



Shenzhen Lejin radio frequency technology Co., LTD

## SPECIFICATIONS FOR APPROVAL

Customer Name: Shenzhen Creality 3D Technology Co.,LTD

Product Name: WIFI Antenna

Product Model: 星云屏

Part Number: LJF02-23022509-R0A

Write By : Huxuwen

Issued Date: 2023-02-27

### CUSTOMER

| ENGINEER R&D DEPT | BUSSINESS DEPT | APPROVAL |
|-------------------|----------------|----------|
|                   |                |          |

### LEJIN

| R&D DEPT | ENGINEER DEPT | APPROVAL |
|----------|---------------|----------|
|          |               |          |

| REV  | MODIFIED DESCRIPTION  | DATE       | REMARK |
|------|-----------------------|------------|--------|
| V1.0 | Initial Draft Release | 2023/02/27 |        |
|      |                       |            |        |
|      |                       |            |        |



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### 3.Product Specification

| A. Electrical Characteristics            |                     |
|------------------------------------------|---------------------|
| Frequency                                | 2400MHz ~2500 MHz   |
| VSWR                                     | <2.0                |
| Efficiency                               | >40%                |
| Impedance                                | 50Ohm               |
| Polarization                             | Linear              |
| Gain                                     | ≤2.5dB              |
| B. Material & Mechanical Characteristics |                     |
| Material of Radiator                     | FPC(Black),LJWF25A  |
| Cable Type                               | Φ1.13mm,L50mm,Black |
| Connector Type                           | IPX1                |
| Dimension                                | 26.0*16.8mm         |
| C. Environmental                         |                     |
| Operation Temperature                    | - 30 °C ~ + 80 °C   |
| Storage Temperature                      | - 30 °C ~ + 85 °C   |
| Humidity                                 | 40%~95%             |

### 4.Test Equipment & Conditions

- 1.Network Analyzers Agilent 8753D/5071C
- 2.HSPA and LTE protocol test set R&S CMW500 -PT
- 3.Communications Test Set Agilent 8960
- 4.3D Chamber Test System

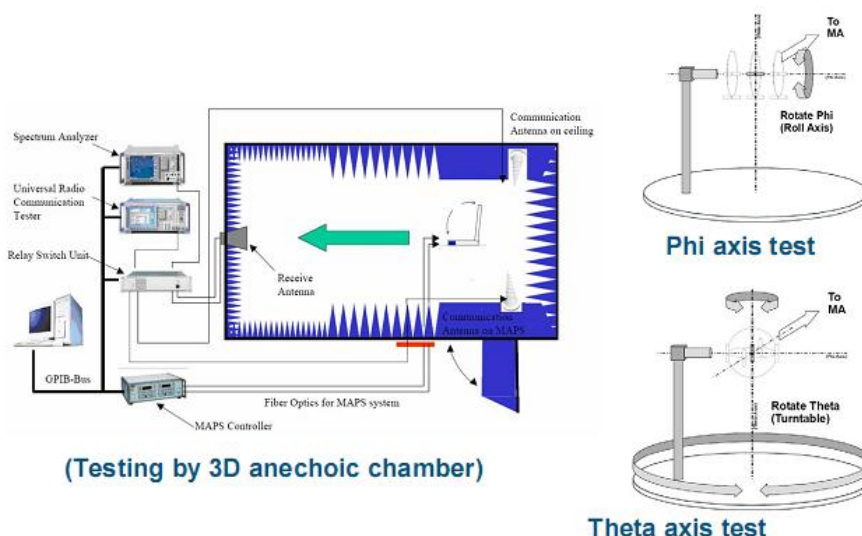


Chart1 Test topology

## 5.Test Report

### 5.1 Voltage Standing Wave Ratio(VSWR).

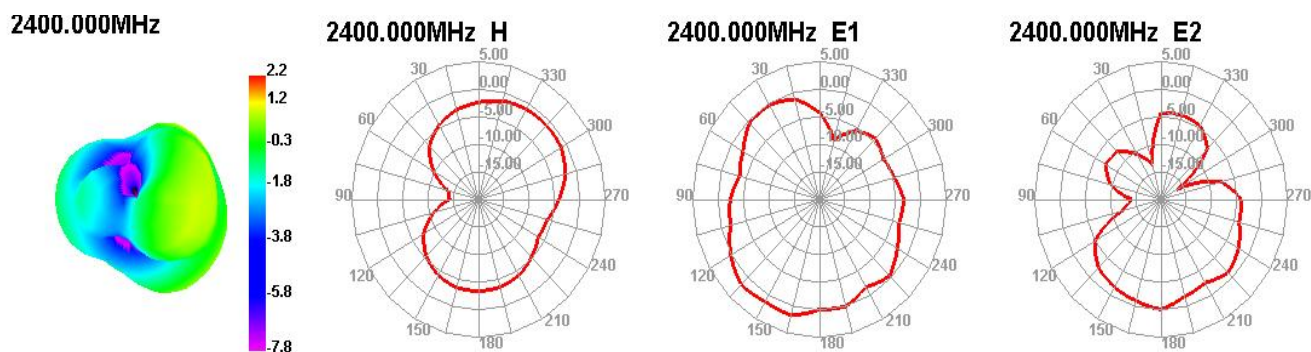


Chart2 VSWR

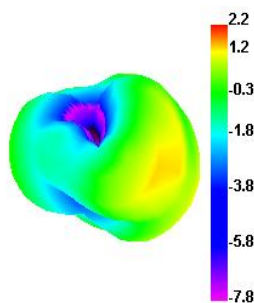
### 5.2 Efficient and gain(estimating conducted by Lejin in Jan,2021,using 3D drawing document that provided by Creality.)

| Passive Test For 2.4GHz | Freq(MHz) | 2400  | 2410  | 2420  | 2430  | 2440  | 2450  | 2460  | 2470  | 2480  | 2490  | 2500  |
|-------------------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                         | Effi(%)   | 52.41 | 60.31 | 56.13 | 57.45 | 53.05 | 54.04 | 52.66 | 55.24 | 61.07 | 60.08 | 50.58 |
|                         | Gain(dBi) | 2.24  | 2.34  | 2.22  | 2.43  | 2.17  | 2.24  | 2.10  | 2.18  | 2.43  | 2.28  | 1.60  |

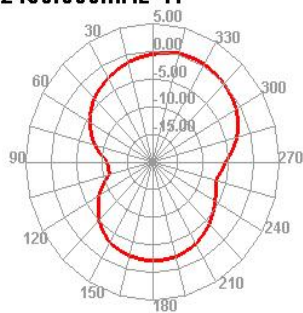
### 5.3 Radiation pattern.



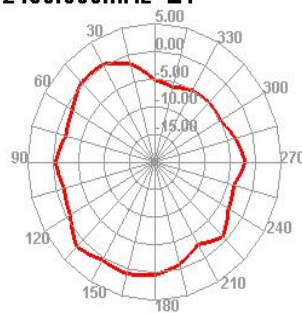
2450.000MHz



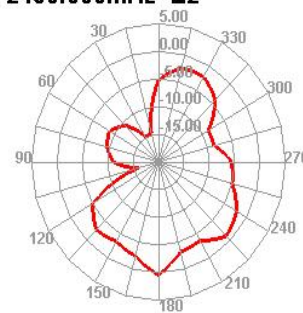
2450.000MHz H



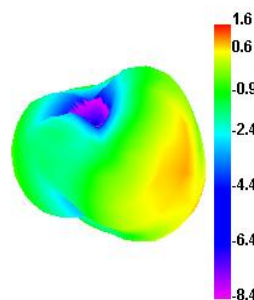
2450.000MHz E1



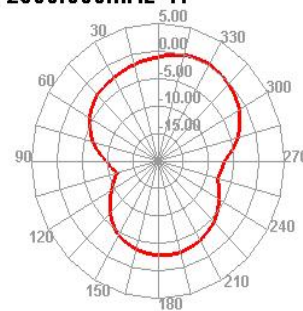
2450.000MHz E2



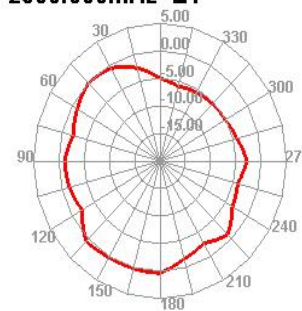
2500.000MHz



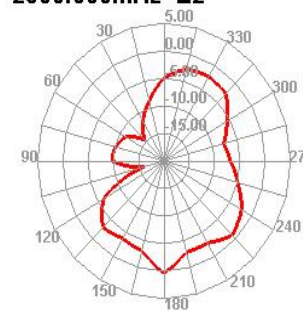
2500.000MHz H



2500.000MHz E1



2500.000MHz E2



## 6. Reliability Test

| Test Item |                                    | Test condition                                                                                                                                                                                                                                                                                                                 | Equipment          | Specification                                                         | Result |
|-----------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------|--------|
| 1         | Low Temp. Storage Test             | Temperature: -30℃ , Time:48hrs<br>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.                                         | Temp.&Humi. Tester | No material deformation is allowed.<br>Electronic Performance is ok . | PASS   |
| 2         | High Temp./High Humid Storage Test | Temperature: 85℃ Humidity: 85% RH Time:48hrs<br>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. | Temp.&Humi. Tester | No material deformation is allowed.<br>Electronic Performance is ok . | PASS   |
| 3         | Salt-Spray 6 pray Test             | Placing antenna in the Salt-Spray Tester ,set the test condition , Temp: 35±2℃ Humidity: 85% NaCl salt spray :5±1%.PH value :6.5~7.2 Testtime:24hours                                                                                                                                                                          | Salt-Spray Tester  | No color change<br>No appear rusting                                  | PASS   |

## 7. Assemble type

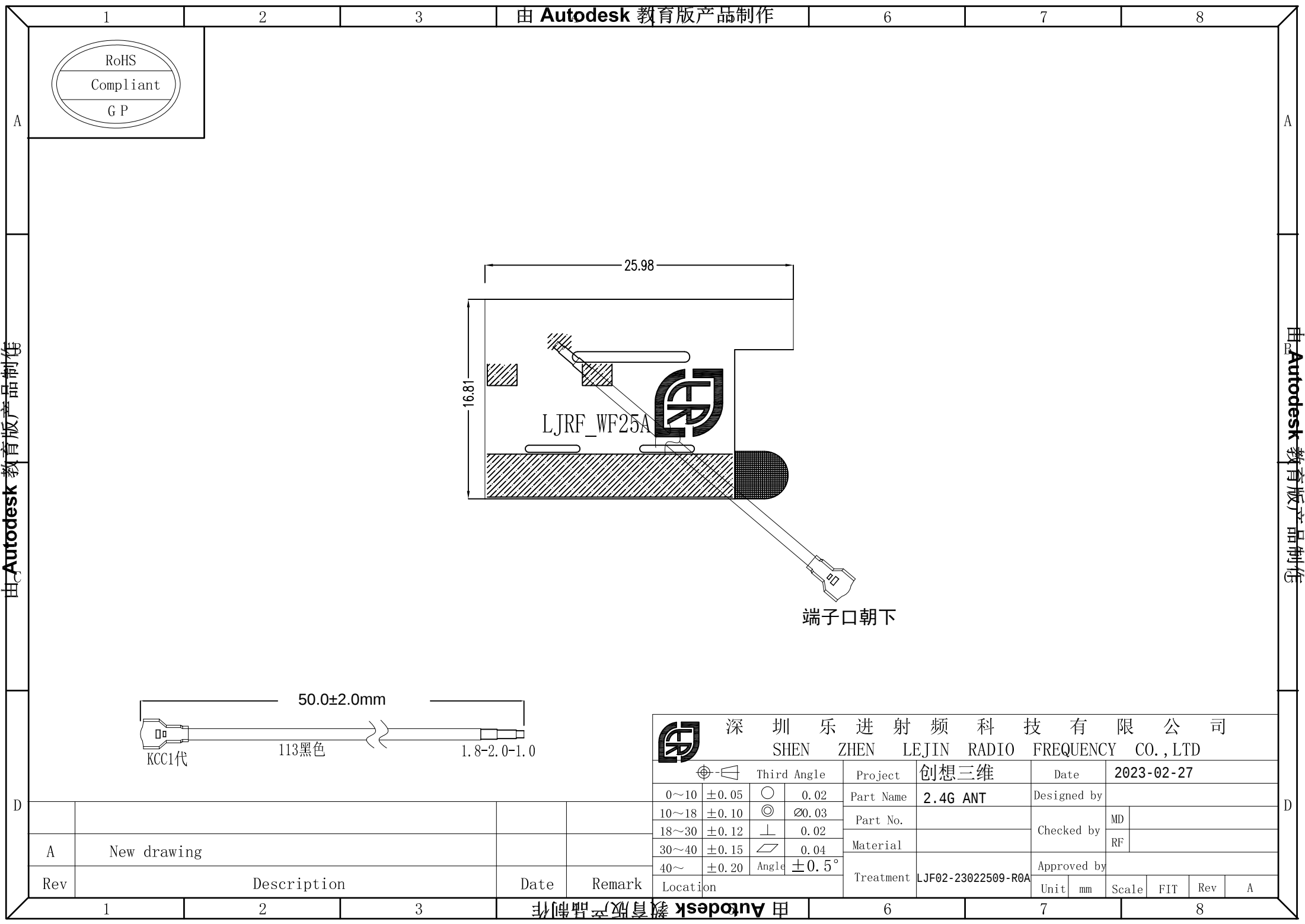


Chart 3 Add conductive foam to connect with PCB



Chart 4 Assemble type

## 8.Product Drawing



由Autodesk教育版产品制作

由Autodesk教育版产品制作

D

D

A

A

RoHS  
Compliant  
G P

|     |             |      |        |  |  |
|-----|-------------|------|--------|--|--|
| A   | New drawing |      |        |  |  |
| Rev | Description | Date | Remark |  |  |

|                                                                                                                                                                      |       |       |         |           |                    |  |             |    |       |     |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|-----------|--------------------|--|-------------|----|-------|-----|-----|
| <div> 深 圳 乐 进 射 频 科 技 有 限 公 司<br/>SHEN ZHEN LEJIN RADIO FREQUENCY CO.,LTD</div> |       |       |         |           |                    |  |             |    |       |     |     |
|  Third Angle                                                                    |       |       | Project | 创想三维      | Date               |  | 2023-02-27  |    |       |     |     |
| 0~10                                                                                                                                                                 | ±0.05 | ○     | 0.02    | Part Name | 2.4G ANT           |  | Designed by |    |       |     |     |
| 10~18                                                                                                                                                                | ±0.10 | ◎     | ∅0.03   | Part No.  |                    |  | Checked by  |    | MD    |     |     |
| 18~30                                                                                                                                                                | ±0.12 | ⊥     | 0.02    |           |                    |  |             |    | RF    |     |     |
| 30~40                                                                                                                                                                | ±0.15 | ▱     | 0.04    | Material  |                    |  | Approved by |    |       |     |     |
| 40~                                                                                                                                                                  | ±0.20 | Angle | ±0.5°   | Treatment | LJF02-23022509-R0A |  |             |    |       |     |     |
| Location                                                                                                                                                             |       |       |         |           |                    |  | Unit        | mm | Scale | FIT | Rev |