

Haitong Communication Electronics  
Co., Ltd

Customer: TCL Communication Ltd.

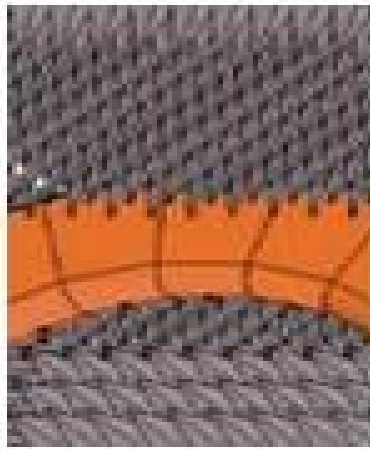
Project name: T509A

Product name: T509A- WiFi Antenna

Material: FPC

Date: 2023.1.16

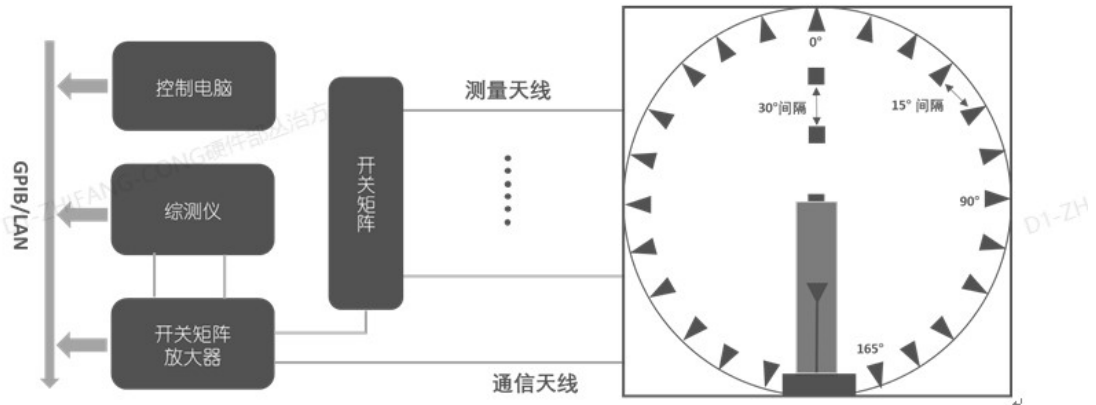
1: chamber room introduction and testing scope



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

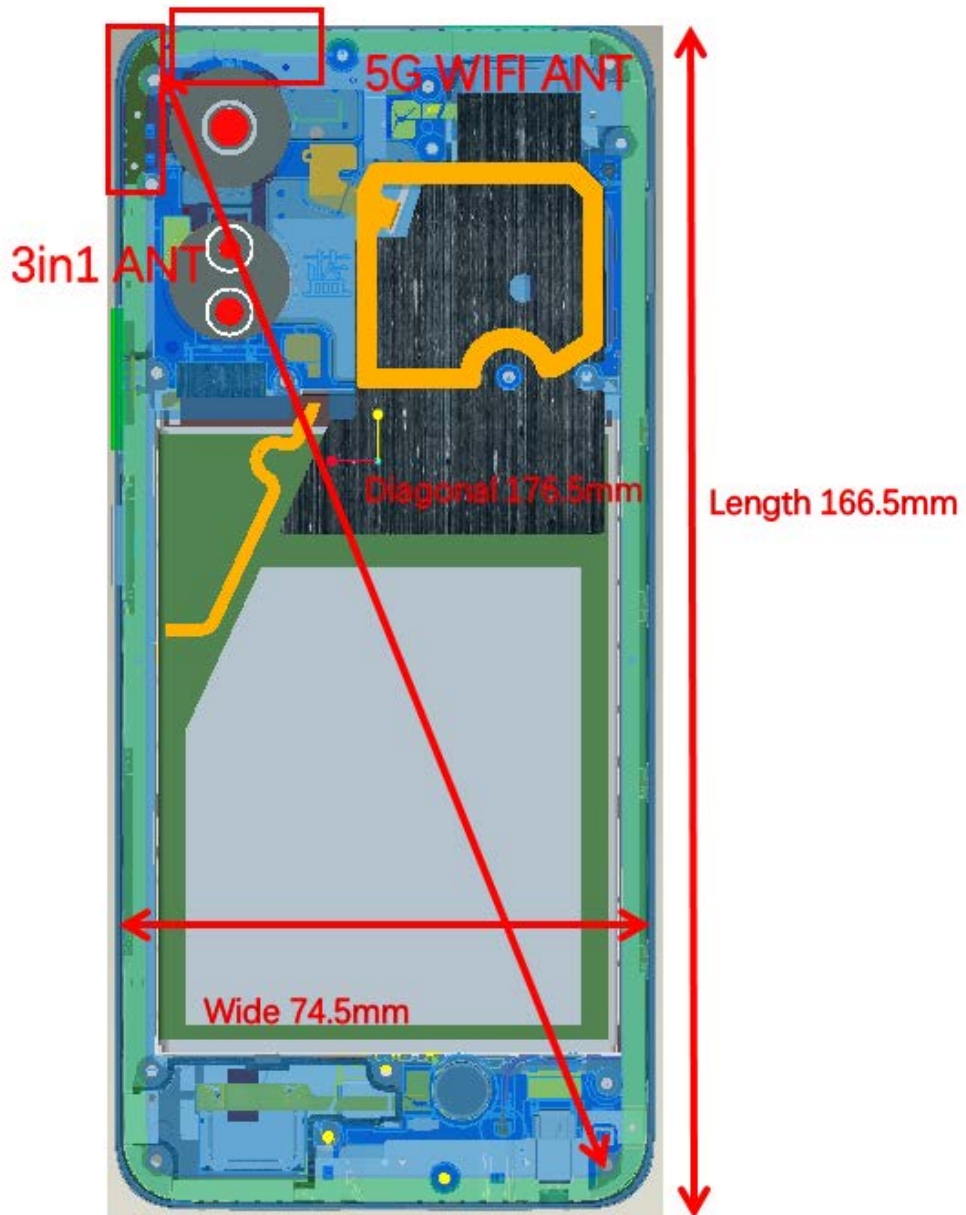
WIFI a/b/g/n

## 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



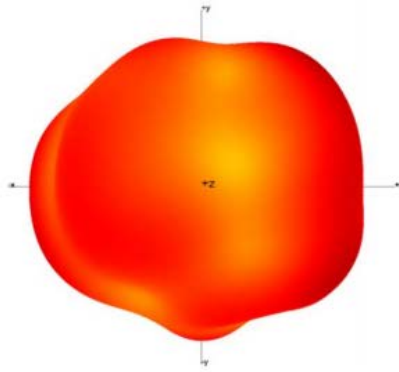
## Antenna placement:

3IN1 ANT			
Frequency	Efficiency	Efficiency(Db)	Gain(dBi)
1550	22%	-6.54	-3.77
1555	22%	-6.5	-3.43
1560	22%	-6.51	-3.17
1565	23%	-6.34	-2.67
1570	23%	-6.29	-2.4
1575	24%	-6.26	-2.01
1580	24%	-6.18	-1.76
1585	24%	-6.11	-1.52
1590	24%	-6.11	-1.68
1595	24%	-6.18	-1.89
1600	24%	-6.2	-1.88
2400	37%	-4.31	-1.37
2410	38%	-4.16	-1.02
2420	38%	-4.2	-1.02
2430	38%	-4.16	-0.97
2440	38%	-4.22	-1.28
2450	37%	-4.29	-1.14
2460	36%	-4.42	-1.38
2470	35%	-4.58	-1.32
2480	33%	-4.79	-1.27
2490	31%	-5.05	-1.27
2500	29%	-5.32	-1.3
AVG	29%	-5.40	-1.80

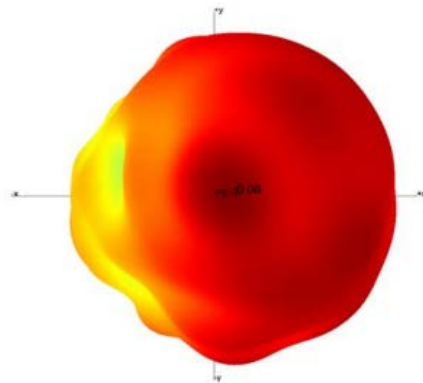
5G WiFi ANT			
Frequency	Efficiency	Efficiency(dB)	Gain(dBi)
5150	20%	-6.98	-1.22
5200	23%	-6.35	-0.63
5250	25%	-6.06	-0.22
5300	28%	-5.52	-0.24
5350	30%	-5.26	0.41
5400	32%	-4.94	0.00
5450	31%	-5.12	0.64
5500	28%	-5.46	0.87
5550	28%	-5.55	1.41
5600	28%	-5.51	0.6
5650	23%	-6.3	0.37
5700	22%	-6.63	0.69
5750	20%	-7.04	0.23
5800	21%	-6.69	0.41
5850	24%	-6.12	0.65
AVG	26%	-5.97	0.26

## 3D Pattern

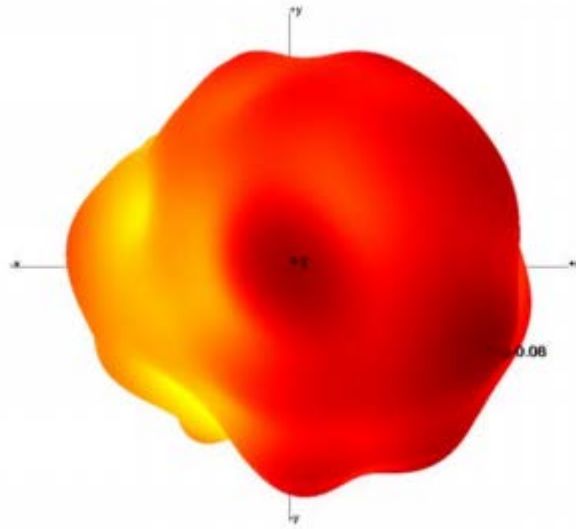
3IN1 ANT\_ 1575Mhz (Frequency=1575MHz)



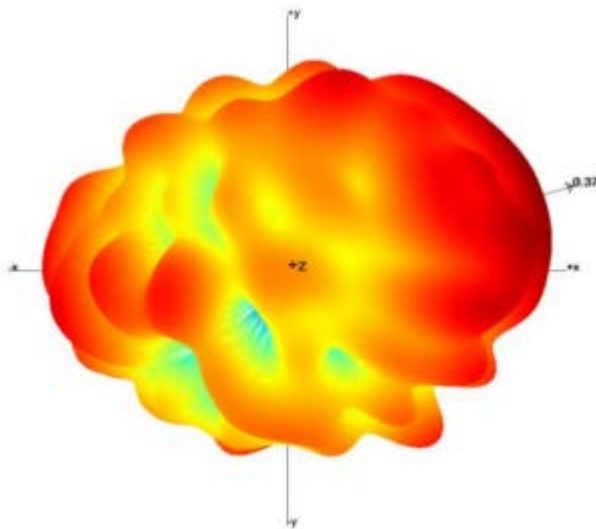
3IN1 ANT\_ 2400Mhz(Frequency=2400MHz)



3IN1 ANT\_2483Mhz(Frequency=2483MHz)



5G WiFi ANT\_5GMhz(Frequency=5150MHz)





5G WiFi ANT\_5GMhz(Frequency=5825MHz)

