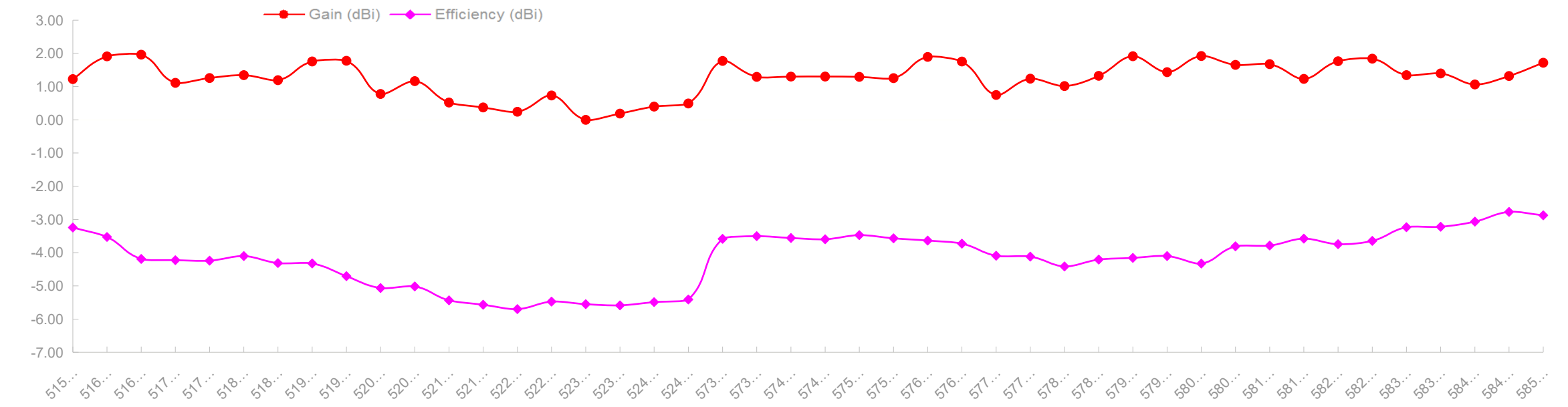
5850.0MHz H+V, Eff: 57.6%



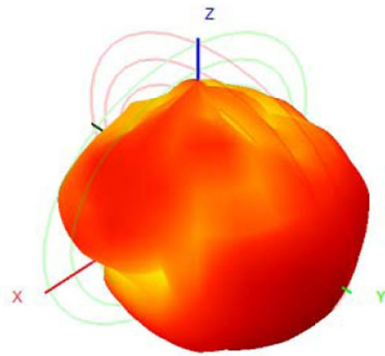
Back View



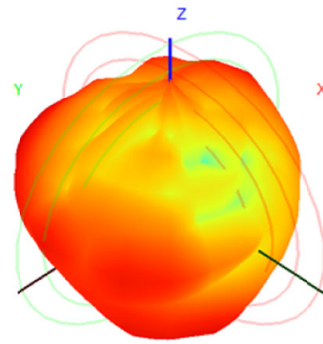
90(H)圓度	13.47	12.75	14.18	13.84	15.03	11.50	15.53	12.46	13.50	12.33	10.31	10.64	11.04	9.00	12.23	10.34	13.16	11.19	12.84	12.98	12.25	12.55	11.98	12.94	13.70	15.69	10.21	14.00	11.15	11.06	13.42	11.55	13.48	13.84	11.41	11.30	12.59	11.11	12.56	10.76	14.47	12.41	11.55	11.91		
Gain 15deg (dBi)																																														
E1(XZ)波瓣寬度	36.00	39.00	37.00	37.00	43.00	34.00	35.00	36.00	35.00	33.00	33.00	36.00	39.00	35.00	56.00	26.00	27.00	27.00	35.00	74.00	75.00	72.00	57.00	68.00	47.00	34.00	50.00	48.00	46.00	66.00	52.00	65.00	25.00	62.00	58.00	63.00	63.00	69.00	68.00	70.00	68.00	48.00	23.00	66.00		
E1(XZ)前后比	0.00	0.00	0.00	0.21	0.38	0.00	0.00	0.00	0.81	1.08	0.51	0.24	0.00	0.00	1.07	0.34	0.00	1.50	2.11	5.86	6.63	6.71	5.41	6.99	7.03	8.04	7.91	7.29	6.26	9.28	6.24	6.86	6.72	7.42	7.77	7.36	6.04	6.47	7.54	8.22	6.39	6.45	8.39	5.88		
E2(YZ)波瓣寬度	69.00	76.00	75.00	80.00	79.00	77.00	79.00	79.00	81.00	80.00	79.00	82.00	78.00	78.00	88.00	84.00	83.00	78.00	84.00	49.00	114.00	121.00	43.00	43.00	119.00	61.00	66.00	63.00	52.00	65.00	23.00	26.00	47.00	53.00	59.00	50.00	67.00	52.00	57.00	24.00	40.00	38.00	112.00	31.00		
E2(YZ)前后比	8.25	7.49	7.73	6.67	6.68	7.50	7.84	7.16	5.29	6.38	6.55	7.09	6.54	7.88	6.01	7.22	5.62	6.93	6.59	8.34	8.02	7.13	7.36	8.30	8.10	8.66	9.46	8.58	9.62	8.23	8.92	9.38	10.03	8.42	9.53	9.96	9.22	9.80	9.34	9.88	9.80	8.78	9.37	8.91		
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	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	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	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Hc(XY)波瓣寬度	77.00	80.00	71.00	63.00	84.00	81.00	65.00	62.00	77.00	75.00	67.00	83.00	77.00	78.00	65.00	83.00	71.00	79.00	72.00	33.00	102.00	40.00	97.00	118.00	91.00	42.00	30.00	123.00	50.00	153.00	79.00	59.00	75.00	61.00	91.00	89.00	135.00	89.00	80.00	74.00	132.00	81.00	122.00	42.00		
Hc(XY)前后比	8.83	5.51	6.03	7.41	5.73	5.21	5.37	5.70	4.50	5.40	3.92	6.20	5.11	4.16	4.72	3.64	4.14	6.17	3.79	5.13	4.64	4.83	5.10	3.80	3.38	3.98	5.00	4.62	4.21	4.89	5.45	5.49	5.91	6.71	6.72	5.32	3.75	5.37	5.20	6.86	4.38	6.28	4.50	3.50		
																											</																			



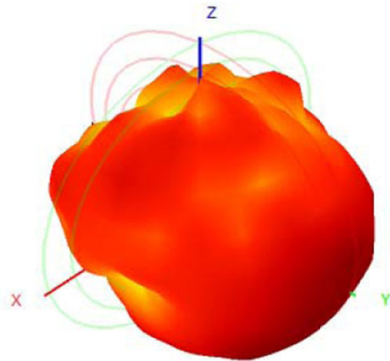
5155.0MHz H+V, Eff: 53.4%



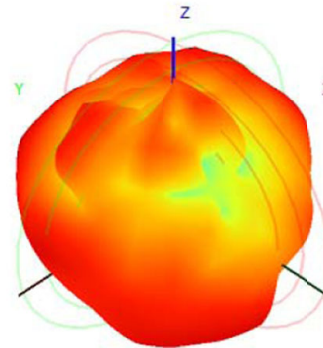
Back View



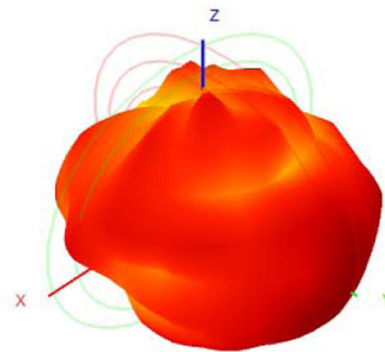
5200.0MHz H+V, Eff: 51.2%



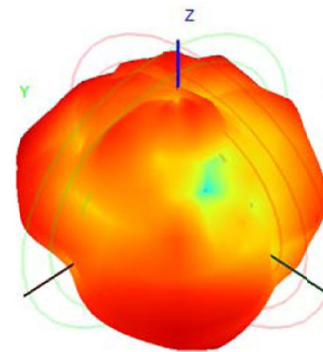
Back View



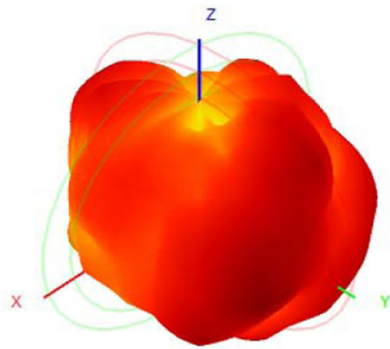
5245.0MHz H+V, Eff: 52.8%



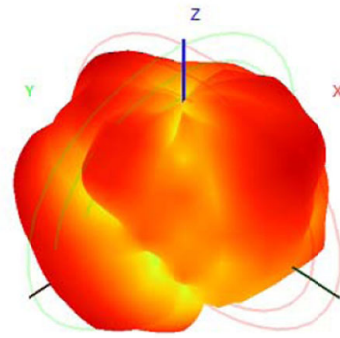
Back View



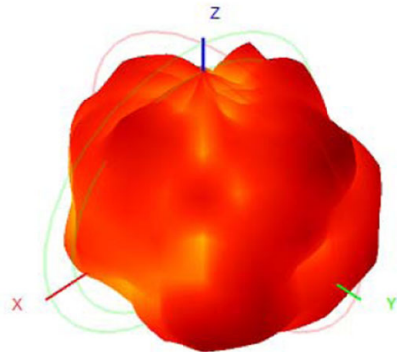
5730.0MHz H+V, Eff: 53.8%



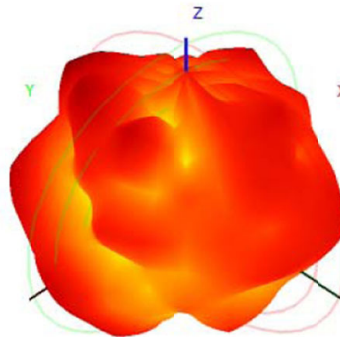
Back View



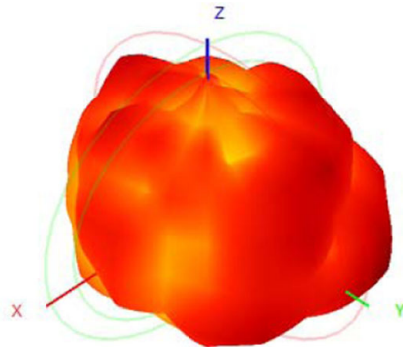
5790.0MHz H+V, Eff: 52.4%



Back View



5850.0MHz H+V, Eff: 51.6%



Back View

