

APPROVAL SHEET

CUSTOMER NAME:	Apical		
PRODUCT NAME:	Copper tube antenna		
CUSTOMER P/N:			
Youbi P/N:	UB01NJ2D1156A	REV:	A

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
CHECKED BY:	Eddy 	
APPROVED BY:	工程专用章 Changxing. Liu	
DATE:	2022/11/23	

Modification History

Version	Content Revision	Issued by	Date
A	Original version	Eddy	2022-11-23

Content

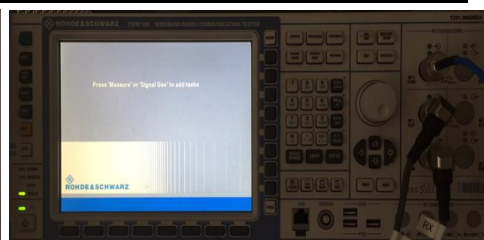
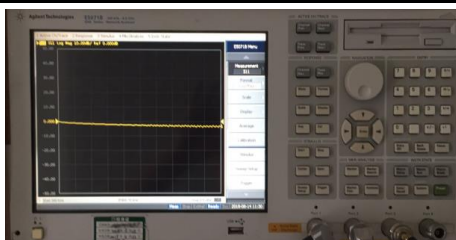
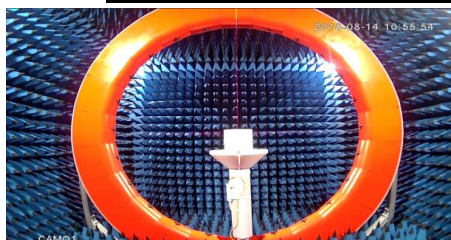
<i>Item</i>	<i>Description</i>
1.-----	Electrical Specification
2.-----	Test Items and Equipment
3.-----	S Parameter
4.-----	Efficiency and Gain
5.-----	Radiation Pattern
6.-----	Active test data
7.-----	Antenna installation diagram
8.-----	Mechanical Specification

1. Electrical Specification

Characteristics	Specifications	Unit
Outline Dimensions	30.94x5.07x3.2,T0.4	mm
Frequency	2400-2500	MHz
Impedance	50	Ω
VSWR	≤ 2	
Polarization	Linear Polarization	
Gain	3.56	dBi
Efficiency	> 60	%
Connector Type	DIP	
Operating temperature	-20℃~+85℃	
Storage Temp	-20℃~+50℃	

2. Test Items and Equipment

	Test items	Test equipment
S Parameter	1.Return Loss 2.VSWR	Network analyzer (Agilent E5071B)
The whole machine of Passive parameters	1.Frequency 2.Gain 3.Radiation Pattern	1.3D microwave darkroom (5m*5m*5m) 2.Network analyzer (Agilent E5071B)
The whole machine of Active parameters	1.TRP 2.TIS	1.3D microwave darkroom (5m*5m*5m) 2.Comprehensive test instrument (CMW500)



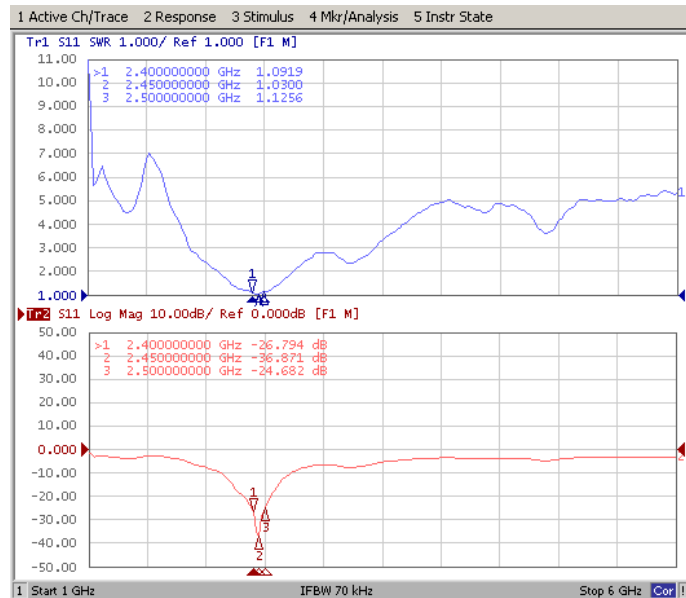
3. S Parameter

Frequency (MHz)	Return Loss (dB)	VSWR
2400	-26.79	1.09
2450	-36.87	1.03
2500	-24.68	1.12

* Voltage Standing Wave Ratio(VSWR)

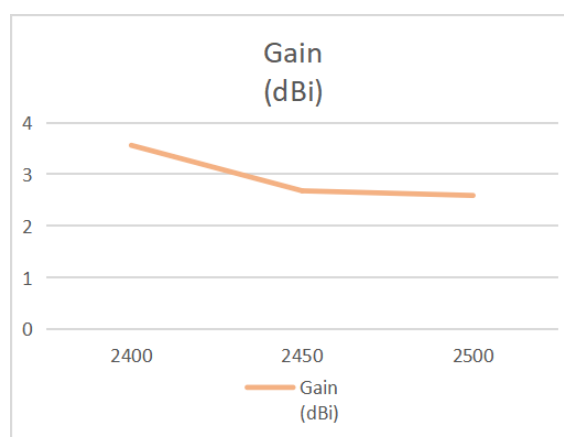
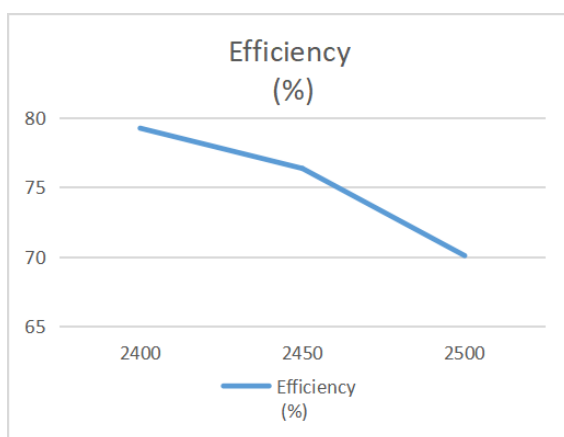
Return Loss(RL)

$$RL=20*\log_{10}[(VSWR+1)/(VSWR-1)]$$



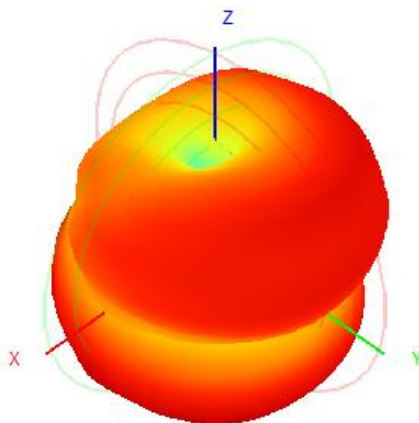
4. Efficiency and Gain

Frequency (MHz)	2400	2450	2500
Efficiency (%)	79.26	76.37	70.11
Gain (dBi)	3.56	2.68	2.59

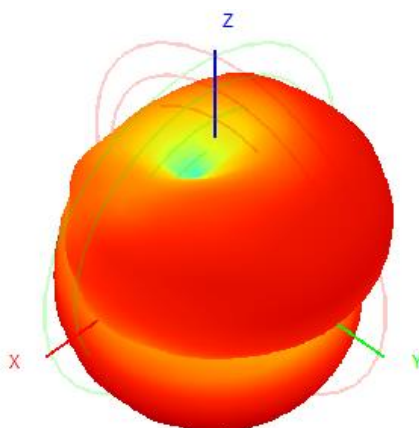


5. Radiation Pattern

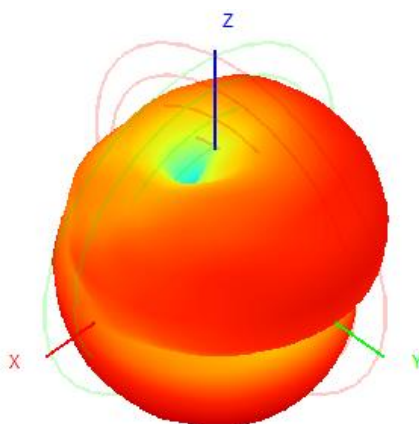
5-1 Antenna 3D Radiation Pattern



2400MHz

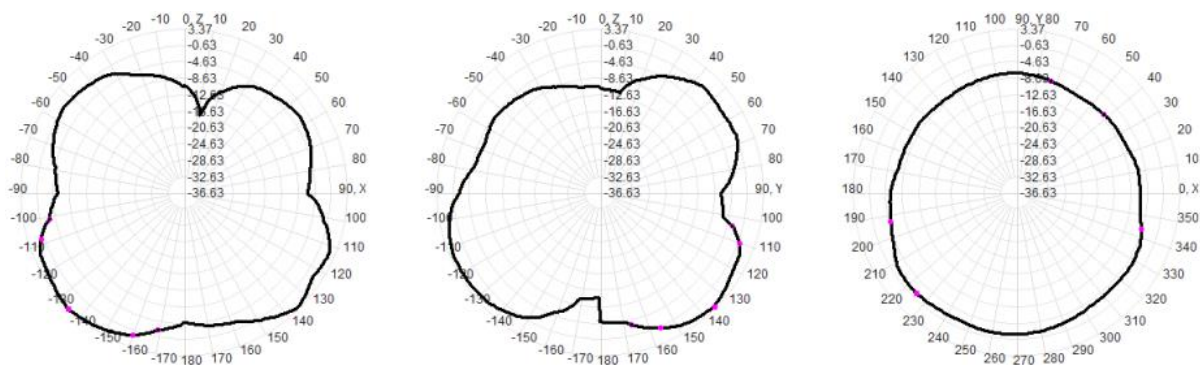


2450MHz

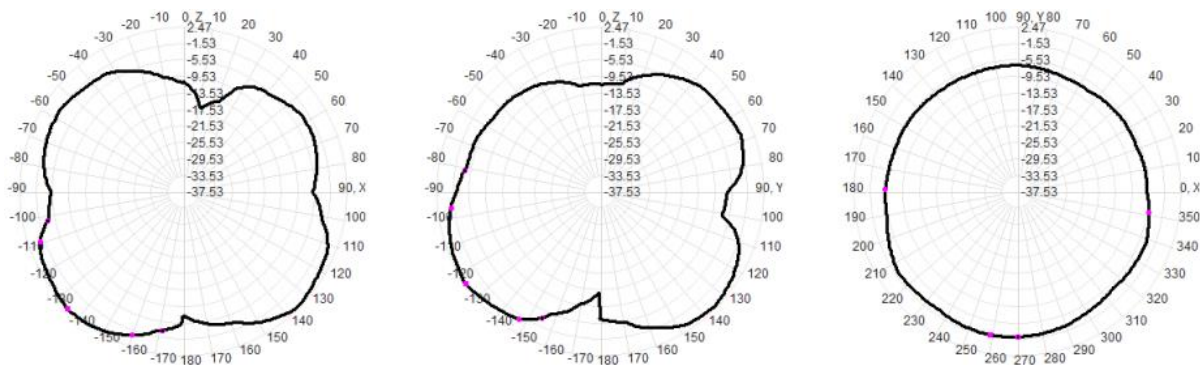


2500MHz

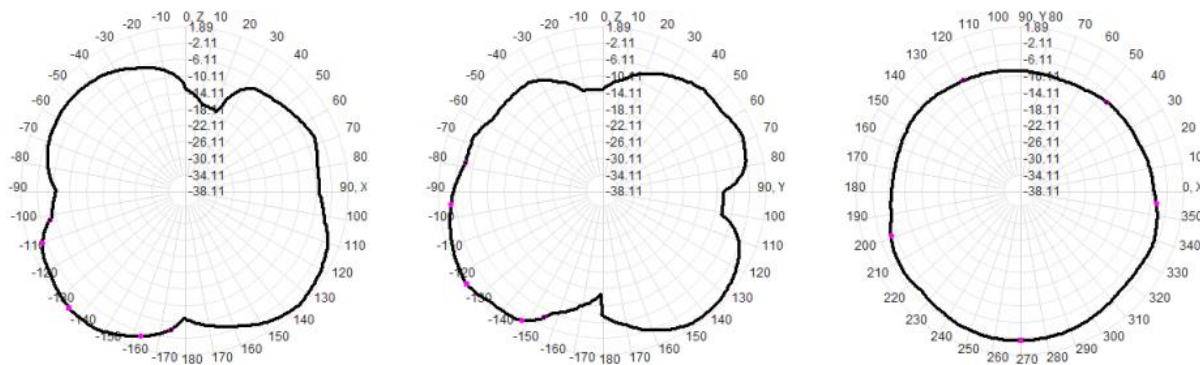
5-2 Antenna 2D Radiation Pattern



2400MHz



2450MHz

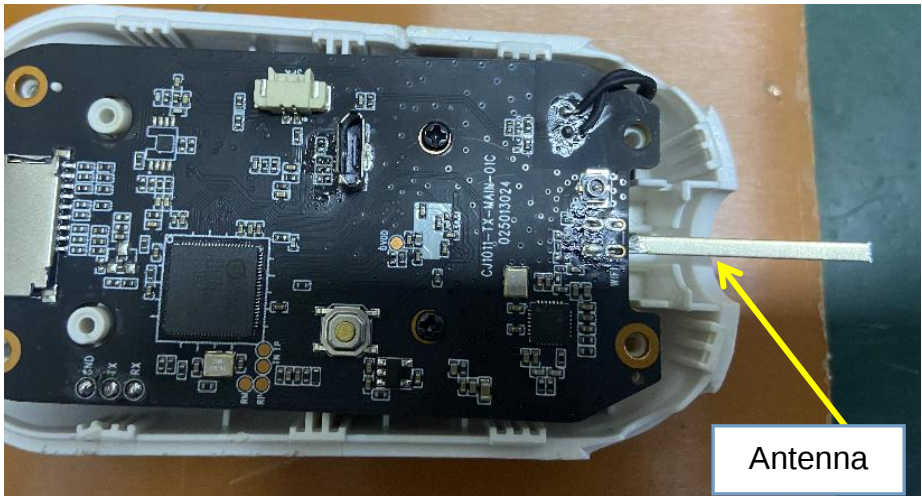


2500MHz

6. Active test data

802.11b : 11MBps			
Channel	1	6	11
TRP	18.9	19.2	18.9
TIS	-86.2	-85.9	-85.1

7. Antenna installation diagram



8. Mechanical Specification

A		B	C	D	E	F	G																																
RoHS COMPLIANT		<table border="1"> <tr> <th>REV.</th> <th>DESCRIPTION</th> <th>ECN NO.</th> <th>DATE</th> <th>DRAFTER</th> </tr> <tr> <td>A</td> <td>First Sample</td> <td>/</td> <td>2022.11.23</td> <td>Yongxin</td> </tr> <tr> <td>B</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						REV.	DESCRIPTION	ECN NO.	DATE	DRAFTER	A	First Sample	/	2022.11.23	Yongxin	B																					
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