



深圳锐锋电子技术有限公司  
Shenzhen Ruifeng Electronic Technology Co., Ltd

承 认 书  
SPECIFICATION FOR APPROVAL

|                                |                    |                     |                |
|--------------------------------|--------------------|---------------------|----------------|
| 客户名称<br>Customer Name          | 捷创数位               |                     |                |
| 客户项目名 Customer<br>Project Name | WDC25-TX           | 项目名<br>Project Name | WDC25-TX       |
| 客户编码<br>Customer P/N           | 400Q-034S-CM       | 料号<br>P/N           | TP6403B-A(RF1) |
| 频段<br>Band                     | WiFi2.4G/WIFI6E/BT |                     |                |
| 版本号<br>Version                 | A0                 |                     |                |
| 设计人信息/Designer Information     |                    |                     |                |
| 射频工程师<br>RF Engineer           | 符学荣                | 研发主管<br>R&D Diretor | 夏承磊            |
| 结构工程师<br>ME Engineer           | 黄宗宝                |                     |                |

| 审批/ Approval    |                   |                  |                   | 客户批准/Customer Approval |                   |
|-----------------|-------------------|------------------|-------------------|------------------------|-------------------|
|                 | 制作<br>Prepared By | 审核<br>Checked By | 批准<br>Approval By | 审核<br>Checked By       | 批准<br>Approval By |
| 签章<br>Signature | 李瑶娜               | 符学荣              | 夏承磊               |                        |                   |
| 日期<br>Date      | 2025. 07. 10      | 2025. 07. 10     | 2025. 07. 10      |                        |                   |

| 修订履历/Change Log |                            |                         |                   |            |
|-----------------|----------------------------|-------------------------|-------------------|------------|
| 版本<br>Version   | 修订内容<br>Change Description | 责任人<br>Person in Charge | 核准<br>Approval By | 日期<br>Date |
|                 |                            |                         |                   |            |
|                 |                            |                         |                   |            |
|                 |                            |                         |                   |            |



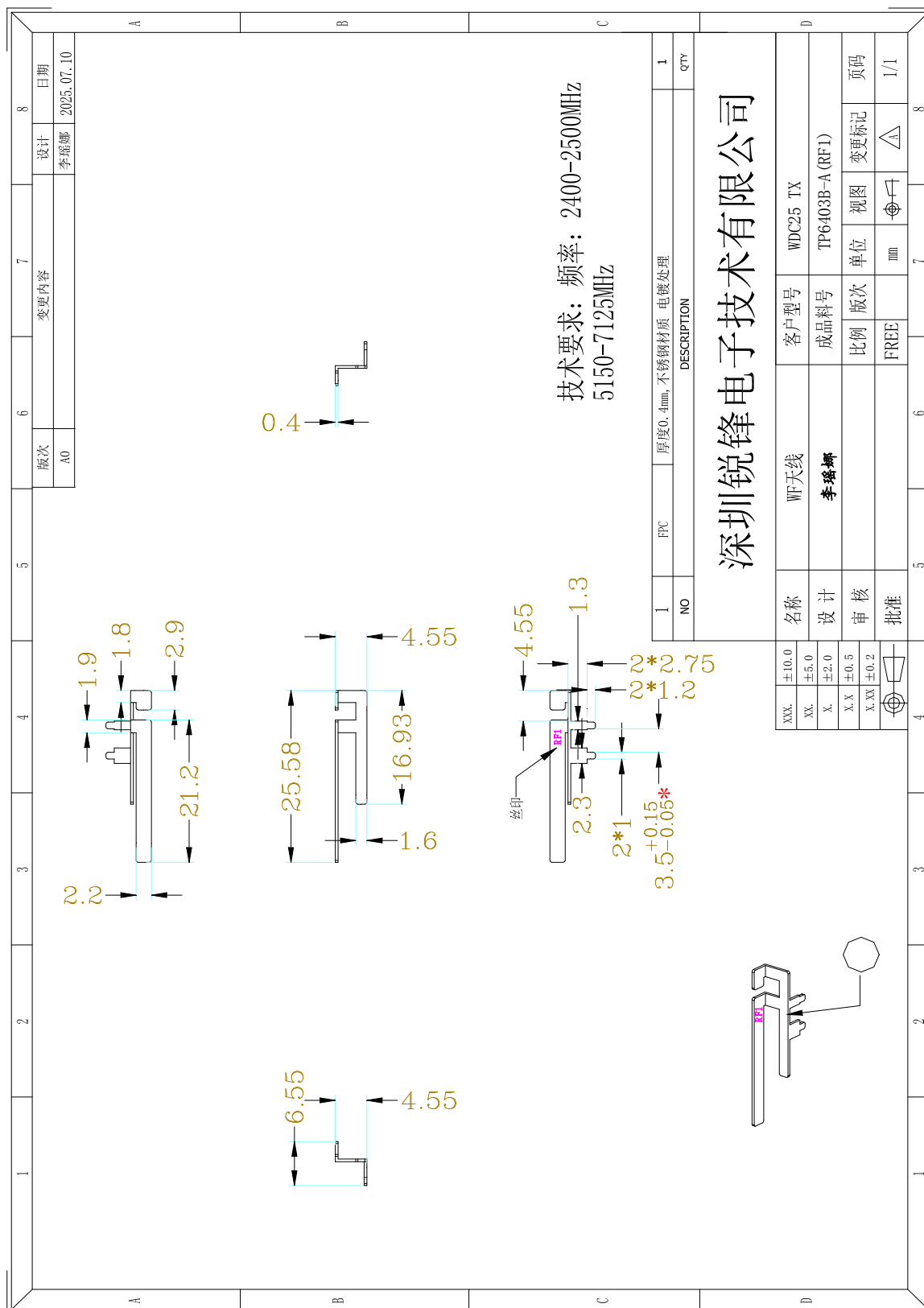
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Drawing or Product Image





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样品尺寸测量报告

Sample Dimensions Test Report

|                            |                     |                     |                          |                  |         |
|----------------------------|---------------------|---------------------|--------------------------|------------------|---------|
| 测试日期<br>Test Date          | 2025. 07. 10        | 样品数量<br>Sample Qty. | 3                        | 测试人<br>Inspector | 许燕芳     |
| 尺寸编号<br>Dimension No.      | 标准<br>Standard      | 样品 1<br>Sample 1    | 样品 2<br>Sample 2         | 样品 3<br>Sample 3 | Pass/NG |
| ①长度                        | 25. 58±0. 2mm       | 25. 6               | 25. 7                    | 25. 6            | Pass    |
| ②宽度                        | 3. 5+0. 15/-0. 05mm | 3. 5                | 3. 55                    | 3. 6             | Pass    |
| ③厚度                        | 0. 4±0. 03mm        | 0. 4                | 0. 4                     | 0. 4             | Pass    |
|                            |                     |                     |                          |                  |         |
|                            |                     |                     |                          |                  |         |
|                            |                     |                     |                          |                  |         |
|                            |                     |                     |                          |                  |         |
|                            |                     |                     |                          |                  |         |
|                            |                     |                     |                          |                  |         |
| 最终结论<br>Conclusion         |                     |                     |                          |                  | PASS    |
| 测试人&日期<br>Inspector & Date | 许燕芳 2025. 07. 10    |                     | 批准&日期<br>Approval & Date |                  |         |

## 射频性能测量报告

## RF Performance Test Report

## 天线测试设备简介

## Antenna Test Equipment Introduction

测试天线输入特性使用 Agilent E5071C and Agilent 5062A 矢量网络分析仪；辐射特性利用广屏三维近场暗室进行测试，并分别使用 8960 E5515 和 Agilent E4438C 进行了分析。暗房的测试坐标如下：

Test of antenna input characteristics using Agilent E5071C and Agilent 5062A vector network analyzer; The radiation pattern of the antenna are tested using the guangping 3D near field Anechoic Chamber, and the instrument is used to agilent8960 E5515 and Agilent E4438C. The test coordinates of the darkroom are as follows:

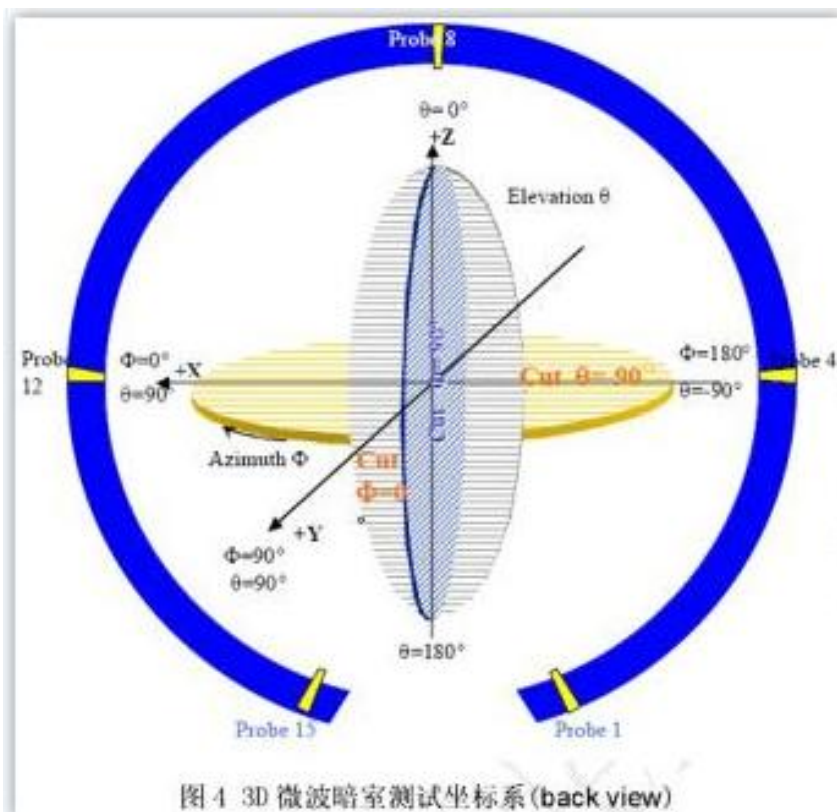


图4 3D 微波暗室测试坐标系(back view)

## 1. S11 参数测量/S11 Parameter-VSWR

使用一根 50  $\Omega$  同轴电缆连接到天线，然后该电缆连接到网络分析仪测量 S11 参数，被测量产品远离金属至少 20 厘米。

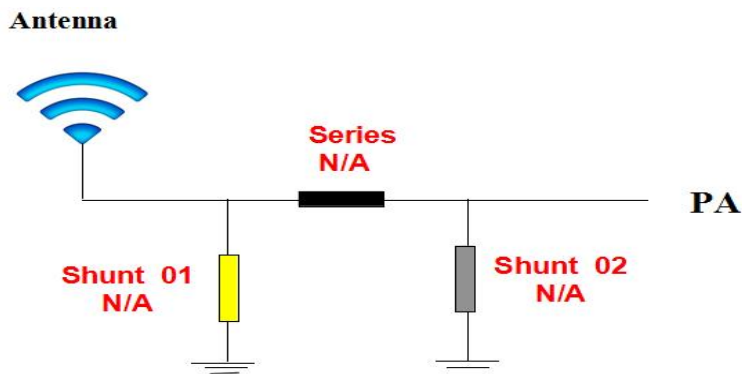
Measuring Method is a 50  $\Omega$  coaxial cable is connected to the antenna. Then this cable is connected to a network analyzer to measure the S11 parameter, Keeping this fixture away from metal at least 20cm.

### S11 Parameter-VSWR-RF1



| 频率 (MHZ)       | 2400  | 2450 | 2500  | 5150  | 5550 | 5850  | 6300  | 6800  | 7125 |
|----------------|-------|------|-------|-------|------|-------|-------|-------|------|
| 驻波比            | 1.5   | 1.4  | 1.4   | 1.5   | 1.1  | 1.3   | 1.5   | 1.5   | 2.2  |
| 阻抗<br>$\Omega$ | 63.6  | 63.1 | 64.3  | 53.4  | 52.5 | 55.9  | 32.8  | 76.9  | 29.2 |
| 回损             | -13.4 | -14  | -14.1 | -13.3 | -23  | -16.8 | -13.5 | -13.4 | -8.3 |

## 2. 天线匹配网络/Antenna Matching Network



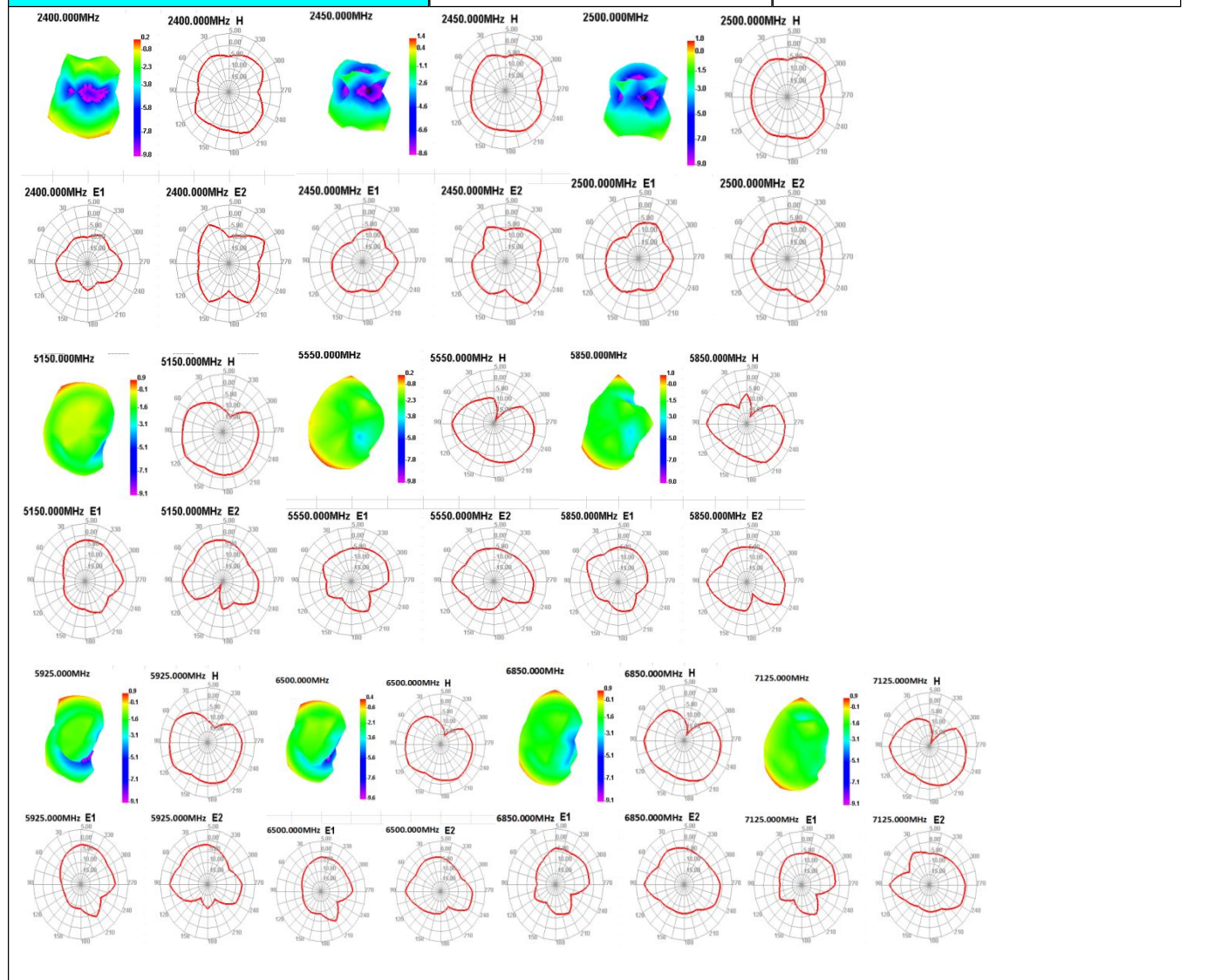
## 3. Gain & Efficiency-

| Frequency (MHz) | Efficiency (%) | Peak GAIN (dBi) |
|-----------------|----------------|-----------------|
| 2400            | 43.82          | 0.23            |

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|      |       |      |
|------|-------|------|
| 2450 | 42.21 | 1.37 |
| 2500 | 37.63 | 1.02 |
| 5150 | 42.41 | 0.88 |
| 5350 | 41.67 | 0.73 |
| 5550 | 42.22 | 0.24 |
| 5850 | 38.53 | 0.96 |
| 5925 | 32.71 | 0.89 |
| 6500 | 34.62 | 0.41 |
| 6850 | 36.38 | 0.88 |
| 7125 | 34.45 | 0.94 |





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## 4.WIFI OTA Data

| 2.4G WIFI                    | TRP   |       |       | TIS    |        |        |
|------------------------------|-------|-------|-------|--------|--------|--------|
| Channel                      | CH1   | CH6   | CH12  | CH1    | CH6    | CH12   |
| 802.11 <b>b</b> , 11M        | 15.68 | 15    | 14.5  | -66.37 | -65.83 | -68.84 |
| 802.11 <b>g</b> , 54M        | 14.29 | 13.72 | 13.67 | -55.59 | -53.53 | -54.36 |
| 802.11 <b>n</b> , MCS7 (65M) | 13.17 | 13.25 | 13.38 | -53.42 | -52.72 | -54.21 |

| 5.8G WIFI             | TRP   |      |       |       | TIS    |        |        |        |
|-----------------------|-------|------|-------|-------|--------|--------|--------|--------|
| Channel               | CH36  | CH60 | CH149 | CH165 | CH36   | CH60   | CH149  | CH165  |
| 802.11 <b>A</b> , 54M | 13.48 | 13.4 | 13.59 | 13.73 | -70.04 | -71.29 | -72.86 | -73.13 |



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可靠性测试报告

Reliability Test Report

|                            |                                                                                                                           |                           |                          |                  |                  |               |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------|--------------------------|------------------|------------------|---------------|
| 测试日期<br>Test Date          | 2025. 07. 10                                                                                                              | 样品数量<br>Sample Qty.       | 3                        | 测试人<br>Inspector | 许燕芳              |               |
| 测试项目<br>Test Item          | 要求<br>Requirement                                                                                                         | 试验设备<br>testing equipment | 样品 1<br>Sample 1         | 样品 2<br>Sample 2 | 样品 3<br>Sample 3 | 判定<br>PASS/NG |
| 高温存储                       | 在+85℃条件下暴露<br>24H, 恢复 2H 后进行测试                                                                                            | 恒温恒湿箱                     | OK                       | OK               | OK               | Pass          |
| 低温存储                       | 在-40℃条件下暴露<br>24H, 恢复 2H 后进行测试                                                                                            | 恒温恒湿箱                     | OK                       | OK               | OK               | Pass          |
| 高温工作                       | 在+60℃条件下通电工作 24H                                                                                                          | 恒温恒湿箱                     | OK                       | OK               | OK               | Pass          |
| 低温工作                       | 在-20℃条件下通电工作 24H                                                                                                          | 恒温恒湿箱                     | OK                       | OK               | OK               | Pass          |
| 盐雾试验                       | (5 ± 0. 5)%氯化钠、<br>pH 值为 6. 5~7. 2, 实验箱温度 (35±2)℃<br><input type="checkbox"/> 24H <input checked="" type="checkbox"/> 48H | 盐雾试验机                     | OK                       | OK               | OK               | Pass          |
| 连接器铆压拉拔力                   | 1. 13 线径 ≥10N<br>0. 81 线径 ≥8N<br>RG174 ≥60N<br>RG178 ≥50N                                                                 | 推拉力计                      | ≥8N                      | ≥8N              | ≥8N              | Pass          |
| 最终结论<br>Conclusion         |                                                                                                                           |                           |                          |                  |                  | Pass          |
| 测试人&日期<br>Inspector & Date | 许燕芳 2025. 07. 10                                                                                                          |                           | 批准&日期<br>Approval & Date |                  |                  |               |

安装事宜或其它

Install Wizard or Other

安装过程:

取 1PCS 产品, 用手撕下 FPC 背面的离型纸, 然后将 FPC 定位孔位置与外壳定位孔位置 (定位筋位或定位线) 对齐, 平整的贴附与外壳上, 具体位置如下图所示:

安装过程注意事项:

- ☐ 粘贴天线后保证 FPC 完整贴附于外壳;
- ☐ 定位孔与外壳定位柱位置对齐;
- ☐ FPC 边缘与外壳边缘对齐;
- ☐ 带端子天线在将端子扣合到主板 PCBA 端时请首先对齐端子, 然后垂直扣合;
- ☐ 拆卸天线端子时需使用工具 (如专用撬棍) 垂直翘起端子, 不可直接拽线拆卸

