

Shenzhen Lxc Electronics Technology Co., Ltd

深圳市连兴创电子科技有限公司

APPROVAL SHEET

承认书

客户 (Customer) : 威视达康

产品 (Product) : WIFI 内置天线 (L=80MM)

型号 (Model) : C993-WIFI 天线

料号 (Part Number) : LXC1BL80202407300002

制作人 (Written By) : 唐红交

签发时间 (Issued Date) : 2024-07-30

客户 CUSTOMER

频率范围(Frequency range)	WIFI:2400-2500 5150-5850 (MHz)
驻波比系数(VSWR)	<2.0
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
天线类型(Antenna type)	内置天线 (Built-in 内置天线 antenna)
天线增益峰值(Antenna gain MAX (dBi))	5dBi+/-1
天线供应商 (Antenna supplier)	Shenzhen Lxc Electronics Technology Co., Ltd
天线型号 (Antenna Model)	C993-WIFI天线

RF by		Checked by	
ME by		Date	
Customer Confirm			

8Project:		Author:Wang	File Name: C993- WIFI 天线
Date: 2024-07-30			
TEST:	Language:	Check: Zhong	
A	English		
地址： 深圳市龙华区大浪街道华芳路 12 号金瑞华工业园 C 栋 4 楼 电话： 0755-29195258 传真： 0755-29590286 Shenzhen Lxc Electronics Technology Co ., Ltd			

Revision History

Date	Revision	Description of Changes
2024-07-30	RA	Measured with SUS301 sample.

深圳市连兴创电子科技有限公司1

PROJECT2

ANTENNA COMPONENTST 3

1 TECHNICAL SUMMARY3

2 GENERAL DESCRIPTION3

2.1 Components/Part revisions 3

3 MECHANICAL DESCRIPTION3

4 ELECTRICAL PERFORMANCE.....3

4.1 Set-up3

4.1.1 VSWR 3

4.1.2 Gain & Radiation Patterns 3

4.1.3 Matching Circuit Description 3

4.2 Measurement Data5

4.2.1 Active result（GSM） 5

6 Mechanical drawing 5

7 RELIABILITY TESTS.....12

7.1 Test content 12

7.2 Test results 12

8 CONCLUSION9

8Project:		Author:Wang	File Name: C993- WIFI 天线
Date: 2024-07-30			
TEST:	Language:	Check: Zhong	
A	English		
地址： 深圳市龙华区大浪街道华芳路 12 号金瑞华工业园 C 栋 4 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 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.

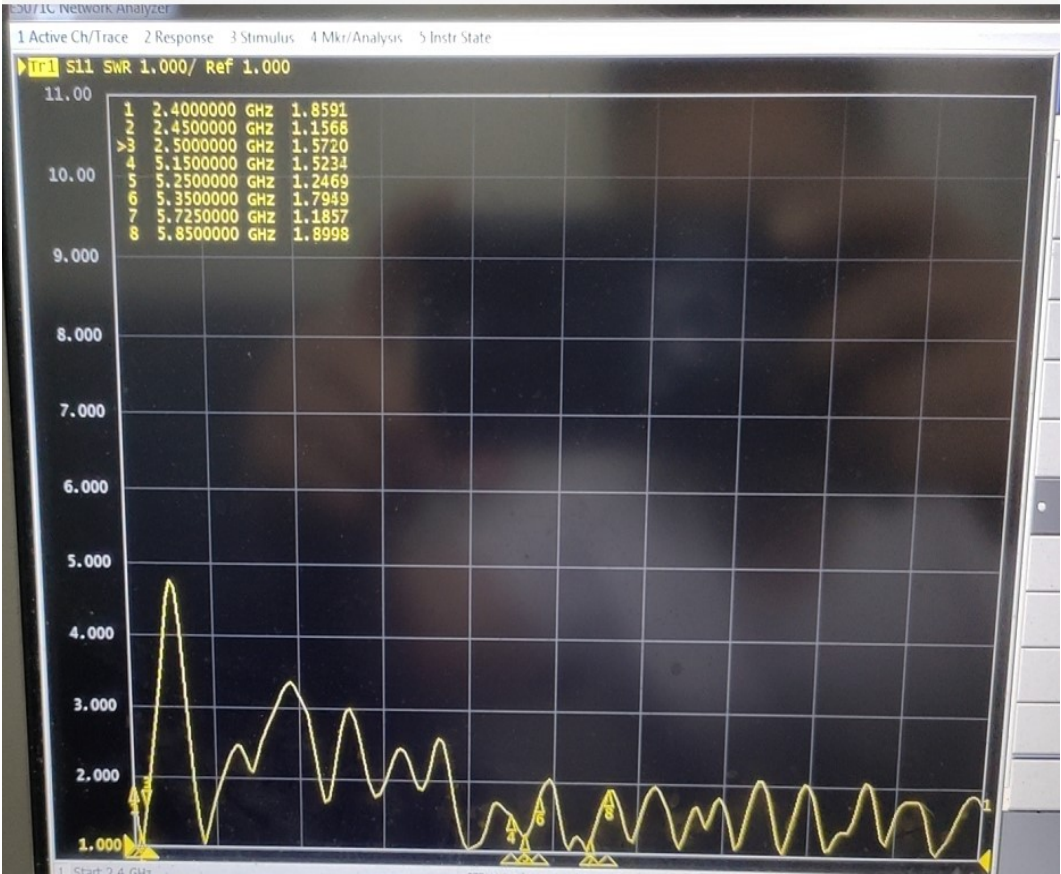
4.1.3 Matching Circuit Description

8Project:		Author:Wang	File Name: C993- WIFI 天线
Date: 2024-07-30			
TEST:	Language:	Check: Zhong	
A	English		
地址： 深圳市龙华区大浪街道华芳路 12 号金瑞华工业园 C 栋 4 楼 电话：0755-29195258 传真：0755-29590286 Shenzhen Lxc Electronics Technology Co ., Ltd			

有源测试数据

天线测试报告	802.11B Antenna Performance Table			802.11G Antenna Performance Table		
Channel	CH 1	CH 6	CH11	CH 1	CH 6	CH 11
Max Power (dBm)	20.4	20.6	20.4	20.2	19.6	19.3
TRP(dBm)	17.1	17.9	17.5	17.1	16.2	16.7
Sensitivity(dBm)	-89.6	-89.8	-90.2	-78.3	-78.8	-79.6
TIS(dBm)	-87.7	-87.8	-88.8	-76.6	-76.4	-77.2

天线测试报告	802.11N Antenna Performance Table			802.11A Antenna Performance Table		
Channel	CH1	CH6	CH11	CH 36	CH 149	CH 161
Max Power (dBm)	18.3	18.2	19.2	19.2	19.4	19.7
TRP(dBm)	16.6	16.7	17.9	17.3	16.5	16.8
Sensitivity(dBm)	-72.5	-72.2	-72.4	-73.4	-72.7	-72.8
TIS(dBm)	-69.2	-69.7	-69.9	-69.2	-69.3	-69.5



8Project:		Author:Wang	File Name: C993- WIFI 天线
Date: 2024-07-30			
TEST:	Language:	Check: Zhong	
A	English		
地址： 深圳市龙华区大浪街道华芳路 12 号金瑞华工业园 C 栋 4 楼 电话： 0755-29195258 传真： 0755-29590286 Shenzhen Lxc Electronics Technology Co ., Ltd			

4.2 Measurement Data

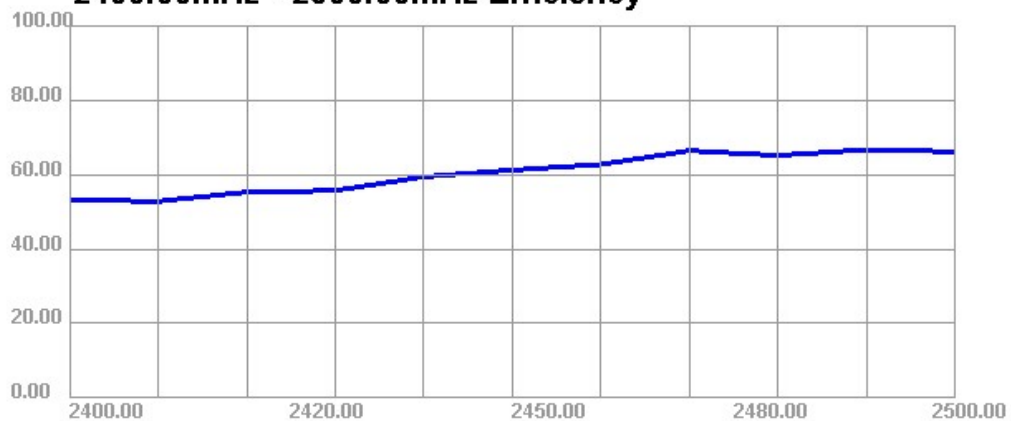
4.2.1 Active result (2.4G)

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	59.21	-2.28	2.74
2410	58.24	-2.35	2.62
2420	56.85	-2.45	2.44
2430	56.6	-2.47	2.32
2440	57.88	-2.37	2.49
2450	63.35	-1.98	2.88
2460	63.1	-2	2.9
2470	58.23	-2.35	2.51
2480	60.98	-2.15	2.74
2490	59.85	-2.23	2.62
2500	56.6	-2.47	2.33

2400.00MHz - 2500.00MHz Gain

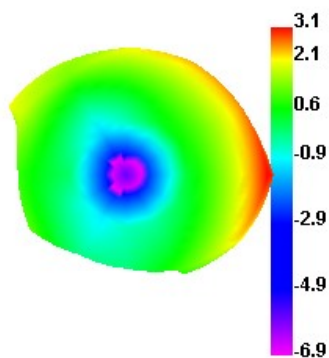


2400.00MHz - 2500.00MHz Efficiency

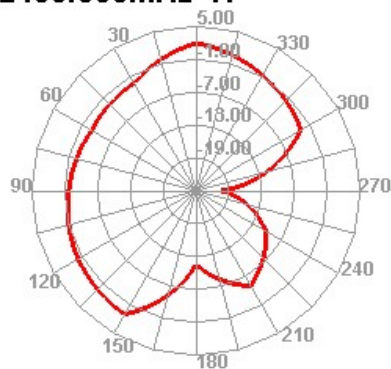


8Project:		Author:Wang	File Name: C993- WIFI 天线
Date: 2024-07-30			
TEST:	Language:	Check: Zhong	
A	English		
地址： 深圳市龙华区大浪街道华芳路 12 号金瑞华工业园 C 栋 4 楼 电话：0755-29195258 传真：0755-29590286 Shenzhen Lxc Electronics Technology Co ., Ltd			

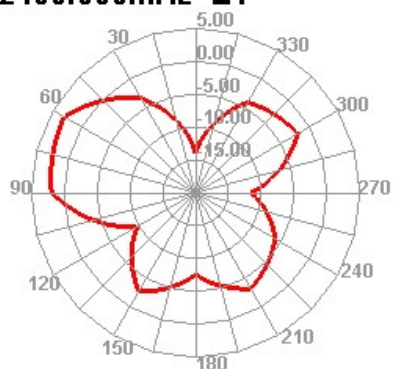
2400.000MHz



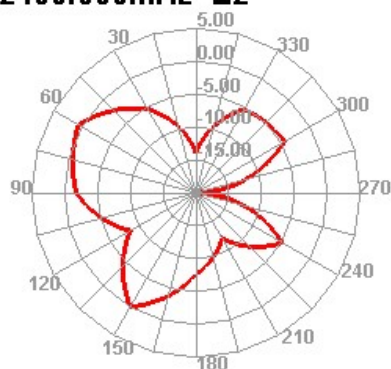
2400.000MHz H



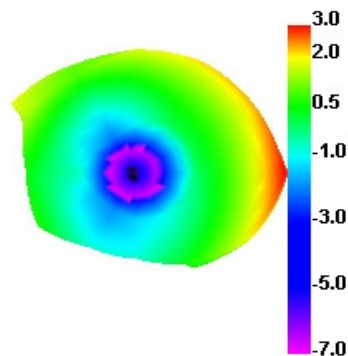
2400.000MHz E1



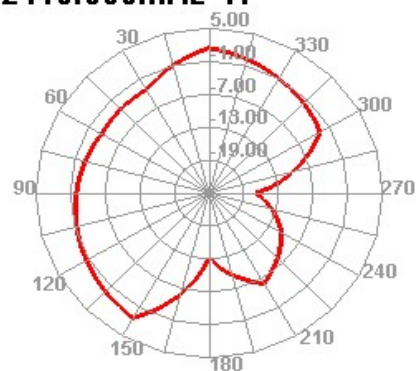
2400.000MHz E2



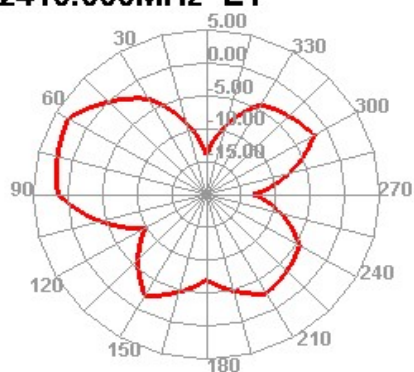
2410.000MHz



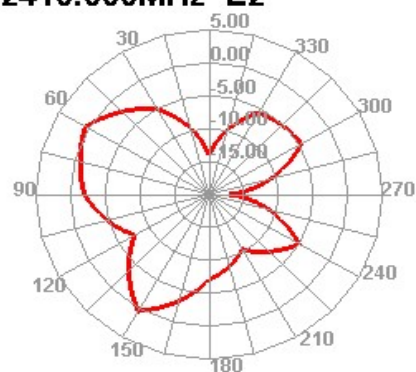
2410.000MHz H



2410.000MHz E1



2410.000MHz E2



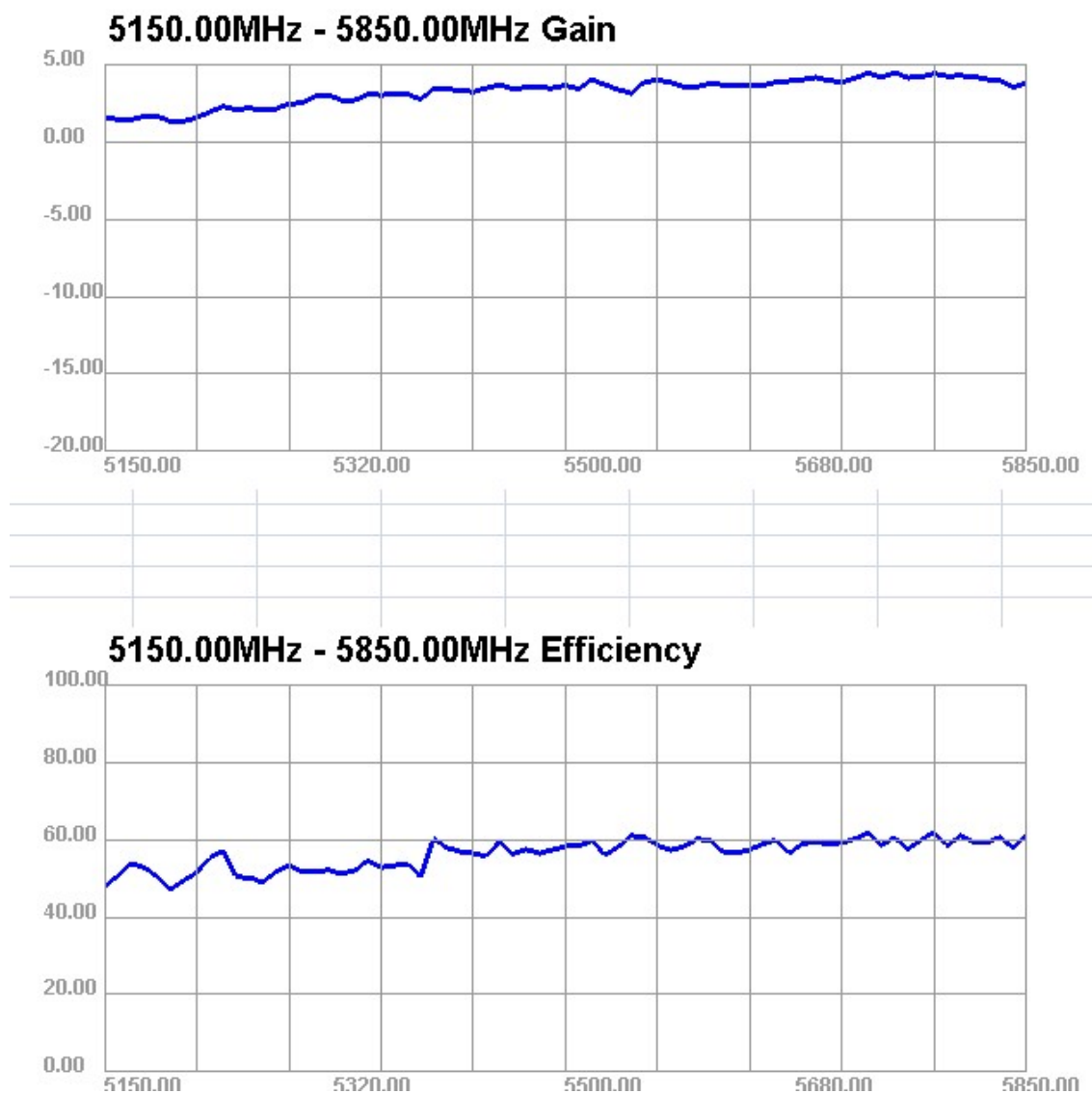
8Project:		Author:Wang	File Name: C993- WIFI 天线
Date: 2024-07-30			
TEST:	Language:	Check: Zhong	
A	English		
地址：深圳市龙华区大浪街道华芳路 12 号金瑞华工业园 C 栋 4 楼 电话：0755-29195258 传真：0755-29590286 Shenzhen Lxc Electronics Technology Co ., Ltd			

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
5150	50.43	-2.41	2.49
5160	50.69	-2.24	2.52
5170	51.03	-2.29	2.53
5180	51.77	-2.31	2.54
5190	52.24	-2.46	2.59
5200	55.15	-2.58	2.91
5210	56.24	-2.5	3.14
5220	56.27	-2.74	3.29
5230	58.66	-2.32	3.31
5240	59.23	-2.27	3.39
5250	56.29	-2.5	3.41
5260	54.9	-2.6	3.48
5270	55.01	-2.84	3.71
5280	55.93	-2.68	3.8
5290	55.55	-2.55	3.11
5300	55.65	-2.55	3.08
5310	57.83	-2.38	3.46
5320	56.42	-2.49	3.55
5330	56.87	-2.77	3.57
5340	54.92	-2.6	3.71
5350	59.77	-2.23	3.79
5360	59.54	-2.18	3.13
5370	59.41	-2.26	3.5
5380	59.93	-2.15	3.14
5390	56.24	-2.5	2.97
5400	56.63	-1.76	3.83
5410	57.01	-1.8	3.76
5420	61.87	-1.75	3.91
5430	62.56	-1.7	3.95
5440	62.76	-1.82	3.12
5450	63.69	-1.69	3.34
5460	63.84	-1.75	3.27
5470	63.92	-1.68	3.59
5480	64.55	-1.64	3.78
5490	65.33	-1.65	3.82
5500	65.38	-1.53	3.35
5510	65.86	-1.5	3.54
5520	66.74	-1.57	3.38
5530	64.12	-1.93	3.64
5540	64.83	-1.88	3.44
5550	63.76	-1.32	3.25

8Project:		Author:Wang	File Name: C993- WIFI 天线
Date: 2024-07-30			
TEST:	Language:	Check: Zhong	
A	English		
地址： 深圳市龙华区大浪街道华芳路 12 号金瑞华工业园 C 栋 4 楼 电话：0755-29195258 传真：0755-29590286 Shenzhen Lxc Electronics Technology Co ., Ltd			

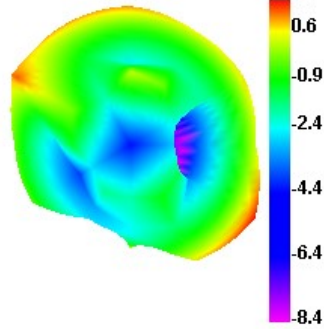
5560	64.17	-1.48	3.89
5570	64.64	-1.7	3.37
5580	62.61	-2.03	3.59
5590	60.72	-2.17	3.82
5600	65.5	-1.71	3.54
5610	66.69	-1.76	3.31
5620	64.18	-1.93	3.96
5630	61.2	-2.13	3.11
5640	59.42	-2.26	3.18
5650	61.89	-1.68	3.83
5660	66.93	-1.66	3.87
5670	66.66	-1.76	3.84
5680	68.38	-1.65	3.14
5690	65.14	-1.86	3.29
5700	66.02	-1.8	3.35
5710	65.69	-1.82	3.46
5720	64.13	-1.93	3.36
5730	61.91	-1.43	3.89
5740	68.11	-1.67	3.9
5750	68.29	-1.66	3.56
5760	67.69	-1.51	3.95
5770	67.82	-1.62	3.26
5780	66.48	-1.58	3.41
5790	67.39	-1.85	3.47
5800	65.66	-1.83	3.51
5810	65.84	-1.44	3.91
5820	66.12	-1.54	3.28
5830	66.49	-1.58	3.34
5840	66.89	-1.88	3.66
5850	66.93	-1.75	3.84

8Project:		Author:Wang	File Name: C993- WIFI 天线
Date: 2024-07-30			
TEST:	Language:	Check: Zhong	
A	English		
地址： 深圳市龙华区大浪街道华芳路 12 号金瑞华工业园 C 栋 4 楼 电话：0755-29195258 传真：0755-29590286 Shenzhen Lxc Electronics Technology Co ., Ltd			

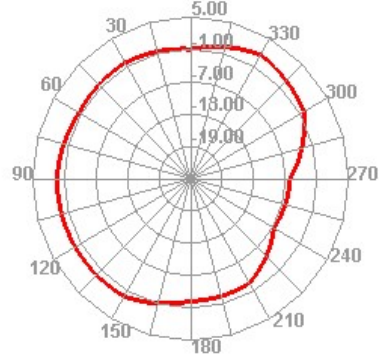


8Project:		Author:Wang	File Name: C993- WIFI 天线
Date: 2024-07-30			
TEST:	Language:	Check: Zhong	
A	English		
地址： 深圳市龙华区大浪街道华芳路 12 号金瑞华工业园 C 栋 4 楼 电话： 0755-29195258 传真： 0755-29590286 Shenzhen Lxc Electronics Technology Co ., Ltd			

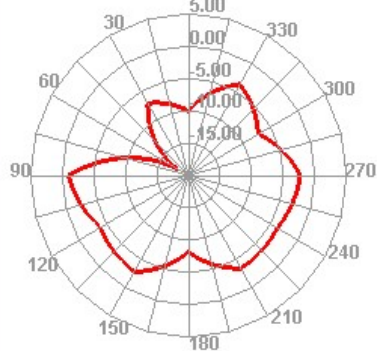
5150.000MHz



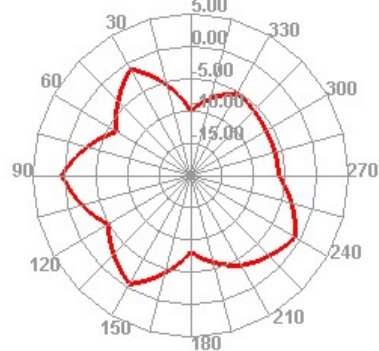
5150.000MHz H



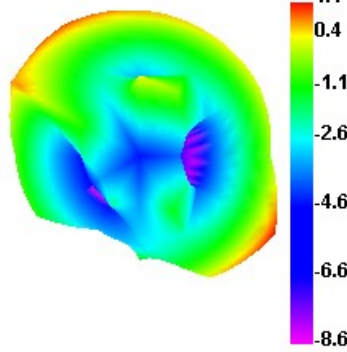
5150.000MHz E1



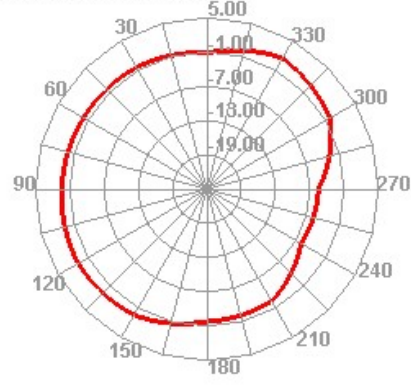
5150.000MHz E2



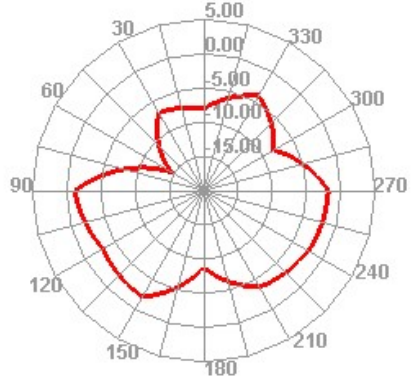
5160.000MHz



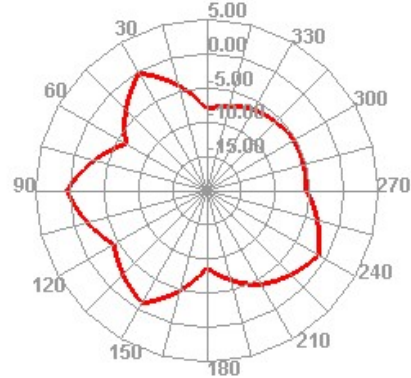
5160.000MHz H



5160.000MHz E1



5160.000MHz E2



8Project:		Author:Wang	File Name: C993- WIFI 天线
Date: 2024-07-30			
TEST:	Language:	Check: Zhong	
A	English		
地址： 深圳市龙华区大浪街道华芳路 12 号金瑞华工业园 C 栋 4 楼 电话： 0755-29195258 传真： 0755-29590286 Shenzhen Lxc Electronics Technology Co ., Ltd			

Technical drawing of a cable assembly. The drawing shows a cross-section of the cable and a side view. Dimensions include 11.90, 45.40, and 80.0 ± 3.0. Callouts 1, 2, and 3 point to specific features. A note indicates '端子口朝下' (Terminal mouth facing down).

标记	签名	修改内容	日期

NO.	DESCRIPTION	MATERIAL	REMARKS	QTY
4				
3	端子	I-PEX 2027B-1121-13		
2	cable	Φ11.9mm Cable 黑色 544.7mm(544.7mm)		
1	PCB	PCB		

NO.	DESCRIPTION	MATERIAL	REMARKS	QTY
4				
3	端子	I-PEX 2027B-1121-13		
2	cable	Φ11.9mm Cable 黑色 544.7mm(544.7mm)		
1	PCB	PCB		

NO.	DESCRIPTION	MATERIAL	REMARKS	QTY
4				
3	端子	I-PEX 2027B-1121-13		
2	cable	Φ11.9mm Cable 黑色 544.7mm(544.7mm)		
1	PCB	PCB		

NO.	DESCRIPTION	MATERIAL	REMARKS	QTY
4				
3	端子	I-PEX 2027B-1121-13		
2	cable	Φ11.9mm Cable 黑色 544.7mm(544.7mm)		
1	PCB	PCB		

NO.	DESCRIPTION	MATERIAL	REMARKS	QTY
4				
3	端子	I-PEX 2027B-1121-13		
2	cable	Φ11.9mm Cable 黑色 544.7mm(544.7mm)		
1	PCB	PCB		

NO.	DESCRIPTION	MATERIAL	REMARKS	QTY
4				
3	端子	I-PEX 2027B-1121-13		
2	cable	Φ11.9mm Cable 黑色 544.7mm(544.7mm)		
1	PCB	PCB		

NO.	DESCRIPTION	MATERIAL	REMARKS	QTY
4				
3	端子	I-PEX 2027B-1121-13		
2	cable	Φ11.9mm Cable 黑色 544.7mm(544.7mm)		
1	PCB	PCB		

NO.	DESCRIPTION	MATERIAL	REMARKS	QTY
4				
3	端子	I-PEX 2027B-1121-13		
2	cable	Φ11.9mm Cable 黑色 544.7mm(544.7mm)		
1	PCB	PCB		

- 11 -

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

8Conclusion

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 !

8Project:		Author:Wang	File Name: C993- WIFI 天线
Date: 2024-07-30			
TEST:	Language:	Check: Zhong	
A	English		
地址： 深圳市龙华区大浪街道华芳路 12 号金瑞华工业园 C 栋 4 楼 电话： 0755-29195258 传真： 0755-29590286 Shenzhen Lxc Electronics Technology Co ., Ltd			