



Shenzhen Lxc Electronics Technology Co ., Ltd

APPROVAL SHEET

For

CE LINK LIMITED

433MHz project

A02520005003

Antenna componentst

Frequency range	433 (MHz)
VSWR	<4.0
Input Impedance	50 (Ω)
Polarization	Vertical Polarization
(3dB) HPW	180° H-plane 120° E-plane
Antenna type	433 antenna (Built-in Spring antenna)
Antenna gain MAX (dBi)	-4.43dBi
Antenna supplier)	Shenzhen Lxc Electronics Technology Co ., Ltd
Antenna Model	LXC-TH-099

RF by		Checked by	
ME by		Date	2024-07-08
Customer Confirm			

Project:433MHz		Author: Zhu	File Name: 433MHz-APP-RA
Date: 2023-10-10			
TEST:	Language:	Check: Wang	
A	English		
Shenzhen Lxc Electronics Technology Co ., Ltd Address: 4 / F, Building C, Jinruihua Industrial Park, No.12 Huafang Road, Dalang Street, Longhua District, Shenzhen			

Revision History

Date	Revision	Description of Changes
2023-10-10	RA	Measured with Spring 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.....	5
7 RELIABILITY TESTS.....	6
7.1 Test content	6
7.2 Test results	6
8 CONCLUSION	6

Project:433MHz		Author: Zhu	File Name: 433MHz-APP-RA
Date: 2023-10-10			
TEST:	Language:	Check: Wang	
A	English		
Shenzhen Lxc Electronics Technology Co ., Ltd Address: 4 / F, Building C, Jinruihua Industrial Park, No.12 Huafang Road, Dalang Street, Longhua District, Shenzhen			

1 Technical Summary

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

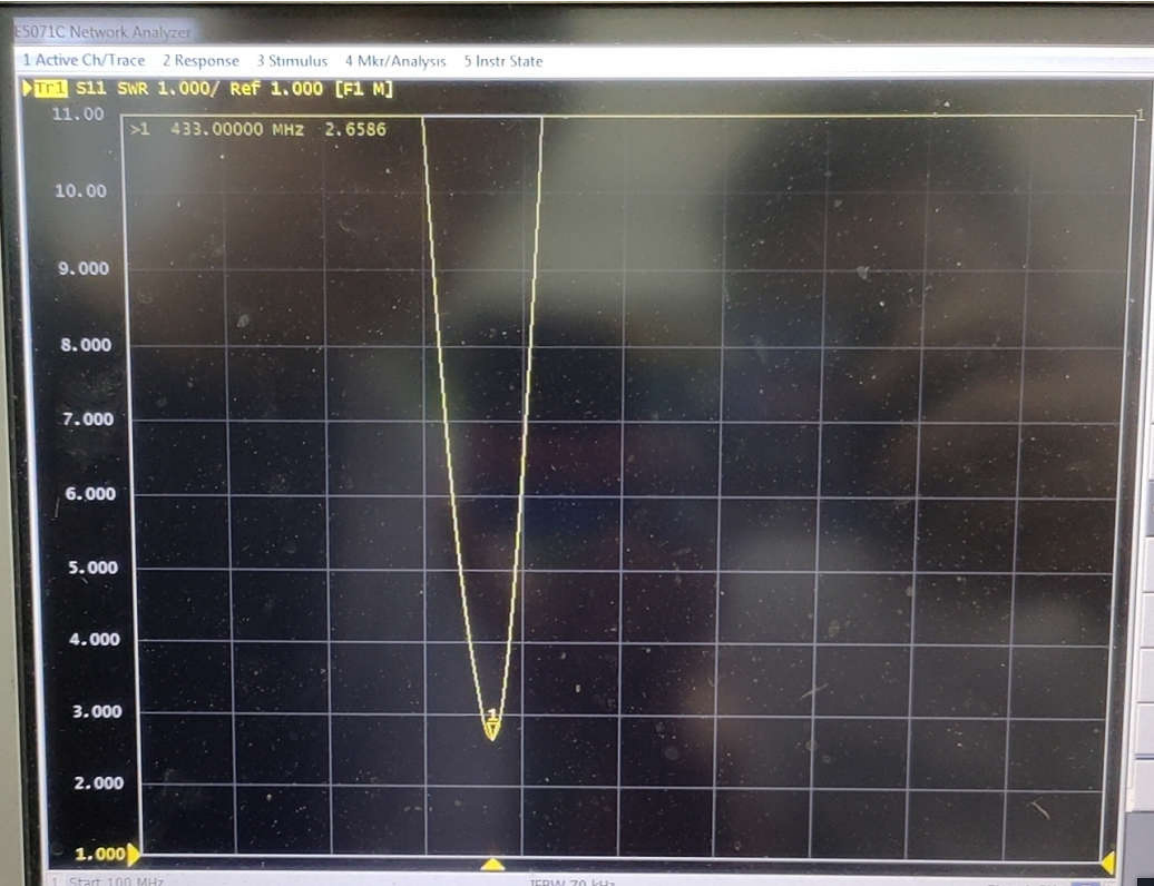
4.1.2 Gain & Radiation Patterns

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:433MHz		Author: Zhu	File Name: 433MHz-APP-RA
Date: 2023-10-10			
TEST:	Language:	Check: Wang	
A	English		
Shenzhen Lxc Electronics Technology Co ., Ltd Address: 4 / F, Building C, Jinruihua Industrial Park, No.12 Huafang Road, Dalang Street, Longhua District, Shenzhen			

5 Plots

433 (MHz)

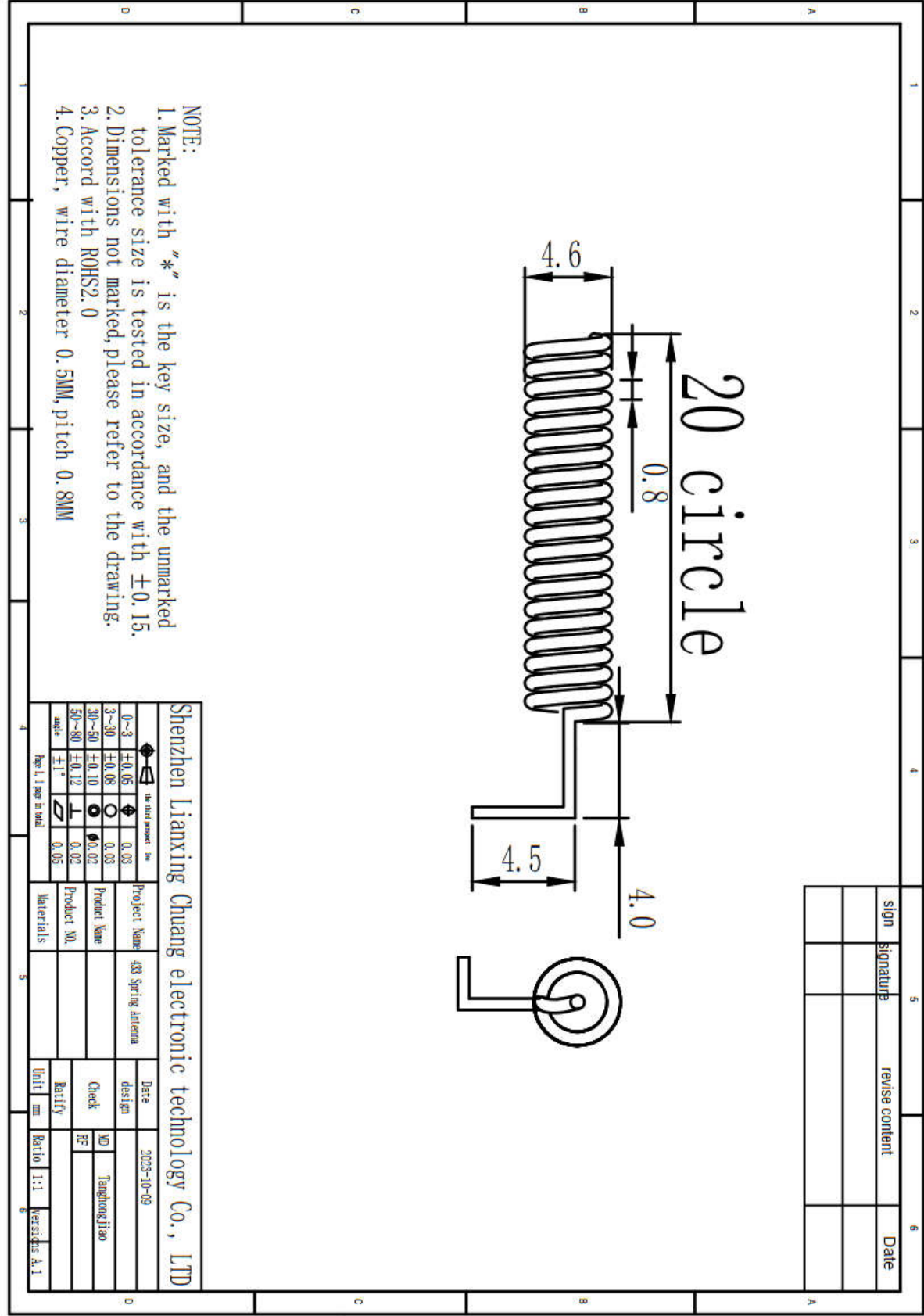


Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
430	15.2	-7.51	-4.12
431	15.13	-7.58	-4.31
432	15.39	-7.66	-4.39
433	15.51	-7.74	-4.43
434	15.57	-7.84	-4.48
435	16.14	-7.94	-4.51
436	16.26	-8.06	-4.59
437	16.37	-8.19	-4.63
438	16.35	-8.27	-4.67
439	15.23	-8.35	-4.75
440	16.53	-8.49	-4.81

Project:433MHz		Author: Zhu	File Name: 433MHz-APP-RA
Date: 2023-10-10			
TEST:	Language:	Check: Wang	
A	English		
Shenzhen Lxc Electronics Technology Co ., Ltd Address: 4 / F, Building C, Jinruihua Industrial Park, No.12 Huafang Road, Dalang Street, Longhua District, Shenzhen			

6 Mechanical drawing

MD



Project:433MHz		Author: Zhu	File Name: 433MHz-APP-RA
Date: 2023-10-10			
TEST:	Language:	Check: Wang	
A	English		
Shenzhen Lxc Electronics Technology Co ., Ltd Address: 4 / F, Building C, Jinruihua Industrial Park, No.12 Huafang Road, Dalang Street, Longhua District, Shenzhen			

7 Reliability tests

7.1 Test content

No	Test item	Test method	Standard of criterion
1	Salt spray test	Spray a 5% salt solution 48HR	There can be no discoloration, distortion (deformation) fall off and other shortcomings of the corrosion area can not be too large
2	Operational Temperature	-40℃~+65℃	
3	Storage Temperature	-50℃~+85℃	
4	Humidity	40%~95%	

7.2 Test results

NO	Sample number	Test time	Test rsdults	Remark
1	50	24HR	OK	The technical level is 9 Corrosion <0.4mm
2	50	48HR	OK	The technical level is 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 !

Project:433MHz		Author: Zhu	File Name: 433MHz-APP-RA
Date: 2023-10-10			
TEST:	Language:	Check: Wang	
A	English		
Shenzhen Lxc Electronics Technology Co ., Ltd Address: 4 / F, Building C, Jinruihua Industrial Park, No.12 Huafang Road, Dalang Street, Longhua District, Shenzhen			