

# Shenzhen SKYLink Technology Co.,Ltd

## Antenna Specification for Approval

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

Product Name: \_\_\_\_\_ 2.4G/5.8G WIFI Antenna \_\_\_\_\_

Part NO. : \_\_\_\_\_ WF84A.V3.C113.110B.221 \_\_\_\_\_

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

Issued Date: \_\_\_\_\_ 2023-11-30 \_\_\_\_\_

### Customer

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

### SKYLink

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

## ● Specification Summary

| A. Electrical Characteristics            |                                      |
|------------------------------------------|--------------------------------------|
| Frequency                                | 2400MHz ~2500MHz<br>5150MHz ~5850MHz |
| S11                                      | <-10.0                               |
| Efficiency                               | >40%                                 |
| Peak Gain                                | 2.6dbi                               |
| Impedance                                | 50 Ohm                               |
| Polarization                             | Line                                 |
|                                          |                                      |
| B. Material & Mechanical Characteristics |                                      |
| Material of Radiator                     | FPC                                  |
| Cable Type                               | 1.13MM Black                         |
| Connector Type                           | /                                    |
| 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

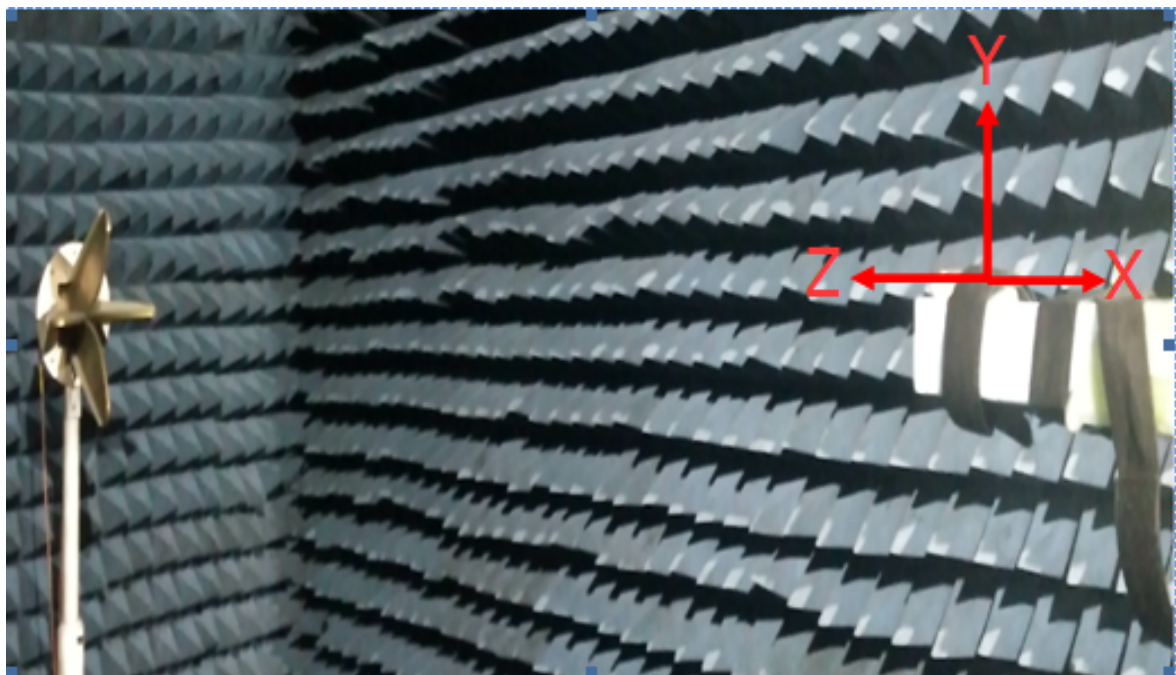
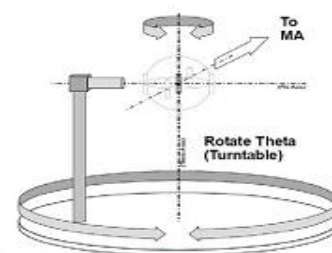
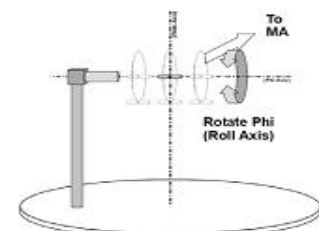
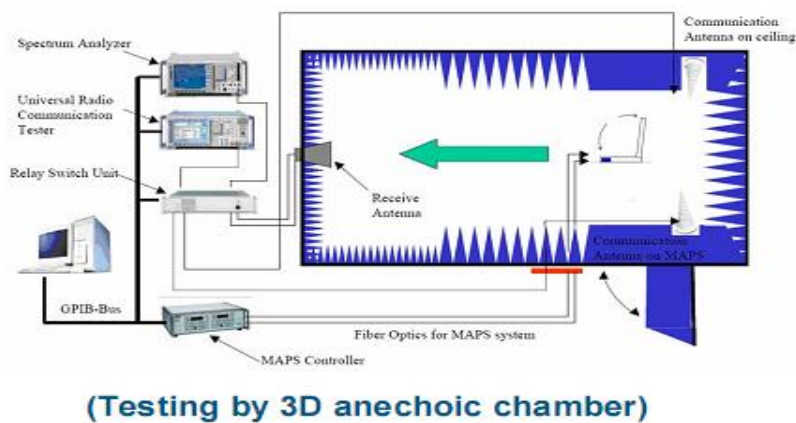
### 1. Network Analyzers :

Agilent 8753D 5071B

#### Communications Test Set:

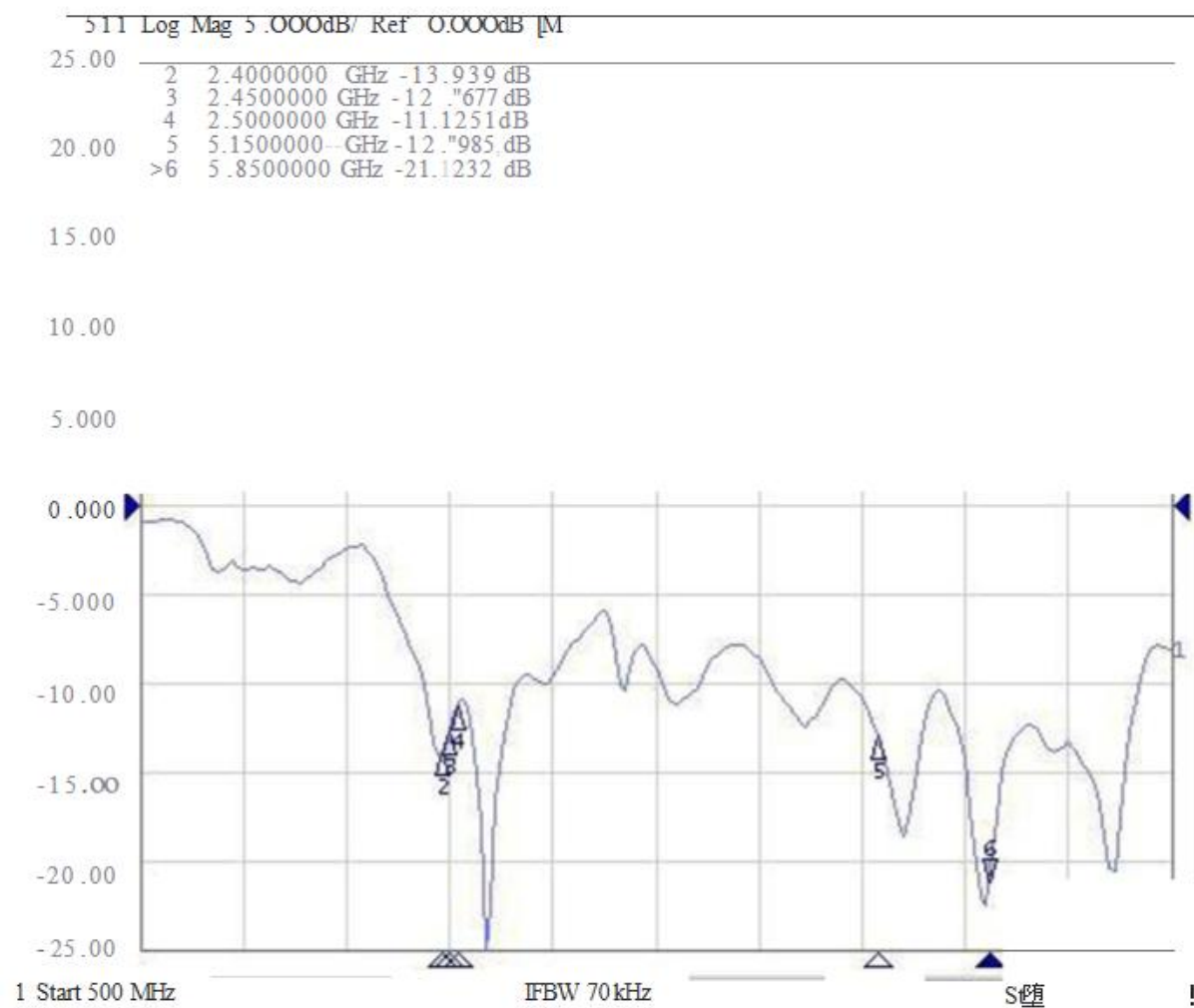
Agilent E5515C CMW500

### 2. 3D Chamber Test System



# THE NATIONAL BUREAU OF INVESTIGATION

## ◆ Return Loss

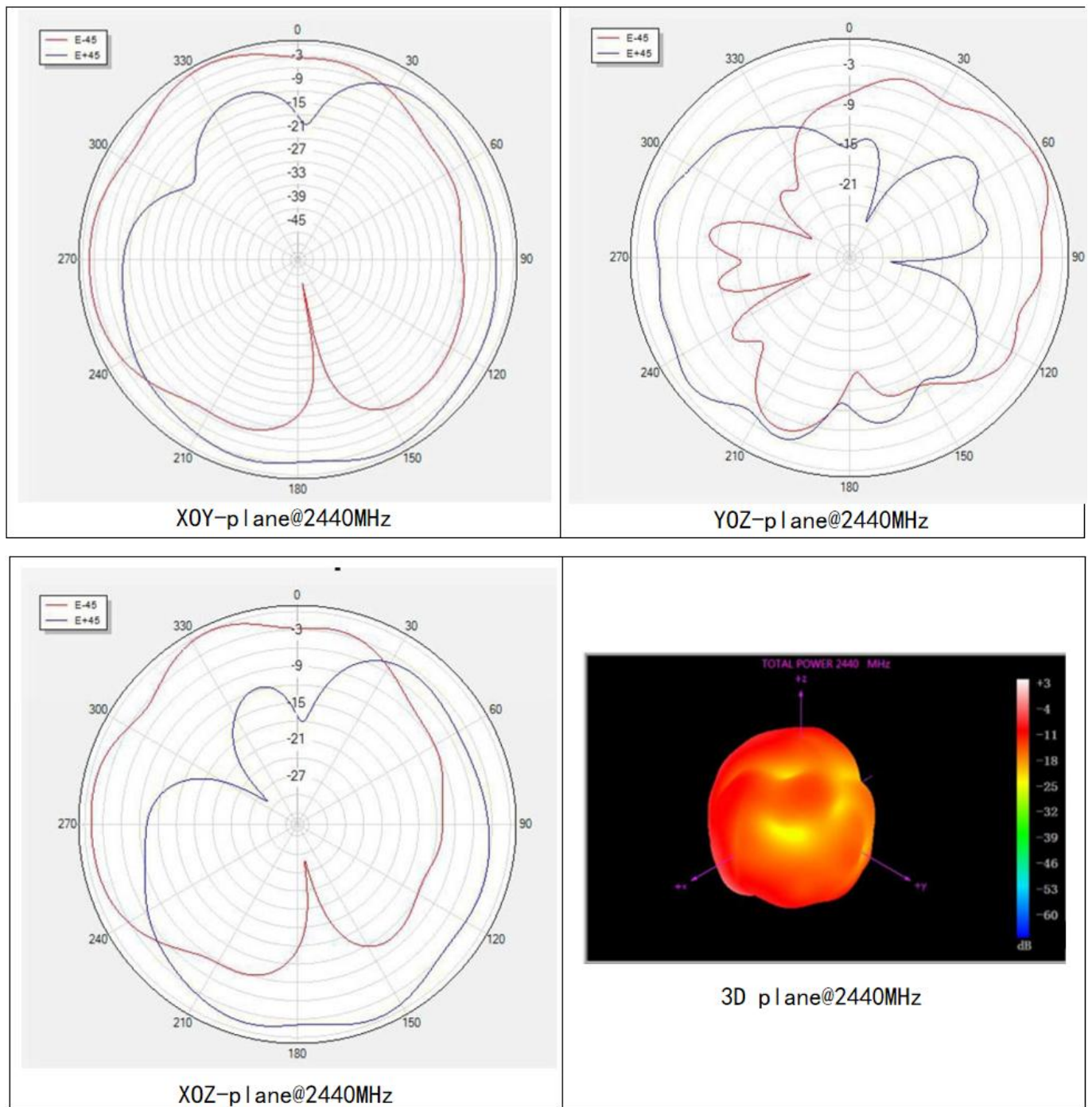


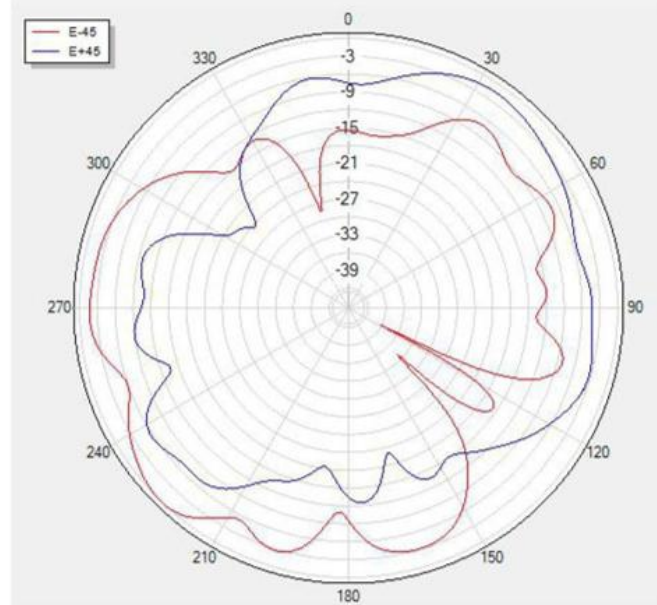
## ◆ Gain & Efficiency

| Fre<br>(MHz) | Eff (%)<br>(dB) | Gain<br>(dB) |
|--------------|-----------------|--------------|
| 2400         | 65.03           | 2.37         |
| 2410         | 63.96           | 2.37         |
| 2420         | 64.51           | 2.46         |
| 2430         | 63.75           | 2.46         |
| 2440         | 63.97           | 2.47         |
| 2450         | 59.76           | 2.12         |
| 2460         | 60.42           | 2.13         |
| 2470         | 59.37           | 2.09         |
| 2480         | 60.53           | 2.25         |
| 2490         | 62.8            | 2.51         |
| 2500         | 62.94           | 2.62         |

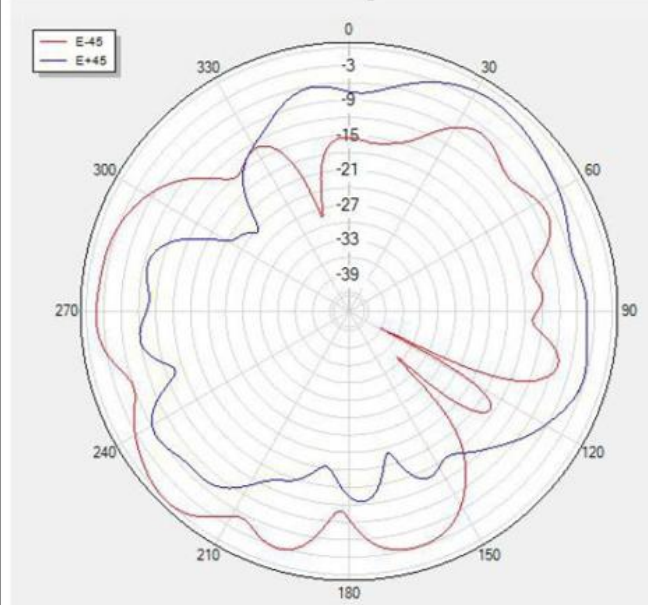
| Fre<br>(MHz) | Eff (%)<br>(dB) | Gain<br>(dB) |
|--------------|-----------------|--------------|
| 5150         | 46.49           | 2.54         |
| 5200         | 45.46           | 2.39         |
| 5250         | 42.56           | 1.83         |
| 5300         | 45.86           | 2.47         |
| 5350         | 47.06           | 2.03         |
| 5400         | 45.35           | 2.05         |
| 5450         | 46.26           | 1.93         |
| 5500         | 47.2            | 2.04         |
| 5550         | 45.95           | 1.79         |
| 5600         | 46.09           | 2.24         |
| 5650         | 47.34           | 2.58         |
| 5700         | 47.9            | 2.57         |
| 5750         | 50.6            | 1.99         |
| 5800         | 52.52           | 1.72         |
| 5850         | 48.47           | 1.77         |

## ◆ Radiation Pattern

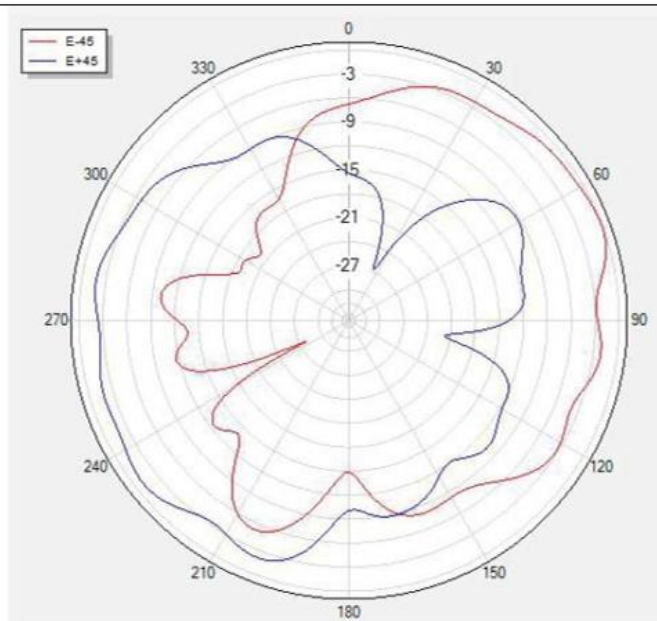




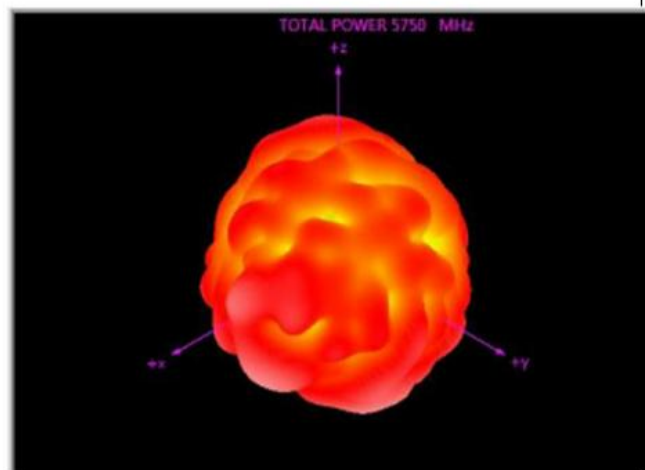
XOY-plane@5750MHz



YOZ-plane@5750MHz



XOY-plane@5750MHz



3D-plane@5750MHz

## ◆ Antenna Picture



## ◆ 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   |