

Shenzhen Etheta Communication
Technology Co., Ltd.

(Shenzhen Etheta)

Customer: TCL Communication Ltd.

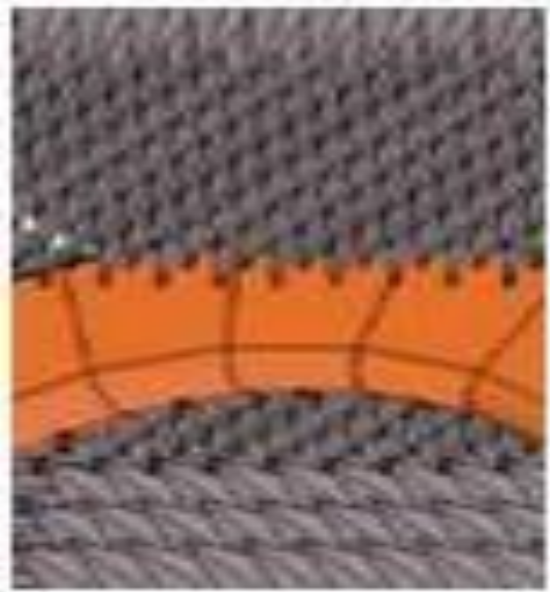
Project name: T614J

Product name: T614J - cellular & wifi antenna

Material: FPC

Date: 2024.02.28

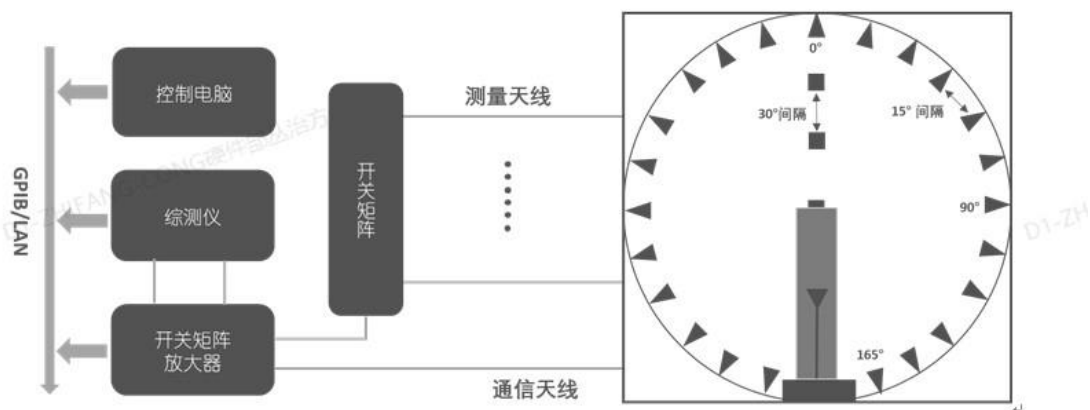
1: chamber room introduction and testing scope



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

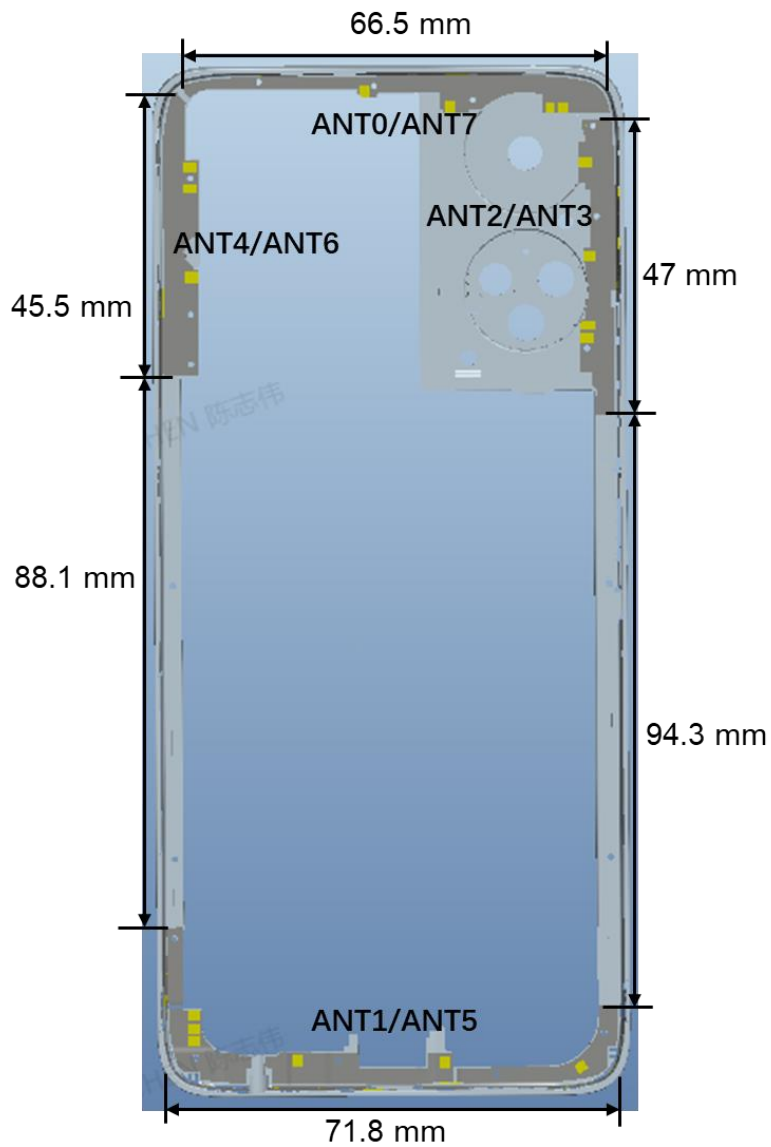
2: test system introduction:



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

3: Test result

Antenna placement:



Antenna	Type	Description
0	FPC	LB TRX+MHB MIMO PRX antenna
1	FPC	LB DRX+MB EN-DC TX+MB(4*4) DRX+UHB DRX(SRS) antenna
2	FPC	MB TRX +UHB TRX antenna
3	FPC	HB(4*4) DRX antenna+ HB EN-DC TX antenna
4	FPC	HB TRX antenna
5	FPC	MHB(4*4) DRX MIMO +MHB(2*2) DRX +UHB MIMO PRX antenna
6	FPC	UHB MIMO DRX antenna
7	FPC	GPS+WIFI 2.4G/5G antenna +BT antenna

ANTO

800M			
Frequency(MHz)	efficiency (%)	AVG Gain	Peak Gain
800	19%	-3.93	-2.21
810	23%	-3.54	-2.16
820	26%	-3.26	-2.61
830	28%	-3.01	-2.36
840	28%	-3.03	-2.44
850	25%	-3.34	-2.18
860	24%	-3.49	-2.94
870	22%	-3.63	-2.05
880	18%	-4.04	-3.15
890	14%	-4.43	-3.31
900	12%	-4.67	-3.18
AVG	22%	-3.67	-2.60

700M			
Frequency(MHz)	efficiency (%)	AVG Gain	Peak Gain
700	16%	-2.65	-2.05
710	18%	-2.41	-2.10
720	20%	-2.15	-1.82
730	20%	-2.54	-2.13
740	20%	-2.48	-2.00
750	21%	-2.31	-1.92
760	21%	-2.43	-2.01
770	23%	-2.51	-1.83
780	21%	-2.16	-1.51
790	19%	-2.47	-2.05
800	17%	-2.92	-2.12
AVG	20%	-2.46	-1.96

650M			
Frequency(MHz)	efficiency (%)	AVG Gain	Peak Gain
600	20%	-3.55	-2.15
610	21%	-3.44	-2.41
620	19%	-3.61	-2.13
630	22%	-3.12	-2.21
640	21%	-3.41	-2.56
650	20%	-3.62	-2.41

660	21%	-3.01	-2.14
670	19%	-3.68	-2.52
680	20%	-3.23	-2.15
690	20%	-3.41	-2.23
700	18%	-3.47	-2.35
AVG	20%	-3.41	-2.30

ANT1

1700-2200M			
Frequency (MHz)	efficiency (%)	AVG Gain	Peak Gain
1700	42%	-0.52	0.54
1720	41%	-0.62	0.15
1740	40%	-0.72	0.48
1760	39%	-0.82	0.52
1780	38%	-0.92	-0.01
1800	36%	-1.12	-0.12
1820	35%	-1.22	-0.14
1840	34%	-1.32	-0.32
1860	33%	-1.42	-0.11
1880	32%	-1.52	-0.10
1900	31%	-1.62	-0.50
1920	34%	-1.32	-0.44
1940	36%	-1.12	-0.02
1960	36%	-1.12	-0.45
1980	35%	-1.22	-0.14
2000	35%	-1.22	-0.56
2020	34%	-1.32	-0.85
2040	34%	-1.32	-0.41
2060	35%	-1.22	-0.61
2080	35%	-1.22	-0.41
2100	34%	-1.32	-0.35
2120	33%	-1.42	-0.62
2140	32%	-1.52	-0.45
2160	31%	-1.62	-0.74
2180	30%	-1.72	-0.67
2200	30%	-1.72	-0.45
AVG	35%	-1.24	-0.26

ANT2

1700-2200M			
Frequency (MHz)	efficiency (%)	AVG Gain	Peak Gain
1700	35%	-1.11	-0.21
1720	37%	-0.93	0.12
1740	36%	-1.02	-0.44
1760	35%	-1.15	-0.36
1780	35%	-1.14	-0.41
1800	34%	-1.26	-0.52
1820	33%	-1.31	-0.12
1840	33%	-1.34	-0.45
1860	33%	-1.32	-0.12
1880	32%	-1.49	-0.35
1900	31%	-1.58	-0.51
1920	32%	-1.44	-0.52
1940	30%	-1.65	-0.41
1960	29%	-1.73	-0.32
1980	28%	-1.85	-0.41
2000	26%	-2.04	-1.21
2020	25%	-2.12	-1.12
2040	27%	-1.92	-1.10
2060	26%	-2.10	-0.41
2080	29%	-1.74	-0.12
2100	30%	-1.65	-0.34
2120	32%	-1.49	-0.52
2140	32%	-1.48	-0.41
2160	32%	-1.46	-0.36
2180	32%	-1.41	-0.65
2200	29%	-1.72	-0.59
AVG	31%	-1.52	-0.46

3300-4200M			
Frequency (MHz)	efficiency (%)	AVG Gain	Peak Gain
3300	20%	-5.51	-3.36
3320	22%	-4.46	-2.31
3340	24%	-4.14	-1.99
3360	26%	-4.65	-2.56
3380	27%	-4.41	-2.26
3400	30%	-4.32	-2.17
3420	32%	-3.24	-1.09

3440	33%	-3.92	-1.77
3460	33%	-3.84	-1.69
3480	35%	-3.65	-1.56
3500	36%	-3.45	-1.34
3520	36%	-3.48	-1.33
3540	36%	-3.65	-1.58
3560	35%	-3.56	-1.41
3580	34%	-3.45	-1.31
3600	34%	-3.85	-1.73
3620	32%	-3.41	-1.26
3640	30%	-4.45	-2.33
3660	30%	-4.62	-2.47
3680	28%	-4.52	-2.37
3700	27%	-4.31	-2.16
3720	26%	-4.48	-2.33
3740	25%	-4.52	-2.37
3760	25%	-4.62	-2.47
3780	26%	-4.59	-2.44
3800	26%	-4.74	-2.59
3820	28%	-4.65	-2.56
3840	29%	-4.35	-2.22
3860	31%	-3.85	-1.75
3880	33%	-3.94	-1.79
3900	34%	-3.45	-1.31
3920	34%	-3.65	-1.53
3940	33%	-3.85	-1.71
3960	32%	-3.74	-1.59
3980	29%	-4.32	-2.17
4000	29%	-4.45	-2.39
4020	27%	-4.85	-2.73
4040	26%	-4.71	-2.56
4060	25%	-4.96	-2.81
4080	24%	-4.36	-2.21
4100	22%	-4.41	-2.26
4120	22%	-4.62	-2.47
4140	22%	-4.61	-2.46
4160	21%	-4.56	-2.41
4180	21%	-4.62	-2.47
4200	20%	-5.81	-3.66
AVG	28%	-4.25	-2.12

ANT4

2500-2700M			
Frequency(MHz)	efficiency (%)	AVG Gain	Peak Gain
2500	17%	-2.74	-1.33
2520	19%	-2.45	-1.04
2540	22%	-2.48	-1.07
2560	24%	-2.21	-0.85
2580	25%	-1.84	-0.43
2600	26%	-1.56	-0.15
2620	27%	-1.65	-0.24
2640	28%	-1.56	-0.15
2660	27%	-1.84	-0.43
2680	27%	-1.81	-0.41
2700	27%	-1.65	-0.24
AVG	24%	-1.98	-0.58

ANT7

1550M			
Frequency(MHz)	efficiency (%)	AVG Gain	Peak Gain
1550	30%	-2.12	-1.34
1560	31%	-2.02	-1.24
1570	31%	-2.35	-1.57
1575	31%	-2.15	-1.37
1580	30%	-2.62	-1.84
1590	27%	-2.25	-1.47
1600	24%	-2.41	-1.63
1610	20%	-3.61	-2.83
1620	19%	-3.31	-2.53
1630	18%	-3.14	-2.36
1640	17%	-3.55	-2.77
1650	16%	-3.56	-2.78
1660	15%	-3.82	-2.7
AVG	24%	-2.84	-2.03

2400M			
Frequency(MHz)	efficiency (%)	AVG Gain	Peak Gain
2400	29%	-5.45	-4.33

2410	30%	-5.14	-4.02
2420	30%	-5.32	-4.21
2430	31%	-5.45	-4.33
2440	32%	-5.32	-4.23
2450	31%	-5.14	-4.02
2460	32%	-5.32	-4.24
2470	32%	-6.41	-5.29
2480	32%	-6.32	-5.28
2490	31%	-6.48	-5.36
2500	30%	-6.58	-5.46
AVG	31%	-5.72	-4.61

5800M			
Frequency(MHz)	efficiency (%)	AVG Gain	Peak Gain
5150	24%	-6.12	-5.34
5200	29%	-6.41	-5.63
5250	32%	-5.41	-4.63
5300	35%	-5.32	-4.54
5350	35%	-5.47	-4.69
5400	37%	-5.28	-4.52
5450	38%	-5.19	-4.41
5500	36%	-5.37	-4.59
5550	35%	-5.49	-4.71
5600	32%	-5.46	-4.68
5650	30%	-5.89	-5.11
5700	28%	-6.02	-5.24
5750	29%	-6.41	-5.29
5800	30%	-5.65	-4.53
5850	28%	-6.32	-5.25
AVG	32%	-5.71	-4.88