



福州中天迅通信技术有限公司

Fuzhou ZHONGTIANXUN Communication Technology Co., Ltd

项目名称(Project Name): P20-R WIFI

天线型号(Antenna model): P20-R WIFI

物料编码(Item number): E. 03. 01257

MPN 码 (MPN) : B0680381D

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|---------------|------------|--------------------------------------------|
| A1            | 2025-11-10 | 初版。<br>First issue.                        |
|               | 2025-12-12 | 更新无源。<br>Update the antenna passive test.  |
| A2            | 2025-12-29 | 图纸更新，数据更新。<br>Drawing update, data update. |





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## 1 名词解释 (Explanation of Nouns)

|       |                                         |
|-------|-----------------------------------------|
| dBi   | Decibel relative isotropic antenna      |
| Tx    | Transmit frequency                      |
| Rx    | Receive frequency                       |
| TRP   | Total Radiated Power                    |
| TIS   | Total Isotropic Sensitivity             |
| VSWR  | Voltage Standing Wave Ratio             |
| GSM   | Global Service for Mobile communication |
| DCS   | Digital Communication System            |
| CDMA  | Code Division Multiple Access           |
| WCDMA | Wideband Code Division Multiple Access  |

## 2 测试设备 (Test equipment)

矢量网络分析仪 (Vector network analyzer)

安捷伦 8753E (Agilent 8753E)

频谱分析仪 (Frequency analyzer)

综合测试仪 (General-purpose tester)

安捷伦 8960 E5515C

标准高性能无反射屏蔽暗室 (High performance no-reflection shielding darkroom)

ETS

8m\*4m\*4m

## 3 适用频段 (Applied frequency band)

| 频段<br>Frequency Band | 频率<br>Frequency             |
|----------------------|-----------------------------|
| WIFI                 | 2400-2500MHz, 5150-5850MHz。 |





## 4. 测试指标和数据图表 (Test project)

### 4.1 驻波图 (VSWR )





4.2 无源效率 (Antenna passive test)

| chNo | Freq (MHz) | Gain (dBi)  | Efficiency_Pcent (%) |
|------|------------|-------------|----------------------|
| 1    | 2400       | 1.837070378 | 45.67882464          |
| 2    | 2410       | 2.284644693 | 48.56520523          |
| 3    | 2420       | 2.506598903 | 49.22444911          |
| 4    | 2430       | 2.434506974 | 47.93560614          |
| 5    | 2440       | 2.222264582 | 46.03234281          |
| 6    | 2450       | 2.131849104 | 46.68741615          |
| 7    | 2460       | 1.742293749 | 46.28374745          |
| 8    | 2470       | 1.590147916 | 46.80765028          |
| 9    | 2480       | 1.172983916 | 44.91342034          |
| 10   | 2490       | 0.725165536 | 43.71290771          |
| 11   | 2500       | 0.902354928 | 43.78688852          |
| 12   | 5150       | 0.201884364 | 27.88749789          |
| 13   | 5200       | 0.211248326 | 30.96880619          |
| 14   | 5250       | 1.432471409 | 36.35725751          |
| 15   | 5300       | 2.137442461 | 38.11721769          |
| 16   | 5350       | 1.923058302 | 40.81260319          |
| 17   | 5400       | 2.227353026 | 41.73698934          |
| 18   | 5450       | 2.502226189 | 42.33314321          |





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|    |      |             |             |
|----|------|-------------|-------------|
| 19 | 5500 | 0.629135513 | 32.2273654  |
| 20 | 5550 | 1.779537335 | 36.47922346 |
| 21 | 5600 | 0.979520673 | 31.64017415 |
| 22 | 5650 | 1.289738012 | 38.30929176 |
| 23 | 5700 | 1.170444399 | 36.60330339 |
| 24 | 5750 | 0.727795477 | 35.03431375 |
| 25 | 5800 | 1.265193159 | 31.41788432 |
| 26 | 5850 | 1.928590342 | 36.51307511 |



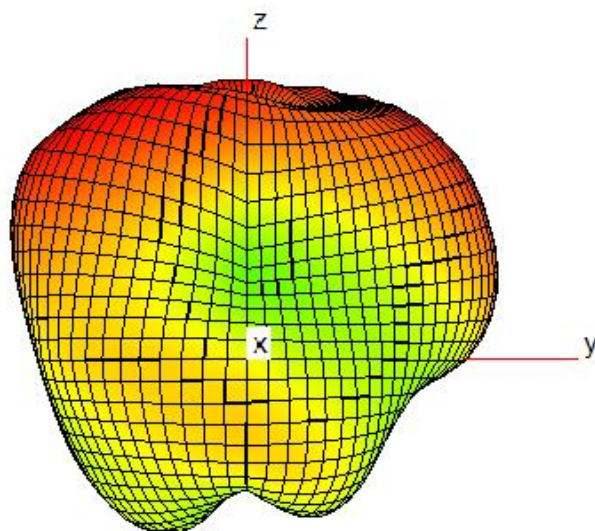
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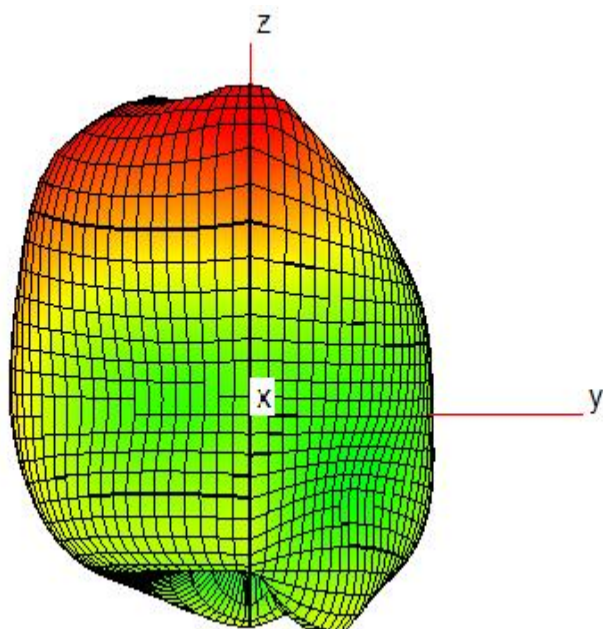


4.3 3D 辐射图 (3D radiation drawing)

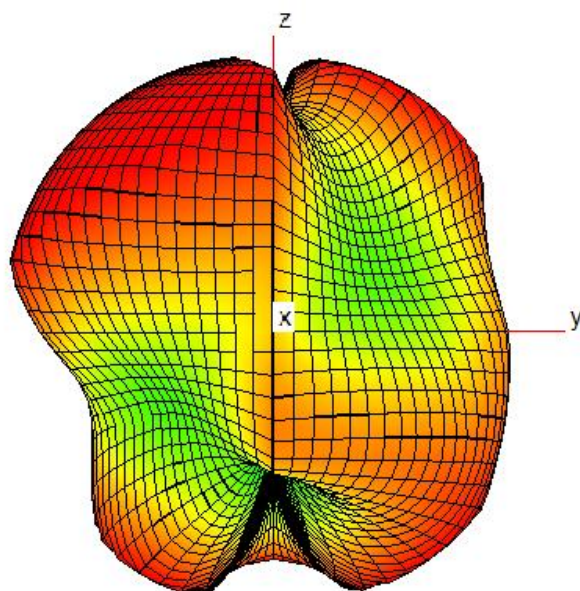
2450MHZ



5250MHZ



5750MHZ





4.4 有源数据 (Active test data)

| 频段      | 参数\信道 | 1      | 7      | 13     |
|---------|-------|--------|--------|--------|
| WIFI-B  | TRP   | 12.24  | 12.41  | 12.76  |
|         | TIS   | -83.64 | -83.57 | -83.09 |
| 频段      | 参数\信道 | 1      | 7      | 13     |
| WIFI-G  | TRP   | 12.18  | 12.34  | 12.54  |
|         | TIS   | -69.58 | -69.82 | -69.58 |
| 频段      | 参数\信道 | 1      | 7      | 13     |
| WIFI-GN | TRP   | 11.98  | 12.19  | 12.26  |
|         | TIS   | -65.55 | -65.47 | -65.41 |
| 频段      | 参数\信道 | 36     | 100    | 165    |
| WIFI-A  | TRP   | 10.65  | 10.72  | 9.98   |
|         | TIS   | -67.95 | -67.64 | -66.85 |

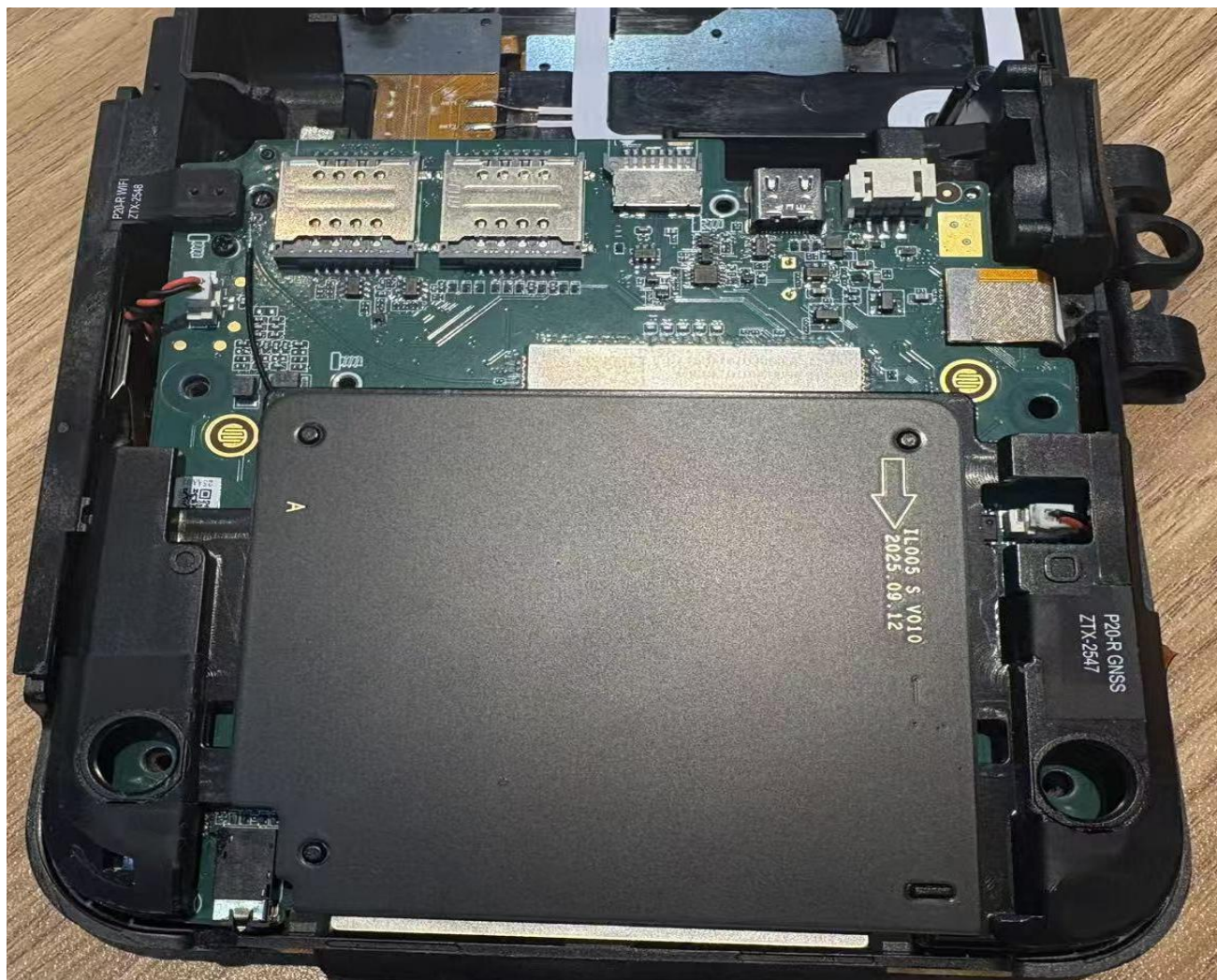




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#### 4.5 装配图 (Environment treatment)

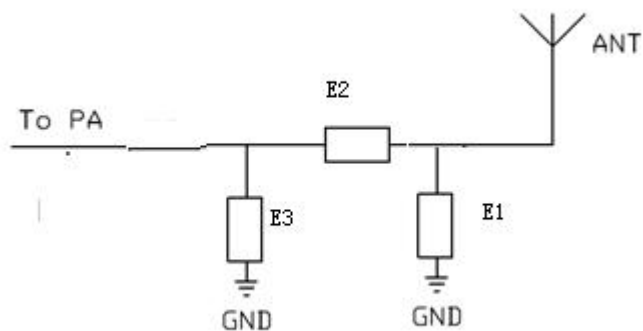


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## 5. 匹配说明 (Matching circuit)



| 匹配说明 | WIFI  |
|------|-------|
| E1   | NC    |
| E2   | 4.7PF |
| E3   | NC    |

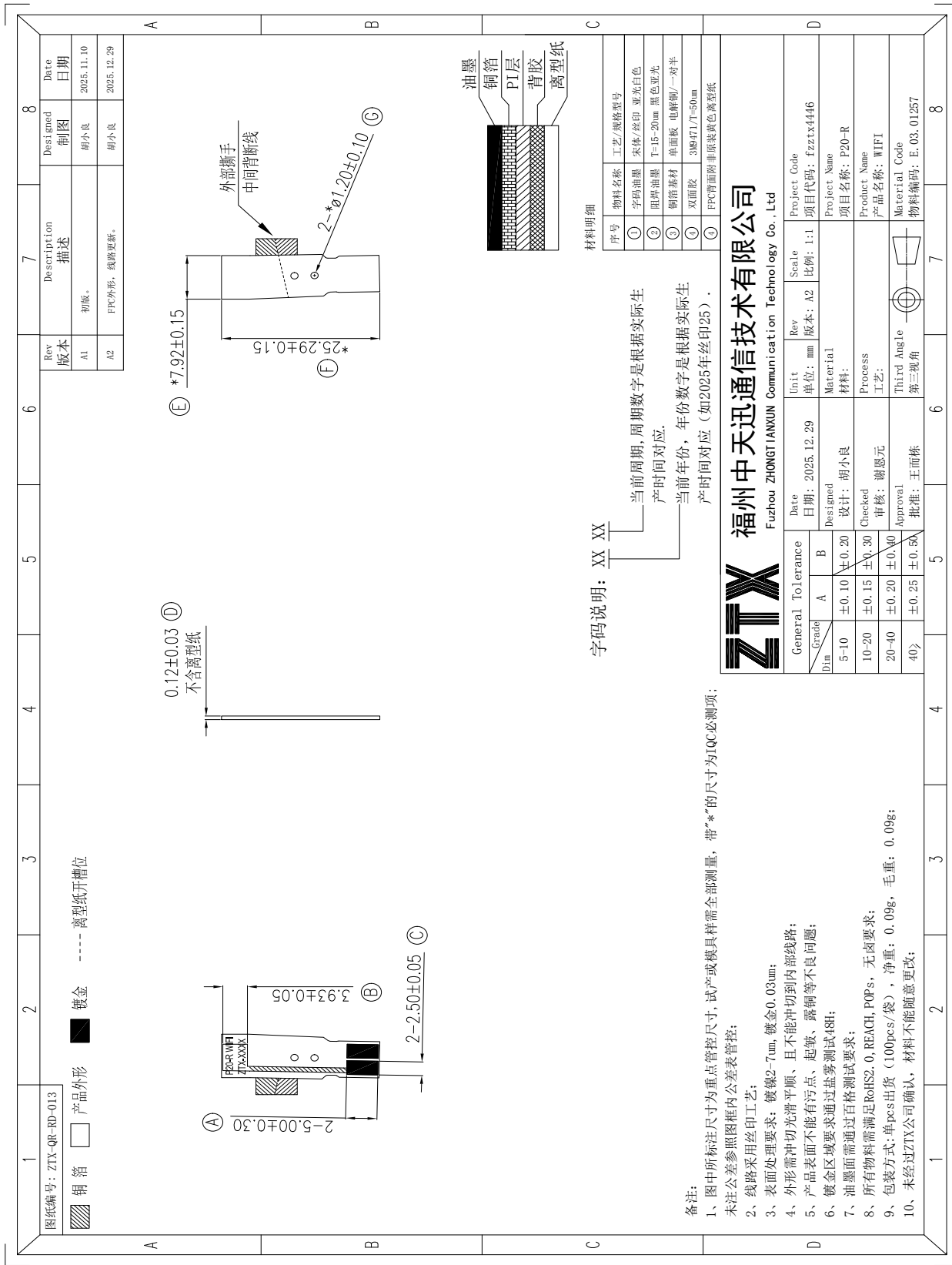




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6. 天线外形图 (Mechanical Specification)



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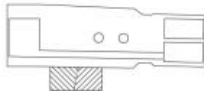
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## 7. 包装作业指导 (The packing way)

|                                                                                                       |       |               |     |                                                                                             |       |     |  |
|-------------------------------------------------------------------------------------------------------|-------|---------------|-----|---------------------------------------------------------------------------------------------|-------|-----|--|
| 福州中天迅通信技术有限公司<br>Fuzhou ZHONGTIANXUN Communication Technology Co., Ltd                                |       |               |     |                                                                                             | 作业指导书 |     |  |
| 产品名称                                                                                                  | 产品型号  | 文件编号          | 版本  | 工序序号/名称                                                                                     | 工序工时  | 日产量 |  |
| WIFI                                                                                                  | P20-R | ZTX-QD-WI-024 | A1  | 包装                                                                                          | /     | /   |  |
| 作业方法 (自检验工序作业合格后, 方能流入下一道工序)                                                                          |       |               |     |                                                                                             |       |     |  |
| <br>图1: 确认数量       |       |               |     | 1. 产品采用单PCS出货, 每 (100pcs) 产品用PE封口胶袋包装;                                                      |       |     |  |
|                                                                                                       |       |               |     | 2. 外箱只允许有1个物料标签, 其余如有多余标签时须将其清理干净。                                                          |       |     |  |
|                                                                                                       |       |               |     | 3. 条码标签在贴于外箱时, 应尽量平整, 避免应起皱影响客户入库。                                                          |       |     |  |
|                                                                                                       |       |               |     | 4. 条码需清晰可扫描                                                                                 |       |     |  |
|                                                                                                       |       |               |     | 5. 在装好产品的箱子上贴外箱标签及物料追溯码, RoHS贴于外箱的右上角, 打印标签内容包括 (生产厂家, 型号, 产品名称, 客户编码, 数量, 订单号, 日期, QA检验, ) |       |     |  |
| <br>图2: 入大袋        |       |               |     | 物料编号                                                                                        |       |     |  |
| <br>图3: 小标签及追溯码   |       |               |     | 物料名称及规格                                                                                     |       |     |  |
|                                                                                                       |       |               |     | 用量                                                                                          |       |     |  |
|                                                                                                       |       |               |     | 工/夹装器具                                                                                      |       |     |  |
|                                                                                                       |       |               |     |                                                                                             |       |     |  |
|                                                                                                       |       |               |     |                                                                                             |       |     |  |
| <br>图4: 贴外箱标签, 封箱 |       |               |     | 修订内容                                                                                        |       |     |  |
|                                                                                                       |       |               |     | 修订日期                                                                                        |       |     |  |
|                                                                                                       |       |               |     | 修订人                                                                                         |       |     |  |
|                                                                                                       |       |               |     |                                                                                             |       |     |  |
|                                                                                                       |       |               |     |                                                                                             |       |     |  |
| 版本                                                                                                    |       |               |     |                                                                                             |       |     |  |
| 制订                                                                                                    | 胡小良   | 审核            | 易爱玲 | 品质确认                                                                                        | 杨登山   | 批准  |  |
|                                                                                                       |       |               |     | 张武民                                                                                         |       |     |  |



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