

# 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) : 汉影  
 产品 (Product) : 2.4G/5.8G Internal onboard antenna (L=105MM)  
 型号 (Model) : WIFI antenna  
 料号 (Part Number) : LXC-202406040003  
 制作人 (Written By) : \_\_\_\_\_  
 签发时间 (Issued Date) : 2024-07-26

### 客户 CUSTOMER

频率范围(Frequency range)	WIFI:2.4G-5.8G (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)	Internal onboard 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)	WIFI antenna

<b>RF by</b>		<b>Checked by</b>	
<b>ME by</b>		<b>Date</b>	
<b>Customer Confirm</b>			

8Project:		Author:Wang	File Name:  <b>WIFI antenna</b>
Date: 2024-07-26			
TEST:	Language:	Check: Zhong	
A	English		
地址: 4th Floor, Building C, Jinruihua Industrial Park, No. 12, Huafang Road, Dalang Street, Longhua District, Shenzhen City Tel.: 0755-29195258 Fax: 0755-29590286 Shenzhen Lxc Electronics Technology Co., Ltd			

## Revision History

Date	Revision	Description of Changes
2024-07-26	RA	Measured with SUS301 sample.

<b>SHENZHEN LXC ELECTRONICS TECHNOLOGY CO., LTD</b> .....	<b>1</b>
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# 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.

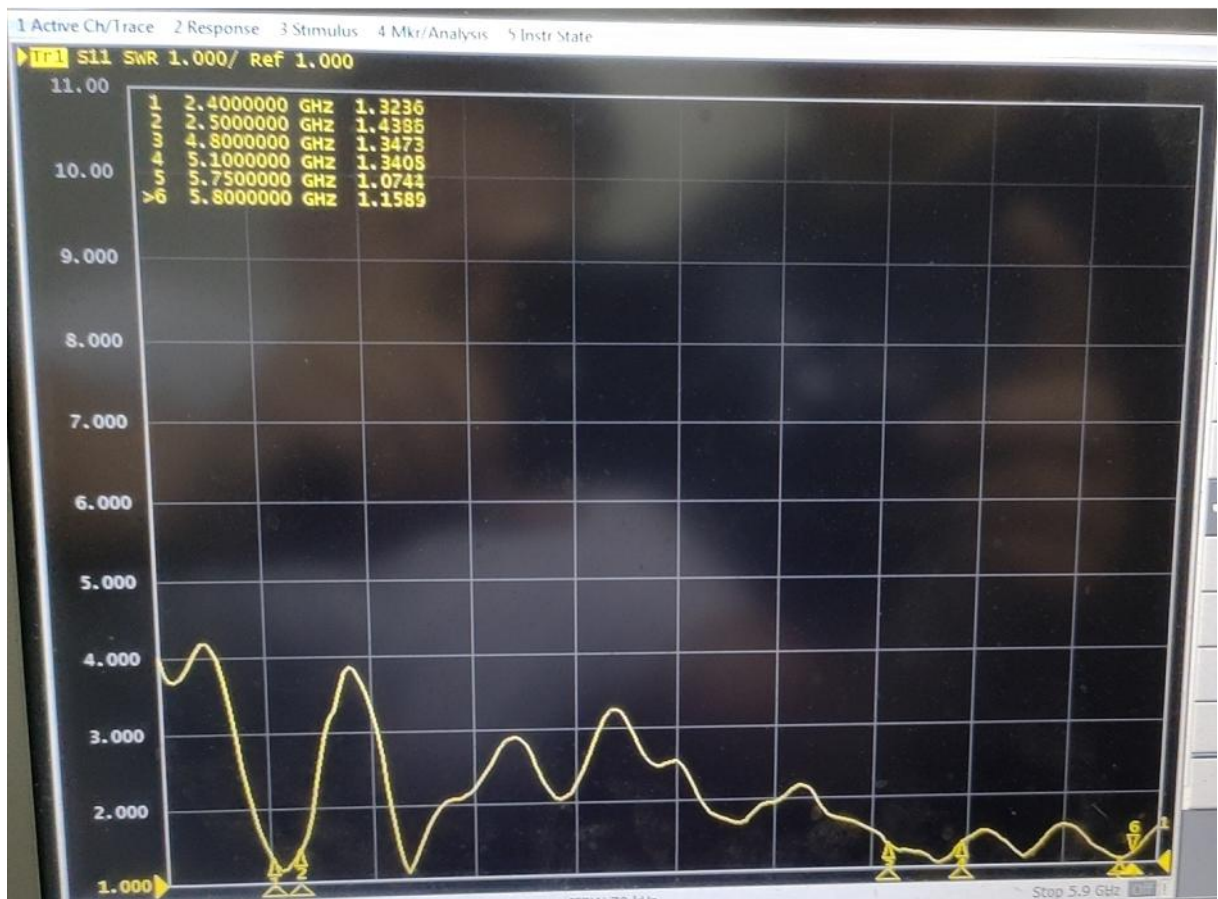
#### 4.1.2 Gain & Radiation Patterns

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



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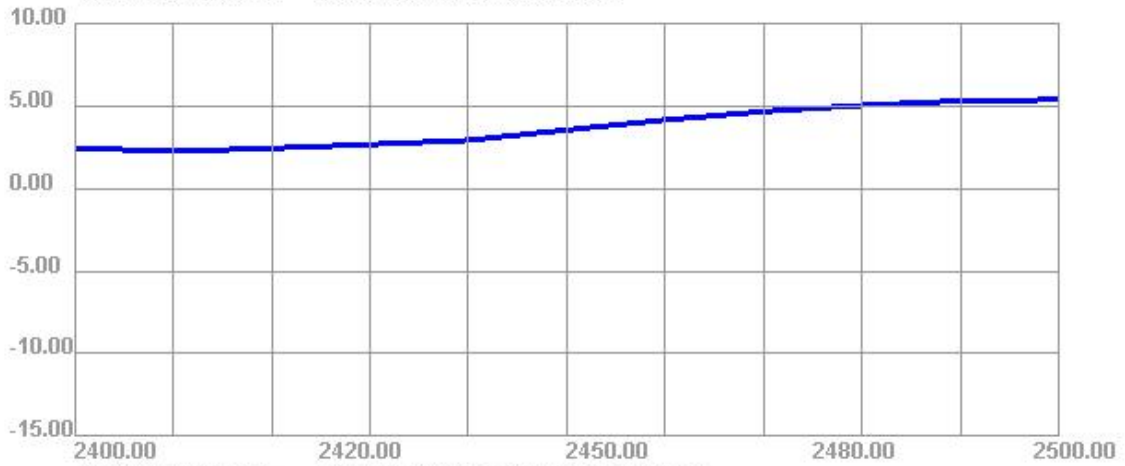
## 4.2 Measurement Data

### 4.2.1 Active result (WIFI)

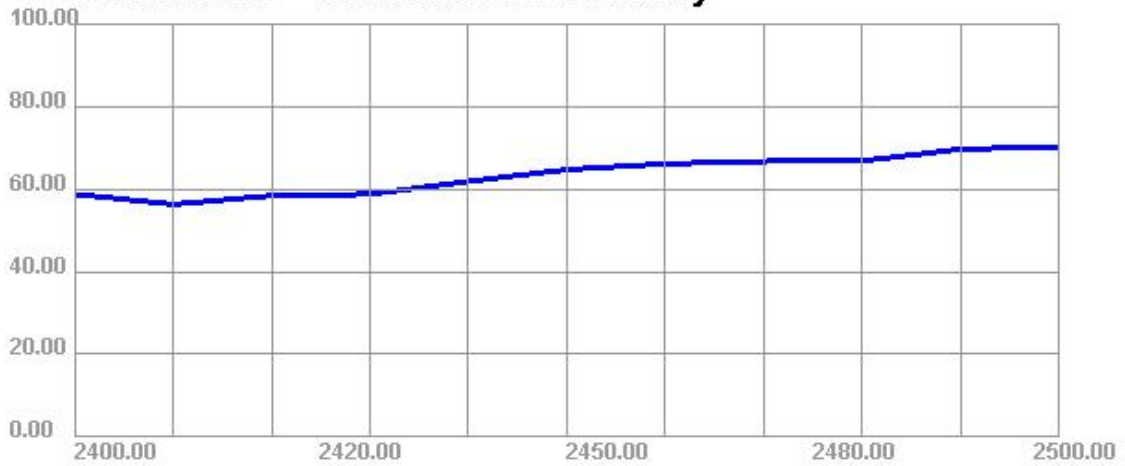
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	53.79	-2.31	2.19
2410	54.32	-2.49	2.25
2420	54.46	-2.33	2.44
2430	56.79	-2.31	2.66
2440	58.88	-2.08	2.92
2450	60.73	-1.89	3.04
2460	61.14	-1.8	3.25
2470	63.75	-1.76	3.29
2480	65.83	-1.75	3.32
2490	66.68	-1.57	3.37
2500	66.77	-1.53	3.41

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### 2400.00MHz - 2500.00MHz Gain

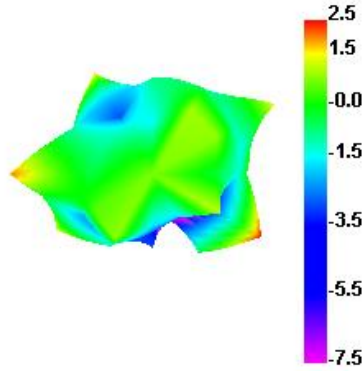


### 2400.00MHz - 2500.00MHz Efficiency

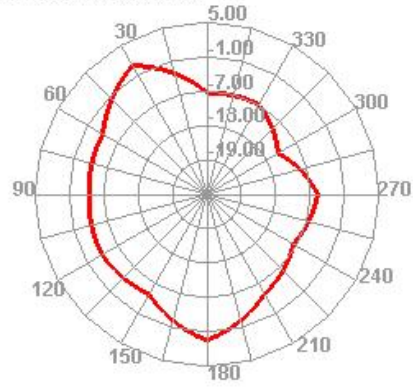


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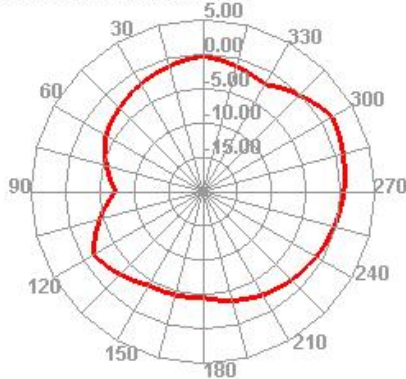
2400.000MHz



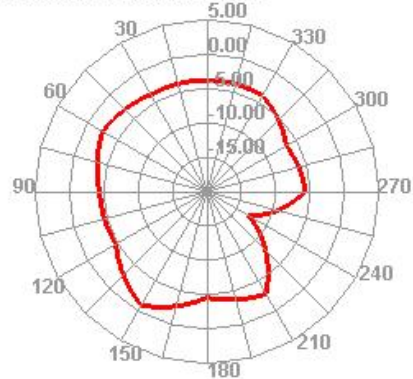
2400.000MHz H



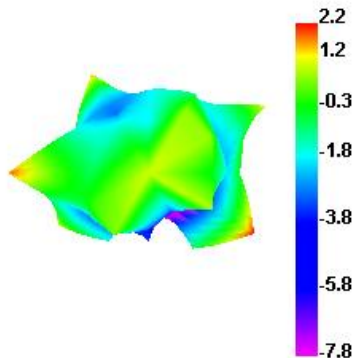
2400.000MHz E1



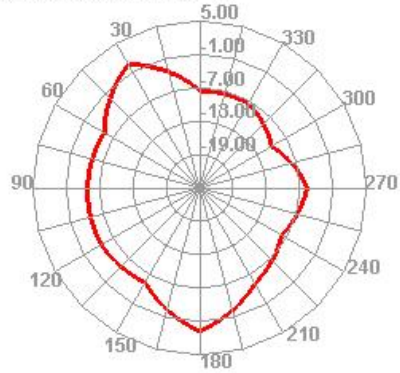
2400.000MHz E2



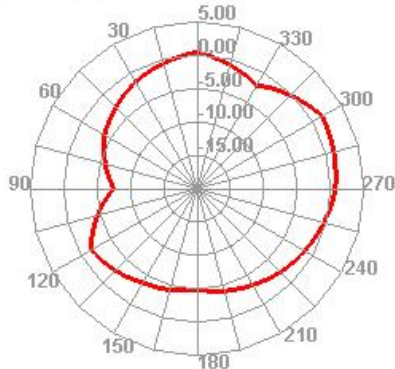
2410.000MHz



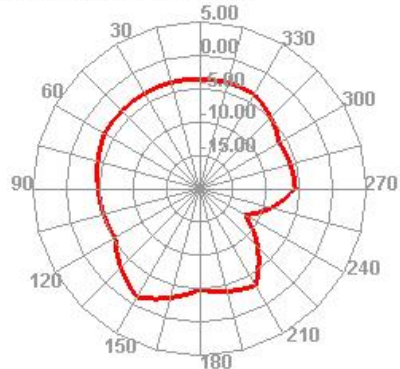
2410.000MHz H



2410.000MHz E1



2410.000MHz E2



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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

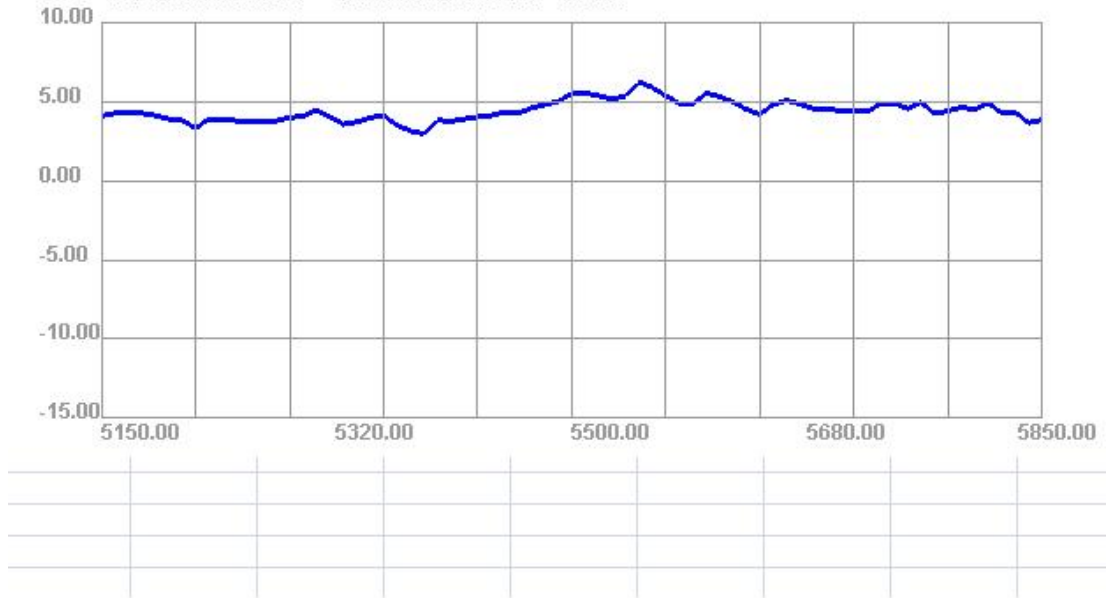
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5510	65.86	-1.5	3.54
5520	66.74	-1.57	3.38
5530	64.12	-1.93	3.64
5540	64.83	-1.88	3.44
5550	63.76	-1.32	3.25
5560	64.17	-1.48	3.89
5570	64.64	-1.7	3.37
5580	62.61	-2.03	3.59
5590	60.72	-2.17	3.82
5600	65.5	-1.71	3.54
5610	66.69	-1.76	3.31
5620	64.18	-1.93	3.96
5630	61.2	-2.13	4.11
5640	59.42	-2.26	4.18
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	4.14
5690	65.14	-1.86	4.29
5700	66.02	-1.8	4.35
5710	65.69	-1.82	4.46
5720	64.13	-1.93	4.36
5730	61.91	-1.43	3.89
5740	68.11	-1.67	4.9
5750	68.29	-1.66	3.56
5760	67.69	-1.51	3.95
5770	67.82	-1.62	4.26
5780	66.48	-1.58	4.41
5790	67.39	-1.85	4.47
5800	65.66	-1.83	4.51
5810	65.84	-1.44	3.91
5820	66.12	-1.54	4.28
5830	66.49	-1.58	3.34
5840	66.89	-1.88	3.66
5850	66.93	-1.75	3.84

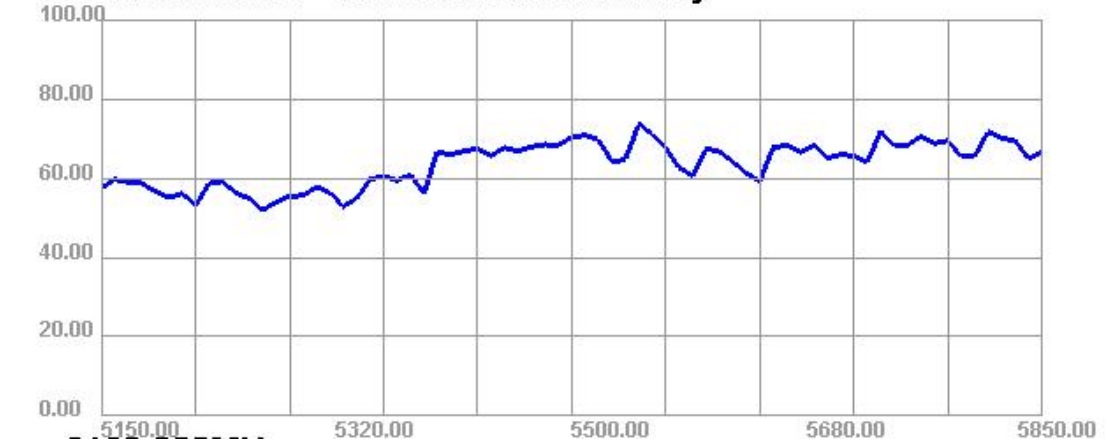
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### 5150.00MHz - 5850.00MHz Gain

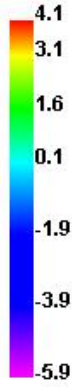
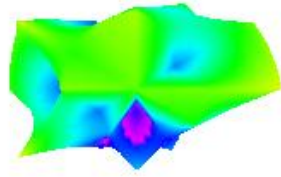


### 5150.00MHz - 5850.00MHz Efficiency

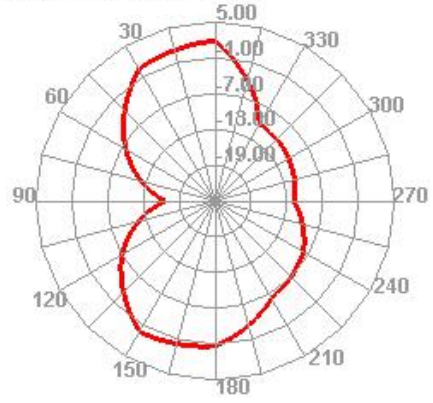


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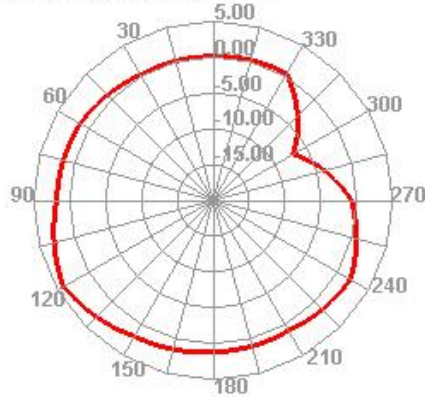
5150.000MHz



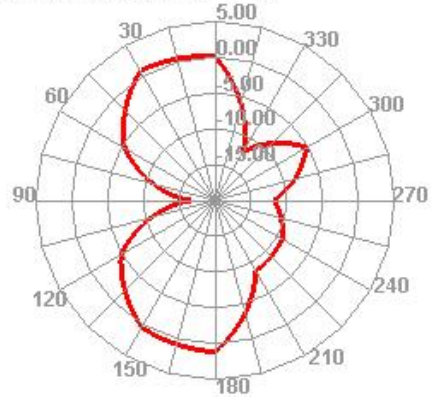
5150.000MHz H



5150.000MHz E1

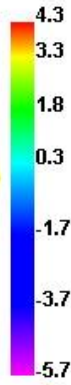
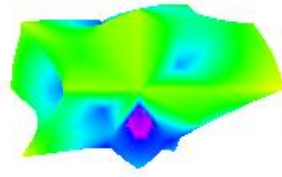


5150.000MHz E2

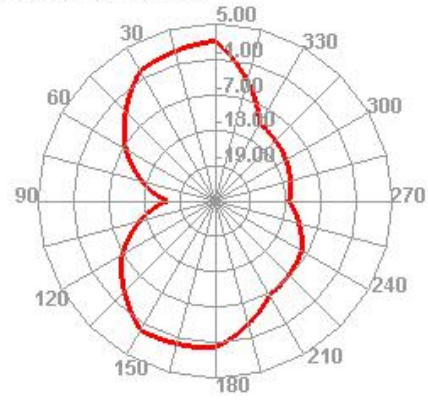


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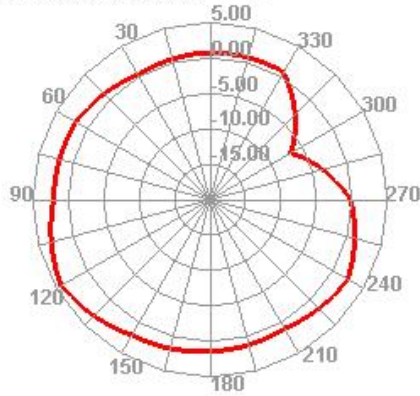
5160.000MHz



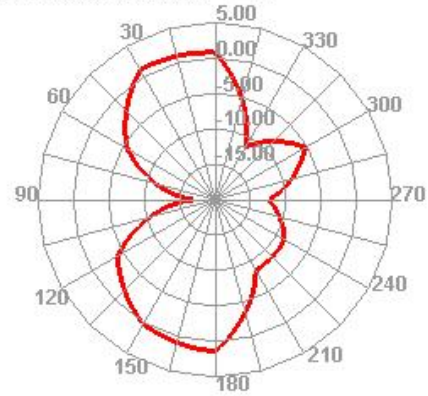
5160.000MHz H



5160.000MHz E1

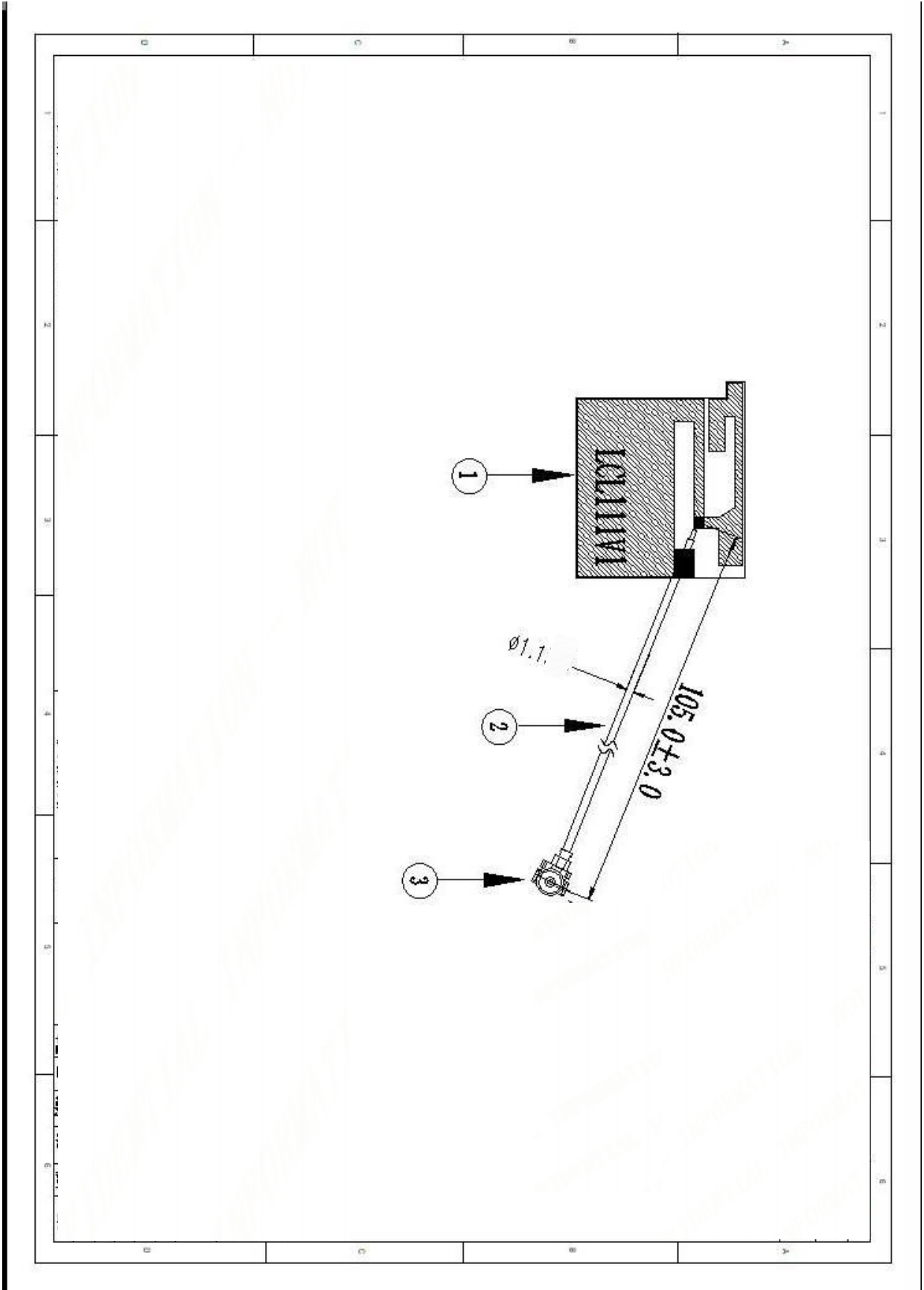


5160.000MHz E2



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## 6 Mechanical drawing



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# 7 Reliability tests

## 7.1 Test content

No	test item	test method	standard of criterion
1	salt spray test	Spray a 5% salt concentration solution for 48 hours	It must not have any defects such as discoloration, distortion, detachment, etc. The area of corrosion cannot be too large.

## 7.2 Test results

NO	sample number	duration of test	experimental result	remark
1	50	24 H	<b>OK</b>	Technical grade: 9 Corrosion: < 0.4mm
2	50	48 H	<b>OK</b>	Technical grade: 9 Corrosion: < 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 !

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