

Specification of antenna material requirements for copper tube antenna project

Customer name: Zhongshan Faner Lighting Technology Co.,Ltd

Customer name: Copper tube antenna

Product name: Copper pipe + coaxial axis

Product specification: Copper tube antenna / 2.4G-WiFi / 2 dBi / 50 ohm / copper tube 4.4*L23mm/RF1.13mm Black coaxis L=160mm + IPEX 1 / set of heat shrink tube

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Development & Design Engineer / Date	SQE Engineer / Date	Purchasing Leader / Date	Development Manager approval / date

catalogue

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1. Overview

1.1 Scope of application

This requirement specifies the antenna technical requirements and material requirements specifications for copper tube antenna products.

This requirement applies to the selection, testing and acceptance of copper tube antennas.

1.2 Project basic information

Antenna name:	Steel pipe antenna
Antenna band:	BT:2400MHZ-2500MHZ
Antenna material:	Copper pipe + coaxis

2. Technical index requirements

2.1 Introduction of test items and equipment

inventory	test item	equipment
S11 parameter	Standing wave ratio, echo loss	network analyzer
Active test	TRP,TIS	Integrated tester, microwave darkroom
Passive test	Gain, efficiency	network analyzer

2.2.1 Test instructions

Test tools: Agilent8960 instrument, R & SCMW500, full wave far field ETS dark room, high precision positioning system and its controller and computer with automatic test program

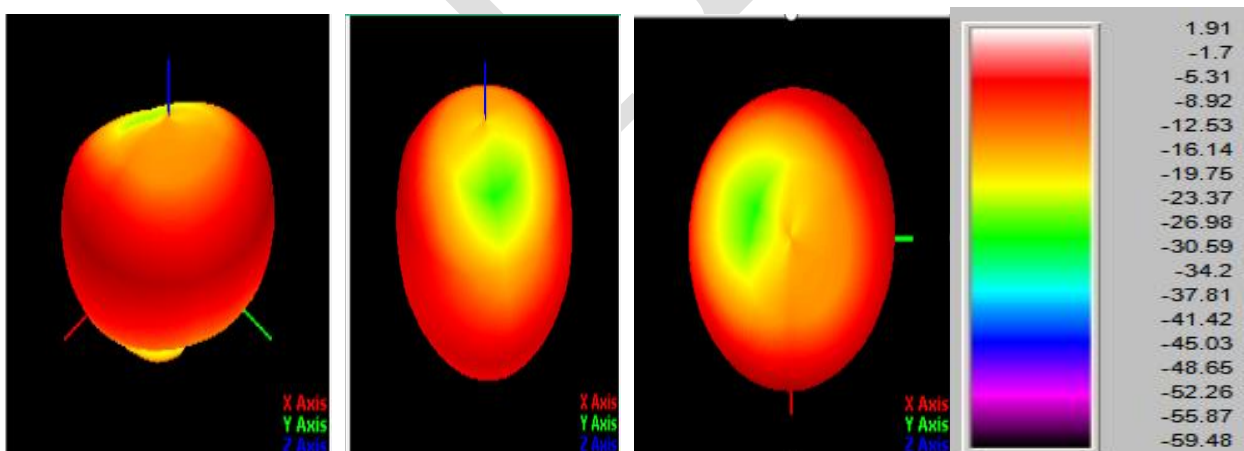
Test environment: temperature $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, humidity $50\% \pm 15\%$

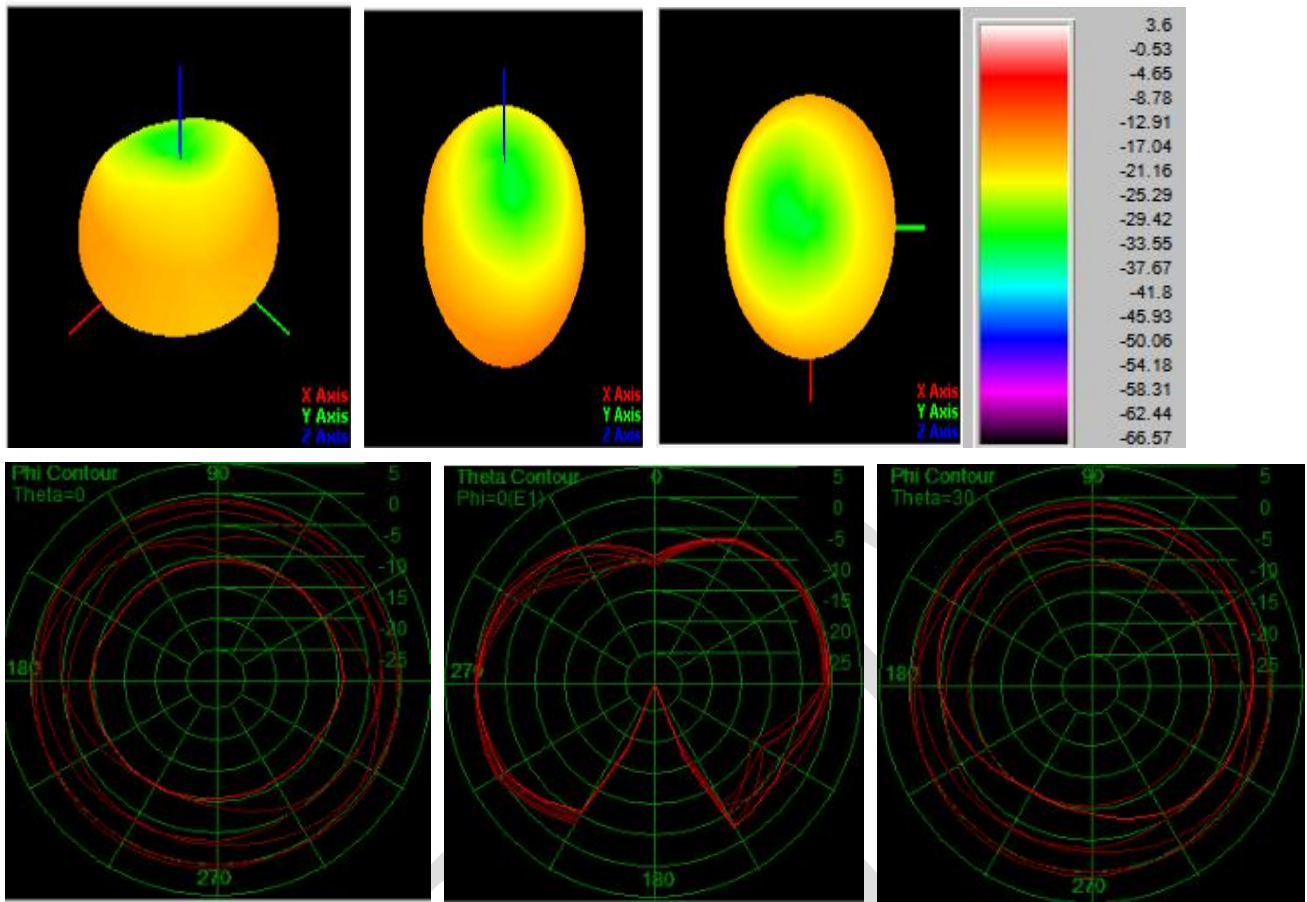
Test method: DUT is fixed in the center of the turntable with H plane, on the same horizontal line as the center of the horn antenna. The positioning system enables the DUT to rotate in the whole sphere to satisfy the high-precision 3 D positioning. Each RF instrument and turntable controller communicate with the PC with automatic test software through the GPIB interface

2.2.2 天线无源参数

Freq. (MHz)	Gain (dBi)	Efficiency (%)
2400	-0.6	59.70%
2410	-0.5	64.20%
2420	-0.34	67.30%
2430	-0.22	68.00%
2440	-0.15	68.60%
2450	0.59	66.60%
2460	1.05	64.30%
2470	0.86	58.40%
2480	1.05	62.20%
2490	1.08	62.8%
2500	0.75	56.20%

2.2.3 天线方向图

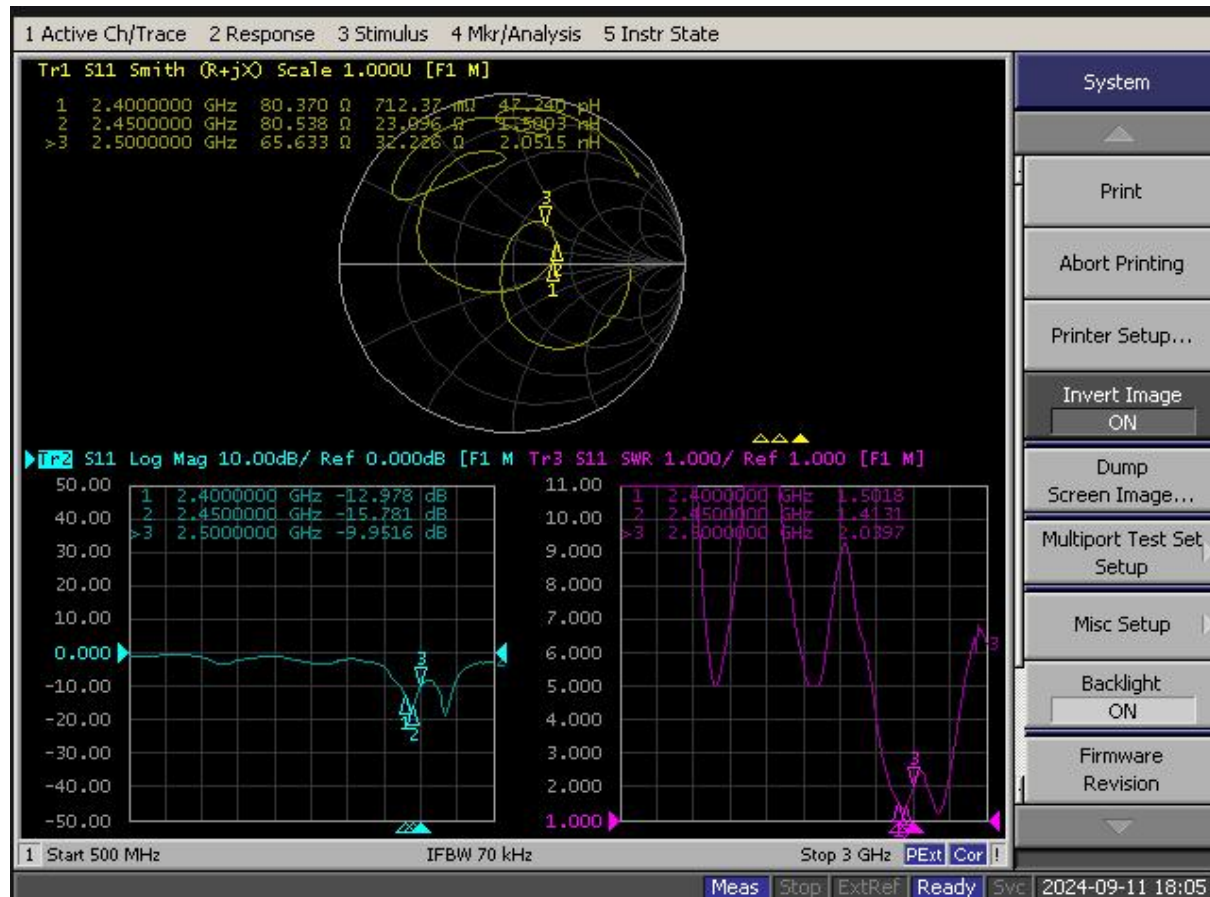




2.2.4 天线测试环境



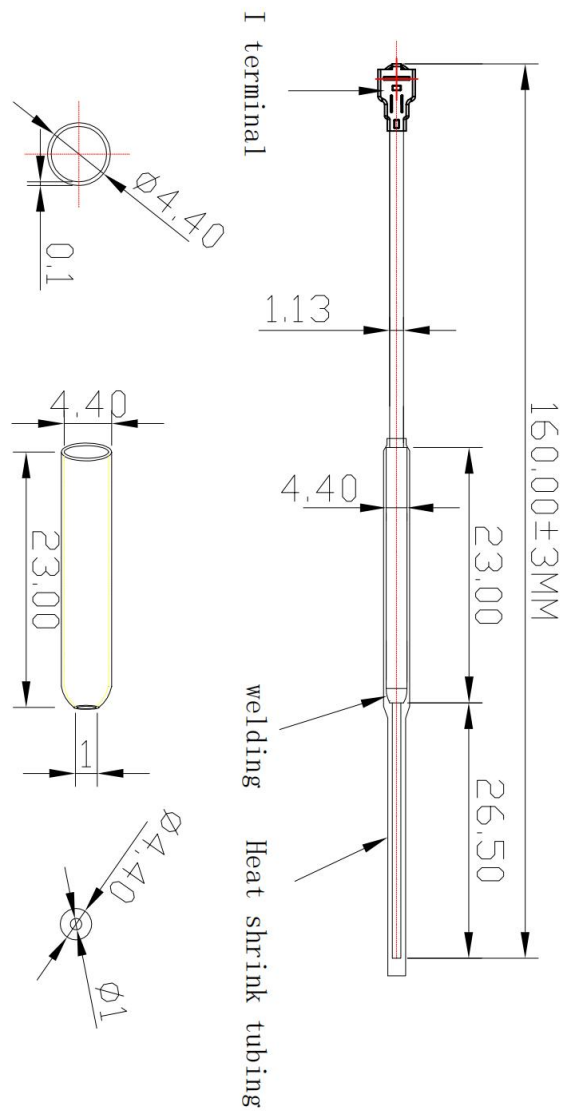
2.2.5 Antenna passive data



3. structural drawings

由 Autodesk 教育版产品制作

BOM					
ITEM	COMPONENT	DESCRIPTION	Q'TY	P/N	VENDOR
1	CABLE	RF COAXIAL CABLE OD=1.13mm black L=160mm	1PCS		XJH
2	terminal	I terminal	1PCS		XJH
3	Copper tube	ø4.4*23 1.0MM Copper tube	1PCS		XJH



SHEENZHEN YUISHENG COMMUNICATION EQUIPMENT CO., LTD						
						E
						名称 TITLE:
						Copper tube antenna
						160MM
						料号 PART NO.
						693001
						客户料号 CUS. P/N
						图号 DRAWING NO.
						SCALE
						UNIT mm
						A4

4. List of BOM tables

693001(Copper tube antenna)BOM

Edition : R:A

client : 693

Type of aircTCft : 639001

Set a date : 2024-12-04

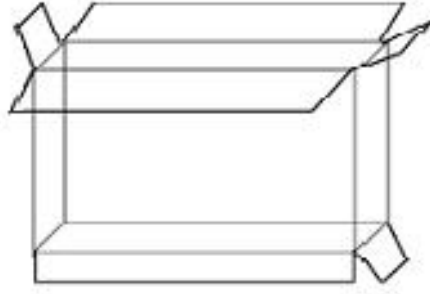
Item numbe	*Material code	*Material name	name	*Machine type	Specification and model	colour	*UNIT.	dosage	remark
1	693001-IA-RA	Copper tube antenna		Copper tube antenna	ø4.4*23 1.0MM Copper tube I terminal	black	PCS	1	
1.1	693001-IA-01-RA	Copper tube antenna		Copper tube antenna	ø4.4*23 1.0MM Copper tube I terminal	black	PCS	1	
verify :			examine :			manufacture : BYZ			

5. Reliability test report

2、耐久性测试（DURABILITY）

1	盐雾试验 SAIT SPRAY TEST	盐水喷雾试验：依 GB1266-86 标准 蒸馏水：一次蒸馏 PH6.5~7 喷雾量：1.4me80cm ² /h 压缩空气压力：1Kgf/cm ² 试验相对度：98° 温度：45°~47° 压力温度：35° 测试时间：96hr	所有规格变华范围初始值 30% All characteristic range is 30% of the initial value
2	高温试验 HEAT TEST	在 85+2℃环境中放 96 小时，再放在正常环境中30 分钟后进行测试 85+2℃ for 96 hours, after keep in normal condition for 30mim the to test.	
3	温试验 HUMIDITY TEST	在 40+2℃ 90-95%RH 环境中放 96 小时，再放在正常环境中30 分钟后进行测试 40+2℃ 90-95%RH for 96hours, after keep in normal condition for 30mim the to test.	
4	底温试验 COLD TEST	在-40+2℃ 环境中放 96 小时，再置放正常环境中30 分钟后进行测试 -40+2℃ for 96hours, after keep in normal condition for 30mim the to test.	

5. Packaging diagram

Packaging method diagram		
product name	Antenna components	
Project model	Copper tube antenna	
File details	Carton Size 1: 35*25*24.5cm Carton Size 2: Depending on the order quantity / volume	
	Boating method	100 PCS / small package in turn into the waterproof bag, the outer box carton packaging;
	Total number of binning	Packaging by order quantity
labeling requirement	Tag Size 1: Universal use 100 * 100mm Tag Size 2: According to customer requirements	
matters need attention		
1. Due to the limitation of order quantity, the packing method of each material is the size of the box according to the total quantity of the order or the physical volume		
2. Storage temperature: room temperature		
3. Preservation conditions: store them in a cool and dry place		

6. Manufacturer Information

6.1 Manufacturer name

SHENZHEN YUSHENG COMMUNICATION EQUIPMENT CO., LTD

6.2 Manufacturers address

407-411, Floor 4, Building 2, South Taiyun Chuanggu Park, Southeast of intersection of Guangming Avenue and Dongchang Road, Guangming District, Shenzhen

THOT