

供应商:

东莞市腾祥电子有限公司

Tengxiang Technology, Inc

地 址: 东莞市 长安镇 沙头沙涌路53号

承 認 書

SPECIFICATION FOR APPROVAL

|                          |                                       |
|--------------------------|---------------------------------------|
| 騰祥料號<br>SOREDE P/N       | AN2450-FPC04GX                        |
| 品 名 / 規 格<br>DESCRIPTION | 2. 4/5. 8G FPC天线, 1. 13灰色线L=60mm+IPEX |
| 騰祥送樣編號<br>SOREDE DWG#    | 210225002                             |
| 送样日期<br>SAMPLE DATE      | 2022/12/1                             |

| MANUFACTURER/ 制造商  |                  |                   |                  |
|--------------------|------------------|-------------------|------------------|
| APPROVED BY<br>核 准 | Q.C.DEPT.<br>品 管 | CHECKED BY<br>核 准 | TESTED BY<br>檢 測 |
| 韦佳                 | 袁旭阳              | 胡超                | 李艳坪              |

客户:

深圳市视壮科技有限公司

|                          |  |
|--------------------------|--|
| 视 壮 料 號<br>CUSTOMER P/N  |  |
| 视 壮 名 稱<br>CUSTOMER      |  |
| 品 名 / 規 格<br>DESCRIPTION |  |

| CUSTOMER APPROVAL/ 客户审核 |                  |                  |                  |
|-------------------------|------------------|------------------|------------------|
| APPROVED BY<br>核 准      | Q.C.DEPT.<br>品 管 | CHECKED BY<br>审核 | TESTED BY<br>檢 測 |
|                         |                  |                  |                  |

Product Number: AN2450-FPC04GX

Product Name: FPC Antenna

## 1. Specification

|                                                                                    |                              |
|------------------------------------------------------------------------------------|------------------------------|
| Sample Photo                                                                       |                              |
|  |                              |
| <b>A. Electrical Characteristics</b>                                               |                              |
| Frequency 频率                                                                       | 2400-2500MHz / 5150-5850 MHz |
| S.W.R. 驻波比                                                                         | $\leq 2.0$                   |
| Antenna Gain 增益                                                                    | 2.85 dBi / 5.31 dBi          |
| Polarization 极化方式                                                                  | Linear                       |
| Impedance 阻抗                                                                       | 50 Ohm                       |
| <b>B. Material &amp; Mechanical Characteristics</b>                                |                              |
| Material of Radiator                                                               | Cu                           |
| Material of Plastic 塑胶材质                                                           | /                            |
| Cable Type 线材规格                                                                    | OD1.13mm , GRAY              |
| Connector Type 连接器规格                                                               | I-PEX                        |
| Connector Pull Test                                                                | /                            |
| Connector Torque Test                                                              | /                            |
| <b>C. Environmental</b>                                                            |                              |
| Operation Temperature 存储温度                                                         | - 40 °C ~ + 80 °C            |
| Storage Temperature 存储温度                                                           | - 40 °C ~ + 80 °C            |

## 2. Characteristics and Reliability Test

Product Number: AN2450-FPC04GX

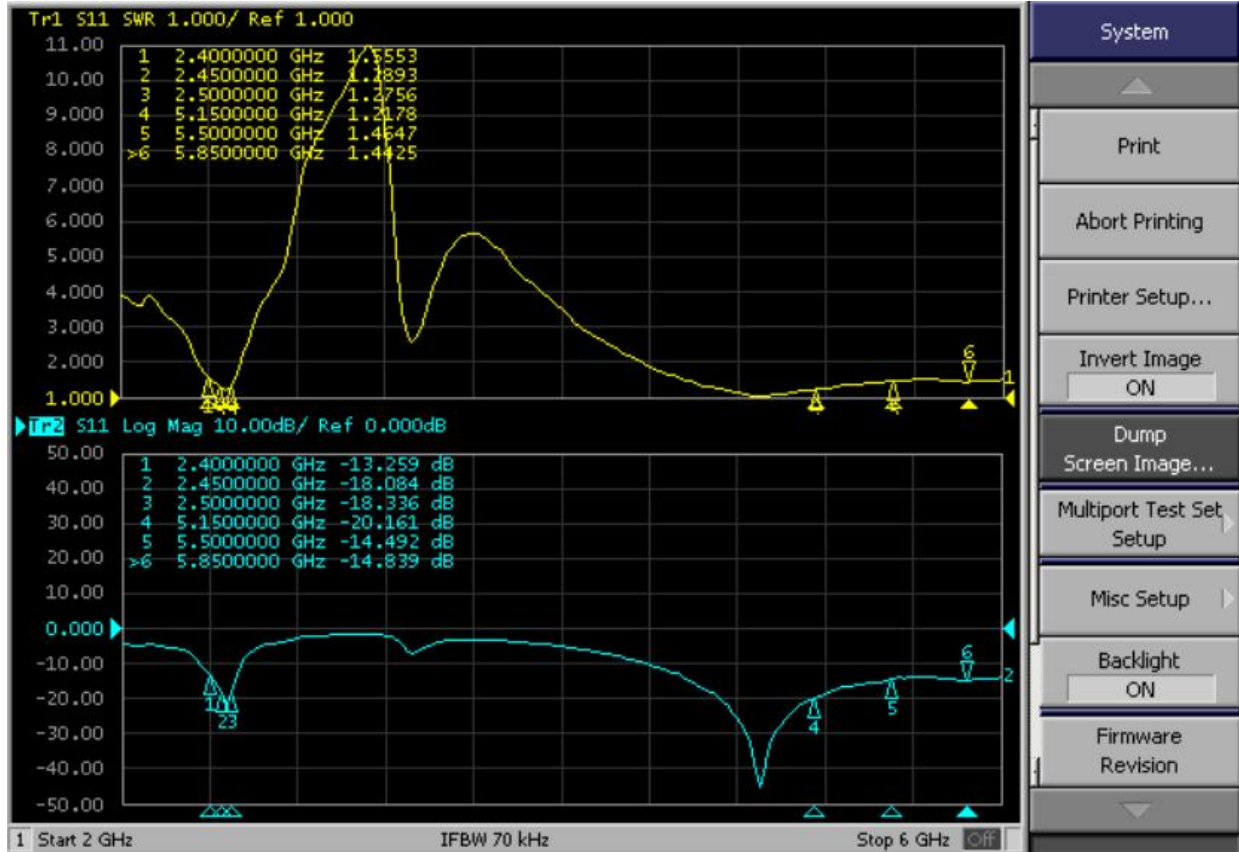
Product Name: FPC Antenna

| Test Items |                      | Test Condition and Procedure                                                                                                         | Requirements                                                            |
|------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| C1         | S.W.R.               | Set DUT on Network Analyzer; make individual calibration to test                                                                     | Directive DUT specification                                             |
| C2         | Antenna Gain         | Set DUT on Antenna Chamber; make individual calibration to test                                                                      | Directive DUT specification                                             |
| M1         | Vibration            | MIL-STD-202G, 201A<br>Amplitude: 0.03 inch (0.76mm); Freq: 10 to 55 Hz<br>3 directions; 2 hours for each direction                   | 1. No Visual Damage<br>2. Frequency Tol.<= 5%                           |
| M2         | Random Drop          | Height: 1.5 Meter;<br>3 directions; 1 time for each direction                                                                        | 1. No parts separated<br>2. Frequency Tol.<= 5%                         |
| M3         | Solderability        | MIL-STD-202G, 210F, cond. A<br>Solder iron: 350±10°C; Duration: 5 seconds                                                            | 1. Mounted on PCB<br>2. No Visual Damage                                |
| M4         | Terminal-Pull Test   | MIL-STD-202G, 211A, cond. A<br>Holding with individual specification; force applied to axis of terminal                              | 1. Directive DUT specification<br>2. Frequency Tol.<= 5%                |
| M5         | Terminal-Torque Test | MIL-STD-202G, 211A, cond. E<br>Holding with individual specification; applied clockwise and counterclockwise to the axis of terminal | 1. Directive DUT specification<br>2. Frequency Tol.<= 5%                |
| M6         | Dimension            | Inspection of dimension, color, material, package, surface process                                                                   | Directive DUT specification                                             |
| E1         | Salt Spray           | MIL-STD-202G, 101E, cond. B<br>Temp: 35°C; RH: >= 95%; NaCl solution: >= 5%;<br>Time: 48 hours                                       | After 2 Hours Recovery<br>1. No Visual Damage<br>2. Frequency Tol.<= 5% |
| E2         | Humidity             | MIL-STD-202G, 103B, cond. B<br>Temp: 40°C; RH: >= 95%; Time: 48 hours                                                                | After 2 Hours Recovery<br>1. No Visual Damage<br>2. Frequency Tol.<= 5% |
| E3         | Thermal Shock        | 1 Cycle: - 45°C (30 minutes) to + 85°C (30 minutes)<br>Cycles: 24                                                                    | After 2 Hours Recovery<br>1. No Visual Damage<br>2. Frequency Tol.<= 5% |
| E4         | Life (High Temp.)    | MIL-STD-202G, 108A, cond. A<br>Temp: 85°C; Time: 96 hours                                                                            | After 2 Hours Recovery<br>1. No Visual Damage<br>2. Frequency Tol.<= 5% |
| R1         | RoHS                 | With Reference to IEC 62321:2008 with flow chart                                                                                     | Directive RoHS 2020/863/EU                                              |

Product Number: AN2450-FPC04GX

Product Name: FPC Antenna

### 3. Antenna - S Parameter Test Data



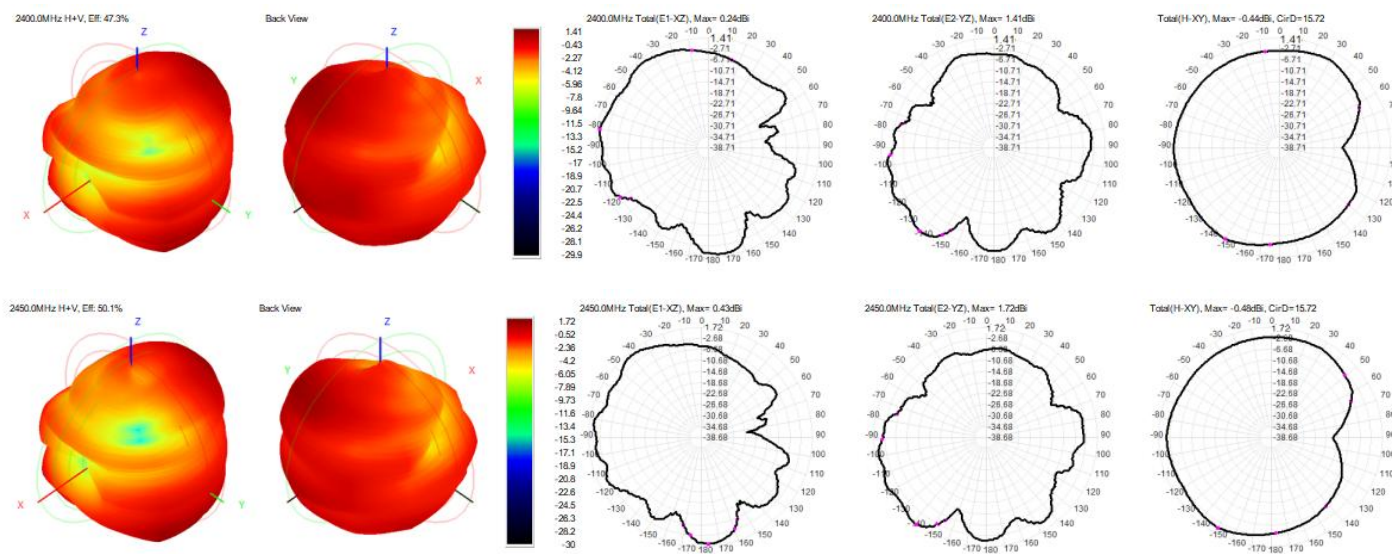
Product Number:AN2450-FPC04GX

Product Name: FPC Antenna



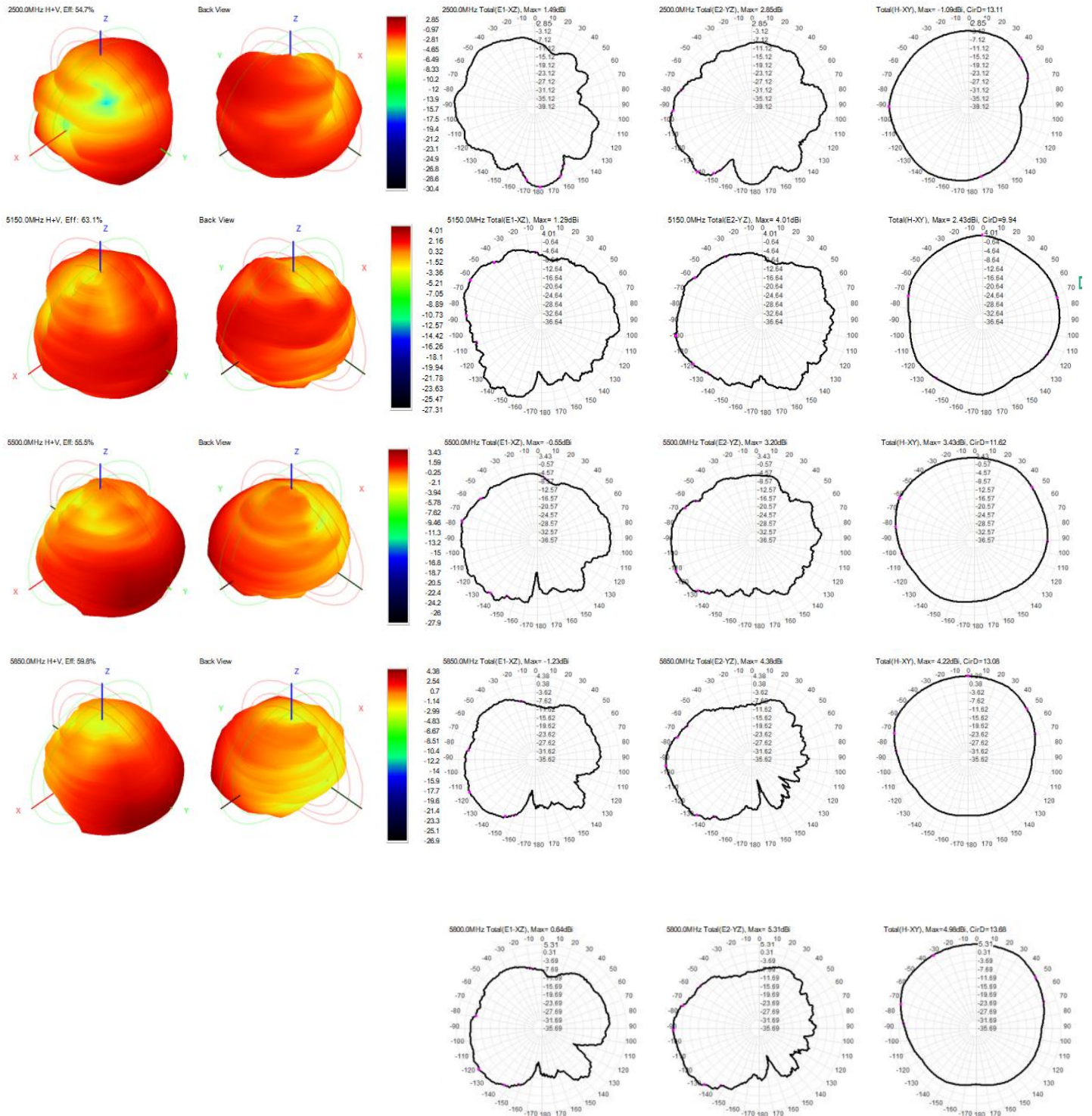
## 4. Antenna - Radiation Pattern Test Data

| Frequency ID    | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14     | 15     | 16     | 17     | 18     | 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Frequency (MHz) | 2400.0 | 2410.0 | 2420.0 | 2430.0 | 2440.0 | 2450.0 | 2460.0 | 2470.0 | 2480.0 | 2490.0 | 2500.0 | 5150.0 | 5200.0 | 5250.0 | 5300.0 | 5350.0 | 5400.0 | 5450.0 | 5500.0 | 5550.0 | 5600.0 | 5650.0 | 5700.0 | 5750.0 | 5800.0 | 5850.0 |
| Gain (dBi)      | 1.41   | 1.39   | 1.57   | 1.30   | 1.57   | 1.72   | 2.17   | 2.55   | 2.80   | 2.75   | 2.85   | 4.01   | 3.73   | 3.74   | 3.26   | 3.42   | 3.64   | 3.76   | 3.43   | 4.06   | 4.56   | 4.62   | 4.71   | 4.60   | 5.31   | 4.38   |
| Efficiency (%)  | 47.28  | 47.12  | 49.14  | 46.49  | 47.85  | 50.11  | 51.87  | 54.33  | 55.47  | 54.46  | 54.73  | 63.07  | 62.14  | 66.49  | 58.68  | 61.60  | 62.56  | 63.21  | 55.53  | 58.21  | 60.69  | 61.43  | 52.24  | 60.21  | 63.70  | 59.75  |



Product Number: AN2450-FPC04GX

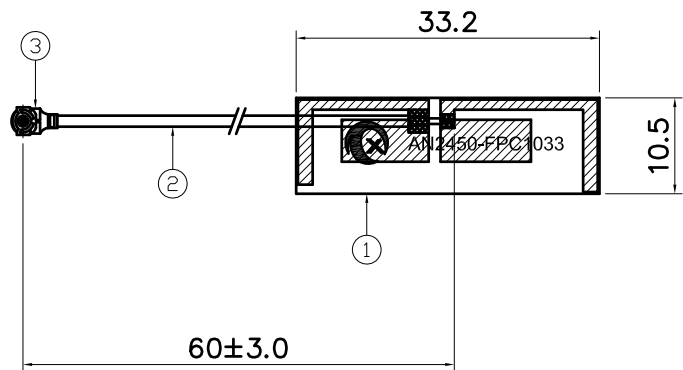
Product Name: FPC Antenna



Note: Maximum antenna gain at 5800.0MHz

## 5. Mechanical Drawing (See attached files)

| SIGN                                                                              | DATE | DESCRIPTION | APPROVER |
|-----------------------------------------------------------------------------------|------|-------------|----------|
|  |      |             |          |
|  |      |             |          |
|  |      |             |          |



1. Mark \* is important dimension;"Cpk "Identify for process control( $CpK \geq 1.33$ ).
2. Tolerance: Unmarked tolerance refer to the standard tolerance please.
3. Pay attention to the direction of the connector.

| 3   | CR-113-ZP-A    | I-PEX         | Cu       | Au Plated | 1    |
|-----|----------------|---------------|----------|-----------|------|
| 2   | CB-113GS       | Coaxial Cable | OD1.13   | Gray      | 1    |
| 1   | AN2450-FPC1033 | FPC           |          | Black     | 1    |
| No. | Part Number    | Name          | Material | Finish    | Q'ty |

|                                                                                                                              |            |            |            |                                                                                       |  |           |
|------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|---------------------------------------------------------------------------------------|--|-----------|
|  <b>Tengxiang Electronics Co., Ltd.</b> |            |            |            |                                                                                       |  |           |
| TITLE: Antenna                                                                                                               |            |            |            |                                                                                       |  |           |
| PART NO.: AN2450-FPC04GX                                                                                                     |            |            |            | CUSTOMER P/N: /                                                                       |  |           |
| APP BY                                                                                                                       | CHK BY     | RF BY      | DES BY     |  |  | Tolerance |
| YCX                                                                                                                          | HC         | WJ         | DWF        |                                                                                       |  | UNITS: mm |
| 2022.12.01                                                                                                                   | 2022.12.01 | 2022.12.01 | 2022.12.01 | SCALE: 1/1                                                                            |  | X.XX ±0.2 |
|                                                                                                                              |            |            |            | REVISION: A                                                                           |  | X° ±1     |

# 產品包裝規範

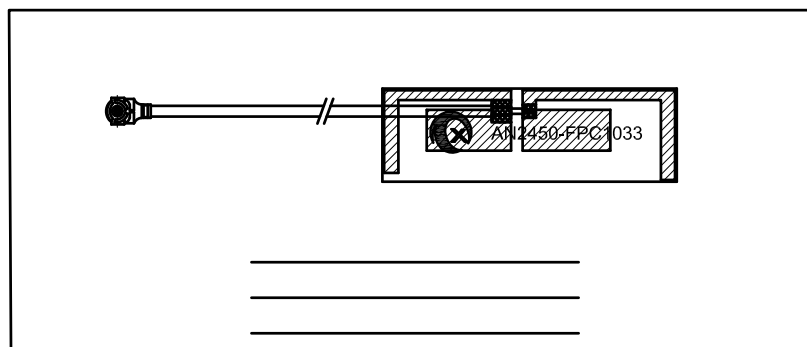
## PACKING CRITERION

Date: 2022.12.01

Page: 1 of 1

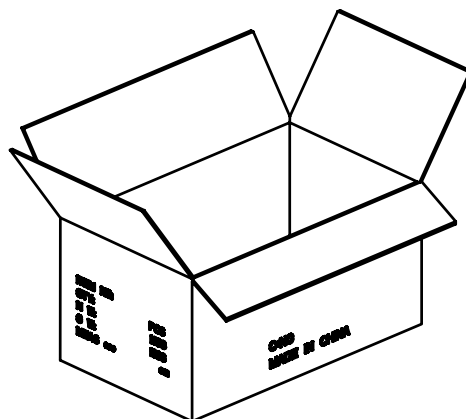
|                              |                |
|------------------------------|----------------|
| Part Number : AN2450-FPC04GX | Revision : A   |
| Name: Antenna                | Customer : ALL |

1 . Enter PE bag。



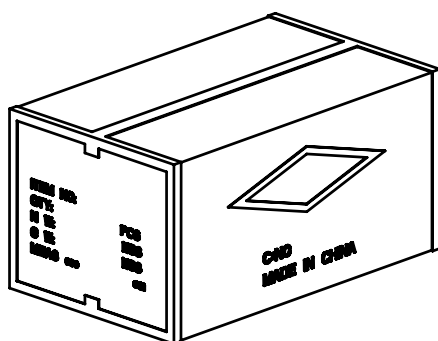
100pcs/ PE bag

2.PACKING 。

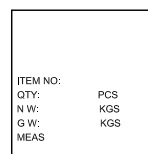


8000pcs/Carton

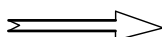
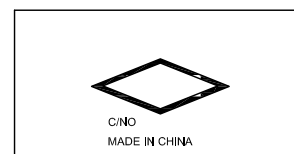
3. SEALING。



SIDE



FRONT



APPROVED BY : YCX

CHECKED BY : HC

DESIGNED BY : DWF