



Shenzhen Lejin radio frequency technology Co., LTD

## SPECIFICATIONS FOR APPROVAL

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

Product Name: 2.4GHz Antenna

Product Model: \_\_\_\_\_

Part Number: LJW01-17091602-R0A

Write By : Huxuwen

Issued Date: 2021-04-08

### 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 | 2021/04/08 |        |
|      |                       |            |        |
|      |                       |            |        |



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### 3.Product Specification

| A. Electrical Characteristics            |                     |
|--|---------------------|
| Frequency                                | 2400MHz ~2500 MHz   |
| VSWR                                     | <2.0                |
| Efficiency                               | >40%                |
| Impedance                                | 50Ohm               |
| Polarization                             | Linear              |
| Gain                                     | ≤1.8dB              |
| B. Material & Mechanical Characteristics |                     |
| Material of Radiator                     | Metal               |
| Cable Type                               | N/A                 |
| Connector Type                           | N/A                 |
| Dimension                                | 19.0*3.50*3.75(H)mm |
| C. Environmental                         |                     |
| Operation Temperature                    | - 20 °C ~ + 70 °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         |                     |

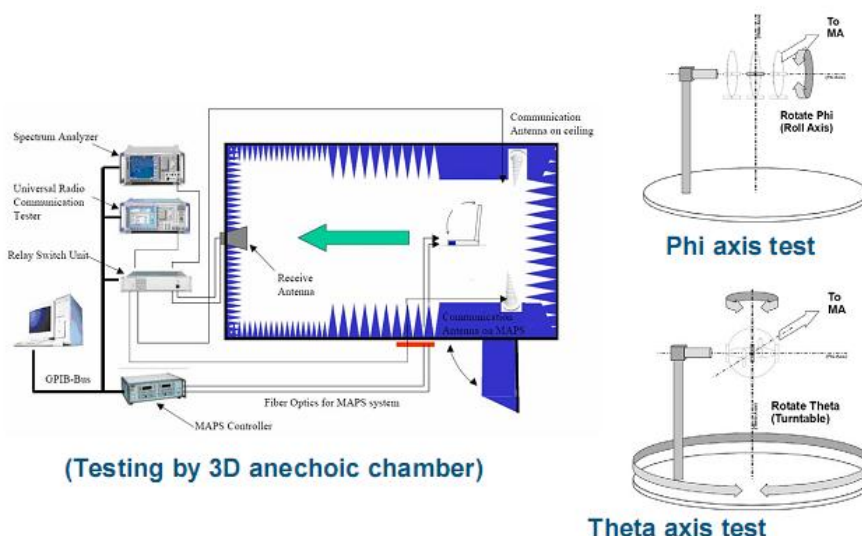


Chart 1 Test topology

## 5.Test Report

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

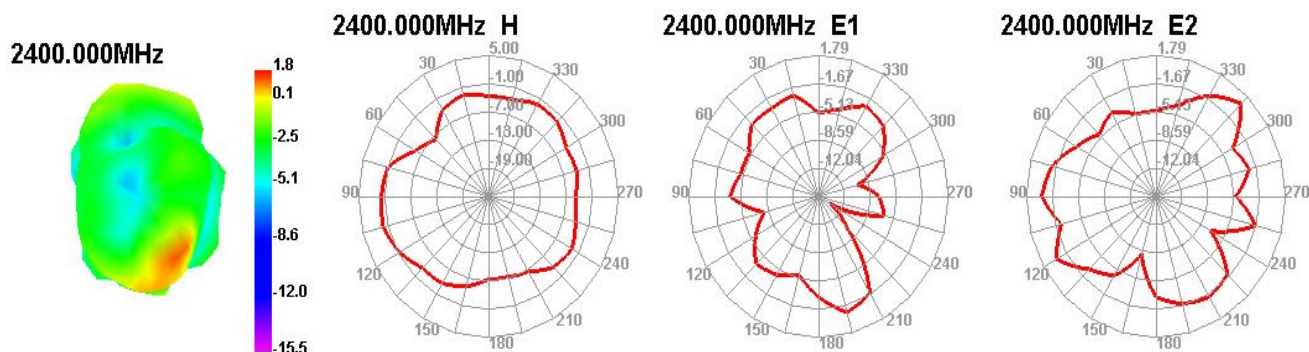


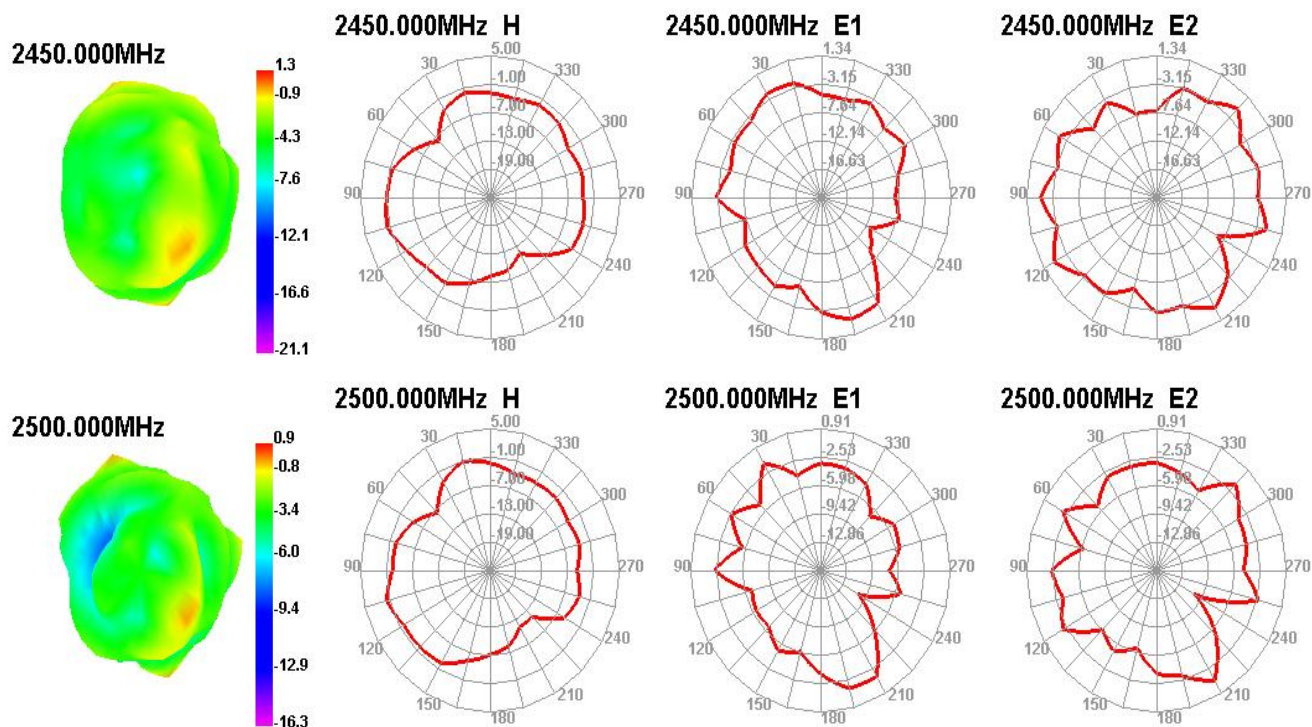
Chart 2 VSWR

### 5.2 Efficient and gain.

| Passive            | Freq(MHz) | 2400  | 2410  | 2420  | 2430  | 2440  | 2450  | 2460  | 2470  | 2480  | 2490  | 2500  |
|--------------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Test For WIFI 2.4G | Effi(%)   | 42.62 | 46.84 | 51.47 | 55.07 | 53.54 | 48.06 | 51.80 | 49.38 | 44.21 | 42.77 | 40.64 |
|                    | Gain(dBi) | 1.47  | 1.44  | 1.56  | 1.65  | 1.54  | 1.79  | 1.62  | 1.59  | 1.62  | 1.37  | 0.36  |

### 5.3 Radiation pattern.



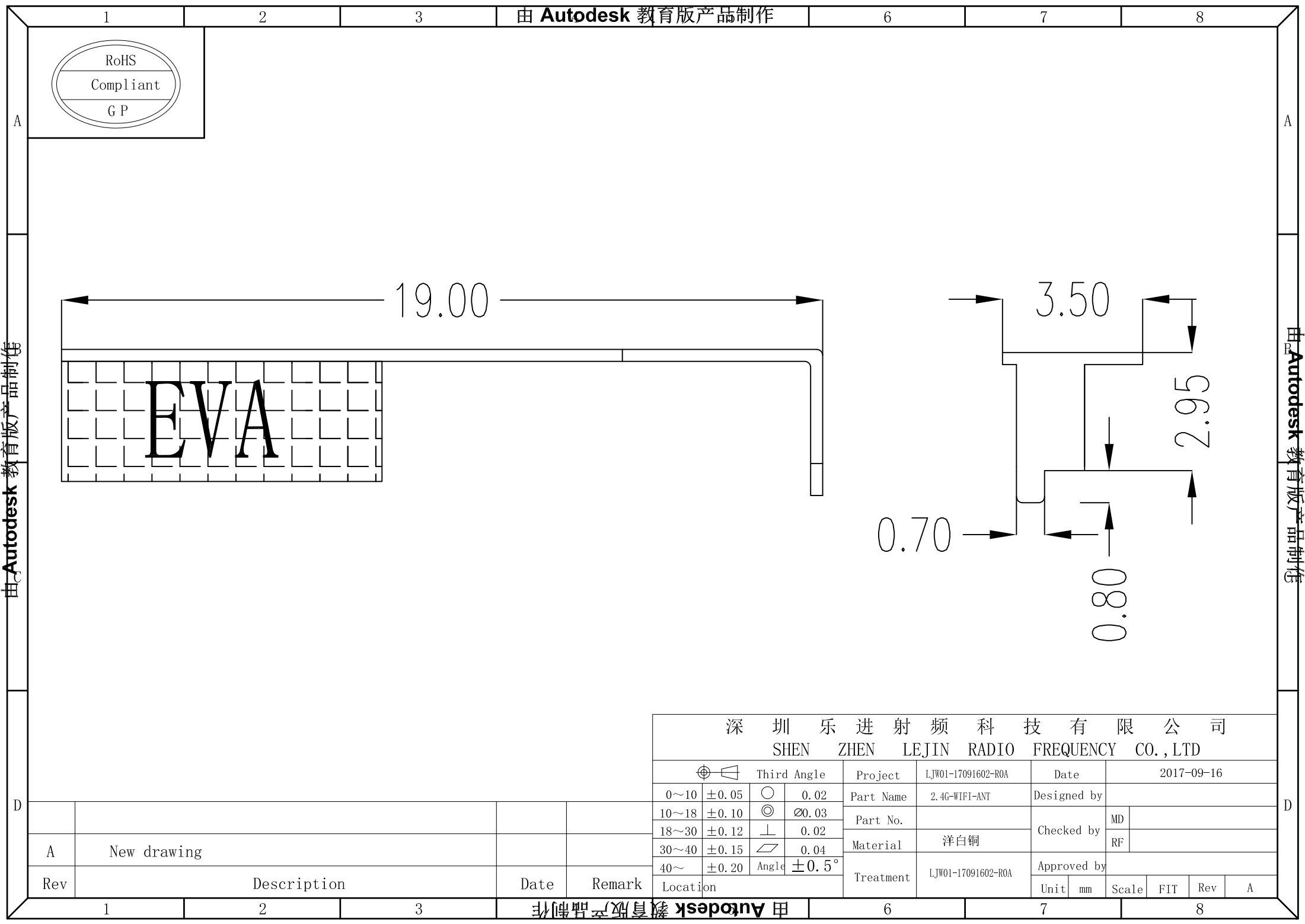


## 6. Reliability Test

| 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.&Hum. 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.&Hum. 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(omitted)

## 8. Product Drawing



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|   |  |           |  |                    |  |                    |  |            |  |       |  |     |  |     |  |
|---|--|-----------|--|--------------------|--|--------------------|--|------------|--|-------|--|-----|--|-----|--|
| 1                                       |  | 2         |  | 3                  |  | 由 Autodesk 教育版产品制作 |  | 6          |  | 7     |  | 8   |  |     |  |
| A                                       |  |           |  |                    |  |                    |  |            |  |       |  |     |  | A   |  |
| RoHS                                    |  |           |  |                    |  |                    |  |            |  |       |  |     |  |     |  |
| Compliant                               |  |           |  |                    |  |                    |  |            |  |       |  |     |  |     |  |
| G P                                     |  |           |  |                    |  |                    |  |            |  |       |  |     |  |     |  |
| 19.00                                   |  |           |  |                    |  |                    |  |            |  |       |  |     |  |     |  |
| EVA                                     |  |           |  |                    |  |                    |  |            |  |       |  |     |  |     |  |
| 3.50                                    |  |           |  |                    |  |                    |  |            |  |       |  |     |  |     |  |
| 2.95                                    |  |           |  |                    |  |                    |  |            |  |       |  |     |  |     |  |
| 0.70                                    |  |           |  |                    |  |                    |  |            |  |       |  |     |  |     |  |
| 0.80                                    |  |           |  |                    |  |                    |  |            |  |       |  |     |  |     |  |
| D                                       |  |           |  |                    |  |                    |  |            |  |       |  |     |  | D   |  |
| 深 圳 乐 进 射 频 科 技 有 限 公 司                 |  |           |  |                    |  |                    |  |            |  |       |  |     |  |     |  |
| SHEN ZHEN LEJIN RADIO FREQUENCY CO.,LTD |  |           |  |                    |  |                    |  |            |  |       |  |     |  |     |  |
| Third Angle                             |  | Project   |  | LJW01-17091602-ROA |  | Date               |  | 2017-09-16 |  |       |  |     |  |     |  |
| 0~10 ±0.05                              |  | Part Name |  | 2.4G-WIFI-ANT      |  | Designed by        |  |            |  |       |  |     |  |     |  |
| 10~18 ±0.10                             |  | Part No.  |  |                    |  | Checked by         |  | MD         |  |       |  |     |  |     |  |
| 18~30 ±0.12                             |  | Material  |  | 洋白铜                |  | Approved by        |  |            |  |       |  |     |  |     |  |
| 30~40 ±0.15                             |  | Treatment |  | LJW01-17091602-ROA |  | Unit               |  | mm         |  | Scale |  | FIT |  | Rev |  |
| 40~ ±0.20                               |  | Angle     |  | ±0.5°              |  | Rev                |  | A          |  |       |  |     |  |     |  |
| Location                                |  |           |  |                    |  |                    |  |            |  |       |  |     |  |     |  |
| 1                                       |  | 2         |  | 3                  |  | 由 Autodesk 教育版产品制作 |  | 6          |  | 7     |  | 8   |  |     |  |