



# APPROVAL SHEET

CUSTOMER NAME	Shenzhen Tongzhou Electronic Technology Co., LTD	
CUSTOMER P/N		
PART NAME	863-928MHz Black rubber antenna	
P/ N	YJC-60202-B42	
APPROVAL REV.	A0	
DELIVERY DATE	2022.09.08	
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Customer Approved		
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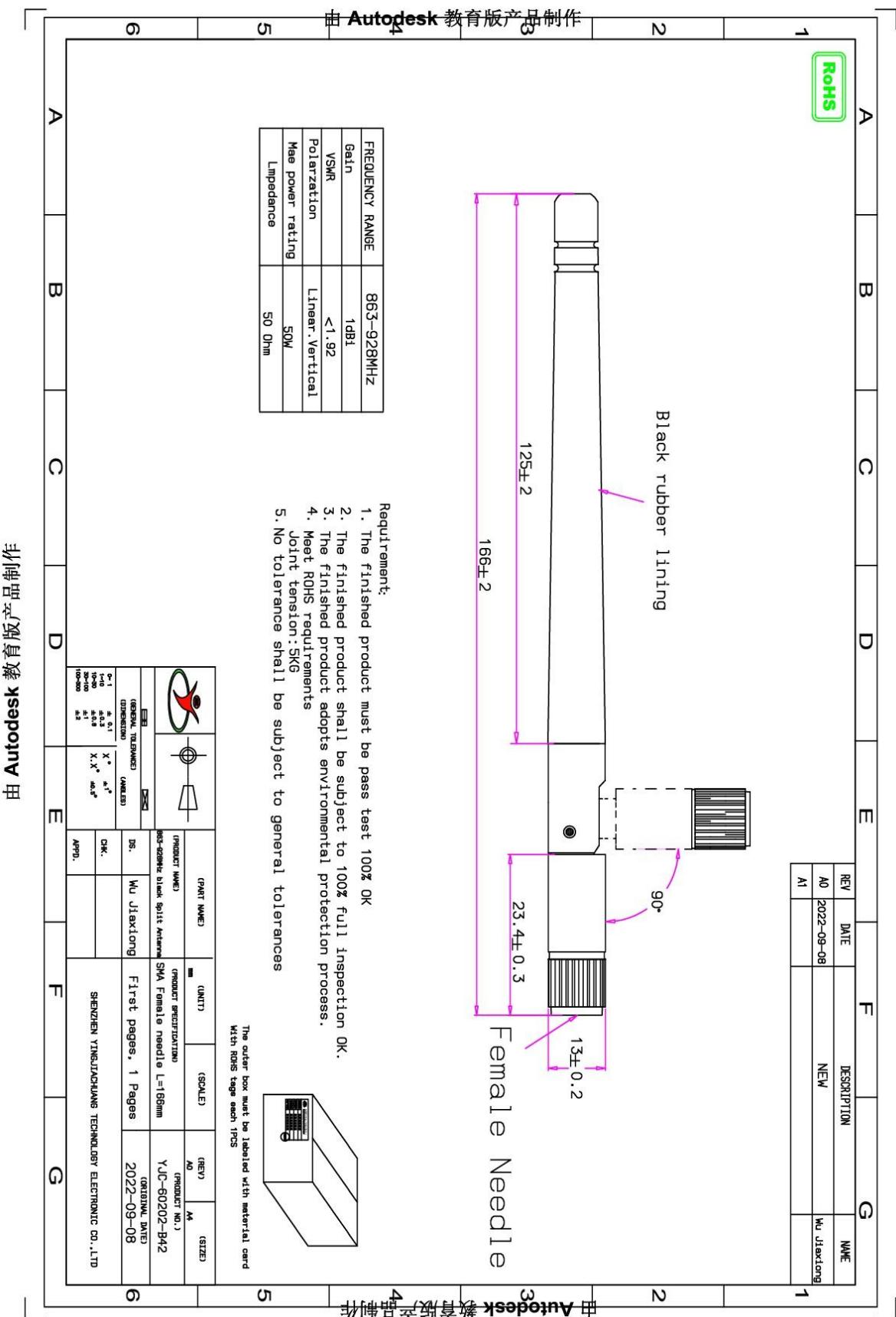


## Resumer:

Version	Change contents and reasons	Date	Issue
A0	NEW	September 8, 2021	



## Antenna plan:





## Antenna technical parameters and environmental performance testing

Electrical Specifications		Mechanical Specifications	
Frequency Range	863–928MHz	Antenna Color	black
VSWR	<1.92	Input connector	SMA
Input Impedance	50 Ω	Antenna length	166 mm
Direction	All	Working Temperature	-20°C ~ +75°C
Gain	1dBi	Working Humidity	20% ~ 80%

## Environmental performance test

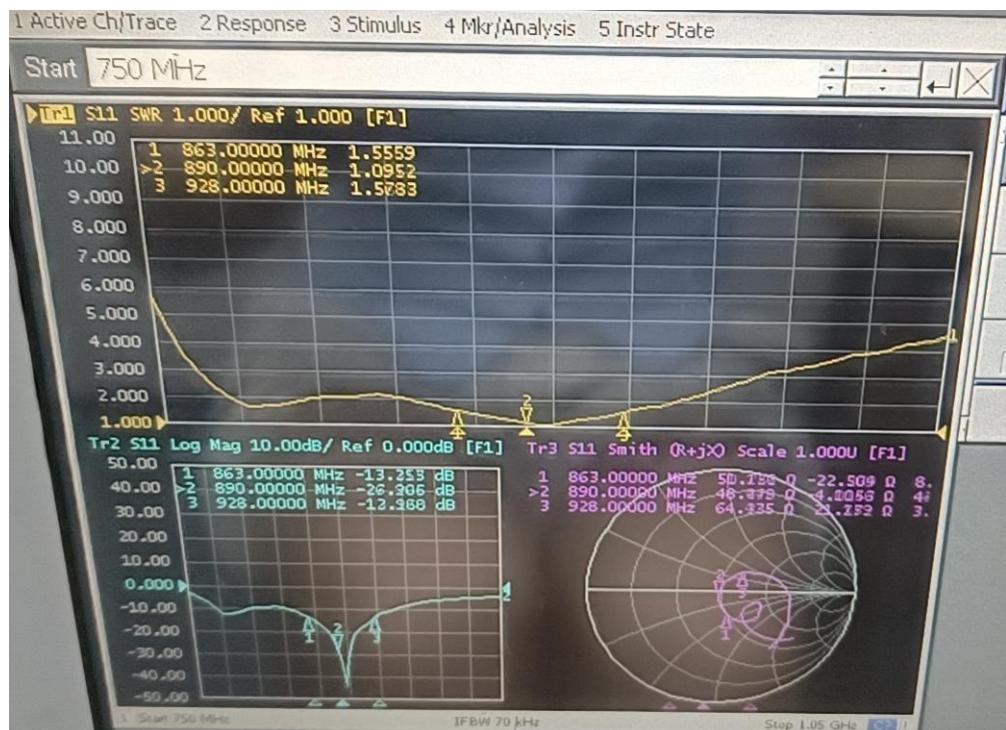
Project	Test condition	Standard
Storage Conditions	In the absence of specified test temperature, humidity, air pressure is as follows: 1. Temperature is -30 °C ~ +80 °C 2. Relative humidity of 45% to 45% 3. Air pressure is 86 kpa to 106 kpa	Electrical and mechanical performance is normal
High and low temperature test	Between 70 °C and -20 °C for 5 loops, then 1–2 h under normal conditions, check the appearance quality.	Size should meet the requirements and meet the performance of machinery and electric.
Constant damp and hot resistance test	95 + / - 3% relative humidity, temperature test: 40 °C. Lasts 2 h after, try to take out the determination of electrical properties, within 5 min after try 1–2 h under article normal thing, check the appearance quality	Size should meet the requirements and meet the performance of machinery and electric.
vibration test	10–55 hz, vibration frequency range of displacement amplitude: 0.35 MM, acceleration amplitude: 50.0 M/S, sweep cycles: 30 times	Electrical and mechanical performance is normal
Fall down test	1 m high altitude in accordance with the perpendicular axis free drop 3 times	Electrical and mechanical performance is normal



Physical picture of antenna :



Antenna performance test chart:

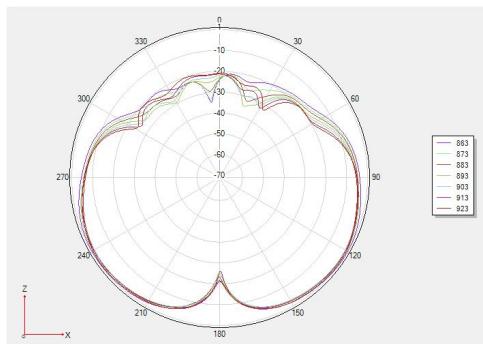


2D 3D test data (863–928MHz) :

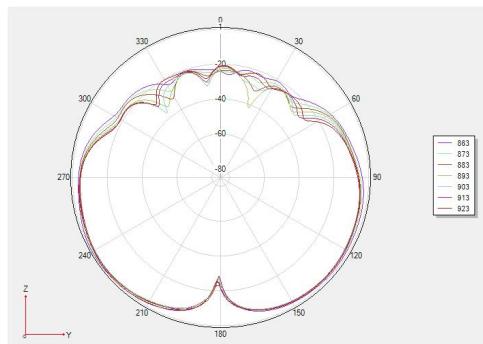
Frequency	Efficiency (%)	Gain. (dBi)
863MHz	39.45	0.74
873MHz	35.24	0.35
883MHz	34.51	-0.46
893MHz	32.43	-0.94
903MHz	32.51	-0.97
913MHz	32.51	-0.54
923MHz	34.28	0.31



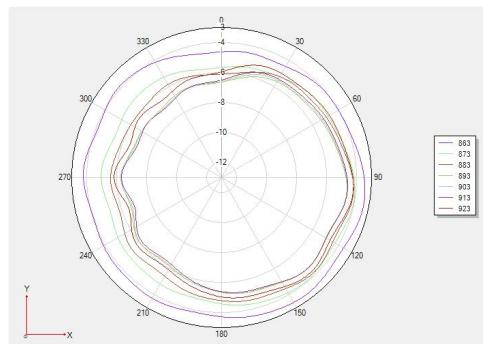
Phi 0 2D 图:



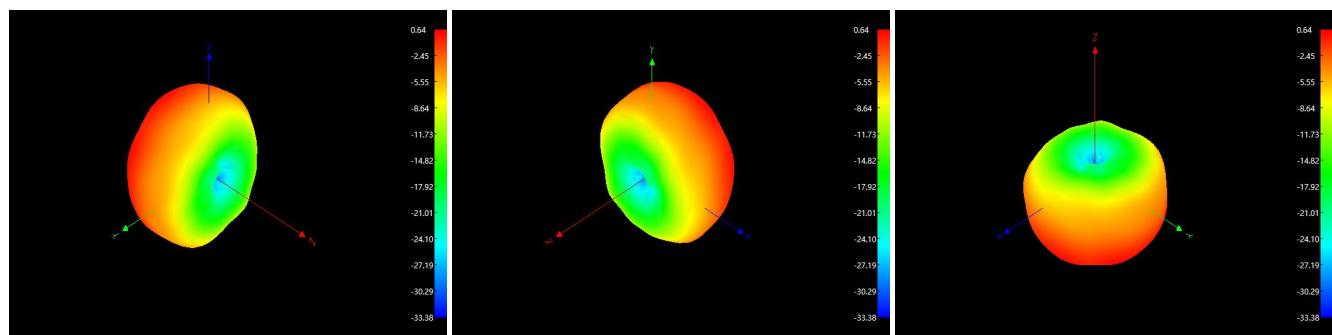
Phi 90 2D 图



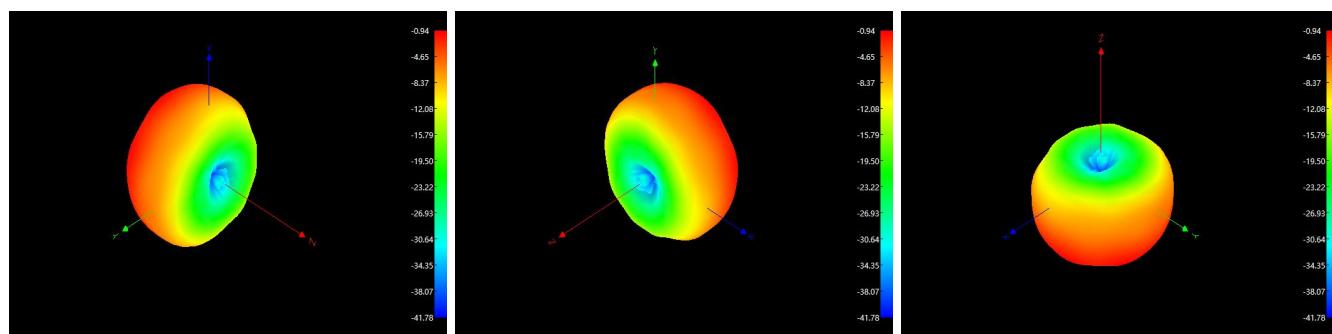
Theta 90 2D 图



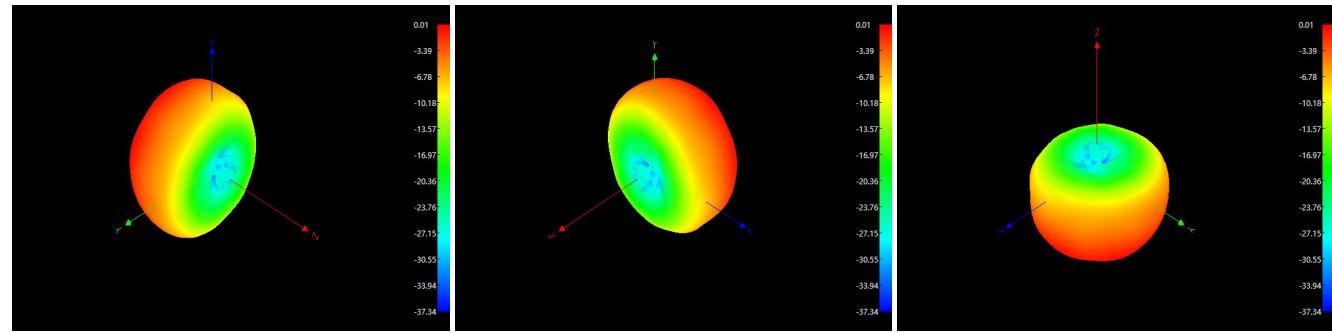
3D 863



3D 893



3D 923





Material RoHS conformity declaration form

This is to certify that the delivery to your company's components, raw materials, auxiliary materials used and the additives in the production engineering are accord with RoHS environmental requirements of the restrictions on the use of hazardous substances directive (RoHS directive 2011/65 / EU)

About components used raw materials, packaging materials, auxiliary materials and additives used in the production process such as composition of the report is as follows:

Component /Part Name	Material Composition	ICP report #	Test Org.	Test Date	Content of harmful substances (ppm)						PASS?
					Cd	Pb	Hg	Cr <sup>6+</sup>	PBB	PBDE	
SMA	PTFE ROD	A2210419237101001C	SGS	21/10/16	ND	ND	ND	ND	ND	ND	PASS
	Copper	SZXML2200496902	SGS	22/03/09	ND	19	ND	ND	ND	ND	PASS
	plating golds	SZXML2201289205	SGS	22/05/09	ND	19	ND	ND	ND	ND	PASS
copper pipe	brass strip	SHAEC2127949504	SGS	21/12/30	ND	35	ND	ND	ND	ND	PASS
Wire rod	RG/RF Series Coaxial Cables	SZXEC2202766604	SGS	22/08/18	ND	ND	ND	ND	ND	ND	PASS
plastic parts	ABS	CANML2204785512	SGS	22/03/30	ND	ND	ND	ND	ND	ND	PASS
	PC	SZXML2200130001	SGS	22/01/20	ND	ND	ND	ND	ND	ND	PASS