

Shenzhen Lxc Electronics Technology Co ., Ltd

深圳市连兴创电子科技有限公司

APPROVAL SHEET

For

深圳市易捷通科技有限公司

4G 天线 project

Antenna componentst

频率范围 Frequency range	GSM:824-960 (MHz) , 1710-2690 (MHz)
驻波比系数 VSWR	<4.0
输入阻抗 Input Impedance	50 (Ω)
极化方式 Polarization	垂直极化 Vertical Polarization
半功率波束 (3dB) HPW	180° H-plane 120° E-plane

RF by		Checked by	
ME by		Date	
Customer Confirm			

Project:4G 天线		Author:Wang	File Name: 4G 天线-APP-RA
Date: 2020-7-15			
TEST:	Language:	Check: Zhong	
A	English		
地址:深圳市龙华新区东环一路柏佳润工业区 3 栋 2 楼 电话: 0755-29195258 传真: 0755-29590286 Shenzhen Lxc Electronics Technology Co ., Ltd			

Revision History

Date	Revision	Description of Changes
2020-7-15	RA	Measured with sample.

深圳市连兴创电子科技有限公司	1
4G 天线 PROJECT	1
ANTENNA COMPONENTST	1
1 TECHNICAL SUMMARY	3
2 GENERAL DESCRIPTION	3
2.1 Components/Part revisions	3
3 MECHANICAL DESCRIPTION	3
4 ELECTRICAL PERFORMANCE	3
4.1 Set-up	3
4.1.1 VSWR	3
4.1.2 Gain & Radiation Patterns	3
4.1.3 Matching Circuit Description	3
4.2 Measurement Data	4
4.2.1 Active result (GSM)	4
6 Mechanical drawing	5
7 RELIABILITY TESTS	7
7.1 Test content	7
7.2 Test results	7
8 CONCLUSION	9

Project:4G 天线		Author:Wang	File Name: 4G 天线-APP-RA
Date: 2020-7-15			
TEST:	Language:	Check: Zhong	
A	English		
地址:深圳市龙华新区东环一路柏佳润工业区 3 栋 2 楼 电话: 0755-29195258 传真: 0755-29590286 Shenzhen Lxc Electronics Technology Co ., Ltd			

1 Technical Summary

This report summarizes the electrical results of the proposed antenna to support the 4G 天线 program. We test the antenna with the latest version handset. And it seems to be acceptable.

2 General Description

2.1 Components/Part revisions

VSWR: Voltage Standing Wave Rate.

3 Mechanical Description

4 Electrical Performance

4.1 Set-up

4.1.1 VSWR

VSWR measurements (S11) were performed using an Agilent 8753D Network Analyzer and the previously described test fixture. Coaxial chokes were used to mitigate surface currents on the outside of the cabling. The testing was performed in free space.

4.1.2 Gain & Radiation Patterns

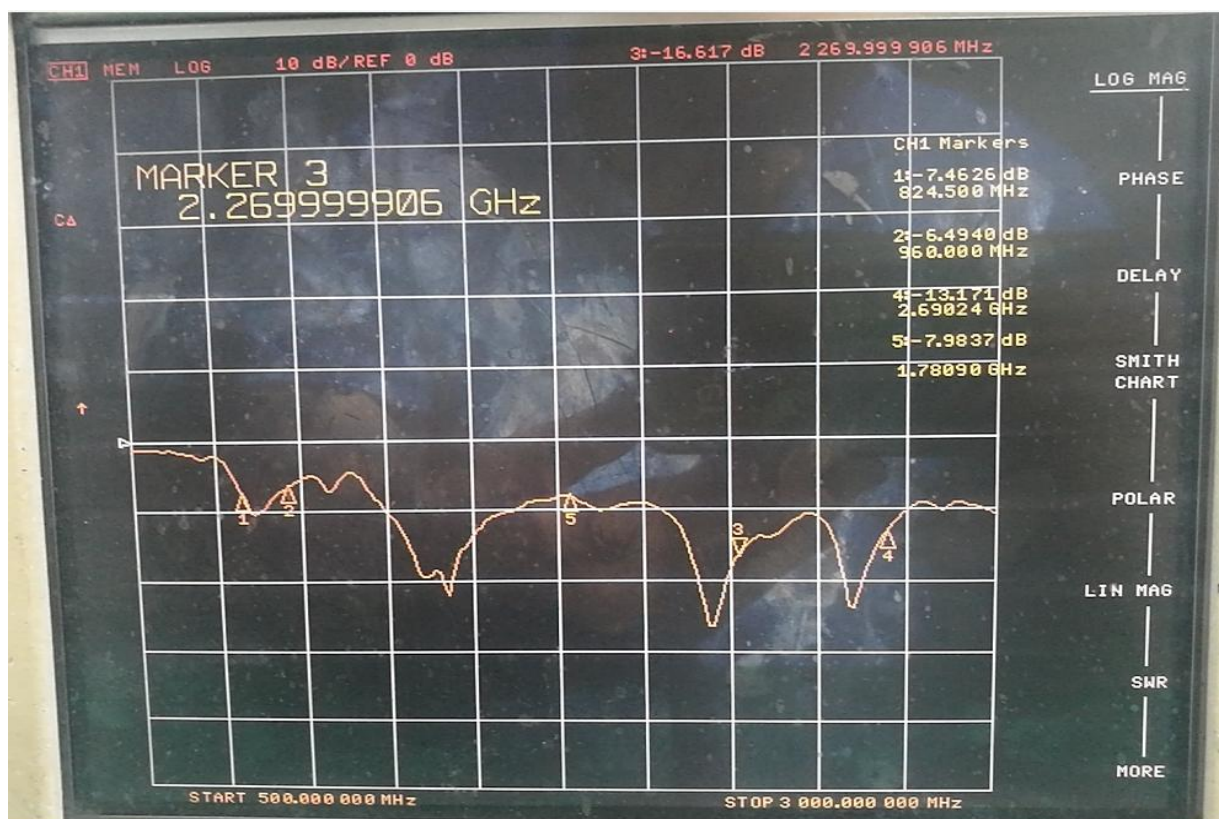
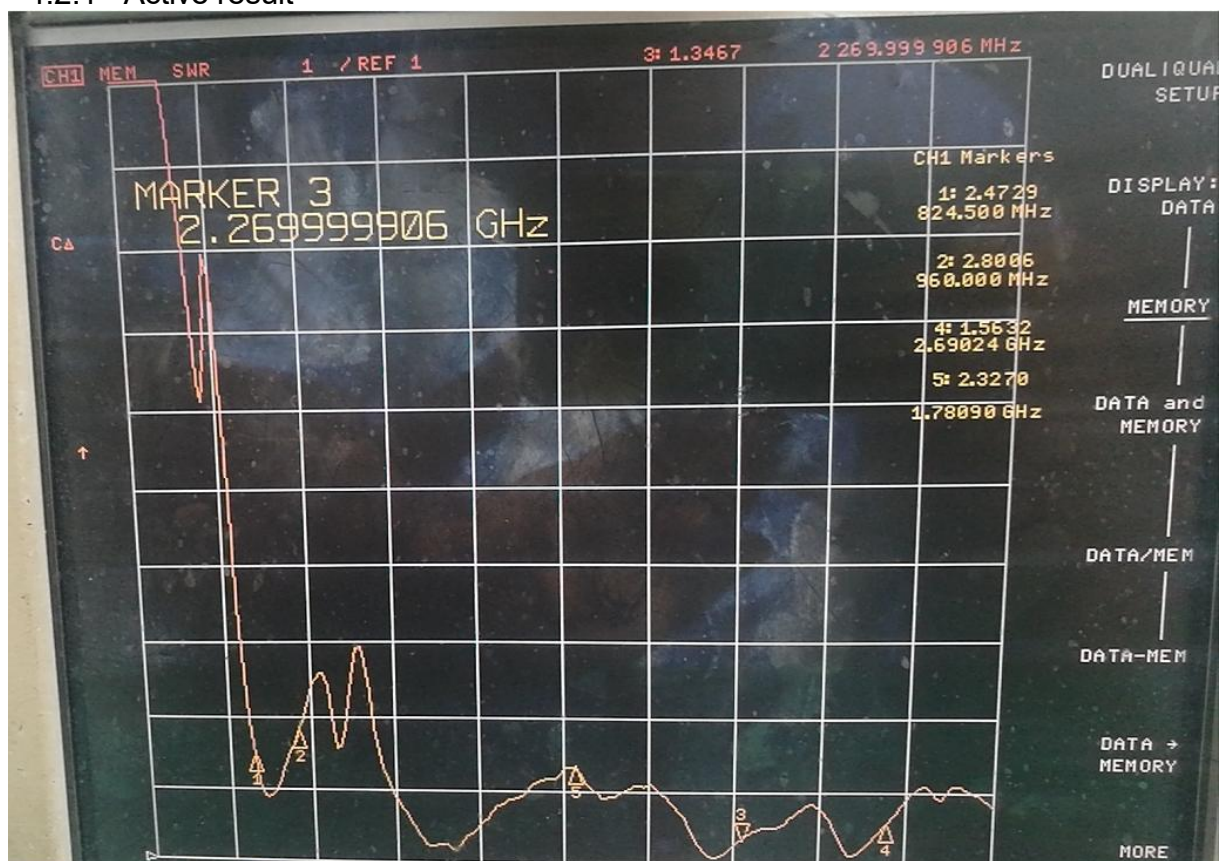
The gain of the antenna was measured in the Lxc's anechoic chamber. Coaxial chokes on the feed cable were used to mitigate surface currents. The chamber provides less than -30 dB reflectivity from 800 MHz through 3 GHz and an 18" diameter spherical quiet zone. The measurement results are calibrated using both dipole and leaky wave horn standards.

4.1.3 Matching Circuit Description

Project:4G 天线		Author:Wang	File Name: 4G 天线-APP-RA
Date: 2020-7-15			
TEST:	Language:	Check: Zhong	
A	English		
地址:深圳市龙华新区东环一路柏佳润工业区 3 栋 2 楼 电话: 0755-29195258 传真: 0755-29590286 Shenzhen Lxc Electronics Technology Co ., Ltd			

4.2 Measurement Data

4.2.1 Active result



Project:4G 天线		Author:Wang	File Name: 4G 天线-APP-RA
Date: 2020-7-15			
TEST:	Language:	Check: Zhong	
A	English		
地址:深圳市龙华新区东环一路柏佳润工业区 3 栋 2 楼 电话: 0755-29195258 传真: 0755-29590286 Shenzhen Lxc Electronics Technology Co ., Ltd			



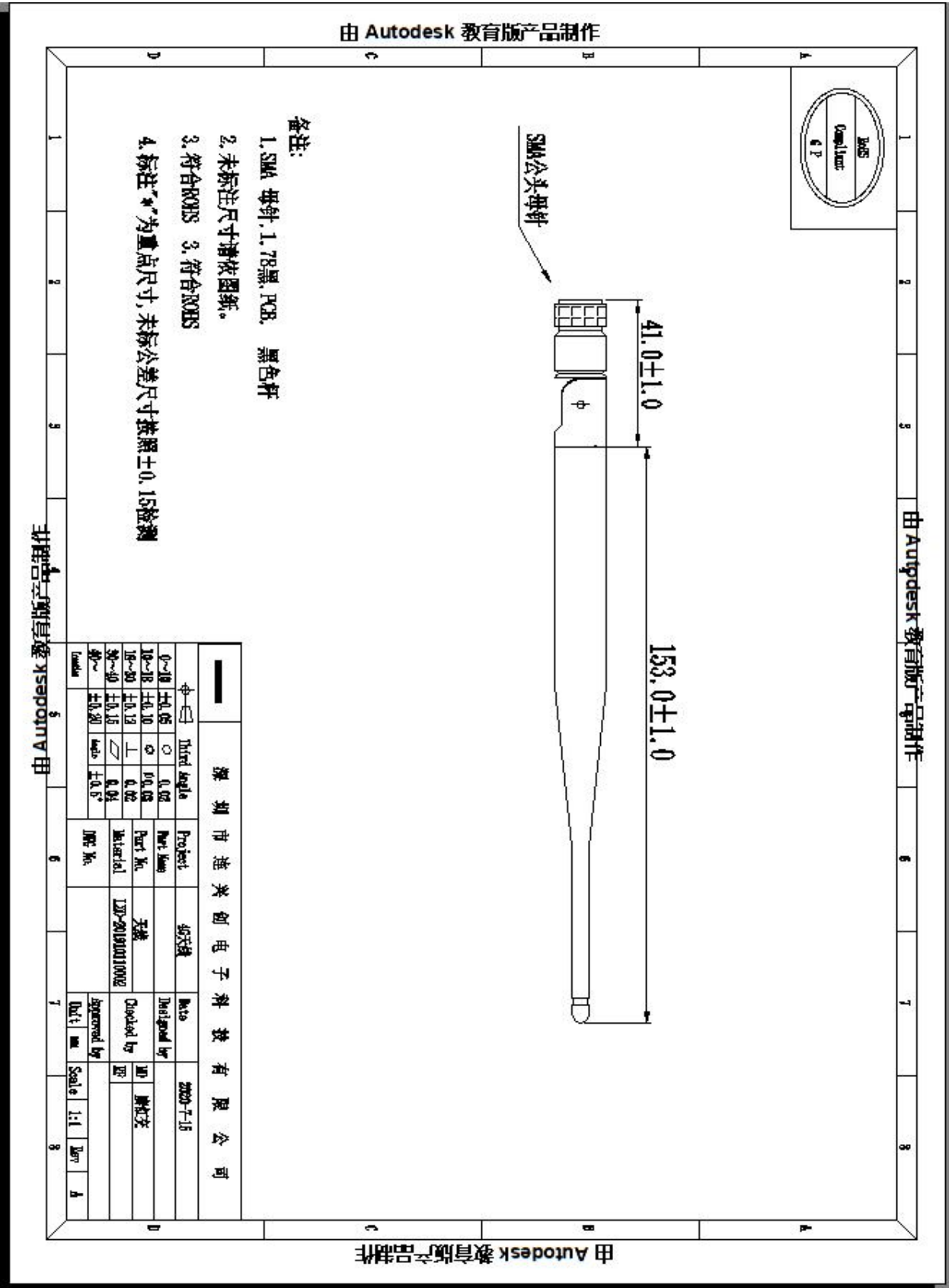
效率与增益

Passive Test For GSM			Passive Test For D3			Passive Test For D4			Passive Test For D5		
Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)
824	17.41	-2.14	1710	31.46	3.73	2110	29.29	1.53	2450	34.38	2.56
832	19.37	-1.49	1750	26.76	2.52	2120	31.31	1.66	2460	33.51	2.22
840	23.18	-1.24	1800	24.89	0.5	2130	35.09	1.96	2470	34.3	1.78
848	27.8	-0.72	1850	25.35	0.22	2140	39.32	2.04	2480	35.85	1.84
856	29.86	-0.71	1900	30.85	1.68	2150	38.63	1.95	2490	40.49	2.11
864	26.88	-0.95	1950	34.75	2.66	2160	36.18	2.19	2500	40.29	2.04
872	26.94	-0.67	1960	33.64	2.49	2170	35.52	2.6	2510	37.01	2.03
880	25.59	-0.76	1970	30.91	2.17	2180	36.52	2.44	2520	37.31	1.99
888	26.62	-0.63	1980	26.61	1.74	2190	44.25	3.32	2530	34.9	1.28
896	27.89	-0.47	1990	25.62	1.48	2300	42.93	3.13	2540	31.14	0.59
904	29.46	-0.29	2000	27.5	1.51	2310	39.67	2.81	2550	26.44	-0.15
912	34.22	0.24	2010	29.71	1.54	2320	36.35	2.47	2560	22.3	-0.58
920	36.18	0.31	2020	28.2	1.11	2330	33.33	1.86	2570	20.8	-0.85
928	36.24	0.29				2340	35.97	1.98	2580	21.03	-0.94
936	35.59	0.1				2350	34.05	1.96	2590	21.6	-0.81
944	34.38	-0.27				2360	32.11	1.87	2600	25.33	-0.49
952	31.43	-0.58				2370	34.68	2.32	2610	29.17	-0.06
960	28.36	-0.48				2380	37.29	2.65	2620	29.34	-0.19
						2390	41.54	3.4	2630	32.08	0.3
						2400	48.77	4.01	2640	35.23	0.54
						2410	48.6	4.05	2650	35.75	0.66
						2420	45.24	3.87	2660	37.52	0.65
						2430	39.22	3.36	2670	37.73	0.58
						2440	32.69	2.59	2680	38.31	0.89
									2690	38.66	1.21

Shenzhen Lxc Electronics Technology Co., Ltd

Project:4G 天线		Author:Wang	File Name: 4G 天线-APP-RA
Date: 2020-7-15			
TEST:	Language:	Check: Zhong	
A	English		
地址:深圳市龙华新区东环一路柏佳润工业区 3 栋 2 楼 电话: 0755-29195258 传真: 0755-29590286 Shenzhen Lxc Electronics Technology Co ., Ltd			

6 Mechanical drawing



Project:4G 天线	Author:Wang	File Name:
Date: 2020-7-15		
TEST:	Language:	Check: Zhong
A	English	
地址:深圳市龙华新区东环一路柏佳润工业区 3 栋 2 楼		
电话: 0755-29195258 传真: 0755-29590286		
Shenzhen Lxc Electronics Technology Co., Ltd		

7 Reliability tests

7.1 Test content

No	试验项目	试验方法	判定基准
1	盐水喷雾试验	把盐浓度 5%的溶液喷雾 48HR	不能有变色, 歪 (变形) 脱落等的缺点 腐蚀面积不能过大

7.2 Test results

NO	样品数	试验期间	实验结果	备注
1	50	24 小时	OK	技术等级为 9 级 腐蚀<0.4mm
2	50	48 小时	OK	技术等级为 9 级 腐蚀<0.4mm

8 Conclusion

From the above test results, we can know the electrical performance of the antenna is seems good.

Shenzhen Lxc Electronics Technology Co ., Ltd ,look forward to your confirmation, thank you for your cooperation !

Project:4G 天线		Author:Wang	File Name: 4G 天线-APP-RA
Date: 2020-7-15			
TEST:	Language:	Check: Zhong	
A	English		
地址:深圳市龙华新区东环一路柏佳润工业区 3 栋 2 楼 电话: 0755-29195258 传真: 0755-29590286 Shenzhen Lxc Electronics Technology Co ., Ltd			