

# SPECIFICATION

## SHEET FOR APPROVAL

(Revision: R: A1)

|  |                |                             |
|--|----------------|-----------------------------|
|  | CUSTOMER(客户名称) | 利利普                         |
|  | CS P/N(客户机种)   | ST-7                        |
|  | PART NAME(品名)  | WIFI&BT                     |
|  | FREQUENCY(频率)  | 2400-2500MHz, 5150-5850MHz。 |
|  | ZTX NO.(物料编号)  | F.00000793                  |
|  | DATE(日期)       | 2025-6-9                    |

Remark(备注):

Sign(客户确认签字盖章):

| ZHONG TIAN XUN TECHNOLOGY CO., LTD |               |          |
|------------------------------------|---------------|----------|
| ME<br>CHECKED                      | RF<br>CHECKED | APPROVAL |
| 胡小良                                | 林权            | 王而栋      |



福州中天迅通信技术有限公司

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<http://www.chinaztx.com>

# ANTENNA SPECIFICATION

CUS P/N : ST-7 WIFI&BT

ApplicationDate:Jun,9,2025

Rev: R:A1

ZTX P/N : ST-7 WIFI&BT

Editor:

Page 2 of 15

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## Revision history

| 版本 | 日期       | 状态  |
|----|----------|-----|
| A1 | 2025-6-9 | 初版。 |
|    |          |     |
|    |          |     |



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CUS P/N : ST-7 WIFI&BT

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Rev: R:A1

ZTX P/N : ST-7 WIFI&BT

Editor:

Page 3 of 15

## Index

|           |            |                                        |              |
|-----------|------------|----------------------------------------|--------------|
|           |            | <b><i>Revision history</i></b>         |              |
| <b>1.</b> |            | <b><i>Test equipment</i></b>           | <b>4</b>     |
| <b>2.</b> |            | <b><i>Antenna test data</i></b>        | <b>5~13</b>  |
|           | <b>2-1</b> | <b><i>VSWR</i></b>                     | <b>5</b>     |
|           | <b>2-2</b> | <b><i>Antenna passive test</i></b>     | <b>6~8</b>   |
|           | <b>2-3</b> | <b><i>3D radiation drawing</i></b>     | <b>9</b>     |
|           | <b>2-4</b> | <b><i>Active test data</i></b>         | <b>10~11</b> |
|           | <b>2-5</b> | <b><i>Matching circuit</i></b>         | <b>12</b>    |
|           | <b>2-6</b> | <b><i>Environment treatment</i></b>    | <b>13</b>    |
| <b>3.</b> |            | <b><i>Mechanical Specification</i></b> | <b>14</b>    |
| <b>4.</b> |            | <b><i>The packing way</i></b>          | <b>15</b>    |



# ANTENNA SPECIFICATION

CUS P/N : ST-7 WIFI&BT

ApplicationDate:Jun,9,2025

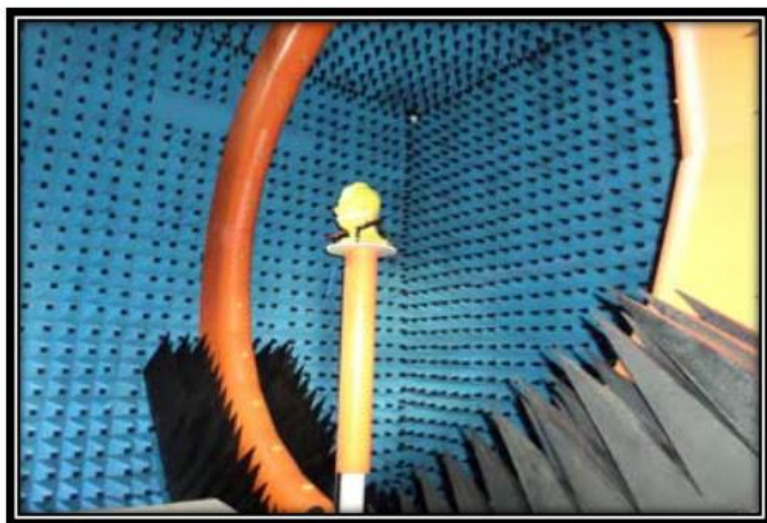
Rev: R:A1

ZTX P/N : ST-7 WIFI&BT

Editor:

Page 4 of 15

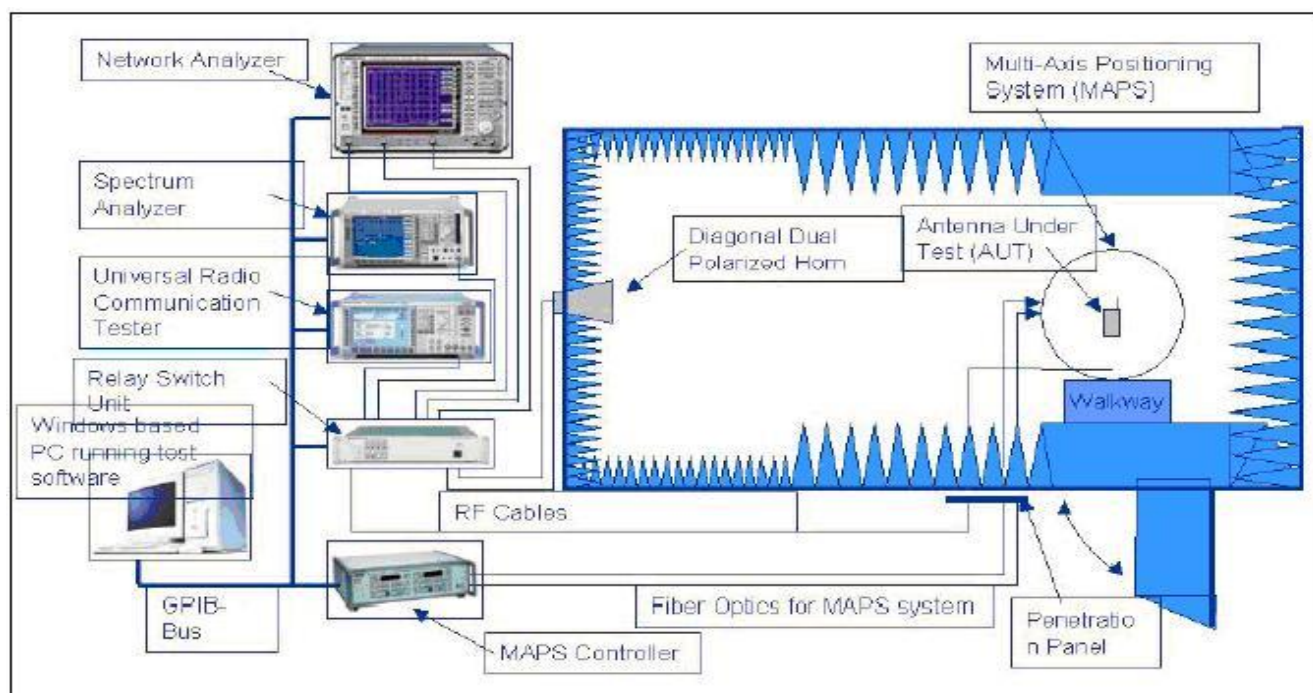
## 1. Test equipment



Owned 6 microwave dark room, equipped 2 sets world leading France Satimo SG24 OTA certification test systems (one in SHENZHEN, another one in Shanghai), ETS OTA Standard test system, Blue test reverberation test system which is High repeatability, high accuracy and high resolution. It can quickly provide accurate test reports, fully meet the CITA standards.

Testing range:

Support active, passive testing of  
GSM/CDMA/WCDMA/TD-  
SCDMA/LTE/WIFI/WLAN/WiMax/BT  
/GPS/MIMO/UWB within 0.4-6G.



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ApplicationDate:Jun,9,2025

Rev: R:A1

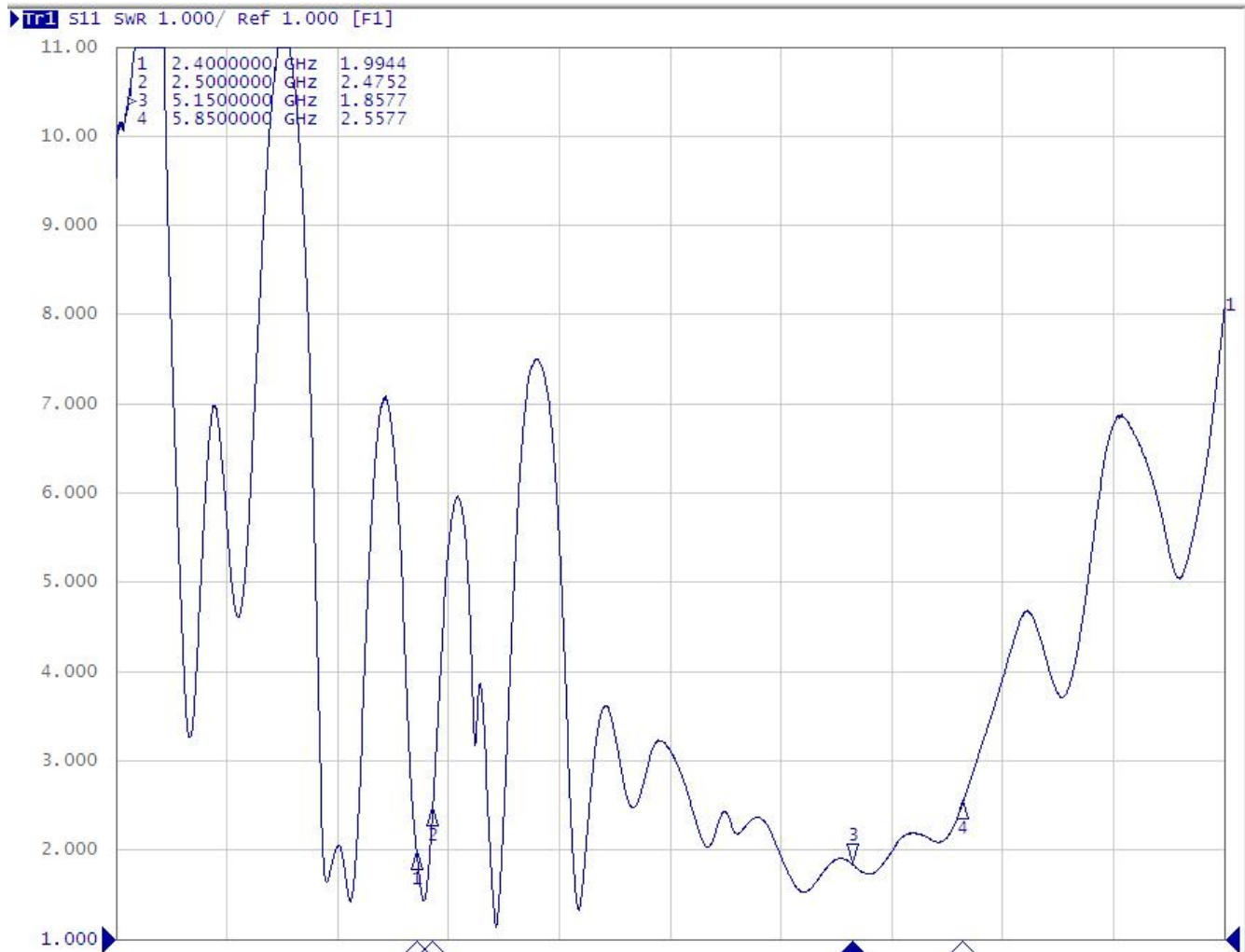
ZTX P/N : ST-7 WIFI&BT

Editor:

Page 5 of 15

## 2.Antenna test data

### 2-1 VSWR



# ANTENNA SPECIFICATION

CUS P/N : ST-7 WIFI&BT

ApplicationDate:Jun,9,2025

Rev: R:A1

ZTX P/N : ST-7 WIFI&BT

Editor:

Page 6 of 15

## 2-2 Antenna passive test

BT

| chNo | Freq (MHz) | Gain (dBi) | Efficiency (%) |
|------|------------|------------|----------------|
| 1    | 2400       | 0.937527   | 34.91926       |
| 2    | 2410       | 0.983446   | 36.80767       |
| 3    | 2420       | 0.764903   | 37.76801       |
| 4    | 2430       | 0.870093   | 37.53463       |
| 5    | 2440       | 0.788596   | 36.37804       |
| 6    | 2450       | 0.911507   | 36.95557       |
| 7    | 2460       | 0.826891   | 36.68944       |
| 8    | 2470       | 0.752018   | 36.83328       |
| 9    | 2480       | 0.508793   | 35.11705       |
| 10   | 2490       | 0.339779   | 33.01014       |
| 11   | 2500       | 0.096214   | 31.94762       |



# ANTENNA SPECIFICATION

CUS P/N : ST-7 WIFI&BT

ApplicationDate:Jun,9,2025

Rev: R:A1

ZTX P/N : ST-7 WIFI&BT

Editor:

Page 7 of 15

## WIFI

| chNo | Freq<br>(MHz) | Gain<br>(dBi) | Efficiency<br>(%) |
|------|---------------|---------------|-------------------|
| 1    | 2400          | 0.937527      | 34.91926          |
| 2    | 2410          | 0.983446      | 36.80767          |
| 3    | 2420          | 0.764903      | 37.76801          |
| 4    | 2430          | 0.870093      | 37.53463          |
| 5    | 2440          | 0.788596      | 36.37804          |
| 6    | 2450          | 0.911507      | 36.95557          |
| 7    | 2460          | 0.826891      | 36.68944          |
| 8    | 2470          | 0.752018      | 36.83328          |
| 9    | 2480          | 0.508793      | 35.11705          |
| 10   | 2490          | 0.339779      | 33.01014          |
| 11   | 2500          | 0.096214      | 31.94762          |
| 12   | 5150          | -0.3415       | 26.21756          |
| 13   | 5200          | 0.893064      | 28.92042          |
| 14   | 5250          | 1.10776       | 32.91529          |
| 15   | 5300          | 0.975269      | 32.96101          |



# ANTENNA SPECIFICATION

CUS P/N : ST-7 WIFI&BT

ApplicationDate:Jun,9,2025

Rev: R:A1

ZTX P/N : ST-7 WIFI&BT

Editor:

Page 8 of 15

|    |      |          |          |
|----|------|----------|----------|
| 16 | 5350 | 1.597859 | 36.05126 |
| 17 | 5400 | 1.992589 | 36.08484 |
| 18 | 5450 | 1.706871 | 36.84823 |
| 19 | 5500 | 0.869499 | 30.45452 |
| 20 | 5550 | 0.848347 | 32.36428 |
| 21 | 5600 | -0.22089 | 28.46199 |
| 22 | 5650 | 1.971223 | 37.61972 |
| 23 | 5700 | 1.324571 | 32.30211 |
| 24 | 5750 | 1.452496 | 32.5776  |
| 25 | 5800 | 1.668772 | 27.88804 |
| 26 | 5850 | 1.87523  | 29.77498 |



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CUS P/N : ST-7 WIFI&BT

ApplicationDate:Jun,9,2025

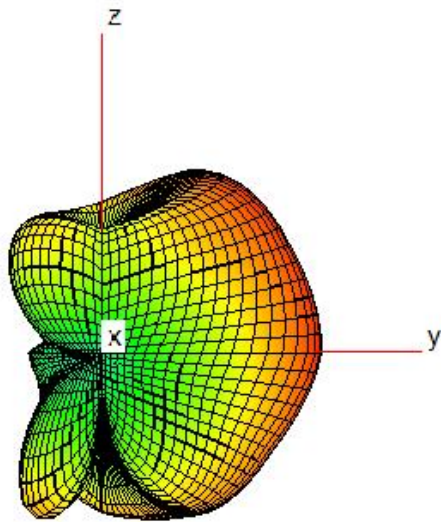
Rev: R:A1

ZTX P/N : ST-7 WIFI&BT

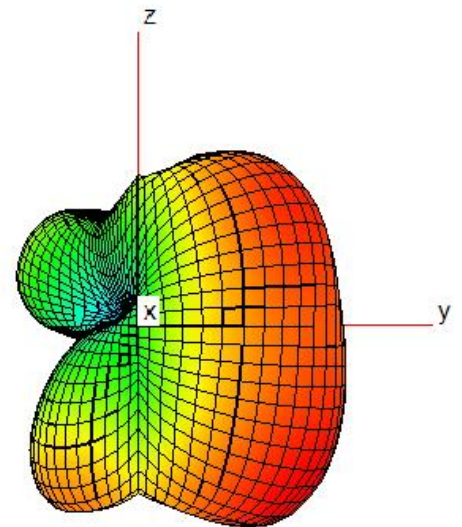
Editor:

Page 9 of 15

## 2-3 3D radiation drawing



2450MHz



5500MHz



# ANTENNA SPECIFICATION

CUS P/N : ST-7 WIFI&BT

ApplicationDate:Jun,9,2025

Rev: R:A1

ZTX P/N : ST-7 WIFI&BT

Editor:

Page 10 of 15

## 2-4 Active test data EM

| 频段    | 参数\信道 | 1      | 7      | 13     |
|-------|-------|--------|--------|--------|
| 11B   | TRP   | 10.96  | 11.48  | 11.50  |
|       | TIS   | -83.58 | -80.56 | -83.77 |
| 11G   | TRP   | 11.52  | 11.84  | 11.61  |
|       | TIS   | -68.74 | -67.25 | -69.56 |
| 11G/N | TRP   | 11.03  | 11.58  | 11.05  |
|       | TIS   | -64.90 | -63.31 | -64.97 |
| 频段    | 参数\信道 | 36     | 64     | 157    |
| 11A   | TRP   | 10.85  | 10.47  | 10.14  |
|       | TIS   | -67.74 | -67.20 | -66.11 |



# ANTENNA SPECIFICATION

CUS P/N : ST-7 WIFI&BT

ApplicationDate:Jun,9,2025

Rev: R:A1

ZTX P/N : ST-7 WIFI&BT

Editor:

Page 11 of 15

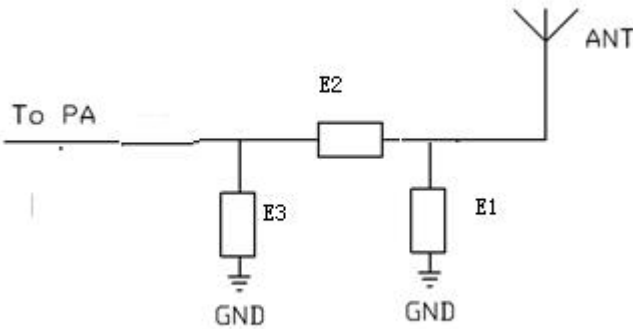
NA

| 频段    | 参数\信道 | 1      | 7      | 13     |
|-------|-------|--------|--------|--------|
| 11B   | TRP   | 11.36  | 12.18  | 11.97  |
|       | TIS   | -84.31 | -80.12 | -84.57 |
| 11G   | TRP   | 12.49  | 13.32  | 12.66  |
|       | TIS   | -69.29 | -68.67 | -70.43 |
| 11G/N | TRP   | 11.95  | 12.49  | 11.55  |
|       | TIS   | -65.51 | -64.30 | -66.14 |
| 频段    | 参数\信道 | 36     | 64     | 157    |
| 11A   | TRP   | 10.64  | 10.39  | 10.12  |
|       | TIS   | -68.05 | -67.71 | -66.28 |



# ANTENNA SPECIFICATION

## 2-5 Matching circuit



| 匹配说明 |       |
|------|-------|
| E1   | 0.5pF |
| E2   | 1nH   |
| E3   | 0.5pF |

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CUS P/N : ST-7 WIFI&BT

ApplicationDate:Jun,9,2025

Rev: R:A1

ZTX P/N : ST-7 WIFI&BT

Editor:

Page 13 of 15

## 2-6 Environment treatment



## ANTENNA SPECIFICATION

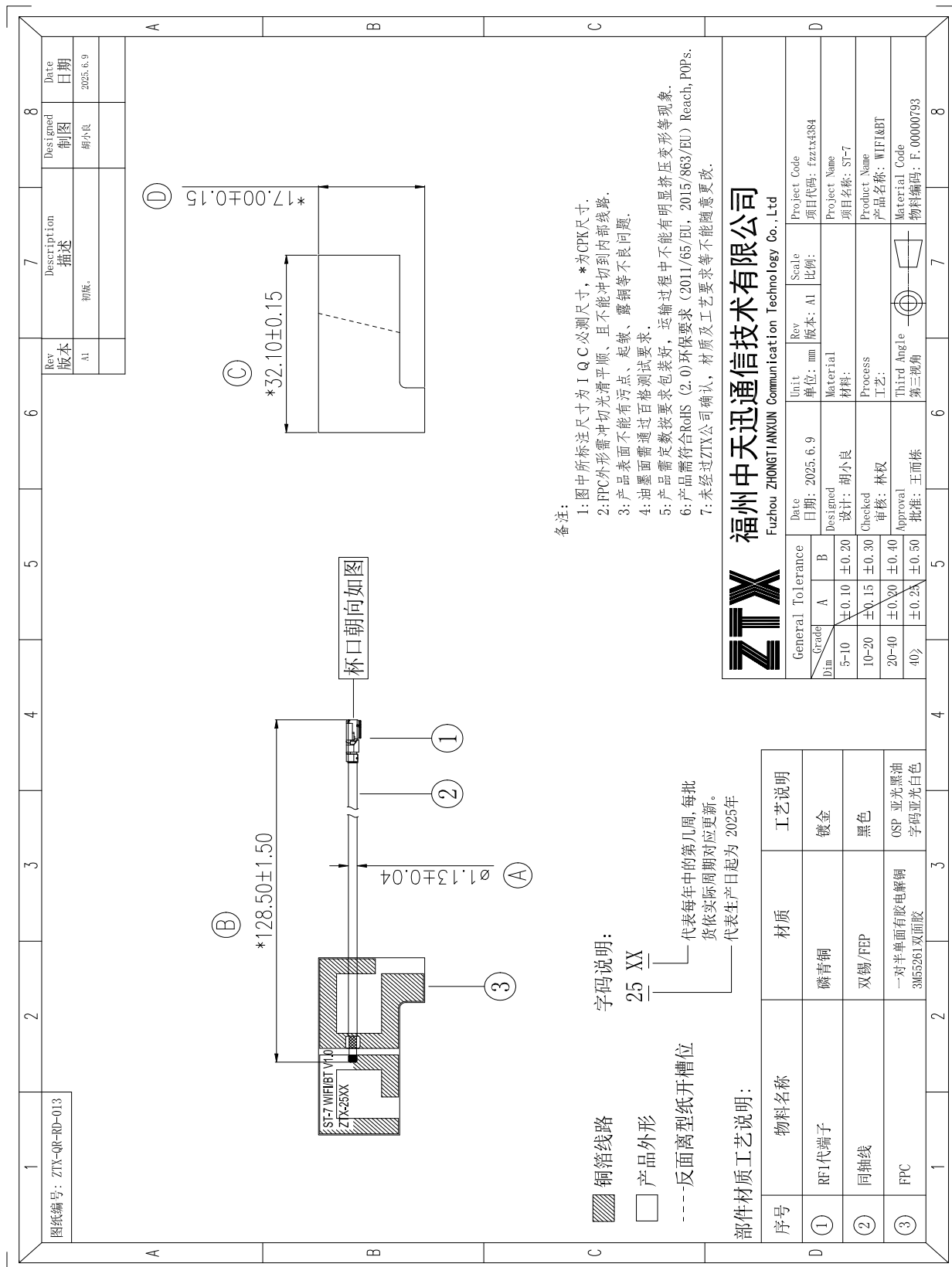
ApplicationDate:Jun,9,2025

Rev: R:A1

Editor:

Page 14 of 15

### 3. Mechanical Specification



ANTENNA SPECIFICATION

4.The packing way

|                                                                                                                                                             |  |              |  |                                                                          |  |          |                       |                                                                                            |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------|--|--------------------------------------------------------------------------|--|----------|-----------------------|--------------------------------------------------------------------------------------------|-----|
| 福州中天迅通信技术有限公司<br>Fuzhou ZHONGTIANXUN Communication Technology Co., Ltd                                                                                      |  |              |  | 包装规范                                                                     |  |          |                       |                                                                                            |     |
| 产品名称<br>WIFI&BT                                                                                                                                             |  | 产品型号<br>ST-7 |  | 工序序号/名称<br>包装                                                            |  | 版本<br>A1 | 文件编号<br>ZTX-QD-WI-023 | 仪器校准及要求:<br>1.测试设备必须接地;<br>2.重新连接接口后或连续测试不稳定时,需对仪器进行校正;<br>3.测试产品时保证天线垂直,并远离人体或金属器件30cm以上; |     |
| <div><div><div>图1: 确认数量</div><div>图2: 封口PE袋包装/贴标签</div><div>图3: 封口PE袋包装/贴标签</div><div>图4: 装箱</div><div>图5: 贴外箱标签/附出货检验报告</div><div>图6: 封箱</div></div></div> |  |              |  | 作业方法&作业参数 (自检验工序作业合格后,方能流入下一道工序)                                         |  |          |                       |                                                                                            |     |
|                                                                                                                                                             |  |              |  | 1.确认数量50pcs产品橡皮筋包扎;                                                      |  |          |                       |                                                                                            |     |
|                                                                                                                                                             |  |              |  | 2.将50pcs产品装入PE开口袋中,贴小标签,填写产品名称、物料号、数量、周期等信息;                             |  |          |                       |                                                                                            |     |
|                                                                                                                                                             |  |              |  | 3.入大袋,用PE封口袋装好,贴小标签,填写产品名称、物料号、数量、周期等信息;                                 |  |          |                       |                                                                                            |     |
|                                                                                                                                                             |  |              |  | 4.装箱,并附手写检验报告一份;                                                         |  |          |                       |                                                                                            |     |
|                                                                                                                                                             |  |              |  | 5.标签贴于外箱的右上角,外标签内容(含:企业名称,供应商代码,客户规格号,生产周期,生产批次包装数量,供应商代码,内附检验报告,ROHS等); |  |          |                       |                                                                                            |     |
| 6.将贴好标签的箱子用胶纸以“工”字型封箱;                                                                                                                                      |  |              |  |                                                                          |  |          |                       |                                                                                            |     |
| 6S要求:                                                                                                                                                       |  |              |  | 1.保持检测现场台面整洁,无尘、水、油污;                                                    |  |          |                       |                                                                                            |     |
| 2.物料摆放整齐,标识清楚;                                                                                                                                              |  |              |  |                                                                          |  |          |                       |                                                                                            |     |
| 注意事项: 1.客户物料编码和数量是否正确,标签必须用机打印的 2.内标签、外标签、出货报告、送货单内容需一致。                                                                                                    |  |              |  |                                                                          |  |          |                       |                                                                                            |     |
| 3.如是试产物料或有变更均需贴相应标识,尾数箱需贴尾数标识,内附检验报告等                                                                                                                       |  |              |  |                                                                          |  |          |                       |                                                                                            |     |
| 物料名称                                                                                                                                                        |  | 物料代码         |  | 规格                                                                       |  | 用量       |                       | 备注                                                                                         |     |
| PE开口袋                                                                                                                                                       |  |              |  |                                                                          |  |          |                       |                                                                                            |     |
| PE封口袋                                                                                                                                                       |  |              |  |                                                                          |  |          |                       |                                                                                            |     |
| 纸板                                                                                                                                                          |  |              |  |                                                                          |  |          |                       |                                                                                            |     |
| 纸箱                                                                                                                                                          |  |              |  |                                                                          |  |          |                       |                                                                                            |     |
| 标签                                                                                                                                                          |  |              |  |                                                                          |  |          |                       |                                                                                            |     |
| 橡皮筋                                                                                                                                                         |  |              |  |                                                                          |  |          |                       |                                                                                            |     |
| 版本                                                                                                                                                          |  | 修订内容         |  |                                                                          |  |          |                       | 修订日期                                                                                       | 修订人 |
| 制订                                                                                                                                                          |  | 胡小良          |  | 审核                                                                       |  | 易爱玲      |                       | 批准                                                                                         |     |
|                                                                                                                                                             |  |              |  |                                                                          |  |          |                       | 张武民                                                                                        |     |