

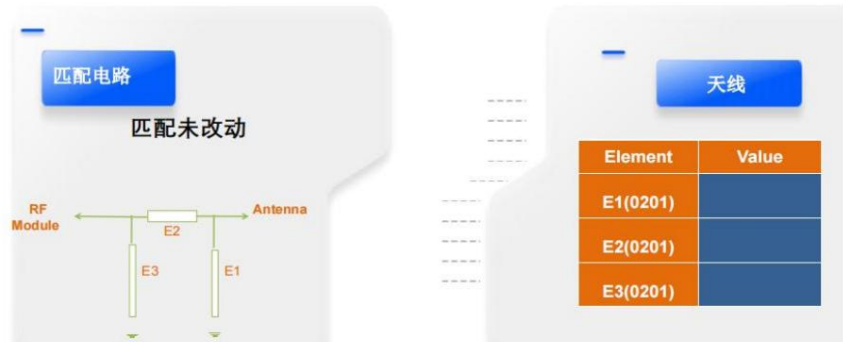
Kaadas 凯迪仕		Shenzhen Kaadas Intelligent Technology Co., Ltd.	
Shenzhen Kaadas is a certified technology company.			
I. Material Information			
Product Description	Supplier information		Client Information
	Manufacturer Part Number: X3372-DDL220X-WIFI		Material code:
	Product Description: FPC Antenna		Material version:
	Specifications:		Product Description: FPC Antenna
	Manufacturer:		Specifications
	Supplier/Agent Name: Shenzhen Heming Micro Technology Co., Ltd.		Client type:
List of attachments:	R sample R Specification		R Engineering Drawings RCPK Report
	R FAI Full-Size Report R Reliability Test Report y Safety Report		R Process Control Chart R Packaging Method
	RoHS Report y		yCA65 Report RREACH Report
	Halogen-Free Warranty Declaration y Halogen-Free Test Report		
Supplier/Agent Agent approval	Produced by: Reviewed by:		approve:
II. Signature and Approval			
Technical Confirmation Section	structure:		hardware:
	Hard Test:		Lock body:
	ID/Packaging:		Components:
	Product:		other:
	y Formal recognition y Temporary approval for limited quantity of _____ PCS Procurement		approver:
	y Refusal to acknowledge:		
	This approval is applicable to all Philips products.		
Quality Engineering division:	Signatory:	Controlled stamping	
	y Procurement y Hardware y Structure y Engineering y ID		y Devices y Software
	y Zhejiang Kaidishi	y Zhejiang Kones	y Zhuhai Jianshi y Supplier
Form Number: SZKDS-QA-4-001			
Version: A1		Shelf life: three years	

Manufacturer:Shenzhen Conex Intelligent Technology Co., Ltd.
Address:Office 01, 10th Floor, B2 Building, Chuangzhi Cloud City Phase II Project, Xiandong Road, Xili Community, Xili Street, Nanshan District, Shenzhen, China

Shenzhen Heming Micro Technology Co., Ltd.

规格书

1. Matching circuit



2. OTA Test Data

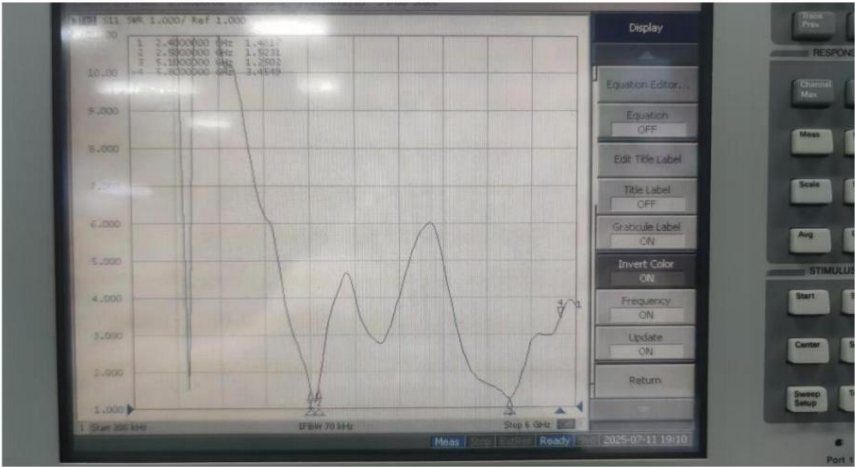
Band	Channel	TRP	TIS
WIFI-B模	1	15.26	-88.53
	6	14.68	-88.33
	11	14.48	-88.55

3. Passive WiFi 2.4 Antenna Test Data

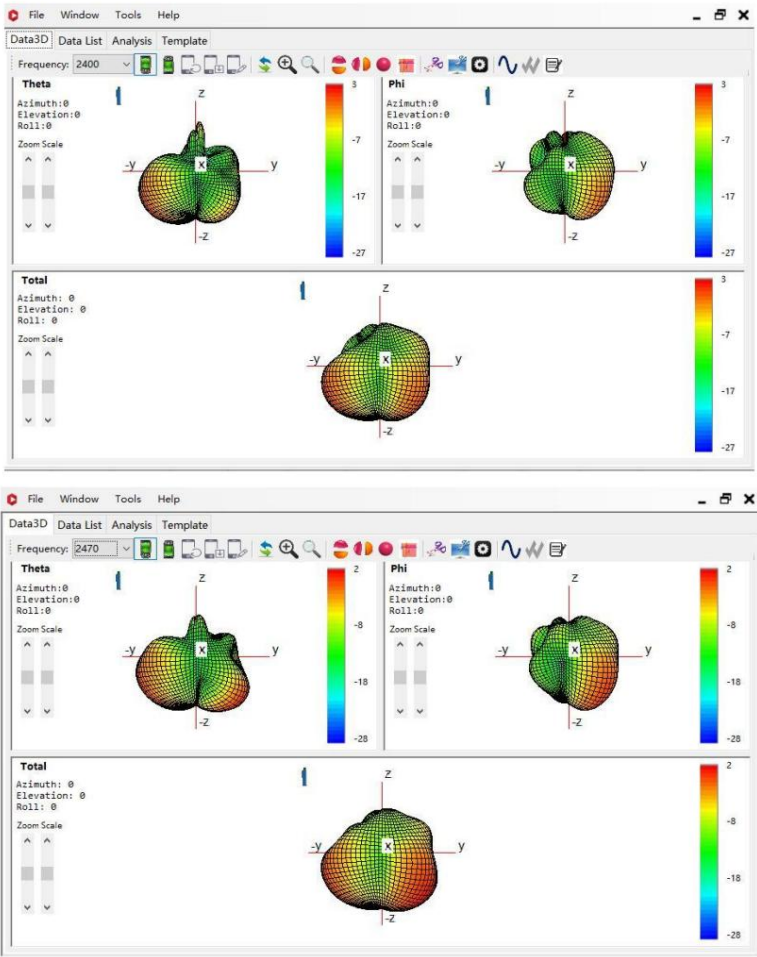
频率	增益	效率
2400	1.95	48.62
2410	2.05	49.06
2420	2.18	50.04
2430	1.85	48.19
2440	1.64	47.55
2450	1.63	46.91
2460	1.6	47.08
2470	1.45	46.71
2480	1.3	46.86
2490	1.17	46.68
2500	1.01	46.45

2.4G

4. VSWR



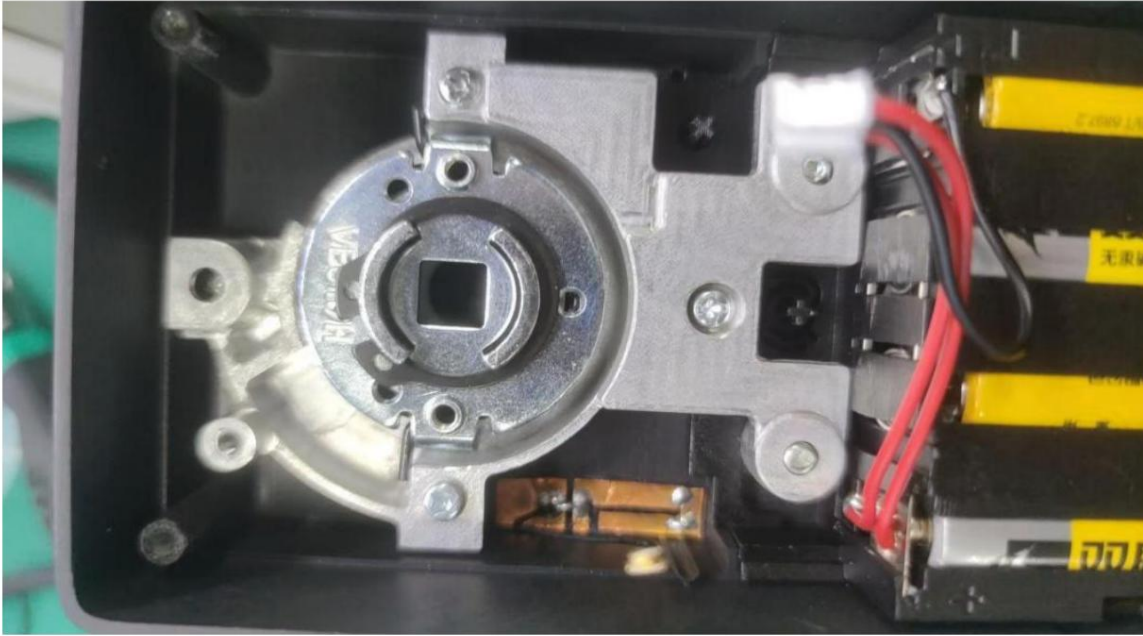
5. Directional Chart

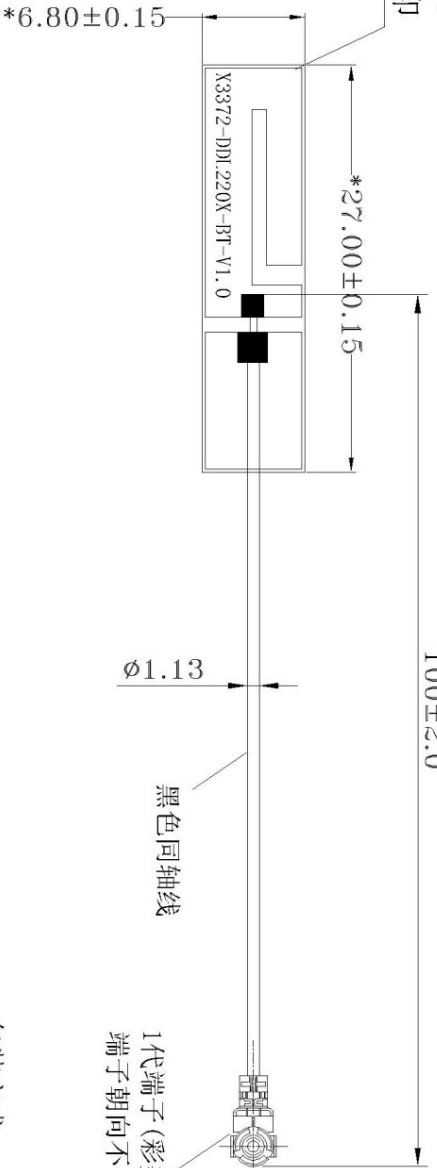
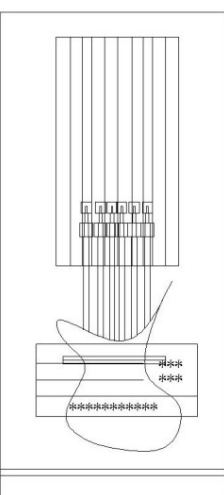


6. Environmental treatment

未做环境处理

6. Antenna position



1	2	3	4	5	6																																																																
环保要求: ☒ ROHS ☐ REACH 无																																																																					
FPC 黑色油墨, 白色丝印																																																																					
																																																																					
包装方式 1: 外露线长大于80MM端子需用珍珠棉包扎 2: PE袋包装; 100PCS/包 3: PE袋需贴上内标签 4: PE袋规格依产品尺寸而定																																																																					
																																																																					
技术要求 1: “*” 重要尺寸标注 2: 天线电压驻波比对照测试图形; 3: 天线焊接部位牢固, 线缆尺寸准确; 焊锡需饱满圆润; 表面不能有油渍残留。 4: 丝印字体清晰不易脱落; 5: 连接器朝向倾斜角度不能大于或小于35° 6: 背面为背胶面; 离心纸面切一刀为撕手位 7: 水平拉力≤7N, 接头不应有松动; 脱落现象 8: 天线切口不可有漏铜现象。 9: 产品必须符合欧盟RoHS要求。																																																																					
深圳市和鸣微科技有限公司 <table><tr><td colspan="2">未注公差标准</td><td>机种</td><td>X3372-DDL220X</td><td>品名</td><td>WIFI天线</td><td>日期</td><td>2025.08.06</td></tr><tr><td>0-10</td><td>±0.05</td><td>料号</td><td>X3372-DDL220X-WIFI</td><td>材料</td><td>特殊工艺</td><td>MD</td><td></td></tr><tr><td>10-18</td><td>±0.06</td><td>材料</td><td></td><td>共 1 页</td><td>第 1 页</td><td>RF</td><td></td></tr><tr><td>18-30</td><td>±0.08</td><td></td><td></td><td></td><td></td><td>审核</td><td></td></tr><tr><td>30-40</td><td>±0.09</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>40-</td><td>±0.10</td><td>Angle</td><td>±0.5°</td><td>第一视角</td><td></td><td>单位</td><td>mm</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>比例</td><td>Fit</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>版本</td><td>V00</td></tr></table>						未注公差标准		机种	X3372-DDL220X	品名	WIFI天线	日期	2025.08.06	0-10	±0.05	料号	X3372-DDL220X-WIFI	材料	特殊工艺	MD		10-18	±0.06	材料		共 1 页	第 1 页	RF		18-30	±0.08					审核		30-40	±0.09							40-	±0.10	Angle	±0.5°	第一视角		单位	mm							比例	Fit							版本	V00
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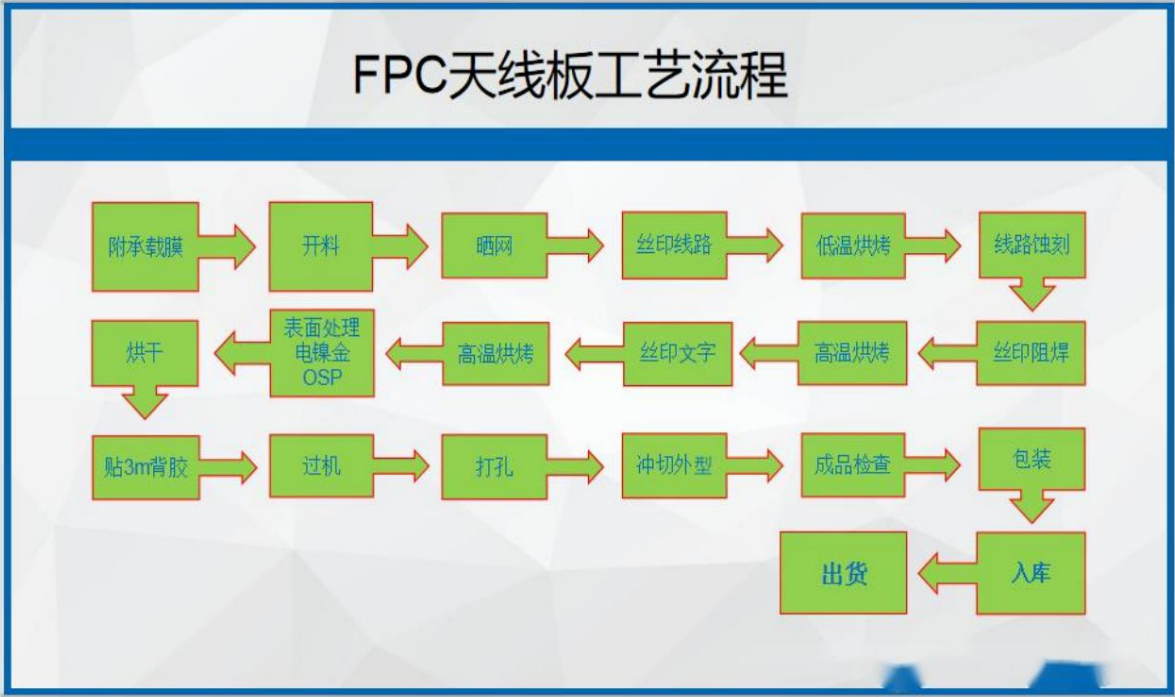
CPK Report

Part Number	X3372-DDL220X-WIFI	Vendor	
Description (Part Name)	FPC	Inspected (Confirmed)	
Tool Number (Modulus)		Inches/mm (inches/millimeters)	
Cavity (Acupoint Number)		Material Name	
		Material Code	
Revision	GA	Date	2025.07.29
Dim. Designator (Size Number)	BT antenna		
	1	2	3
Nominal size	27.000	6.800	0.120
+ Tolerance (positive tolerance)	0.150	0.150	0.030
- Tolerance (negative tolerance)	-0.150	-0.150	-0.030
Upper Limit	27.150	6.950	0.150
Lower Limit (Specification Lower	26.850	6.650	0.090
Limit) 1	27.062	6.836	0.128
2	27.048	6.865	0.132
3	27.034	6.834	0.125
4	27.056	6.855	0.126
5	27.074	6.862	0.124
6	27.062	6.836	0.128
7	27.048	6.865	0.132
8	27.034	6.834	0.125
9	27.056	6.855	0.126
10	27.074	6.862	0.124
11	27.062	6.836	0.128
12	27.048	6.865	0.132
13	27.034	6.834	0.125
14	27.056	6.855	0.126
15	27.074	6.862	0.124
16	27.062	6.836	0.128
17	27.048	6.865	0.132
18	27.034	6.834	0.125
19	27.056	6.855	0.126
20	27.074	6.862	0.124
21	27.062	6.836	0.128
22	27.048	6.865	0.132
23	27.034	6.834	0.125
24	27.056	6.855	0.126
25	27.074	6.862	0.124
26	27.062	6.836	0.128
27	27.048	6.865	0.132
28	27.062	6.836	0.128
29	27.048	6.865	0.132
30	27.034	6.834	0.125
31	27.056	6.855	0.126
32	27.074	6.862	0.124
MAX.	27.074	6.865	0.132
MIN.	27.034	6.834	0.124
AVERAGE	27.055	6.850	0.127
STDEV	0.013	0.013	0.003
CP	3.753	3.757	3.421
Cpk	2.381	2.494	2.601
TOOLING (measuring tools)	Anime	Anime	Anime

Process flow diagram

Customer		Written By (Production)		Origin. Date (Date of Production)	
Part Number	X3372-DDL220X-WIFI	Revised By (Edited)		Revised Date	
Description (Part Name)	FPC	Approved By (Confirmed)		Approved Date (Confirmation Date)	

Production Operation Flow Chart



Process control chart

☐ Sample Production ☐ Plan Number: ☒ Production				Main contact person/phone number: 18815476290				Date Version Change History First edition released on April 22, 2024 (A/0).					
RAD/QC-QCP-001 Part Name/Latest Change Level													
X3372-DDL220X-BT Antenna				Core group: Mo Xuan, Lin Zhenquan, Zhou Weidong, Yang Qin									
Part Name/Description: FPC				Organization/Factory Approval/Date: April 22, 2024									
Organization/ Factory: Shenzhen Heming Microelectronics Technology Co., Ltd.		Organization Code		Other Approvals/Dates (if required)									
Project sequence (equipment name)	work			Management Point		Frequency of confirmation by			management responsible persons		Determination methods	Data format	Related standard types
	Work drawing	Engineering drawings	Homework content	Project Management	Quality characteristics and precautions	Operator	QC	technician	quantity	Operation cycle			
													
QC1	Incoming material inspection (2D)		Material receiving inspection (based on the material receiving inspection standards and drawings for the parts).	Incoming material inspection	Size: 5 pieces/batch; Appearance AQL: 0.4/batch			•	Size: 5 pieces/batch appearance AQL = 0.4 per batch	QC	incoming materials and measures the quantity.	IPQC inspects	SIP, drawings
PED	(Equipment Inspection)		Inspection equipment for punching and positioning holes using a punching machine or automatic punching machine.		Verify that the hole punch is within its calibration period and that its parameters are consistent with the parameter control table.				• Total quantity	technician	Visual Inspection	Drilling Machine Inspection Checklist	
QC2	First article inspection (2D)		Appearance and dimensions: in accordance with inspection specifications and drawings (specifications).		5 pieces were randomly sampled for appearance inspection, C=0; 5 pieces were randomly sampled for dimensional inspection, C=0.			•	5 pieces were randomly sampled for appearance inspection, C=0; Size sampling quantity: 5 pieces C=0;	QC	Visual inspection First Article Test Report	IPQC,	AIP, Issuing Drawings

QC3	Process inspection (2D)		Specifications and dimensions (as per product engineering drawings) Appearance (as per inspection specifications)	Process sampling inspection	Appearance is calculated at 5 pieces/2 hours per station; dimensions are calculated at 5 pieces/4 hours per finished product.		•		Appearance according to each 5pcs/2hs Size according to	QC visual inspection and measurements	Product inspection report	IPQC	AIP, Insulating drawings
1	Full inspection (CCD)		1. Remove the fully inspected products from the pallet. 2. Inspect the FPC products for scratches, missing punches, misalignment, etc. 3. Inspect the area around the FPC holes for dents or other FPC marks. 4. Clean heavily soiled areas with alcohol. 5. Place the qualified products back onto the pallet.	Precautions	1. Wear gloves during operation and handle products with care. 2. Be sure to wipe heavily soiled areas. 3. Always check the edges of the FPC outer holes. Are there any burrs?		•		Product 5pcs/4hs Full quantity of operators visually inspected				SOP2
QC4	Finished product inspection (2D)		Specifications and dimensions (as per product engineering drawings), appearance (as per inspection standards).	FQC spot checks	Size: 5 pieces/batch; Appearance AQL: 0.4/batch		•		Size 5PCS/ Appearance AQL for each batch = 0.4/ Each batch	QC		FQC	drawing Product inspection Record (AIP)
14	Package		1. Check the tray for any missing or overfilled products. 2. Packing quantity regulations: 100 pieces per tray, 100 pieces per pack. Package 3. Cover the top of each stack of products with an empty tray. 4. Pack according to customer requirements. 5. After packing into boxes, seal the boxes and affix RoHS, outer box labels, HF labels, etc.	Precautions	1. Wear gloves during operation and handle products with care. 2. Place trays in a staggered manner.		•		Full quantity of operators visually inspected				SOP4
QC5	Outbound inspection		1. Is the part number correct? 2. Does the outer box label match the actual product? 3. Does the order number match the PMC shipping order number? 4. Is the outer box packaging intact?	Note 1. Each box must be checked.			•		Full Quantity	QC Visual	Shipment Report (AIP)		

Note: Table shows
preparations before
production;

The table shows production;



Performance and reliability test report

Fill in the box indicated by the arrow with: This

Customer			Written By (Production)				Origin. Date (Date of Production)				
Part Number: X3372-D0L220X-WIFI		Revised By						Origin. Date (Date of Production)			
Description (Part Name)		FPC		Approved By (Confirmed)				Origin. Date (Date of Production)			
client		Project Name					Test date		Completion date: 2025/7/26 - 2025/7/28		
Serial Number	Test Item	Test Instrument	Test conditions	Judgment criteria	Test sample					determination	
					1	2	3	4	5		
1	Salt spray test	Salt spray test chamber	Spread the product out in a 5% NaCl environment at 35°C. The experimental machine was left to stand for 24 hours and then dried for 48 hours.	The color, gloss, surface appearance, and hardness remained unchanged. No scratches, no cracks, and no reduction in electrical performance.	OK	OK	OK	OK	OK	OK	
2	High-temperature and high-humidity storage	constant temperature and humidity chamber	1. Temperature: 65y, Humidity: 90-95% 2: Time 48H 3. After testing, allow the phone to return to room temperature. 2H. Check the appearance, structure, and all functions are OK.	The color, gloss, surface appearance, and hardness remained unchanged. No scratches, no cracks, no warping, and no issues with electrical performance. damage.	OK	OK	OK	OK	OK	OK	
3	Low temperature storage	Constant temperature and humidity test chamber	1: Temperature -30y 2: Time 48H 3. After testing, allow the phone to return to room temperature. 2H, Inspect the appearance, structure, and all functions.	All functions are normal, no labels are sticking up, and the label can be read and aligned correctly. Constant scanning, no antenna tilting. Mobile phone RF performance. The indicators meet the requirements, the functions are normal, and there is no change in the casing. The surface is cracked, bubbly, moldy, and has fissures. Discoloration or other abnormalities	OK	OK	OK	OK	OK	OK	
4. Adhesion Test		3M tape	Using 3M 600 adhesive tape, on the same side of the FPC antenna... Position, quickly tear off the tape 3 times vertically.	No paint peeling	OK	OK	OK	OK	OK	OK	
5	Resistant to hand sweat	Non-woven fabric/artificial sweat	Non-woven fabric (or filter paper) soaked in sweat. Apply it to the product surface and seal it in a plastic bag. After being placed at room temperature for 48 hours, the product surface... Wipe away any sweat from the face and place at room temperature. 2H; and perform an adhesion test. Acidic sweat: pH=4.7; Alkaline sweat: pH=8.8; perform each test once. (Artificial) Sweat preparation method: Sodium chloride (NaCl) 20 g/L; Ammonium chloride (NH4Cl) 17.5 g/L; Urine 5g/L of acetic acid (CH4N2O); (CH3COOH)2.5g/L; Lactic acid (C3H6O3) 15g/L; then add NaOH until... The solution pH is 4.7 or 8.8.	1. The product surface is free from blistering, oxidation, deformation, and other defects. Abnormalities such as warping, obvious discoloration, and coating peeling; minor Discoloration is acceptable. 2: RF performance meets design requirements	OK	OK	OK	OK	OK	OK	
Note:											
Compiled by: Zhou Weidong						Reviewed by: Mo Xuan					

Packaging

Part	094S108403GA	Product Name:	X3372-DDL220X-WIFI
Number: Product	Antenna (Black)	Packaging Materials:	Resealable bags + cardboard boxes
Specifications:	1 box	Packaging method:	PFC full-page packaging
Packaging Quantity: Carton	Quantity:		

Figure 1: Whole-plate packaging



Figure 2: Packaging Method



Figure 3: View of the packaging box (front, side, top)



Note: FPC products are manufactured individually and packaged in PE bags for shipment.

Environmental Compliance Report RoHS+RECAH

SALEABLE PART																						
Part number			Part Name/Model			Supplier part number			Manufacturer Name			Supplier Green Material Labeling Method										
FPC						X3372-DDL220X-WIFI Shenzhen Herning Micro Technology Co., Ltd.																
SUB-PART																						
Serial Number	Name (Chinese/English)		Part Number (monomer/monomer in) Material composition (part number or grade)	single product Dosage (g)	supplier	Test report tell	Restricted substance content (PPM)						control method	SGS Report/ROHS				Halogen-free test report tell		CA65 RECAH		Remark (item name) The material is used in product P/N and it)
	monomer	substances in monomers Quality components					With/Without Lead, Cadmium, Mercury, Hexavalent Chromium (PBB, PBDE)								serial number	Report date Effective date	Report expiration date	Query website	query website	query website	website	
1	Substrate	Halogen-free epoxy resin Adhesive		5.76	Suzhou Cai Gelun Ti Materials Limited company	There is	ND		ND	ND	ND	ND	SGS		SHAEC24028 809006	2024/12/20	2025/12/20					
2	ink	Epoxy acrylate Oligomers		3.0045	Yulibao Technology Technology Co., Ltd.	There is	ND		ND	ND	ND	ND	SGS		ETR2550138 3	2025/5/20	2026/5/20					
3	plating	Cd		0.1188	Dongguan Xindasheng Electronic technology has Limited Company	There is	ND		ND	ND	ND	ND	ST		A2250164855 101001E	2025/03/18	2026/03/18			/		
4	Adhesive backing	acrylate polymerization Material glue		3.5000	Xianghong Technology has	ND			ND	ND	ND	ND	SGS		SHAEC240 27480901	2024.12.06	2025.12.06					
5																						
6																						
7																						
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