

# Shenzhen SKYLink Technology Co.,Ltd

## Antenna Specification for Approval

Customer Name: \_\_\_\_\_

Product Name: \_\_\_\_\_ 2.4G WIFI Antenna \_\_\_\_\_

Part NO.: \_\_\_\_\_ WF87A.C113.135B.122400.1 \_\_\_\_\_

Write By: \_\_\_\_\_ Damon Cui \_\_\_\_\_

Issued Date: \_\_\_\_\_ 2024.07.19 \_\_\_\_\_

Customer

| R&D Dept | Business Dept | Approved By |
|----------|---------------|-------------|
|          |               |             |

SKYLink

| R&D Dept | Engineer Dept | Approval |
|----------|---------------|----------|
|          |               |          |

## ● Specification Summary

| A. Electrical Characteristics            |                   |
|------------------------------------------|-------------------|
| Frequency                                | 2400MHz ~2500MHz  |
| VSWR                                     | <2.0              |
| Efficiency                               | >50%              |
| Peak Gain                                | 2.2dbi            |
| Impedance                                | 50 Ohm            |
| Polarization                             | Line              |
|                                          |                   |
| B. Material & Mechanical Characteristics |                   |
| Material of Radiator                     | Cu                |
| Cable Type                               | 1.13MM Black      |
| Connector Type                           | 1                 |
| Dimension                                | At Attachment     |
| Heat-durability                          | 280±5°C, 10sec.   |
|                                          |                   |
| C. Environmental Characteristics         |                   |
| Operation Temperature                    | - 20 °C ~ + 80 °C |
| Storage Temperature                      | - 30 °C ~ + 85 °C |
|                                          |                   |

## ● Test Equipment & Conditions

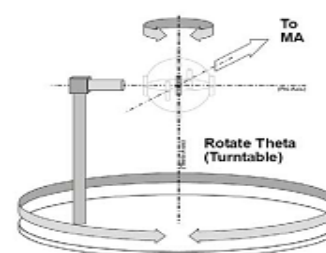
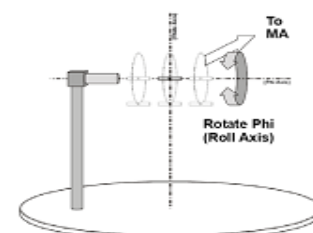
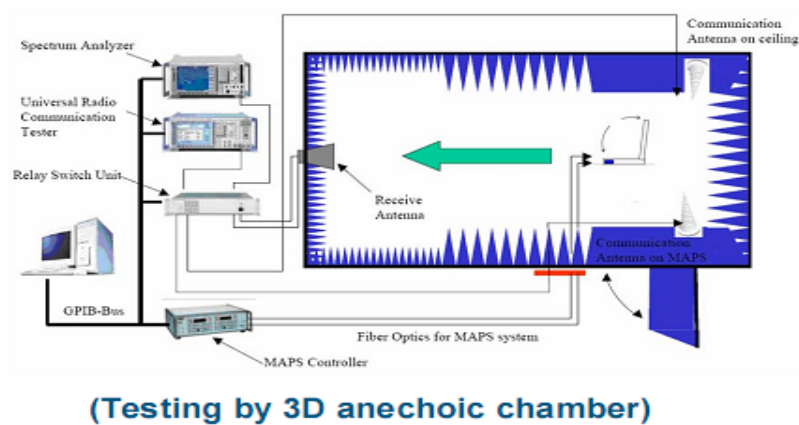
### 1. Network Analyzers :

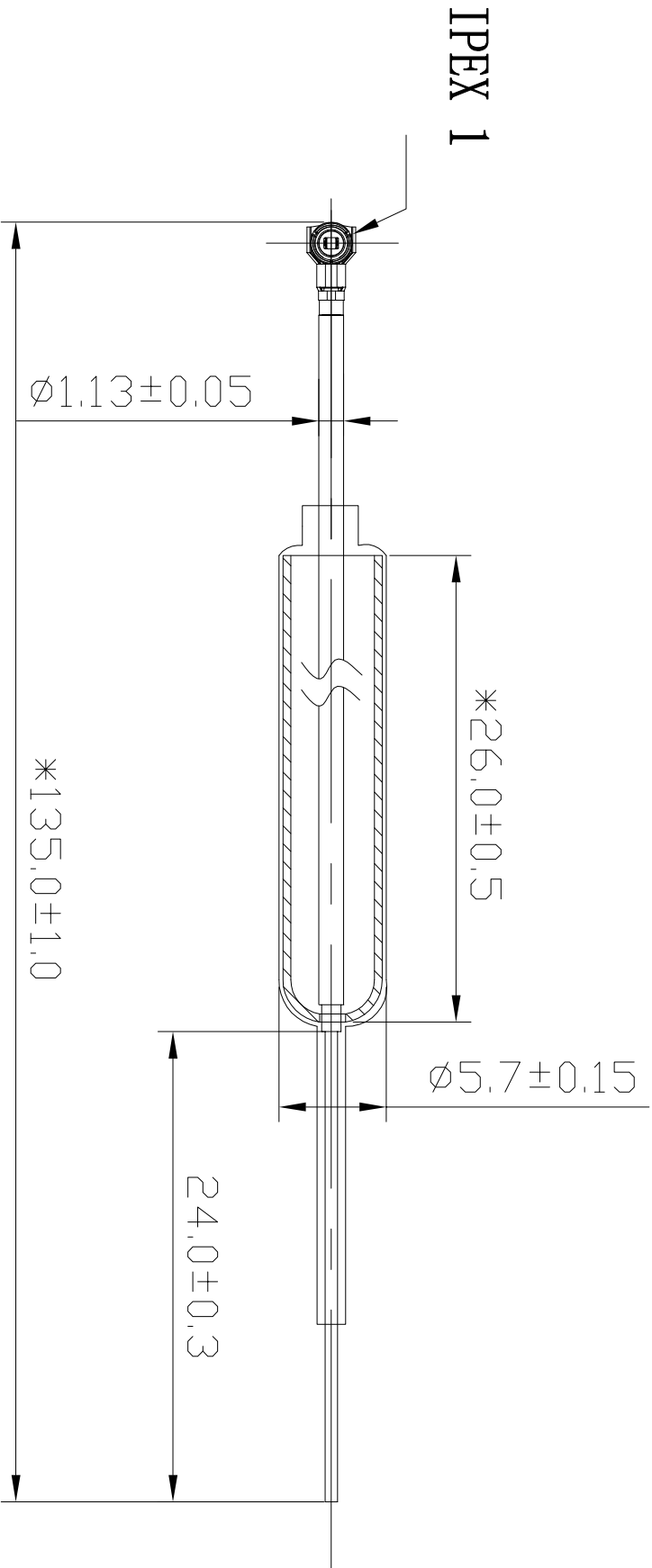
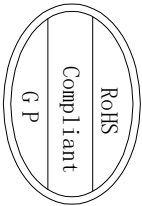
Agilent 8753D 5071B

#### Communications Test Set:

Agilent E5515C CMW500

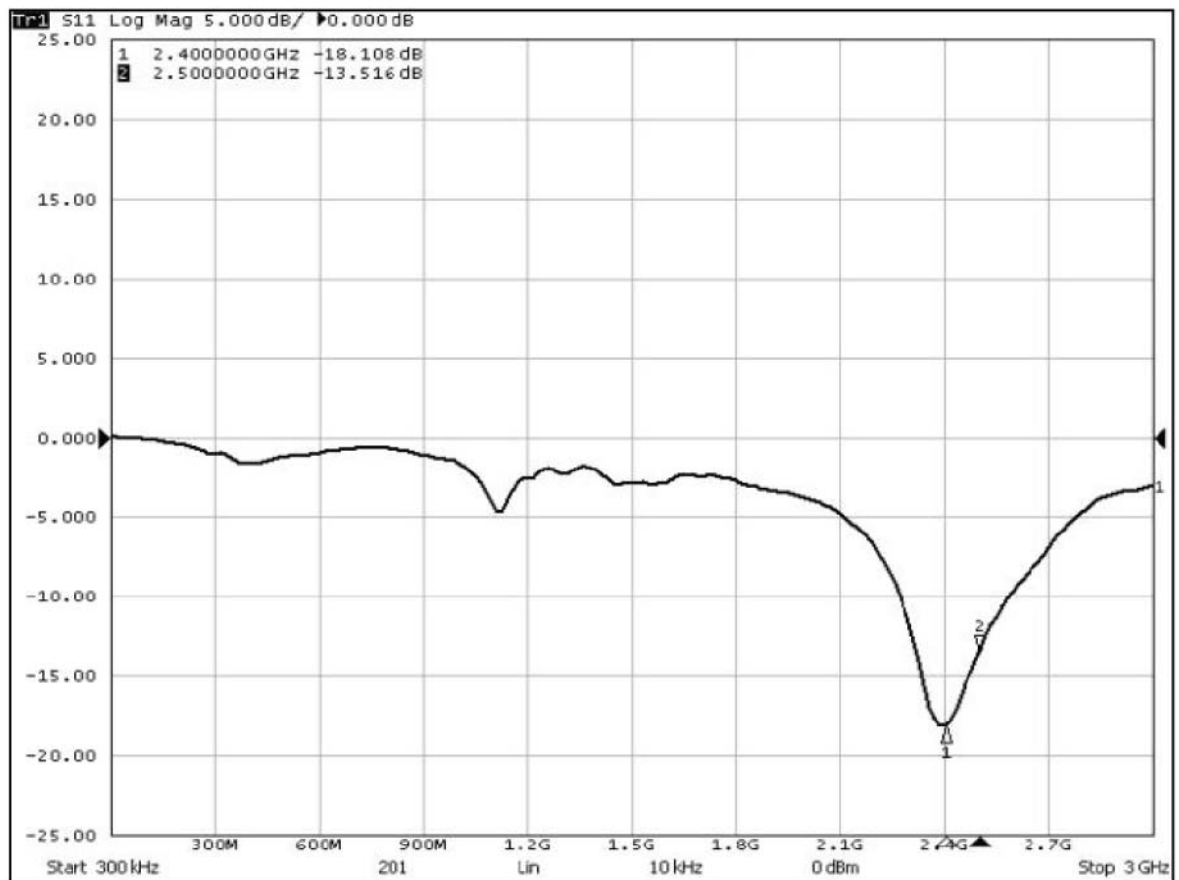
### 2. 3D Chamber Test System





|                                                                                    |  |      |  |           |  |                          |  |                 |  |   |  |   |  |   |  |
|------------------------------------------------------------------------------------|--|------|--|-----------|--|--------------------------|--|-----------------|--|---|--|---|--|---|--|
| 1                                                                                  |  | 2    |  | 3         |  | 4                        |  | 5               |  | 6 |  | 7 |  | 8 |  |
| <div><div><div><div>RoHS</div><div>Compliant</div><div>G P</div></div></div></div> |  |      |  |           |  |                          |  |                 |  |   |  |   |  |   |  |
| IPEX 1                                                                             |  |      |  |           |  |                          |  |                 |  |   |  |   |  |   |  |
|                                                                                    |  |      |  |           |  |                          |  |                 |  |   |  |   |  |   |  |
| SHEN ZHEN SKYLINK CO., LTD                                                         |  |      |  |           |  |                          |  |                 |  |   |  |   |  |   |  |
| <div><div><div>Third Angle</div></div></div>                                       |  |      |  | Project   |  | Date                     |  | 2024-07-19      |  |   |  |   |  |   |  |
| 0~10 ±0.05 ○ 0.02                                                                  |  |      |  | Part Name |  | Designed by              |  |                 |  |   |  |   |  |   |  |
| 10~18 ±0.10 ⊙ Ø.03                                                                 |  |      |  | Part No.  |  | WF87A.C113.135B.122400.1 |  |                 |  |   |  |   |  |   |  |
| 18~30 ±0.12 ⊥ 0.02                                                                 |  |      |  | Material  |  | Checked by               |  |                 |  |   |  |   |  |   |  |
| 30~40 ±0.15 ▽ 0.04                                                                 |  |      |  | DWG No.   |  | Approved by              |  |                 |  |   |  |   |  |   |  |
| 40~ ±0.20 Angle ±0.5°                                                              |  |      |  | Unit      |  | mm                       |  | Scale 1:1 Rev A |  |   |  |   |  |   |  |
| Rev                                                                                |  |      |  |           |  |                          |  |                 |  |   |  |   |  |   |  |
| 1                                                                                  |  | 2    |  | 3         |  | 4                        |  | 5               |  | 6 |  | 7 |  | 8 |  |
| Description                                                                        |  | Date |  | Remark    |  |                          |  |                 |  |   |  |   |  |   |  |
| New drawing                                                                        |  |      |  |           |  |                          |  |                 |  |   |  |   |  |   |  |
| D                                                                                  |  |      |  |           |  |                          |  |                 |  |   |  |   |  |   |  |

## ◆ Return Loss

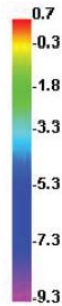
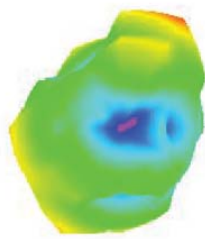


## ◆ Gain & Efficiency

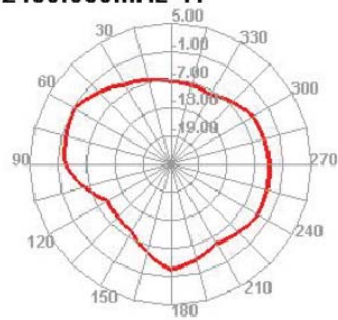
| Freq<br>(MHz) | Effi<br>(%) | Gain<br>(dBi) |
|---------------|-------------|---------------|
| 2400          | 53.66       | 0.7           |
| 2410          | 52.19       | 0.8           |
| 2420          | 53.03       | 1.09          |
| 2430          | 54.41       | 1.32          |
| 2440          | 56.67       | 1.45          |
| 2450          | 55.24       | 1.2           |
| 2460          | 55.61       | 1.21          |
| 2470          | 51.91       | 1.29          |
| 2480          | 54.39       | 1.66          |
| 2490          | 56.96       | 2.03          |
| 2500          | 56.23       | 2.2           |

## ◆ Radiation Pattern

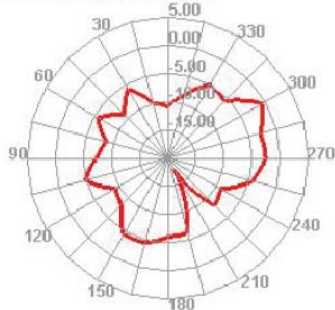
2400.000MHz



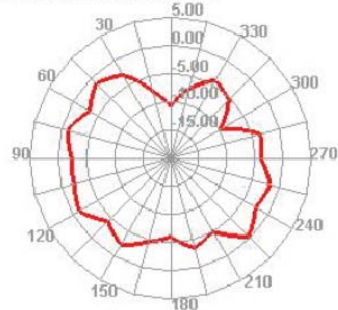
2400.000MHz H



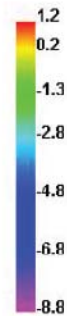
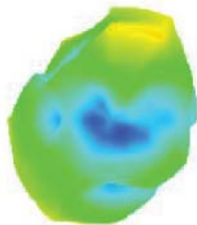
2400.000MHz E1



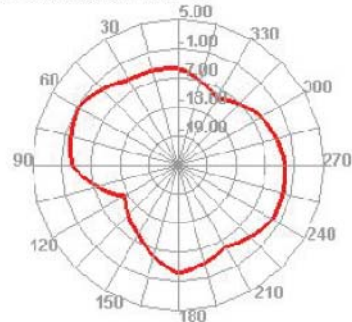
2400.000MHz E2



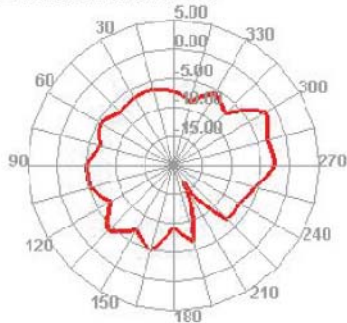
2450.000MHz



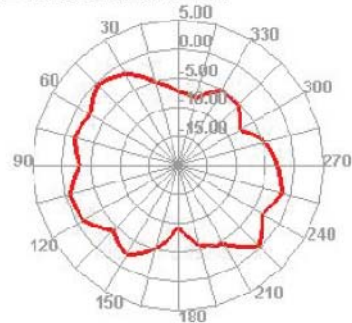
2450.000MHz H



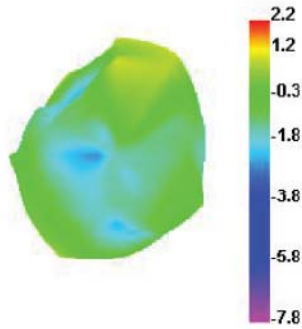
2450.000MHz E1



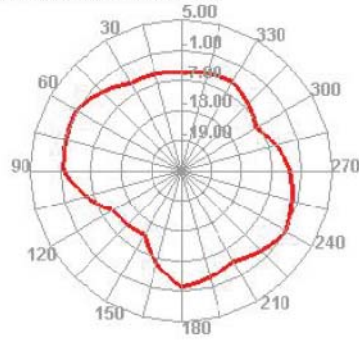
2450.000MHz E2



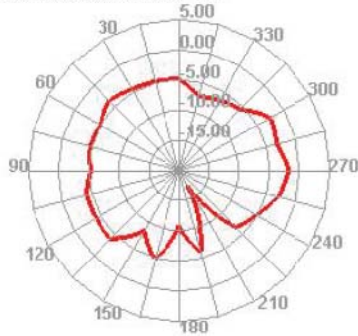
**2500.000MHz**



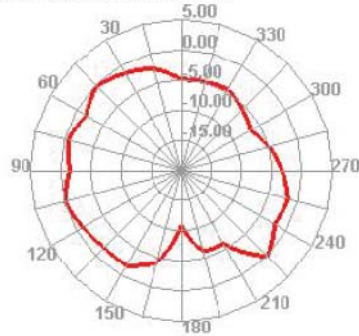
**2500.000MHz H**



**2500.000MHz E1**



**2500.000MHz E2**



## ◆ Reliability Test

| Test Item |                                    | Test condition                                                                                                                                                                                                                                                                                                                           | Equipment          | Specification                                                                    | Result |
|-----------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------|--------|
| 1         | Low Temp. Storage Test             | <p>Temperature: -30℃, Time:48hrs</p> <p>Test condition: Placing antenna in a Low/High Temperature Chamber, keep the temp is 25℃ and humidity is 65% for one hour, then step-down the temp. to -30℃ in one hour, store antenna for 44 hours; step-up temp to 25℃,test antenna after 2 hours.</p>                                          | Temp.&Humi. Tester | <p>No material deformation is allowed.</p> <p>Electronic Performance is ok .</p> | PASS   |
| 2         | High Temp./High Humid Storage Test | <p>Temperature: 85℃ Humidity: 85% RH Time:48hrs</p> <p>Test condition: Placing antenna in a Low/High Temperature Chamber, keep the temp is 25℃ and humidity is 65% for one hour, then step-up the temp. to 80℃ and the humidity up to 85% in one hour, store antenna for 44 hours; step-down temp to 25℃,test antenna after 2 hours.</p> | Temp.&Humi. Tester | <p>No material deformation is allowed.</p> <p>Electronic Performance is ok .</p> | PASS   |
| 3         | Salt-Spray 6 pray Test             | <p>Placing antenna in the Salt-Spray Tester ,set the test condition , Temp: <math>35 \pm 2^{\circ}\text{C}</math> Humidity: 85% NaCl salt spray :5 <math>\pm 1</math> %.PH value :6.5~7.2 Test time:24hours</p>                                                                                                                          | Salt-Spray Tester  | <p>No color change</p> <p>No appear rusting</p>                                  | PASS   |