



深圳市浩天诚无线科技有限公司
SHENZHEN HAOTIAN CHENG WIRELESS TECHNOLOGY CO.,LTD.

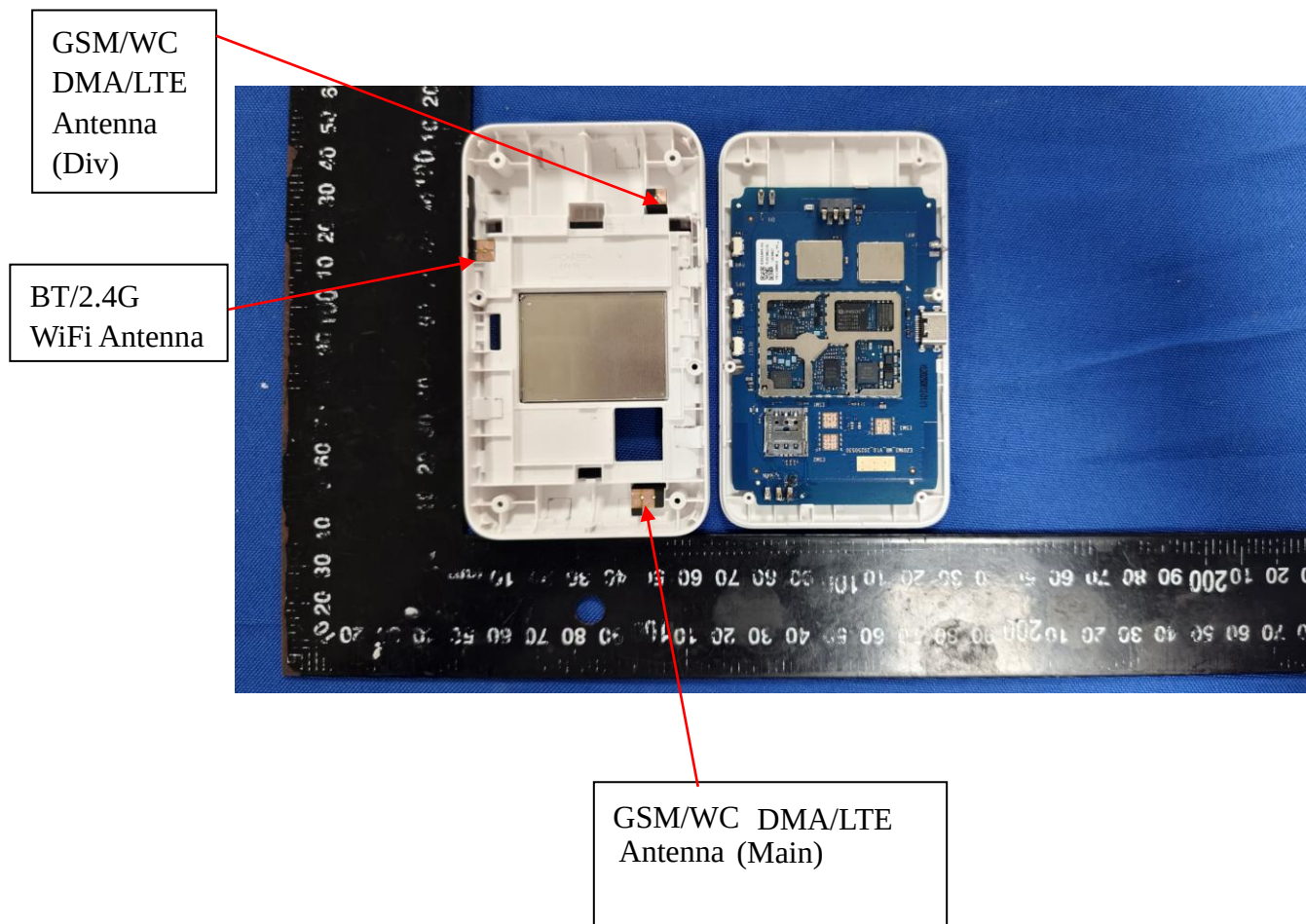
Antenna Performance Test Report

customer name		radio frequency engineer	肖强
project name	M416	structural engineer	黄振明
Antenna frequency band	GSM+WCDMA+LTE		
Report version	data		
V1.0	2025-7-3		



Matching Circuit

Antenna Type: Integral Antenna





Main antenna switch logic

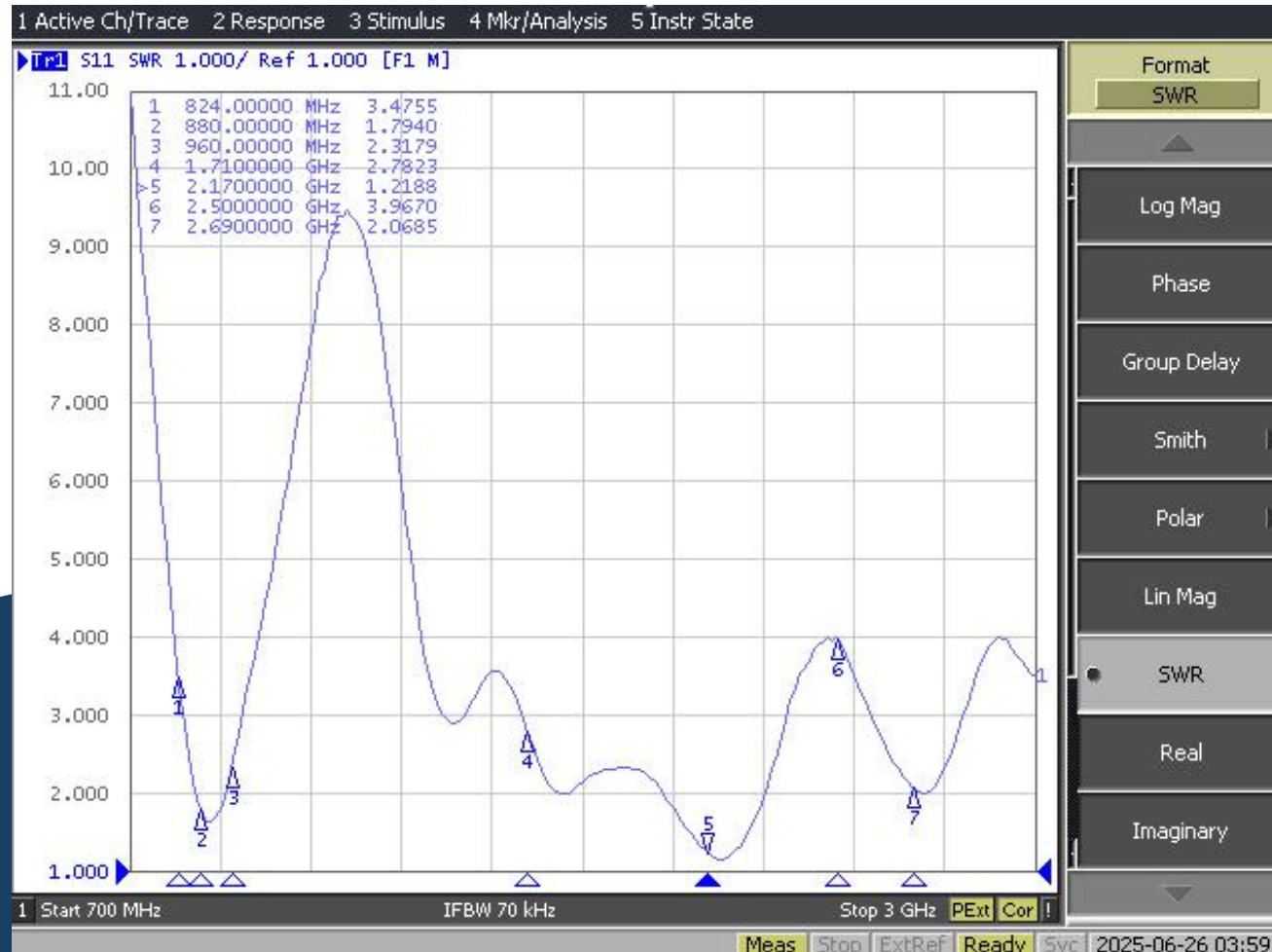


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RF1控制：	GSM900/1800/1900+WCDMA-B1/2/4/8+LTE-B1/2/3/4/7/8/9/25/66/34/38/39/40/41
RF2控制：	GSM850+WCDMA-B5+LTE-B5/18/19/20/26
RF3控制：	LTE-B12/13/17/28



RF1 path of the main antenna SAR Test Data





RF1 path of the main antenna SAR Test Data



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A	B	C	D	E	F	G	H	I	J	K	L
Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)
870	42.02	-0.03	1700	31.88	-0.56	2040	41.34	1.57	2380	33.63	-0.88
880	43.82	0.23	1710	31.91	-0.81	2050	40.96	1.39	2390	34.87	-0.49
890	40.37	-0.4	1720	33.92	-0.39	2060	42.04	1.48	2400	33.12	-0.64
900	40.34	-0.39	1730	35.44	-0.18	2070	41.03	1.28	2410	30.89	-1.01
910	41.65	-0.25	1740	36.2	0.01	2080	41.21	1.32	2420	30.88	-1.03
920	41.67	-0.26	1750	37.71	0.24	2090	40.72	1.3	2430	32.99	-0.66
930	38.8	-0.4	1760	37.81	0.34	2100	42.02	1.61	2440	33.52	-0.68
940	36.07	-0.33	1770	35.42	-0.02	2110	39.56	1.33	2450	36.64	-0.17
950	31.85	-0.74	1780	35.74	0.04	2120	39.06	1.34	2460	38.67	0.01
960	30.44	-1.63	1790	37.35	0.41	2130	36.91	0.98	2470	37.26	-0.37
970	30.14	-1.34	1800	36.98	0.39	2140	35.85	0.81	2480	36.21	-0.58
			1810	37.44	0.5	2150	35.98	0.73	2490	36.34	-0.66
			1820	37.89	0.52	2160	34.44	0.57	2500	36.9	-0.6
			1830	38.78	0.73	2170	36.49	1.01	2510	38.9	-0.38
			1840	35.49	0.32	2180	37.38	1.31	2520	38.45	-0.59
			1850	36.03	0.52	2190	36.84	1.21	2530	36.9	-0.76
			1860	40.13	1.32	2200	38.14	1.22	2540	33.13	-1.38
			1870	40.45	1.37	2210	38.57	1.11	2550	30.77	-1.85
			1880	41.77	1.75	2220	40.05	1.19	2560	31.1	-1.73
			1890	40.36	1.61	2230	39.93	1.14	2570	29.97	-2.12
			1900	40.08	1.73	2240	42.28	1.44	2580	30.58	-2.08
			1910	38.6	1.5	2250	42.3	1.53	2590	32.75	-1.83
			1920	39.5	1.64	2260	41.29	1.49	2600	32.18	-1.8
			1930	42.16	1.96	2270	40.86	1.39	2610	27.66	-2.6
			1940	41.16	1.76	2280	40.41	1.09	2620	27.32	-2.57
			1950	40.16	1.65	2290	38.84	0.54	2630	29.51	-1.86
			1960	39.06	1.51	2300	40.01	0.33	2640	30.38	-1.67
			1970	39.27	1.72	2310	41.05	0.23	2650	32.45	-1.11
			1980	39.8	1.82	2320	40.52	-0.12	2660	34.49	-0.79
			1990	40.53	1.93	2330	39.83	-0.67	2670	34.47	-0.81
			2000	42.16	1.99	2340	36.12	-1.11	2680	30.21	-1.77
			2010	42.29	1.86	2350	34.8	-1.14	2690	29.85	-1.92
			2020	40.74	1.53	2360	34.78	-0.89	2700	33.14	-1.35
			2030	40.34	1.49	2370	32.52	-1.2			



RF2 path of the main antenna SAR Test Data

A	B	C
Freq (MHz)	Effi (%)	Gain (dBi)
810	28.24	-1.88
820	29.71	-1.65
830	30.75	-1.47
840	31.5	-1.04
850	31.47	-0.76
860	31.56	-0.86
870	34.02	-0.18
880	35.82	0.08
890	32.37	-0.55
900	32.34	-0.54



RF3 path of the main antenna SAR Test Data

A	B	C
Freq (MHz)	Effi (%)	Gain (dBi)
690	18.37	-5.45
700	19.89	-5.44
710	21.94	-4.91
720	24.92	-4.16
730	26.45	-3.35
740	24.66	-3.28
750	21.64	-3.53
760	21.61	-3.09
770	21.81	-2.77
780	20.99	-3.44
790	20.31	-4.29
800	22.76	-4.21



Secondary Antenna SAR Test Data

A	B	C	D	E	F	G	H	I	J	K	L
Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)
810	44.55	0.77	1700	63.63	2.08	2030	56.89	0.2	2360	42.48	1.82
820	40.97	0.79	1710	65.9	2.21	2040	44.86	-0.62	2370	44.94	2.05
830	44.18	-0.63	1720	66.14	2.13	2050	38.42	-1.23	2380	43.51	1.82
840	33.08	-1.09	1730	69.88	2.4	2060	37.82	-1.33	2390	46.58	2.04
850	30.33	-1.37	1740	69.24	2.47	2070	35.19	-1.64	2400	49.39	2.22
860	34.59	-0.81	1750	68.28	2.76	2080	40.42	-0.79	2410	50.76	2.27
870	35.1	-0.66	1760	76.24	3.21	2090	44.15	-0.15	2420	51.28	2.21
880	38.06	-0.38	1770	77.42	3.17	2100	43.26	-0.02	2430	60.64	2.77
890	36.41	-0.84	1780	79.34	3.33	2110	42.12	-0.63	2440	69.16	3.15
900	38.24	-0.71	1790	78.33	3.37	2120	39.95	-0.92	2450	69.59	3
910	41.81	-0.19	1800	75.24	3.34	2130	39.75	-0.95	2460	66.02	2.62
920	44.09	-0.07	1810	77.66	3.41	2140	40.6	-0.22	2470	66.13	2.51
930	48.65	0.08	1820	77.75	3.23	2150	42.23	-0.43	2480	66.39	2.31
940	52.89	0.24	1830	76.87	3.08	2160	45.23	0.2	2490	73	2.53
950	51.44	0.5	1840	70.18	2.59	2170	41.01	-0.16	2500	75.52	2.5
960	45.07	-0.12	1850	67.44	2.28	2180	40.33	-0.6	2510	76.83	2.42
970	54.22	0.69	1860	67.55	2.13	2190	40.61	-0.01	2520	71.59	1.98
980	58.93	1.21	1870	60.59	1.58	2200	40.72	0.05	2530	67.93	1.85
			1880	62.31	1.61	2210	40.04	0	2540	61.4	1.58
			1890	63.02	1.74	2220	43.5	0.5	2550	58.67	1.54
			1900	59.46	1.49	2230	48.17	1.11	2560	63.73	2.11
			1910	52.25	0.84	2240	44.2	0.75	2570	65.78	2.37
			1920	54.49	0.92	2250	40.26	0.07	2580	64.23	2.29
			1930	57.15	1.16	2260	41.11	0.56	2590	64.92	2.35
			1940	57.27	1.18	2270	42.25	0.64	2600	66.91	2.46
			1950	65.78	1.72	2280	42.06	0.6	2610	55.07	1.73
			1960	67.56	1.86	2290	45.66	1.28	2620	51.8	1.42
			1970	62.71	1.66	2300	47.66	1.59	2630	55.6	1.65
			1980	57.37	1.28	2310	44.06	1.2	2640	55.68	1.62
			1990	57.03	1.02	2320	41.42	0.9	2650	56.66	1.66
			2000	58.22	0.71	2330	45.72	1.5	2660	57.71	1.7
			2010	55.91	0.22	2340	45.53	1.58	2670	56.32	1.65
			2020	57.55	0.19	2350	43.58	1.41	2680	44.47	0.59
									2690	41.61	0.32
									2700	47.03	0.74



WIFI Antenna SAR Test Data



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	A	B	C
	Freq (MHz)	Effi (%)	Gain (dBi)
	2400	52.94	1.28
	2410	52.19	1.32
	2420	52.33	1.42
	2430	50.75	1.4
	2440	48.67	1.26
	2450	53.07	1.76
	2460	51.56	1.81
0	2470	51.54	1.92
1	2480	55.77	2.24
2	2490	54.8	1.96
3	2500	50.93	1.56