Shenzhen Etheta Communication

Technology Co., Ltd.

（Shenzhen HT）

Customer：TCL Communication Ltd.

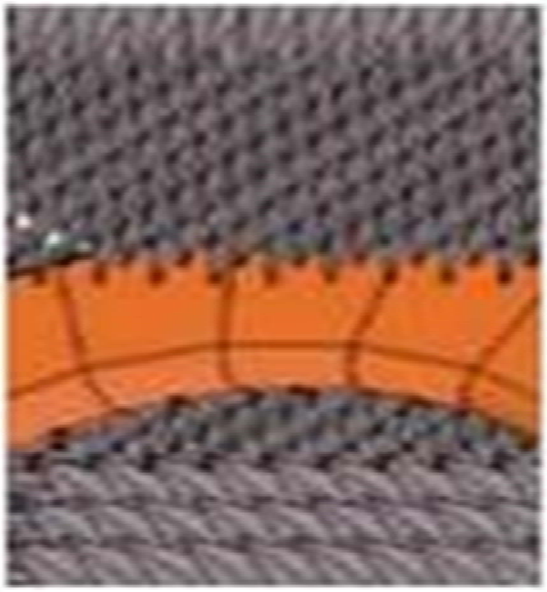
Project name：T432J

Product name：T432J- cellular &wifi antenna

Material：FPC

Date：2023.07.25

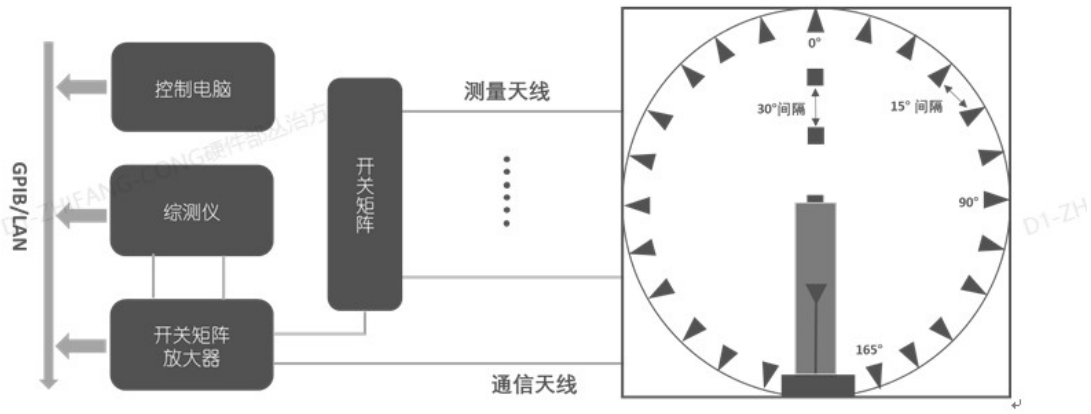
1: chamber room introduction and testing scope



Our company has a number of OTA test darkrooms, ranging from 400MHz to 8.5ghz, which can provide passive test and active test (including OTA overall 2G,3G,4G,5GFR test, WiFi multi-mode test, GPS active test, Bluetooth active test, which can provide antenna gain and efficiency. 2D orientation and apple chart analysis and upper and lower hemisphere efficiency values, mutual disturbance correlation coefficient test items

WIFI a/b/g/n/ac/a

2： test system introduction:

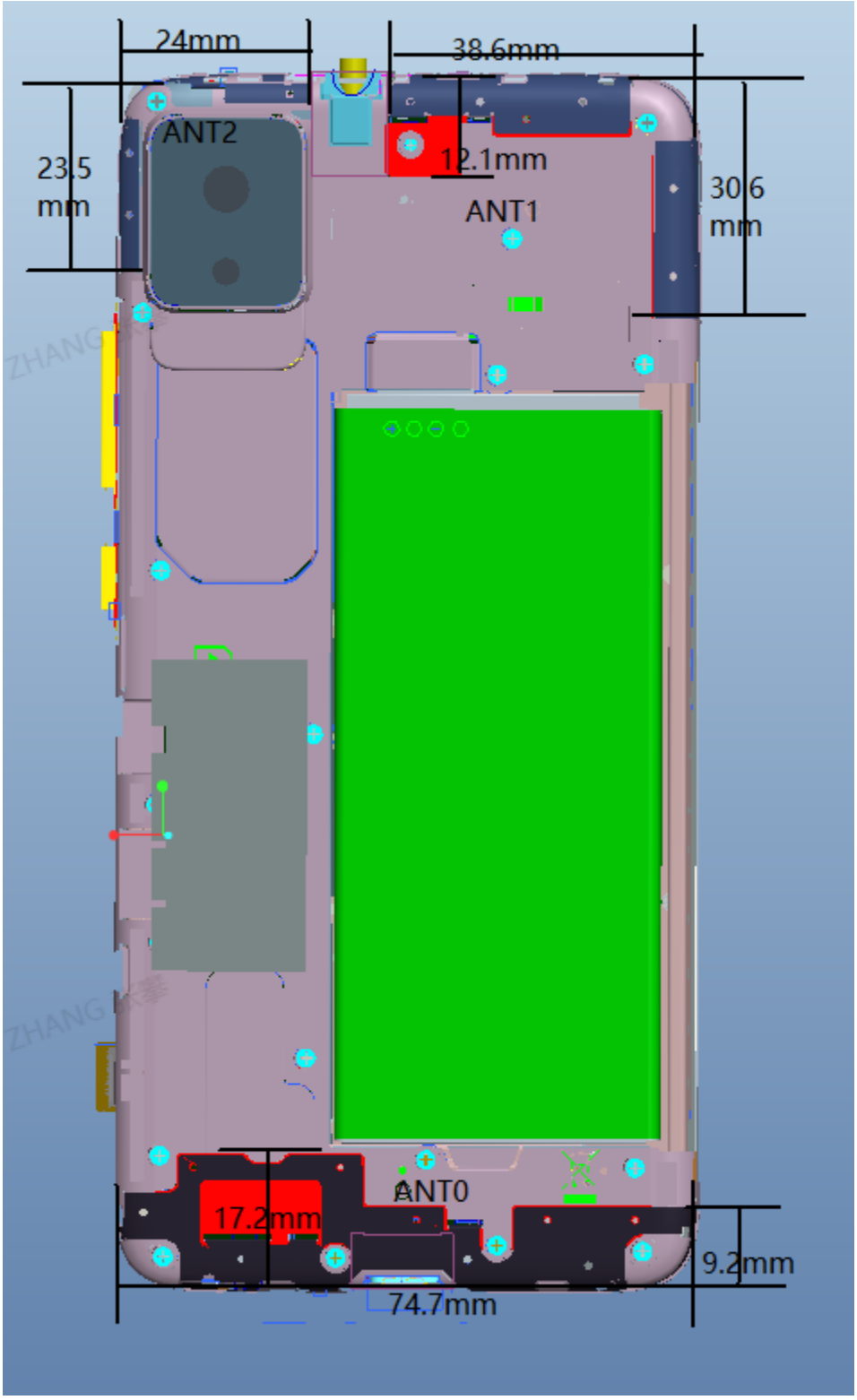


The figure above shows the connection and control process between the darkroom of our company and the testing system and computer. The testing system has the characteristics of accurate, fast and simple testing
The operation interface is simple and humanized
The Equipment List

Type of equipment	Model Number	Manufacture	Calibration Date	Valid Period
Desktop computer with windows XP	N/A	DELL	N/A	N/A
Base Station Simulator (GSM UMTS)	E5071C	Agilen	2022/10/8	One Year
Anechoic Chamber	Ray Zone 2800	General Test	N/A	N/A
Switch Control System	SW-RZ0012	General Test	N/A	N/A

3： Test result

Antenna placement:



ANT1_800M			
Frequency(MHz)	efficiency (%)	AVG Gain	Peak Gain
800	23%	-6.44	-2.49
810	23%	-6.36	-2.42
820	21%	-6.80	-2.97
830	17%	-7.72	-3.88
840	13%	-8.81	-4.72
850	10%	-9.94	-5.69
860	8%	-11.05	-6.65
870	6%	-12.13	-7.69
880	5%	-12.93	-8.36
890	4%	-13.72	-9.24
900	4%	-14.54	-10.20
AVG			

ANT1_700M			
Frequency(MHz)	efficiency (%)	AVG Gain	Peak Gain
700	25%	-6.08	-2.67
710	28%	-5.59	-2.16
720	30%	-5.16	-1.65
730	32%	-5.01	-1.39
740	32%	-5.01	-1.14
750	30%	-5.21	-1.06
760	26%	-5.83	-1.54
770	19%	-7.28	-3.42
780	19%	-7.19	-3.92
790	19%	-7.18	-3.78
800	17%	-7.64	-3.96
AVG			

ANT1_650M			
Frequency(MHz)	efficiency (%)	AVG Gain	Peak Gain
600	7%	-11.39	-7.86
610	9%	-10.52	-6.90
620	11%	-9.43	-6.05
630	15%	-8.33	-4.93
640	18%	-7.40	-4.25
650	21%	-6.85	-3.58
660	23%	-6.38	-3.15

670	26%	-5.91	-2.79
680	26%	-5.81	-2.50
690	25%	-6.11	-2.63
700	24%	-6.24	-2.83
AVG			

ANT2_1575M			
Frequency(MHz)	efficiency (%)	AVG Gain	Peak Gain
1550	38%	-4.18	1.53
1560	38%	-4.22	1.43
1570	38%	-4.26	1.38
1580	37%	-4.30	1.32
1590	37%	-4.36	1.26
1600	36%	-4.45	1.27
1610	35%	-4.62	1.14
1620	33%	-4.82	1.13
1630	31%	-5.05	1.02
1640	29%	-5.38	0.77
1650	27%	-5.71	0.55
1660	38%	-4.18	1.53
AVG			

ANT2_2500M			
Frequency(MHz)	efficiency (%)	AVG Gain	Peak Gain
2400	35%	-4.60	3.35
2410	35%	-4.55	3.30
2420	35%	-4.55	3.49
2430	35%	-4.55	3.51
2440	35%	-4.52	3.49
2450	35%	-4.52	3.42
2460	34%	-4.68	3.23
2470	32%	-4.93	2.98
2480	31%	-5.04	2.86
2490	31%	-5.06	2.78

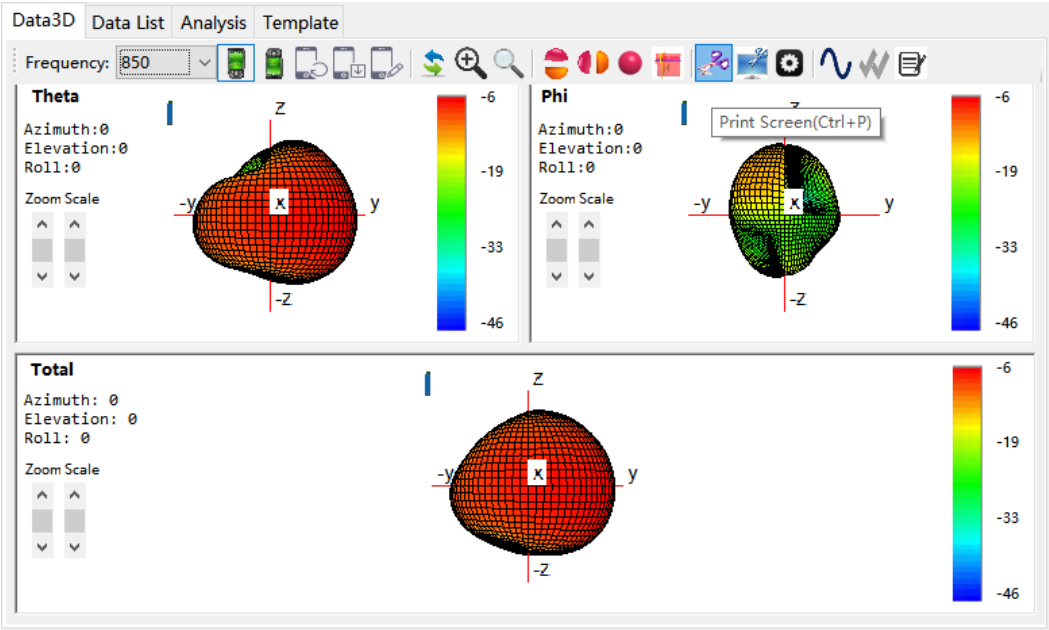
2500	31%	-5.04	2.58
AVG			

ANT0_1700-2700M			
Frequency(MHz)	efficiency (%)	AVG Gain	Peak Gain
1700	36%	-4.44	0.11
1720	40%	-3.98	0.71
1740	42%	-3.78	0.77
1760	43%	-3.64	0.90
1770	43%	-3.69	0.81
1780	43%	-3.71	1.59
1800	41%	-3.91	1.70
1820	38%	-4.21	1.21
1840	36%	-4.40	1.04
1860	37%	-4.27	1.16
1880	38%	-4.17	1.53
1890	40%	-3.96	2.24
1900	39%	-4.07	2.09
1920	39%	-4.09	1.91
1940	38%	-4.23	1.89
1960	37%	-4.34	1.86
1980	34%	-4.64	1.31
2000	33%	-4.86	0.80
2020	31%	-5.07	0.82
2040	31%	-5.14	0.68
2060	28%	-5.58	0.69
2080	25%	-5.98	0.36
2100	22%	-6.53	-0.14
2120	19%	-7.14	-0.43
2140	18%	-7.48	-0.39
2160	17%	-7.58	-0.24
2180	17%	-7.62	0.10
2200	17%	-7.70	0.03
2220	18%	-7.52	0.18
2300	18%	-7.34	0.45
2320	18%	-7.46	0.29
2340	18%	-7.49	-0.14
2360	19%	-7.31	-0.66
2380	19%	-7.28	-0.92
2400	18%	-7.36	-1.05

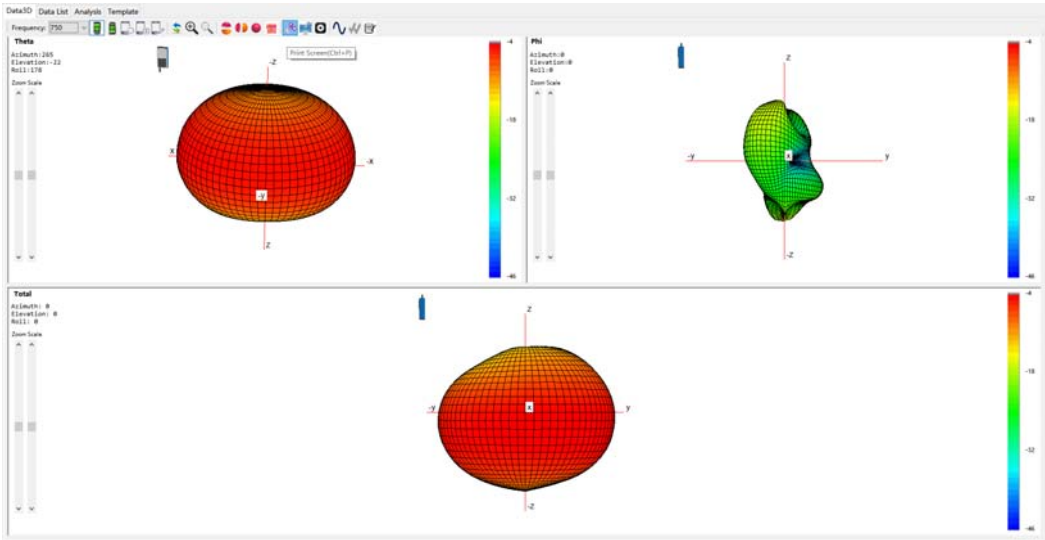
2420	21%	-6.83	-0.96
2440	22%	-6.62	-1.30
2460	23%	-6.38	-1.23
2480	22%	-6.53	-1.45
2500	21%	-6.69	-1.79
2520	21%	-6.70	-1.79
2540	21%	-6.71	-1.91
2560	22%	-6.56	-1.74
2580	23%	-6.41	-1.58
2600	24%	-6.16	-1.45
2620	25%	-5.96	-1.28
2640	27%	-5.72	-0.98
2660	28%	-5.58	-1.26
2680	28%	-5.59	-1.20
2700	28%	-5.54	-1.50
AVG			

3D Pattern

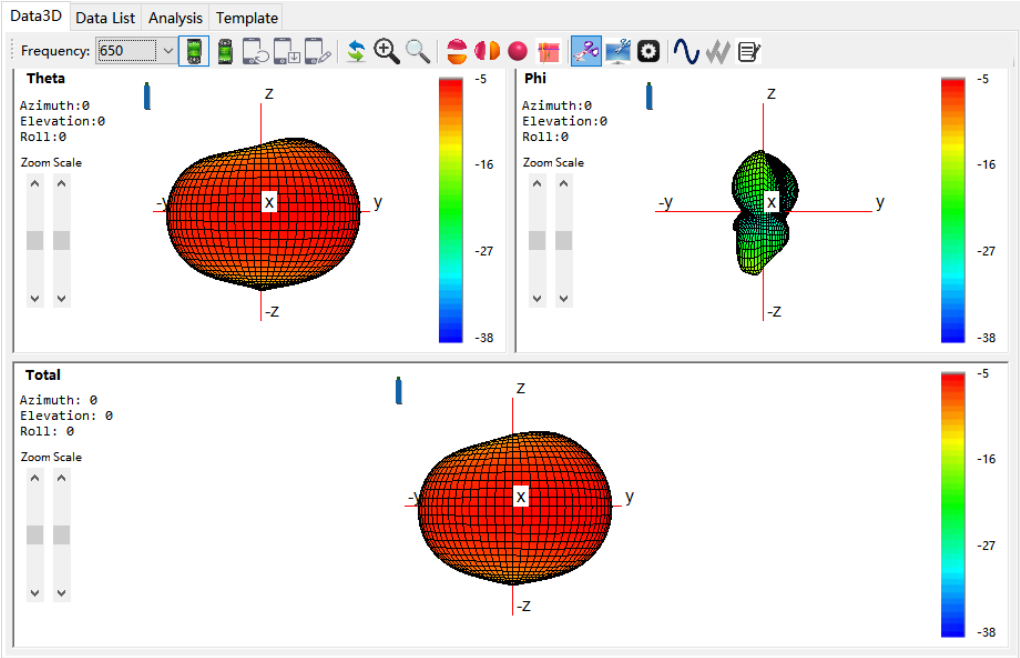
ANT 1_ 800M (Frequency=840MHz)



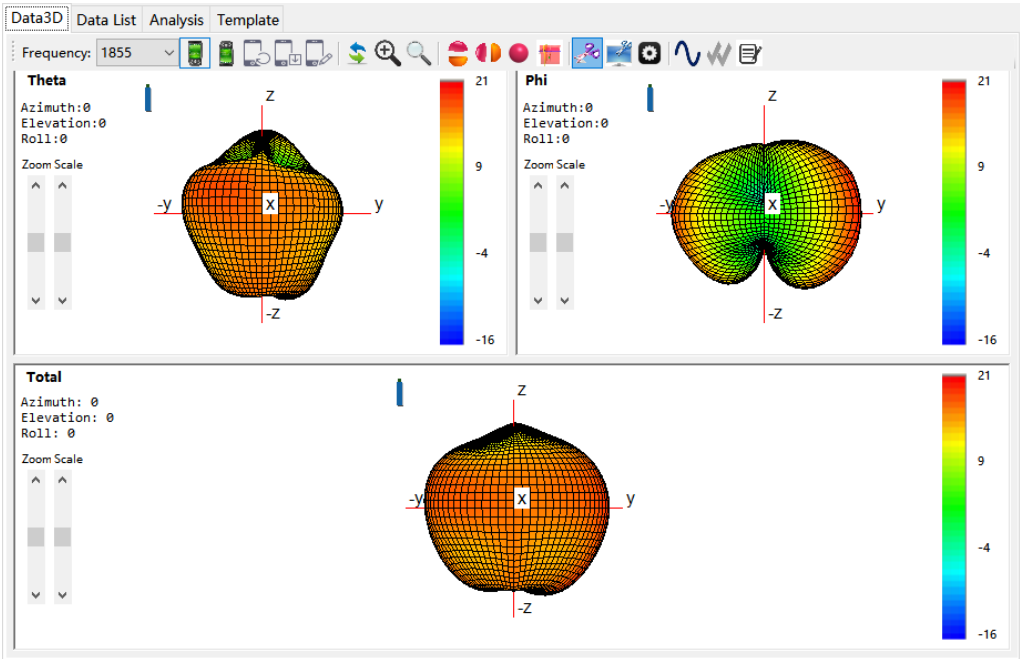
ANT 1_ 750M (Frequency=750MHz)



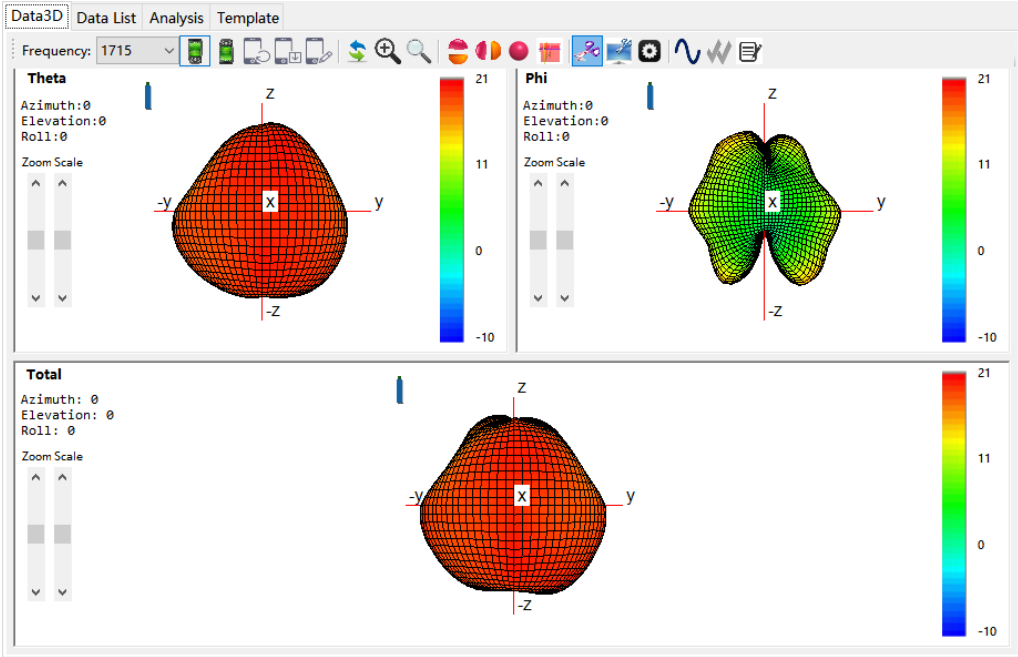
ANT 1_ 600M (Frequency=650MHz)



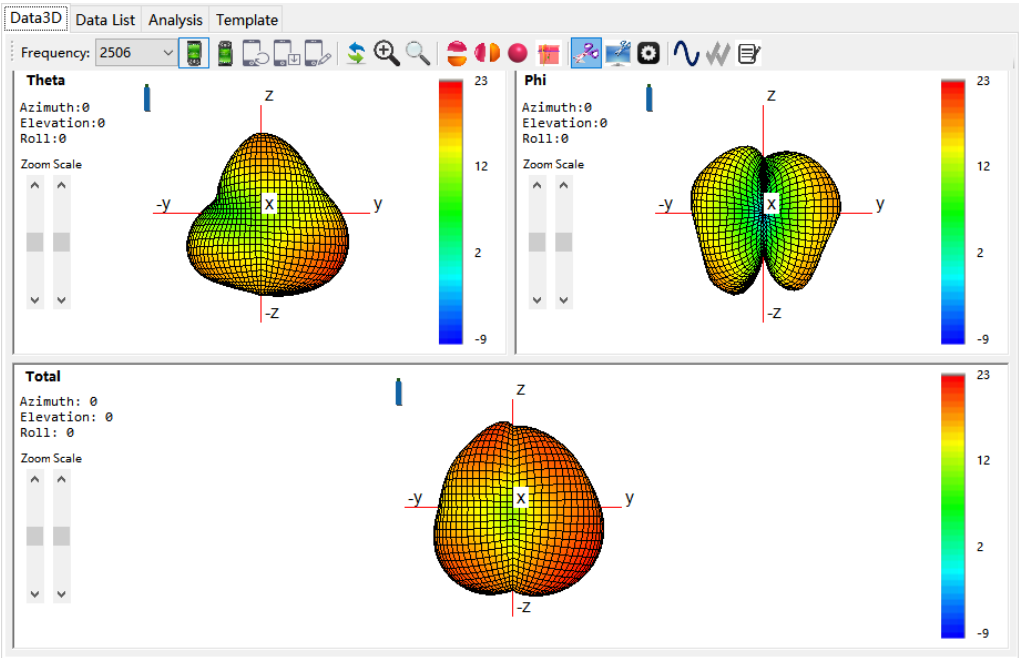
ANT0_ 1900M (Frequency=1980MHz)



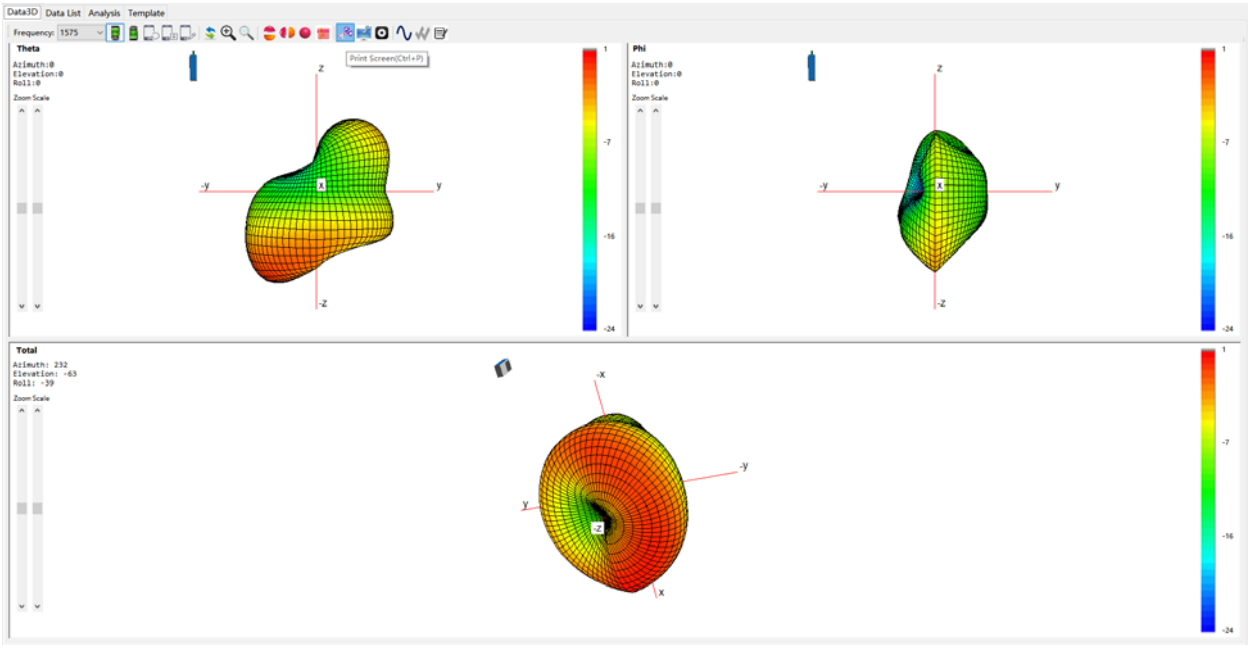
ANT 0_ 1715M (Frequency=1715MHz)



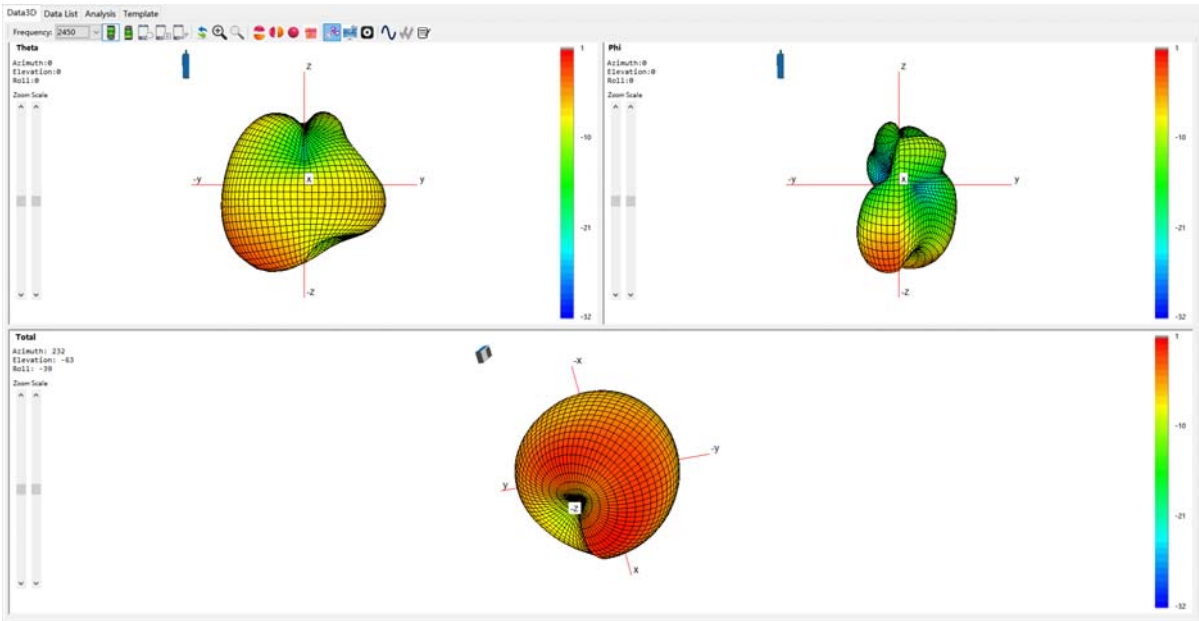
ANT 0_ 2500M (Frequency=2505MHz)



ANT 2_ 1575M (Frequency=1575MHz)



ANT 2_ 2450M (Frequency=2450MHz)


Data3D
Data List
Analysis
Template
Frequency: 2450
Theta
Azimuth:0
Elevation:0
Roll:0
Zoom Scale
Phi
Azimuth:0
Elevation:0
Roll:0
Zoom Scale
Total
Azimuth: 232
Elevation: -63
Roll: -30
Zoom Scale
1
-10
-21
-32