Guanhong ElectronicsWIFI dual frequency cable antenna specification recognition

Product Specifications for Approval

Customer Name: **Guanhong Electronics**

Antenna frequency band: 2400-2500MHz 5150-5850MHz

Version: A0 Production date: 2023-05-05

Number: FS-WZ-JB-052

Research and development of Feisheng Electronics Co., Ltd.			
Structures:	**Xu Long**	**RF:**	**Guo Xi**
Auditing:	**Gu Zhifei**	**Appreval:**	**Gu Zhifei**
Customer confirmation			
Customer review:		**Customer approval:**	

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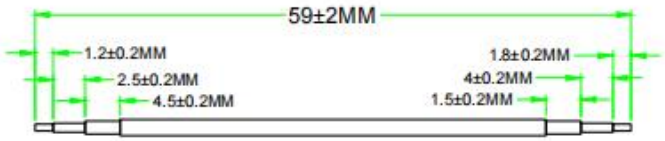
Modify the record

Versions	Dates	RF	Modify the content
01	2023-05-05	XuLong	

PARTS DRAWING

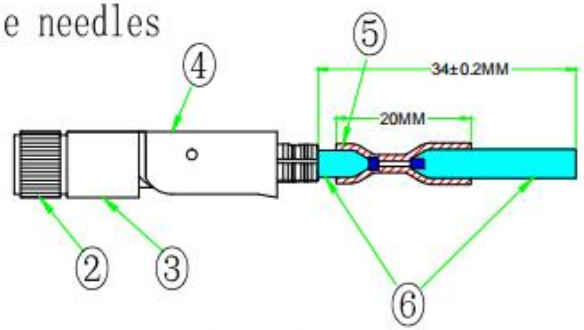
ROHS Compliant

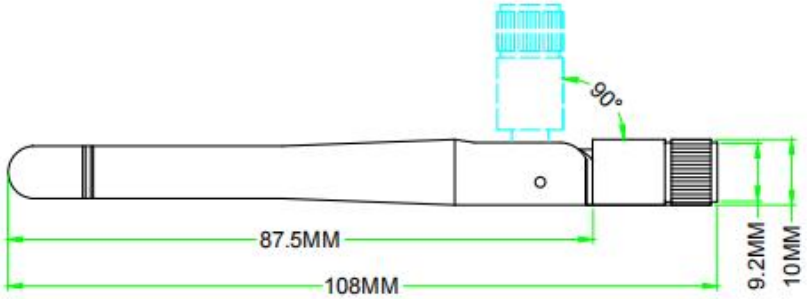
REV	Product Item No	Drawing time			
A0	FS-WZ-JB-052	2023.03.03			

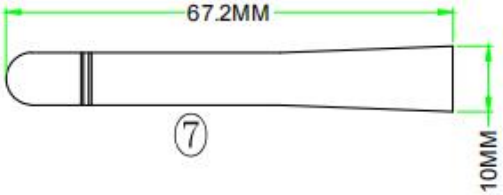


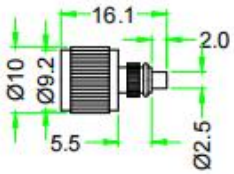
SMA male and female needles

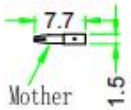
①178-line copper tube











Mother needle

1. The finished product must be 100% tested for continuity.

2. Finished products must be 100% fully inspected

3. Adopt environmental protection process. The finished product meets ROHS requirements.

Frequency Range	2400-2500MHz 5150-5850MH
Gain	3dbi
VSWR	Comparison waveform
Polarization	Perpendicular
Impedance	50 OHM

NO	Code	Name	Description	Q'ty	Part NO
7		Rubber rod	67.2*10MM Black	1	
6		copper tube	ϕ4.4*24.5*ϕ1.6MM Nickel Plated Brass	1	
5		Heat Shrink Tubing	4.0*20MM Black	1	
4		Upper fixation	9.5*20MM Black	1	
3		Lower fixation	9.5*11.6MM Black	1	
2		SMA	Straight male female needle copper head with black plating	1	
1		wire rod	178 wire double tin brown L=59MM	1	

ANGLE PROJECTION

GENERAL TOLERANEC

100~200:	± 3.00
50~100:	± 2.00
25~50:	± 0.20
10~25:	± 0.15
1~10:	± 0.1

PRODUCT NAME

Rubber stick WIFI dual frequency SMA male female pin-178 wire double tin brown L=108MM

Product Item No	UNIT	M M	SIZE	1:3
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SHENZHEN FEISHENG ELECTRONIC CO.,LTD

Product Features Specification Table

一、Basic characteristics of the product：

Product type : Rubber stick WIFI dual frequency SMA male female pin-178 wire double tin brown L=108MM	
DESCRIPTION	**VALUE**
Frequency Range	2400-2500MHz 5150-5850MHz
Impedance	50 Ω
VSWR	Compare the waveforms of samples
Gain	3DBi
Radiation	Omni-directional
Polarization	linear Vertical
Powers	1W
Connector model	SMA
Operating temperature	-45℃~+85℃
Storage temperature	-45℃~+85℃

1. Summary：

This report to account for the measurement setup and result of the Antenna. The measurement setup includes s-parameter, The measured data for Antenna are presented and analysis.

2. S-Parameter Measurement S：

A. Reflection coefficient :

(a) Instrument：Network Analyzer

(b) Setup：

(1) Calibrate the Network Analyzer by one port calibration using O.S.L. calibration kits.

(2) Connect the antenna under test to the Network Analyzer.

(3) Measure the S11(reflection coefficient) shown in Fig. 1.

(4) Generally, the S11 is less than –10dB to ensure the 90% VSWR 2.0:1 power into antenna and only less than 10% power back to system.

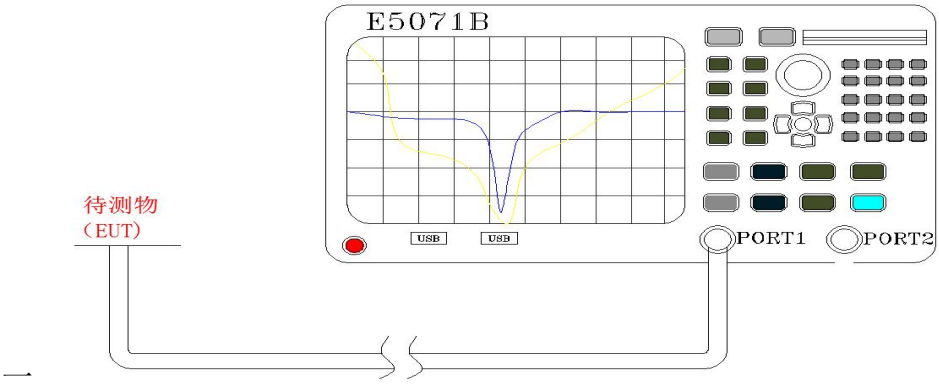


Fig.1 Antenna measured in Network Analyzer

3. S-Parameter Measurement Result S：

S-Parameter test data ：

Frequency MHz 工作频段	2400	2450	2500	5150	5850
V.S.W.R 驻波比	1.41	1.48	1.61	1.53	1.66

S-Parameter test image ：

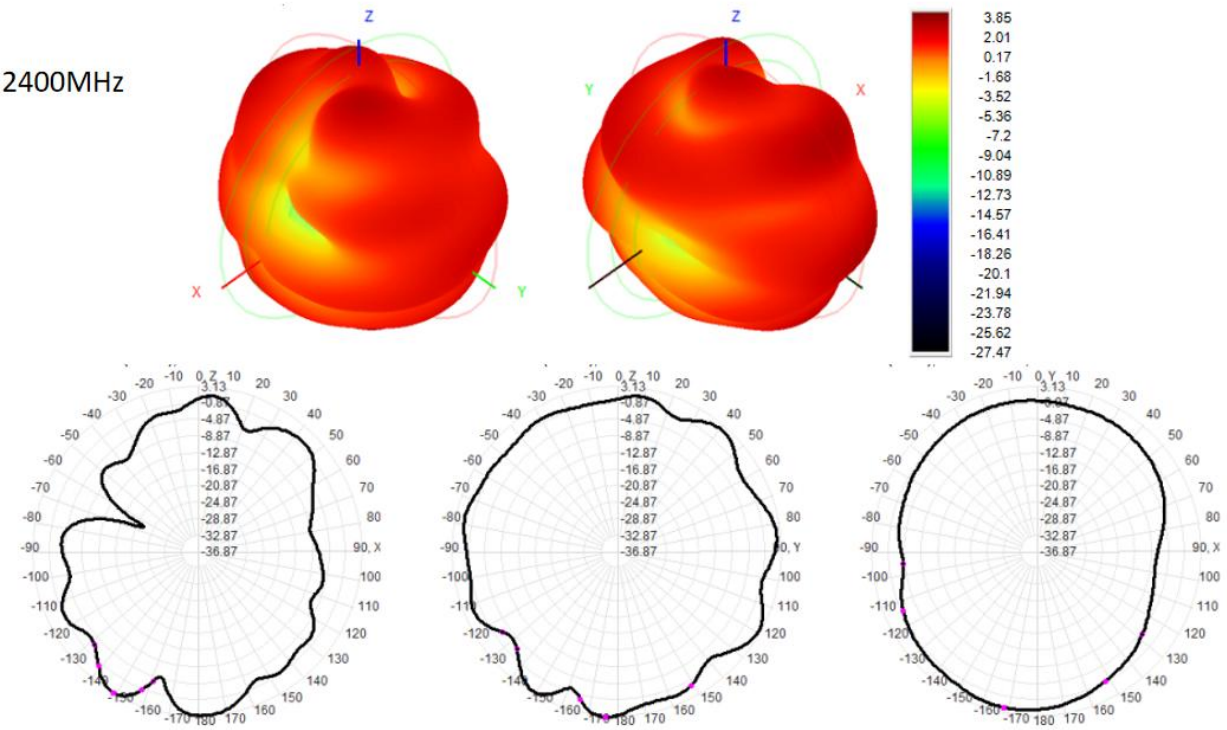
Machine appearance

Passive value

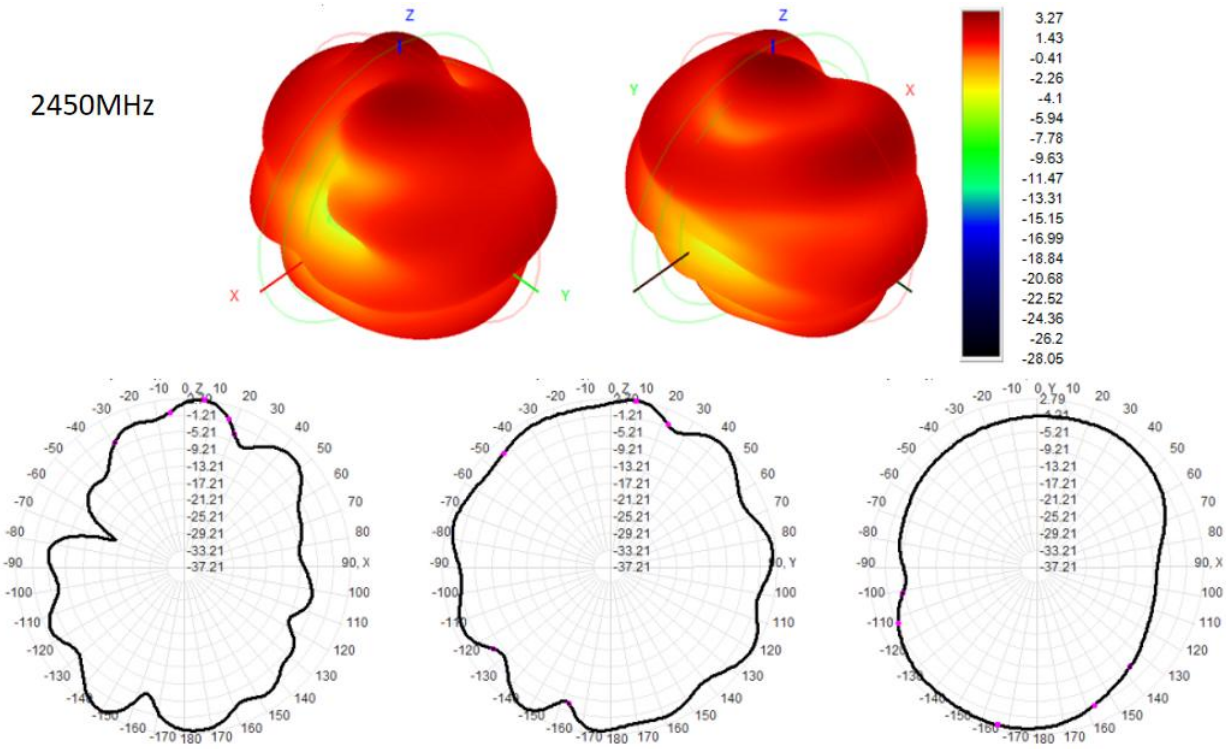
Frequency (MHz) （工作频段）	Efficiency (%) （效率）	Peak GAIN (dBi) （增益）
2400	76. 19	2. 56
2450	78. 07	2. 69
2500	78. 60	2. 72
5150	62. 95	2. 32
5850	56. 27	2. 14

2D、3D

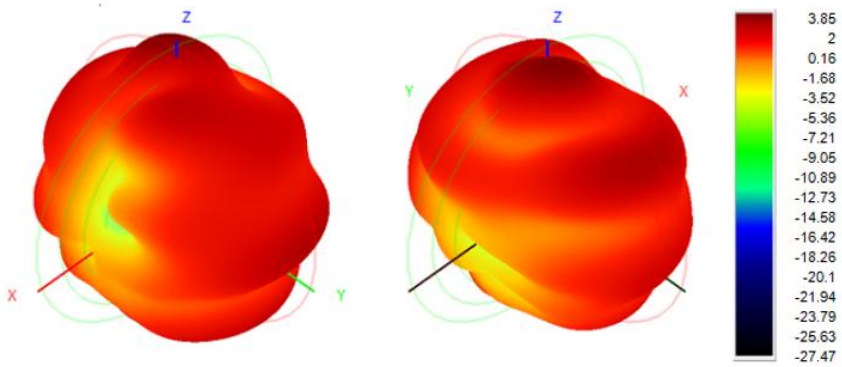
2400MHz

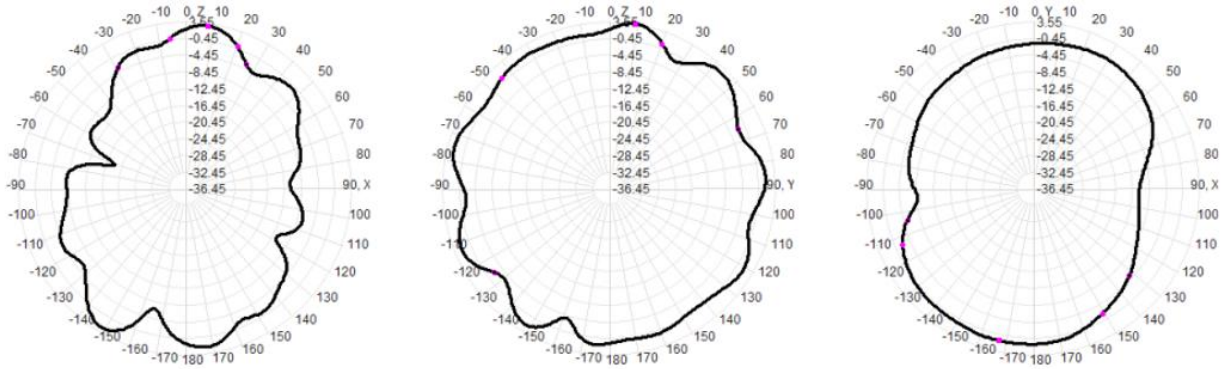


2450MHz

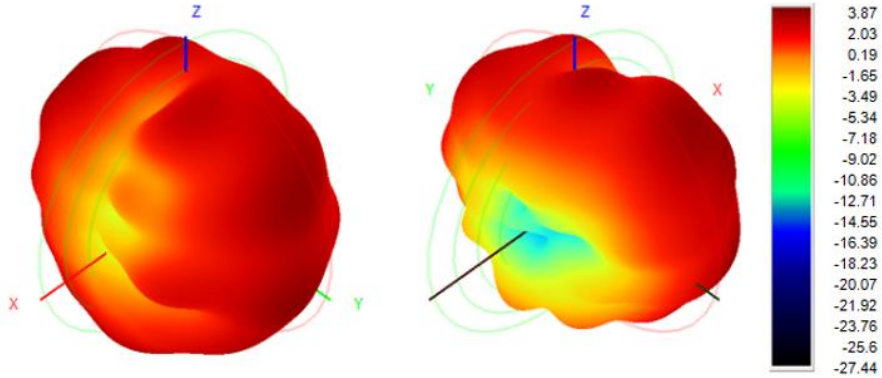


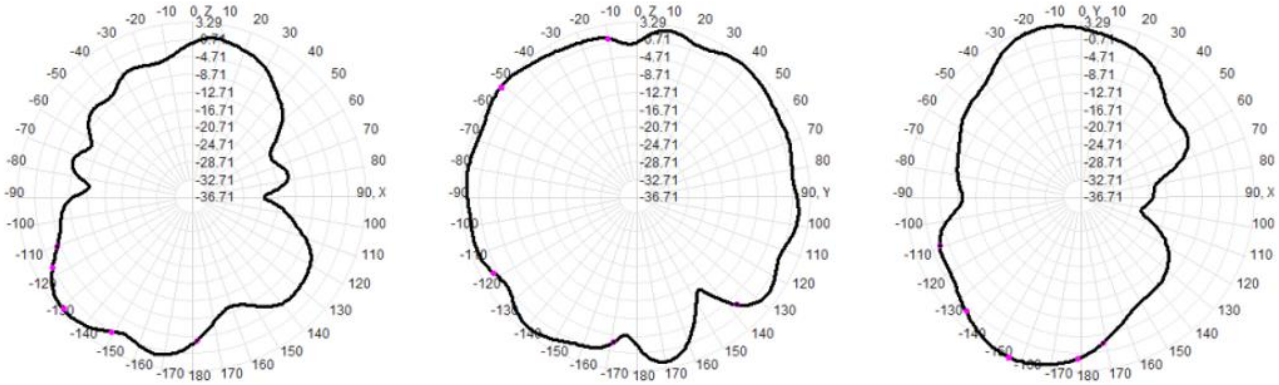
2500MHz



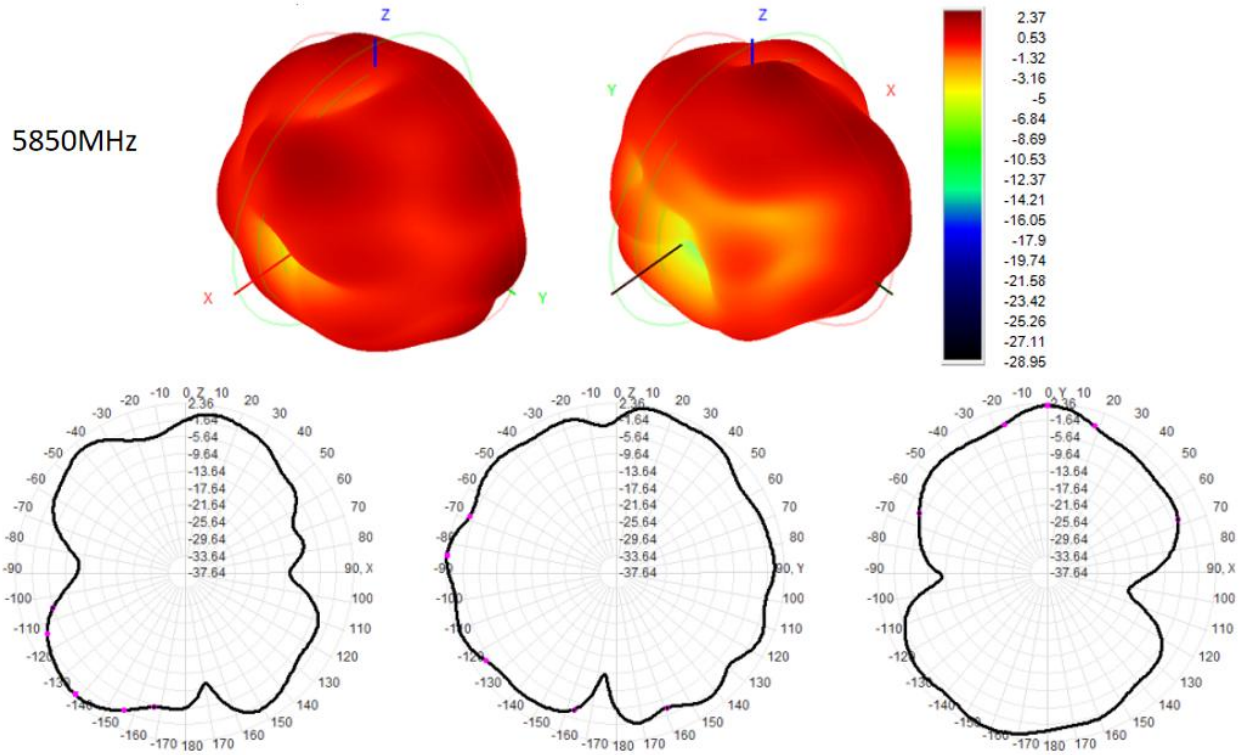


5150MHz





5850MHz


Z
X
Y
2.37
0.53
-1.32
-3.16
-5
-6.84
-8.69
-10.53
-12.37
-14.21
-16.05
-17.9
-19.74
-21.58
-23.42
-25.26
-27.11
-28.95
0, Z
90, X
0, Y
90, Y

Environmental test requirements

Preface	Test items	Test methods and conditions	Test equipment	Test results
1	Temperature and humidity test	Reference E1A 364-31 Method Three, Test Condition A The purpose of this test process is to conduct detailed standard tests. The products used are affected by high humidity and heat. Influence the performance of the material for evaluation. Requirements: Temperature: 85℃ Humidity: 90~95% (R.H) Time : 72 hours	K.SON INS THS-A4L-150	Qualified
2	Low temperature test	Refer to Feisheng Electronic Test Specification The measured sample should be traveled in a temperature-balanced environment, and its temperature setting Set at -45° C Requirements : Time : 24 hours	K.SON INS THS-A4L-150	Qualified
3	High temperature test	Refer to Feisheng Electronic Test Specification: The measured sample should be placed in a constant temperature environment, and the gas temperature should be set at 70℃. Requirements : TIne : 24 hours	K.SON INS THS-A4L-150	Qualified

Environmental test requirements

Preface	Test items	Test methods and conditions	Test equipment	Test results
4	Hot and cold tests	Refer to Feisheng Electronic Test Specification: The measured sample should be placed in a fixed environment, and the temperature should be set at -45~85℃. Requirements ： More than 8 hours.(30 minutes/time, 12 cycles)	K.SON INS THS-A4L-150	Qualified
5	Salt spray test	Refer to Feisheng Electronic Test Specification: The tested sample should be placed in a fixed environment: NaCL Concentration: 40-60g/1Kg PH value: 6.5-7.2 Test time: 24 hours 1.Gold-plated products are not allowed to peel with rust spots. 2.Other nickel-plated, tinned and galvanized products shall not have more than two rust points on the same shaft or surface.	Salt spray tester	Qualified

Mechanical test requirements

Preface	Test items	Test methods and conditions	Test equipment	Test results
1	Vibration test	Test condition A The purpose of this test process is to evaluate the products used in the detailed standard test methods, which are moved or moved to affect the performance of the material.	Vibration tester	Qualified
		Requirements : Vibration range: 10-55HZ Displacement amplitude value: 0.35mm Acceleration amplitude: 50.0M/S Number of frequency sweeping cycles: 30Times		
2	DROP TESTS	Refer to Feisheng Electronic Test Specification: The measured sample should be placed at a certain height, and its height should be set to 1 meter, and it should fall freely 3 times in the direction of 6 surfaces.	Drop test fixtures	Qualified
		Requirements : The mechanical characteristics of the product are normal after the drop test.		

Mechanical test requirements

3	Tula test	Refer to Feisheng Electronic Test Specification: Fix the object under test through the fixture, and after applying a certain force in the opposite direction, the product assembly shall not fall off.	Tile tester	Qualified
		Requirements: 1. The product assembly cannot fall off. 2. Minimum tensile force: 1.2KG		

Note: Feisheng Electronics performs the above mechanical and environmental parameter tests before R&D and trial delivery.