

# 深圳市扬跃电子通信科技有限公司

Shenzhen Yangyue Electronic Communication Technology Co., Ltd.

## SPECIFICATION FOR APPROVAL

# 承認書

|                       |                                                                                                                                                            |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Customer Name</b>  |                                                                                                                                                            |
| <b>Product name</b>   | WIFI antenna/YY-20240702-01/2.4 GHz/wire diameter 0.81 mm/coaxial line length 20 ± 2 mm/With 4 generation original terminal/Nano 2K dedicated/yangyue/ROHS |
| <b>Product number</b> | 332-200000074                                                                                                                                              |
| <b>Prepared By</b>    | Tony-Men                                                                                                                                                   |
| <b>Checked By</b>     |                                                                                                                                                            |
| <b>Approved By</b>    |                                                                                                                                                            |
| <b>Apply Date</b>     | July 12th , 2024                                                                                                                                           |

| CUSTOMER SIGNATURE                                                                          |            |             |
|---------------------------------------------------------------------------------------------|------------|-------------|
| Prepared By                                                                                 | Checked By | Approved By |
|                                                                                             |            |             |
| PLEASE RETURN TO US ONE COPY OF "SPECIFICATION FOR APPROVAL" WITH YOUR APPROVED SIGNATURES. |            |             |

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|                             |                                               |
|-----------------------------|-----------------------------------------------|
| 频率范围 <b>Frequency range</b> | 2400~2500 (MHz)                               |
| 增益 <b>Gain</b>              | 3.2dBi                                        |
| 驻波比系数 <b>VSWR</b>           | <2.2                                          |
| 输入阻抗 <b>Input Impedance</b> | $50 \pm 5$ ( $\Omega$ )                       |
| 极化方式 <b>Polarization</b>    | Vertical polarization+Horizontal polarization |

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## Revision History

| Date      | Revision | Description of Changes                  |
|-----------|----------|-----------------------------------------|
| 2024-7-12 | RA       | Measured with 2.4G WIFI Antenna sample. |

## 1 Technical Summary

This report summarizes the electrical results of the proposed antenna to support the 2.4G WIFI Antenna program. We test the antenna with the latest version handset. And it seems to be acceptable.

## 2 General Description

### 2.1 Components/Part revisions

VSWR: Voltage Standing Wave Rate.

## 3 Mechanical Description

## 4 Electrical Performance

### 4.1 Set-up

#### 4.1.1 VSWR

VSWR measurements (S11) were performed using an Agilent 8753D Network Analyzer and the previously described test fixture. Coaxial chokes were used to mitigate surface currents on the outside of the cabling. The testing was performed in free space.

#### 4.1.2 Gain & Radiation Patterns

The gain of the antenna was measured in the Lxc's anechoic chamber. Coaxial chokes on the feed cable were used to mitigate surface currents. The chamber provides less than -30 dB reflectivity from 300 MHz through 3 GHz and an 18" diameter spherical quiet zone. The measurement results are calibrated using both dipole and leaky wave horn standards.

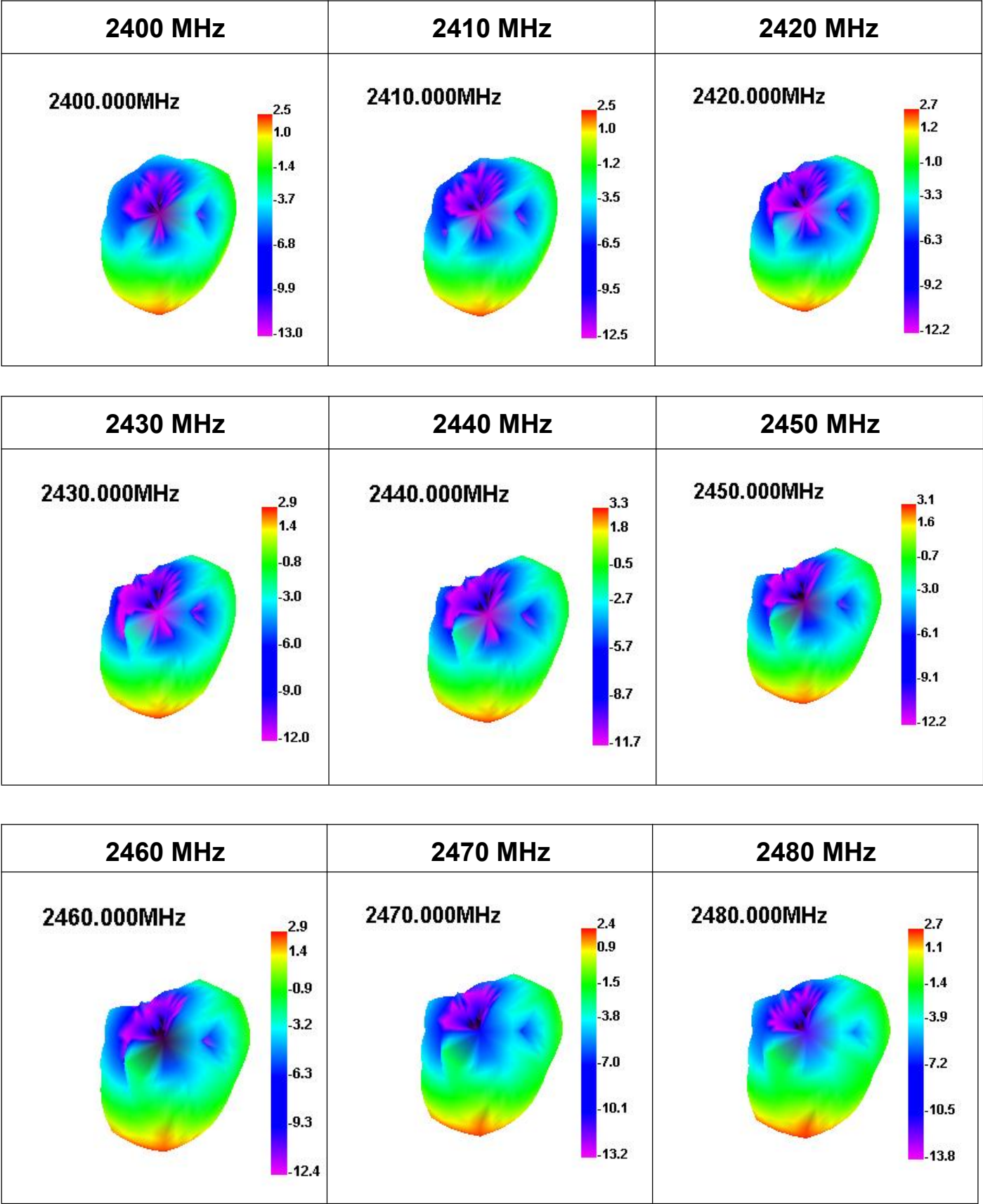
#### 4.1.3 Matching Circuit Description

No changed..

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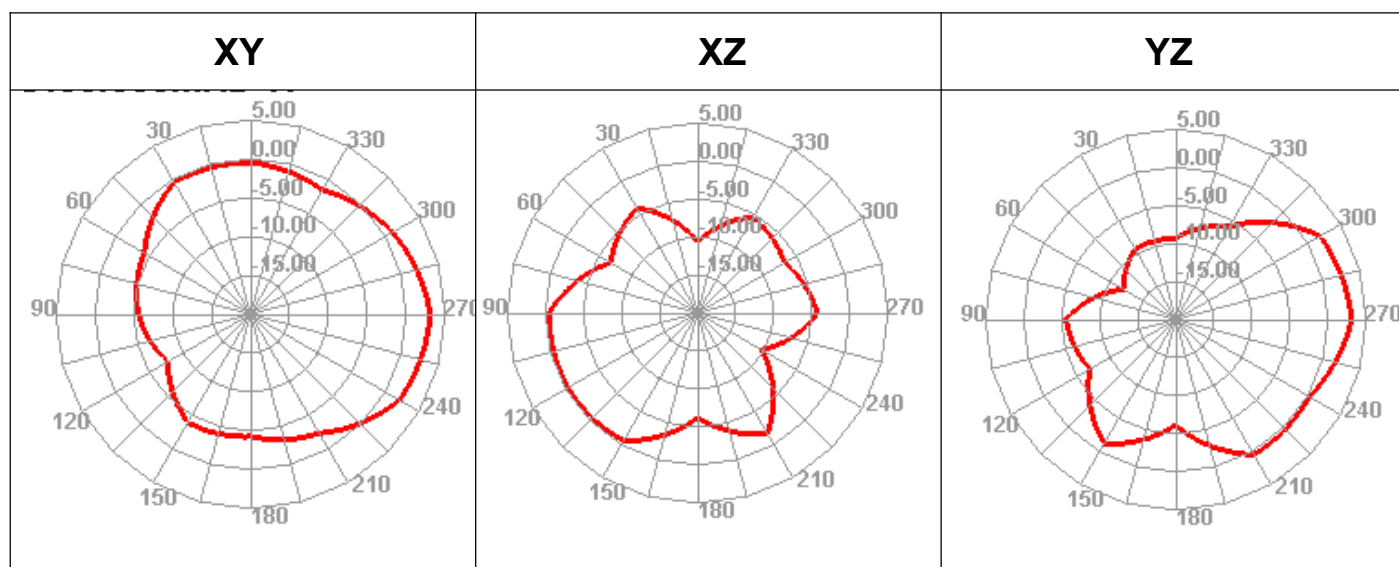
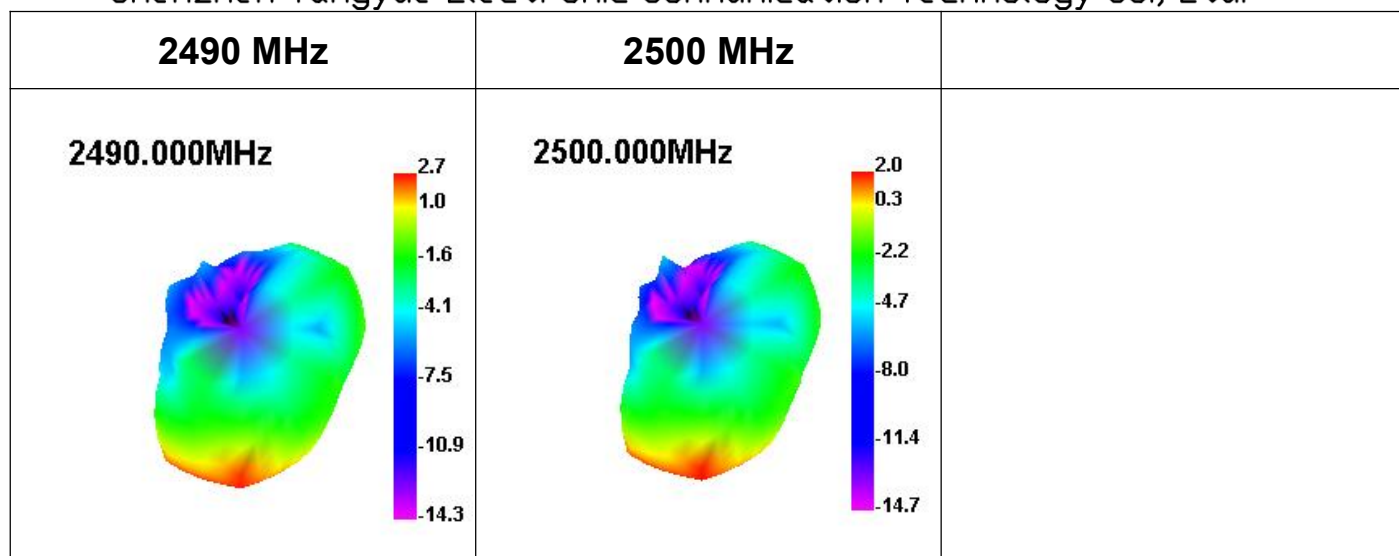
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## 5. Antenna - Radiation Pattern Test Data



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| Freq | (MHz) | 2400  | 2410  | 2420  | 2430  | 2440  | 2450  | 2460  | 2470 | 2480  | 2490  | 2500 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|------|
| Effi | (%)   | 56.53 | 54.29 | 54.46 | 57.02 | 63.07 | 62.25 | 61.87 | 55.5 | 59.57 | 57.87 | 48.8 |
| Gain | (dBi) | 2.5   | 2.51  | 2.68  | 2.92  | 3.27  | 3.1   | 2.95  | 2.41 | 2.73  | 2.67  | 1.97 |

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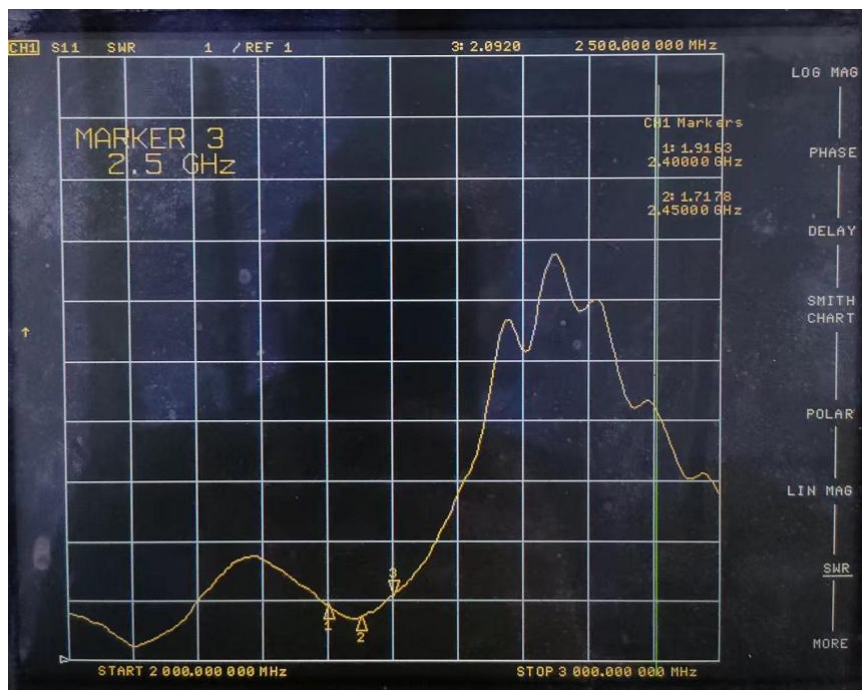
Address: 6F, building A, Chuang Fu winners Industrial Park, 2 Pujiang Road, Humen Daning, Dongguan

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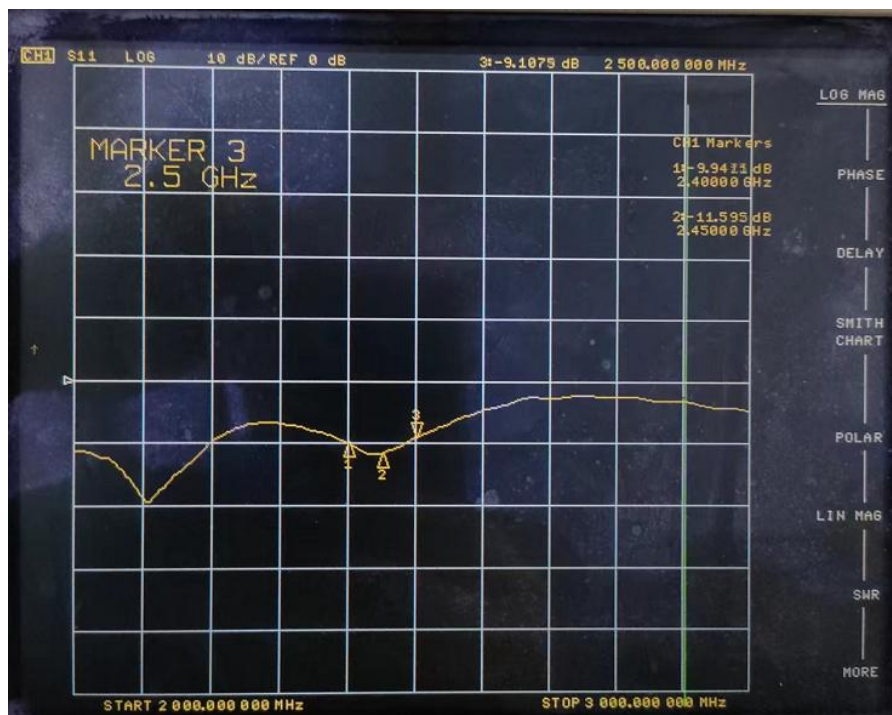
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## 6.Plots

### VSWR



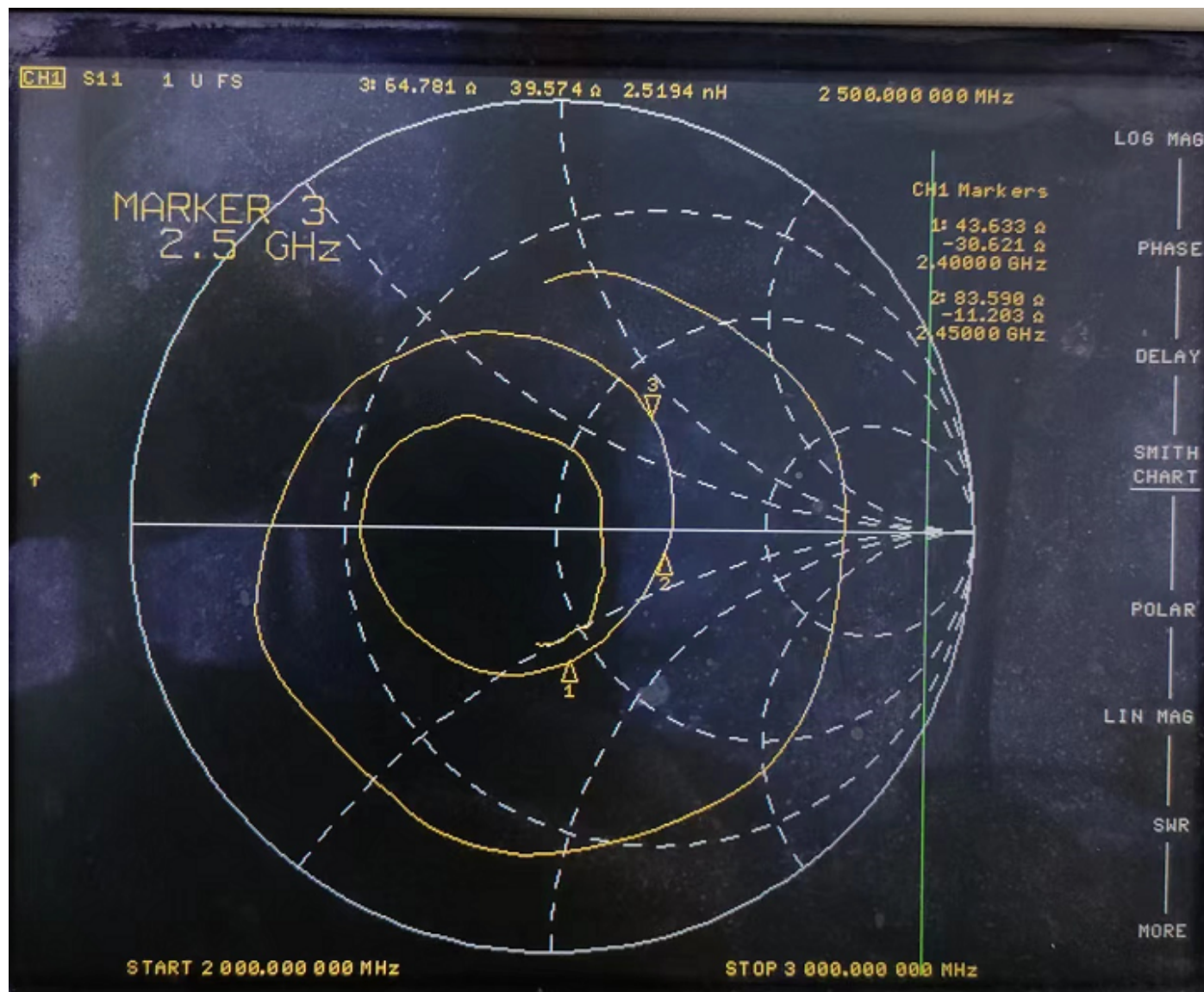
### Return loss



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## Smith chart



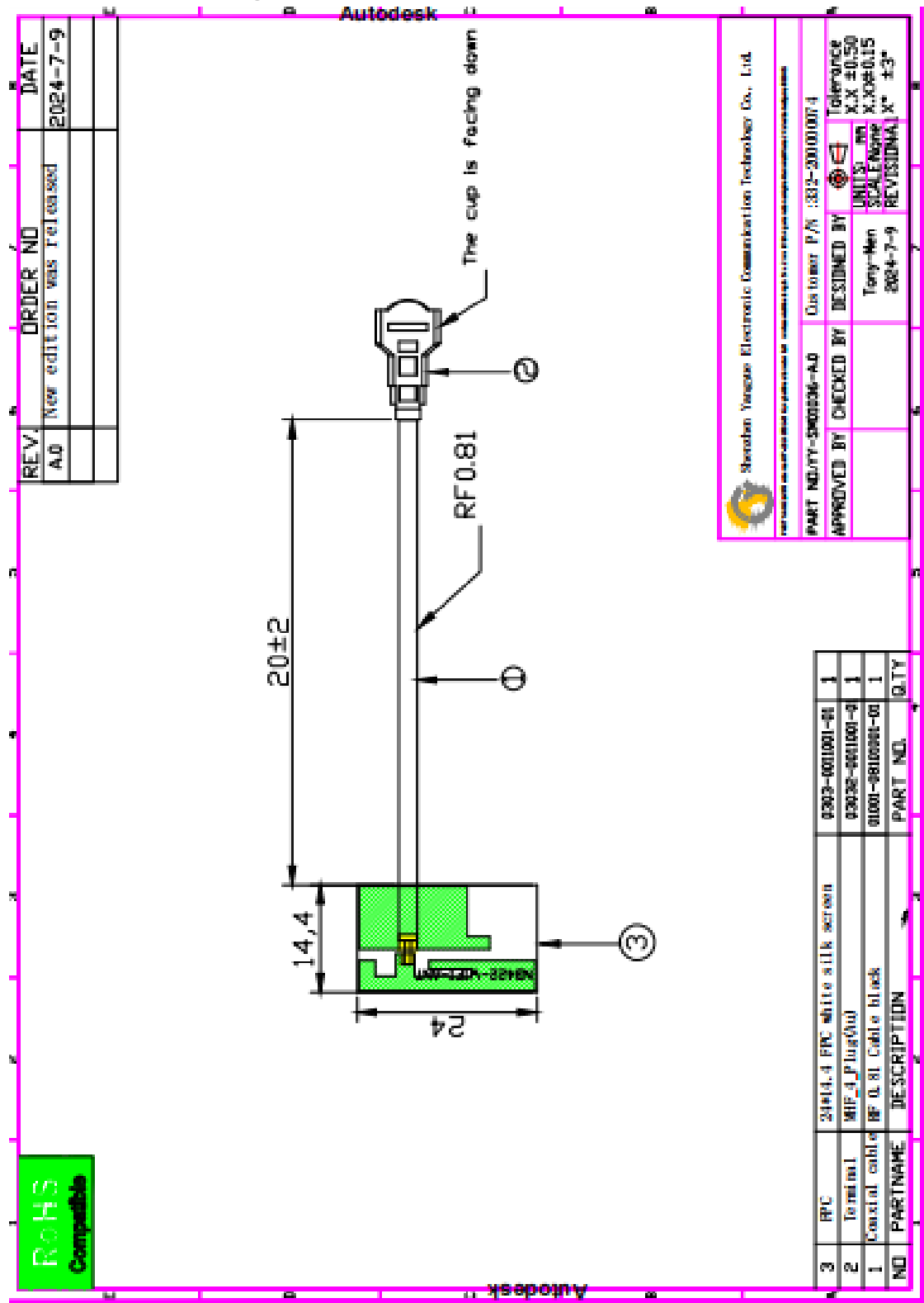
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## 6.Mechanical drawing



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## 7 Reliability tests

### 7.1 Test content

| No | Pilot projects                  | Test method                                                      | Benchmark                                                                                                                                           |
|----|---------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | 盐水喷雾试验<br>Salt water spray test | 把盐浓度 5%的溶液喷雾 24HR<br>A solution of 5% salt was sprayed for 24 hr | 不能有变色, 歪 (变形) 脱落等的缺点 腐蚀面积不能过大<br>Can not have discoloration, slanting (deformation) off and other shortcomings, corrosion area can not be too large |

### 7.2 Test results

| NO | 样品数<br>Number of samples | 试验期间<br>Test time | 实验结果<br>The results of the experiment | 备注<br>Notes                                                                          |
|----|--------------------------|-------------------|---------------------------------------|--------------------------------------------------------------------------------------|
| 1  | 10                       | 24H               | PASS                                  | 技术等级为 9 级<br>腐蚀<0.4mm<br>The technical grade is grade 9<br>Corrosion & LT;<br>0.4 mm |

## 8 Conclusion

以上数据表明此 2.4GHz 天线参数均已达标。性能以装机后的实际使用效果为准。

**The above data show that the 2.4 ghz antenna parameters have reached the standard. Performance is based on the actual use effect after installation**

From the above test results, we can know the electrical performance of the antenna is seems good.

Shenzhen Yangyue Electronic Communication Technology Co., Ltd, look forward to your confirmation, thank you for your cooperation !