



2.4ghz 5dbi Rubber Duck- Male TS-JB-581

| | | | | | | | | |
|---------------|--|----------------|--|-----|----------------|------------|------|------------------|
| PARTS DRAWING | | ROHS Compliant | | REV | PRODUCT NO. | DATE | NAME | DESCRIPTION |
| | | | | A0 | TS-JB-581-2.4G | 2025.11.21 | | Initial Issuance |

Ask

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

| | | | | | | | | | | | | |
|--|--|--|--|-----------------------------------|---------------------|--------------------|--|--|------|--------|--------|-----|
| | | | | Frequency Range | 2400-2500MHz | | | PRODUCT NAME | | | | |
| | | | | Gain | 5DBi | | | 380B Glue Stick Antenna-2.4G-6.0 Bent Male Connector-L=106MM | | | | |
| | | | | VSWR | Comparing Waveforms | | | PRODUCT NO. | UNIT | M M | SIZE | 1:3 |
| | | | | Polarization | vertical | | | TS-JB-581-2.4G | PAGE | 1 OF 1 | FORNIT | A4 |
| | | | | Impedance | 50 Ω | GENERAL TOLERANCE: | | | | | | |
| | | | | operation temperature: -45°C~85°C | | 100~200: ± 3.00 | | | | | | |
| | | | | storage temperature: -45°C~85°C | | 50~100: ± 2.00 | | | | | | |
| | | | | | | 25~50: ± 0.20 | | | | | | |
| | | | | | | 10~25: ± 0.15 | | | | | | |
| | | | | | | 5~10: ± 0.1 | | | | | | |

| NO | Name | Description | Q'ty |
|----|---------------|--|------|
| 3 | Rubber sleeve | 99*10.5MM Black 380B Silk Screen TS-JB-581-2.4G | 1 |
| 2 | cable | RG178 cable, double tin, brown, L=70MM | 1 |
| 1 | SMA | 6.0mm Right-Angle Male Connector Pin, Gold-Plated / 24 Hours | 1 |

Product Features Specification Table

一、 Basic characteristics of the product:

| DESCRIPTION | VALUE |
|-----------------|---------------------|
| Frequency Range | 2400-2500MHz |
| Impedance | 50Ω |
| VSWR | Comparison waveform |

| | |
|------------------------------|------------------|
| Gain | 5dBi |
| Radiation | Omni-directional |
| Polarization | linear Vertical |
| Powers | 1W |
| Connector model | SMA-J |
| Operating temperature | -45°C~+85°C |
| Storage temperature | -45°C~+85°C |

二、 Product size:

| | | | |
|--------------------|--------------|------------------------|-------|
| Dimensions | 106mm*10.5mm | Fixing method | / |
| Shell color | Black | Connector Model | SMA-J |

Test data and graphs

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.

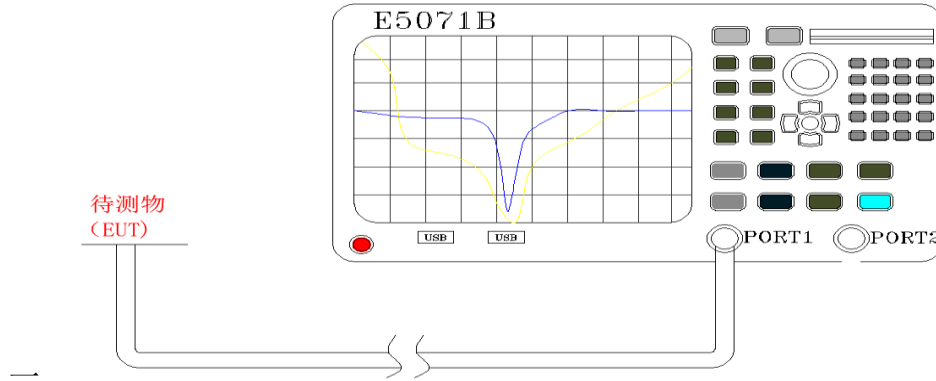


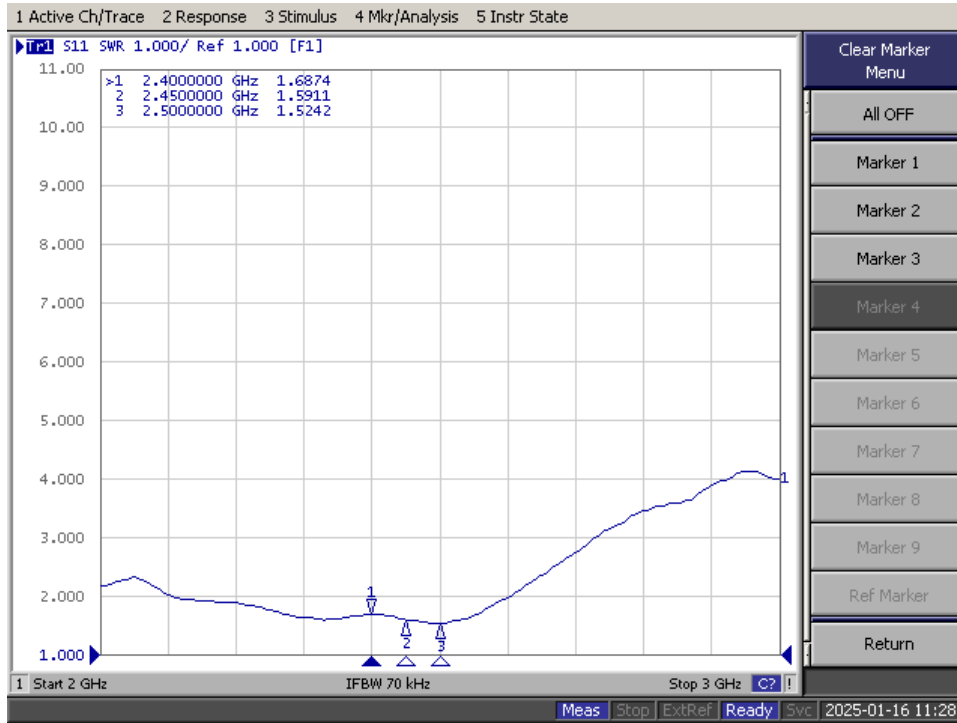
Fig.1 Antenna measured in Network Analyzer

3. S-Parameter Measurement Result S:

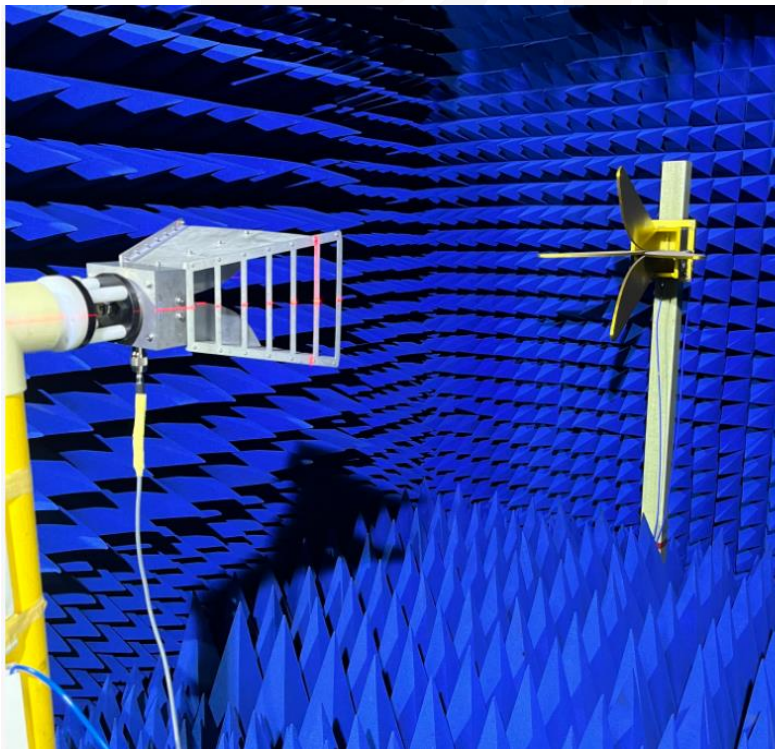
S-Parameter test data:

| Frequency MHz | 2400 | 2450 | 2500 |
|------------------|------|------|------|
| V.S.W.R | 1.68 | 1.59 | 1.52 |

S-Parameter test image:



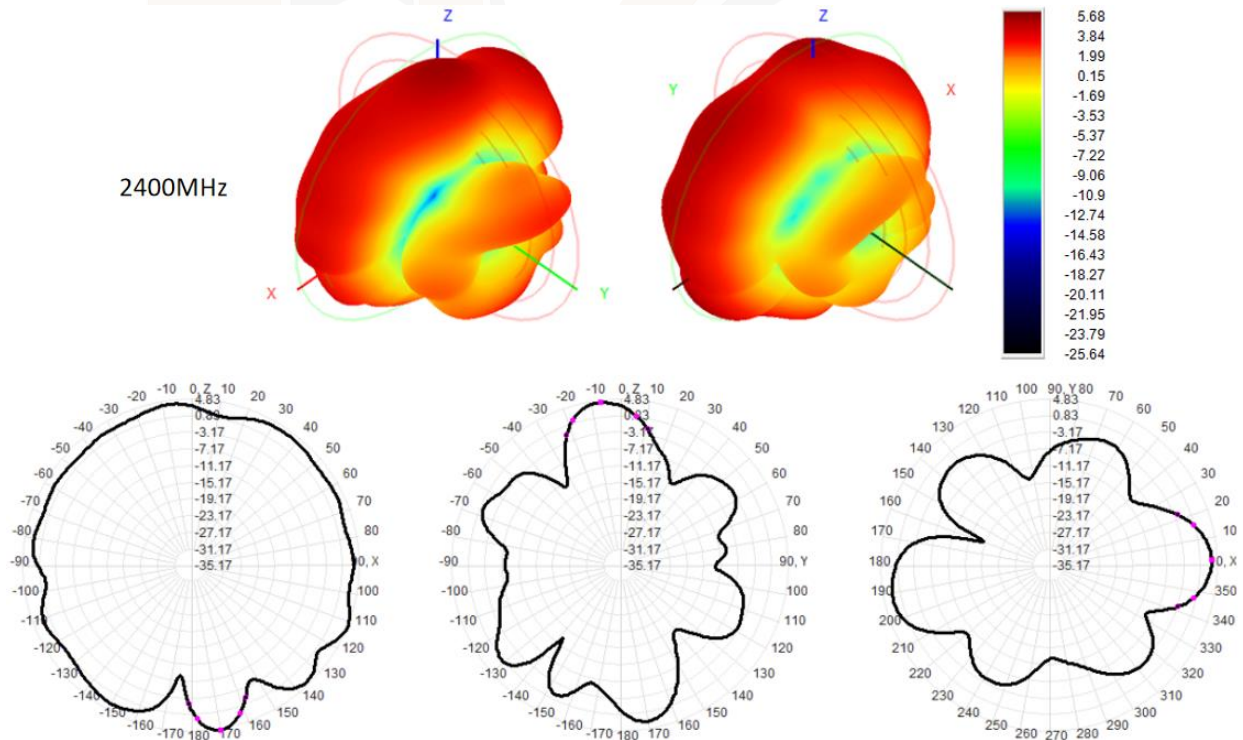
Darkroom test environment:



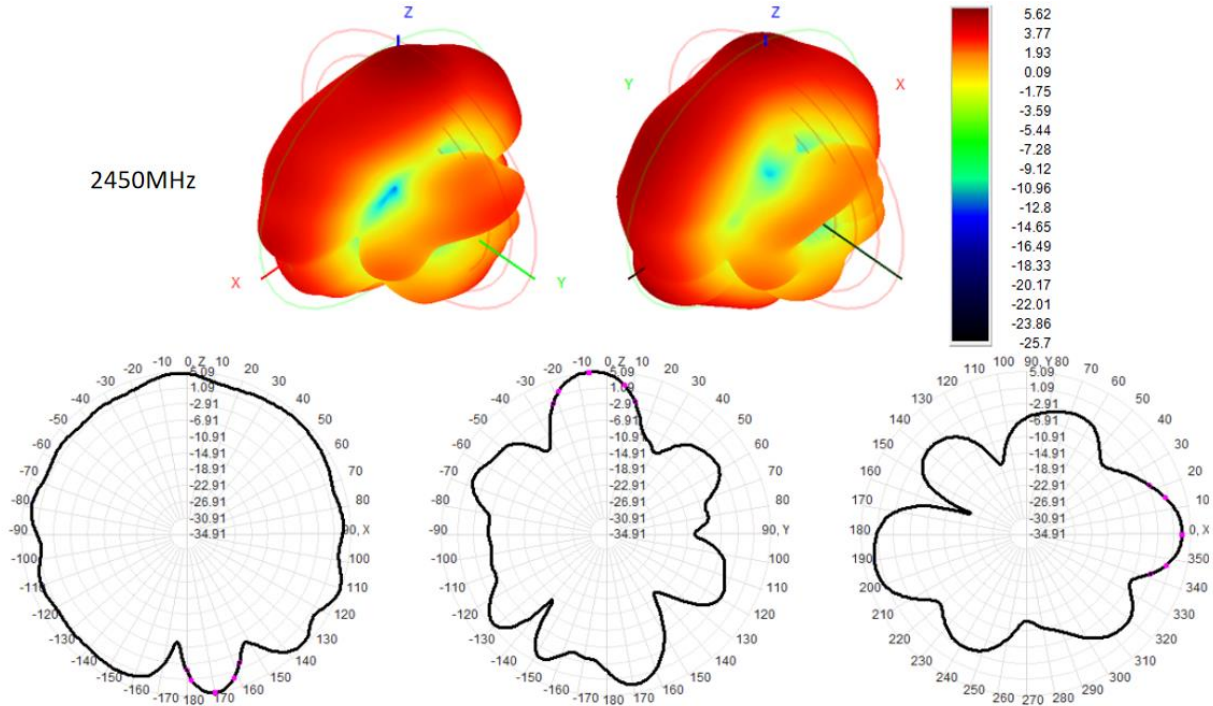
Passive numerical value:

| Frequency (MHz) (工作频段) | Efficiency (%) (效率) | Peak GAIN (dBi) (增益) |
|---------------------------|------------------------|-------------------------|
| 2400 | 72.71 | 5.30 |
| 2450 | 71.07 | 5.23 |
| 2500 | 63.08 | 5.11 |

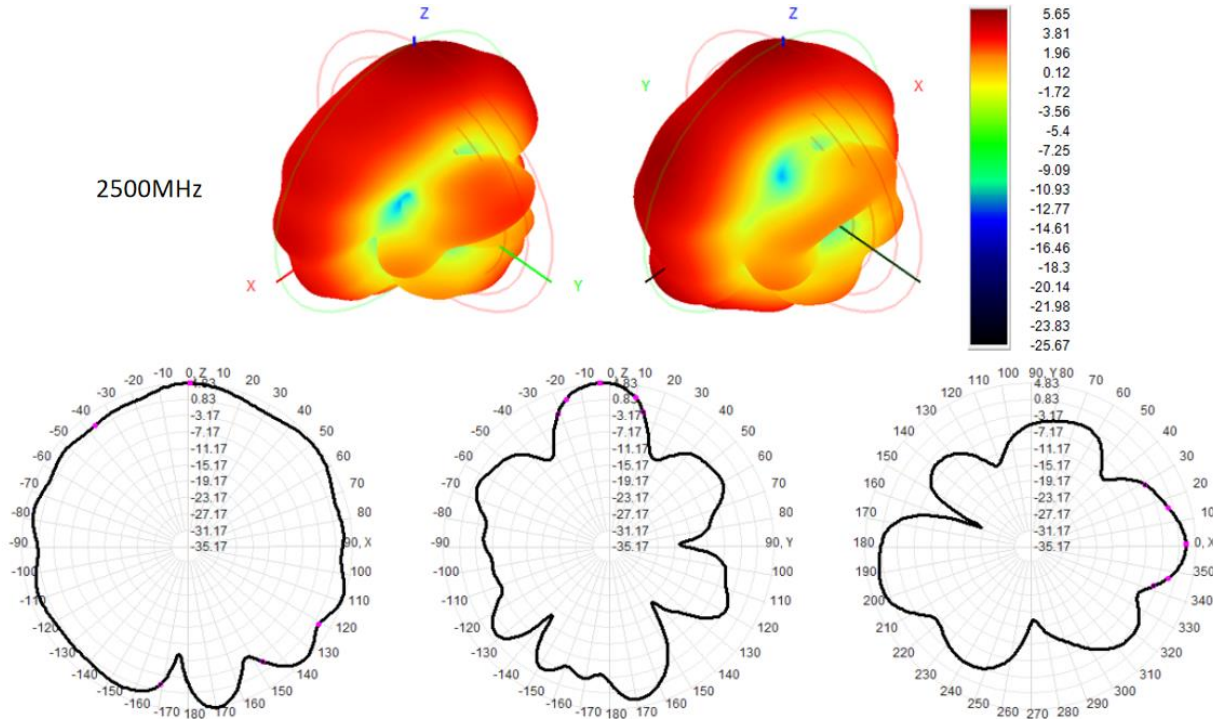
2D、3D:



2450MHz



2500MHz



Environmental test requirements

| Preface | Test items | Test methods and conditions | Test equipment | Test results |
|---------|-------------------------------|--|--|--------------|
| 1 | Temperature and humidity test | <p>Reference EIA 364-31 Method Three, Test Condition A</p> <p>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.</p> <p>Requirements: Temperature: 85°C Humidity: 90~95% (R.H) Time : 72 hours</p> | <p>K. SON INS THS-A4L-150</p> | Qualified |
| 2 | Low temperature test | <p>Refer to Test Specification: The measured sample should be traveled in a temperature-balanced environment, and its temperature setting Set at -45° C</p> <p>Requirements : Time : 24 hours</p> | <p>K. SON INS THS-A4L-150</p> | Qualified |
| 3 | High temperature test | <p>Refer to Test Specification: The measured sample should be placed in a constant temperature environment, and the gas temperature should be set at 70°C.</p> <p>Requirements : Time : 24 hours</p> | <p>K. SON INS THS-A4L-150</p> | Qualified |

Environmental test requirements

| Preface | Test items | Test methods and conditions | Test equipment | Test results |
|---------|--------------------|--|-----------------------------------|--------------|
| 4 | Hot and cold tests | <p>Refer to Test Specification: The measured sample should be placed in a fixed environment, and the temperature should be set at -45~85°C.</p> <p>Requirements : More than 8 hours. (30 minutes/time, 12 cycles)</p> | <p>K. SON INS THS-A4L-150</p> | Qualified |
| 5 | Salt spray test | <p>Refer to 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</p> <p>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.</p> | <p>Salt spray tester</p> | Qualified |

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> | <p>Vibration tester</p> | Qualified |

| | | | | |
|---|------------|---|--------------------|---|
| | | <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> | | |
| 2 | DROP TESTS | <p>Refer to 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> | Drop test fixtures | Qualified |
| | | <p>Requirements :</p> <p>The mechanical characteristics of the product are normal after the drop test.</p> | | |

Mechanical test requirements

| | | | | |
|---|-----------|--|-------------|---|
| 3 | Tula test | <p>Refer to Test Specification:</p> <p>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.</p> | Tile tester | Qualified |
|---|-----------|--|-------------|---|

| | | | | |
|--|--|---|--|--|
| | | Requirements: 1. The product assembly cannot fall off. 2. Minimum tensile force: 1.2KG | | |
|--|--|---|--|--|

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

