
4IN 1 Antenna P/N:GL059
698MHz-5.8G Covered GSM/3G/LTE/WiFi 2.4G/WiFi 5.8G/5G



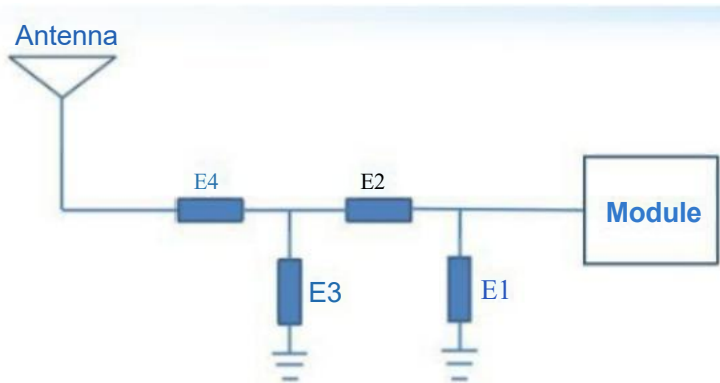
二、测试环境

2.1. 天线测试环境

无

三、天线匹配

3.1. 天线



E1	E2	E3	E4
NC	0Ω	NC	0Ω

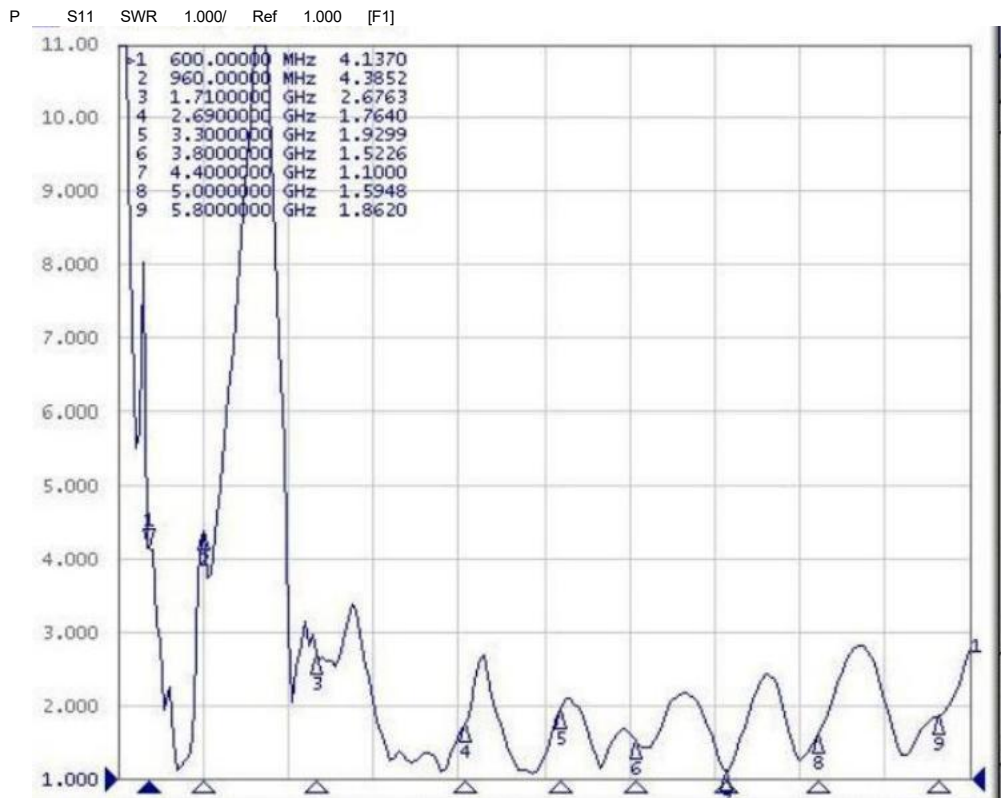
*:我司未对原有天线前端匹配做更改。

四、 电气性能报告

4.1 驻波比图

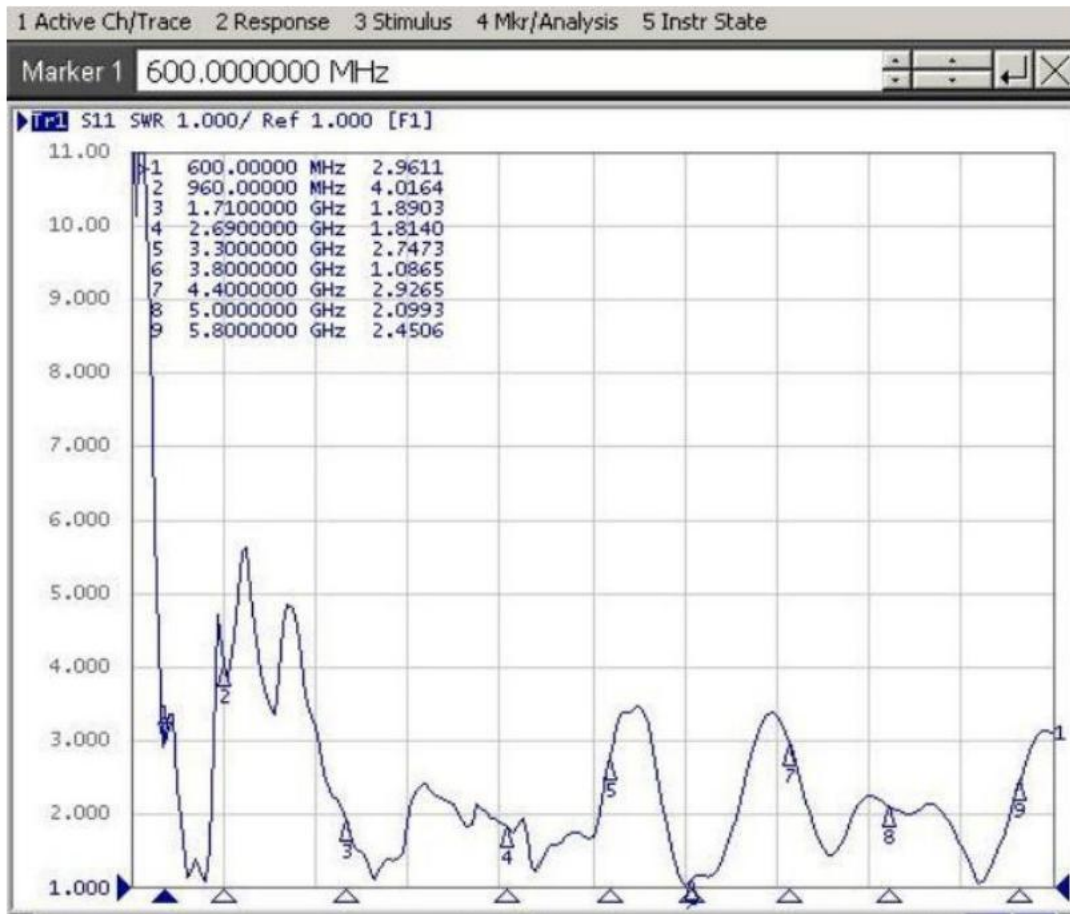
Ant1

1 Active Ch/Trace 2Response 3 Stimulus 4 Mkr/Analysis 5Instr State



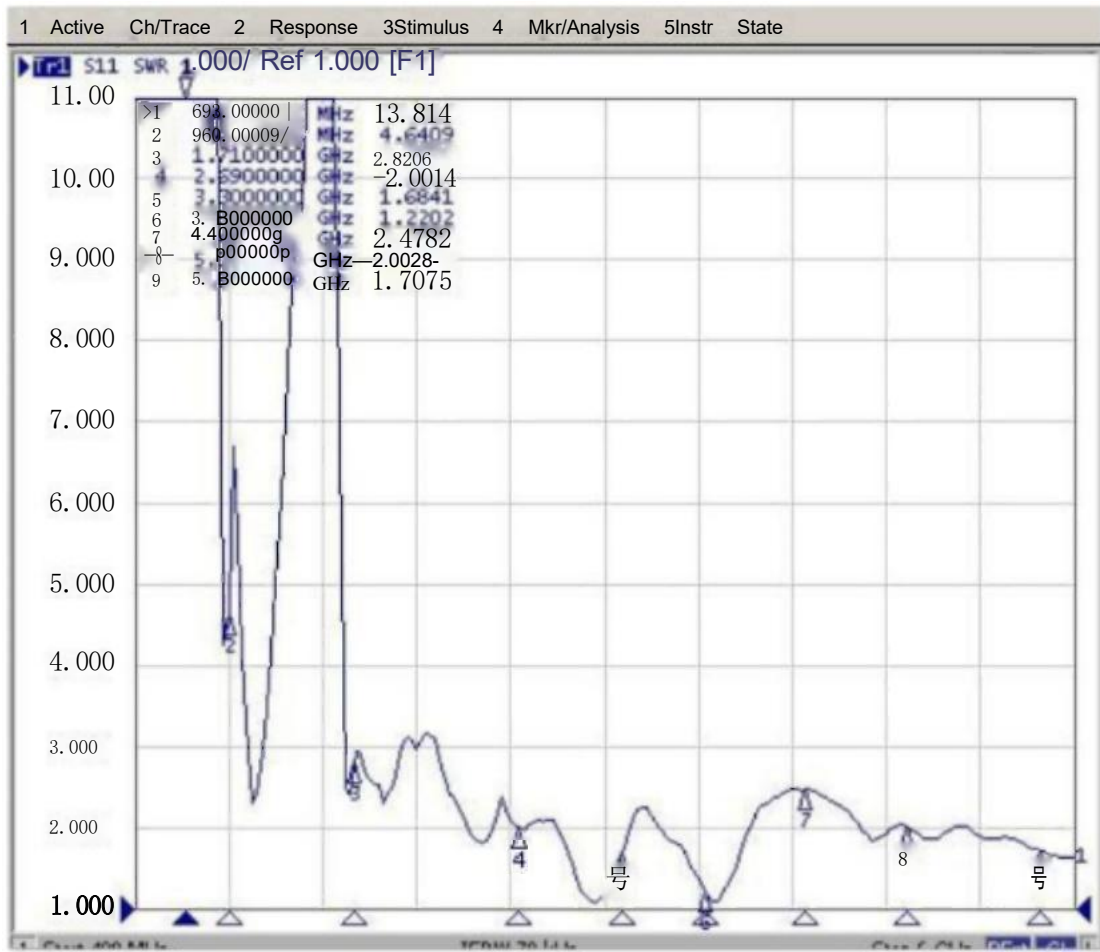
Frequency (MHz)	600	960	1710	2690	3300	3800	4400	5000	5800
VSWR	4.14	4.39	2.68	1.76	1.93	1.52	1.10	1.59	1.86

Ant2



Frequency (MHz)	600	960	1710	2690	3300	3800	4400	5000	5800
VSWR	2.96	4.02	1.89	1.81	2.75	1.09	2.93	2.10	2.45

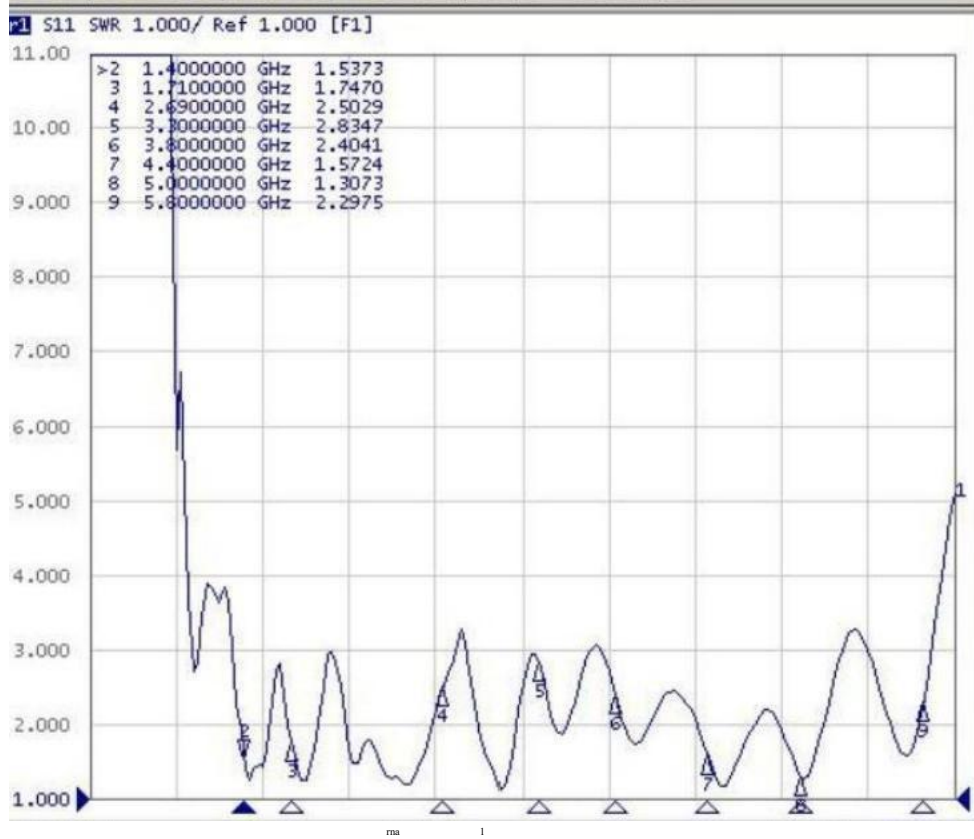
Ant 3



Frequency (MHz)	698	960	1710	2690	3300	3800	4400	5000	5800
VSWR	13.81	4.64	2.82	2.0	1.68	1.22	2.48	2.0	1.71

Ant 4

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State



Frequency (MHz)	1400	1710	2690	3300	3800	4400	5000	5800
VSWR	1.54	1.75	2.5	2.83	2.4	1.57	1.31	2.30

4.2有源 OTA 测试数据

4G-LTE

	WCDMA:Band1 (2100)			WCDMA:Band8 (900)		
Channel	10562	10700	10838	2937	3013	3088
TRP (dBm)	18.02		17.18	17.32		16.04
TIS (dBm)	-10786		-10757	-1695		-1682
	WCDMA: BAND5 (850)					
Channel	44357	4408	4458			
TRP (dBm)	18.36		17.31			
TIS (dBm)	-1642		-954			

	FDD-LTE:Band1 (2100)			FDD-LTE:Band3 (1800)		
Channel	18050	18300	18550	19250	19575	19900
TRP (dBm)	16.16		14.4	16.04		13.9
TIS (dBm)	-96.6		-9562	-9537		-9573

FDD-LTE:Band5(850)

Channel	20450	20525	20600
TRP(dBm)	14.67		15.14
TIS(dBm)	-88.59		-90.4

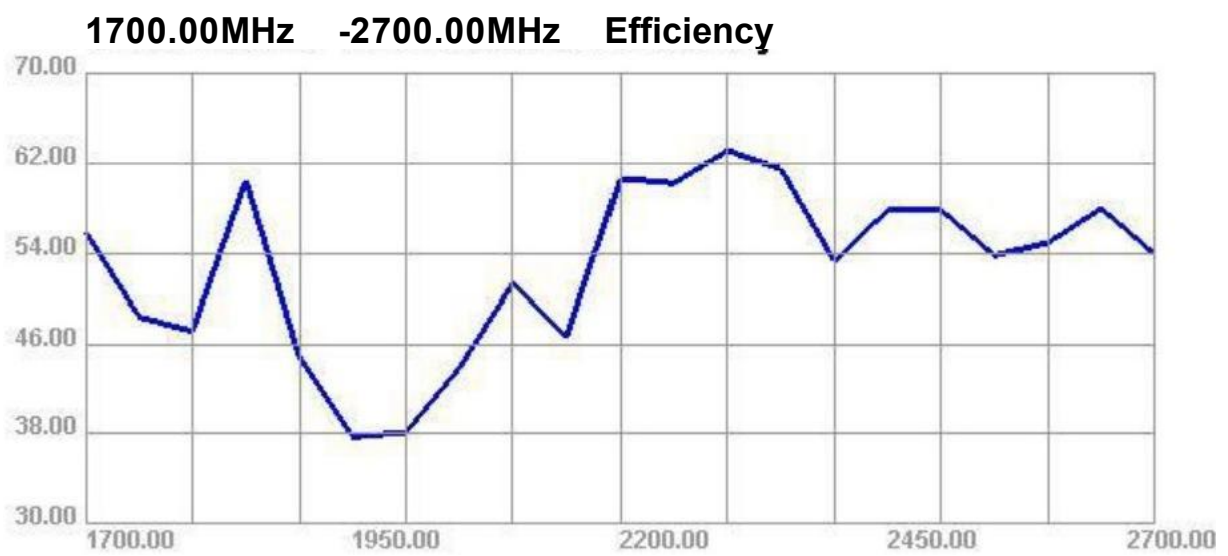
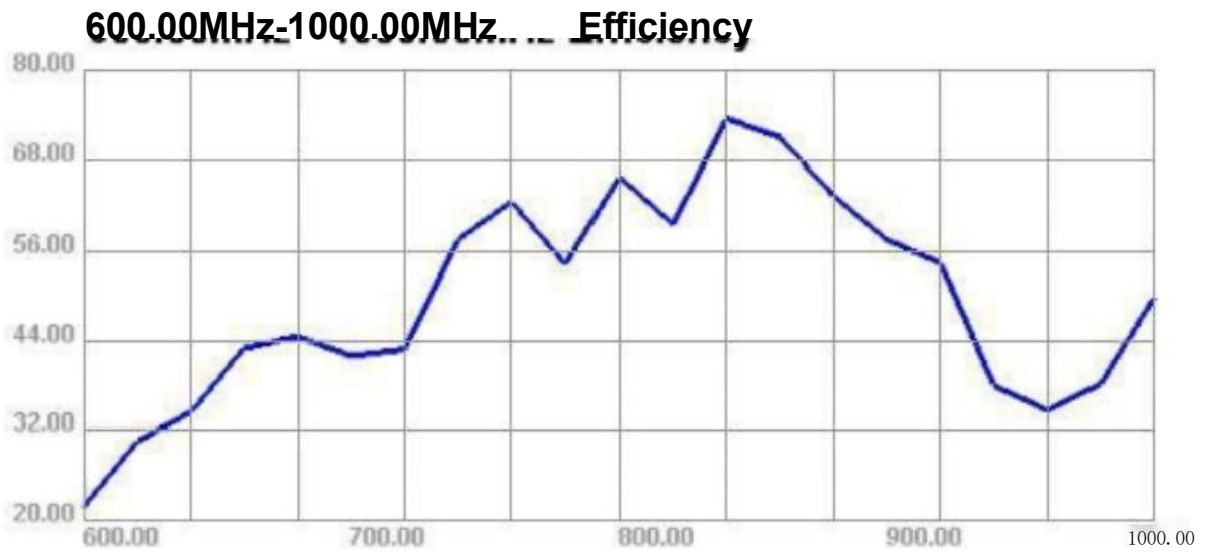
	FDD-LTE:Band7 (2700)			FDD-LTE:Band8 (900)		
Channel	20850	21100	21350	19250	19575	19900
TRP (dBm)	16.39		17.18	15.47		16.54
TIS (dBm)	-93.91		-95	-89.49		-90.87

	TDD-LTE:Band38 (2600)			TDD-LTE:Band39 (1900)		
Channel	37850	38000	38150	38350	38450	38550
T' RP (dBm)	16.05		15.53	17.23		16.33
TIS (dBm)	-87.89		-87.94	-91.44		-91.07
	TDD-LTE:Band40 (2300)			TDD-LTE:Band41 (2500)		
Channel	38750	39150	39550	39750	40620	41490
TRP (dBm)	15.12		13.74	17.17		17.05
TIS (dBm)	-93.25		-88.72	-87.1		-87.49

	-80.1			-80.77		TIS (dBm)
15.72		15.10	17.66		16.88	TRP (dBm)
730000	7139990	696668	650000	636666	623334	Channel
5G:n79			5G:n78			
	-81.66			-82.39		TIS (dBm)
9.04		18.94	17.5		17.72	TRP (dBm)
676666	650000	623334	528000	518598	509202	Channel
5G:n77			5G:n41			

4.3 效率

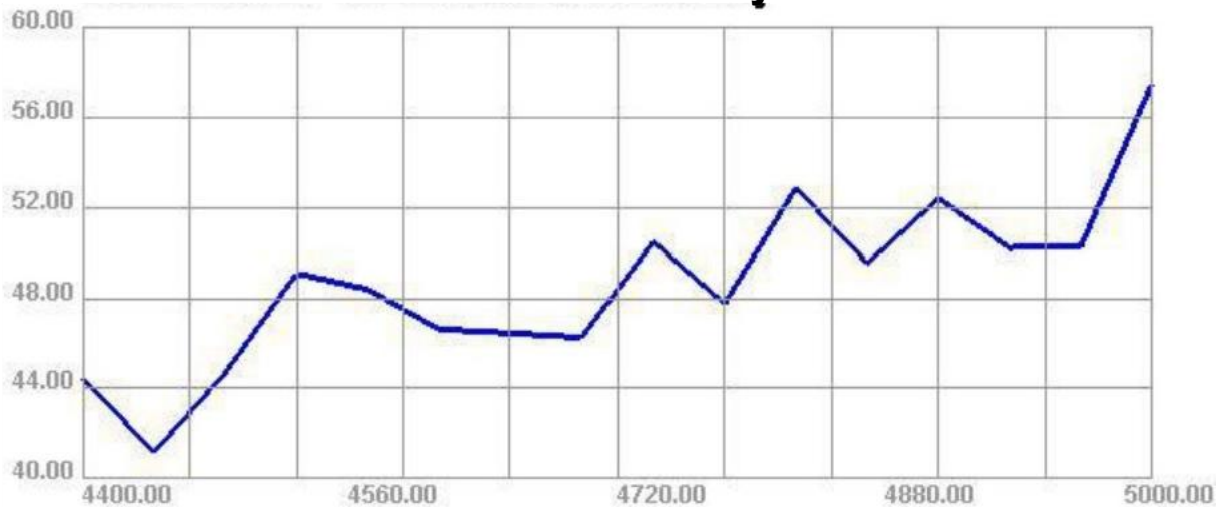
Ant 1



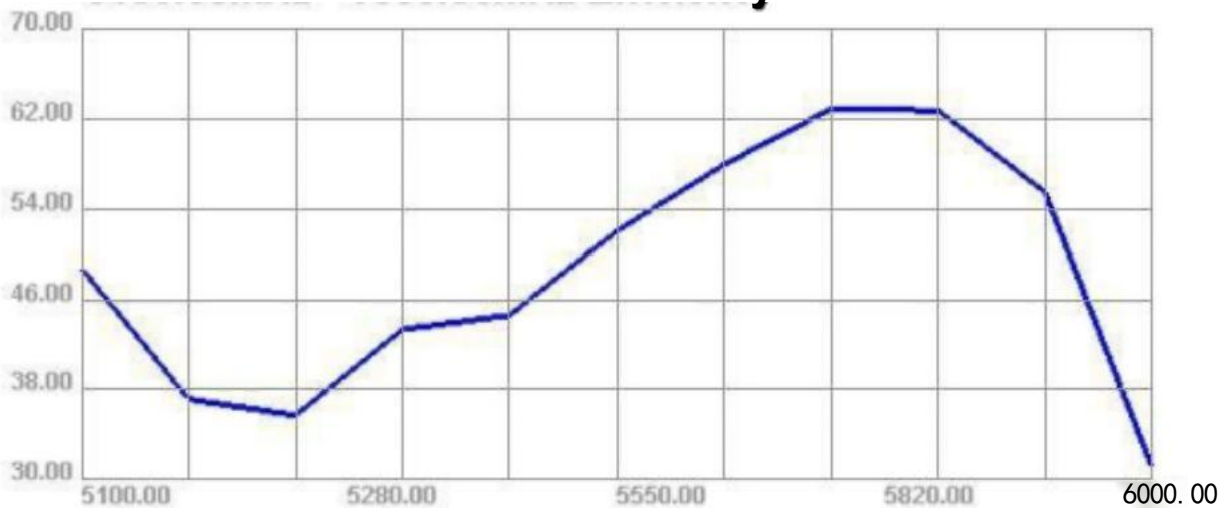
3300.00MHz - 4200.00MHz Efficiency



4400.00MHz - 5000.00MHz Efficiency

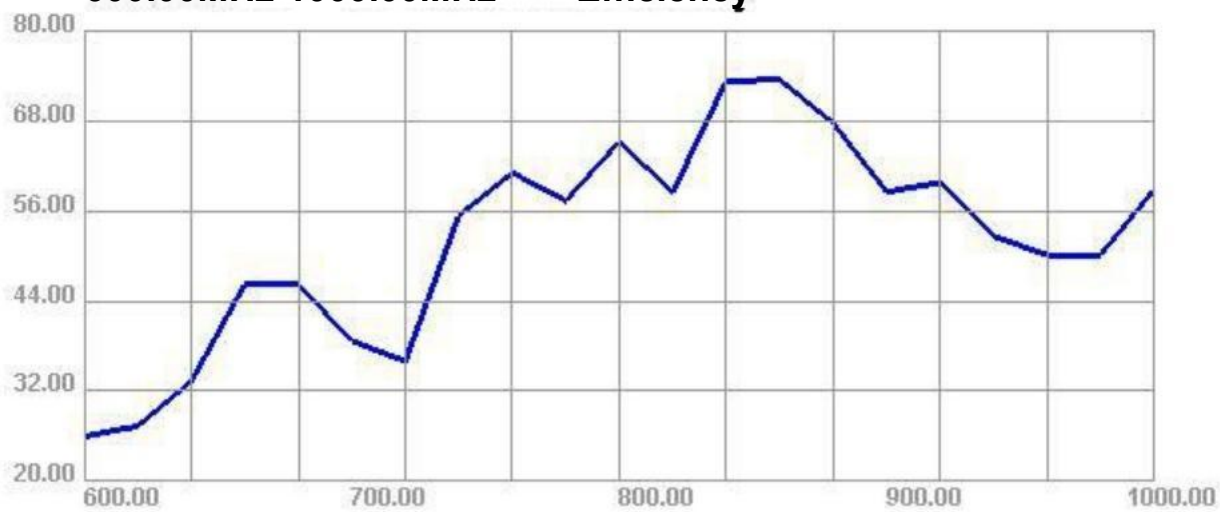


5100.00MHz - 6000.00MHz Efficiency

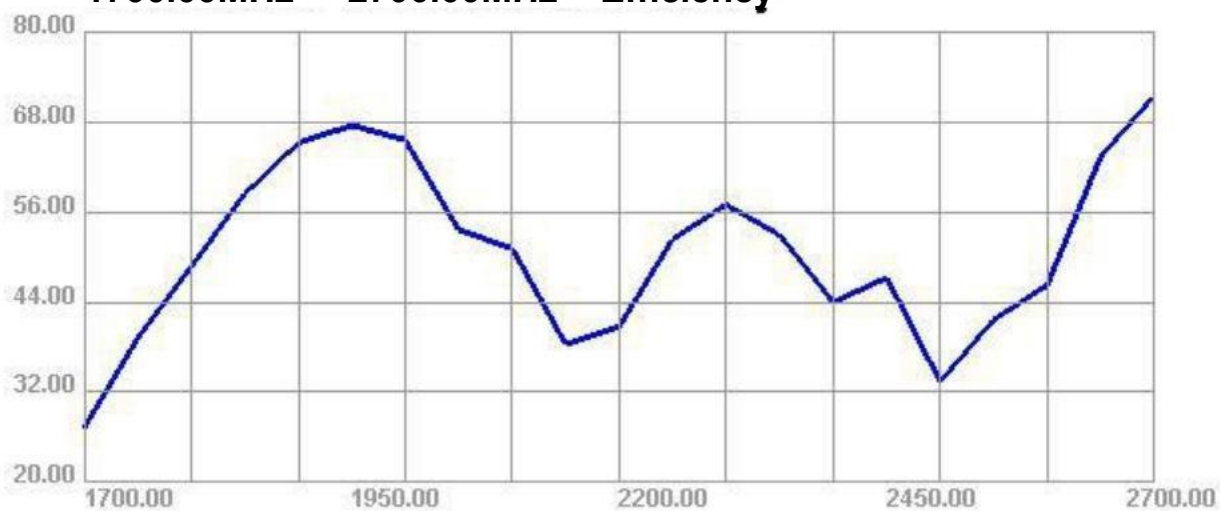


Ant 2

600.00MHz-1000.00MHz Efficiency



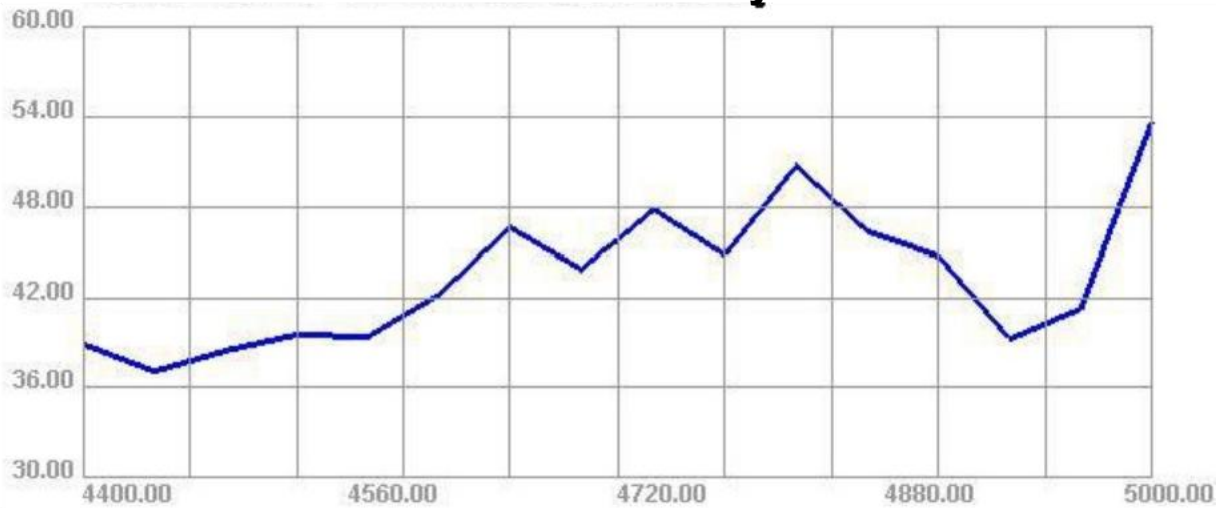
1700.00MHz -2700.00MHz Efficiency



3300.00MHz -4200.00MHz Efficiency



4400.00MHz -5000.00MHz Efficiency

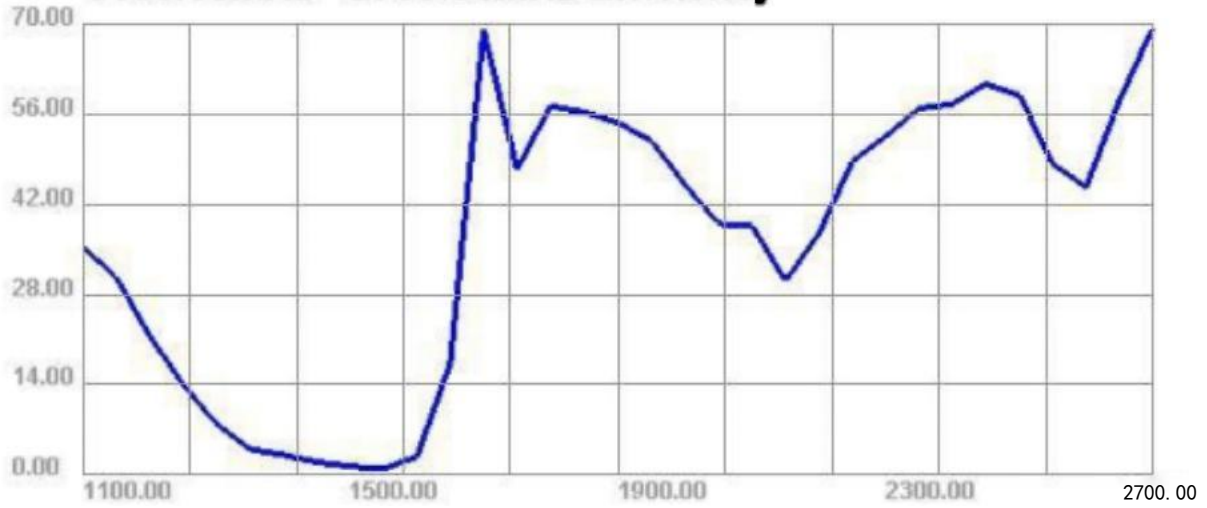


5100.00MHz -6000.00MHz Efficiency



Ant 3

1100.00MHz -2700.00MHz Efficiency



3300.00MHz-4200.00MHz Efficiency



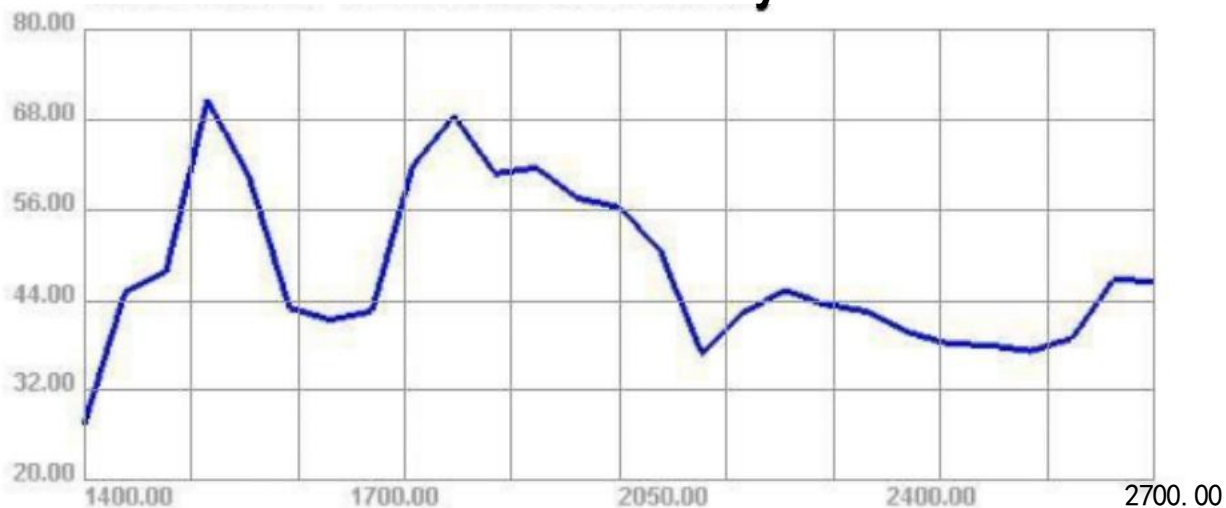
4400.00MHz-5000.00MHz

Efficiency



Ant 4

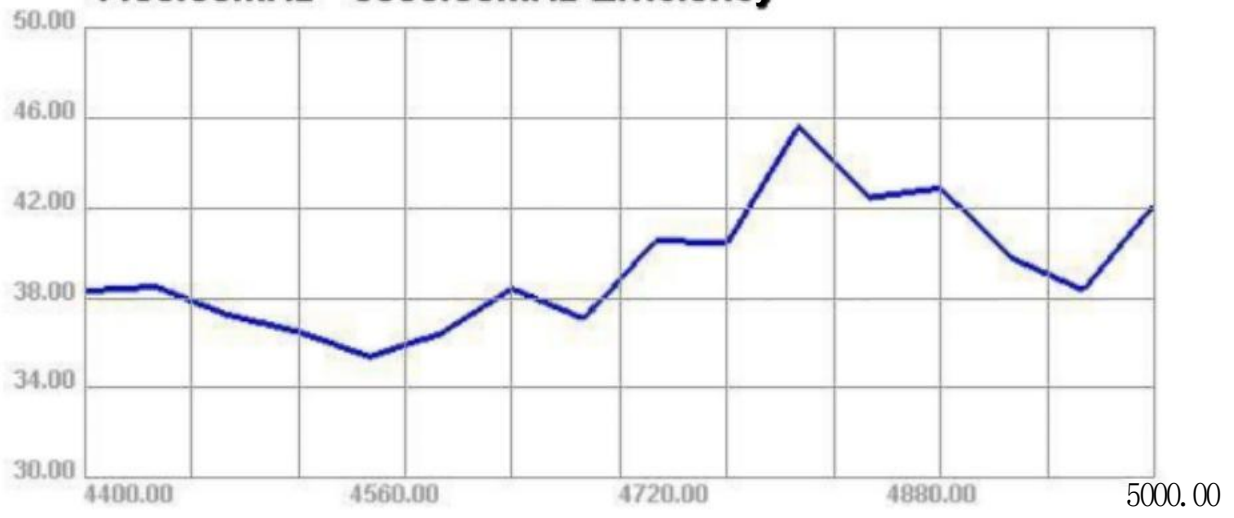
1400.00MHz -2700.00MHz Efficiency



3300.00MHz-4200.00MHz Efficiency



4400.00MHz-5000.00MHz Efficiency

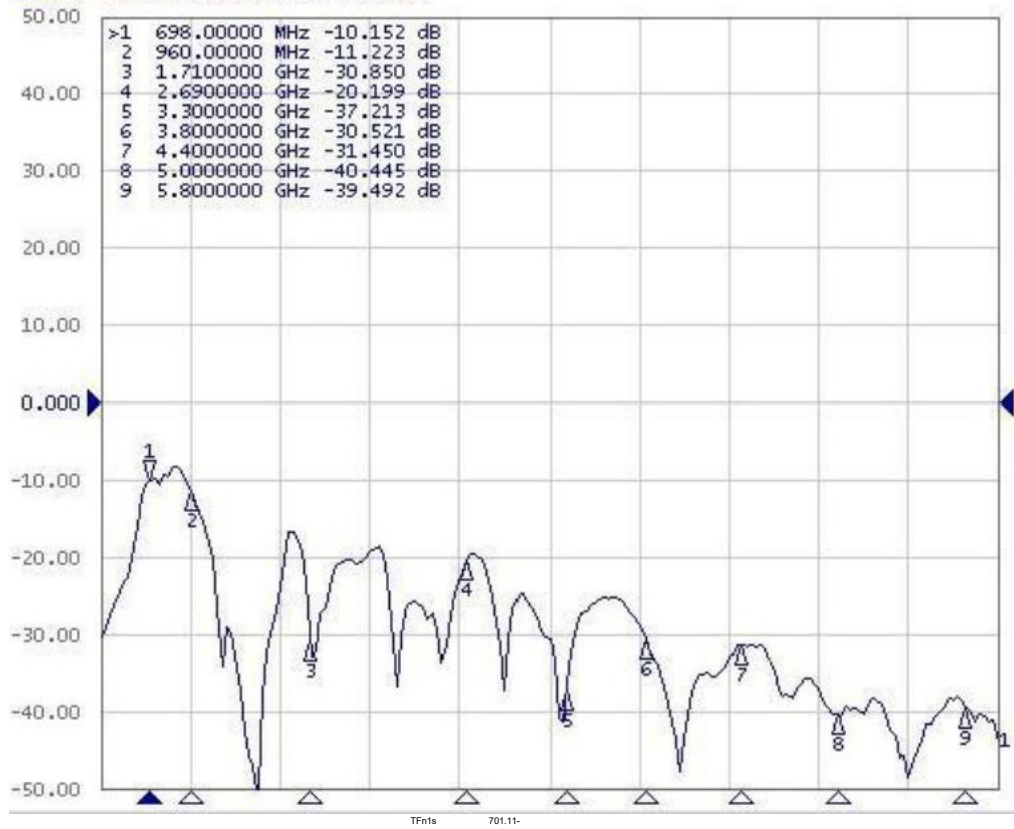


4.4 Isolation

Ant1-Ant2

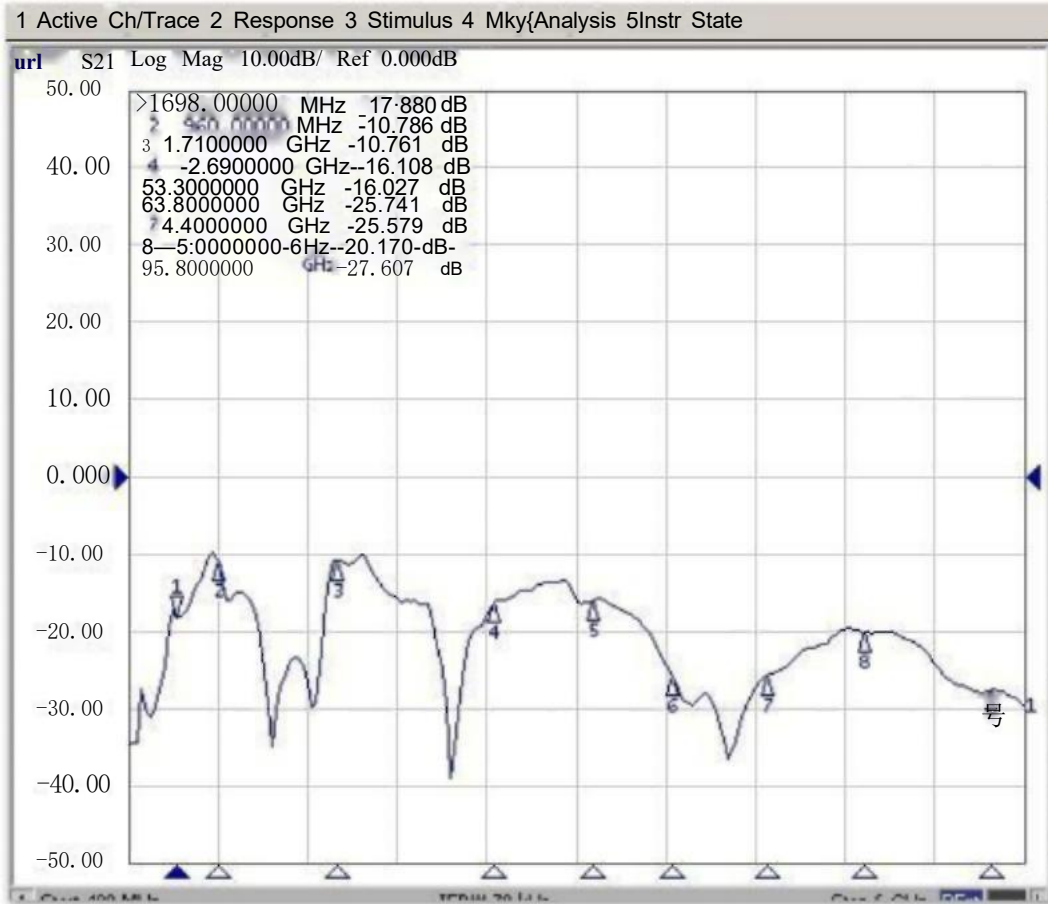
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State

\Trl_S21 Log_Mag 10.00dB/ Ref 0.000dB



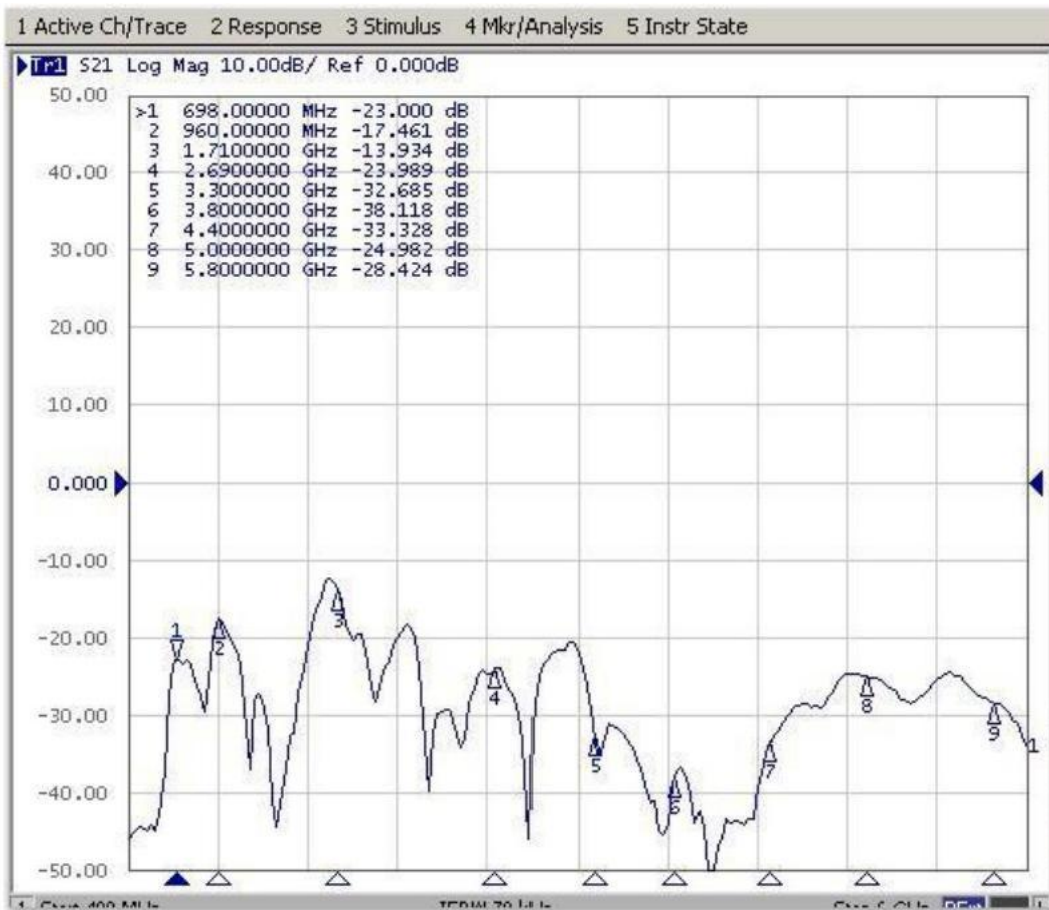
Frequency (MHz)	698	960	1710	2690	3300	3800	4400	5000	5800
RL	-10.15	-11.22	-30.85	-20.2	-37.21	-30.52	-31.45	-40.45	-39.5

Ant1-Ant3



Frequency (MHz)	698	960	1710	2690	3300	3800	4400	5000	5800
RL	-17.88	-10.79	-10.76	-16.11	-16.02	-25.74	-25.58	-20.17	-27.61

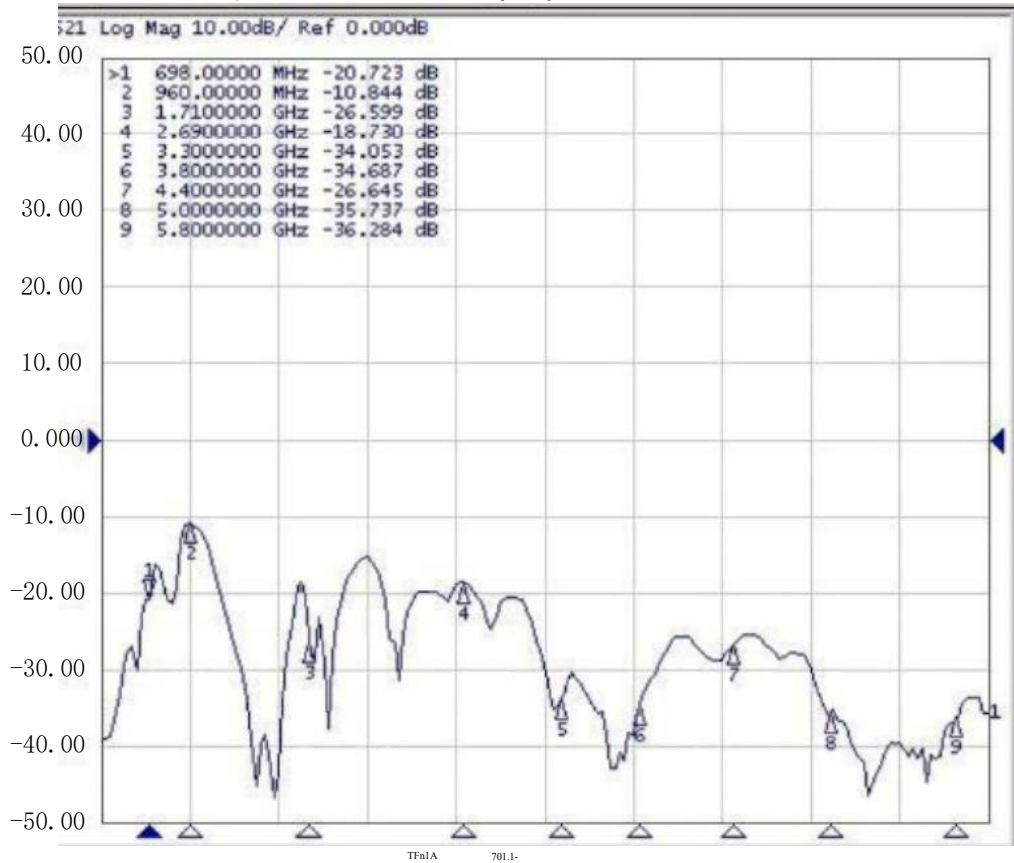
Ant1-Ant4



Frequency (MHz)	698	960	1710	2690	3300	3800	4400	5000	5800
RL	-23	-17.46	-13.93	-23.99	-32.69	-38.12	-33.33	-24.98	-28.42

Ant2-Ant3

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr{Analysis 5 Instr State

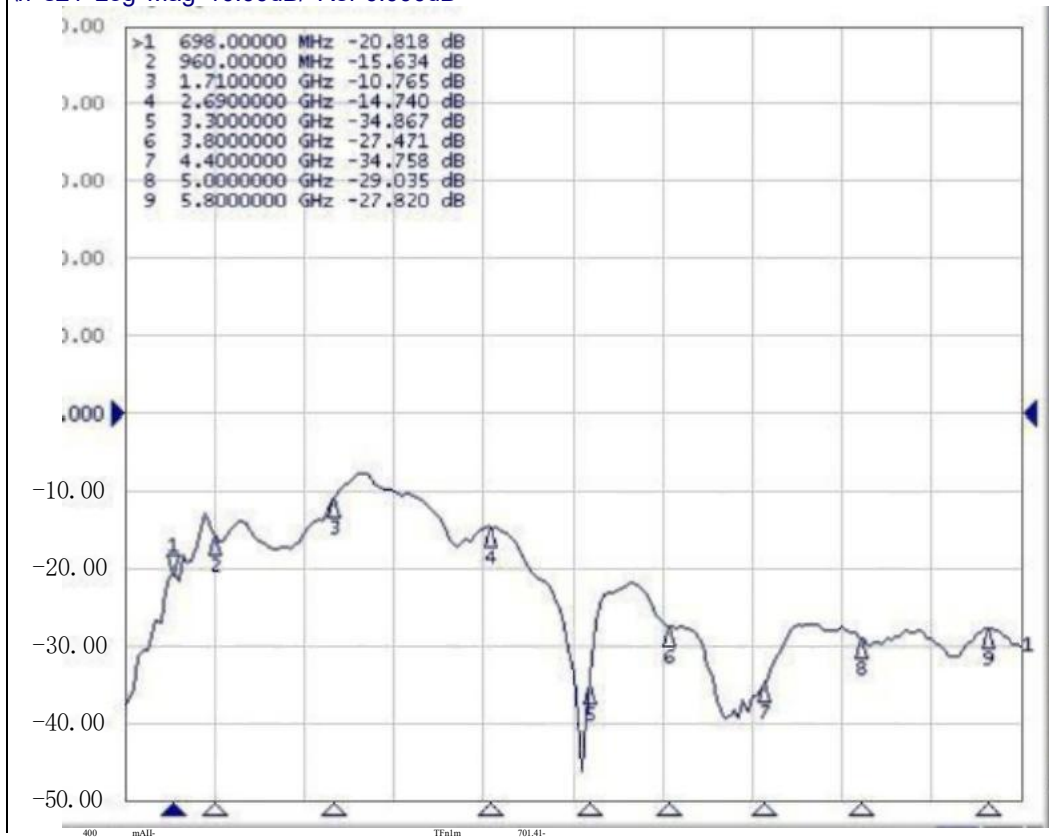


Frequency (MHz)	698	960	1710	2690	3300	3800	4400	5000	5800
RL	-20.72	-10.84	-26.6	-18.73	-34.05	-34.69	-26.65	-35.74	-36.28

Ant2-Ant4

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mky/Analysis 5 Instr State

|rl s21 Log Mag 10.00dB/ Ref 0.000dB



Frequency (MHz)	698	960	1710	2690	3300	3800	4400	5000	5800
RL	-20.82	-15.63	-10.77	-14.74	-34.87	-27.47	-34.76	-29.04	-27.82

五、可靠性测试报告

5.1. 盐雾试验报告

客 户	***	零件名称	外置天线	作成日期	202 -9
检测项目	测试要求			实测结果	评价
中性盐雾实验	实验过程：对天线上的五金件进行中性盐雾试验，在 $35^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 的密闭环境中，湿度 $> 85\%$ ，PH值在6.5-7.2范围内，用 $5\% \pm 1\%$ 的NaCl溶液，连续24h盐水喷雾后，产品表面应无锈蚀、变色、及镀层剥落。			实验结束后产品表面无锈蚀，无变色，镀层无剥落。	合格
实验：尹宜峰			批准：尹宜峰		



天线测试仪器

暗室测试环境

六. 工程图

