



Shenzhen Lxc Electronics Technology Co., Ltd

深圳市连兴创电子科技有限公司

APPROVAL SHEET

For

DONGGUAN CE LINK LIMITED

东莞市海能电子有限公司

IPC-13PS Antenna project

Antenna componentst

频率范围 Frequency range	WIFI:2400-2500 (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 FPC 天线 (Built-in FPC antenna)

RF by	Yongjian.zhu	Checked by	Bluck.wang
ME by	Hongjiao.tang	Date	2023-03-16
Customer Confirm	Bing Mo		

Project:WIFI Antenna		Author: Zhu	File Name: IPC-13PS-APP-RA
Date: 2022-10-18		Check: Wang	
TEST:	Language:		
A	English		
TEL: 0755-29195258 FAX: 0755-29590286 Shenzhen Lxc Electronics Technology Co., Ltd			

Revision History

Date	Revision	Description of Changes
2022-10-18	RA	Measured with FPC sample.

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
5 PLOTS	4
6 MECHANICAL DRAWING.....	6
7 RELIABILITY TESTS.....	6
7.1 Test content	6
7.2 Test results	7
8 CONCLUSION	7

Project: WIFI Antenna		Author: Zhu	File Name: IPC-13PS-APP-RA
Date: 2022-10-18			
TEST:	Language:	Check: Wang	
A	English		
TEL: 0755-29195258 FAX: 0755-29590286 Shenzhen Lxc Electronics Technology Co ., Ltd			

1 Technical Summary

This report summarizes the electrical results of the proposed antenna to support the Built in-WIFI 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 (S21) 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.

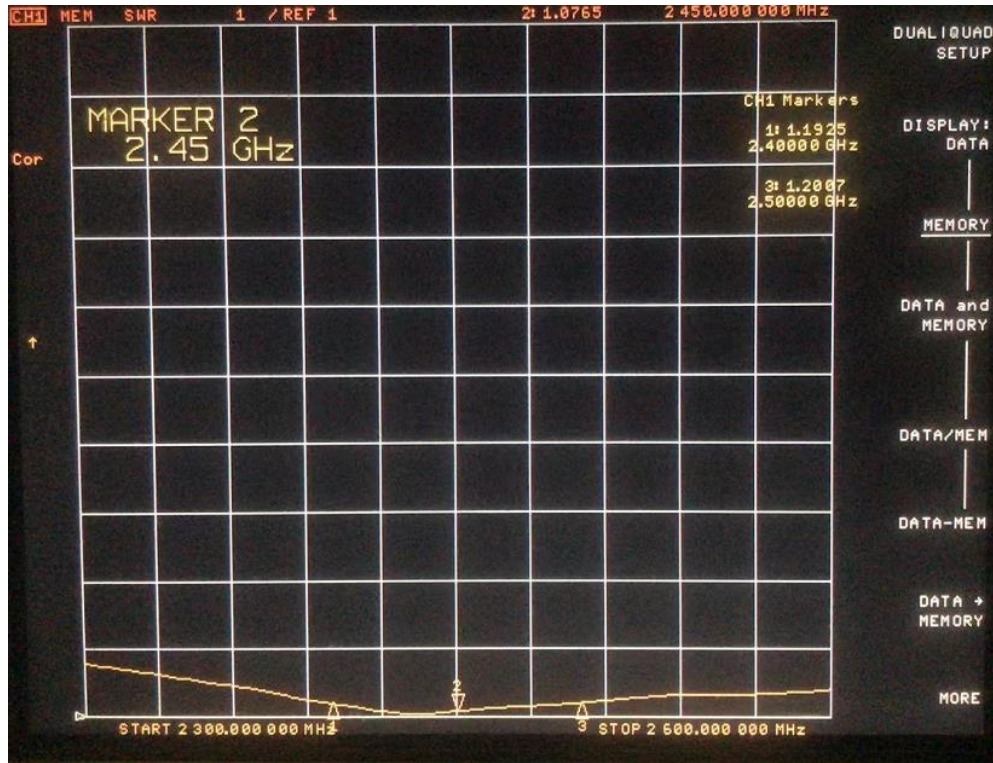
4.1.2 Gain & Radiation Patterns

The gain of the antenna was measured in the HUMAN'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.

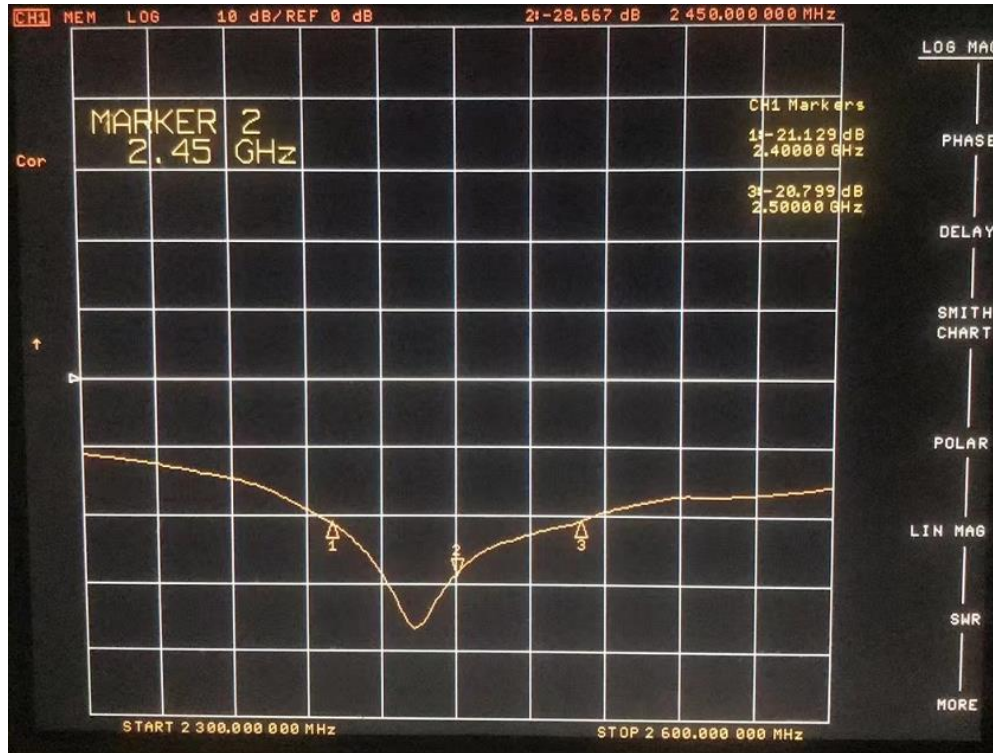
Project: WIFI Antenna		Author: Zhu	File Name: IPC-13PS-APP-RA
Date: 2022-10-18			
TEST:	Language:	Check: Wang	
A	English		
TEL: 0755-29195258 FAX: 0755-29590286			
Shenzhen Lxc Electronics Technology Co., Ltd			

5 Plots

5.1 VSWR (S11)



LOG MAG (S11)



Project: WIFI Antenna		Author: Zhu	File Name: IPC-13PS-APP-RA
Date: 2022-10-18			
TEST:	Language:	Check: Wang	
A	English		
TEL: 0755-29195258 FAX: 0755-29590286 Shenzhen Lxc Electronics Technology Co., Ltd			

5.2 Gain efficiency

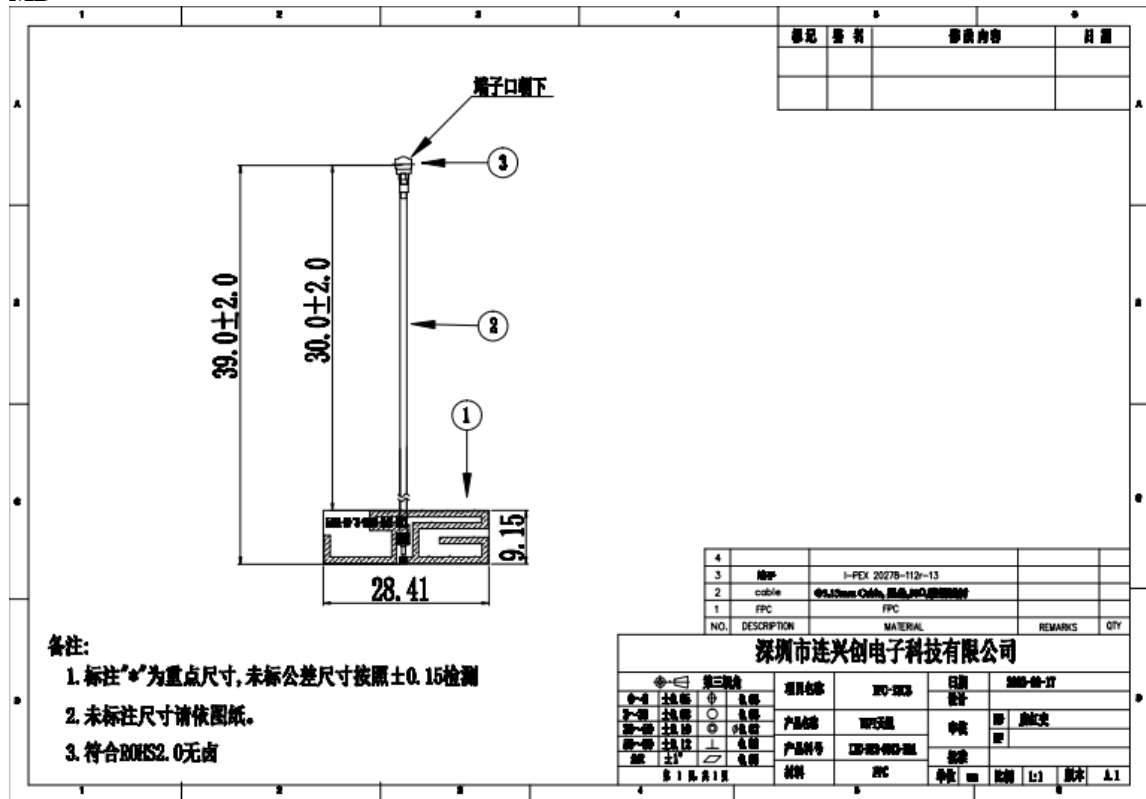
2400-2500 (MHz)

Passive Test For WIFI2.4		
Freq	Effi	Gain
(MHz)	(%)	(dBi)
2400	50.13	2.62
2410	51.42	2.57
2420	52.41	2.96
2430	53.09	2.93
2440	53.56	2.81
2450	53.98	2.74
2460	53.23	2.22
2470	54.51	2.12
2480	55.69	2.6
2490	51.43	2.67
2500	52.81	2.47

Project:WIFI Antenna		Author: Zhu	File Name: IPC-13PS-APP-RA
Date: 2022-10-18			
TEST:	Language:	Check: Wang	
A	English		
TEL: 0755-29195258 FAX: 0755-29590286			
Shenzhen Lxc Electronics Technology Co., Ltd			

6 Mechanical drawing

MD



7 Reliability tests

7.1 Test content

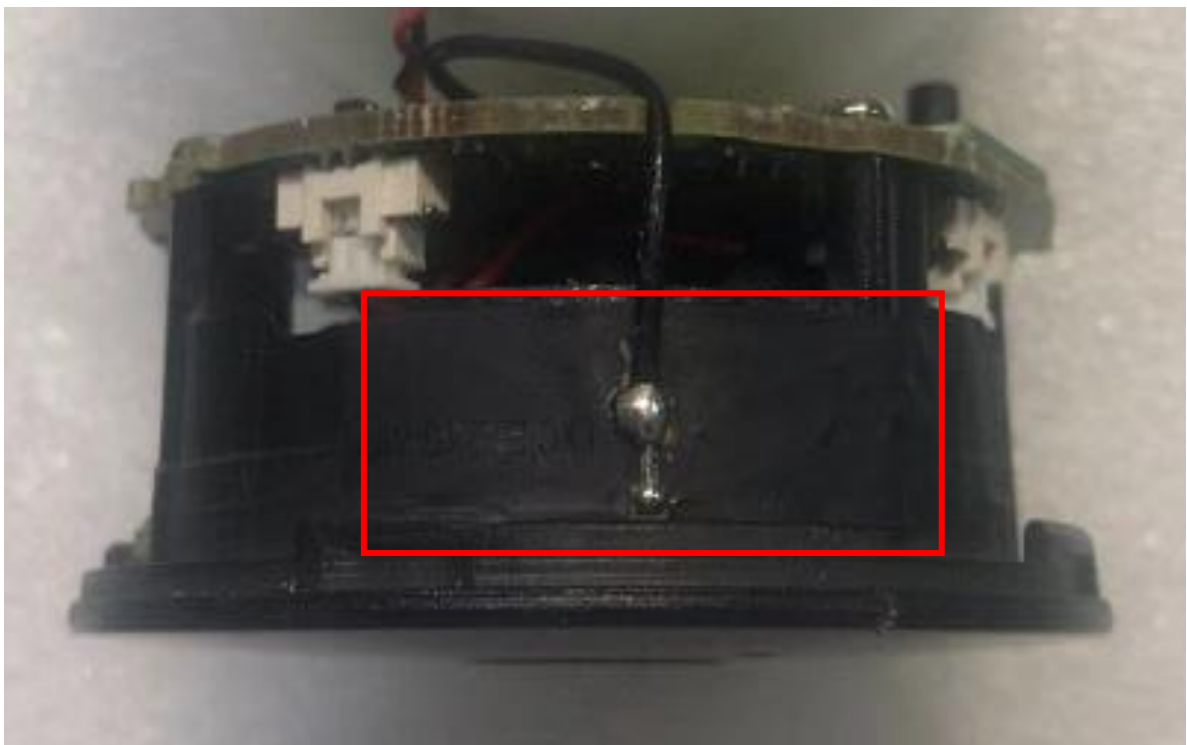
No	试验项目(pilot projects)	试验方法(test mode)	判定基准(defining principle)
1	salt spray test	Spray the solution with salt concentration of 5% for 48H	Spray the solution with salt concentration of 5% for 48H without discoloration, deflection (deformation), falling off, etc. The corrosion area shall not be too large
2	工作温度 (Operational Temperature)	-40°C~+65°C	
3	储存温度 (Storage Temperature)	-50°C~+85°C	
4	湿度 (Humidity)	40%~95%	

Project: WIFI Antenna		Author: Zhu	File Name: IPC-13PS-APP-RA
Date: 2022-10-18			
TEST:	Language:	Check: Wang	
A	English		
TEL: 0755-29195258 FAX: 0755-29590286			
Shenzhen Lxc Electronics Technology Co., Ltd			

7.2 Test results

NO	样品数 (Number of samples)	试验期间 (During the test)	实验结果 (experimental result)	备注(remarks)
1	50	24h	OK	技术等级为9级 腐蚀<0.4mm(Remarks The technical level is Level 9 Corrosion<0.4mm)
2	50	48h	OK	技术等级为9级 腐蚀<0.4mm(Remarks The technical level is Level 9 Corrosion<0.4mm)

8 Conclusion



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

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

Project: WIFI Antenna		Author: Zhu	IPC-13PS-APP-RA
Date: 2022-10-18			
TEST:	Language:	Check: Wang	
A	English		
TEL: 0755-29195258 FAX: 0755-29590286			
Shenzhen Lxc Electronics Technology Co., Ltd			