## **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	

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#### **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	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

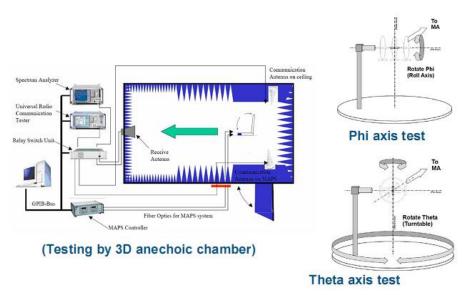
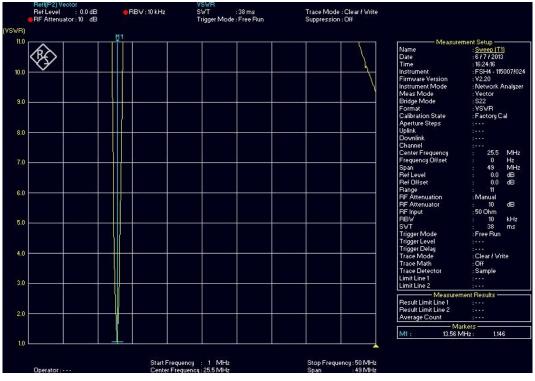


图 1 test topology

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### 5.Test Report



#### 5.1 Matching network.

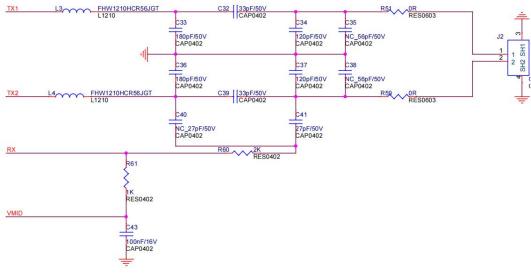


Chart 2 Matching network

#### 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.

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### 6.Reliability Test

Test Item		Test condition	Equipment	Specification	Result
1	Test	Temperature Chamber, keep the temp is 25 C and	Temp.&Hu mi. Tester	No material deformation is allowed. Electronic Performance is ok .	PASS
2	Humid Storage Test	Temperature: 85°C Humidity: 85% RH Time:48hrs Test condition: Placing antenna in a Low/High Temperature Chamber, keep the temp is 25°C and humidity is 65% for one hour, then step-up the temp. to 80°C and the humidity up to 85% in one hour, store antenna for 44 hours; step-down tempto 25°C ,test antenna after 2 hours.	Temp.&Hu mi. 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: $35\pm2^{\circ}$ C Humidity: 85% NaCl salt spray : $5\pm1$ %.PH value :6.5~7.2 Testtime:24hours	Salt-Spray Tester	No color change No appear rusting	PASS

### 7.Real picture

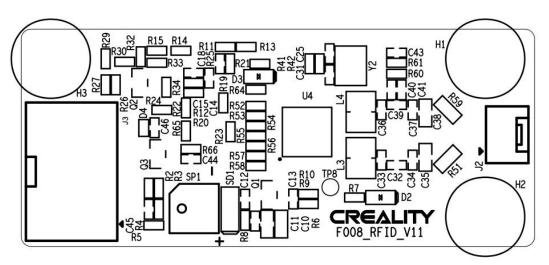


Chart 3 PCB layout

### 8. Product Drawing

$\square$			J	C	Ψ	А	
	Rev	A					
1		New drawing	Remark: 1.FPC material:Electrolytic copp 2.Backing in behind:3M300LSE. 3.Tolerance: Cuting die:±0.1mn 4.ROHS:(Pb,Hg,Cr+6,PBBs,PBI			RoHS Compliant GP	1
2	Description	Πg	Remark: 1.FPC material:Electrolytic copper. 2.Backing in behind:3M300LSE. 3.Tolerance: Cuting die:±0.1mm;Circuit on FPC:±0.05mm; others are ±0.05mm. 4.ROHS:(Pb,Hg,Cr+6,PBBs,PBDEs),<1000ppm; Cd,<100ppm.	Lejin RF			2
ω			on FPC:±0.05mm; ot	Lajin № M659A NFC ANT			ω
4	Date Remark		ners are ±0.05mm.		SSSE		4
ບາ	+0.20 Angle _		0~10 ±0.05 O 0.02	UL1571#28AV			л
6		Part No. Material	乐 进 射 频 SHEN ZHEN LEJIN RAD Ingle Project Creality 3D 0.02 Part Name NFC ANT	C: 100.0±5.0mm UL1571#28AWG, 2P黑色线 双绞, W-1, UL			6
	182308-R1A Approved by Unit mm Scale		和DIO FREQUENC y 3D Date Designed by	100.0±5.0mm 双绞, WI-1, UL认证 GH1.25-2P, 白色公头带扣胶壳		A : 40 A : 40 A : 40 A : 40 A : 40	7
8	le FIT Rev A		有 限 公 司 Y CO., LTD 2024-12-27				8
				0	ω	А	-