

SPECIFICATION



ShenZhenTianDaCommunicationCO., LTD

D2 Spring antenna

Product acknowledgement

client	xunmei	Frequency band	433MHz
Project name	D2	edition	A
Item part number	天达：XN-D2-43-TH-A 客户料号：1. M. 02. 00. 0. 004	colour	Natural quality
RF design	wangxinchuang	Structural design	ZHOULUHU
date	2024.06.27		

Customer confirmation:

Whether the assembly meets your requirements: ☐OK☐NG

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catalogue

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保密要求

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一、Spring antenna

1、specification

The acceptance document mainly provides the test status of the electrical and structural performance parameters of the 433MHz antenna of the D2 project. Below is Investec Design

Picture of a 433MHz antenna.



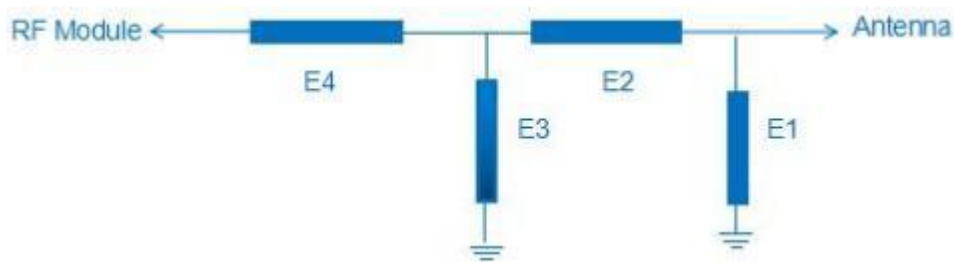
1.1、Electrical specification

1.1.1、Electrical performance index

This antenna works in the frequency band of 428MHz - 438MHz. The following is the electrical performance index of the antenna designed and mass-produced by Investec.。

433M		
Frequency band	frequency (MHz)	VSWR
433MHz	428~438	≤ 2.0

1.1.2、Match the circuit diagram



Spring antenna	
Element	Value
E1 (0402)	NC
E2 (0402)	8.2pF
E3 (0402)	15pF
E4 (0402)	

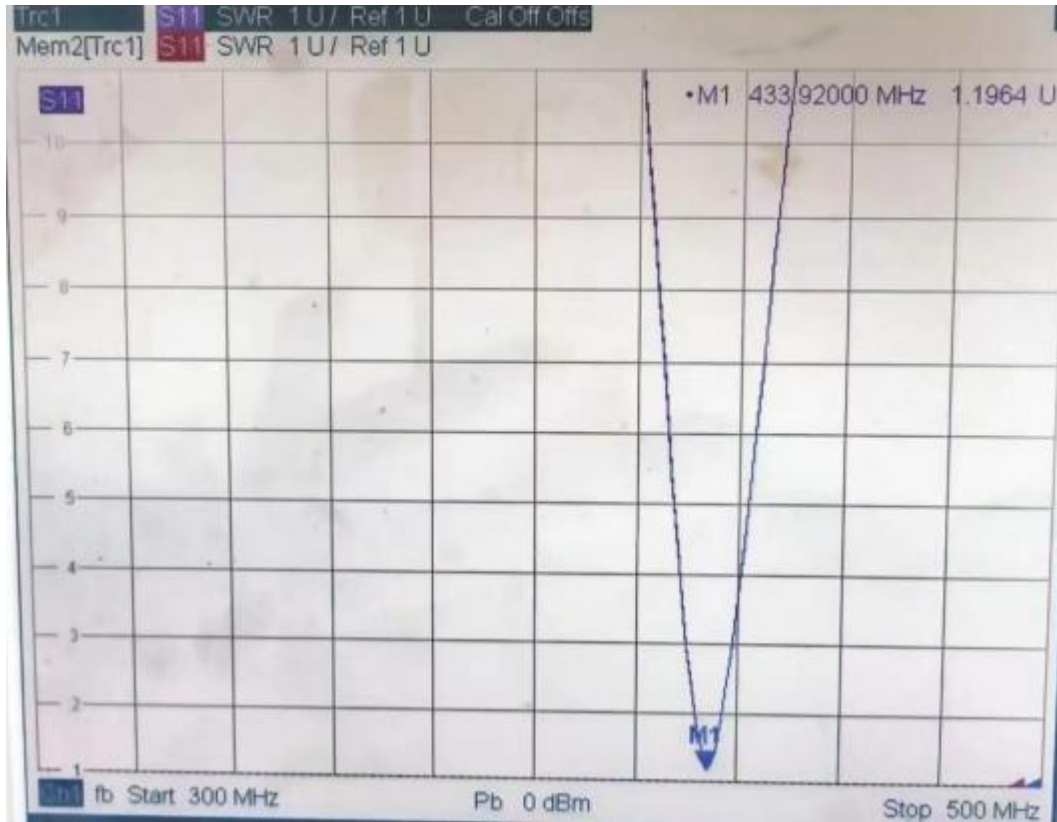


The matching circuit of the spring antenna is the 8.2pF capacitor in series and the 15pF capacitor in parallel from the antenna end.

1.2 TEST

1.2.1、Passive testing

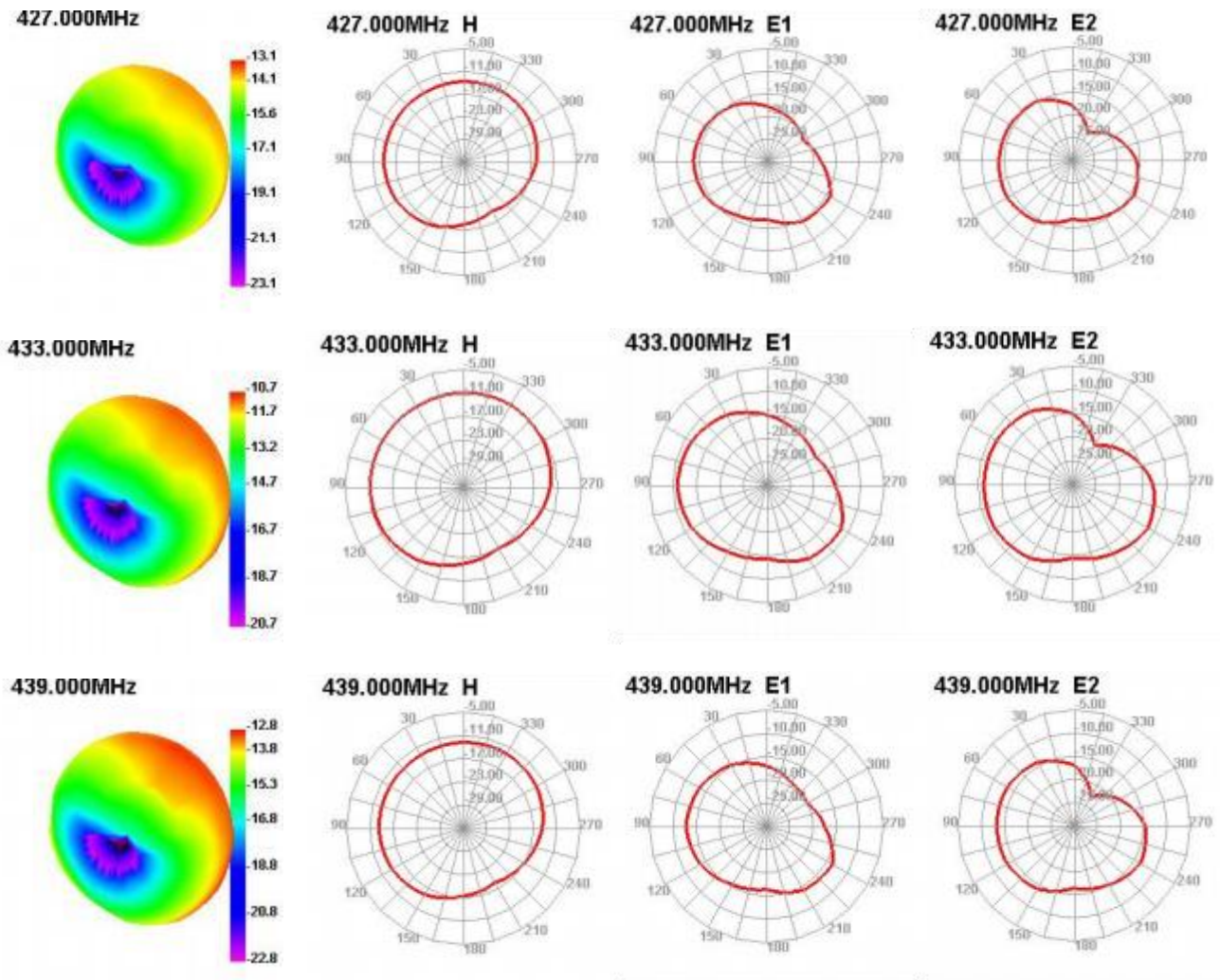
1.2.1.1、Antenna standing wave test (VSWR)



1.2.1.2、Antenna gain, efficiency

Passive Test For 433							
Freq (MHz)	Effi (%)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	AttH (dB)	AttV (dB)
421	7.3	-16.32	-18.47	3.526	3.772	37.41	36.86
424	7.91	-14.83	-16.98	3.773	4.137	37.11	36.31
427	8.86	-13.13	-15.28	4.172	4.685	37.15	36.23
430	10.26	-11.55	-13.7	4.764	5.498	37.36	36.37
433	11.31	-10.68	-12.83	5.218	6.089	37	36.28
436	10.89	-11.18	-13.33	5.06	5.83	36.58	36.01
439	9.34	-12.81	-14.96	4.416	4.923	36.06	35.35
442	8.39	-14.17	-16.32	4.016	4.376	36.21	35.19
445	7.66	-15.71	-17.86	3.71	3.947	36.69	35.28

1.2.2、Antenna pattern



二、Structural specification

2.1、Antenna composition

The spring antenna is mainly composed of phosphor copper wire.

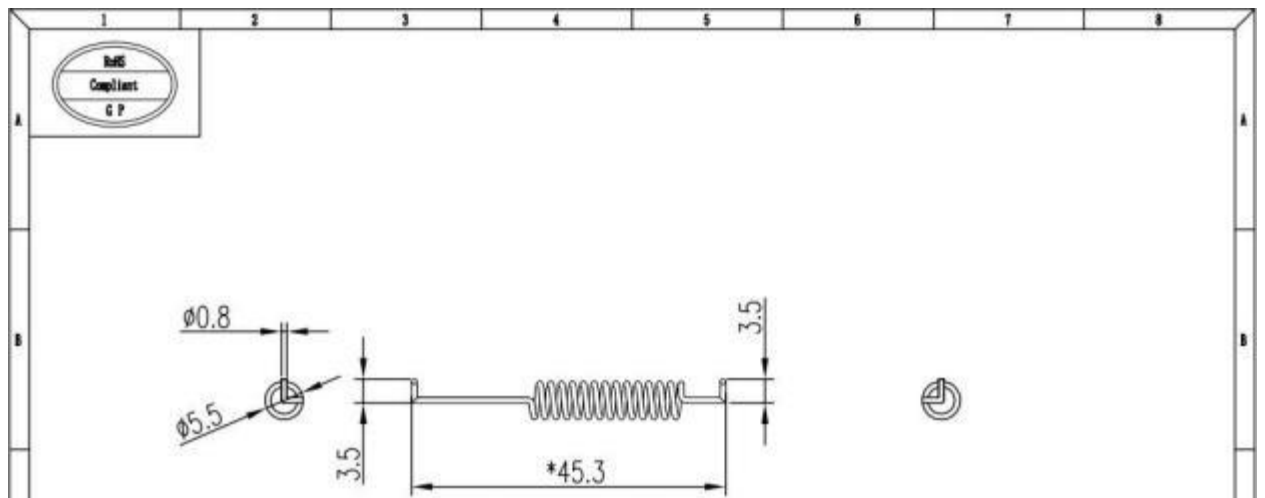


Antenna position and placement method

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2.2、Engineering drawing



2.3、Dimensional measurement

quantityKey dimension	1	2	3	4
45.30 ± 1.0	44.99	45.28	45.31	45.18
$\phi 5.50 \pm 0.1$	$\phi 5.51$	$\phi 5.52$	$\phi 5.53$	$\phi 5.50$
$\phi 0.80 \pm 0.1$	$\phi 0.80$	$\phi 0.81$	$\phi 0.79$	$\phi 0.79$

三、Conclusion

This antenna is designed on the prototype provided by the customer, the electrical parameters and structural size have reached the technical requirements, please confirm!

四、Packaging

Pack in PE bag.