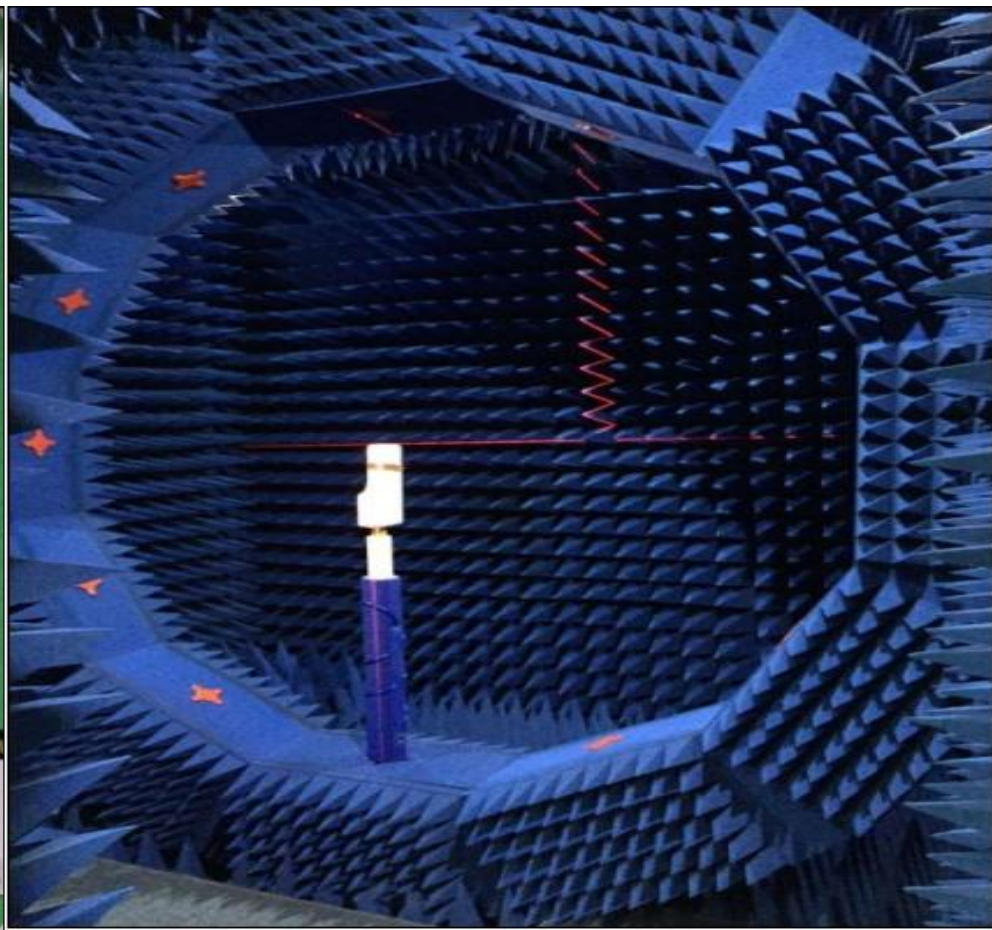
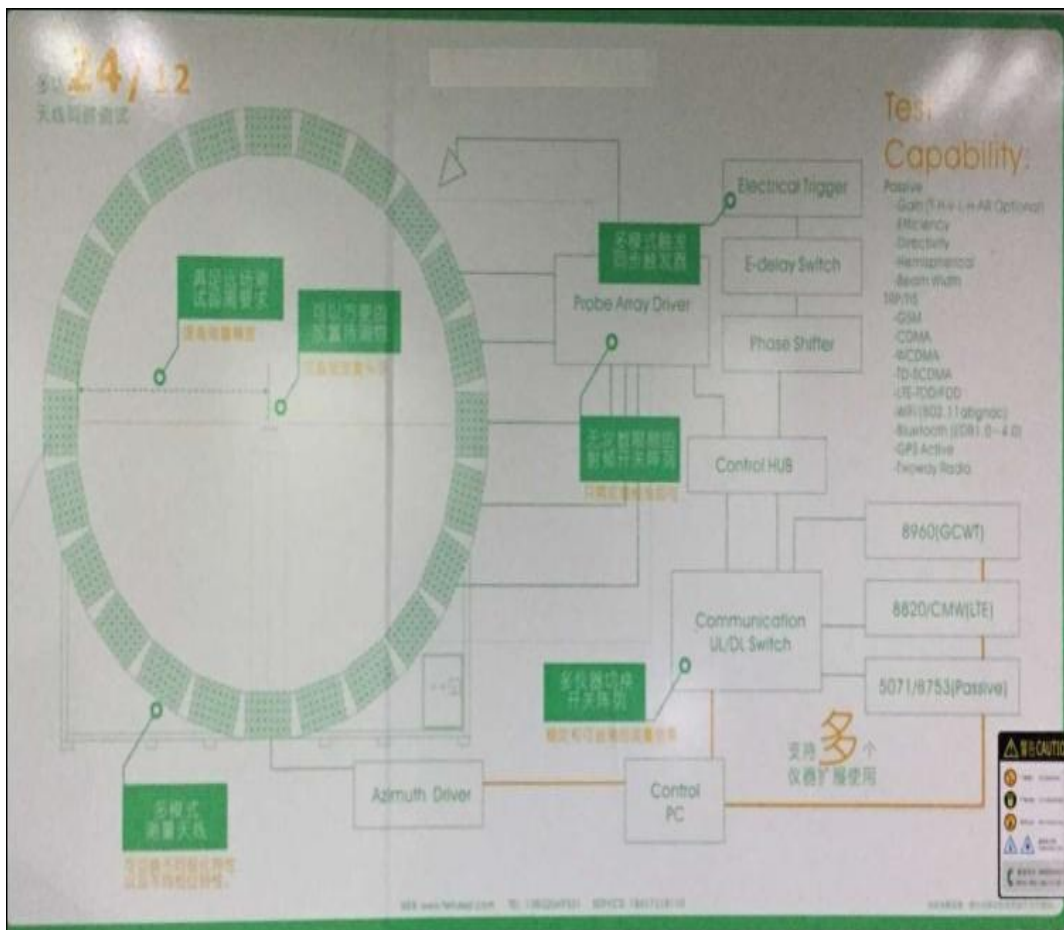


1、Summary of the report

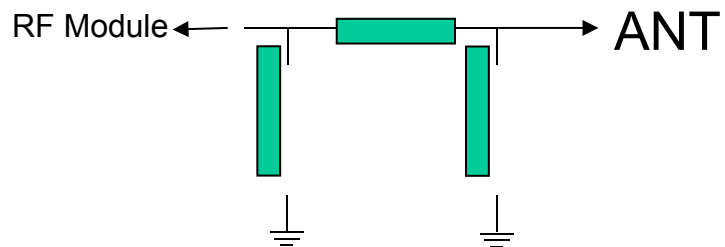
Version	Date	Content overview
V1	20250214	Antenna debugging data
V2		
V3		

2、 Test equipment information



3、Main road antenna matching (no change)

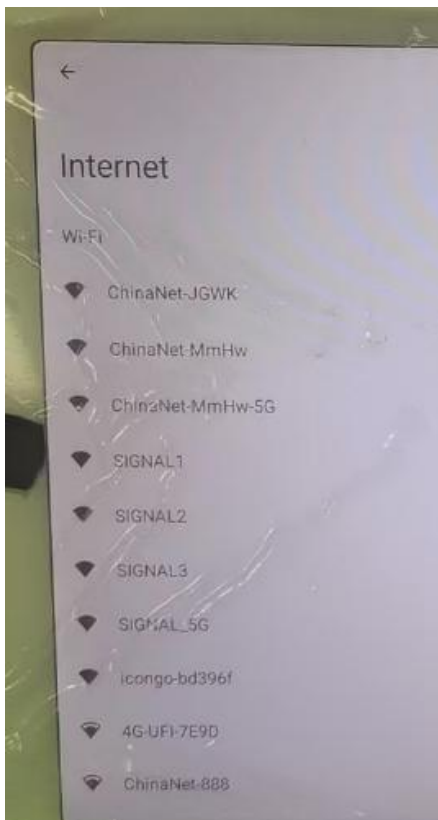
Element	(0402)	(0402)	(0402)
Value			



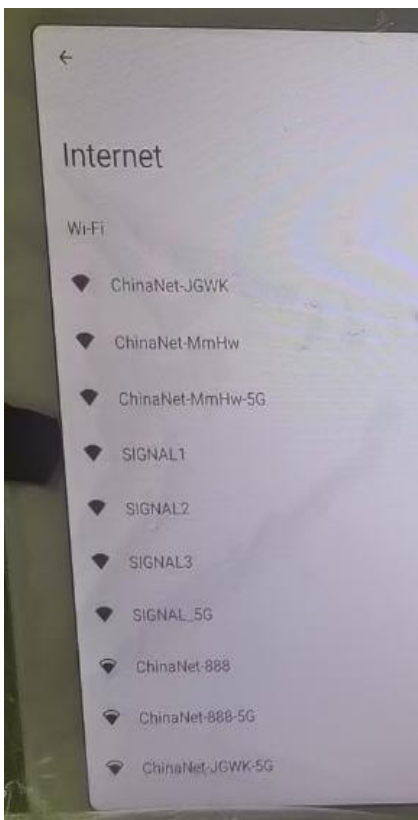
4、2.4G WIFI/5G WIFI Active antenna test data

Band	Channel	TRP	TIS
2.4G(802.11b)	1	12.40	-80.97
	6	13.56	-78.77
	13	12.89	-80.20
5G(802.11a)	149	13.63	-67.81
	157	14.85	-68.09
	165	14.42	-69.27

5、2.4G/5G WIFI actual test data



不隔墙5米



不隔墙10米



隔墙10米

SIGNAL3 为2.4G WIFI,SIGNAL_5G为5G WIFI



6、2.4G WIFI Passive test data

Test Point ID	Freq. (MHz)	TRP (dBm)	Gain (dBi)	Directivity (dBi)	Efficiency (%)	Efficiency (dB)	Max (dBm)	Theta of Max	Phi of Max	Min (dBm)	Theta of Min	Phi of Min	AVG (dBm)	Max/Min (dB)	Max/AVG (dB)	Min/AVG (dB)
1	2350.0	2350.00	-0.08	6.40	22.5%	-6.47	-0.08	15000	180	-36.87	18000	3000	-6.99	36.79	6.91	-29.88
2	2355.0	2355.00	0.01	6.42	22.9%	-6.40	0.01	15000	180	-35.42	18000	3000	-6.92	35.44	6.93	-28.50
3	2360.0	2360.00	0.19	6.41	23.9%	-6.22	0.19	15000	180	-32.84	18000	3000	-6.73	33.02	6.92	-26.11
4	2365.0	2365.00	0.35	6.46	24.5%	-6.11	0.35	15000	15000	-32.70	18000	3000	-6.62	33.05	6.97	-26.08
5	2370.0	2370.00	0.52	6.49	25.3%	-5.98	0.52	15000	15000	-32.61	18000	3000	-6.47	33.12	6.99	-26.13
6	2375.0	2375.00	0.88	6.66	26.4%	-5.78	0.88	15000	15000	-33.25	18000	3000	-6.27	34.12	7.15	-26.97
7	2380.0	2380.00	0.97	6.68	26.8%	-5.71	0.97	15000	15000	-32.60	18000	3000	-6.20	33.57	7.17	-26.39
8	2385.0	2385.00	1.19	6.73	27.9%	-5.54	1.19	15000	15000	-30.60	18000	6000	-6.03	31.79	7.22	-24.57
9	2390.0	2390.00	1.48	6.82	29.2%	-5.34	1.48	15000	15000	-28.72	18000	6000	-5.83	30.20	7.30	-22.89
10	2395.0	2395.00	1.66	6.89	30.0%	-5.24	1.66	15000	15000	-28.14	18000	6000	-5.72	29.80	7.37	-22.43
11	2400.0	2400.00	1.91	6.94	31.4%	-5.03	1.91	15000	15000	-29.19	18000	6000	-5.51	31.10	7.42	-23.68
12	2405.0	2405.00	2.13	6.98	32.8%	-4.85	2.13	15000	15000	-29.88	18000	6000	-5.32	32.01	7.46	-24.56
13	2410.0	2410.00	2.26	7.04	33.3%	-4.78	2.26	15000	15000	-30.65	18000	6000	-5.26	32.90	7.52	-25.39
14	2415.0	2415.00	2.34	7.06	33.7%	-4.72	2.34	15000	15000	-31.19	18000	6000	-5.21	33.53	7.54	-25.99
15	2420.0	2420.00	2.51	7.14	34.5%	-4.62	2.51	15000	15000	-29.13	18000	6000	-5.11	31.64	7.62	-24.02
16	2425.0	2425.00	2.68	7.18	35.4%	-4.50	2.68	15000	15000	-27.00	18000	6000	-4.98	29.67	7.66	-22.01
17	2430.0	2430.00	2.86	7.24	36.4%	-4.38	2.86	15000	15000	-27.88	18000	6000	-4.87	30.74	7.72	-23.02
18	2435.0	2435.00	2.96	7.27	37.1%	-4.30	2.96	15000	15000	-28.84	18000	6000	-4.79	31.80	7.75	-24.05
19	2440.0	2440.00	3.16	7.32	38.4%	-4.16	3.16	15000	15000	-29.61	18000	6000	-4.64	32.77	7.80	-24.97
20	2445.0	2445.00	3.26	7.34	39.1%	-4.07	3.26	15000	15000	-30.93	18000	0	-4.55	34.19	7.81	-26.38
21	2450.0	2450.00	3.22	7.28	39.2%	-4.06	3.22	15000	15000	-30.20	18000	0	-4.54	33.42	7.76	-25.66
22	2455.0	2455.00	3.27	7.29	39.6%	-4.02	3.27	15000	15000	-29.61	18000	0	-4.49	32.88	7.76	-25.12
23	2460.0	2460.00	3.25	7.21	40.2%	-3.96	3.25	15000	15000	-29.96	18000	0	-4.42	33.21	7.67	-25.54
24	2465.0	2465.00	3.19	7.13	40.4%	-3.94	3.19	15000	15000	-32.34	18000	0	-4.40	35.53	7.59	-27.93
25	2470.0	2470.00	3.18	7.07	40.9%	-3.89	3.18	15000	15000	-33.22	18000	0	-4.35	36.40	7.53	-28.87
26	2475.0	2475.00	3.07	6.99	40.6%	-3.92	3.07	15000	15000	-33.94	18000	0	-4.39	37.01	7.46	-29.55
27	2480.0	2480.00	3.03	7.00	40.1%	-3.97	3.03	12000	9000	-33.00	18000	0	-4.44	36.03	7.47	-28.56
28	2485.0	2485.00	3.02	7.04	39.6%	-4.03	3.02	12000	9000	-31.90	18000	0	-4.50	34.92	7.51	-27.40
29	2490.0	2490.00	2.98	7.08	38.9%	-4.10	2.98	12000	9000	-31.87	18000	0	-4.57	34.85	7.55	-27.30
30	2495.0	2495.00	2.94	7.12	38.2%	-4.18	2.94	12000	9000	-32.99	18000	0	-4.66	35.93	7.59	-28.34
31	2500.0	2500.00	2.93	7.17	37.6%	-4.24	2.93	12000	9000	-36.79	18000	0	-4.72	39.72	7.65	-32.07

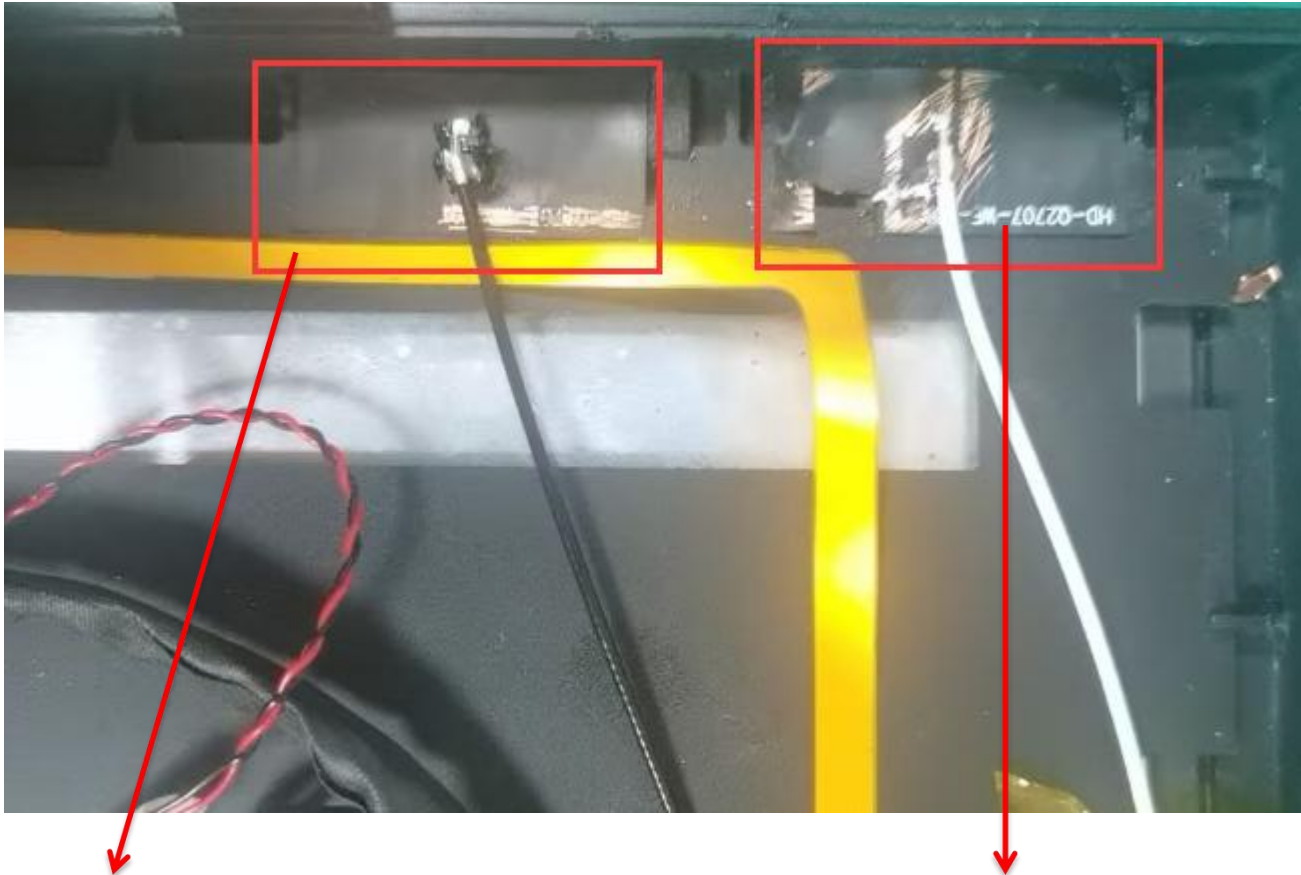
7、5G WIFI Passive test data

Test Point ID	Freq. (MHz)	TRP (dBm)	Gain (dBi)	Directivity (dBi)	Efficiency (%)	Efficiency (dB)	Max (dBm)	Theta of Max	Phi of Max	Min (dBm)	Theta of Min	Phi of Min	AVG (dBm)	Max/Min (dB)	Max/AVG (dB)	Min/AVG (dB)
1	5120.0	5120.00	-0.11	5.57	27.1%	-5.68	-0.11	15000	3180	-34.30	18000	9000	-5.74	34.20	5.63	-28.57
2	5140.0	5140.00	0.60	6.01	28.8%	-5.41	0.60	15000	3180	-34.34	18000	12000	-5.48	34.94	6.07	-28.86
3	5160.0	5160.00	0.83	6.05	30.1%	-5.22	0.83	15000	3180	-34.90	18000	12000	-5.32	35.73	6.15	-29.58
4	5180.0	5180.00	-0.62	4.87	28.3%	-5.49	-0.62	15000	3180	-34.00	18000	9000	-5.67	33.39	5.05	-28.34
5	5200.0	5200.00	-1.11	4.61	26.8%	-5.72	-1.11	15000	3180	-34.62	18000	12000	-5.85	33.51	4.74	-28.77
6	5220.0	5220.00	-1.55	4.41	25.4%	-5.95	-1.55	15000	3180	-34.86	18000	9000	-6.06	33.31	4.51	-28.80
7	5240.0	5240.00	-0.11	5.22	29.3%	-5.33	-0.11	15000	3180	-34.17	18000	12000	-5.45	34.06	5.34	-28.72
8	5260.0	5260.00	0.35	5.85	28.2%	-5.50	0.35	15000	3180	-34.38	18000	9000	-5.53	34.73	5.88	-28.85
9	5280.0	5280.00	0.49	5.64	30.5%	-5.15	0.49	15000	3180	-34.40	18000	12000	-5.25	34.89	5.74	-29.15
10	5300.0	5300.00	-0.10	5.27	29.1%	-5.37	-0.10	15000	3180	-34.67	18000	12000	-5.49	34.58	5.39	-29.18
11	5320.0	5320.00	-0.10	5.26	29.1%	-5.37	-0.10	15000	3180	-34.31	18000	12000	-5.51	34.21	5.40	-28.80
12	5340.0	5340.00	-0.50	4.92	28.7%	-5.42	-0.50	15000	3180	-34.45	18000	9000	-5.60	33.95	5.10	-28.86
13	5360.0	5360.00	-0.48	4.85	29.4%	-5.32	-0.48	15000	3180	-35.42	18000	12000	-5.53	34.94	5.05	-29.90
14	5380.0	5380.00	-0.95	4.77	26.8%	-5.71	-0.95	15000	3180	-34.82	18000	9000	-5.83	33.88	4.88	-28.99
15	5400.0	5400.00	-1.33	4.43	26.5%	-5.76	-1.33	15000	3180	-33.86	18000	12000	-5.88	32.53	4.55	-27.99
16	5420.0	5420.00	-1.58	4.29	25.9%	-5.86	-1.58	15000	3180	-34.08	18000	9000	-5.97	32.50	4.39	-28.10
17	5440.0	5440.00	-0.80	4.85	27.2%	-5.65	-0.80	12000	3180	-34.11	18000	9000	-5.74	33.31	4.94	-28.37
18	5460.0	5460.00	0.30	5.47	30.4%	-5.17	0.30	12000	3180	-34.40	18000	9000	-5.33	34.70	5.63	-29.07
19	5480.0	5480.00	0.16	5.35	30.2%	-5.19	0.16	12000	3180	-33.67	18000	12000	-5.36	33.83	5.52	-28.31
20	5500.0	5500.00	0.15	5.33	30.3%	-5.18	0.15	12000	3180	-33.82	18000	12000	-5.44	33.97	5.59	-28.38
21	5520.0	5520.00	-0.89	4.73	27.4%	-5.62	-0.89	12000	3180	-33.83	18000	9000	-5.78	32.95	4.90	-28.05
22	5540.0	5540.00	-1.25	4.59	26.1%	-5.84	-1.25	12000	3180	-33.88	18000	9000	-5.93	32.62	4.68	-27.94
23	5560.0	5560.00	-1.60	4.50	24.6%	-6.09	-1.60	12000	3180	-33.10	18000	12000	-6.12	31.51	4.52	-26.98
24	5580.0	5580.00	-1.38	4.48	25.9%	-5.86	-1.38	12000	3180	-34.40	18000	9000	-5.93	33.02	4.55	-28.47
25	5600.0	5600.00	-1.17	4.70	25.9%	-5.87	-1.17	12000	3180	-33.27	18000	9000	-5.94	32.10	4.77	-27.33
26	5620.0	5620.00	-1.36	4.55	25.7%	-5.91	-1.36	12000	3180	-33.68	18000	9000	-5.95	32.32	4.59	-27.73
27	5640.0	5640.00	-1.16	4.68	26.0%	-5.84	-1.16	12000	3180	-33.91	18000	9000	-5.93	32.75	4.77	-27.98
28	5660.0	5660.00	-1.06	4.64	26.9%	-5.70	-1.06	12000	3180	-33.13	18000	9000	-5.83	32.07	4.77	-27.30
29	5680.0	5680.00	-0.90	4.86	26.6%	-5.76	-0.90	12000	3180	-34.45	18000	9000	-5.90	33.55	4.99	-28.56
30	5700.0	5700.00	-0.81	4.72	28.0%	-5.53	-0.81	12000	3180	-35.07	18000	12000	-5.73	34.25	4.92	-29.33
31	5720.0	5720.00	-1.13	4.78	25.6%	-5.92	-1.13	15000	3180	-34.66	18000	9000	-6.00	33.52	4.86	-28.66
32	5740.0	5740.00	-1.52	4.51	25.0%	-6.03	-1.52	15000	3180	-35.07	18000	9000	-6.15	33.55	4.63	-28.92
33	5760.0	5760.00	-1.52	4.35	25.9%	-5.87	-1.52	15000	3180	-34.62	18000	12000	-6.02	33.10	4.50	-28.60
34	5780.0	5780.00	-1.36	4.62	25.3%	-5.98	-1.36	15000	3180	-33.82	18000	9000	-6.06	32.46	4.71	-27.76
35	5800.0	5800.00	-0.68	4.82	28.2%	-5.50	-0.68	15000	3180	-34.47	18000	9000	-5.68	33.79	5.00	-28.80
36	5820.0	5820.00	-0.72	4.93	27.3%	-5.64	-0.72	15000	3180	-35.16	18000	9000	-5.77	34.45	5.05	-29.39

8、2.4G BT passive test data

Test Point ID	Freq. (MHz)	TRP (dBm)	Gain (dBi)	Directivity (dBi)	Efficiency (%)	Efficiency (dB)	Max (dBm)	Theta of Max	Phi of Max	Min (dBm)	Theta of Min	Phi of Min	AVG (dBm)	Max/Min (dB)	Max/AVG (dB)	Min/AVG (dB)
1	2350.0	2350.00	-0.35	5.88	23.8%	-6.23	-0.35	15000	9000	-39.67	18000	15000	-6.76	39.32	6.41	-32.92
2	2355.0	2355.00	-0.25	5.84	24.6%	-6.09	-0.25	15000	9000	-41.90	18000	15000	-6.62	41.66	6.37	-35.29
3	2360.0	2360.00	-0.20	5.76	25.3%	-5.97	-0.20	15000	9000	-39.27	18000	15000	-6.50	39.06	6.30	-32.76
4	2365.0	2365.00	-0.15	5.74	25.7%	-5.90	-0.15	15000	9000	-39.81	18000	15000	-6.43	39.66	6.28	-33.38
5	2370.0	2370.00	0.08	5.75	27.1%	-5.67	0.08	15000	9000	-36.98	18000	15000	-6.21	37.05	6.28	-30.77
6	2375.0	2375.00	0.19	5.75	27.8%	-5.56	0.19	15000	9000	-35.98	18000	15000	-6.09	36.18	6.29	-29.89
7	2380.0	2380.00	0.02	5.65	27.3%	-5.64	0.02	15000	9000	-36.86	18000	15000	-6.18	36.88	6.20	-30.68
8	2385.0	2385.00	0.18	5.66	28.3%	-5.48	0.18	15000	9000	-32.93	18000	15000	-6.02	33.11	6.20	-26.91
9	2390.0	2390.00	0.41	5.67	29.8%	-5.26	0.41	15000	9000	-31.28	18000	15000	-5.79	31.69	6.20	-25.49
10	2395.0	2395.00	0.47	5.65	30.3%	-5.18	0.47	15000	9000	-31.22	18000	15000	-5.71	31.70	6.19	-25.51
11	2400.0	2400.00	0.48	5.53	31.3%	-5.05	0.48	15000	9000	-31.82	18000	15000	-5.59	32.30	6.07	-26.23
12	2405.0	2405.00	0.40	5.37	31.8%	-4.97	0.40	15000	9000	-34.41	18000	15000	-5.51	34.81	5.91	-28.89
13	2410.0	2410.00	0.33	5.31	31.7%	-4.98	0.33	15000	9000	-35.44	18000	15000	-5.52	35.77	5.85	-29.92
14	2415.0	2415.00	0.18	5.17	31.7%	-4.99	0.18	15000	9000	-34.70	18000	15000	-5.52	34.88	5.70	-29.18
15	2420.0	2420.00	-0.01	4.99	31.6%	-5.00	-0.01	15000	9000	-32.96	18000	15000	-5.52	32.96	5.51	-27.45
16	2425.0	2425.00	0.26	5.23	31.8%	-4.97	0.26	15000	12180	-31.52	18000	15000	-5.48	31.78	5.74	-26.04
17	2430.0	2430.00	0.55	5.44	32.4%	-4.89	0.55	15000	12180	-31.07	18000	15000	-5.39	31.61	5.94	-25.68
18	2435.0	2435.00	0.77	5.59	33.0%	-4.81	0.77	15000	12180	-32.04	18000	12000	-5.30	32.82	6.07	-26.75
19	2440.0	2440.00	0.96	5.77	33.0%	-4.81	0.96	15000	12180	-33.52	18000	12000	-5.27	34.48	6.23	-28.25
20	2445.0	2445.00	1.04	5.93	32.5%	-4.88	1.04	15000	12180	-32.89	18000	12000	-5.32	33.93	6.37	-27.57
21	2450.0	2450.00	1.10	6.02	32.3%	-4.91	1.10	15000	12180	-32.58	18000	12000	-5.33	33.68	6.43	-27.25
22	2455.0	2455.00	1.18	6.02	32.8%	-4.84	1.18	15000	12180	-31.50	18000	12000	-5.22	32.68	6.40	-26.28
23	2460.0	2460.00	1.25	6.08	32.9%	-4.83	1.25	15000	12180	-32.50	18000	12000	-5.18	33.75	6.43	-27.31
24	2465.0	2465.00	1.19	6.07	32.5%	-4.88	1.19	15000	12180	-33.34	18000	12000	-5.21	34.53	6.41	-28.13
25	2470.0	2470.00	1.31	6.18	32.7%	-4.86	1.31	15000	9000	-35.94	18000	12000	-5.17	37.25	6.49	-30.77
26	2475.0	2475.00	1.50	6.35	32.7%	-4.85	1.50	15000	9000	-37.83	18000	12000	-5.14	39.32	6.64	-32.69
27	2480.0	2480.00	1.46	6.39	32.1%	-4.93	1.46	15000	9000	-33.85	18000	12000	-5.21	35.31	6.67	-28.64
28	2485.0	2485.00	1.19	6.26	31.1%	-5.07	1.19	15000	9000	-32.03	18000	15000	-5.34	33.21	6.53	-26.69
29	2490.0	2490.00	1.00	6.15	30.6%	-5.14	1.00	15000	9000	-30.68	18000	15000	-5.41	31.68	6.41	-25.27
30	2495.0	2495.00	0.99	6.11	30.8%	-5.12	0.99	15000	9000	-30.53	18000	15000	-5.38	31.52	6.37	-25.14
31	2500.0	2500.00	0.78	6.01	30.0%	-5.23	0.78	15000	9000	-31.84	18000	15000	-5.49	32.63	6.27	-26.36

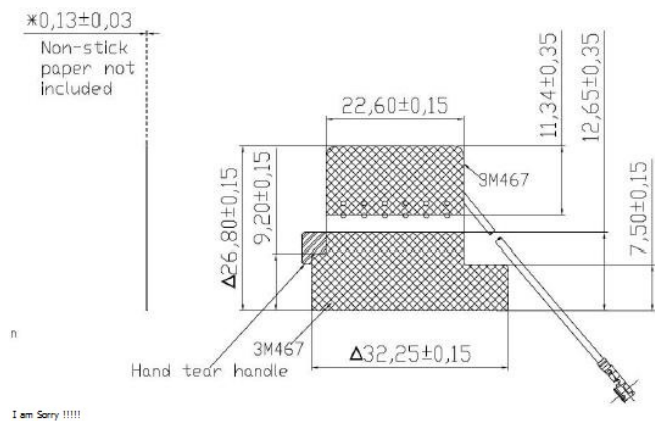
9、The placement of antennas and coaxial lines



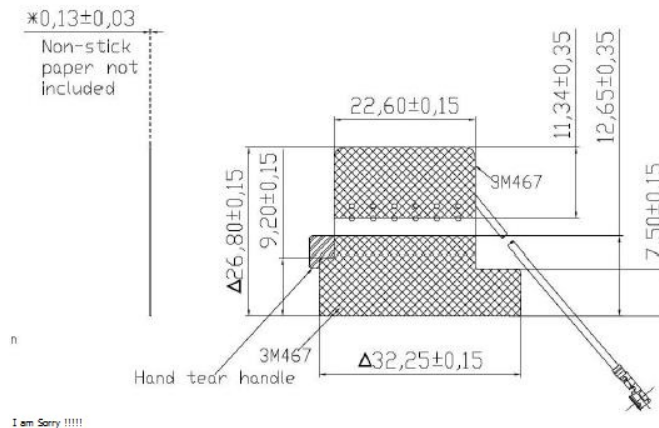
BT Antenna placement

2.4G/5G WIFI Antenna placement

八、Antenna Size



BT ANTENNA SIZE



WIFI ANTENNA SIZE