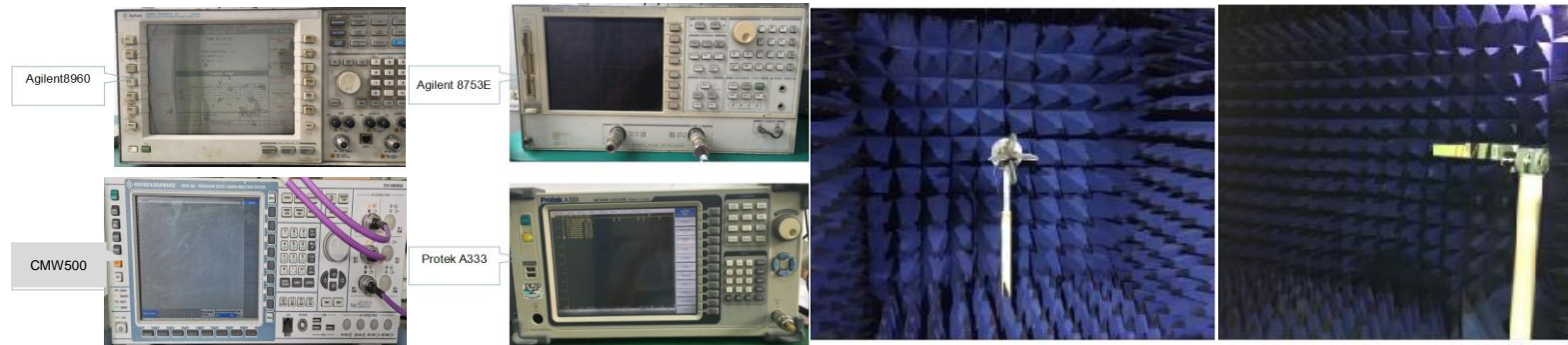


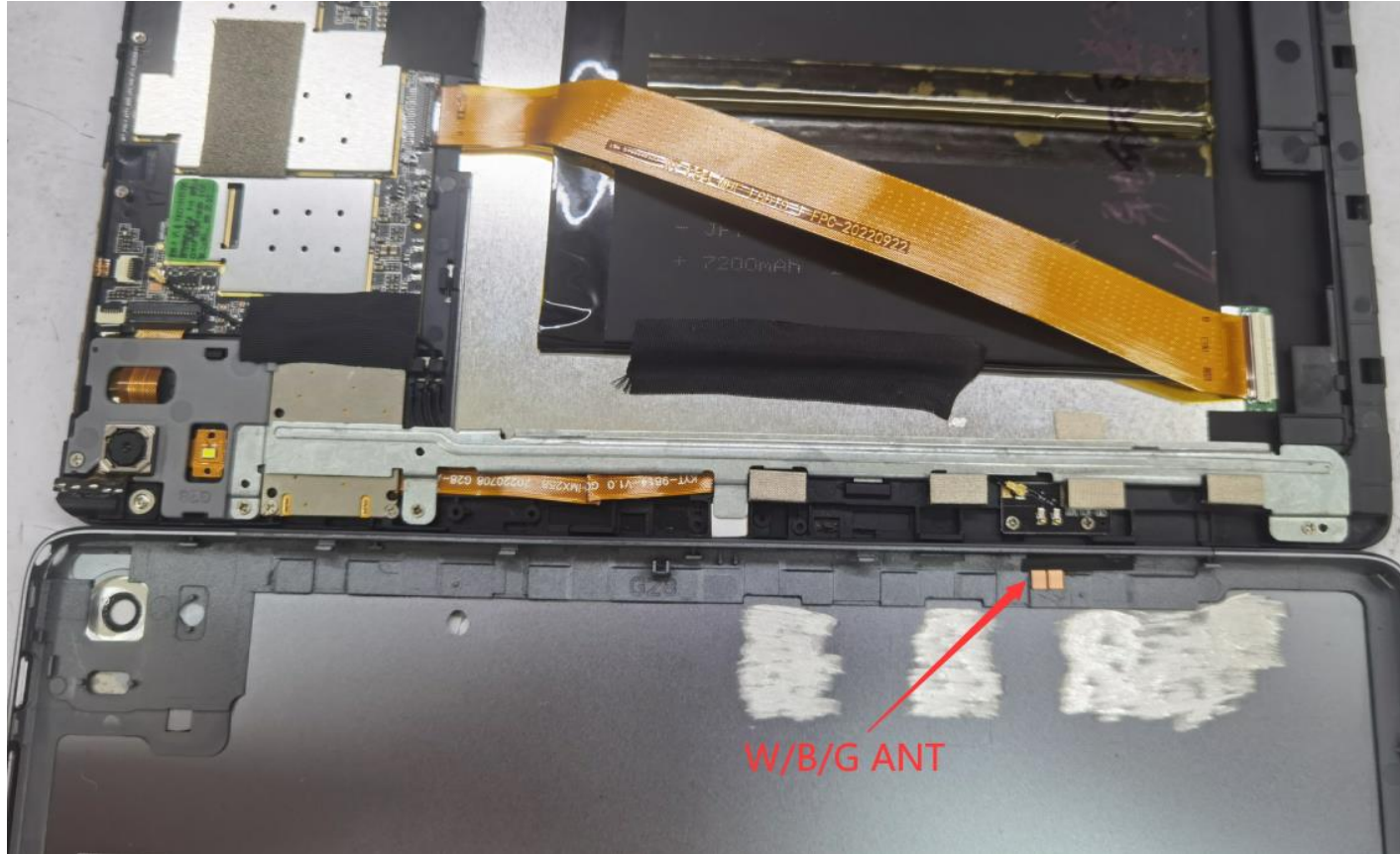
Test environment

	test item	test equipment
S-parameter	1. VSWR 2. Rrtun Loss	network analyzer: Agilent8753ES
2. Active	1. TRP 2. TIS 3. Screen off/on	1. darkroom: 5*3*3m (3D) Chamber 2. Anritu: Agilent8960 CMW500
3. Passive	1. Gain 2. Efficiency	1. darkroom: 5*3*3m (3D) Chamber 2. network analyzer: Agilent 8753ES



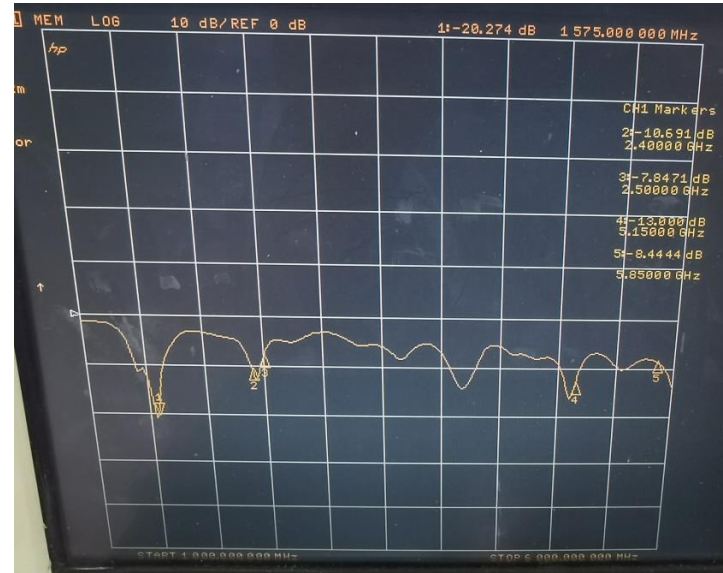
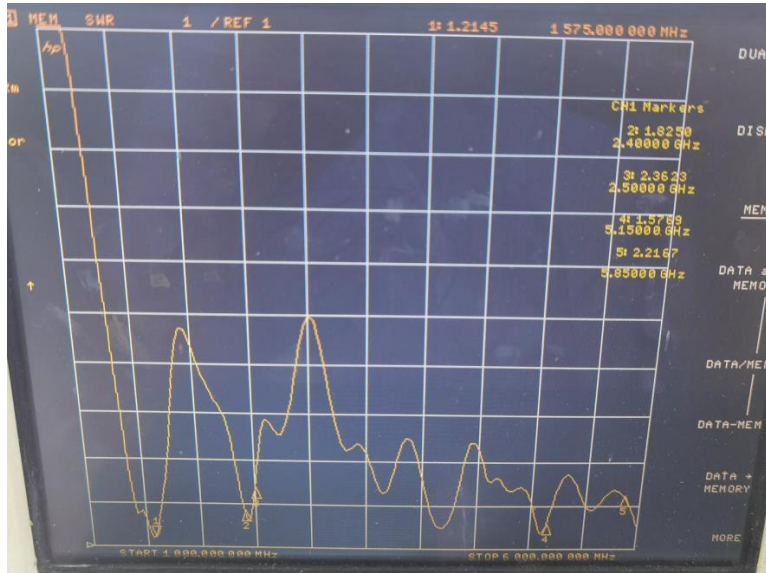


Antenna position



Passive test data

ANT S11-VSWR&Return Loss



Frequency(MHZ)	1575	2400	2500	5150	5850
VSWR	1.21	1.82	2.36	1.57	2.21
Return Loss(DB)	-20.27	-10.69	-7.84	-13.00	-8.44



Passive test data

ANT GAIN&Efficiency-GPS 1.575G

1570	40.43	-3.93	1.52	-0.63	20.888	19.544	1.52	-12.35	5.45	60	41.5	41.03
1575	41.38	-3.83	1.61	-0.54	21.472	19.909	1.61	-12.59	5.44	60	41.68	41.23
1580	41.38	-3.83	1.58	-0.57	21.434	19.942	1.58	-13.16	5.41	60	41.78	41.35



Passive test data

ANT GAIN&Efficiency-WIFI2.4G/BT

Passive Test For WIFI2.4

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Directivity (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
2400	39.23	-4.06	2.27	0.12	13.106	26.121	2.27	-23.28	6.34	0	45.54	45.77
2410	37.59	-4.25	2	-0.15	12.525	25.062	2	-26.28	6.25	0	45.8	46.08
2420	37.17	-4.3	1.82	-0.33	12.411	24.758	1.82	-27.51	6.12	0	45.39	45.66
2430	33.86	-4.7	1.33	-0.82	11.32	22.539	1.33	-21.21	6.03	0	45.5	45.85
2440	32.47	-4.89	1.04	-1.11	10.906	21.562	1.04	-21.8	5.92	0	45.59	45.95
2450	32.39	-4.9	0.96	-1.19	10.967	21.427	0.96	-24.8	5.86	0	45.67	46.09
2460	32.98	-4.82	0.92	-1.23	11.314	21.669	0.92	-31.37	5.74	0	45.65	46.03
2470	32.16	-4.93	0.99	-1.16	11.213	20.945	0.99	-28.3	5.92	0	45.95	46.35
2480	32.82	-4.84	1.44	-0.71	11.651	21.17	1.44	-34.91	6.28	0	45.85	46.23
2490	31.94	-4.96	1.57	-0.58	11.356	20.581	1.57	-26.74	6.53	0	46.14	46.54
2500	32.03	-4.94	1.77	-0.38	11.396	20.639	1.77	-33.69	6.71	0	46.08	46.47



Passive test data

ANT GAIN&Efficiency-WIFI 5G

Passive Test For WIFI5G						
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)
5150	26.4	-7.12	-0.53	-2.68	10.409	15.989
5170	24.59	-7.31	-0.9	-3.05	9.594	15.001
5190	27.87	-6.41	-0.26	-2.41	11.948	15.925
5210	26.72	-6.44	-0.63	-2.78	11.823	14.894
5230	29.32	-5.8	-0.51	-2.66	14.673	14.652
5250	28.45	-5.78	-0.96	-3.11	14.762	13.684
5270	27.98	-5.69	-1.12	-3.27	15.821	12.154
5290	31.99	-4.95	-0.4	-2.55	18.429	13.561
5310	28.51	-5.45	-0.63	-2.78	17.253	11.254
5330	31.53	-5.01	0.04	-2.11	19.638	11.888
5350	30.25	-5.19	-0.13	-2.28	18.828	11.418
5370	31.82	-4.97	-0.15	-2.3	19.529	12.287
5390	27.45	-5.61	-0.91	-3.06	16.945	10.507
5410	34.01	-4.68	-0.08	-2.23	21.239	12.769
5430	30.17	-5.2	-0.26	-2.41	18.954	11.216
5450	30.71	-5.13	0.2	-1.95	19.613	11.099
5470	29.5	-5.3	0.12	-2.03	19.402	10.098
5490	29.63	-5.28	0.09	-2.06	20.088	9.537
5510	30.38	-5.17	0.08	-2.07	20.842	9.543
5530	32.86	-4.83	0.2	-1.95	22.43	10.428
5550	34.95	-4.57	0.34	-1.81	23.96	10.991
5570	34.05	-4.68	-0.04	-2.19	23.659	10.388
5590	37.97	-4.21	0.18	-1.97	26.375	11.594
5610	36.19	-4.41	-0.18	-2.33	24.914	11.276
5630	39.27	-4.06	0	-2.15	27.243	12.022
5650	32.76	-4.85	-0.76	-2.91	23.134	9.624
5670	38.27	-4.17	-0.13	-2.28	27.393	10.881
5690	30	-5.23	-1.34	-3.49	21.637	8.364
5710	38.52	-4.14	-0.39	-2.54	27.901	10.62
5730	31.61	-5	-1.11	-3.26	23.172	8.434
5750	34.08	-4.68	-0.79	-2.94	25.393	8.682
5770	30.73	-5.12	-1	-3.15	23.224	7.506
5790	32.56	-4.87	-0.58	-2.73	24.674	7.889
5810	31.31	-5.04	-0.61	-2.76	23.788	7.525
5830	35.28	-4.52	-0.26	-2.33	26.981	8.301
5850	33.33	-4.77	-0.33	-2.48	25.592	7.742



Active test data

802.11b	Frequency	TRP		TIS	
	2412	CH1 11Mbps	11.85	CH1 11Mbps	-80.75
2437	CH6 11Mbps	11.55	CH6 11Mbps	-80.78	
2467	CH11 11Mbps	11.46	CH11 11Mbps	-80.31	
802.11a		TRP		TIS	
	5180	CH36 6Mbps	7.56	CH36 54Mbps	-68.11
	5300	CH60 6Mbps	8.84	CH60 54Mbps	-69.12
	5805	CH161 6Mbps	7.3	CH161 54Mbps	-68.38



WIFI Antenna test





GPS star search test

