



Product Number: K212-10068-A

Product Name: 内置PCB天线

Version: X0

# SPECIFICATION FOR APPROVAL

|                                                                                                                                                     |                                                                                 |                 |  |                   |                  |                 |     |     |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------|--|-------------------|------------------|-----------------|-----|-----|-----|
| CUSTOMER (客户名称)                                                                                                                                     | 湖南欧智通科技有限公司                                                                     |                 |  |                   |                  |                 |     |     |     |
| CS P/N (客户机种)                                                                                                                                       | 4A30X9X2G4-00                                                                   |                 |  |                   |                  |                 |     |     |     |
| PART NAME (品名)                                                                                                                                      | 内置PCB板天线 (RT-PCB162 V0.0) PIFA天线 2.4G/5.8G $\phi$ 0.81<br>黑色 L=80MM 带四IPEX ROHS |                 |  |                   |                  |                 |     |     |     |
| FREQUENCY (频率)                                                                                                                                      | 2.4-2.5GHz&5.15-5.85GHz                                                         |                 |  |                   |                  |                 |     |     |     |
| RTANT NO. (物料编号)                                                                                                                                    | K212-10068-A                                                                    |                 |  |                   |                  |                 |     |     |     |
| DATE (日期)                                                                                                                                           | 2022.11.22                                                                      |                 |  |                   |                  |                 |     |     |     |
| 出样签章                                                                                                                                                |                                                                                 |                 |  |                   |                  |                 |     |     |     |
| <table><tr><td>APPROVED BY<br/>核准</td><td>CHECKED BY<br/>确认</td><td>DRAWED BY<br/>制作</td></tr><tr><td>黄龙保</td><td>宋逸锋</td><td>刘云海</td></tr></table> |                                                                                 |                 |  | APPROVED BY<br>核准 | CHECKED BY<br>确认 | DRAWED BY<br>制作 | 黄龙保 | 宋逸锋 | 刘云海 |
| APPROVED BY<br>核准                                                                                                                                   | CHECKED BY<br>确认                                                                | DRAWED BY<br>制作 |  |                   |                  |                 |     |     |     |
| 黄龙保                                                                                                                                                 | 宋逸锋                                                                             | 刘云海             |  |                   |                  |                 |     |     |     |
| Remark (备注):                                                                                                                                        |                                                                                 |                 |  |                   |                  |                 |     |     |     |
| 客户承认签章                                                                                                                                              |                                                                                 |                 |  |                   |                  |                 |     |     |     |
| <table><tr><td>APPROVED BY<br/>核准</td><td>CHECKED BY<br/>确认</td><td>TESTED BY<br/>检测</td></tr><tr><td></td><td></td><td></td></tr></table>          |                                                                                 |                 |  | APPROVED BY<br>核准 | CHECKED BY<br>确认 | TESTED BY<br>检测 |     |     |     |
| APPROVED BY<br>核准                                                                                                                                   | CHECKED BY<br>确认                                                                | TESTED BY<br>检测 |  |                   |                  |                 |     |     |     |
|                                                                                                                                                     |                                                                                 |                 |  |                   |                  |                 |     |     |     |
| Sign (客户确认签字盖章): _____                                                                                                                              |                                                                                 |                 |  |                   |                  |                 |     |     |     |

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2022/11/22

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## 1. Contents项目表

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| 3   | 产品实物图     | 3       |
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| 附件  | 2D产品图     | 附件      |

## 2. Revision history变更履历

| Revision版本 | Date日期     | Change the content变更内容 |
|------------|------------|------------------------|
| X0         | 22. 11. 22 | 新版                     |
|            |            |                        |
|            |            |                        |
|            |            |                        |

### 3. 产品实物图片Product picture



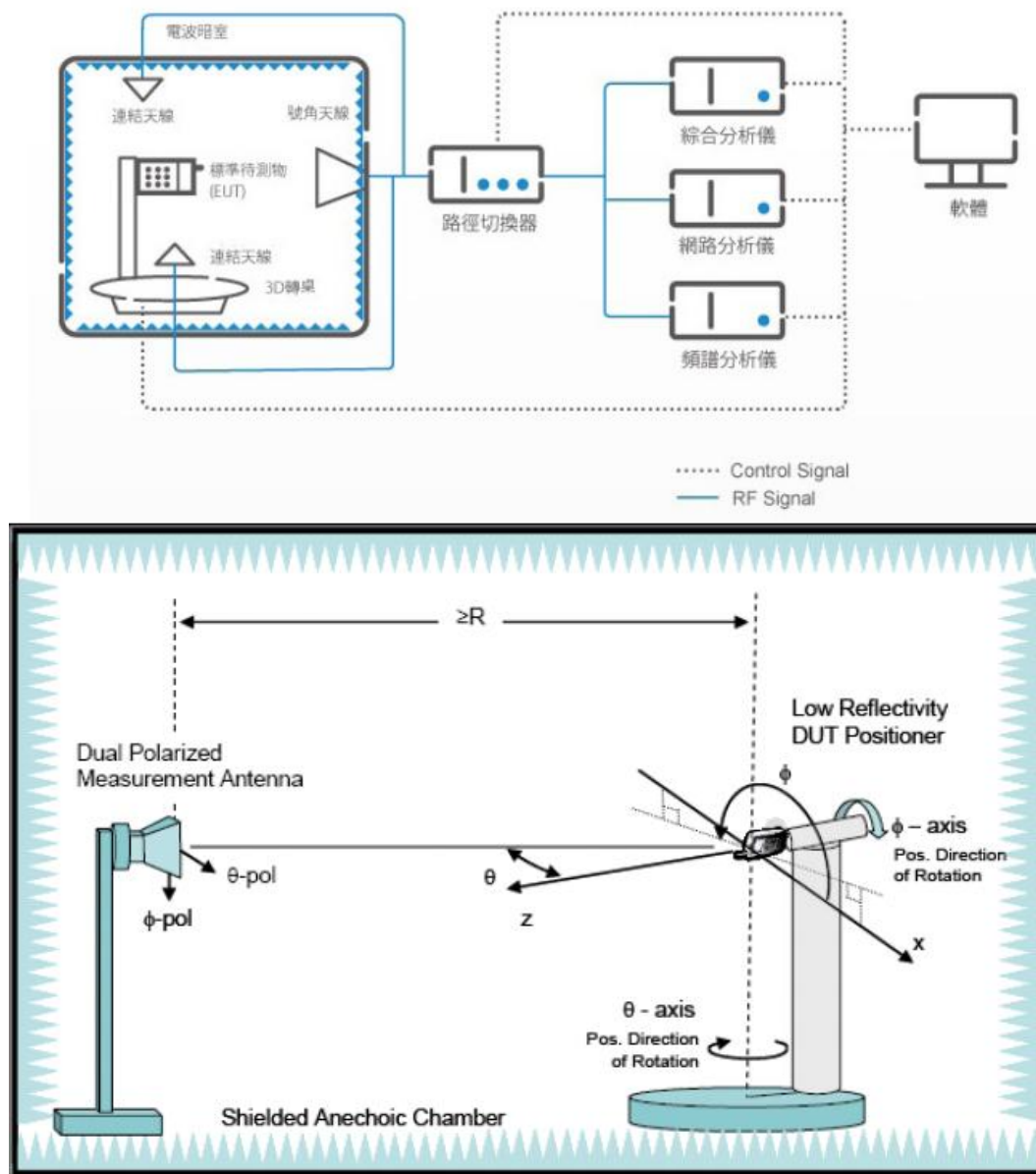
### 4. 规格表Specification

| A. Electrical Properties |                         |
|--------------------------|-------------------------|
| Frequency Rang频段范围       | 2.4-2.5GHz&5.15-5.85GHz |
| Impedance特性阻抗            | 50 $\Omega$ Nominal     |
| VSWR电压驻波比                | 2.0Max. (带机壳)           |
| Gain(peak)增益 (峰值)        | 2.77dBi                 |
| Efficiency效率             | 40%                     |
| Out of roundness不圆度      | 3.0 dBi (Max. )         |
| Radiation辐射方式            | Omni-Directional/全向     |
| Polarization极化方式         | Linear Vertical/垂直      |
| B. Physical Properties   |                         |
| Connector Type连接方式       | 四代IPEX                  |
| Cable线材                  | $\Phi 0.81\text{mm}$    |
| Antenna Radiator天线振子体    | FPC                     |
| C. Environmental         |                         |
| Storage Temp存储环境范围       | -40℃~+80℃               |
| Operating Temp工作环境       | -10℃~+65℃               |
| Storage humidity存储湿度     | 95%                     |
| Working humidity工作湿度     | 5%~95%                  |

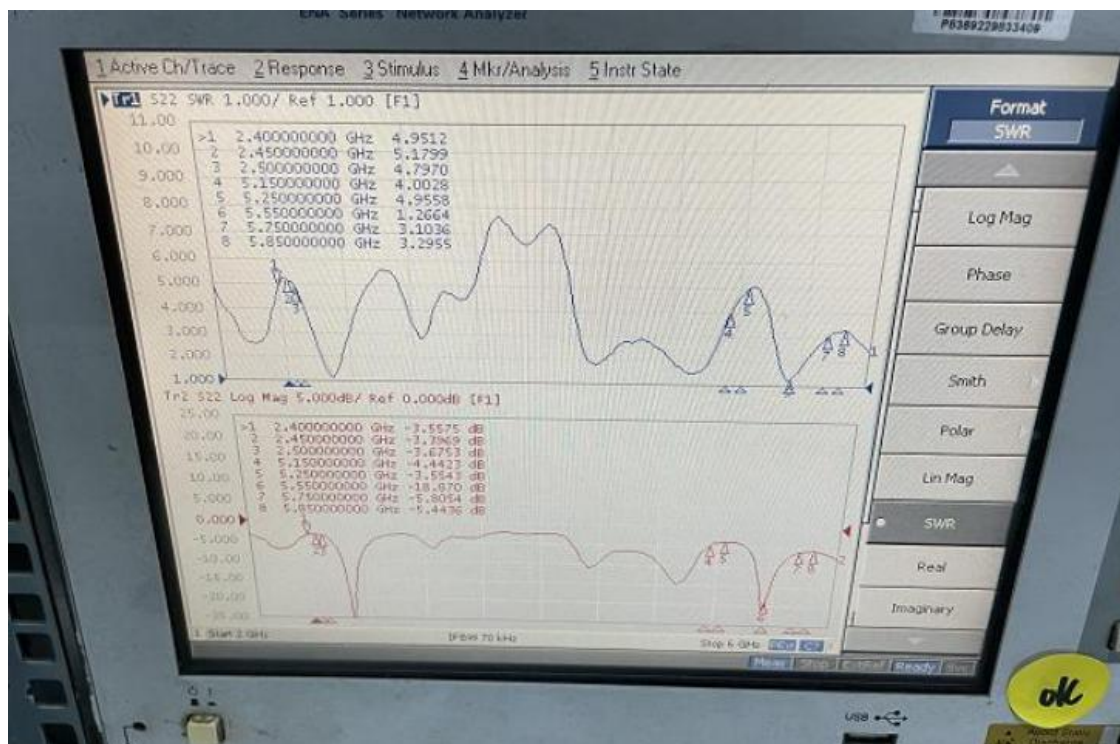
## 5. 电性测试报告Electrical Test Report

### 5.1 Test equipment

#### OTA 系統架構圖



## 5.2 网络分析仪测试报告



## 5.3 暗室无源测试数据

### 2.4G

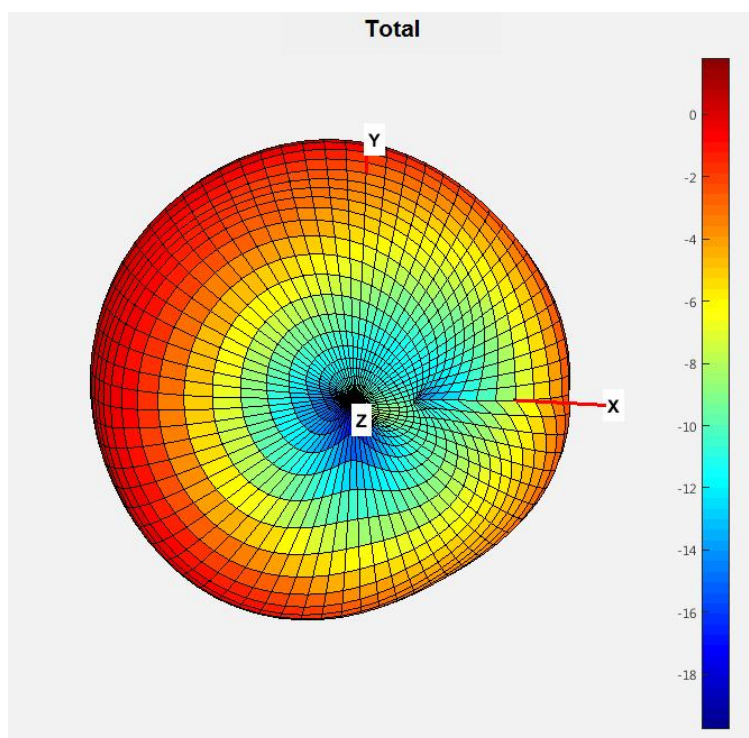
| 频率 (MHz) | 效率 (%) | 增益 (dBi) |
|----------|--------|----------|
| 2400     | 59.16  | 2.77     |
| 2410     | 57.81  | 2.55     |
| 2420     | 56.62  | 2.37     |
| 2430     | 56.49  | 2.34     |
| 2440     | 56.1   | 2.33     |
| 2450     | 57.68  | 2.53     |
| 2460     | 54.58  | 2.39     |
| 2470     | 54.2   | 2.48     |
| 2480     | 57.54  | 2.8      |
| 2490     | 54.7   | 2.6      |
| 2500     | 53.09  | 2.42     |

### 5.8G

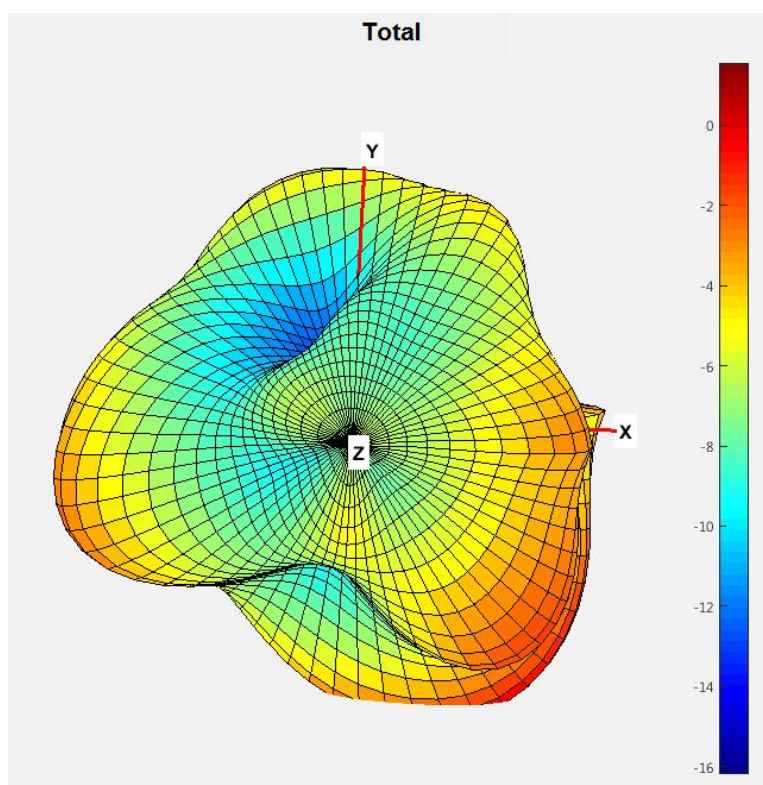
| 频率 (MHz) | 效率 (%) | 增益 (dBi) |
|----------|--------|----------|
| 5150     | 39.17  | 0.08     |
| 5200     | 35.65  | 0.2      |
| 5250     | 34.59  | -0.24    |
| 5300     | 34.36  | -0.12    |
| 5350     | 36.98  | 0.25     |
| 5400     | 42.76  | 0.62     |
| 5450     | 46.67  | 0.79     |
| 5500     | 43.35  | 0.28     |
| 5550     | 41.5   | -0.37    |
| 5600     | 32.11  | -0.46    |
| 5650     | 31.48  | -0.72    |
| 5700     | 32.24  | -1.02    |
| 5750     | 35.08  | -0.47    |
| 5800     | 38.9   | 0.84     |
| 5850     | 34.83  | 0.44     |

### 5.3 3D方向图（天线裸测）

2450MHz



5500MHz



## 6. 样品检验报告Sample inspection report

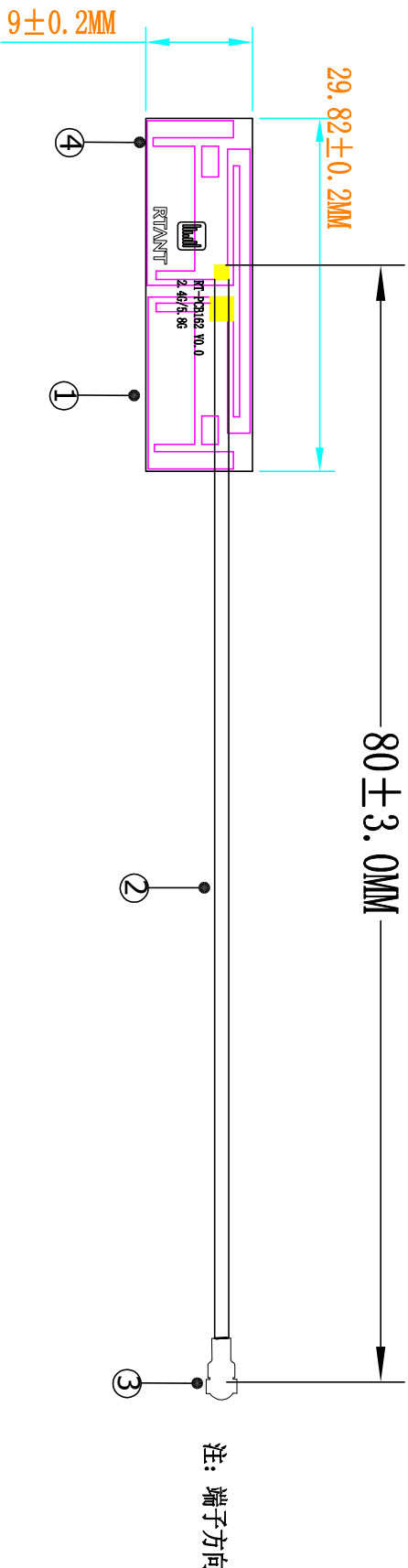
日期: 2022. 12. 22

| 送检数量    |                    | 5PCS                                                                                              | 合格数量  |       | 5PCS  |       |       |         |
|---------|--------------------|---------------------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|---------|
| 检验项目    |                    | 检验标准及说明                                                                                           | 检验结果  |       |       |       |       | 判定      |
|         |                    |                                                                                                   | No. 1 | No. 2 | No. 3 | No. 4 | No. 5 |         |
| 外观      | 线材                 | 对比无色差、无脏污、无破损，无刮伤                                                                                 | pass  | pass  | pass  | pass  | pass  | ■OK □NG |
|         | IPEX               | 对比无色差、无脏污、无破损，无刮伤                                                                                 | pass  | pass  | pass  | pass  | pass  | ■OK □NG |
|         | PCB/FPC            | 对比无色差、无脏污、无破损，无刮伤                                                                                 | pass  | pass  | pass  | pass  | pass  | ■OK □NG |
|         | 焊接                 | 焊接后不能冷焊、假焊、锡尖、锡珠、漏焊                                                                               | pass  | pass  | pass  | pass  | pass  | ■OK □NG |
|         | 浸锡                 | 浸锡后不能有锡尖，凸锡球，无浸锡、变形                                                                               |       |       |       |       |       | □OK □NG |
|         | 其他                 |                                                                                                   |       |       |       |       |       | □OK □NG |
| 主要尺寸    | 1                  | 80±3mm                                                                                            | 80    | 80    | 80    | 80    | 80    | ■OK □NG |
|         |                    |                                                                                                   |       |       |       |       |       |         |
|         |                    |                                                                                                   |       |       |       |       |       |         |
|         |                    |                                                                                                   |       |       |       |       |       |         |
|         |                    |                                                                                                   |       |       |       |       |       |         |
|         |                    |                                                                                                   |       |       |       |       |       |         |
| 电气及功能测试 | Frequency Rang     | 2.4-2.5GHz<br>5.15-5.85GHz                                                                        |       |       |       |       |       |         |
|         | VSWR               | <5.5                                                                                              | pass  | pass  | pass  | pass  | pass  | ■OK □NG |
|         |                    |                                                                                                   |       |       |       |       |       |         |
|         |                    |                                                                                                   |       |       |       |       |       |         |
| 机械性能    | Cable与IPEX<br>组装拉力 | >1.0kg                                                                                            | 1.7   | 1.7   | 1.6   | 1.6   | 1.7   | ■OK □NG |
|         |                    |                                                                                                   |       |       |       |       |       |         |
| 备注      |                    |                                                                                                   |       |       |       |       |       |         |
| 最终判定    |                    | <input checked="" type="checkbox"/> 合格 <input type="checkbox"/> 不合格 <input type="checkbox"/> 条件认可 |       |       |       |       |       |         |

审核: 张超超

检验: 雷娟兰

| SIGN | DATE     | DESCRIPTION | APPROVER |
|------|----------|-------------|----------|
| A0   | 22.11.29 | 新版发行        | 姜文祥      |

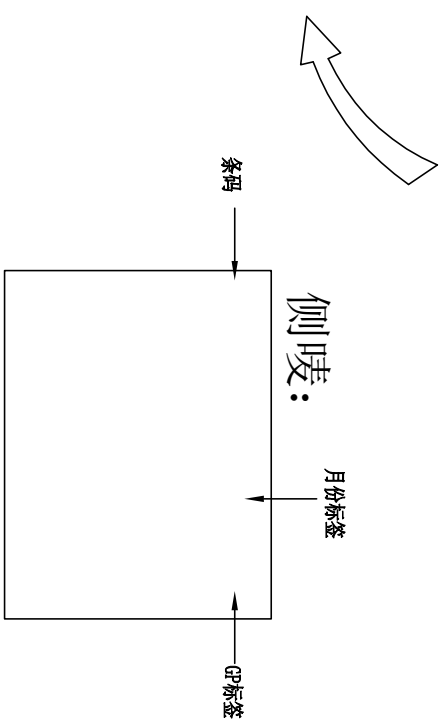
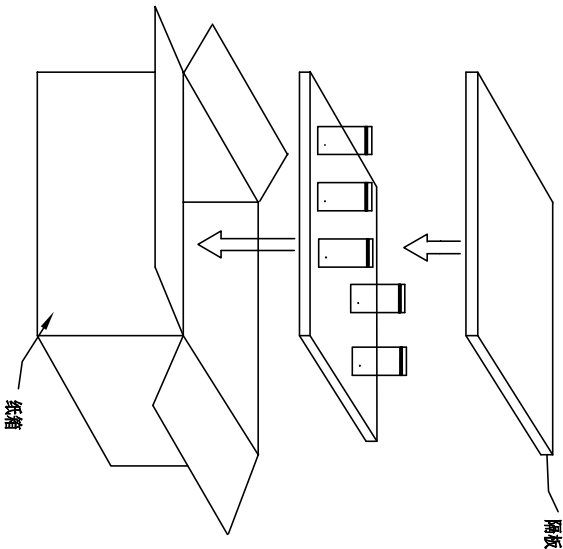
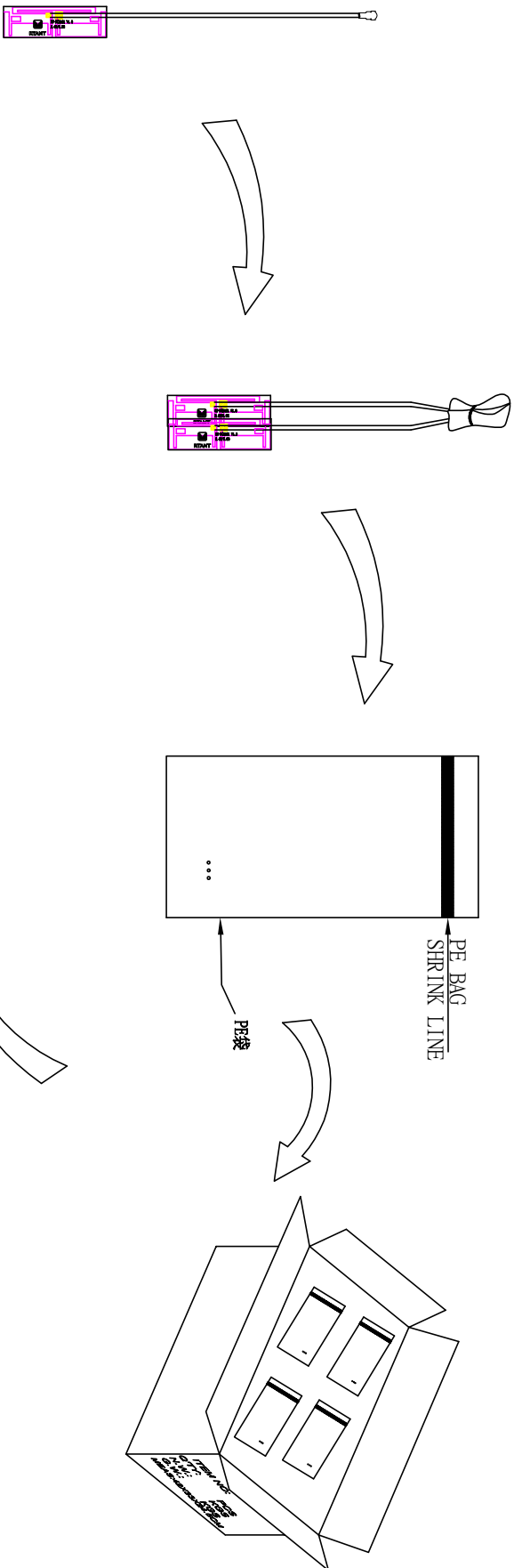


|     |              |      |               |                          |      |
|-----|--------------|------|---------------|--------------------------|------|
| 4   | Q40-010076-A | 背胶   | 3M            | L29.5+3 (手撕位3MM)*W9.0    | 1    |
| 3   | Q20-160030-A | IPEX | 铜             | 镀金 IPEX 四代               | 1    |
| 2   | W10-280002-A | 线材   | Φ0.81mm CABLE | 黑色 50 Ω                  | 1    |
| 1   | Q70-010180-A | PCB  | 电解铜           | RT-PCB162 V0.0 2.4G/5.8G | 1    |
| No. | Part Number  | Name | Material      | Describe                 | Q'ty |

NOTE:  
1. 带\*为重点管制尺寸;  
2. 电测:  
Frequency Rang:  
2.4-2.5GHz; 15-5.85GHz  
Impedance: 50 Ω  
VSWR: 2.0MAX (带机壳与 IPEX)  
3. 工作环境: -10℃~+85℃;  
4. 环保要求: RoHS 2.0;  
5. IPEX方向管制:  
100mm±90度;  
200mm±135度;  
200mm以上不管控;

|                                              |                               |                                                                                              |              |
|----------------------------------------------|-------------------------------|----------------------------------------------------------------------------------------------|--------------|
| TITLE:                                       | 内置PCB板天线                      | RTANT COMMUNICATIONS CO.,LTD<br>东莞市安特通信有限公司<br>Http://www.rtant.com<br>E-mail: csg@rtant.com |              |
| P/N:                                         | 4A30X9X2G4-00                 | Tel: 0769-85853856<br>Fax: 0769-8585273                                                      |              |
| CUSTOMER:                                    | 欧智通                           |                                                                                              |              |
| DRAW NO.:                                    | K212-10068-A                  |                                                                                              |              |
| DIMENSIONS TOLERANCES UNLESS OTHERWISE NOTED |                               |                                                                                              |              |
| 一般公差                                         | XXX ±0.1<br>XX ±0.5<br>X ±1.0 | XX ±5                                                                                        |              |
| TOLERANCE                                    | UNIT: mm                      | SCALE: NONE                                                                                  | CHECKED      |
|                                              |                               | REV: 40                                                                                      | DRAWN        |
|                                              |                               |                                                                                              | 姜文祥 22.11.29 |

| SIGN | DATE     | DESCRIPTION | APPROVER |
|------|----------|-------------|----------|
| A0   | 22.11.29 | 新版发行        | 姜文祥      |



|                                              |  |                                                            |  |
|----------------------------------------------|--|------------------------------------------------------------|--|
| TITLE:                                       |  | 内置PCB板天线                                                   |  |
| P/N:                                         |  | 4A30X9Y2G4-00                                              |  |
| CUSTOMER:                                    |  | 联智通                                                        |  |
| DRAW NO.:                                    |  | K212-10068-A                                               |  |
| DIMENSIONS TOLERANCES UNLESS OTHERWISE NOTED |  |                                                            |  |
| 一般公差                                         |  | 3XX ±0.1    XX ±5<br>XX ±0.5    X ±1.0<br>X ±3.0    X ±3.0 |  |
| TOLERANCE                                    |  | UNIT: mm    REV: 0                                         |  |
| APPROVED                                     |  | CHECKED                                                    |  |
| DRAINED                                      |  | DRAMAED                                                    |  |
| 美文祥 22.12.29                                 |  |                                                            |  |