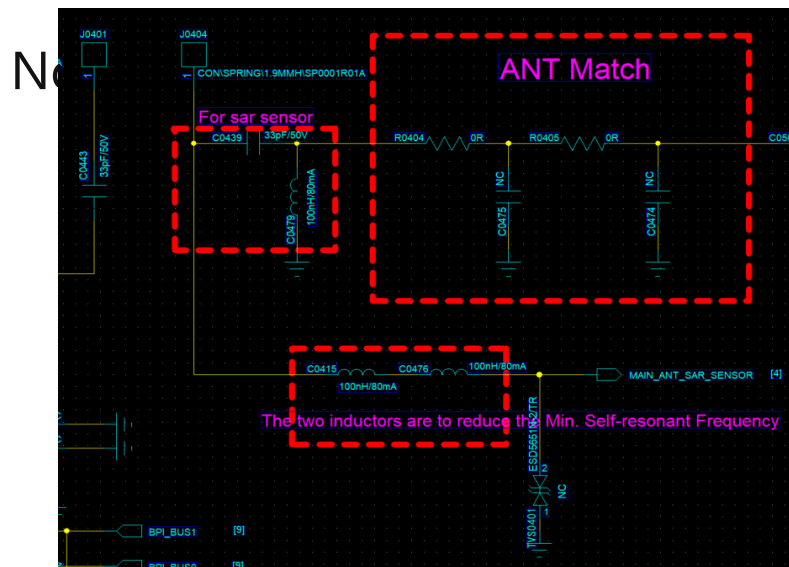
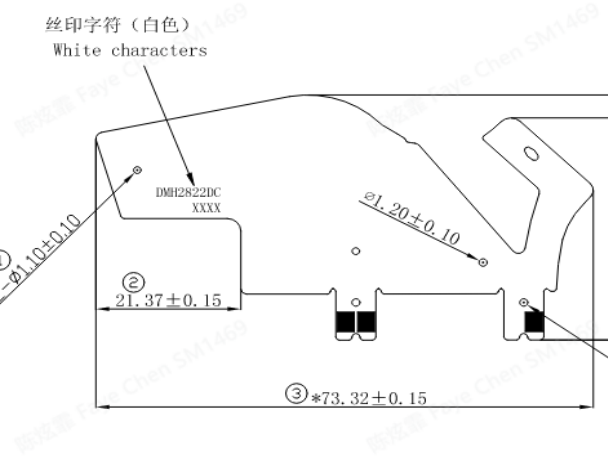


	Antenna Passive Test Report				
	Project Name	SP04	Engineer	lilei	Checker
	HW Version	DVT	Prototype(S/N)		Software Version
	Temperature/Humidity	25°C/50%	Test Equipment	OTA	Test Date
Conclusion:			Remarks		

Standard	Fre(Mhz)	Effi(%) (Min~Max)	Probiem Description and Next Step Plan
Main Antenna	600~800	12%-41%	
	800~960	19%-35%	
	1700~2170	30%-38%	
	2300~2400	39%-45%	
	2500~2700	40%-50%	
Div Antenna	600~800	3%-14%	
	800~960	8%-20%	
	1700~2170	25%-35%	
	2300~2400	38%-40%	
	2500~2700	25%-30%	
WiFi	2.4G	30%-40%	
	5G	25%-35%	
GPS	L5	30%	

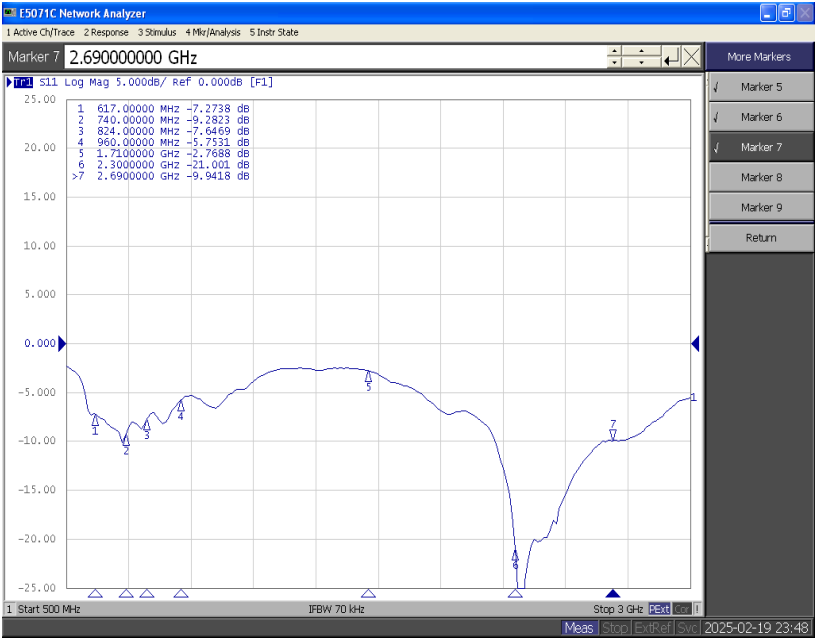
Antenna information				
Antenna name	Specification	Manufacturer	Production address	Antenna type
Main ANT & WIFI&GPS	FPC49.04*29.6 FPC48.85*15.14	SHENZHEN DEMAN ELECTRONICS CO.,LTD	Floor 4-6,Building D,Shunluo Industrial Park,No.1 Fengtai Road, Tangxia Town, Dongguan City, Guangdong Province,China	Monopole antenna
Div ANT	FPC 31.79*25.94	INPAQ TECHNOLOGY(SUZHOU) CO., LTD.	No.5, Chunqiu Road, Panyang Industrial Park, Huangdai Town, Xiangcheng Zone, Suzhou City, 215143 Jiangsu Province, China	Monopole antenna
NFC ANT	FPC\13.56MHz	SHENZHEN DEMAN ELECTRONICS CO.,LTD	Floor 4-6,Building D,Shunluo Industrial Park,No.1 Fengtai Road, Tangxia Town, Dongguan City, Guangdong Province,China	Loop antenna

Fixture Picture



Element	Matching

S Parameter (Return Loss, Smith)



Passive Performance (Efficiency, Gain)

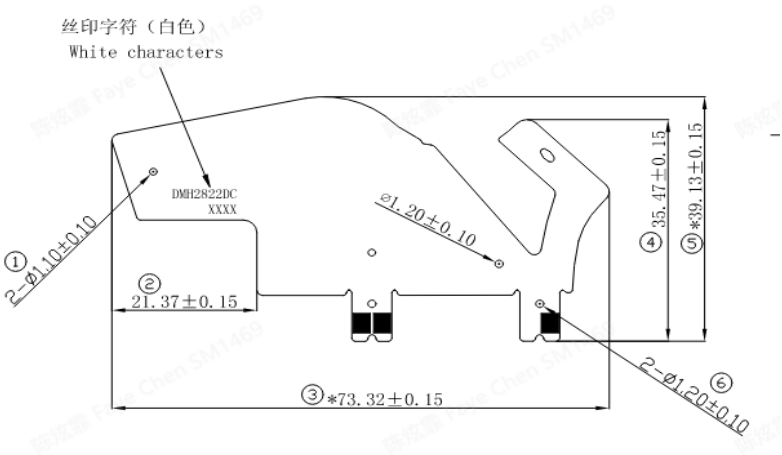
frequency (MHz)	Gain (dB)	Efficiency (dB)	
600	-2.21	-6.39	
610	-1.93	-5.97	
620	-2.12	-6.41	
630	-2.23	-6.64	
640	-2.18	-6.45	
650	2.14	-6.33	
660	-2.06	-6.10	
670	-2.05	-6.04	
680	-2.12	-6.12	
690	-2.19	-6.23	
700	-2.02	-5.91	
710	-2.13	-6.00	
720	-1.97	-5.88	
730	-1.67	-5.19	



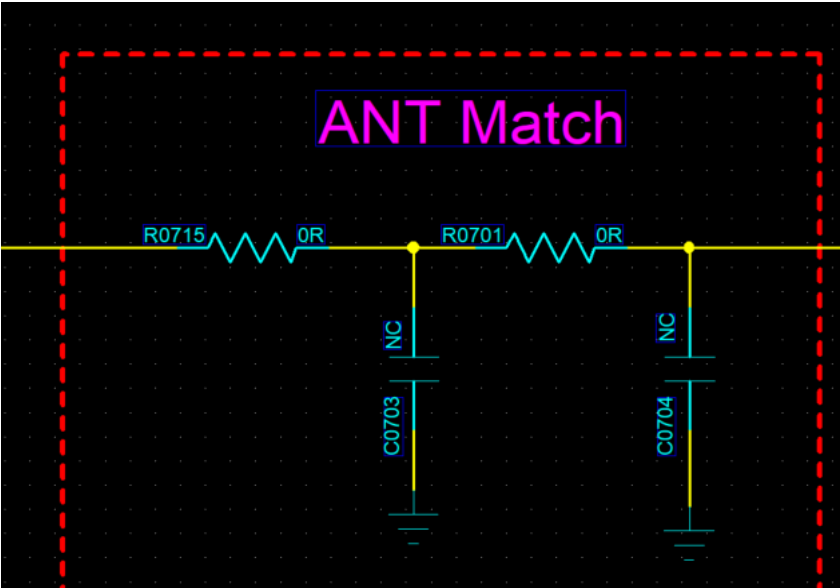
740	-1.07	-4.39	
750	-0.46	-4.01	
760	-0.30	-3.92	
770	-0.28	-3.85	
780	0.25	-3.50	
790	0.33	-3.49	
800	0.50	-3.36	
810	0.38	-3.60	
820	-0.34	-4.06	
830	-0.39	-4.21	
840	-0.49	-4.48	
850	-1.04	-4.62	
860	-1.02	-4.70	
870	-1.43	-4.74	
880	-1.65	-5.04	
890	-1.74	-5.44	
900	-1.85	-5.66	
910	-1.82	-5.78	
920	-2.01	-6.22	
930	-2.23	-6.61	
940	-2.26	-6.71	
950	-2.27	-6.50	
960	-1.87	-6.50	
1700	0.28	-5.16	
1720	0.05	-5.33	
1740	-0.05	-5.24	
1760	0.07	-5.01	
1780	0.01	-4.86	
1800	-0.01	-4.52	
1820	-0.43	-4.29	
1840	-0.84	-4.34	
1860	-1.14	-4.78	
1880	-1.64	-5.17	
1900	-1.55	-4.92	
1920	-1.29	-4.55	

1940	-1.28	-4.37	
1960	-1.56	-4.44	
1980	-1.37	-4.35	
2000	-1.29	-4.12	
2020	-1.11	-4.13	
2040	-0.26	-4.23	
2060	0.33	-4.46	
2080	0.42	-4.55	
2100	0.15	-4.57	
2120	0.34	-4.57	
2140	0.71	-4.64	
2160	1.02	-4.52	
2180	1.44	-4.12	
2200	1.51	-3.90	
2220	1.25	-3.98	
2240	0.32	-4.20	
2260	0.12	-4.19	
2280	0.12	-4.16	
2300	-0.28	-4.49	
2320	-0.85	-4.79	
2340	-1.45	-4.92	
2360	-1.49	-4.78	
2380	-1.45	-4.93	
2400	-1.16	-4.81	
2420	-1.01	-4.66	
2440	-0.90	-4.47	
2460	-1.01	-4.61	
2480	-1.00	-4.48	
2500	-1.22	-4.67	
2520	-0.85	-4.33	
2540	-0.77	-4.07	
2560	-1.21	-4.30	
2580	-1.30	-4.45	
2600	-1.41	-4.92	
2620	-1.08	-5.05	

2640	-1.01	-5.29	
2660	-0.97	-5.30	
2680	-0.70	-5.02	
2700	-0.52	-4.76	

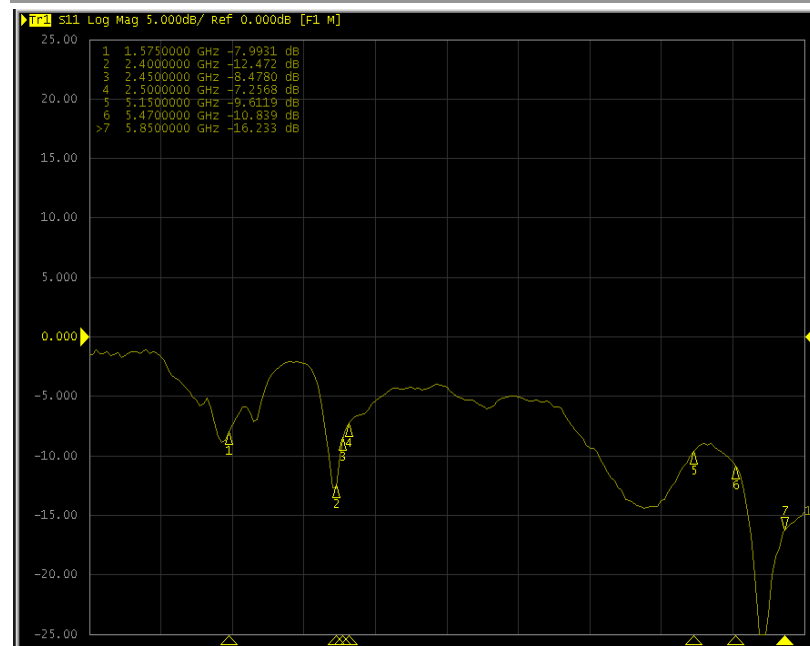


Matching Circuit、Switch Logic Schematic(CAD and Tag Number Diagram)



Element	Matching

S Parameter (Return Loss, Smith)



Passive Performance (Efficiency, Gain)

frequency (MHz)	Efficiency (dB)	Gain (dB)	Efficiency (%)
1520	-4.59	-1.69	39.90
1525	-4.54	-1.56	40.36
1530	-4.48	-1.44	40.93
1535	-4.46	-1.20	41.11
1540	-4.44	-1.01	41.30
1545	-4.47	-1.00	41.02
1550	-4.54	-0.97	40.36
1555	-4.63	-0.87	39.54
1560	-4.73	-0.91	38.64
1565	-4.84	-1.00	37.67
1570	-4.95	-1.04	36.73
1575	-5.11	-1.22	35.40
1580	-5.25	-1.35	34.28

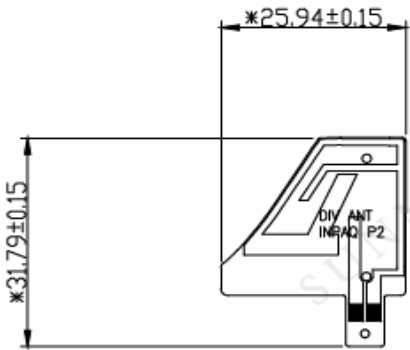
1585	-5.35	-1.47	33.50
1590	-5.47	-1.61	32.58
1595	-5.63	-1.74	31.41
1600	-5.80	-1.90	30.20
1605	-6.00	-2.09	28.84
1610	-6.13	-2.25	27.99
1615	-6.29	-2.42	26.98
1620	-6.42	-2.51	26.18
1625	-6.50	-2.61	25.70
1630	-6.71	-2.88	24.49
1635	-6.87	-3.18	23.60
1640	-7.00	-3.19	22.91
1645	-7.14	-3.22	22.18
1650	-7.21	-3.15	21.83
2300	-6.29	0.38	23.48
2310	-5.94	0.72	25.47
2320	-5.60	0.87	27.51
2330	-5.29	1.04	29.58
2340	-4.94	1.21	32.08
2350	-4.59	1.28	34.73
2360	-4.24	1.47	37.69
2370	-4.01	1.67	39.72
2380	-4.03	1.77	39.53
2390	-4.00	1.86	39.81
2400	-3.96	2.02	40.14
2410	-3.97	2.19	40.08
2420	-4.03	2.21	39.54
2430	-4.25	2.20	37.57
2440	-4.48	2.14	35.69
2450	-4.70	2.00	33.92
2460	-4.97	1.81	31.87
2470	-5.09	1.90	31.01
2480	-5.20	1.88	30.17
2490	-5.39	1.65	28.89
2500	-5.27	1.85	29.70

2510	-5.13	2.10	30.70
2520	-5.13	2.04	30.70
2530	-5.13	2.05	30.73
2540	-5.02	2.19	31.48
2550	-4.94	2.08	32.08
2560	-5.12	1.87	30.76
2570	-5.25	1.77	29.85
2580	-4.98	1.84	31.75
2590	-5.07	1.51	31.09
2600	-5.21	1.29	30.14
5000	-5.23	2.15	29.98
5020	-5.46	1.92	28.45
5040	-5.44	1.88	28.56
5060	-5.35	1.97	29.14
5080	-5.74	1.60	26.67
5100	-5.51	1.86	28.13
5120	-5.53	1.76	27.96
5140	-5.25	2.06	29.88
5160	-5.12	2.09	30.76
5180	-5.33	1.93	29.33
5200	-5.69	1.57	26.96
5220	-5.33	1.99	29.33
5240	-5.20	2.19	30.21
5260	-4.74	2.56	33.61
5280	-4.69	2.60	33.99
5300	-4.85	2.36	32.74
5320	-4.80	2.18	33.14
5340	-4.85	1.72	32.70
5360	-5.13	0.96	30.68
5380	-5.08	0.78	31.07
5400	-5.70	0.05	26.89
5420	-5.79	-0.15	26.37
5440	-5.47	0.04	28.38
5460	-5.84	-0.25	26.08
5480	-5.35	0.24	29.16

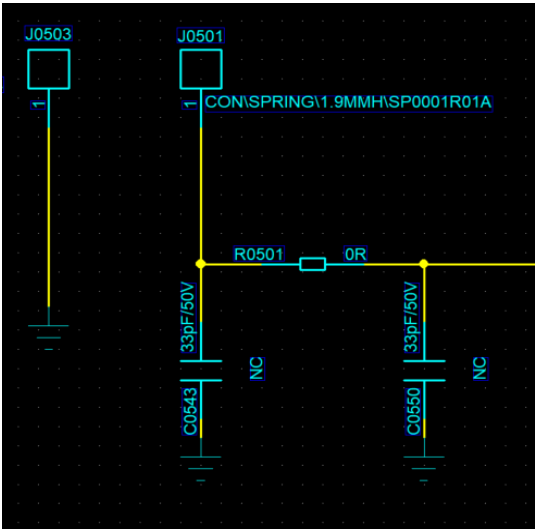
5500	-5.64	0.06	27.27
5520	-5.42	0.68	28.71
5540	-5.11	0.89	30.83
5560	-5.29	1.06	29.56
5580	-5.29	1.02	29.60
5600	-5.61	0.63	27.48
5620	-5.71	0.29	26.85
5640	-5.12	0.79	30.75
5660	-5.21	0.46	30.16
5680	-4.67	1.00	34.11
5700	-4.84	1.10	32.81
5720	-5.48	0.75	28.28
5740	-4.85	1.61	32.73
5760	-4.96	1.73	31.89
5780	-5.45	1.35	28.50
5800	-5.39	1.81	28.88
5820	-5.99	1.42	25.17
5840	-5.29	2.34	29.55
5860	-5.55	2.29	27.89
5880	-5.40	2.67	28.85
5900	-5.39	2.92	28.90
5920	-5.40	3.09	28.83
5940	-5.25	3.30	29.88
5960	-5.49	2.87	28.23
5980	-5.28	3.02	29.63
6000	-5.49	2.61	28.22

Div Antenna

Fixture Picture

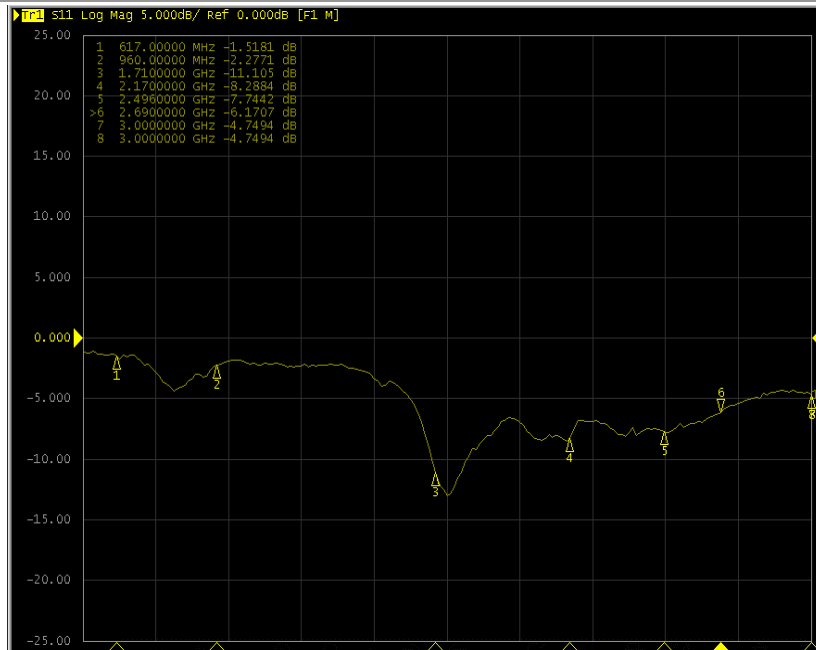


Matching Circuit, Switch Logic Schematic(CAD and Tag Number Diagram)



Element	Matching

S Parameter (Return Loss, Smith)



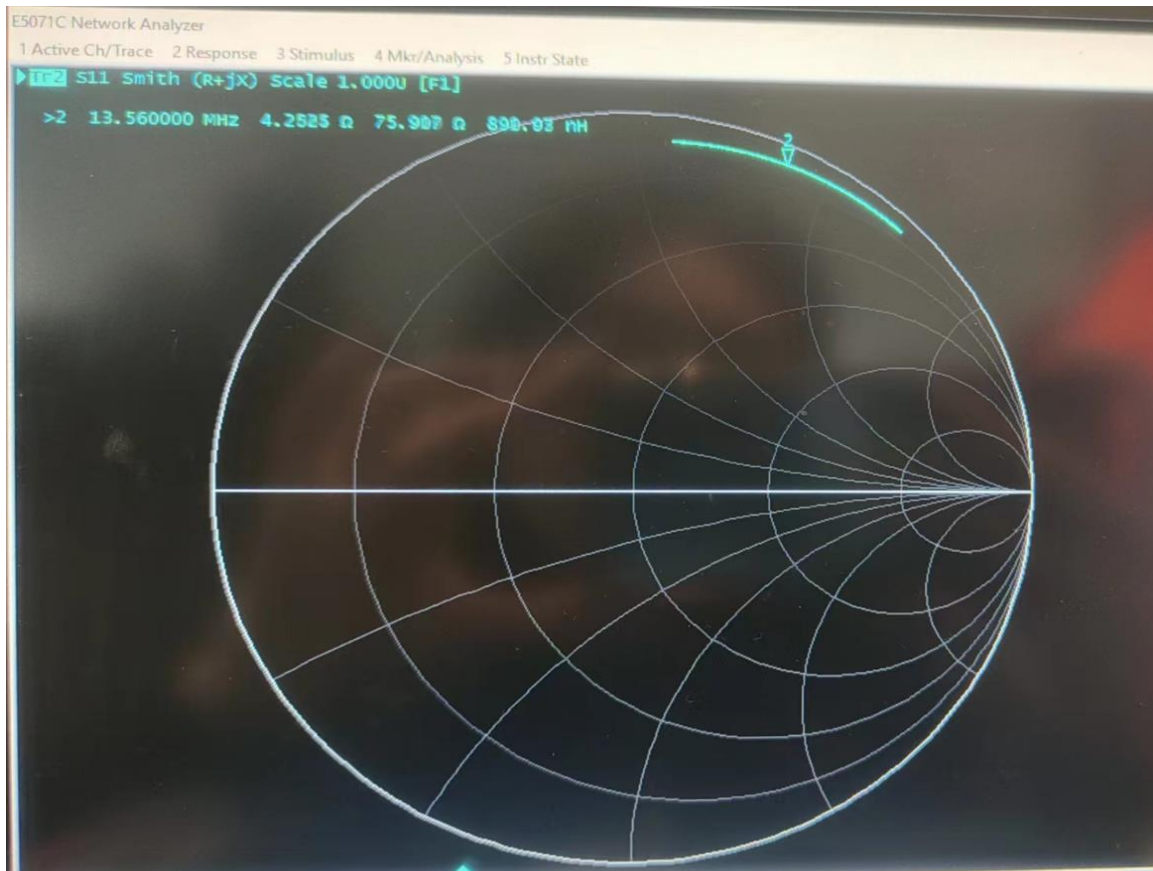
Passive Performance (Efficiency, Gain)

frequency (MHz)	Gain(dB)	Efficiency(dB)	Efficiency(%)
617	-11.39	-14.80	3.31
663	-9.67	-12.97	5.04
704	-7.86	-11.47	7.13
729	-7.65	-11.31	7.40
746	-6.91	-10.81	8.30
751	-6.46	-10.32	9.29
756	-6.06	-9.78	10.53
777	-5.36	-8.61	13.76
791	-5.69	-8.77	13.26
806	-5.53	-8.57	13.89
815	-5.10	-8.35	14.61
821	-4.89	-8.51	14.08
824	-4.86	-8.47	14.23
832	-4.59	-8.22	15.07

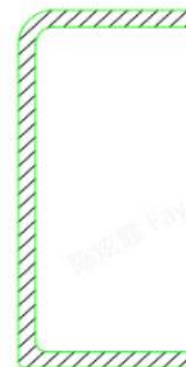
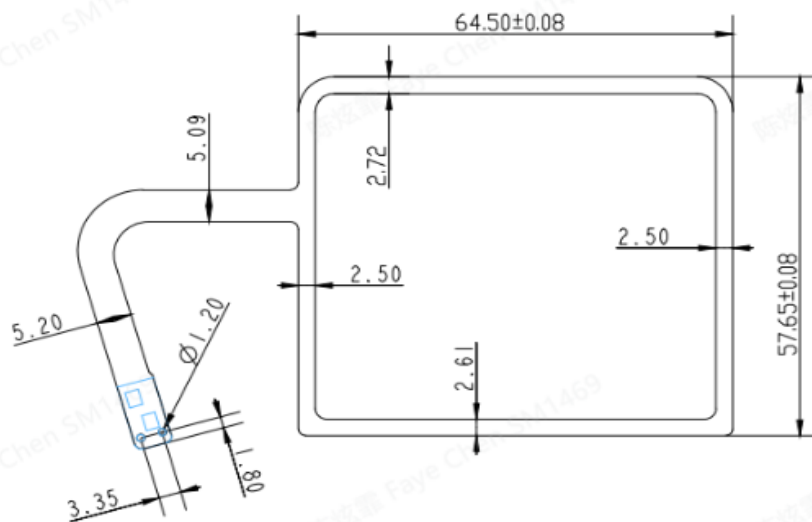
836	-4.38	-8.22	15.06
847	-3.81	-8.08	15.56
849	-3.79	-7.98	15.93
862	-4.23	-7.72	16.89
869	-4.68	-7.80	16.59
880	-5.14	-8.40	14.46
881	-5.17	-8.48	14.20
894	-6.58	-10.31	9.31
897	-7.00	-10.79	8.33
915	-6.08	-8.77	13.26
925	-6.29	-9.05	12.45
942	-7.29	-10.32	9.29
960	-8.10	-11.28	7.45
1805	-0.57	-4.73	33.62
1880	-0.70	-4.90	32.35
1920	-0.95	-5.04	31.37
1980	-2.84	-6.06	24.75
2155	0.17	-4.83	32.91
2170	-0.26	-5.23	29.99
2200	-1.68	-5.71	26.87
2300	1.29	-4.62	34.55
2350	1.07	-4.31	37.10
2400	1.03	-4.32	37.01
2500	0.08	-5.20	30.19
2535	0.65	-5.05	31.26
2570	0.71	-5.39	28.88
2593	0.83	-5.45	28.51
2595	0.82	-5.50	28.16
2620	0.85	-5.48	28.32
2655	0.65	-5.47	28.36
2690	0.40	-5.62	27.43

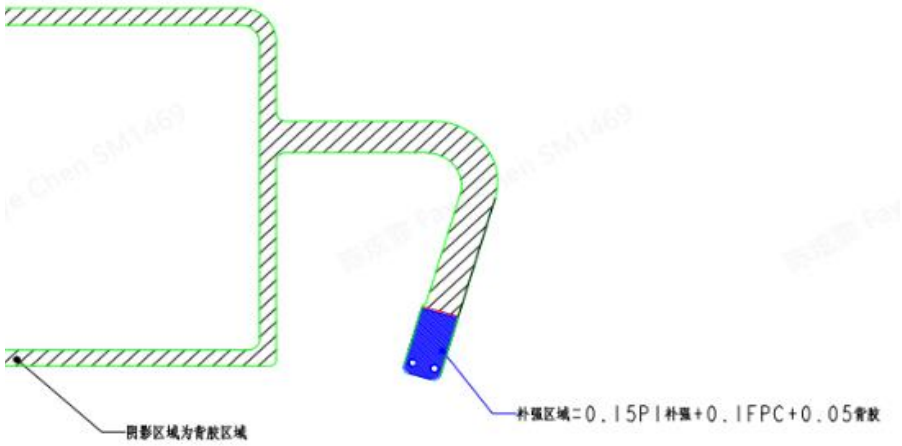
NFC Antenna

NFC Antenna Reader Mode Load Impedance

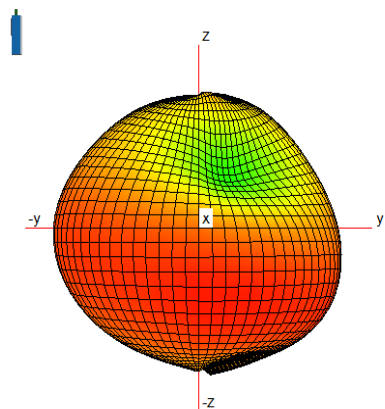


NFC Antenna Specifications

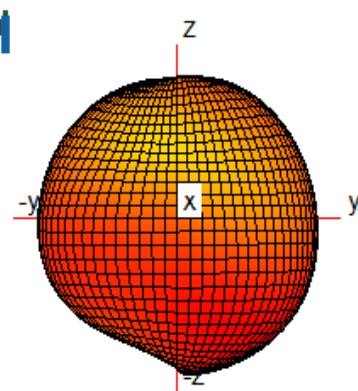




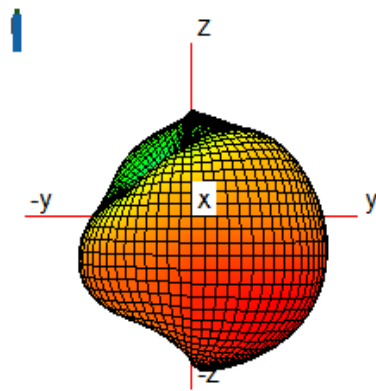
MAIN ANT 3D Pattern



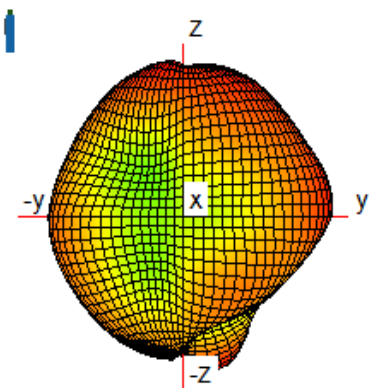
617MHz



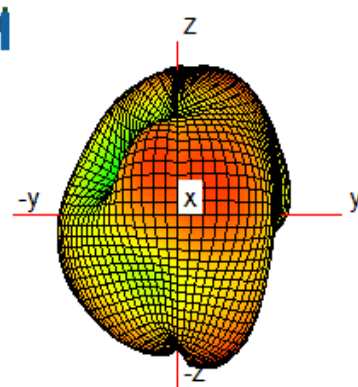
824MHz



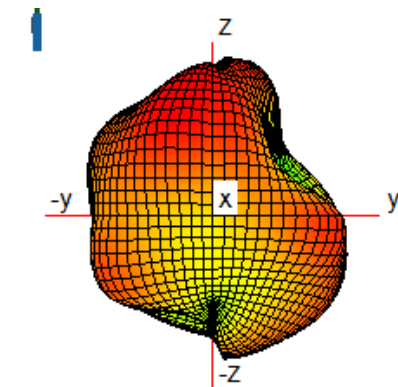
960MHz



1710MHz

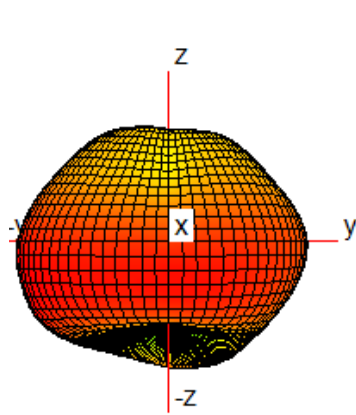


2170MHz

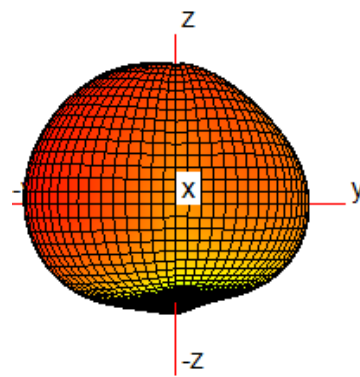


2690MHz

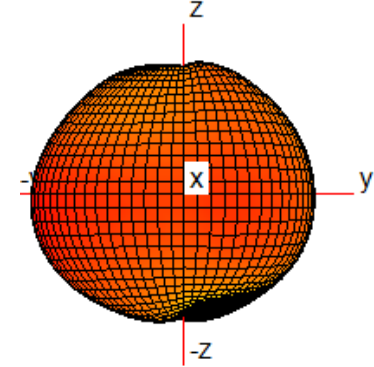
DIVERSITY ANT 3D Pattern



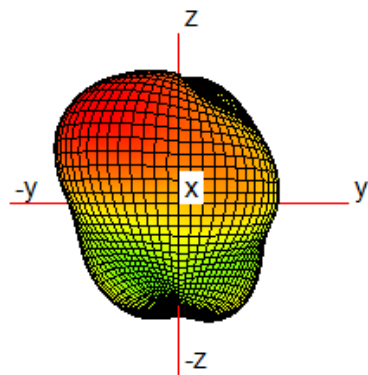
617MHz



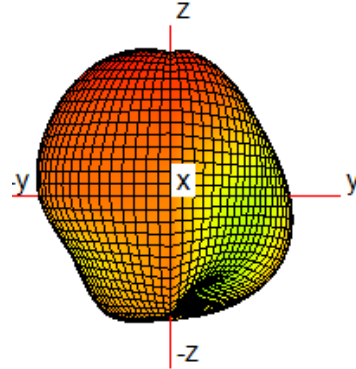
824MHz



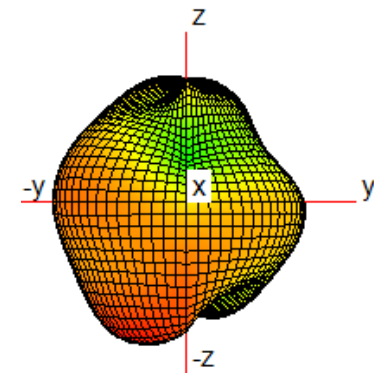
960MHz



1710MHz

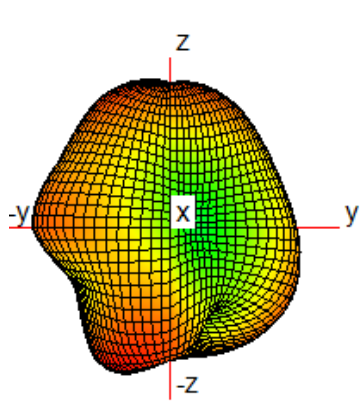


2170MHz

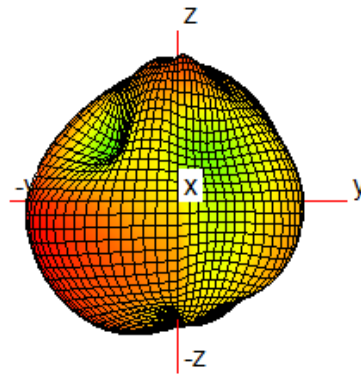


2690MHz

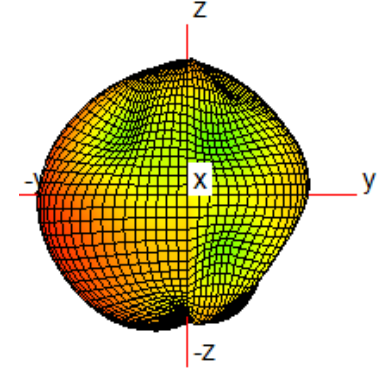
WIFI ANT 3D Pattern



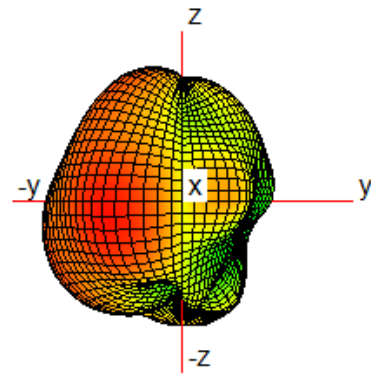
1575MHz



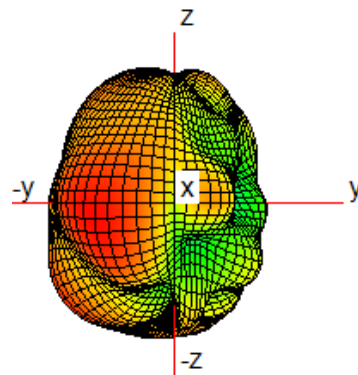
2400MHz



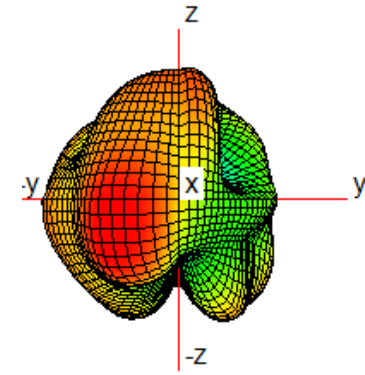
2500MHz



5150MHz



5470MHz



5850MHz