



# Tengxiang Technology.Inc

Product Number: TX-AN2400-0301RS-B

Product Name: Antenna

## Specification For Approval

Customer : MS \_\_\_\_\_

Customer P/N : / \_\_\_\_\_

Tengxiang P/N : TX-AN2400-0301RS-B \_\_\_\_\_

Description : Antenna \_\_\_\_\_

| Tengxiang Checked By: | Customer Approved By: |
|-----------------------|-----------------------|
|                       |                       |



# Tengxiang Technology.Inc

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<http://www.tenxiang.cn>



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Product Number: TX-AN2400-0301RS-B

Product Name: Antenna

## 1. Specification

| Sample Photo                                                                       |                                        |
|------------------------------------------------------------------------------------|----------------------------------------|
|  |                                        |
| A. Electrical Characteristics                                                      |                                        |
| Frequency                                                                          | 2400 ~ 2500 MHz                        |
| S.W.R.                                                                             | $\leq 2.0$                             |
| Antenna Gain                                                                       | 3.0dBi                                 |
| Polarization                                                                       | Linear                                 |
| Impedance                                                                          | 50 Ohm                                 |
| B. Material & Mechanical Characteristics                                           |                                        |
| Material of Radiator                                                               | CU                                     |
| Material of Plastic                                                                | Body: TPE<br>Hinge: ABS<br>Holder: ABS |
| Cable Type                                                                         | RG-178                                 |
| Connector Type                                                                     | SMA Male Reverse                       |
| Connector Pull Test                                                                | $\geq 5$ Kg                            |
| Connector Torque Test                                                              | 300 ~ 1000 g.cm                        |
| C. Environmental                                                                   |                                        |
| Operation Temperature                                                              | - 40 °C ~ + 65 °C                      |
| Storage Temperature                                                                | - 40 °C ~ + 80 °C                      |



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## 2. Characteristics and Reliability Test

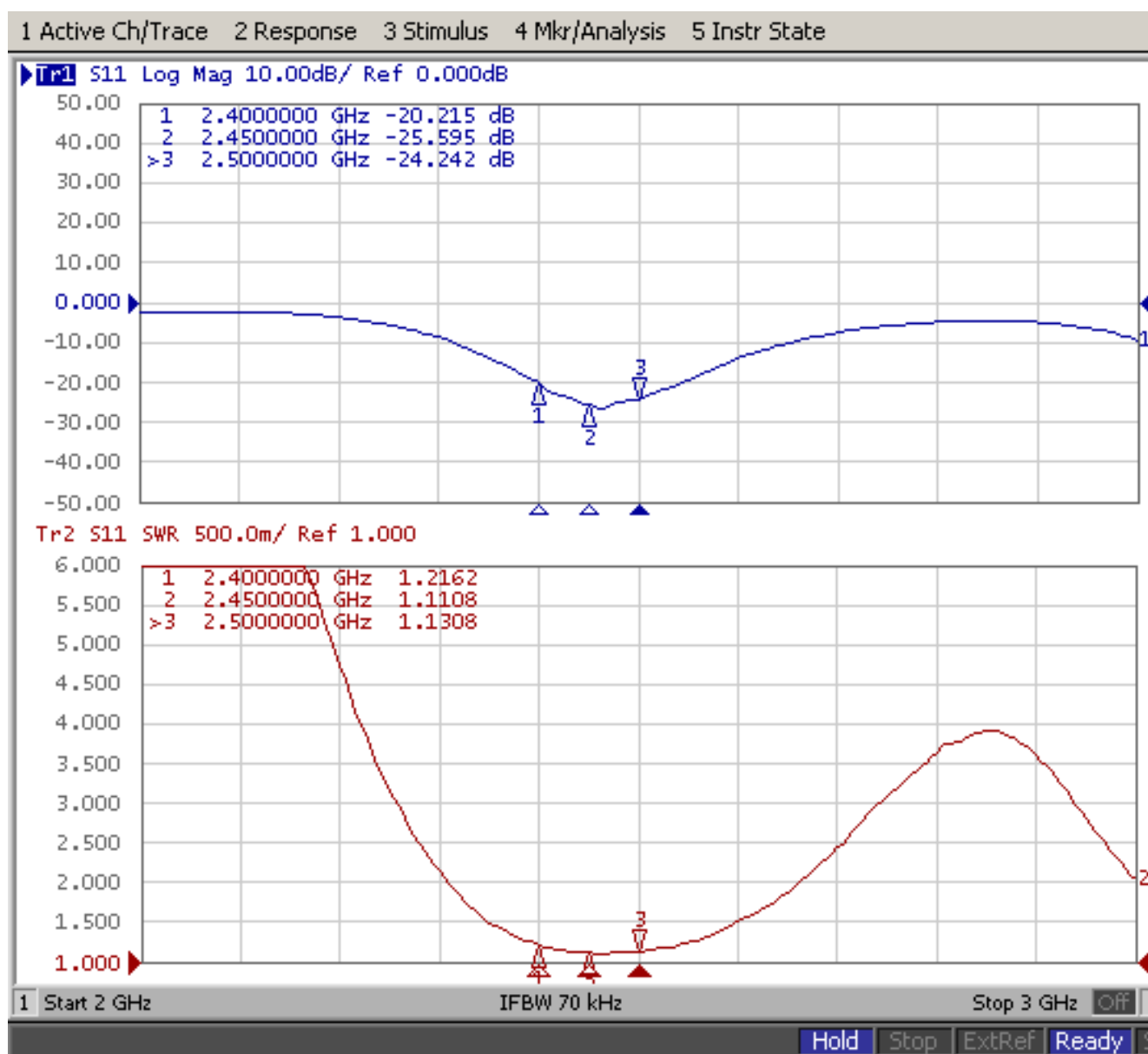
| Test Items |                      | Test Condition and Procedure                                                                                                         | Requirements                                                            |
|------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| 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: - 40°C (30 minutes) to + 80°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                           |

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|    |      |                                                  |                            |
|----|------|--------------------------------------------------|----------------------------|
|    |      |                                                  | 2. Frequency Tol.<= 5%     |
| R1 | RoHS | With Reference to IEC 62321:2008 with flow chart | Directive RoHS 2002/95/EC  |
| R2 | PFOS | With Reference to USA EPA 3540C:1996 by LC/MS    | Directive RoHS 2006/122/EC |
| R3 | PFOA | With Reference to USA EPA 3540C:1996 by LC/MS    | Directive RoHS 2006/122/EC |

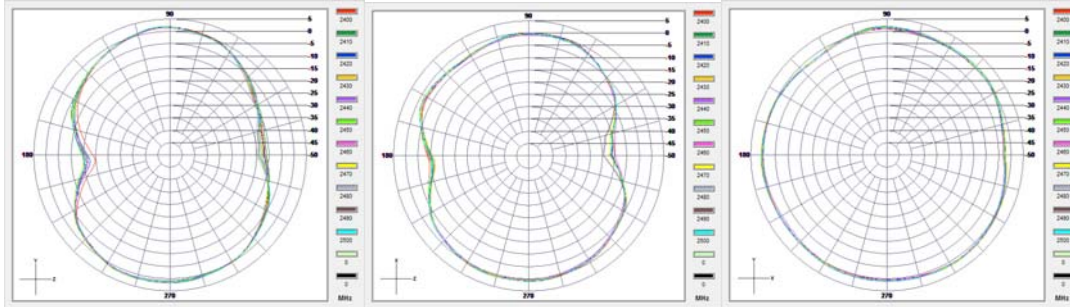
## 3. Antenna - S Parameter Test Data



**Product Number:** TX-AN2400-0301RS-B

**Product Name:** Antenna

## 4. Testing Equipment Specification

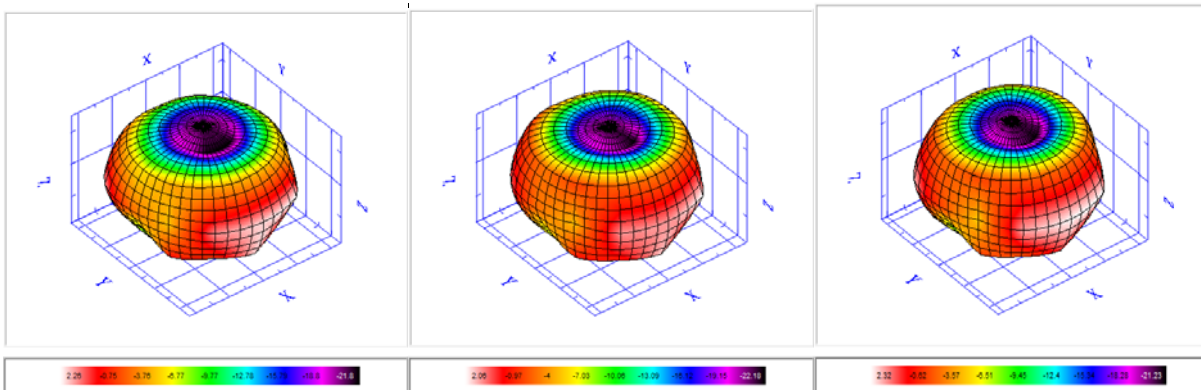


| Frequency               | 2400   | 2450   | 2500   |
|-------------------------|--------|--------|--------|
| TRP (dBm)               | -0.71  | -0.83  | -0.7   |
| Peak EIRP (dBm)         | 2.32   | 2.06   | 2.26   |
| NHPRP +/- 45 (degree)   | -0.86  | -0.93  | -0.81  |
| NHPRP +/- 30 (degree)   | -1.11  | -1.27  | -1.19  |
| E-Theta Peak Gain (dBi) | -12.34 | -14.91 | -14.07 |
| E-Phi Peak Gain (dBi)   | 2.31   | 2.03   | 2.25   |
| E-Total Peak Gain (dBi) | 2.32   | 2.06   | 2.26   |
| Directivity (dBi)       | 3.03   | 2.89   | 2.95   |
| Efficiency (%)          | 84.92  | 82.69  | 85.15  |

**2500MHZ**

**2450MHZ**

**2400MHZ**



## 4. Mechanical Drawing

See attached files

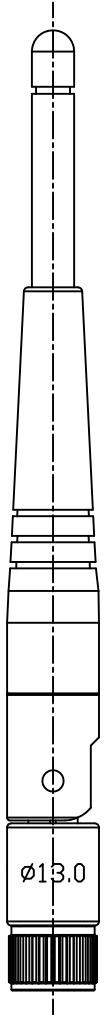
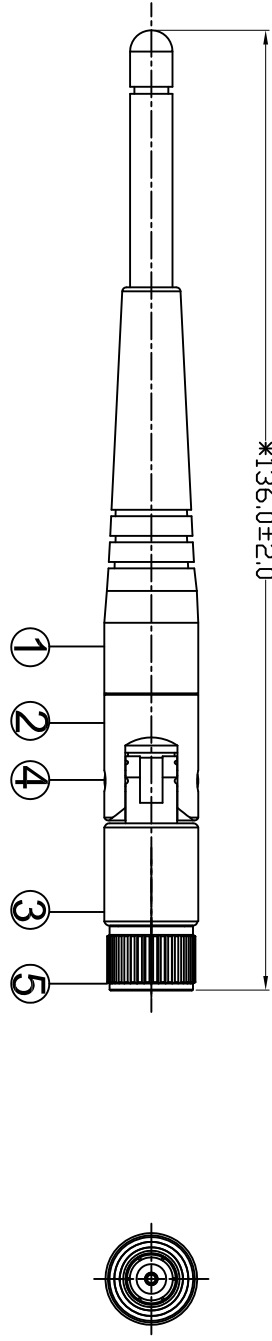
## 5. Material Description and RoHS Test Report

See attached files

RoHS

Compatible

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



Note:  
1. "Take" \* "is the important dimension.  
2. Tolerance: Unmarked tolerance refer to the standard tolerance please.

|     |                 |                 |          |                 |     |
|-----|-----------------|-----------------|----------|-----------------|-----|
| 5   | SMA194-CCT5AN19 | SMAMale Reverse | Cu       | Zn Plated 120u" | 1   |
| 4   | AN03-514PB      | Pin             | POM      | Black           | 2   |
| 3   | AN03-T06B       | Body-3          | ABS      | Black           | 1   |
| 2   | AN9201-02B      | Body-2          | ABS      | Black           | 1   |
| 1   | AN03-03B        | Body-1          | TPE      | Black           | 1   |
| NO. | Part Number     | Description     | Material | Finished        | Qty |



dg tengxiang Technology Inc.

TITLE: 2.4GHz 3dBi Antenna

PARTNO.:TX-AN2400-0301RS-B

APP BY HDPE 2015.09.15

CHK BY TDML Y 2015.09.15

RF BY

DES BY HUHUJ 2015.09.15

UNITS: mm

SCALE: 1/1

REVISION: A

Tolerance X.X ±0.5 X.XX ±0.2 X" ±1

# 產品包裝規範

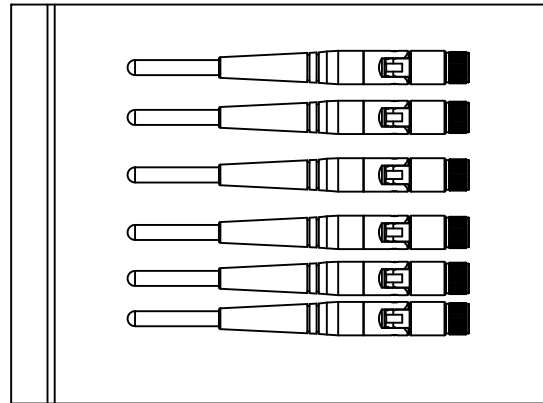
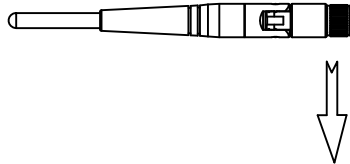
## PACKING CRITERION

Date: 2015.9.15

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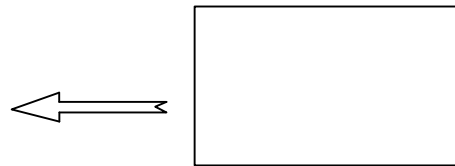
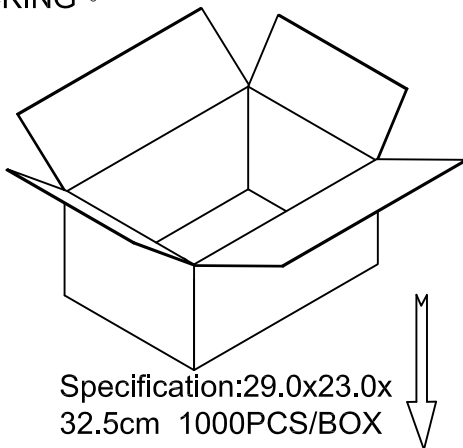
|                                 |                |
|---------------------------------|----------------|
| Part Number :TX-AN2400-0301RS-B | Revision : B   |
| Name: 2.4G 3dBi Antenna         | Customer : ALL |

1.Enter the bag ◦



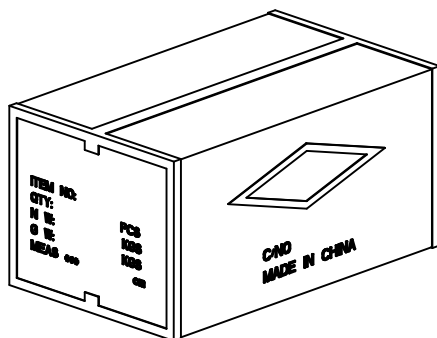
20PCS/ bag

2.PACKING ◦



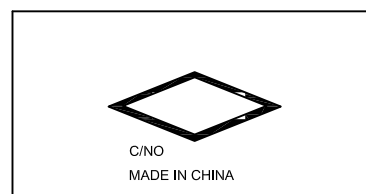
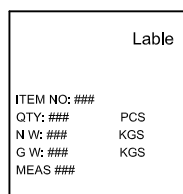
Cardboard :50pcs/BOX

3. SEALING◦



SIDE

FRONT



APPROVED BY : \_\_\_\_\_ CHECKED BY : \_\_\_\_\_ DESIGNED BY : DCH