深圳市扬跃电子通信科技有限公司
Shenzhen Yangyue Electronic Communication Technology Co., Ltd.

深圳瑞益成科技有限公司
Shenzhen Candour Co.,Ltd

承　认　书

产品描述	生产厂家：深圳市扬跃电子通信科技有限公司		规格型号/版本:1.	
	供应商产品名称：2.4/5.8Ghz双频可折弯胶棒天线 2DB增益，87效率以上，195MM长		瑞益成产品参考型号：424-00004-0300	
	供应商物料代码:YY-R01300-0103-B0		瑞益成物料代码:	
附件：	■ 规格书	■ 工程图纸	□ 样品	□ RoHS报告
	□ CPK 报告	□ FAI全尺寸报告	■ 可靠性测试报告	□ RoHS、无卤物质成分管控表
	□ 制程管制图	□ 材质证明书	□ 包装方式	□ 安规报告（可选）
	□ 无卤保证声明书(可选)	□ 无卤检测报告（可选）		
	备注： 1. RoHS报告和无卤检测报告可提供电子档，由采购部和SQE保存，签承认书前必须提供； 2. 可选项针对不同客户要求提供，除包材外其他客户必须提供。 3. 包材由包装工程师，项目经理，器件部，品质部签核即可。			
供应商签核	制作：门志红		审核：Tony	批准：杨剑辉
技术确认栏	结构/堆叠：		软件（选签）：	
	硬件（选签）：		项目经理：	
质量确认	DQE工程师：		SQE工程师：	
承认条件：	□ 承认		□ 拒绝承认	
	□ 条件承认	需满足条件：_____		
	□ 临时承认	限量_____Pcs 采购		
分发部门：	□采购	□ 硬件	□ 软件	□ 产品部器件科 □ 战略合作商：_____
	□品质	□ 客户	□ 加工厂	□ 供应商 □ 其他 _____

表单编号：FORM-QA-026　　版本：C　　保存期限：至物料停用后一年

Sample Photo	
	
A. Electrical Characteristics	
Frequency	**2400 ~ 2500 MHz** **5150 ~ 5850 MHz**
V.S.W.R.	**<= 2.0 @ 2400 ~ 2500 MHz** **<= 2.0 @ 5150 ~ 5850 MHz**
Antenna Gain	**4.1 dBi @ 2400 ~ 2500 MHz** **5.2 dBi @ 5150 ~ 5850 MHz**
Efficiency	**92.21 % @ 2400 ~ 2500 MHz** **91.65 % @ 5150 ~ 5850 MHz**
Polarization	**Linear**
Impedance	**50 Ohm**
B. Material & Mechanical Characteristics	
Material of Radiator	**Cu**
Material of Plastic	**TPEE / ABS**
Cable Type	**RG-178U**
Connector Type	**SMA Male Reverse**
C. Environmental	
Operation Temperature	**- 40 ˚C ~ + 65 ˚C**
Storage Temperature	**- 40 ˚C ~ + 80 ˚C**

Revision History

Date	Revision	Description of Changes
2019-12-21	RA	Measured with 2.4GHz/5.8GHZ Antenna sample.

1 Technical Summary

This report summarizes the electrical results of the proposed antenna to support the 2.4GHz/5.8GHZ Antenna 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.

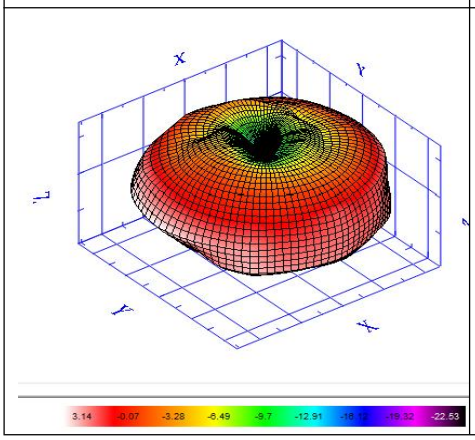
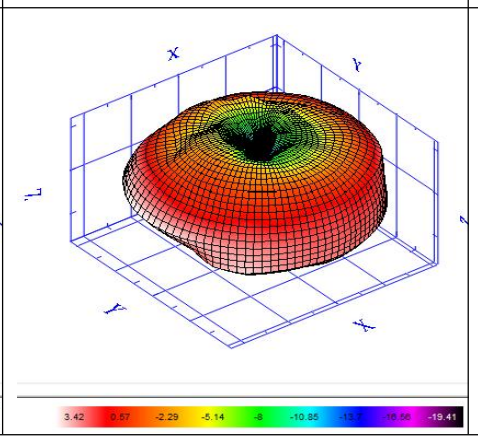
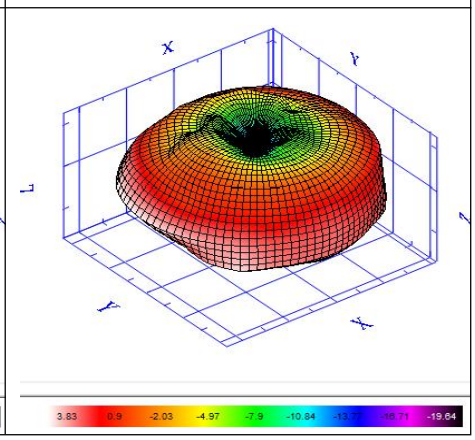
4.1.2 Gain & Radiation Patterns

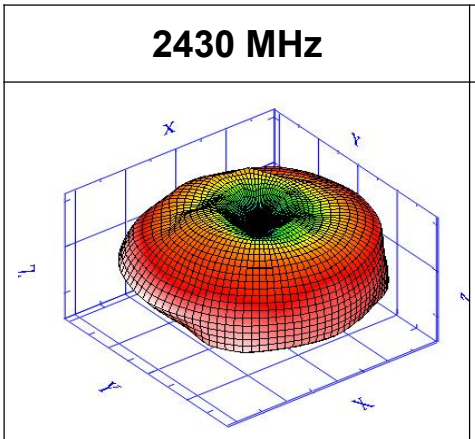
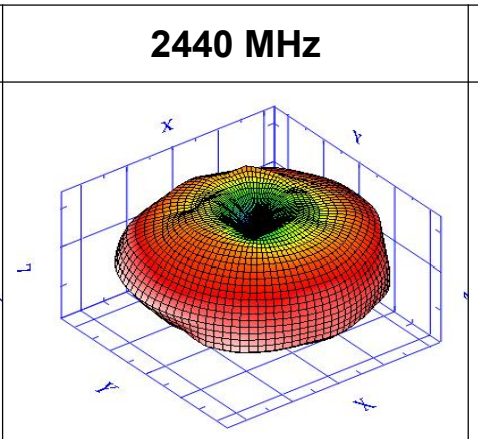
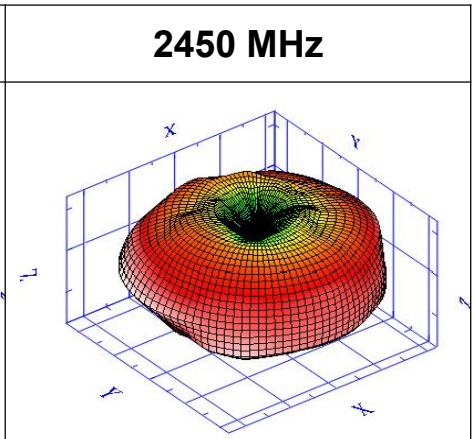
The gain of the antenna was measured in the Lxc's anechoic chamber. Coaxial chokes on the feed cable were used to mitigate surface currents. The chamber provides less than –30 dB reflectivity from 300 MHz through 3 GHz and an 18" diameter spherical quite zone. The measurement results are calibrated using both dipole and leaky wave horn standards.

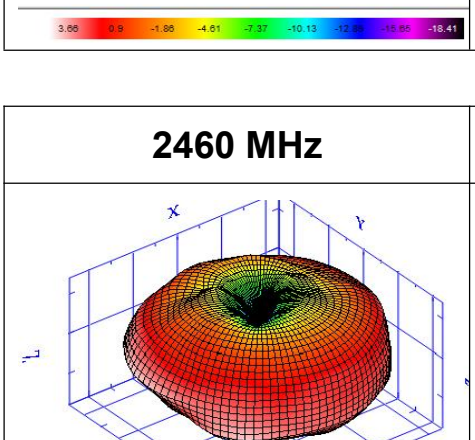
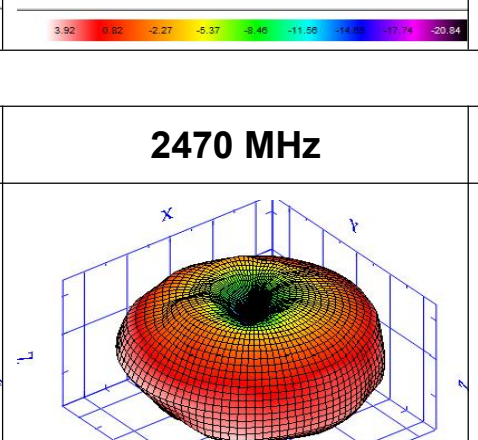
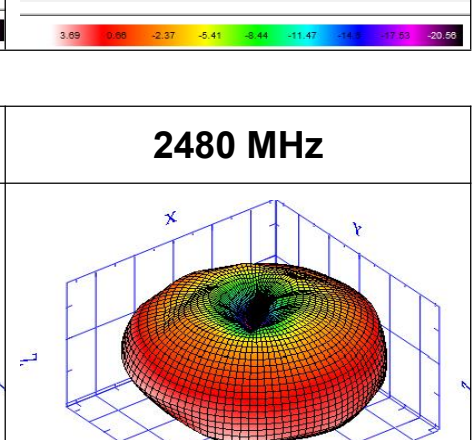
4.1.3 Matching Circuit Description

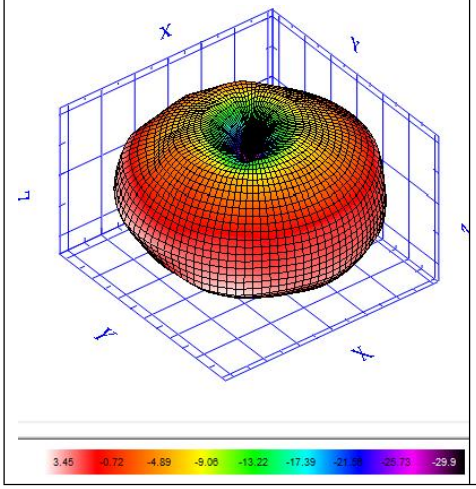
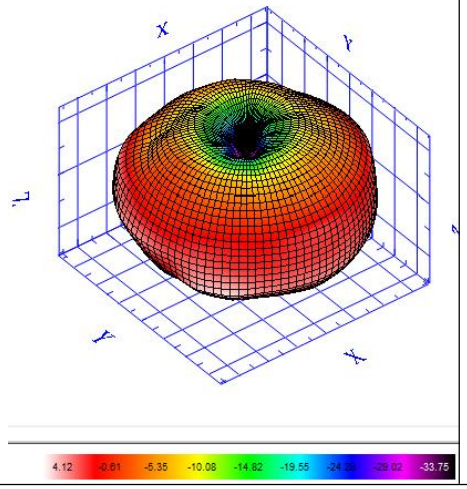
No changed..

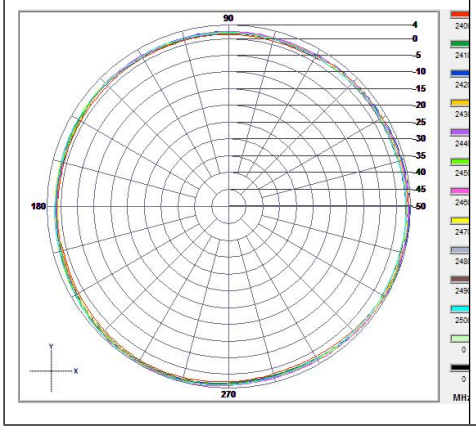
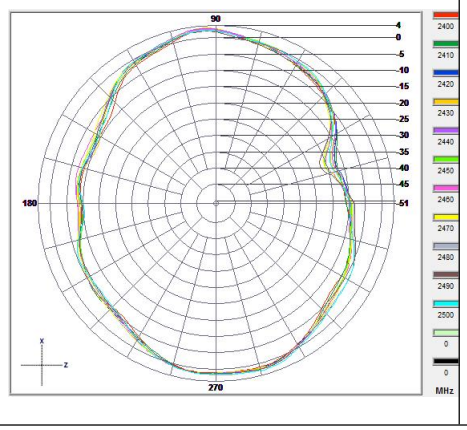
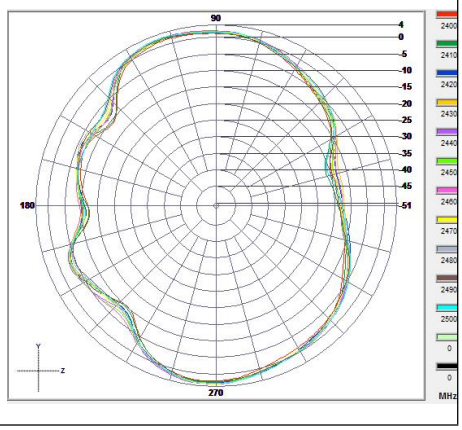
5. Antenna - Radiation Pattern Test Data

2400 MHz	2410 MHz	2420 MHz
		

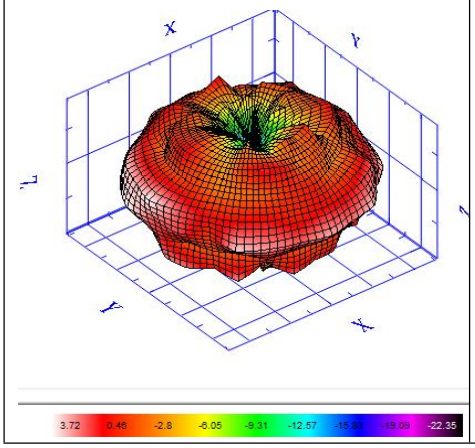
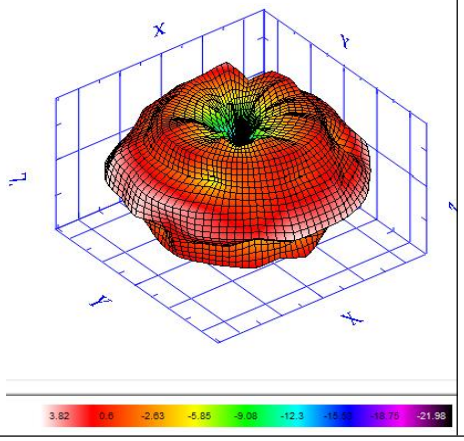
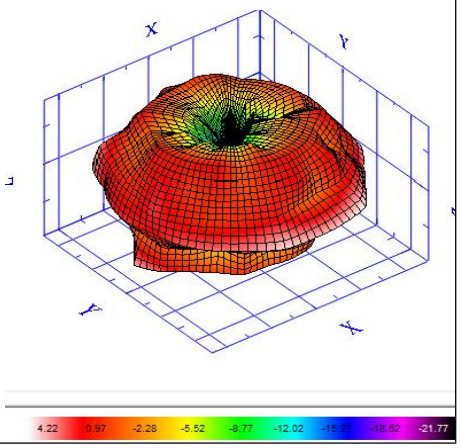
2430 MHz	2440 MHz	2450 MHz
		

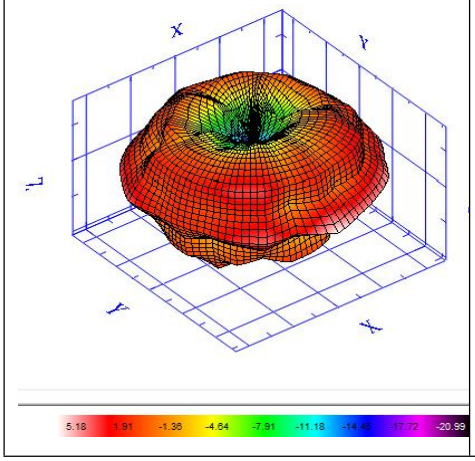
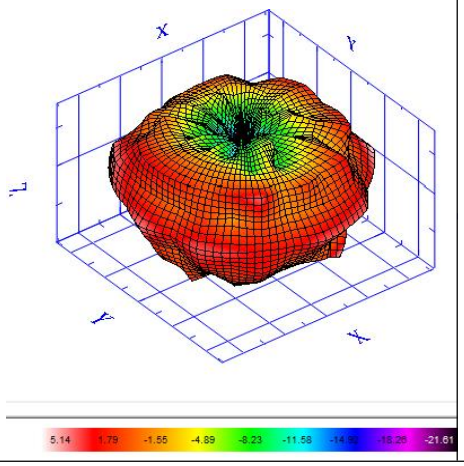
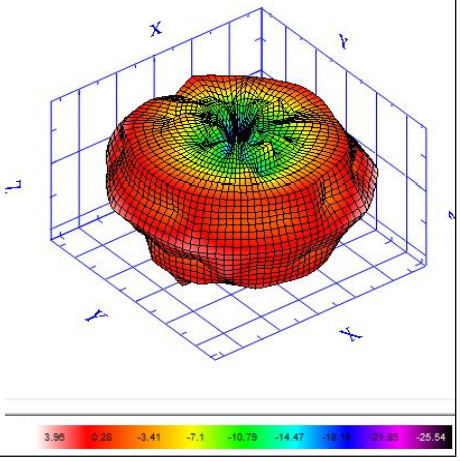
2460 MHz	2470 MHz	2480 MHz
		

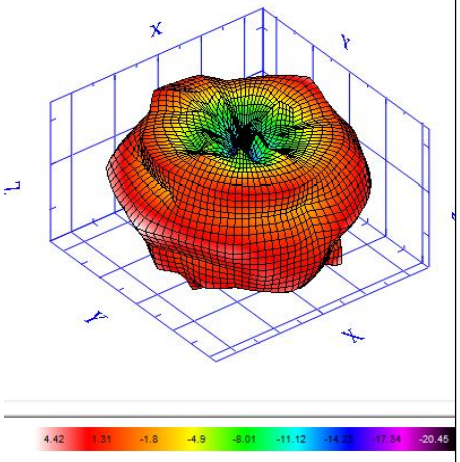
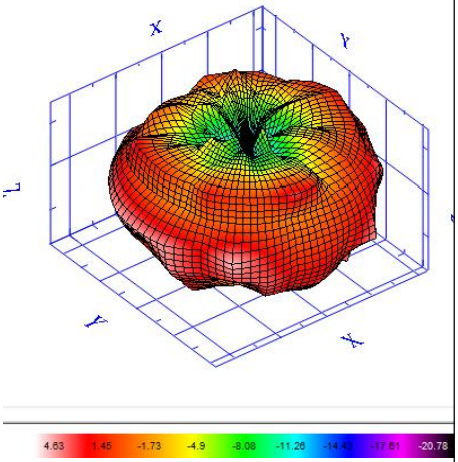
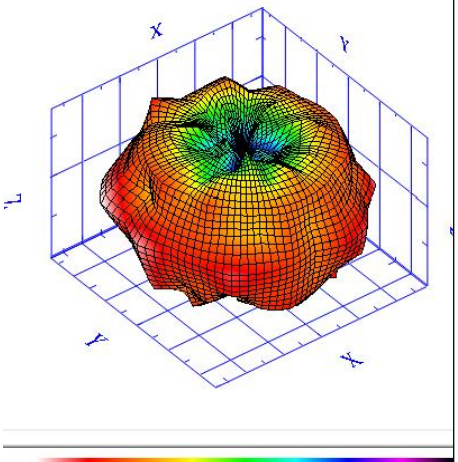
2490 MHz	2500 MHz	
		

XY	XZ	YZ
		

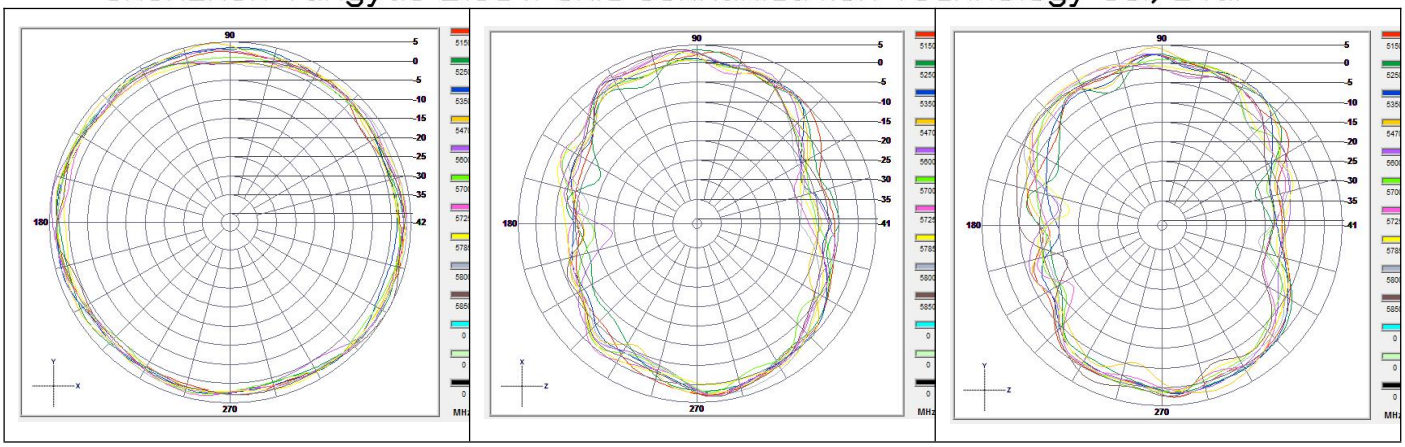
Frequency	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
E-Total Peak Gain (dBi)	3.14	3.42	3.83	3.66	3.92	3.69	4.1	3.71	3.78	3.45	4.12
Efficiency (%)	76.03	82.61	87.56	88.47	92.57	89	92.21	88.51	88.01	86.13	92.16
Average Gain (dB)	-1.19	-0.83	-0.58	-0.53	-0.34	-0.51	-0.35	-0.53	-0.55	-0.65	-0.35

5150 MHz	5250 MHz	5350 MHz
		

5470 MHz	5600 MHz	5700 MHz
		

5725 MHz	5785 MHz	5850 MHz
		

XY	XZ	YZ



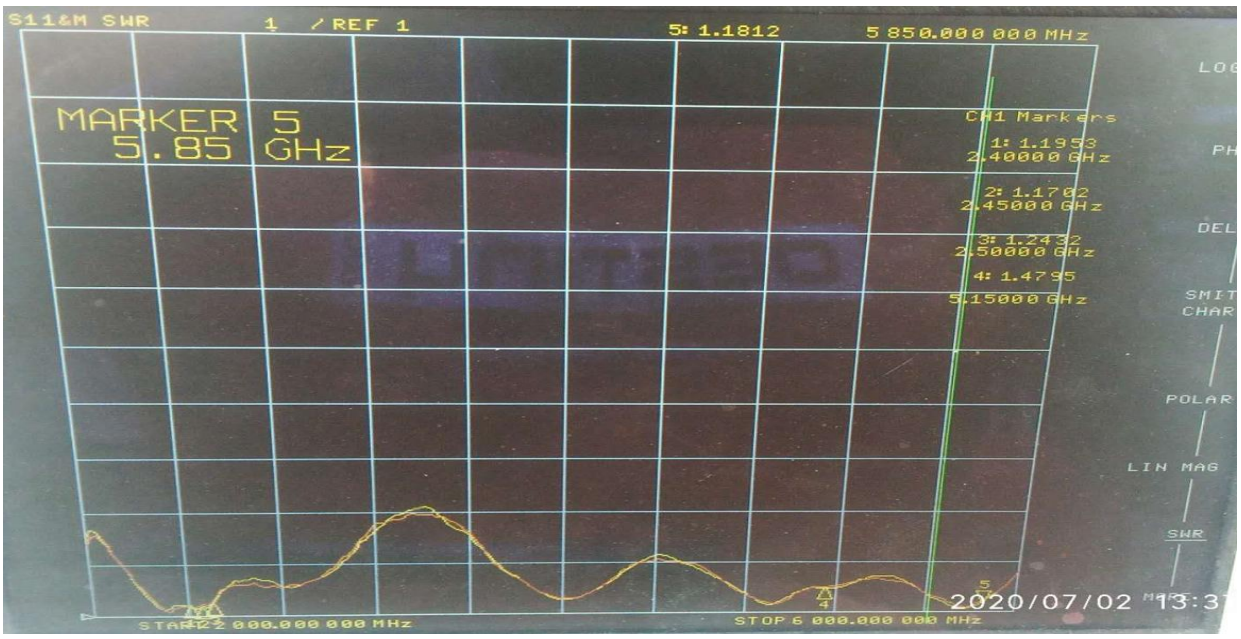
Frequency	5150	5250	5350	5470	5600	5700	5725	5785	5800	5850
E-Total Peak Gain (dBi)	3.72	3.82	4.22	5.18	5.14	3.96	4.42	4.63	4.43	5.24
Efficiency (%)	86.86	83.04	81.69	88.54	89.23	82.14	88.87	87.4	91.65	85.34
Average Gain (dB)	-0.61	-0.81	-0.88	-0.53	-0.5	-0.85	-0.51	-0.58	-0.38	-0.69

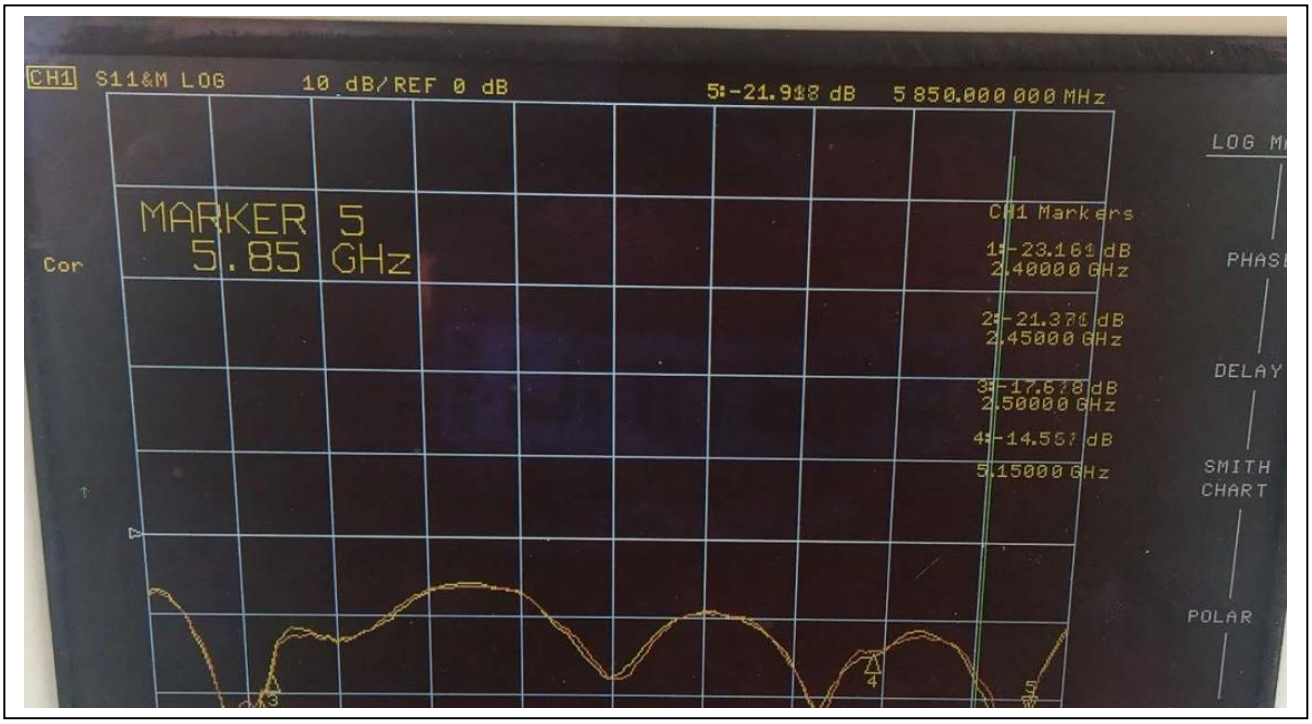
6.Plots

VSWR

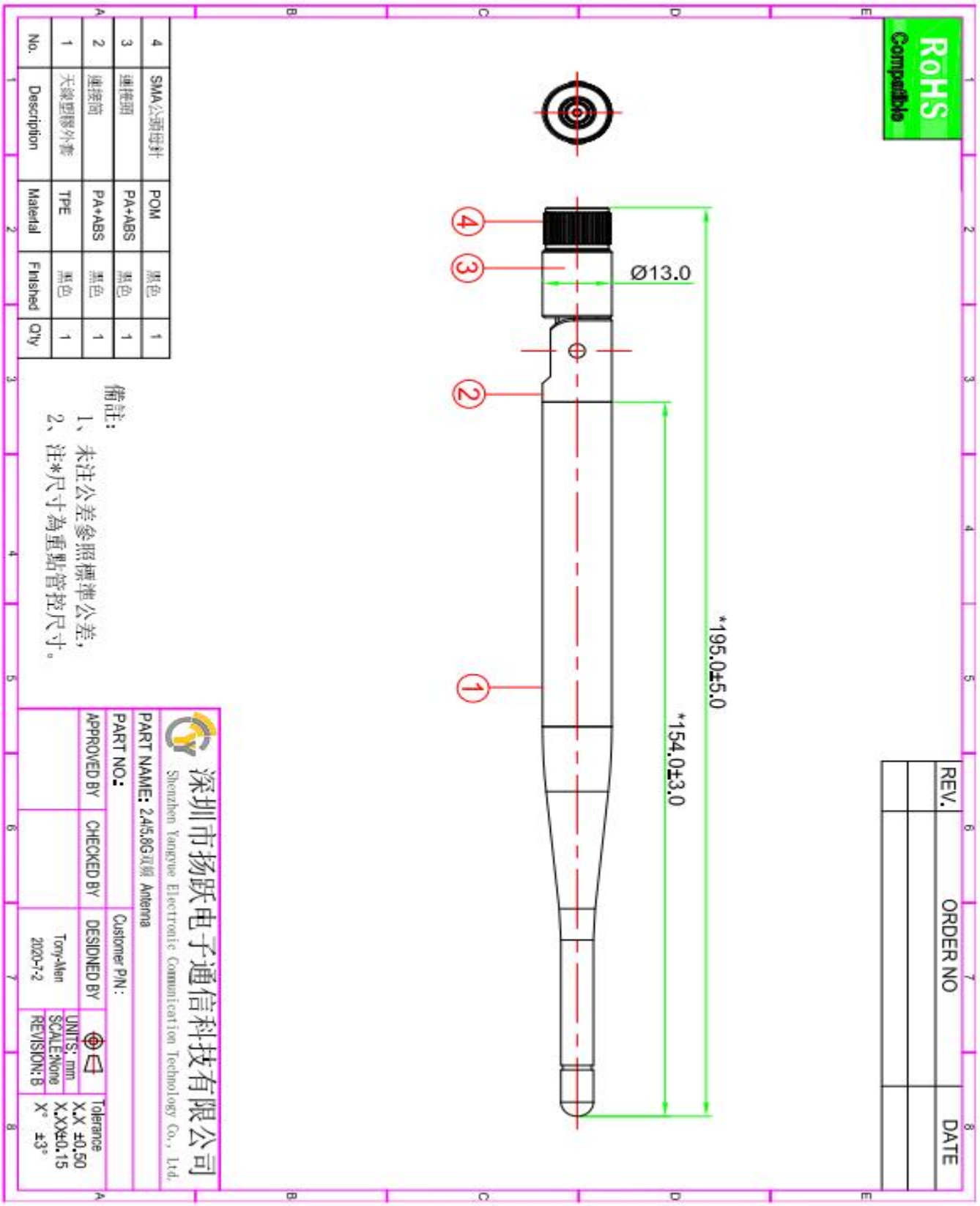
注：驻波系数的标准值

注：回 损的标准值


S11&M SWR
1 / REF 1
5: 1.1812
5 850.000 000 MHz
MARKER 5
5.85 GHz
CH1 Markers
1: 1.1953
2.40000 GHz
2: 1.1702
2.45000 GHz
3: 1.2432
2.50000 GHz
4: 1.4795
5.15000 GHz
LOG
PH
DEL
SMIT
CHAR
POLAR
LIN MAG
SWR
2020/07/02
STOP 6 000.000 000 MHz


CH1 S11&M LOG
10 dB/ REF 0 dB
5:-21.918 dB
5 850.000 000 MHz
MARKER 5
5.85 GHz
Cor
CH1 Markers
1:-23.161 dB
2.40000 GHz
2:-21.371 dB
2.45000 GHz
3:-17.670 dB
2.50000 GHz
4:-14.557 dB
5.15000 GHz
LOG M
PHASE
DELAY
SMITH
CHART
POLAR

7 Mechanical drawing



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	10	24 小时	**OK**	技术等级为 9 级 腐蚀<0.4mm
2	10	48 小时	**OK**	技术等级为 9 级 腐蚀<0.4mm

8 Conclusion

以上数据表明此 2.4GHz/5.8GHZ 天线参数均已达标。性能以装机后的实际使用效果为准。

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

Shenzhen Yangyue Electronic Communication Technology Co., Ltd, look forward to your confirmation, thank you for your cooperation !