

Shenzhen Heyixun Technology Co., LTD

SPECIFICATION FOR APPROVAL

customer Name	ShenZhen He Yixun Technology Co., Ltd		
Customer project Name	CQ-HI201	Heyixun project Name	CQ-HI201
Antenna type	Copper tube antenna	Heyixun P/N	HYX0122-CQ-HI201-V1
Band	2400-2500MHz		
vers ion	A0		
Designer Information			
RF Engineer	Xu Liang	EE Engineer	Feng Xiaoheng
ME Engineer	Reng Yinan		

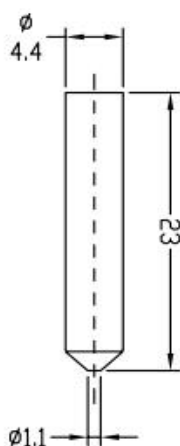
Heyixun Approval				customer Approval	
	prepared	checked BY	Approval BY	checked BY	Approval BY
signature	Xiao Jingxian				
Date	2025-12-18				

change Log				
version	change Description	person in charge	Approval BY	Date

catalogue

No.	Item	Page No.
1	Drawing or Product Image	3-5
2	Dimensions Test Report	6
3	RF Performance Test Report	7-11
4	Reliability Test Report	12
5	PACK ING CRITERION	13
6	Environmental requirements	14

Drawing or Product Image

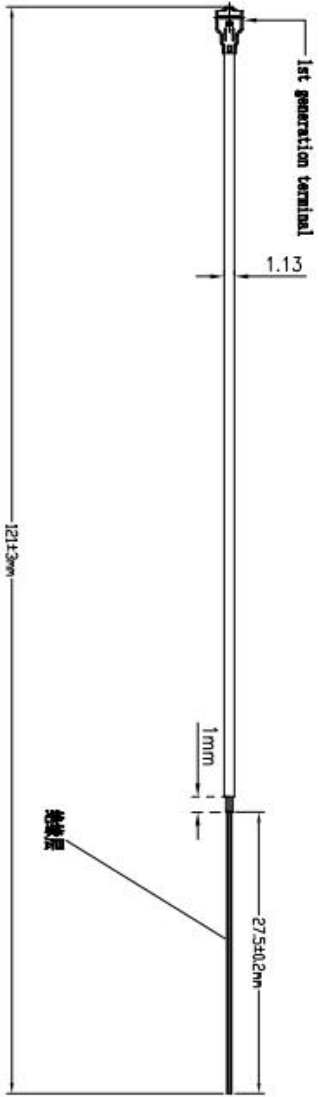


Material: Copper

H=0.25

He Yi Xun Technology Co., Ltd.							
	The third angle method	Model	Copper tube antenna	Date	2025-12-6	Drawing Zhu Zeng Yuan	Page 1 of 1
0~10	±0.10	○	0.02	Product name	2.4G	Audit	Approval
10~20	±0.12	◎	0.03	Part number	HTX0122-SM24-Y1		
20~40	±0.15	└	0.02	Material	Copper		
40~	±0.20	▮	0.04	Structure	Feng Xiaohong		
			0.02	Radio frequency	Zou Zeng Yuan		
				Unit	mm	Action	1:1
						Version	REV:A

V.1
V.2
V.3
V.4
V.5
V.6



- I. Technical Parameters
1. Rated Voltage: 60 VAC (R.M.S)
 2. F Test Range: 0 to 6 GHz
 3. Characteristic Impedance: 50 ± 2 ohms
 4. Working Temperature Range: -40°C to 85°C
 5. Working Humidity: 95% R.H. Max.

- II. Electrical Performance
1. Insulation: 500 M ohms
 2. Contact Resistance:
Center PIN Pin: 25 m ohms Max.
External Iron Shell 15 m ohms Max.
 3. Dielectric Strength: 200 V AC for 2 Minutes
 4. Line Loss:
900 MHz: 0.5 dB Max.
At 1800 MHz: 0.7 dB Max.
 5. VSW (Voltage Standing Wave Ratio):
From 0.1 to 3 GHz: 1.3 Max.
From 3 to 6 GHz 1.5 Max.

- III. Mechanical Performance
1. Pull-out Force:
Initial: 4 N Min.
After 0 cycles: 2 N Min.
Tension: 10 N Min.

Note: 1st generation terminals are used. Overall length: 121 ± 3 mm.

He Yi Xun Technology Co., Ltd.									
No.	Layer	Description (Thickness)	Manufacturer & P/N	Symbol	The third angle method	Model	Copper tube antenna	Date	Zhu Zeng Yuan
1	Wire	0.81	Tiamei	10~20	± 0.10	Product name	HTX0122-SMB24-T	Design	Approval
2	Terminal	1st generation	Zepel	20~40	± 0.15	Part number	Copper	Design	Approval
3				40~	± 0.20			Design	Approval

V.1
V.2
V.3
V.4
V.5
V.6

V.1.1
V.2.2
V.3.3
V.4.4
V.5.5
V.6.6

He Yi Xun Technology Co., Ltd.

No.	Layer	Description (Thickness)	Manufacturer & P/N		The third angle method	Model	Copper tube antenna	Date	Design	Zhu Zeng Yuan	page number
1	Wire	0.81	Tiannai		±0.10 ±0.12 ±0.15	Product name	Assembly drawing	Structure	Peng Xiaohong		1 of 1
2	Terminal	1st generation	Zepel		±0.20 ±0.04 0.02	Part number		Basis frequency	Zhu Zeng Yuan		Approval
3					0.02						

mm

Ratio

1:1

Version

REV: A

sample Dimensions Test Report

address: 1903-1905, Building 2, Jiufang Square, Tiezai Road, Gongle Community, Xixiang Street, Bao'an District, Shenzhen

Shenzhen Heyixun Technology Co., LTD

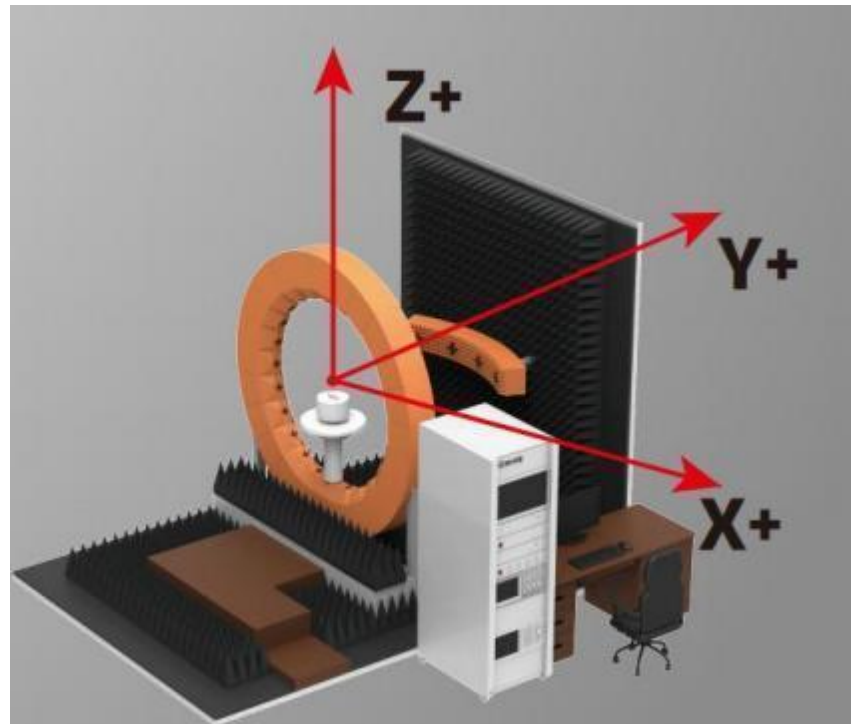
customer Name	He Yixun	customer P/N		Heyixun P/N	HYX0122-CQ-HI201-V1
Test Date	2025-12-18	samp le Qty.	3	Inspector	Xiao Jingxian
Dimens ion NO.	standard	samp le 1	samp le 2	samp le 3	pass/NG
①length	121±3mm	121.5mm	120.8mm	121.9mm	Pass
②Diameter	4.4±0.3mm	4.7mm	4.5mm	4.6mm	Pass
③Length of copper tube	23±0.3mm	23.2mm	23.1mm	22.9mm	Pass
Conclusion					PASS
Inspector & Date	Xiao Jingxian 2025-12-18		Approval &Date		

RF Performance Test Report

customer Name	He Yixun	project Name	CQ-HI201	Heyixun P/N	HYX0122-CQ-HI201-V1
Band	2400-2500MHZ	Test Date	2025-12-18	Inspector	Xiao Jingxian

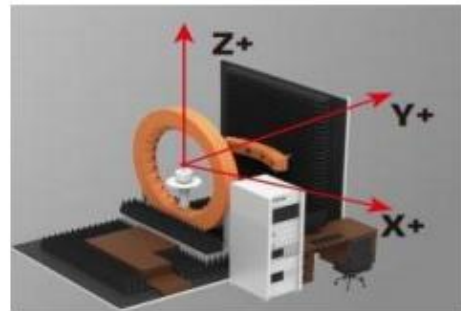
Antenna Test Equipment Introduction

Test of antenna input characteristics using Agilent E5071c and Agilent 5071c vector network analyzer ; The radiation pattern of the antenna are tested using the ETS starlab 3D near field Anechoic Chamber, and the instrument is used to agilent8960 E5515 and Agilent E4438C. The test coordinates of the darkroom are as follows:



1.TestSystem

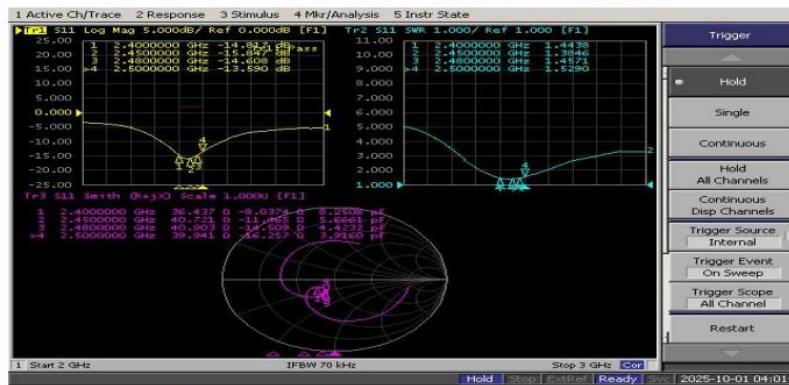
Sequence Number	Test Item	equipment
S parameter	VSWR	Agilent 5071C & Agilent 5071B
OTA Test	TRP&TIS	Agilent 8960 & CMW500 STIMO
Gain & Efficiency	Gain & Efficiency	SATIMO Agilent 5071C



Antenna position



2.Test Result VSWR&Log Mag&Smith(Ω)



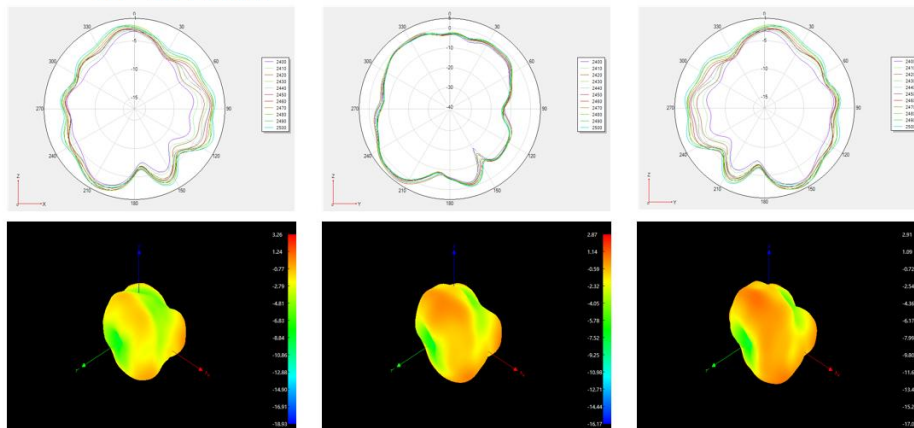
Frequency (MHz)	2400	2450	2480	2500
Log Mag	-14.82	-15.85	-16.61	-13.59
Smith(Ω)	36.44	40.72	40.90	39.94
VSWR	1.44	1.38	1.46	1.53

3.Test Result

Frequency (MHz)	Efficiency (%)	Max GAIN (dBi)
2400	55.21	3.26
2410	56.23	3.67
2420	59.16	4.16
2430	59.98	3.71
2440	62.37	3.55
2450	63.24	2.87
2460	64.57	2.99
2470	64.12	2.6
2480	64.71	2.91
2490	64.71	2.32
2500	66.68	2.52

3.Test Result

3.1 2D Pattern



customer Name	He Yixun	customer P/N		Heyixun P/N	HYX0122-CQ-HI201-V1	
Test Date	2025-12-18	samp le Qty.	3	Inspector	Xiao Jingxian	
Test Item	Requireme	testing equipment	samp le 1	samp le 2	samp le 3	PASS/NG
High temperature storage	The test was performed after 24 hours of exposure at +85° C and 2 hours of recovery	Constant temperature and humidity chamber	OK	OK	OK	Pass
Cryogenic storage	The test was performed after 24 hours of exposure at -40° C and 2 hours of recovery	Constant temperature and humidity chamber	OK	OK	OK	Pass
High temperature operation	Operates at +60° C for 24 hours	Constant temperature and humidity chamber	OK	OK	OK	Pass
Operates at low temperatures	It works on power for 24H at -20° C	Constant temperature and humidity chamber	OK	OK	OK	Pass
Salt spray test	(5 Shi 0.5)*Sodium chloride, pH value is 6.5~7.2, and the temperature of the experimental chamber is (35 ±2)° C ☒ 24H ☐ 48H	Salt spray testing machine	OK	OK	OK	Pass
Connector riveting pull-out force	1.13 Wire size ≥10N 0.81 Wire size ≥8N RG174 ≥60N RG178 ≥50N	Push-pull force gauge	/	/	/	/
Conclusion						Pass
Inspector & Date	Xiao Jingxian 2025-12-18		Approval & Date			

Rel

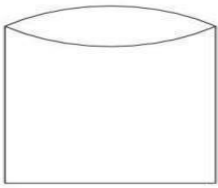
iability Test Report

PACKING CRITERION

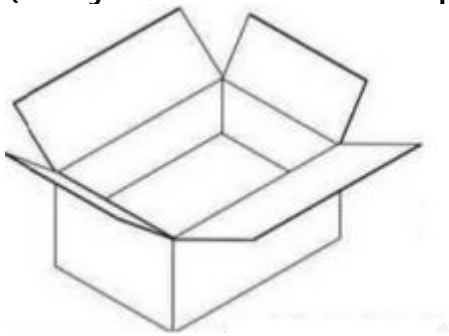
- 1、 Individual products (Subject to the actual packaging)



- 2、 Big PE bag packing (full sheet/single 90pcs) (Subject to the actual packaging)



- 3、 Sealed, the outer box is affixed with our production label and ROHS label. (Subject to the actual packaging)



Environmental requirements

MSDS (Material Safety Data Sheet)	☒ offer	☐ Not available	☐ N/A
COC (Environmental Protection Agreement)	☒ offer	☐ Not available	☐ N/A
Technical standards for environmentally friendly hazardous substances	☒ offer	☐ Not available	☐ N/A
Specific environmental requirements	☒ ROHS2.0 COMPLIANT ☒ Halogen-free ☒ Meets California 65		