

Product Number: NB2400-128  
Product Name: 2.4GHz Antenna

# Specification For Approval

Date: 2021 / 03 / 19

File No.: \_\_\_\_\_

Version: 1.0

Customer : 广东南光影视器材有限公司

Customer P/N : /

Yi Zong P/N : NB2400-128

Description : 2.4GHz Antenna

Cortec Checked By: Wang Chao Xing

Customer Approved By: chen junrong



**一纵电子**

**YIZONG ELECTRONICS**

**Product Number: NB2400-128**  
**Product Name: 2.4GHz Antenna**

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### 1. Revision History

| Revision | Date       | Change Notification | Description |
|----------|------------|---------------------|-------------|
| 1.0      | 2021.03.19 | 初版                  |             |
|          |            |                     |             |
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## 2. Specification

|  |                   |
|--|-------------------|
| Sample Photo   |                   |
|  |                   |
| <b>A. Electrical Characteristics</b>   |                   |
| Frequency  | 2400 ~ 2500 MHz   |
| V.S.W.R.   | $\leq 2.0$        |
| Peak Gain  | 2.32dBi           |
| Polarization   | Linear            |
| Impedance  | 50 Ohm            |
| <b>B. Material &amp; Mechanical Characteristics</b>                                |                   |
| Material of Radiator   | CU                |
| Cable Type   | OD1.13mm          |
| Connector Type   | Mini Connector    |
| <b>C. Environmental</b>  |                   |
| Operation Temperature  | - 40 °C ~ + 65 °C |
| Storage Temperature  | - 40 °C ~ + 80 °C |



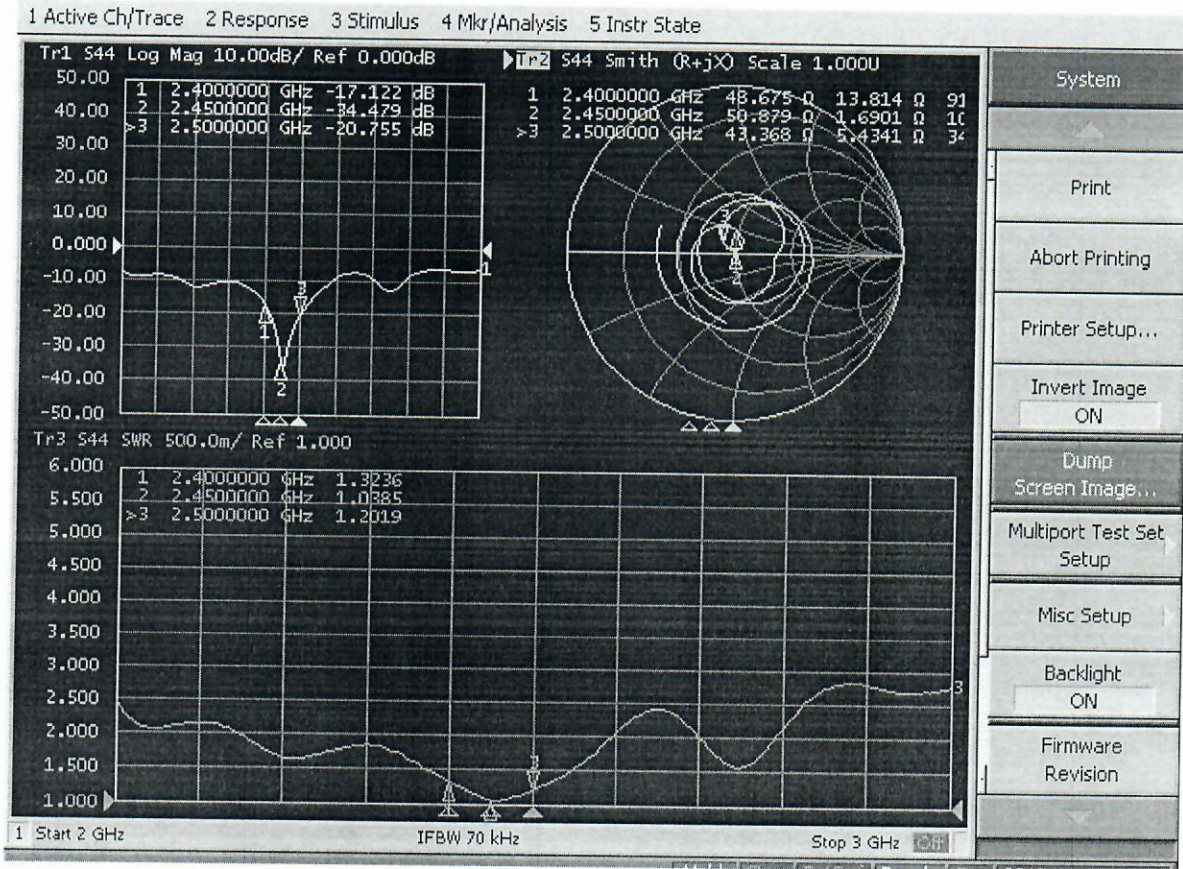
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### 3. Characteristics and Reliability Test

| 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            | GB / T2423 . 48-1997<br>Amplitude: 0.03 inch (1.5mm); Freq: 20 to 80 to 20 Hz<br>3 directions; 2 hours for each direction | 1. No Visual Damage<br>2. Frequency Tol.<= 5%                           |
| M2         | Random Drop          | GB / T2423.8-1995<br>Height: 1.0 Meter;<br>3 directions; 1 time for each direction  | 1. No parts separated<br>2. Frequency Tol.<= 5%                         |
| M3         | Solderability        | GB 2423 . 28- 82<br>Solder iron: 260±5°C; Duration: 5 seconds   | 1. Mounted on PCB<br>2. No Visual Damage                                |
| M4         | Terminal-Pull Test   | Holding with individual specification; force applied to axis of terminal  | 1. Directive DUT specification<br>2. Frequency Tol.<= 5%                |
| M5         | Terminal-Torque Test | 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           | GB / T 2423 . 17- 93<br>Temp: 35°C; RH: >= 95%; NaCl solution: >= 5%;<br>Time: 24 hours                                   | After 2 Hours Recovery<br>1. No Visual Damage<br>2. Frequency Tol.<= 5% |
| E2         | Humidity             | GB / T 2423 . 4 - 93<br>Temp: 80°C / 12 H; -40°C / 12H RH: >= 90%;<br>Time: 24 hours                                      | After 2 Hours Recovery<br>1. No Visual Damage<br>2. Frequency Tol.<= 5% |
| E3         | Thermal Shock        | GB / T 2423 . 22 - 87<br>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.)    | GB /T 2423 . 2 - 89<br>Temp: 80°C; Time: 24 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 2011/65/EU   |
| 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  |

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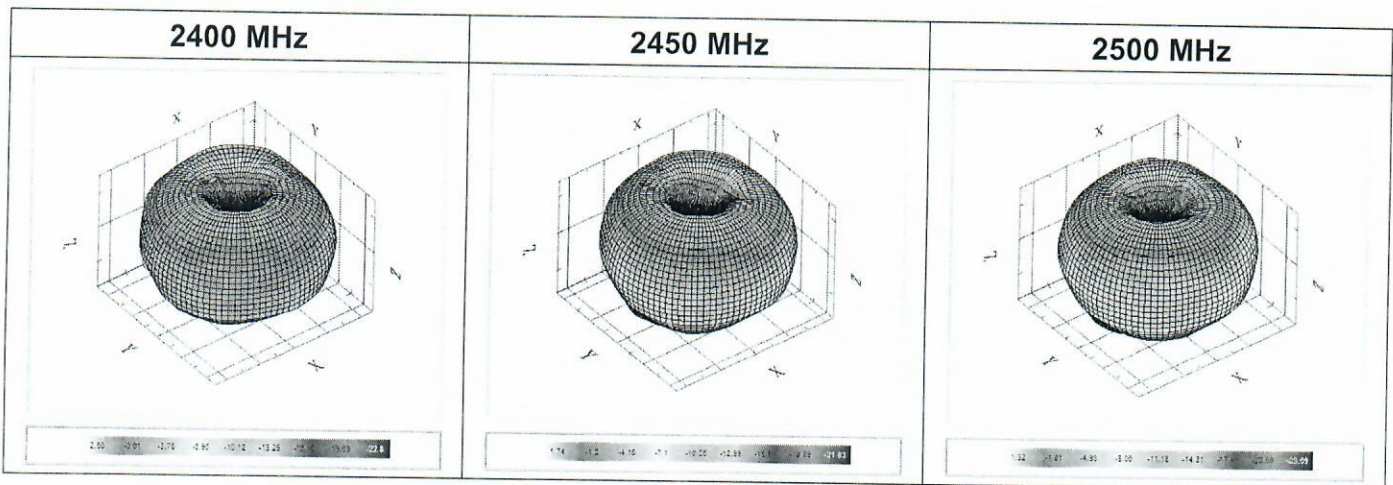
### 4. Antenna - S Parameter Test Data





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### 5. Antenna - Radiation Pattern Test Data



|                         |       |       |        |        |        |        |        |        |        |        |        |
|-------------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Frequency               | 2400  | 2410  | 2420   | 2430   | 2440   | 2450   | 2460   | 2470   | 2480   | 2490   | 2500   |
| TRP (dBm)               | -2.33 | -2.29 | -2.17  | -1.96  | -1.73  | -1.6   | -1.45  | -1.58  | -1.48  | -1.62  | -1.37  |
| Peak EIRP (dBm)         | 1.89  | 1.71  | 1.8    | 1.89   | 2.12   | 2.17   | 2.32   | 1.97   | 2.04   | 2.01   | 2.09   |
| NHPRP +/- 45 (degree)   | -2.88 | -2.82 | -2.67  | -2.44  | -2.19  | -2.06  | -1.9   | -2.03  | -1.91  | -2.02  | -1.75  |
| NHPRP +/- 30 (degree)   | -3.91 | -3.83 | -3.62  | -3.34  | -3.06  | -2.92  | -2.75  | -2.87  | -2.75  | -2.82  | -2.53  |
| E-Theta Peak Gain (dBi) | -9.22 | -9.7  | -10.14 | -10.13 | -11.06 | -10.41 | -10.28 | -11.06 | -11.32 | -11.34 | -10.95 |
| E-Phi Peak Gain (dBi)   | 1.86  | 1.69  | 1.78   | 1.8    | 1.99   | 2.07   | 2.22   | 1.87   | 1.96   | 1.93   | 2.05   |
| E-Total Peak Gain (dBi) | 1.89  | 1.71  | 1.8    | 1.89   | 2.12   | 2.17   | 2.32   | 1.97   | 2.04   | 2.01   | 2.09   |
| Directivity (dBi)       | 4.21  | 4     | 3.97   | 3.85   | 3.84   | 3.77   | 3.77   | 3.55   | 3.52   | 3.62   | 3.45   |
| Efficiency (%)          | 58.54 | 58.99 | 60.73  | 63.62  | 67.2   | 69.11  | 71.68  | 69.43  | 71.06  | 68.91  | 72.99  |

### 6. Mechanical Drawing

See attached files

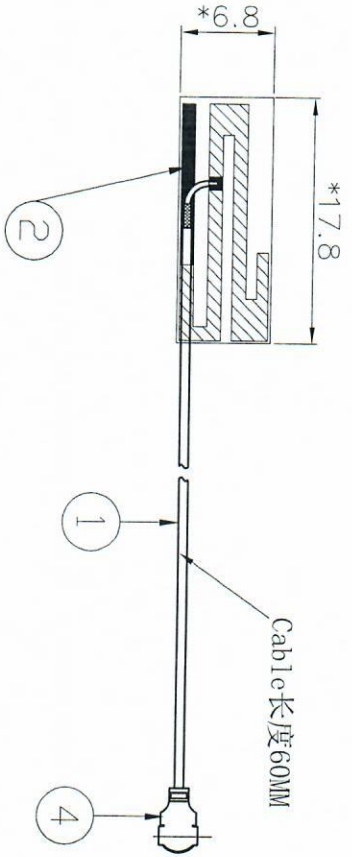
### 7. Material Description and RoHS Test Report

See attached files

# RoHS

Compatible

| SIGN | DATE | DESCRIPTION | APPROC |
|------|------|-------------|--------|
| △    |      |             |        |
| △    |      |             |        |



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

| No. | Part Number    | Name           | Material   | Finish     | Q'ty |
|-----|----------------|----------------|------------|------------|------|
| 1   | R-CB-113B      | Coaxial Cable  | O.D. 1.13  | BLACK      | 1    |
| 2   | PB-NB1183-03FB | PCB            | FR4        | T=0.6mm    | 1    |
| 3   | GS-NB1183-02A  | Adhesive       | SONY-G9000 | 16*5.0mm   | 1    |
| 4   | IPEX           | Mini connector | Cu         | Au Plating | 1    |

## 东莞一纵电子有限公司

|                              |        |                              |             |
|------------------------------|--------|------------------------------|-------------|
| TITLE: 2.4G Embedded Antenna |        | CUSTOMER P/N: 65-031-254306F |             |
| PART NO.: NB2400-128         |        |                              |             |
| APP BY                       | CHK BY | RF BY                        | DES BY      |
|                              |        |                              | LIXUKE      |
|                              |        |                              | 2021/03/19  |
|                              |        |                              | REVISION: A |
|                              |        |                              | Toleranc    |
|                              |        |                              | X.X ±       |
|                              |        |                              | X.XX ±      |
|                              |        |                              | X° ±        |