



Shenzhen Lejin radio frequency technology Co., LTD

SPECIFICATIONS FOR APPROVAL

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

Product Name: NFC antenna

Product Model: PF012

Part Number: LJNF02-24082308-R1A

Write By : Limingjin

Issued Date: 2024-11-14

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 | 2024/11/24 | |
| V1.1 | Revise the length of cable,support PF012 model | 2025/02/10 | |
| | | | |



Index

| | |
|--------------------------------|---|
| 1. Cover | 1 |
| 2. Index | 2 |
| 3. Product Specification | 3 |
| 4. Test Equipment & Conditions | 3 |
| 5. Test Report | 4 |
| 6. Reliability Test | 5 |
| 7. Real picture | 5 |
| 8. Product Drawing | 6 |

3.Product Specification

| A. Electrical Characteristics | |
|--|----------------------------------|
| Frequency | 13.56MHz |
| VSWR | ≤ 3.0 |
| Efficiency | N/A |
| Impedance | 50~90Ohm |
| Polarization | N/A |
| Gain | N/A |
| B. Material & Mechanical Characteristics | |
| Material of Radiator | Internal FPC(M659A) |
| Cable Type | Φ0.9mm,twisted-pair,L100mm,Black |
| Connector Type | 1.25Pin*2 |
| Dimension | 40.0mm*14.5mm |
| C. Environmental | |
| Operation Temperature | - 20 °C ~ + 50 °C |
| Storage Temperature | - 30 °C ~ + 80 °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.Spectrum analyzer | RS FPS8 FSH4 |
| 4.3D Chamber Test System | |

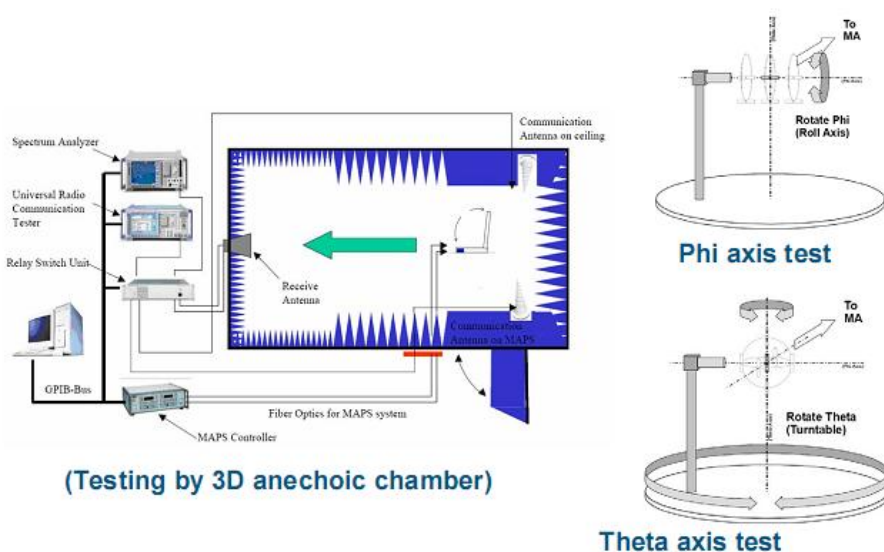
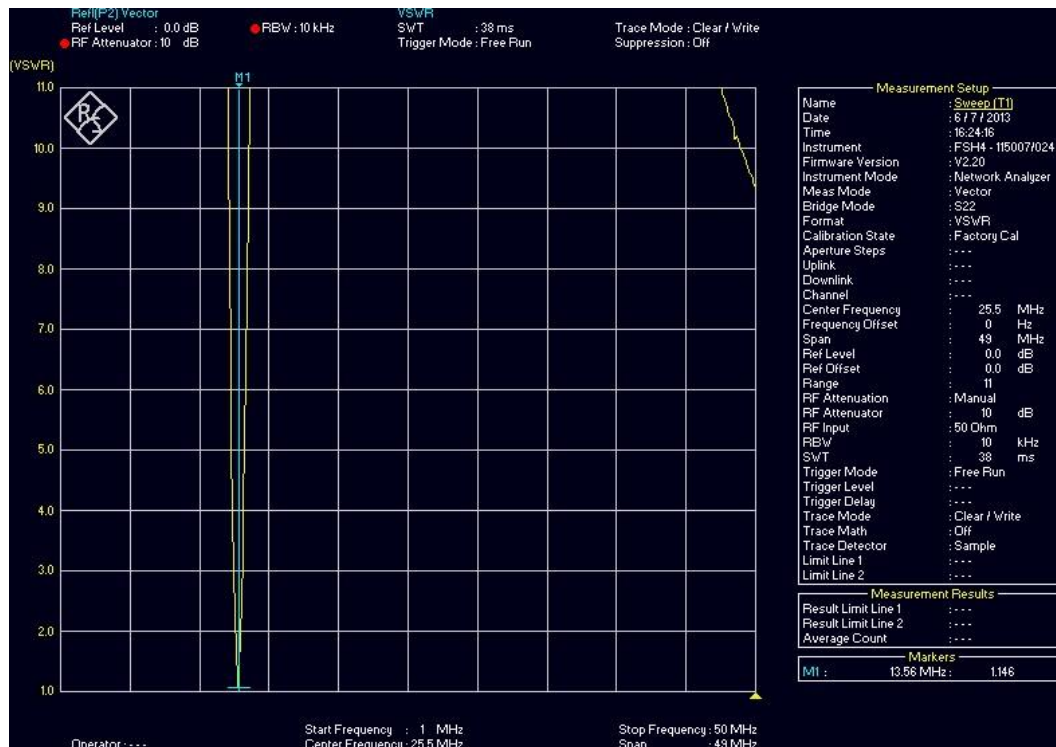


图 1 test topology



5. Test Report



5.1 Matching network.

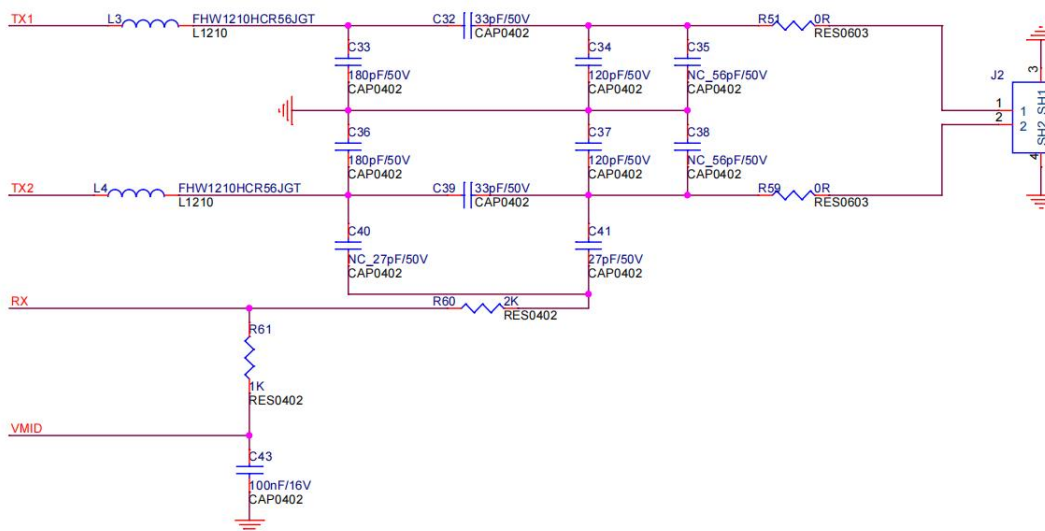


Chart 2 Matching network

5.2 NFC(13.56MHz) parameter.

Inductance: 1.47UH;

Capacitance: 43PF;

Quality factor: 39;

Impedance: 1.26 Ω

Performance: Class A/B/F card: 0.1% Error rate.

6. Reliability Test

| Test Item | Test condition | Equipment | Specification | Result |
|---|--|-----------------------|--|--------|
| 1 Low Temp. Storage Test | Temperature: -30℃, Time:48hrs 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. Electronic Performance is ok. | PASS |
| 2 High Temp./High Humid Storage Test | Temperature: 85℃ Humidity: 85% RH Time:48hrs 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. Electronic Performance is ok. | PASS |
| 3 Salt-Spray 6 pray Test | Placing antenna in the Salt-Spray Tester, set the test condition, Temp: $35 \pm 2^\circ\text{C}$ Humidity: 85% NaCl salt spray: $5 \pm 1\%$. PH value: 6.5~7.2 Testtime: 24 hours | Salt-Spray Tester | No color change No appear rusting | PASS |

7. Real picture

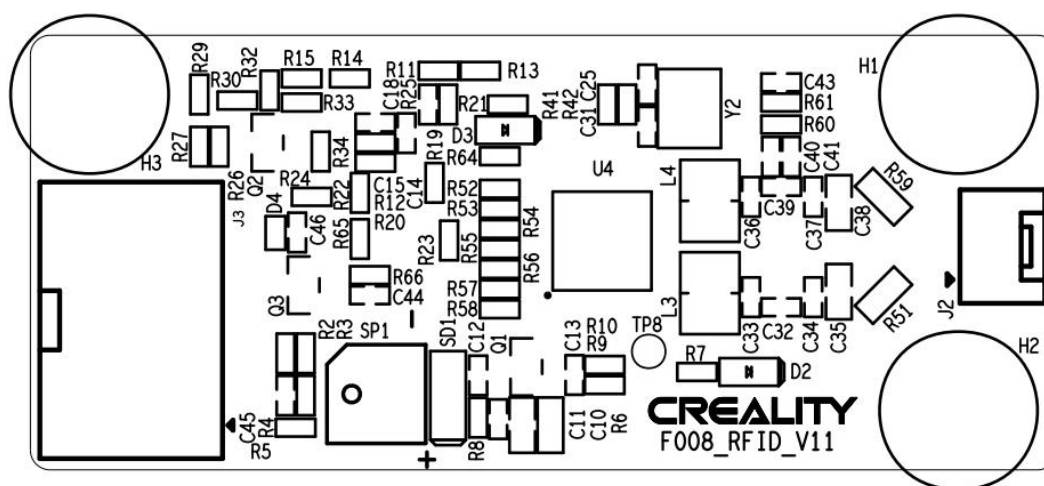


Chart 3 PCB layout

8. Product Drawing

