



NOVA 2.4G/5G Specification Approval

Customer Name: NOVA STAR

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

Version: A0

Production date: 2024-08-09

Model: FS-3010-0241

Customer part number: 120010041

Research and development of Feisheng Electronics Co., Ltd.

Structures:	<u>Xu Long</u>	RF:	<u>Guo Xi</u>
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Customer confirmation			
Customer review:		Customer approval:	

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Modify the record

Versions	Dates	RF	Modify the content
A0	2024-08-09	Xu Long	

PARTS DRAWING	ROHS Compliant	REV	PRODUCT NO.	DATE	NAME	DESCRIPTION
		A0	FS-WZ-JB-094	2024.08.09		Initial Issuance



Ask

1. There is no broken skin or damage to the wire sheath.
2. The finished product must be 100% tested for continuity OK.
3. 100% inspection of finished products is required.
4. Adopt environmental protection process. The finished product meets ROHS requirements.

Test conditions

rated voltage: AC 60V
 Contact impedance: 20-0hm
 voltage withstand: AC200V
 Insulation impedance: 500m-0hm
 characteristic impedance: 50 0hm

				Frequency Range	2400-2500MHz 5150-5850MHz	 GENERAL TOLERANCE: 100~200 : ± 3.00 50~100 : ± 2.00 25~50 : ± 0.20 10~25 : ± 0.15 ~10 : ± 0.1	PRODUCT NAME				
				Gain	5DBi		Glue stick antenna WIFI dual frequency -5DB rubber sleeve SMA male and female needle-L=195MM				
				VSWR	Comparing Waveforms		PRODUCT NO.	UNIT	M M	SIZE	1:3
				Polarization	vertical		FS-WZ-JB-094	PAGE	1 OF 1	FORMT	A4
NO	Name	Description	Q'ty	Impedance	50 Ω	 深圳市飞胜电子有限公司 SHENZHEN FEISHENG ELECTRONIC CO., LTD					
4	Rubber sleeve	154 * 13MM 5DB rubber sleeve black	1	operation temperature: -45℃~85℃ storage temperature: -45℃~85℃							
3	Up solid	18 * 13MM black 5DB connector type	1								
2	Bottom Solid	14.5 * 13MM black 5DB connector type	1								
1	SMA	Straight male and female needles made of black zinc alloy	1								

Product Features Specification Table

一、 Basic characteristics of the product:

Product type : Glue stick antenna WIFI dual frequency -5DB rubber sleeve SMA male and female needle-L=195MM	
DESCRIPTION	VALUE
Frequency Range	2400-2500/5150-5850MHz
Impedance	50 Ω
VSWR	≤2.3
Gain	4.89dbi / 5.52dbi
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.

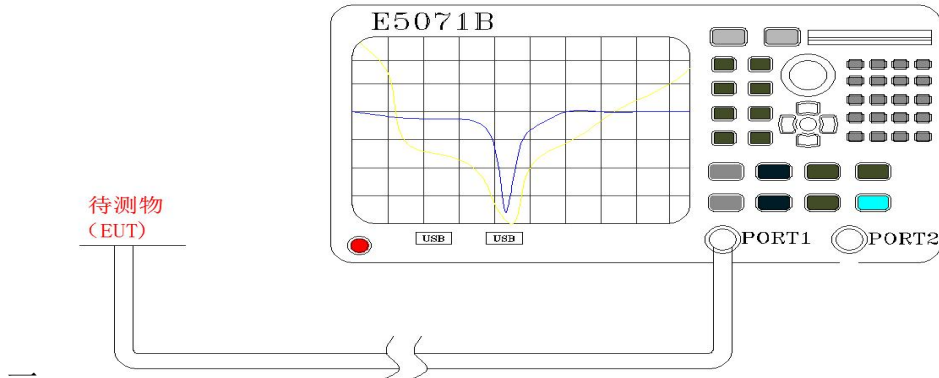


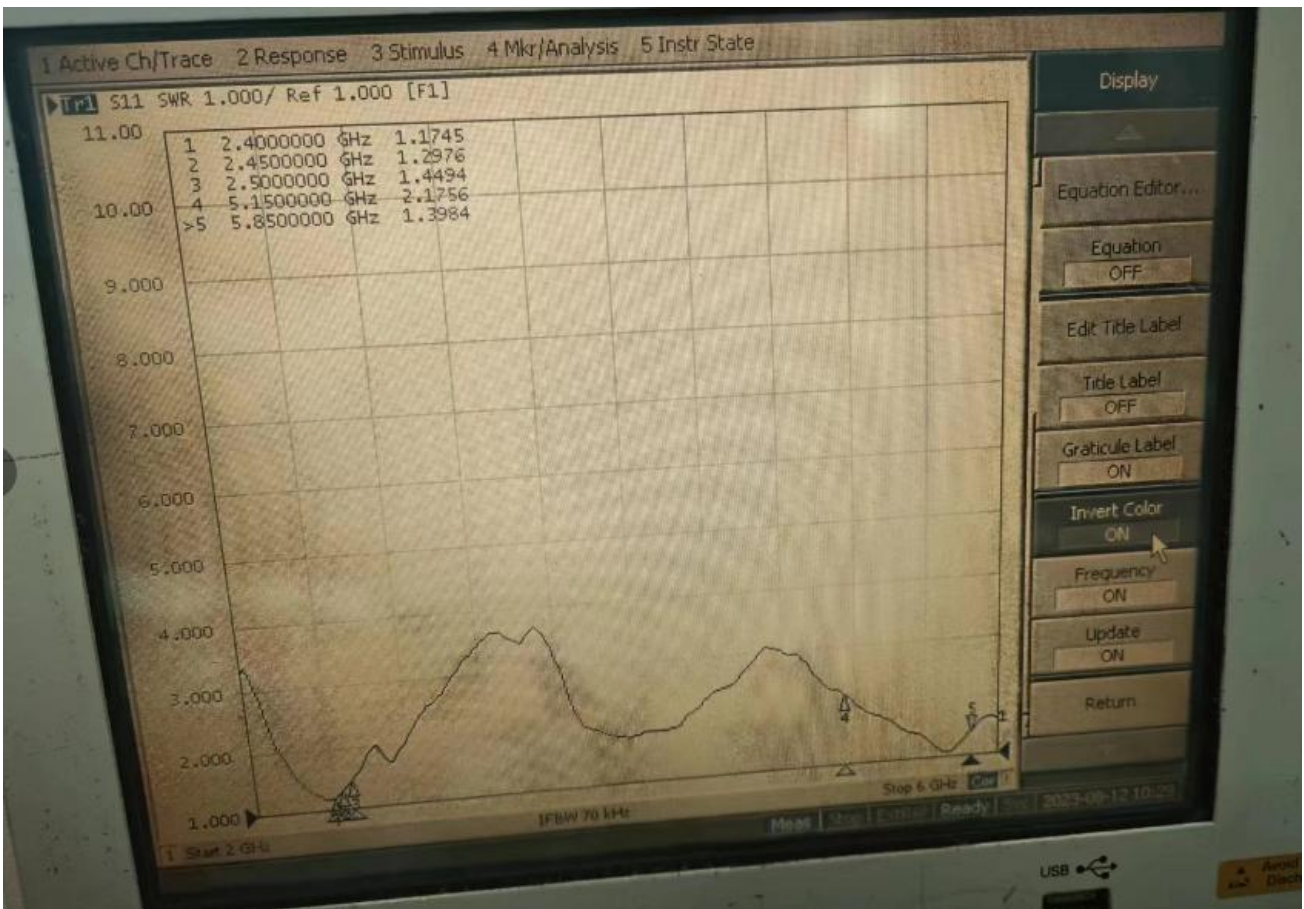
Fig.1 Antenna measured in Network Analyzer

3. S-Parameter Measurement Result S:

S-Parameter test data :

Frequency MHz	2400	2450	2480	5100	5800
Loss DB value	1.17	1.29	1.44	2.17	1.39

S-Parameter test image :



Antenna appearance:

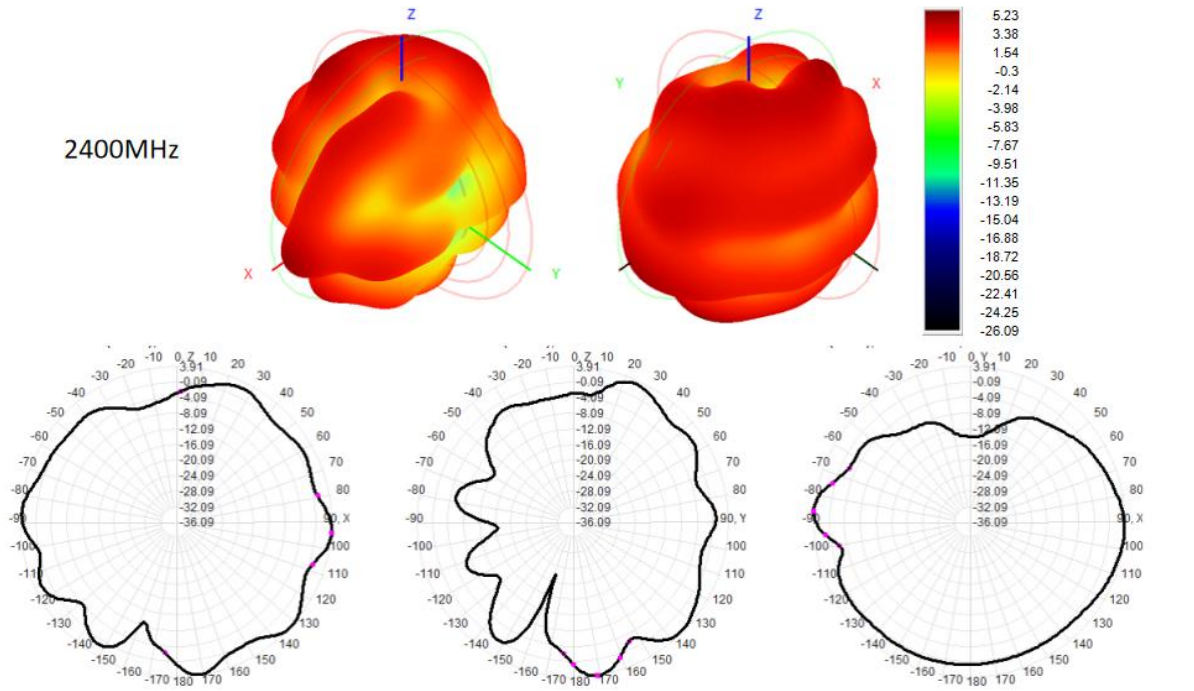


Passive numerical value:

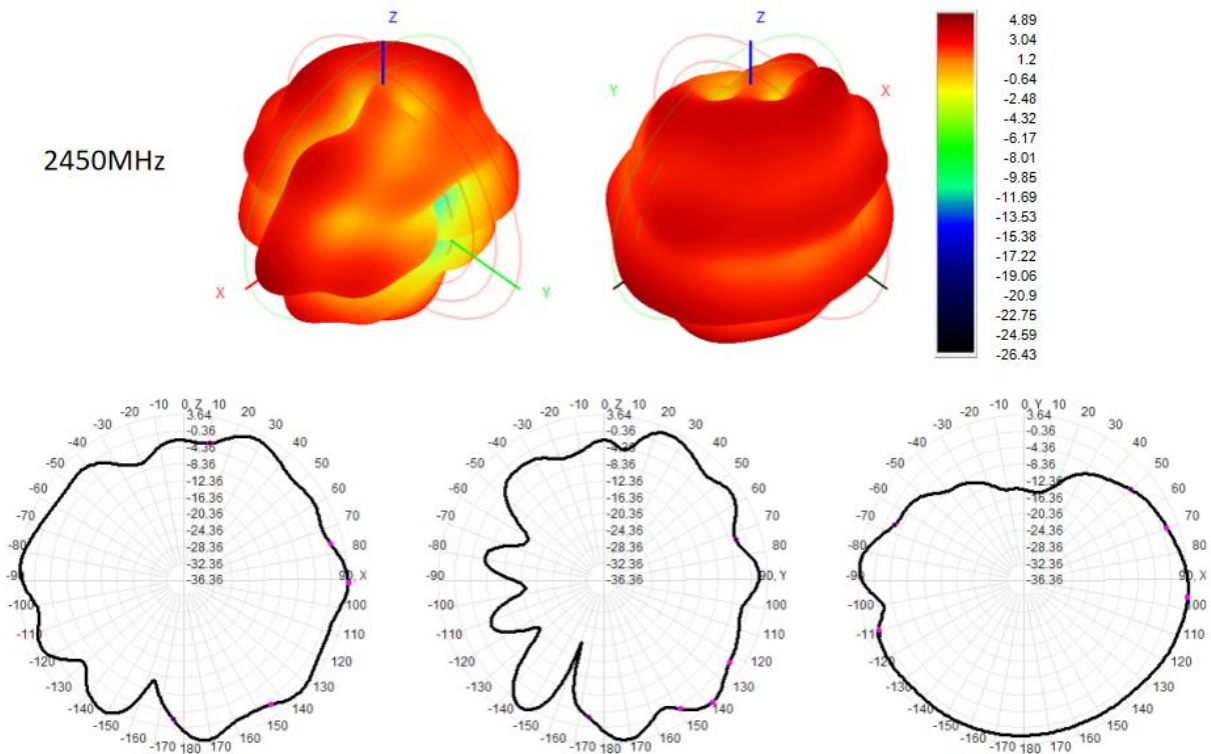
Frequency (MHZ)	Efficiency (%)	Peak GAIN (dBi)
2400	88.53	3.55
2450	85.27	4.89
2500	78.31	4.62
5150	61.18	2.42
5850	65.85	5.52

2D/3D:

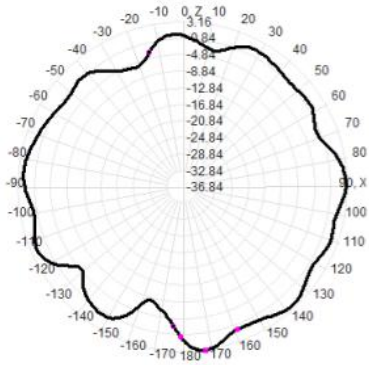
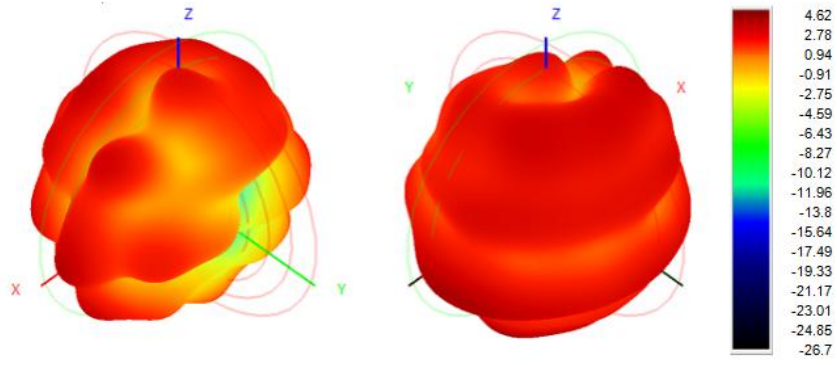
2400MHz



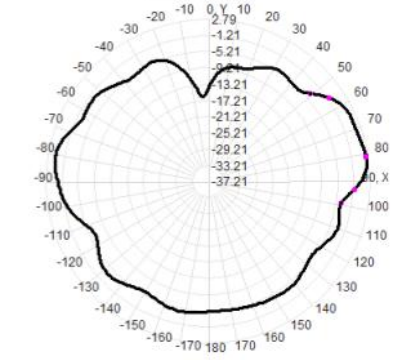
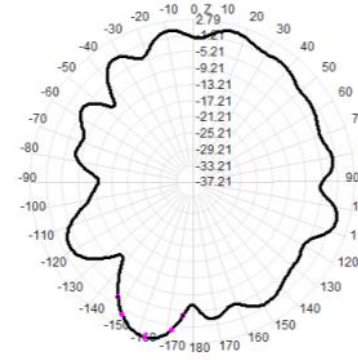
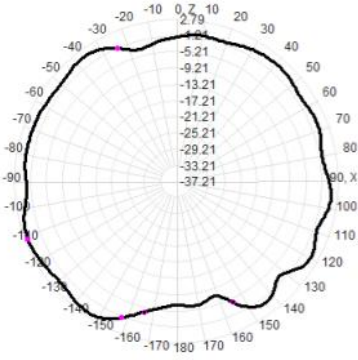
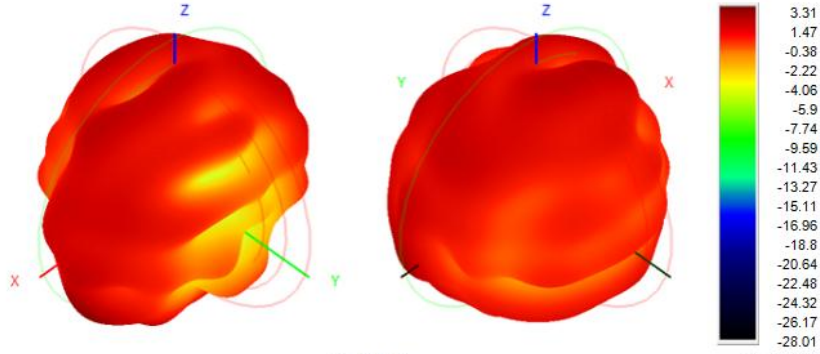
2450MHz



2500MHz



5850MHz



Environmental test requirements

Preface	Test items	Test methods and conditions	Test equipment	Test results
1	Temperature and humidity test	Reference EIA 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°C 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°C. Requirements : Time : 24 hours	K. SON INS THS-A4L-150	Qualified

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°C . <hr/> Requirements : More than 8 hours. (30 minutes/time, 12 cycles)	K. SON INS THS-A4L-150	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Qualified</div>
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 <hr/> 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	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Qualified</div>

Mechanical test requirements

Preface	Test items	Test methods and conditions	Test equipment	Test results
1	Vibration test	<p>Test condition A</p> <p>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.</p> <hr/> <p>Requirements :</p> <p>Vibration range: 10-55HZ</p> <p>Displacement amplitude value: 0.35mm</p> <p>Acceleration amplitude: 50.0M/S</p> <p>Number of frequency sweeping cycles: 30Times</p>	Vibration tester	Qualified
2	DROP TESTS	<p>Refer to Feisheng Electronic Test Specification:</p> <p>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.</p> <hr/> <p>Requirements :</p> <p>The mechanical characteristics of the product are normal after the drop test.</p>	Drop test fixtures	Qualified

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	<div style="border: 1px solid black; padding: 2px;">Qualified</div>
		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.