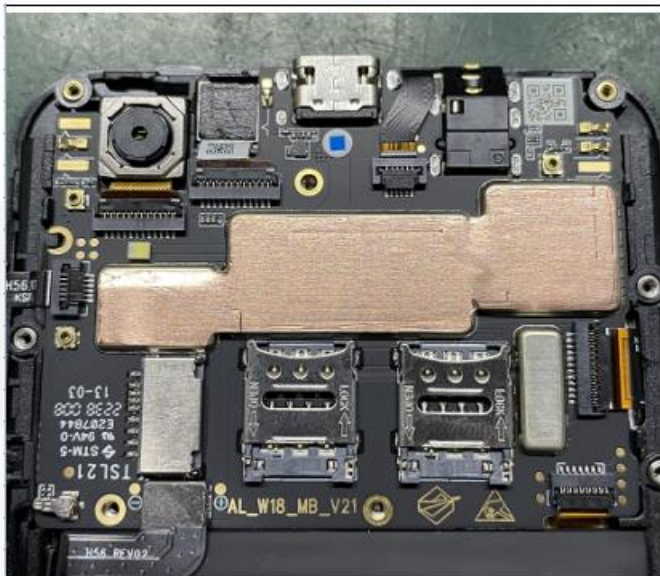
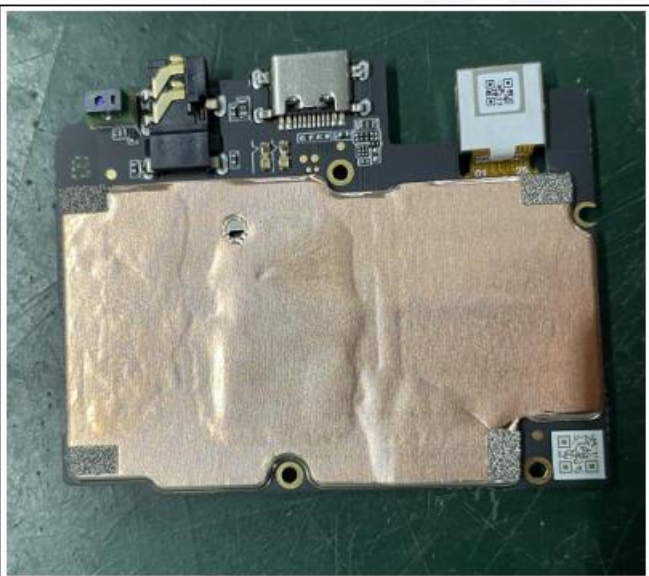


Environmental treatment

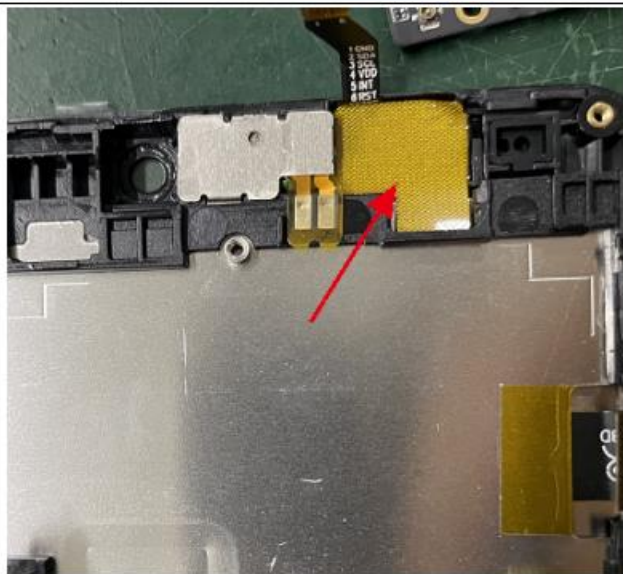


屏蔽罩上贴铜箔



屏蔽罩上面贴铜箔，四个角贴导电泡棉

Environmental treatment

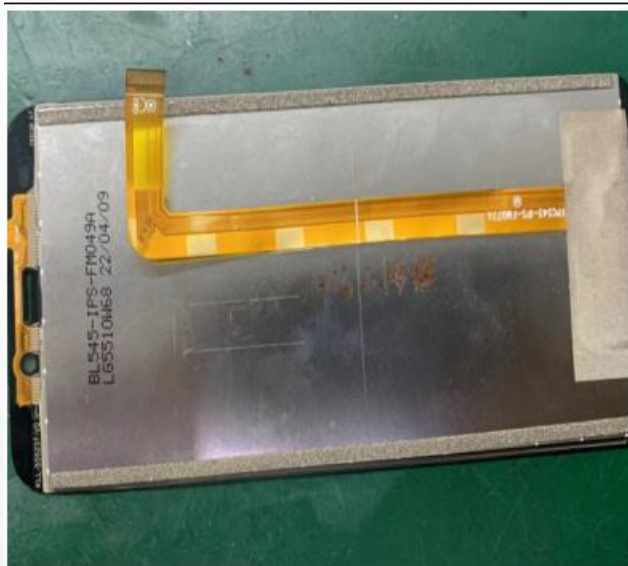


此处贴导电布屏蔽干扰

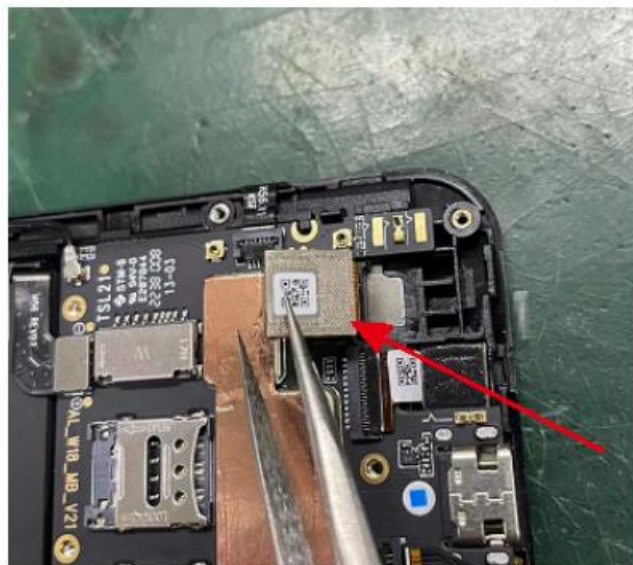


此处贴导电布，使小板地和五金中框导通

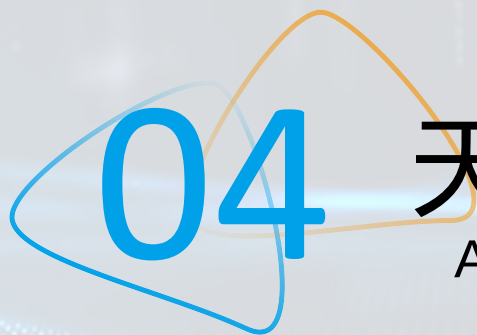
Environmental treatment



屏蔽罩上贴铜箔



屏蔽罩上面贴铜箔，四个角贴导电泡棉

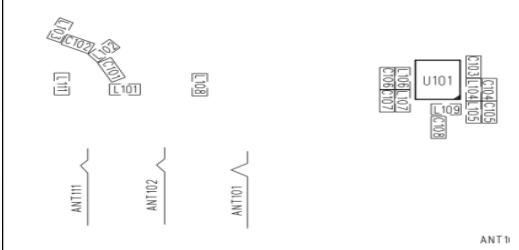
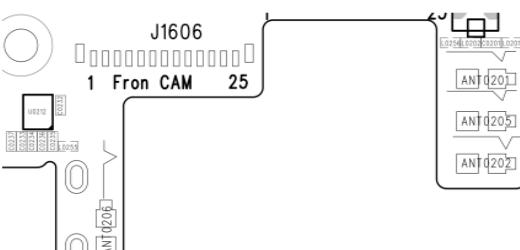


04

天线匹配电路

Antenna matching circuit

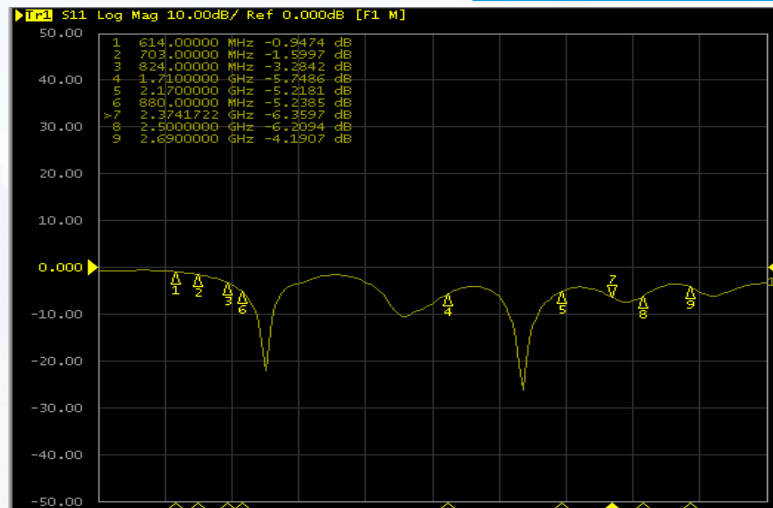
Antenna matching circuit

二. 天线匹配/开关逻辑											
主天线匹配						分集线匹配					
											
L103	NC	L101	NC	L104	NC	L0256	0欧	L0255	100pf	C0233	1.5nh
C102	0欧	C108	100pf	L107	6.8pf	L0202	NC	C0235	9.1nh	C0237	NC
L102	NC	L109	5.6nh	L106	0欧	C0201	0欧	C0236	0欧		
C101	0欧	L105	9.1pf			L0201	NC	C0234	3.9pf		
主天线开关逻辑						分集天线开关逻辑					
RF1	LTE: B13/B4/B7/B41/B66 WCDMA: B4 GSM: B3					RF1	LTE: B13/B4/B7/B41/B66 WCDMA: B4 GSM: B3				
RF2	B71					RF2	B71				
RF3	LTE: B2/B5 WCDMA: B2/B5 GSM: B2/B5					RF3	LTE: B2/B5 WCDMA: B2/B5 GSM: B2/B5				
RF4	LTE: B12 B17					RF4	LTE: B12 B17				

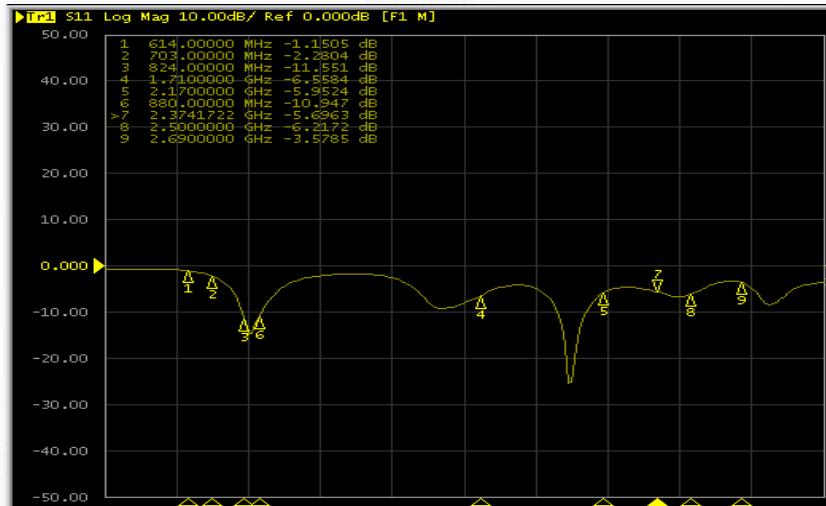
05 天线数值

Antenna numerical

Main Antenna Impedance

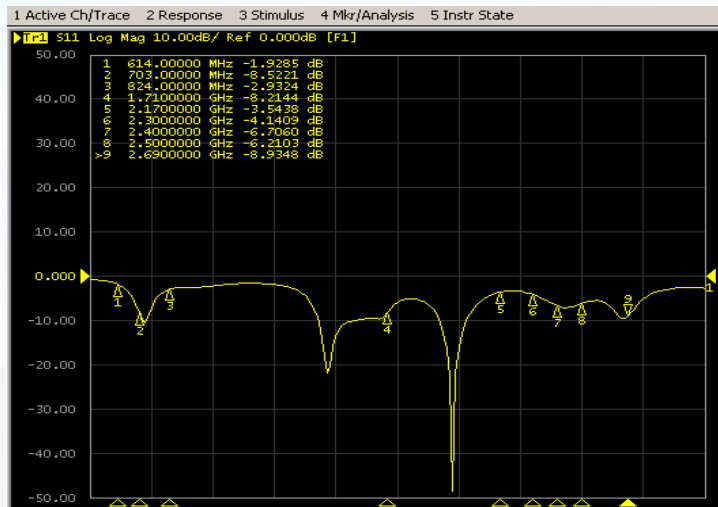


RF1

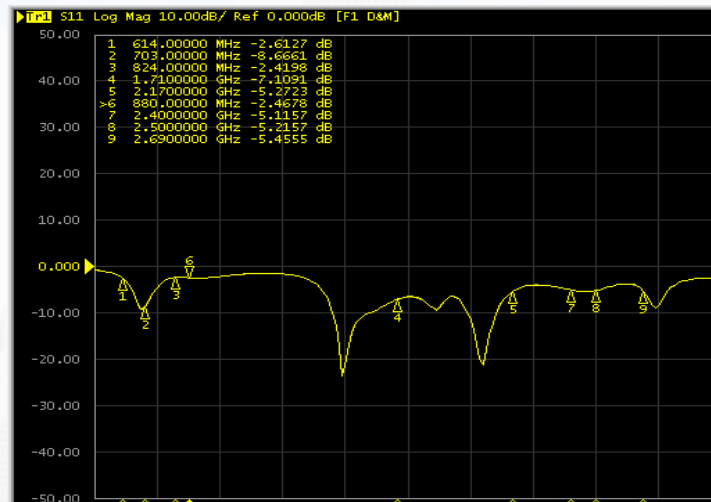


RF2

Main Antenna Impedance

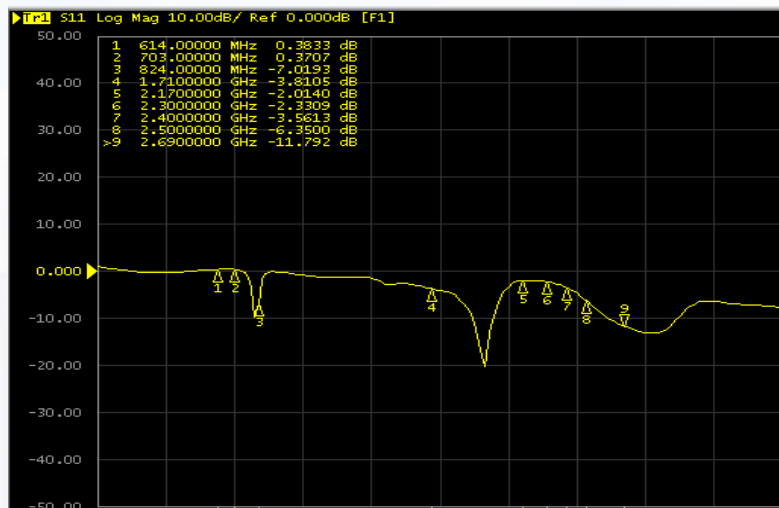


RF3

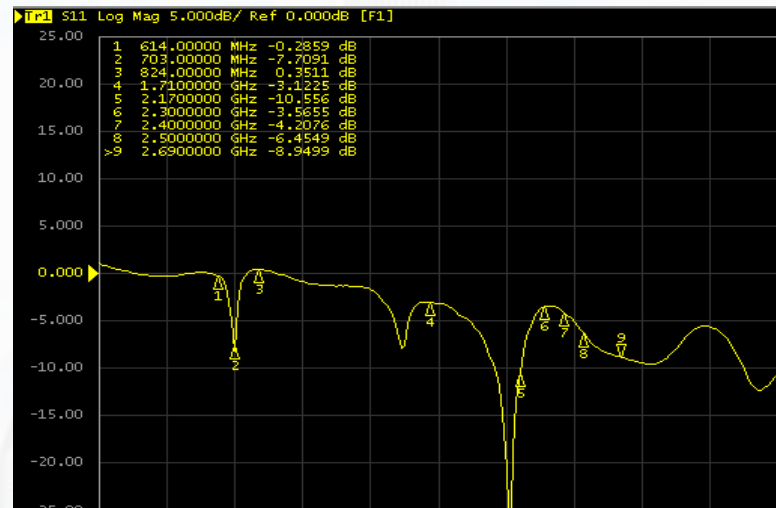


RF4

Diversity Antenna Impedance

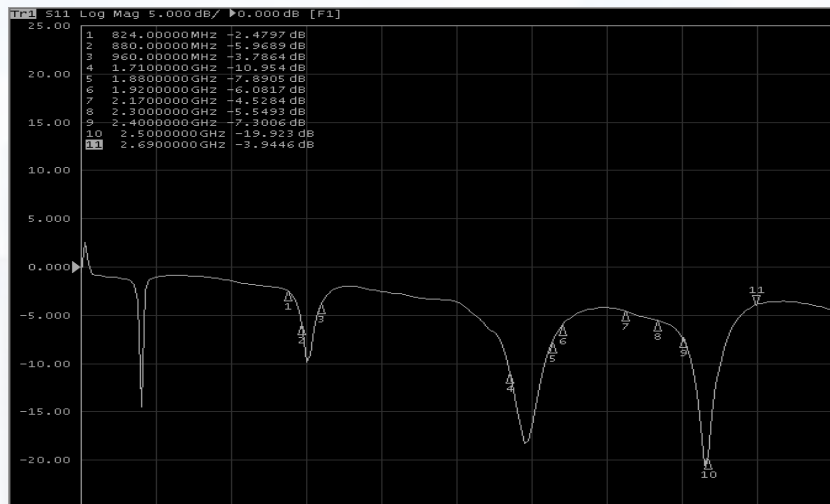


RF1



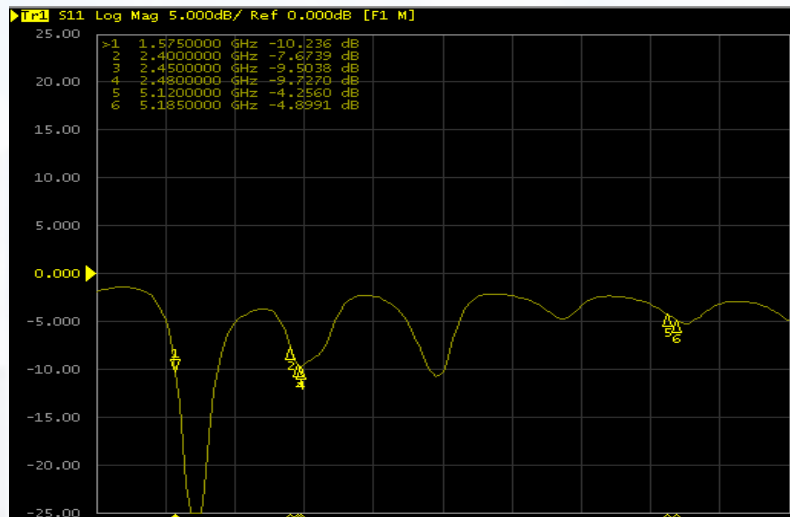
RF2

Diversity Antenna Impedance



RF3

3-in-1 Antenna Impedance



Primary Antenna Passive Data

Freq (MHz)	Effi (%)	Effi (dB)	Freq (MHz)	Effi (%)	Effi (dB)	Freq (MHz)	Effi (%)	Effi (dB)
650	35.52	-4.5	830	32.12	-4.93	1700	47.13	-3.27
660	33.89	-4.7	840	30.77	-5.12	1710	49.76	-3.03
670	32.89	-4.83	850	31.52	-5.01	1720	50.53	-2.96
680	31.34	-5.04	860	29.74	-5.27	1730	53.67	-2.7
690	31.32	-5.04	870	28.57	-5.44	1740	56.33	-2.49
700	30.03	-5.22	880	27.92	-5.54	1750	58.58	-2.32
710	31.32	-5.04	890	28.52	-5.45	1760	56.74	-2.46
720	33.9	-4.7	900	27.23	-5.65	1770	58.07	-2.36
730	31.1	-5.07	910	25.33	-5.96	1780	64.78	-1.89
740	33.75	-4.72	920	26.5	-5.77	1790	60.26	-2.2
750	34.14	-4.67	930	27.2	-5.65	1800	63.48	-1.97
760	33.81	-4.71	940	27.09	-5.67	1810	65.9	-1.81
770	35.19	-4.54	950	27.2	-5.65	1820	53.5	-2.72
780	35.92	-4.45	960	27.35	-5.63	1830	58.18	-2.35
790	36.62	-4.36	970	28.03	-5.52	1840	50.48	-2.97
800	35.77	-4.47	980	26.56	-5.76	1850	49.3	-3.07
810	33.89	-4.7	990	26.43	-5.78	1860	50.92	-2.93
820	31.41	-5.03	1000	26.63	-5.75	1870	46.58	-3.32

Freq (MHz)	Effi (%)	Effi (dB)	Freq (MHz)	Effi (%)	Effi (dB)	Freq (MHz)	Effi (%)	Effi (dB)
1880	44.99	-3.47	2060	32.18	-4.92	2640	45.4	-3.43
1890	45.45	-3.42	2070	30.83	-5.11	2650	43.74	-3.59
1900	47.83	-3.2	2080	31.69	-4.99	2660	45.77	-3.39
1910	47.91	-3.2	2090	29.31	-5.33	2670	46.37	-3.34
1920	51.37	-2.89	2100	39.59	-4.02	2680	44.11	-3.55
1930	51.86	-2.85	2510	40.91	-3.88	2690	46.52	-3.32
1940	52.86	-2.77	2520	42.03	-3.76			
1950	52.97	-2.76	2530	44.04	-3.56			
1960	46.3	-3.34	2540	42.72	-3.69			
1970	46.91	-3.29	2550	43.25	-3.64			
1980	43.84	-3.58	2560	41.6	-3.81			
1990	39.9	-3.99	2570	41.37	-3.83			
2000	39.85	-4	2580	42.81	-3.68			
2010	39.14	-4.07	2590	42.61	-3.7			
2020	38.93	-4.1	2600	43.43	-3.62			
2030	37.23	-4.29	2610	43.99	-3.57			
2040	34.61	-4.61	2620	45.04	-3.46			
2050	31.26	-5.05	2630	45.92	-3.38			



Diversity Antenna Passive Data



Freq (MHz)	Effi (%)	Effi (dB)	Freq (MHz)	Effi (%)	Effi (dB)	Freq (MHz)	Effi (%)	Effi (dB)
650	14.36	-8.43	830	21.85	-6.61			
660	14.06	-8.52	840	23.22	-6.34			
670	14.42	-8.41	850	23.64	-6.26			
680	14.79	-8.3	860	23.53	-6.28			
690	15.37	-8.13	870	24.81	-6.05			
700	15.52	-8.09	880	26.55	-5.76			
710	16.58	-7.81	890	25.95	-5.86			
720	19.26	-7.15	900	26.02	-5.85			
730	21.6	-6.66	910	27.31	-5.64			
740	23.83	-6.23	920	27.97	-5.53			
750	26.45	-5.78	930	26.35	-5.79			
760	27.06	-5.68	940	28.25	-5.49			
770	28.98	-5.38	950	28.93	-5.39			
780	30.59	-5.14	960	27.55	-5.6			
790	32.41	-4.89	970	28.82	-5.4			
800	31.35	-5.04	980	28.71	-5.42			
810	33.38	-4.76	990	30.9	-5.1			
820	34.86	-4.58	1000	29.71	-5.27			

Freq (MHz)	Effi (%)	Effi (dB)	Freq (MHz)	Effi (%)	Effi (dB)	Freq (MHz)	Effi (%)	Effi (dB)
1880	37.86	-4.22	2060	36.22	-4.41	2640	34.56	-4.61
1890	40.28	-3.95	2070	33.41	-4.76	2650	37.74	-4.23
1900	42.12	-3.76	2080	23.86	-6.22	2660	34.31	-4.65
1910	43.83	-3.58	2090	22.6	-6.46	2670	37.4	-4.27
1920	45.6	-3.41	2100	21.83	-6.61	2680	40.17	-3.96
1930	44.95	-3.47	2510	23.08	-6.37	2690	41.12	-3.86
1940	43.14	-3.65	2520	23.38	-6.31			
1950	46.02	-3.37	2530	23.05	-6.37			
1960	49.59	-3.05	2540	21.82	-6.61			
1970	51.68	-2.87	2550	21.28	-6.72			
1980	51.76	-2.86	2560	21.29	-6.72			
1990	53.34	-2.73	2570	22.38	-6.5			
2000	52.13	-2.83	2580	24.45	-6.12			
2010	51.09	-2.92	2590	25.34	-5.96			
2020	46.72	-3.31	2600	26.41	-5.78			
2030	44.45	-3.52	2610	30.97	-5.09			
2040	46.21	-3.35	2620	32.9	-4.83			
2050	38.98	-4.09	2630	32.79	-4.84			



Antenna gain



BT+WIFI2.4G
Max:1.18dBi

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	57.95	-2.37	1.18
2410	52.08	-2.83	1.02
2420	54.49	-2.64	1.08
2430	50.79	-2.94	1.11
2440	46.53	-3.32	1.15
2450	46.16	-3.36	1.12
2460	45.12	-3.46	1.07
2470	44.52	-3.51	1.01
2480	42.56	-3.71	0.81
2490	40.28	-3.95	0.48
2500	37.28	-4.29	0.21

WIFI5G
Max:1.18dBi

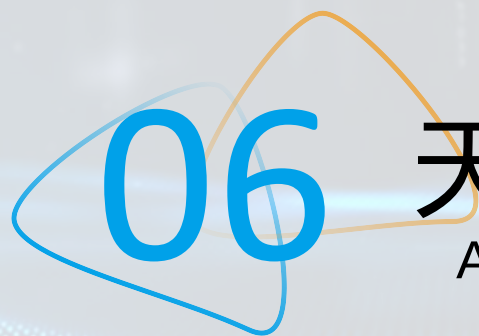
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
5000	36.5	-4.38	0.99	5420	25.88	-5.87	0.53
5020	37.38	-4.27	1.18	5440	27.56	-5.60	0.65
5040	36.26	-4.41	1.01	5460	26.78	-5.72	0.61
5060	38.78	-4.11	1.08	5480	27.35	-5.63	0.66
5080	40.76	-3.90	1.12	5500	29.98	-5.23	0.86
5100	42.95	-3.67	1.09	5520	29.88	-5.25	0.85
5120	39.55	-4.03	0.98	5540	29.75	-5.27	0.84
5140	39.26	-4.06	1.12	5560	34.74	-4.59	1.12
5160	43.02	-3.66	0.89	5580	35.01	-4.56	1.14
5180	40.48	-3.93	1.03	5600	34.56	-4.61	1.13
5200	42.51	-3.72	1.05	5620	36.69	-4.35	1.15
5220	42.47	-3.72	1.17	5640	35.31	-4.52	1.05
5240	33.45	-4.76	1.11	5660	37.38	-4.27	1.03
5260	36.93	-4.33	1.13	5680	35.98	-4.44	1.09
5280	31.33	-5.04	0.81	5700	35.25	-4.53	1.08
5300	30.14	-5.21	0.63	5720	33.81	-4.71	1.07
5320	32.37	-4.90	0.71	5740	34.64	-4.60	0.87
5340	28.24	-5.49	0.45	5760	35.43	-4.51	0.93
5360	26.23	-5.81	0.41	5780	36.51	-4.38	1.18
5380	26.71	-5.73	0.51	5800	38.81	-4.11	0.88
5400	27.57	-5.60	0.66	5820	37.24	-4.29	1.14

Antenna Active Data

05

SINAWELL
司南微电子

Band	Channel	TRP(dBm)	TIS Combined	Band	Channel	TRP(dBm)	TIS Combined
GSM 850	128	26.43		B5 (10M)	20450	19.29	
	190	26.87			20525	19.08	
	251	26.75	-101.1		20600	18.32	-92.36
GSM 1800	512	26.1		B7 (10M)	20800	18.55	
	699	25.81			21100	19.83	
	885	25.33	-103.96		21400	18.85	-93.82
GSM1900	512	24.36	-102.03	B12 (5M)	23060	19.39	
	661	24.7	-102.18		23095	19.24	
	810	25.12	-102.21		23130	19.83	-94.34
W2	9662	18.3		B13 (5M)			
	9800	18.25					
	9938	18.19	-106.68		23230	17.52	-94.78
W4	1537	17.76		B17 (5M)	23780	19.53	
	1638	17.86			23790	19.44	
	1738	18.19	-107.48		23800	19.89	-96.27
W5	4132	17.68		B41 (20M)	39750	20.7	
	4183	17.44			40620	21.96	
	4233	17.25	-104.66		41490	20.93	-90.28
B2 (10M)	18650	20.49		B66 (10M)	132022	20.15	
	18900	20.48			132322	20.29	
	19150	20.41	-95.18		132622	20.67	-95.15
B4 (10M)	20000	20.28		B71 (10M)	133172	17.64	
	20175	20.42			133297	18.85	
	20350	20.63	-96.1		133422	18.73	-93.77



天线图档

Antenna structural drawings





size report



	client	ALcommunication	project name	H56ANT		date of measurement		2022-09-15	
	supplier	SINAWEI	Measuring tools	two-dimensional		Units of measurement		mm	
NO	size	tolerance	Measured 1	Measured 2	Measured 3	Measured 4	Measured 5	determination	
1	32.15	±0.15	32.19	32.17	32.18	32.18	32.19	OK	
2	2.36	±0.10	2.32	2.34	2.36	2.36	2.35	OK	
3	3.67	±0.10	3.68	3.66	3.65	3.64	3.67	OK	
4	1.28	±0.10	1.31	1.32	1.33	1.31	1.34	ok	
5	2.28	±0.10	2.30	2.32	2.32	2.33	2.34	OK	
6	0.85	±0.10	0.87	0.88	0.87	0.86	0.87	OK	
7	6.8	±0.10	6.82	6.84	6.85	6.85	6.86	OK	
8	6.3	±0.10	6.27	6.31	6.30	6.31	6.32	OK	
9	3.85	±0.10	3.83	3.82	3.82	3.86	3.85	OK	
10	4.35	±0.10	4.39	4.38	4.38	4.36	4.35	OK	