

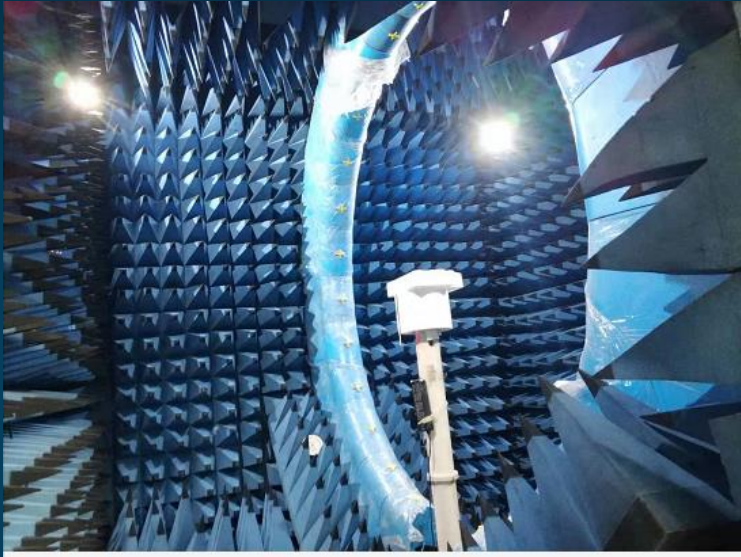
Shenzhen HamyWe Technology Co., Ltd.

C600C



Test the equipment

SG24



GTS



Agilent 8960



CMW 500



Agilent E5071B

测试系统(Test System)	测试环境(Test Environment)	有源测试(OTA Testing)	无源测试(SAR Testing)
SG24 ETS	温度(Temperature): $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 湿度(humidity): $50\% \pm 15\%$	支持(Support)2G/3G/4G 支持(Support)BT/WIFI/GPS	600MHZ——6G

调试版本记录Debug version log

项目名(Project ID)

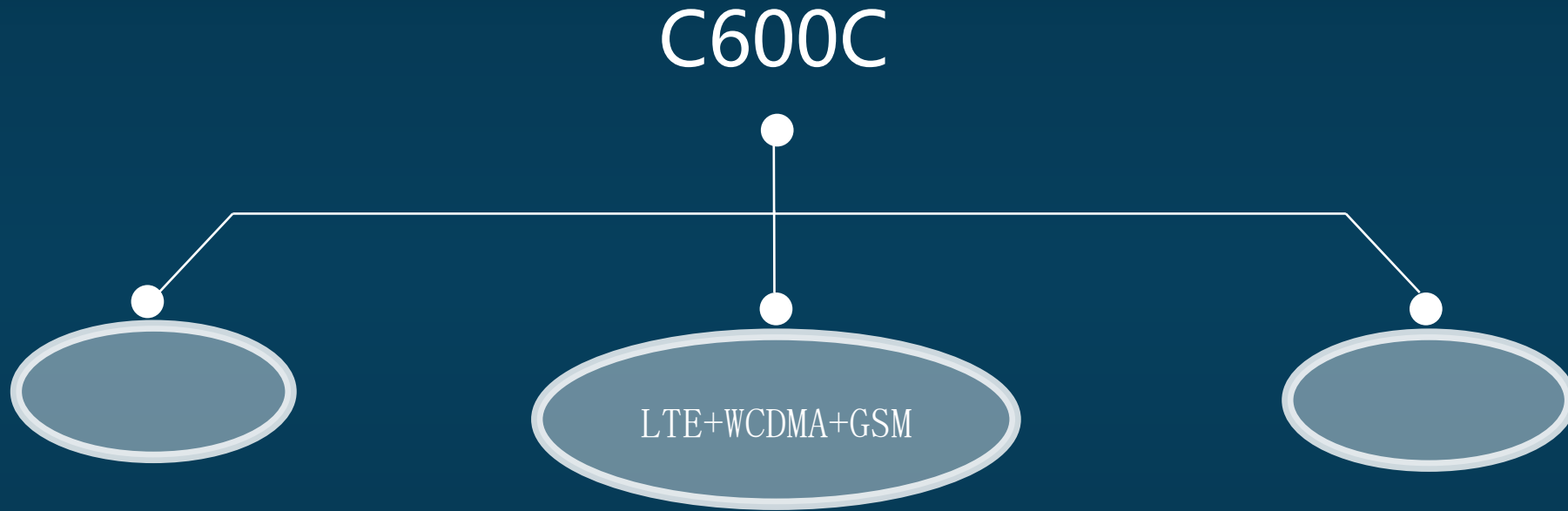


主板丝印

主板版本: OTX72-06+MT66-07

[illegible]

The item states



机器类型:

天线方式: fpc

匹配改动: 未更改

Device: Mobile Phone

Antenna Type: fpc

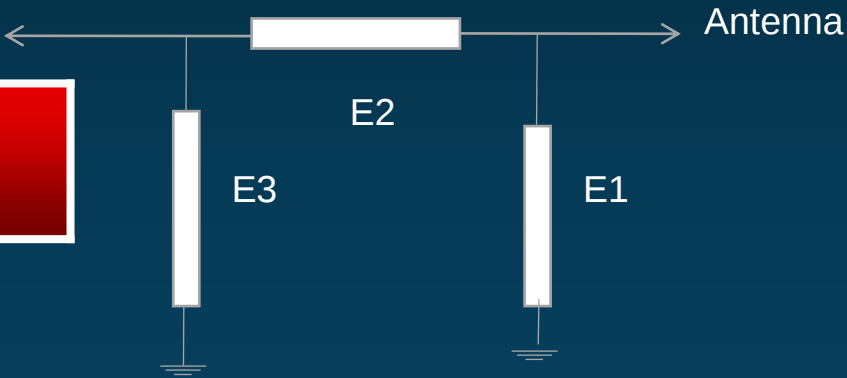
Matching changes: No changes

匹配电路(Matching Circuit)

RF Module

Matching Changes	No Change
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匹配是否有改动	未改动
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天线(Antenna)	
Element	Value
E1 (0201)	
E2 (0201)	
E3 (0201)	

OTA测试数据(OTA Test Data) :

Band	TRP	TIS	Band	TRP	TIS	Band	TRP	TIS	Band	TRP	TIS
GSM850	29.03		W2	19.79		LTE B2	20.3		LTE B12	18.89	
	28.97			19.86			20.52			18.91	
	28.73	-104.18		19.53	-105.76		19.94	-94.26		19.32	-93.16
GSM900	28.31		W4	20.13		LTE B4	20.52		LTE B13	19.69	
	27.37			20.03			21.2			19.99	
	27.18	-101.48		19.82	-105.06		21.03	-93.5		20.35	-94.39
DCS1800	26.32		W5	20.16		LTE B5	21.47		LTE B17	18.99	
	26.45			19.99			21.24			18.55	
	26.56	-103.77		19.76	-104.89		20.84	-92.83		17.89	-92.87
PCS1900	26.52					LTE B7	22.01		LTE B66	20.24	
	26.32						22.04			21.09	
	25.67	-103.69					21.55	-91.09		21.36	-93.21

OTA测试数据(OTA Test Data) :

Band	TRP	TIS	Band	TRP	TIS
LTE B71	18.85				
	19.75				
	19.76	-90.13			
LTE B38	21.48				
	21.7				
	21.62	-89.49			
LTE B40	21.64				
	21.95				
	21.53	-90.47			
LTE B41	21.15				
	21.58				
	21.06	-89.32			

WIFI 有源数据Active data

Band	Channel	TRP	TIS
WIFI 2.4G(11M)	1	16.16	-83.15
	7	16.38	-83.77
	13	16.73	-84.34
WIFI 5G(54M)	149	13.72	-74.12
	157	14.34	-74.24
	165	14.19	-74.32

主天线无源测试数据(Main Antenna SAR Test Data) :

Frequency (MHz)	Gain(dBi)	Efficiency (%)
660	-2.5	22.84
680	-1.19	26.34
700	0.59	39.27
720	1.44	53.29
740	2.1	60.28
760	2.17	60.61
780	2.27	61.73
800	2.05	64.87
820	1.79	62.89
840	2.32	64.31
860	2.13	58.52

Frequency (MHz)	Gain(dBi)	Efficiency (%)
880	0.78	53.7
900	1.12	52.12
920	2.11	55.12
940	2.28	57.14
960	1.83	53.54
980	1.49	43.88

主天线无源测试数据(Main Antenna SAR Test Data) :

Frequency (MHz)	Gain (dBi)	Efficiency (%)
1700	2.8	63.1
1730	1.97	56.86
1760	1.35	51.48
1790	1.6	50.87
1820	1.68	56.51
1850	0.34	58.76
1880	1.37	74.77
1910	0.99	62.82
1940	2.09	55.77
1970	2.73	52.1
2000	2.98	53.84

Frequency (MHz)	Gain (dBi)	Efficiency (%)
2030	3.13	53.3
2060	2.91	55.21
2090	2.16	53.83
2120	1.67	50.48
2150	1.44	44.96
2170	1.35	42.32

Frequency (MHz)	Gain (dBi)	Efficiency (%)
2300	3.78	60.45
2320	3.57	59.03
2340	3.73	61.84
2360	4.02	64.79
2380	4.27	65.06
2400	4.16	63.09
2420	3.75	59.26
2440	3.39	59.07
2460	3.36	60.19
2480	3.29	59.96
2500	3.29	58.85

Frequency (MHz)	Gain (dBi)	Efficiency (%)
2520	3.16	58.08
2540	2.93	54.83
2560	2.92	52.79
2580	2.9	52.73
2600	2.59	50.32
2620	2.06	47.57
2640	1.16	42.57
2660	0.14	38.53
2680	-0.48	37.35
2700	-0.38	38.15

分集天线无源测试数据(Secondary Antenna SAR Test Data) :

Frequency (MHz)	Gain(dBi)	Efficiency(%)
660	-8.47	9.13
680	-6.89	10.74
700	-4.7	11.94
720	-3.23	17.59
740	-2.4	23.36
760	-2.46	24.7
780	-2.07	25.14
800	-1.46	27.34
820	-0.78	30.37
840	0.21	36.95
860	1.11	45.34

Frequency (MHz)	Gain(dBi)	Efficiency(%)
880	3.24	64.38
900	2.22	69.21
920	2.8	72.95
940	3.88	68.73
960	3.08	56.51
980	1.4	43.8

分集天线无源测试数据(Secondary Antenna SAR Test Data) :

Frequency (MHz)		
Frequency (MHz)	Gain (dBi)	Efficiency (%)
1700	-1.92	20.39
1730	-2.02	19.51
1760	-2.04	19.12
1790	-2.06	20.79
1820	-1.44	24.85
1850	-0.91	30.84
1880	0.4	45.17
1910	0.64	41.25
1940	1.18	39
1970	1.63	37.38
2000	2.02	39.43

Performance of the proposed antenna		
Frequency (MHz)	Gain (dBi)	Efficiency (%)
2030	1.87	38.54
2060	1.91	41.84
2090	1.46	45.54
2120	2.2	48.95
2150	2.27	49.43
2180	1.98	49.73
2210	2.66	47.32
2240	3.23	49.46
2270	3.09	51.23
2300	3.25	51.15
2330	3.51	53.76

Table 1: Comparison of the proposed antenna with the state-of-the-art		
Frequency (MHz)	Gain (dBi)	Efficiency (%)
2360	3.93	60.03
2390	4.03	62.29
2420	3.85	58.6
2450	4.06	58.99
2480	4.21	63.48
2510	4.17	64.25
2540	3.99	64.23
2570	4.01	63.72
2600	4.2	64.06
2630	4.05	62.58
2660	3.79	59.22

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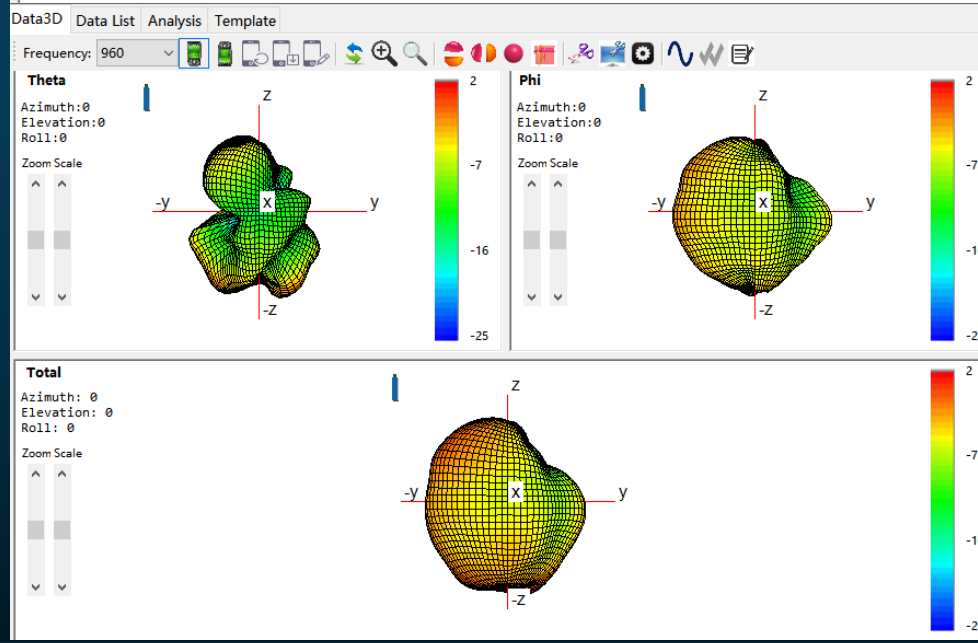
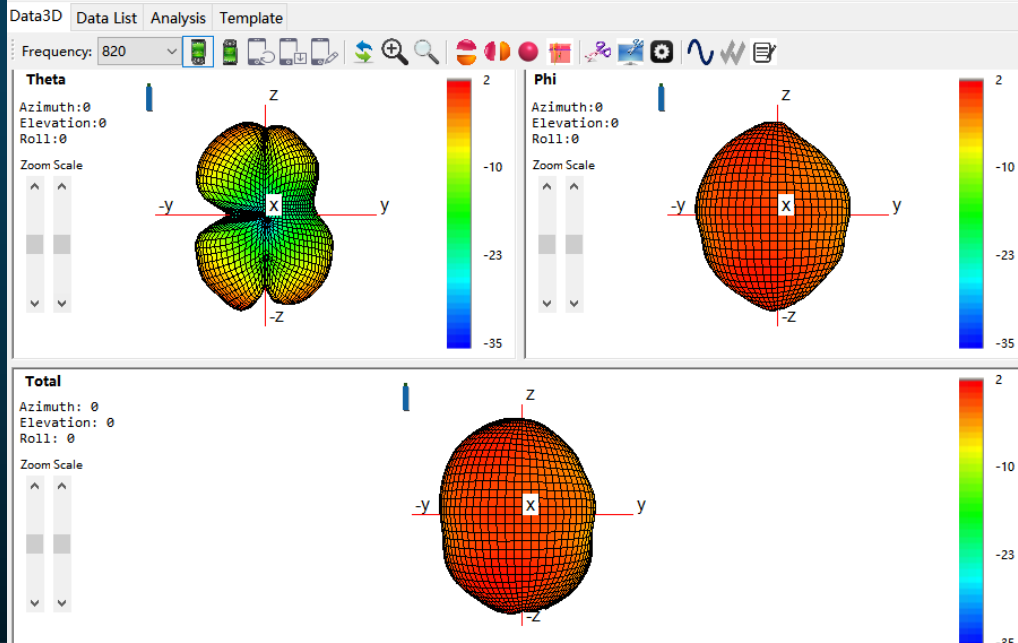
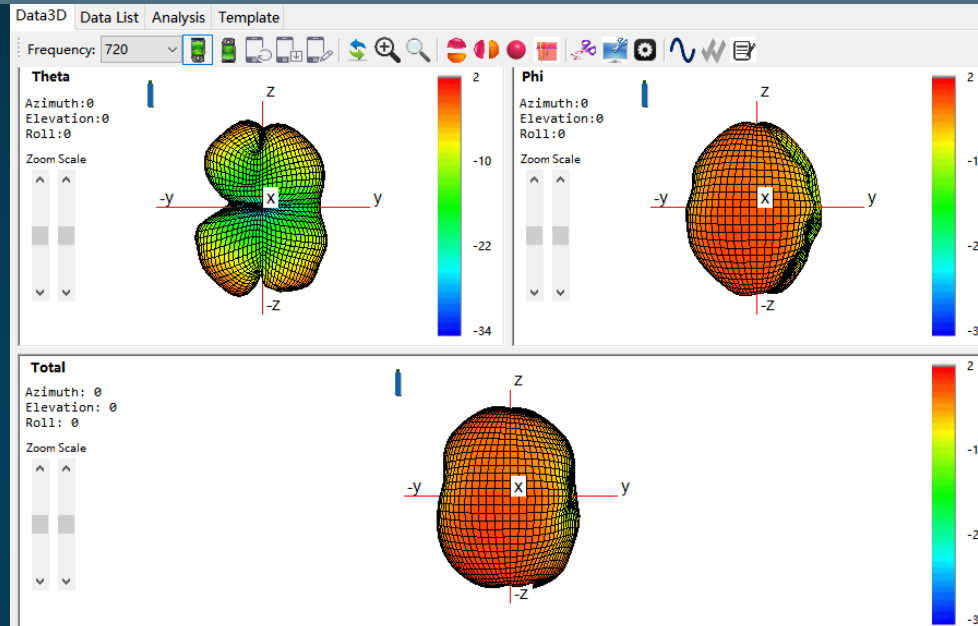
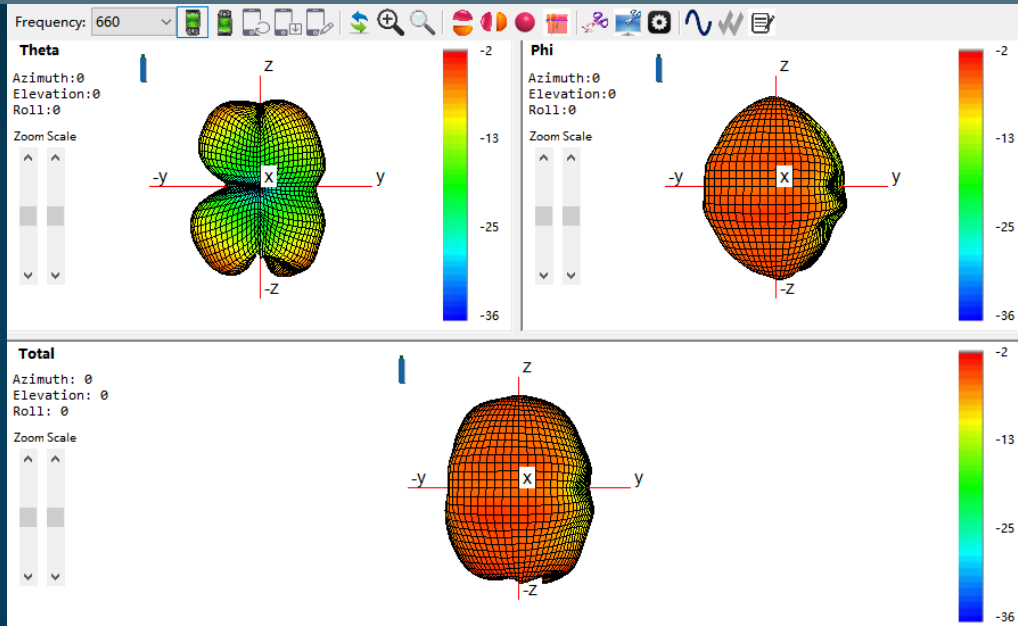
WIFI天线无源测试数据(Secondary Antenna wifi Test Data) :

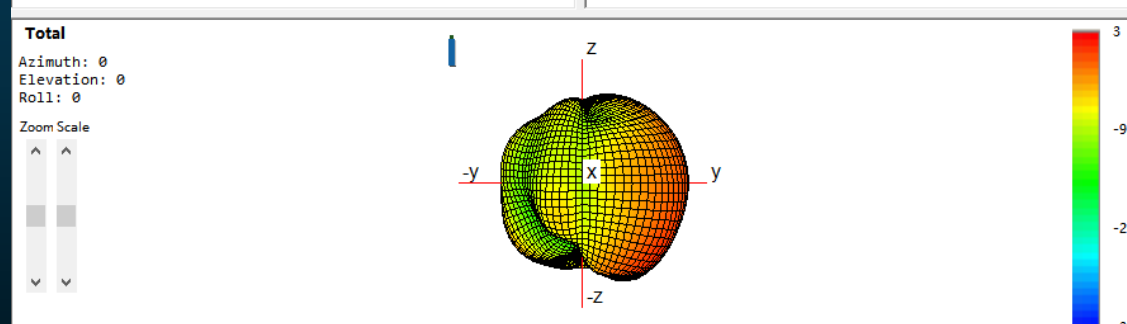
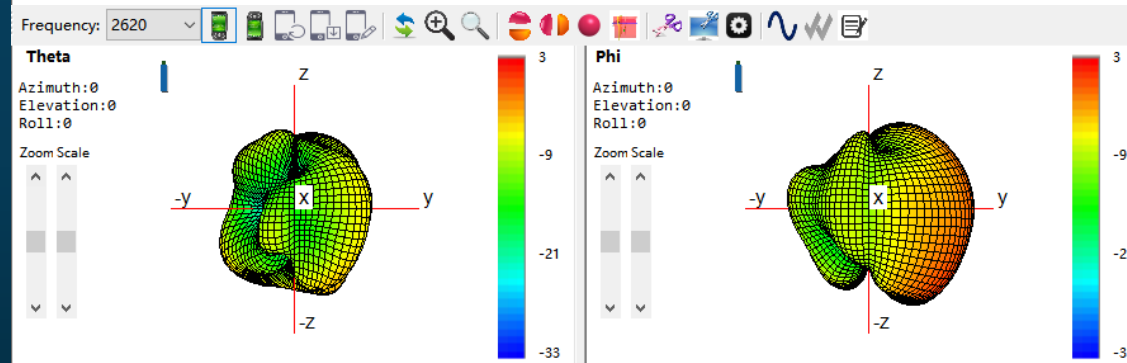
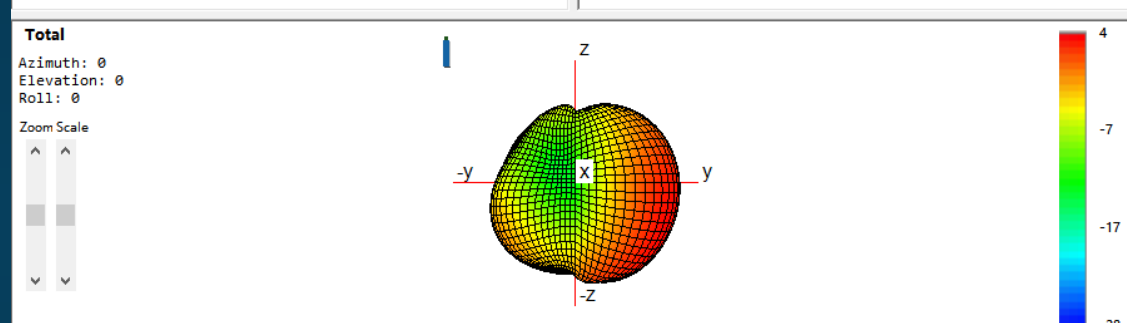
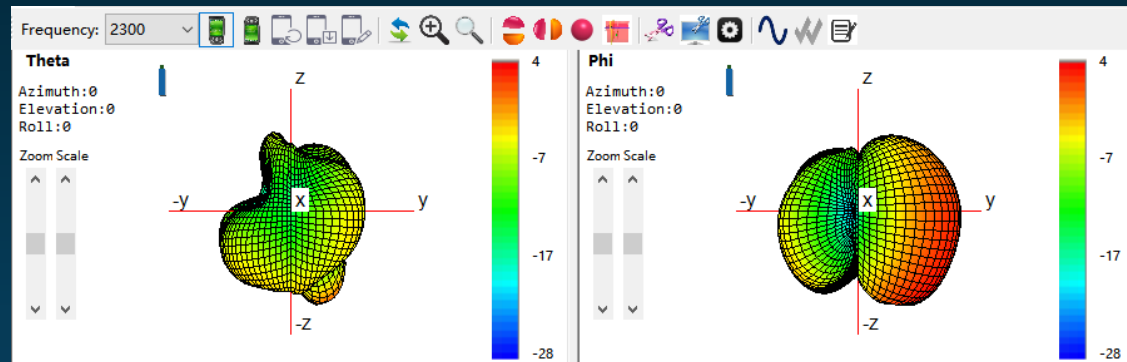
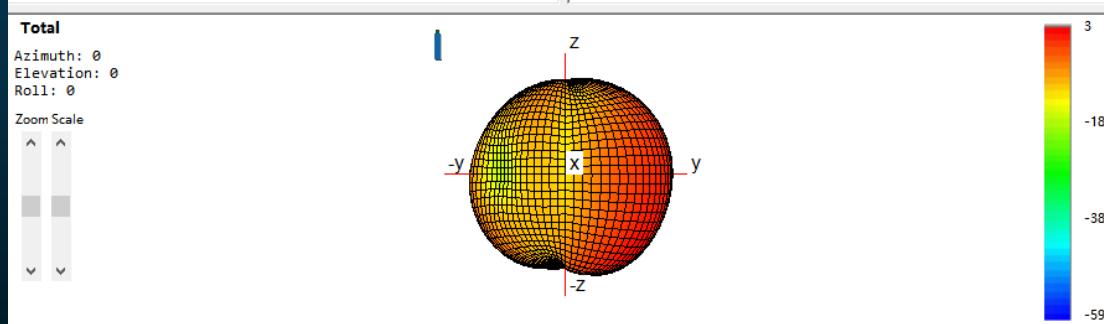
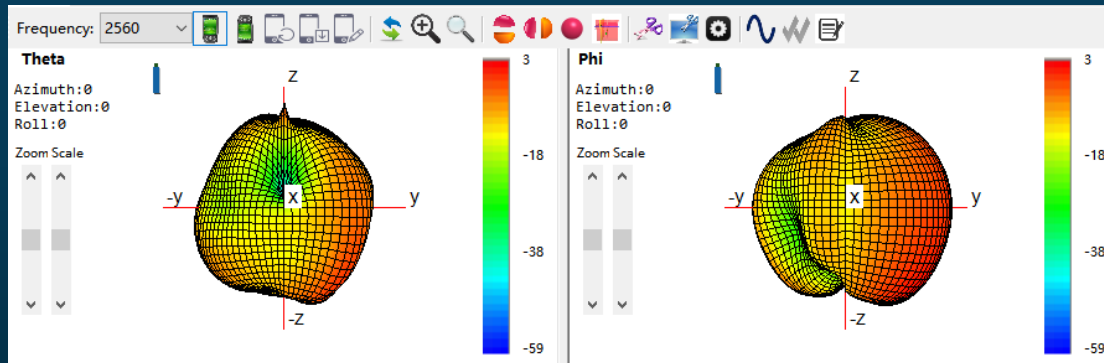
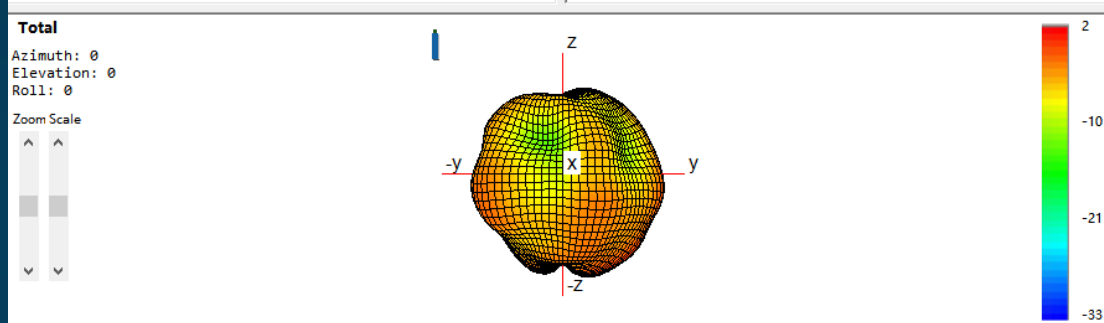
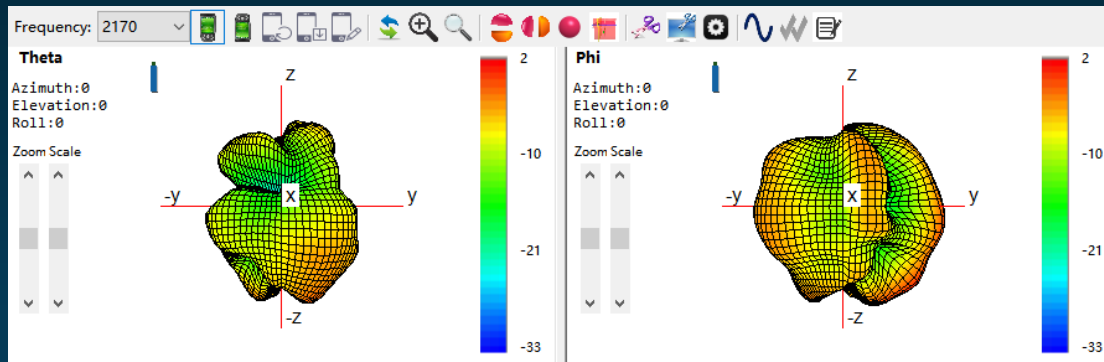
Frequency (MHz)		
Frequency (MHz)	Gain (dBi)	Efficiency (%)
2400	4.22	68.02
2410	4.27	65.65
2420	4.34	63.63
2430	4.34	61.12
2440	4.44	60.93
2450	4.49	63.73
2460	4.35	65.83
2470	4.31	69.46
2480	4.18	71.81
2490	4.08	73.08
2500	4.04	73.91

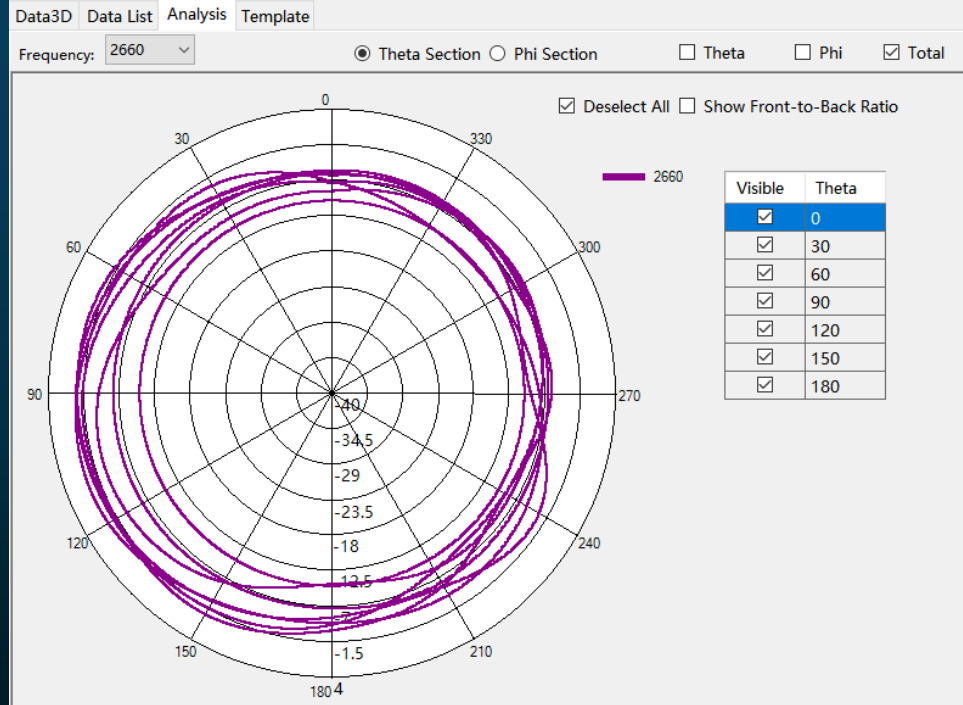
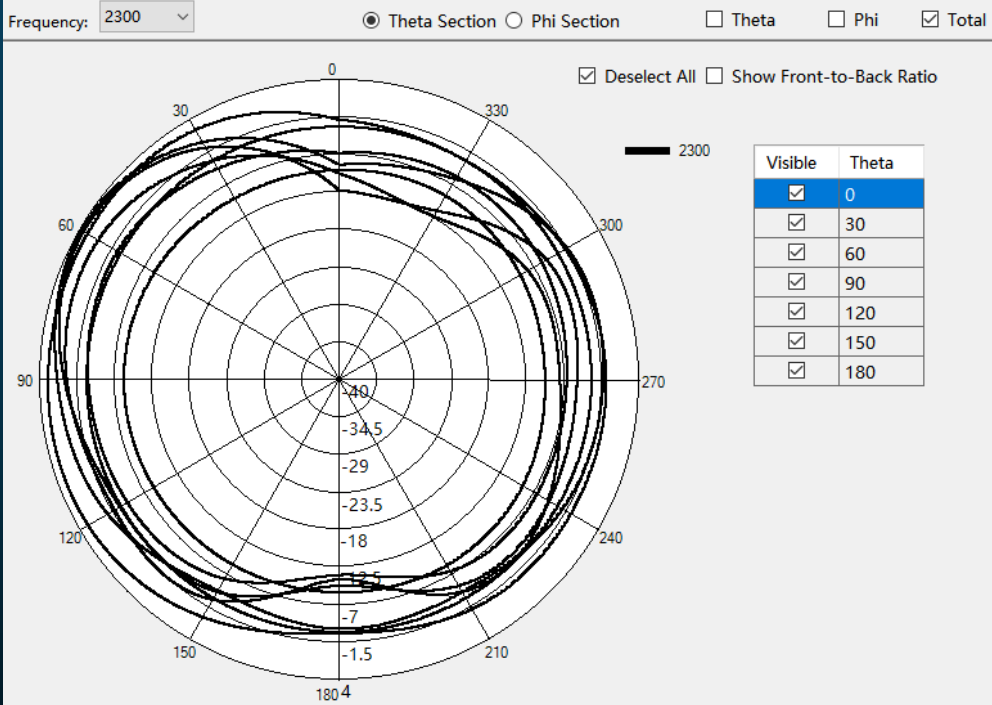
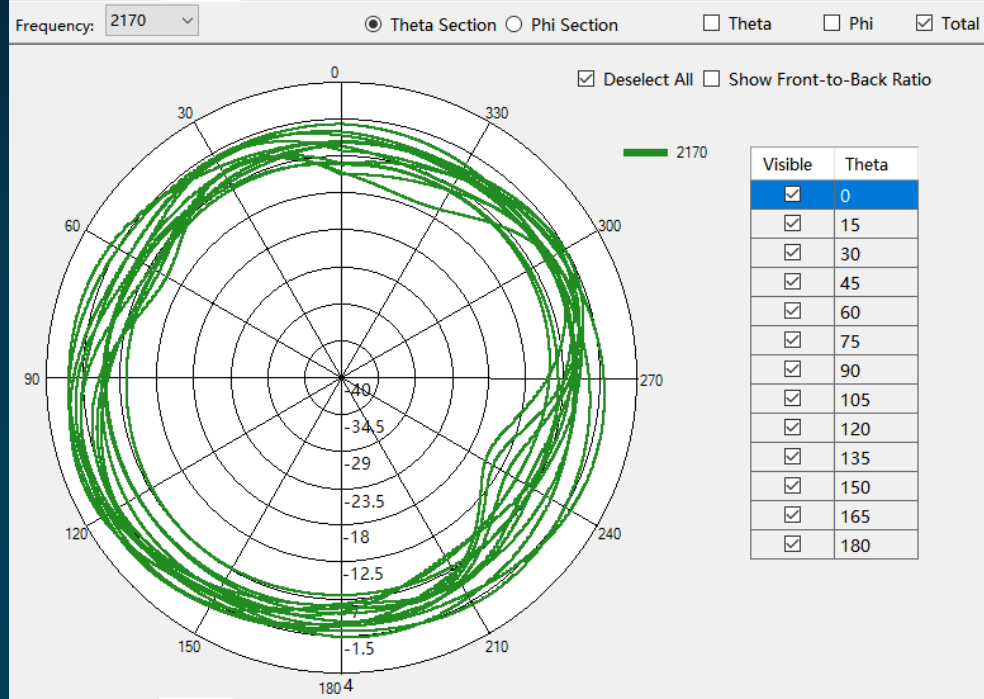
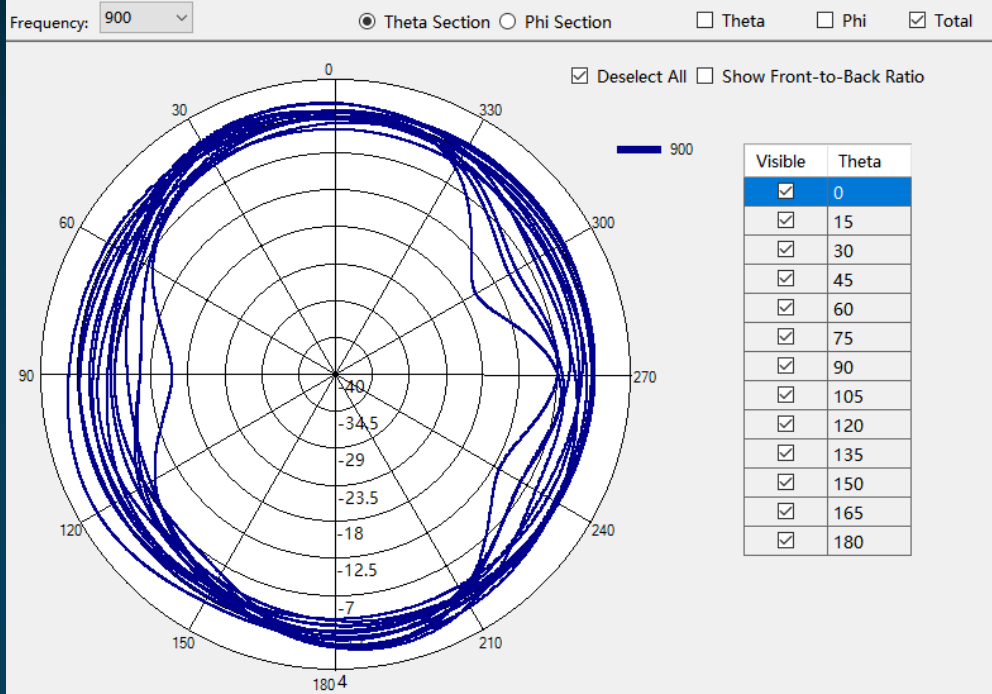
Antenna Performance Metrics		
Frequency (MHz)	Gain (dBi)	Efficiency (%)
5150	3.95	67.56
5200	3.76	70.27
5250	4.84	70.56
5300	5.53	69.96
5350	6.59	74.28
5400	7.08	75.1
5450	7.03	73.65
5500	7.15	73.3
5550	7.12	72.47
5600	6.89	70.72
5650	7.36	76.35

[illegible]

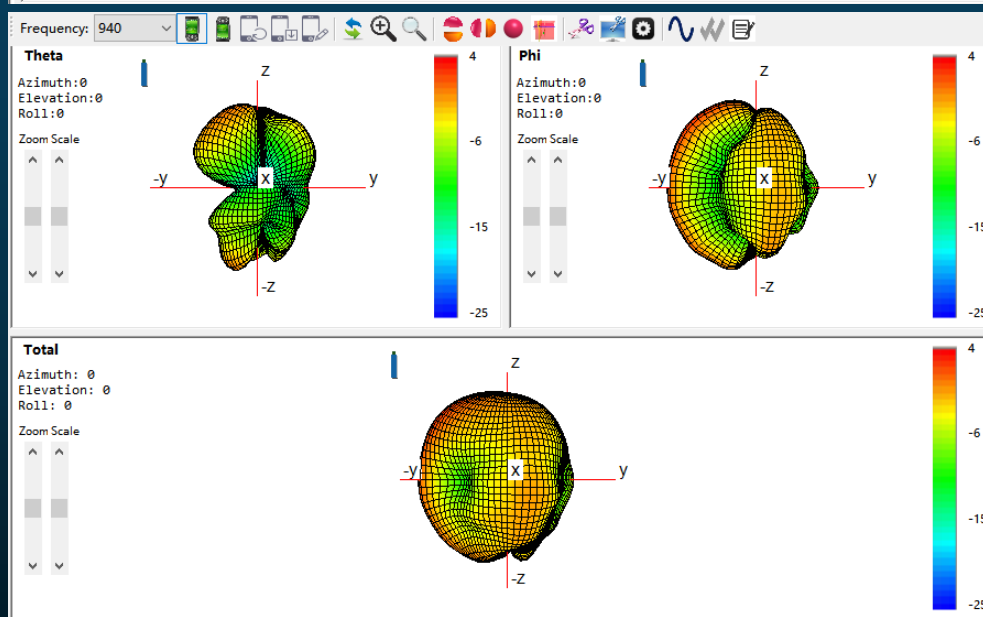
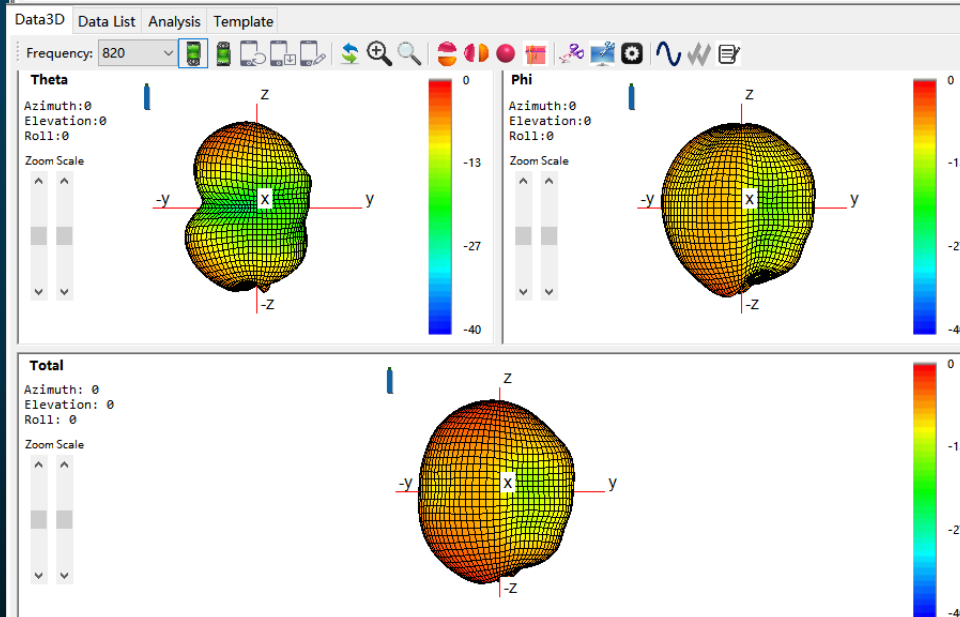
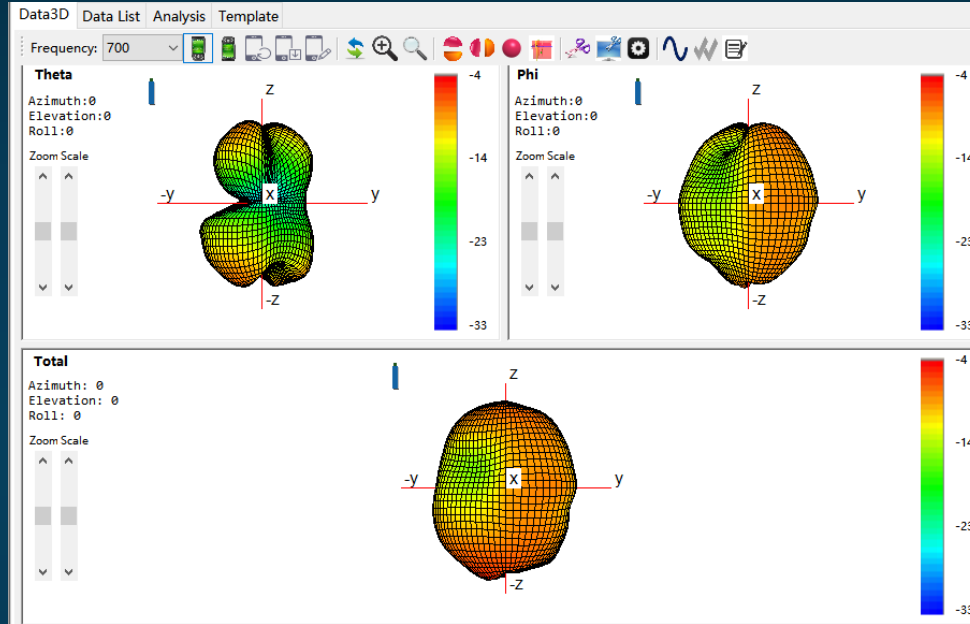
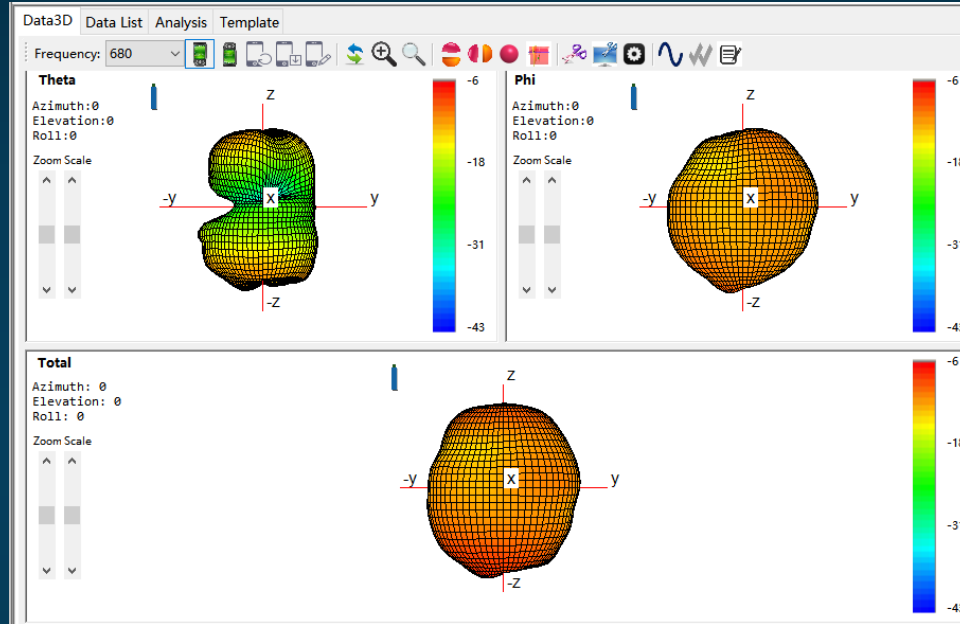
3D图（主天线） [3D Views/Pictures(Main Antenna)] :

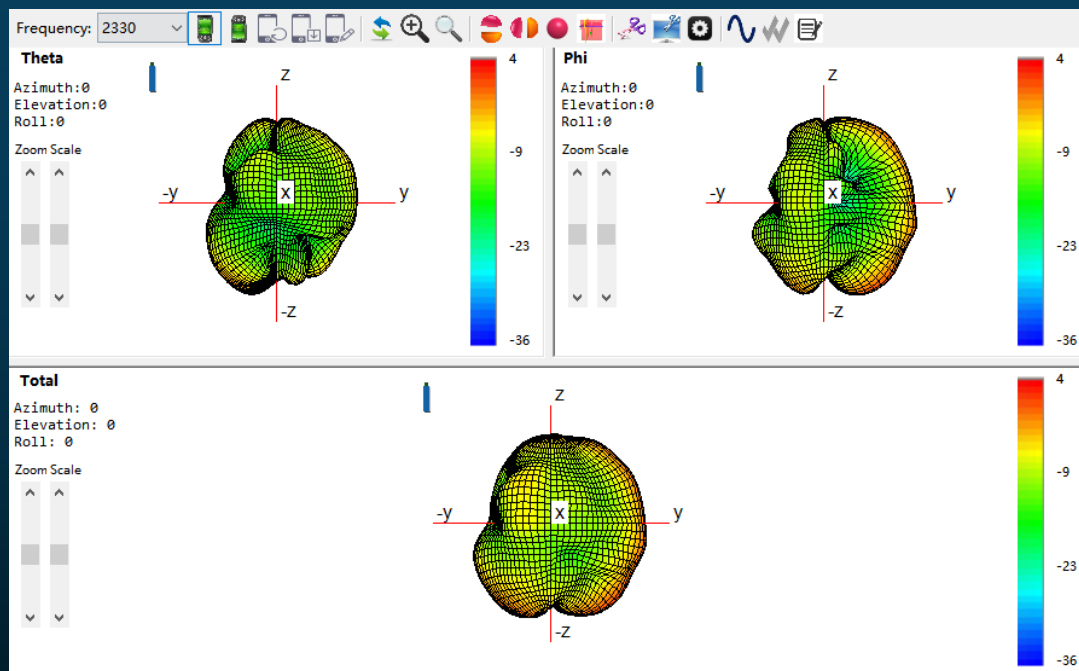
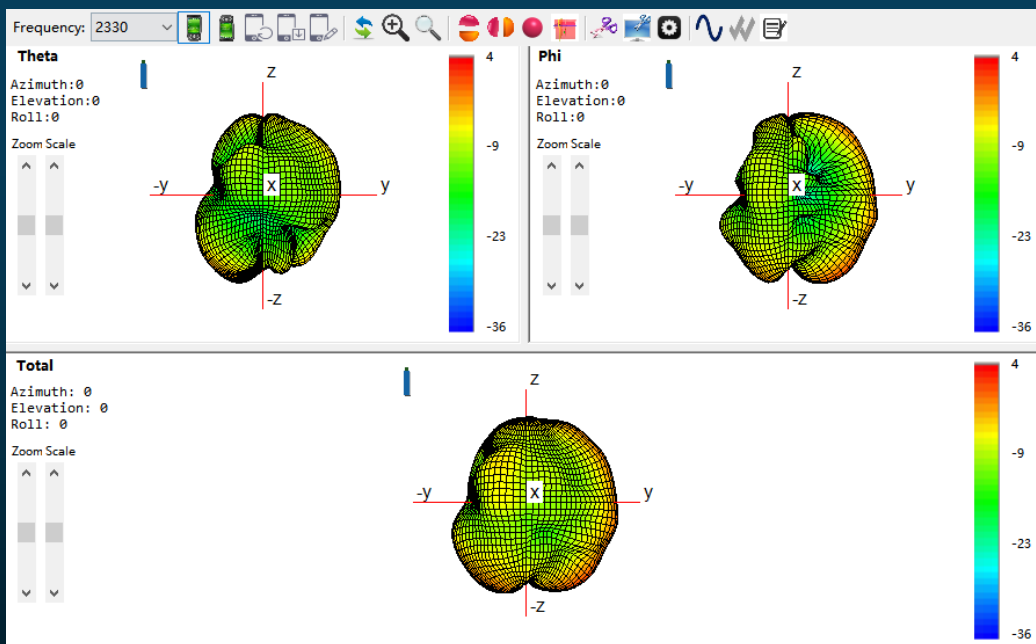
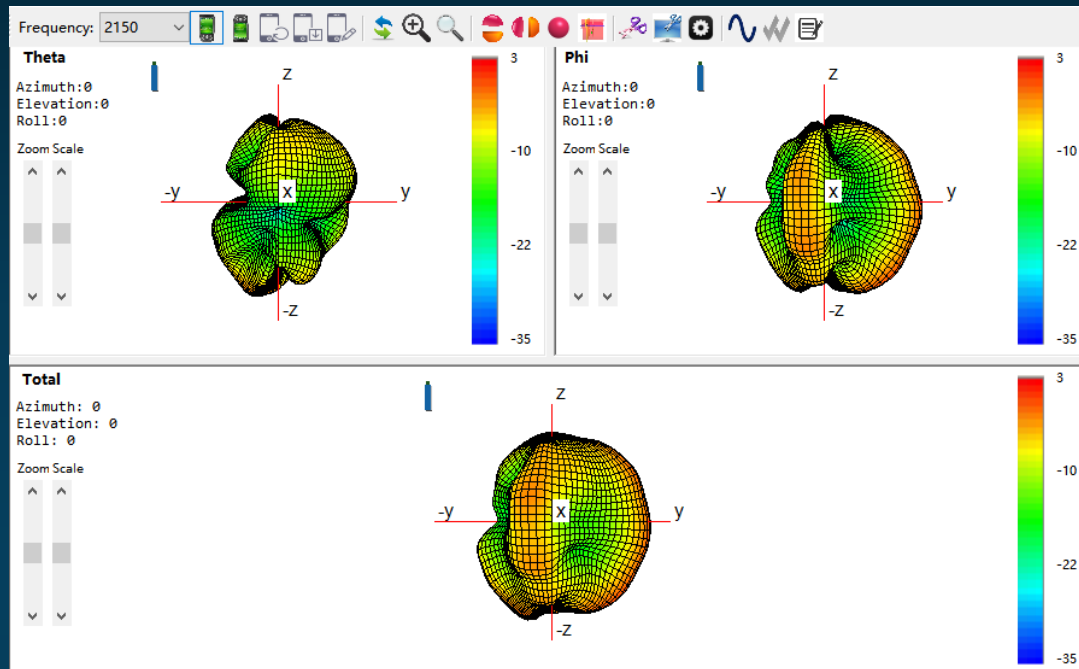
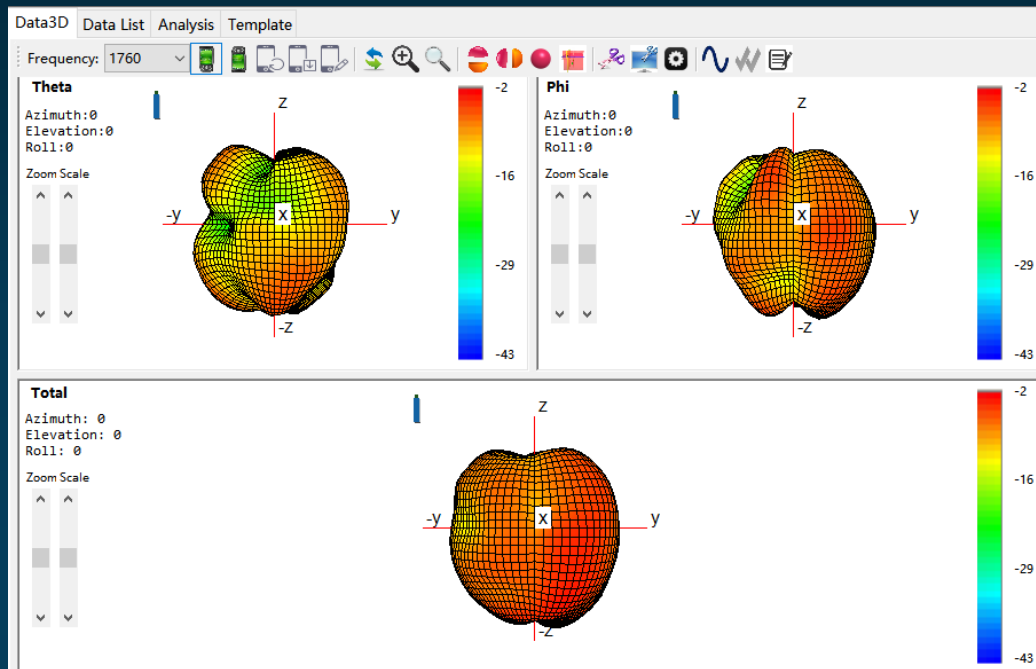


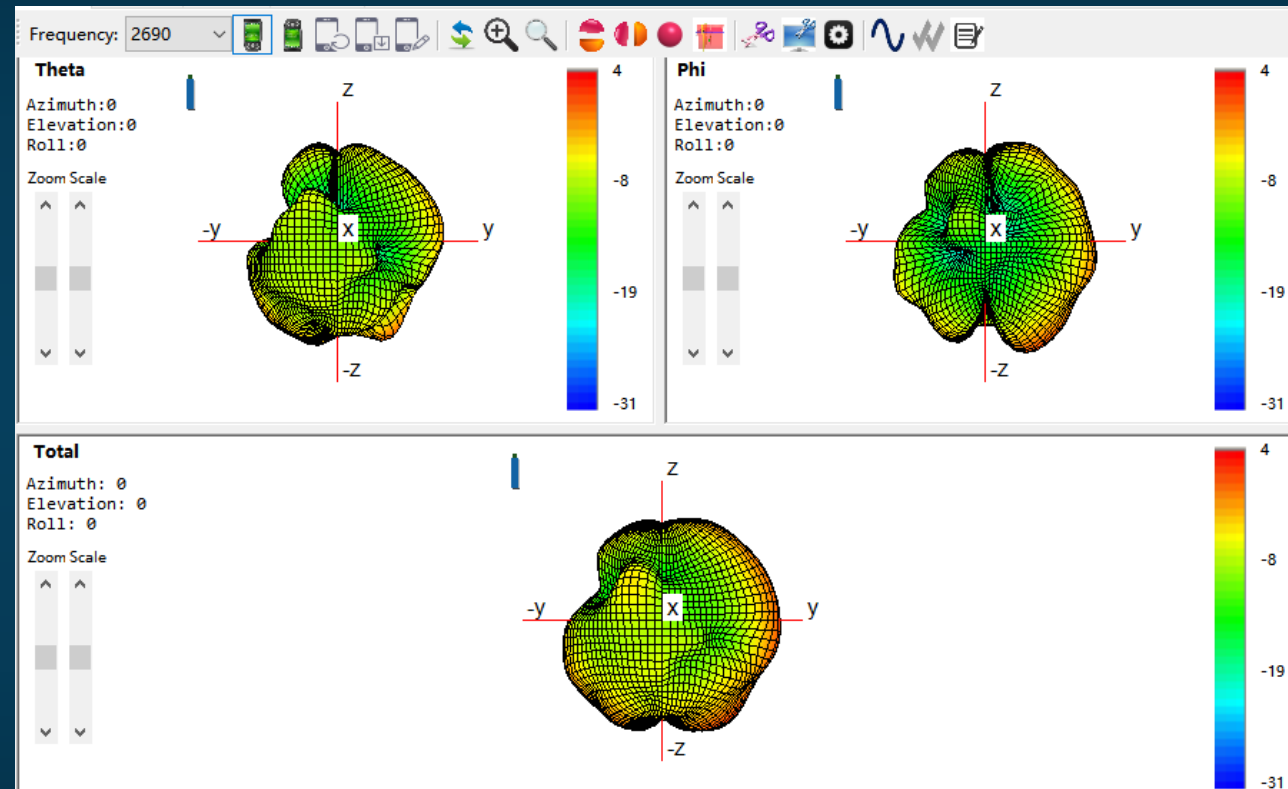
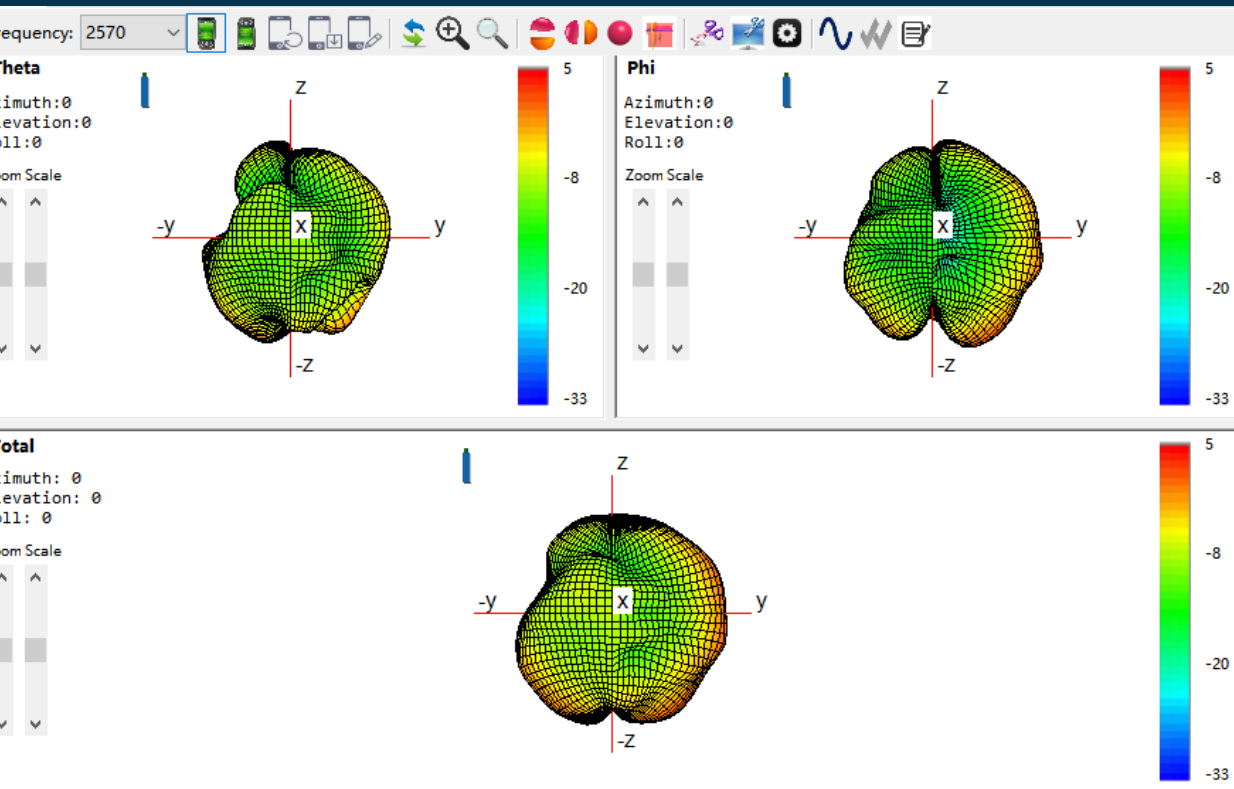


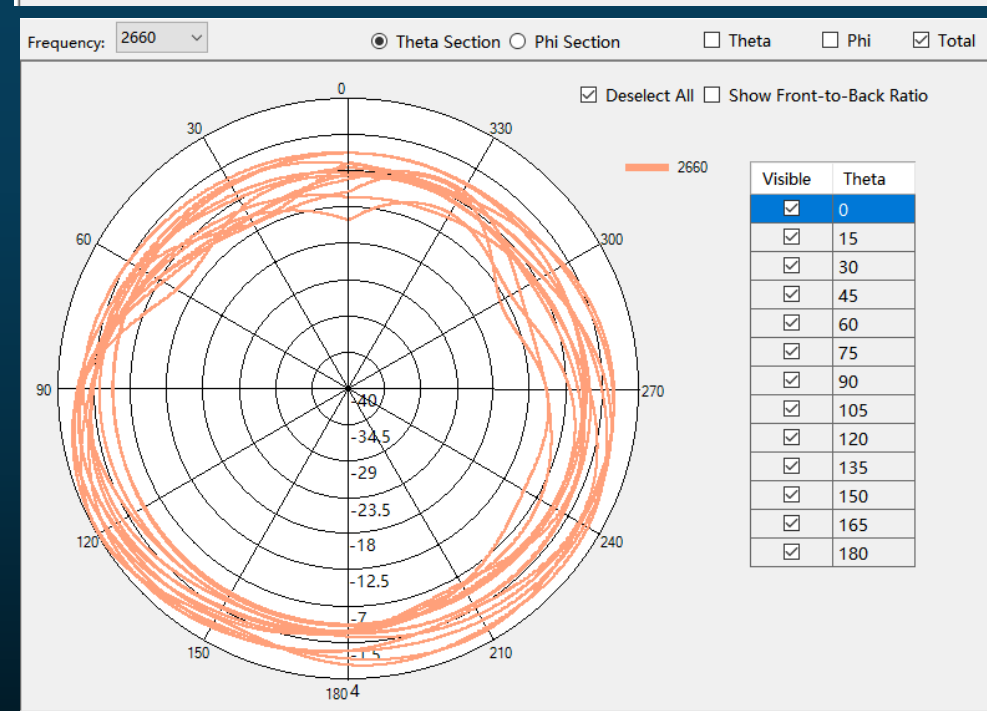
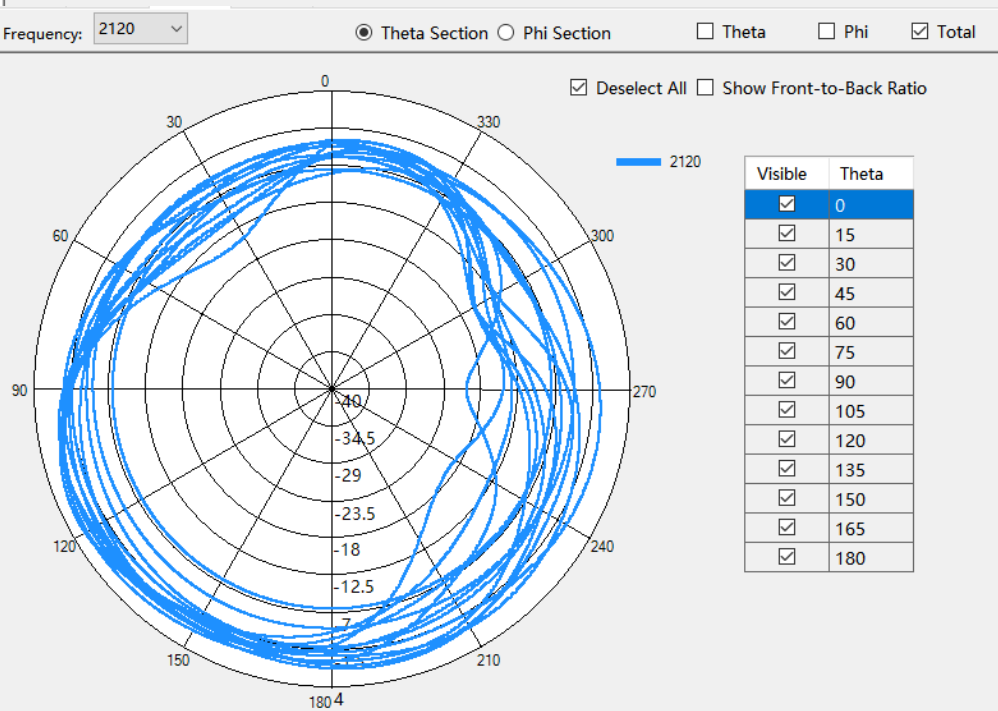
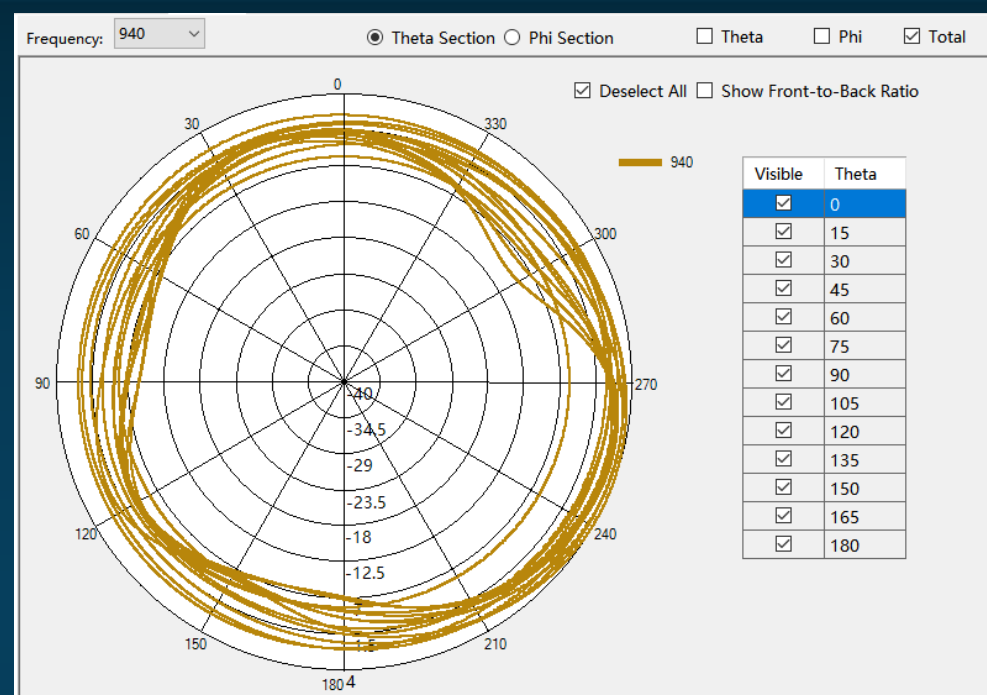
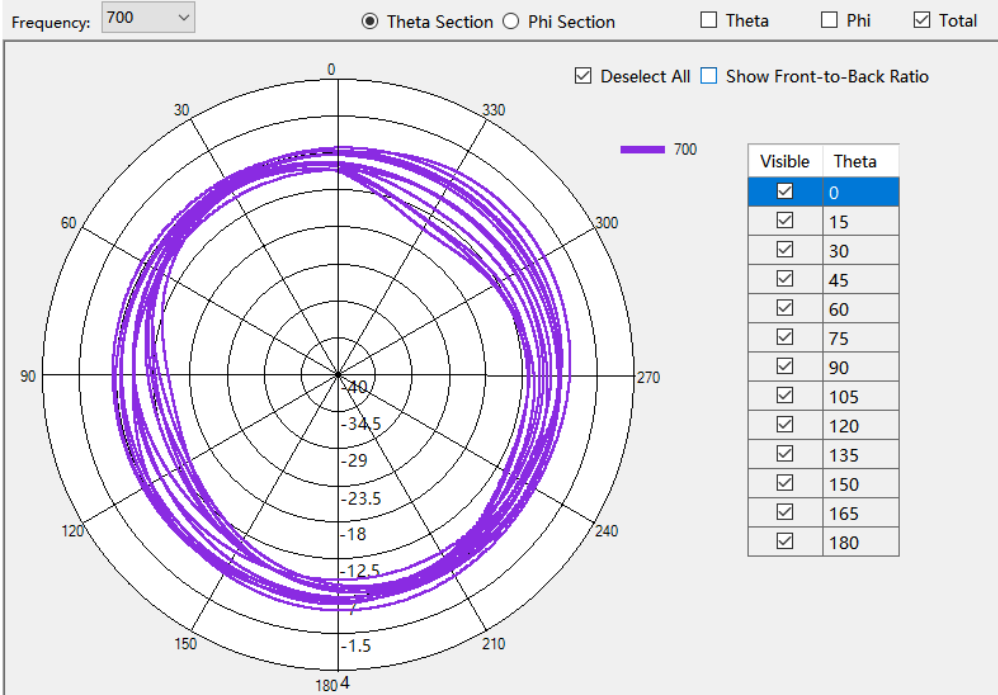


3D图（分集天线）[3D Views/Pictures(Secondary Antenna)]:

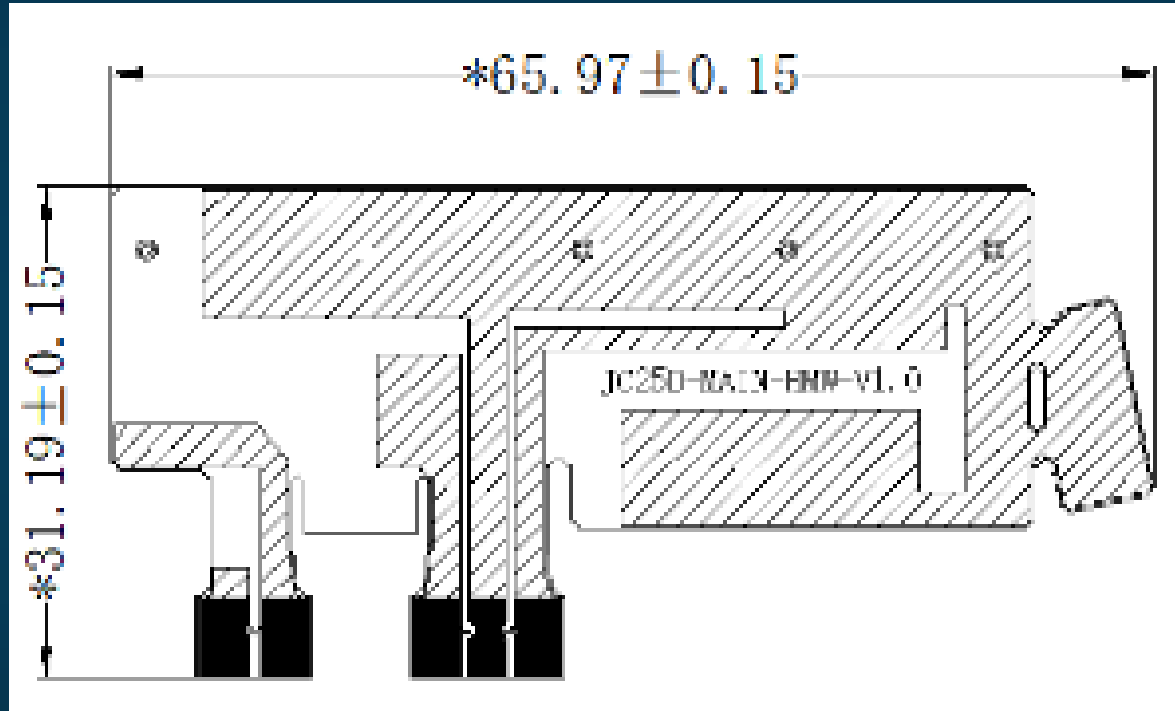




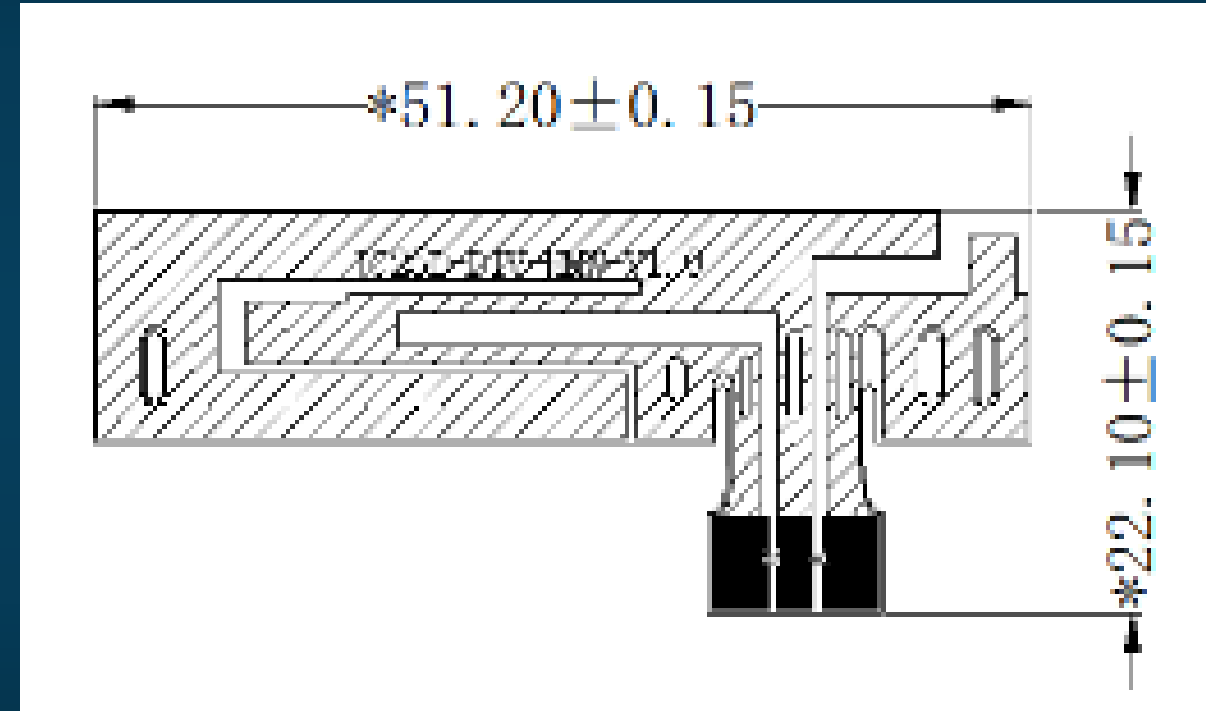




天线尺寸(Antenna Dimension):



主天线



分集天线

环境处理(environmental treatment(manipulation)

