

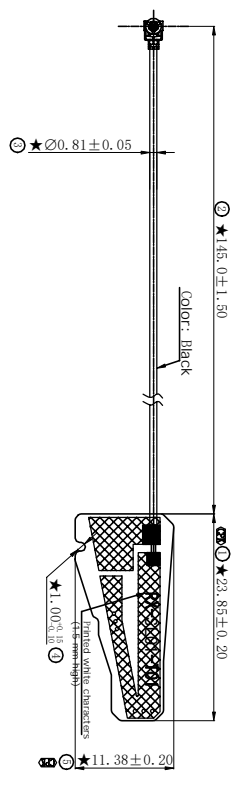
Recognition

Product description	Supplier Name: KunShan Innowave Communication Technology CO.,Ltd	Supplier Material Type: WIFI antenna		
	Supplier Address: Building C, No. 1689 Zizhu Road, Yushan Town, Kunshan City, Jiangsu Province	Innowave Number:		
	Material Name: SL02 WIFI antenna			
	Version number: V01			
	Remarks:			
Annex	<input checked="" type="checkbox"/> Specifications	<input checked="" type="checkbox"/> Process Flow Chart	<input checked="" type="checkbox"/> Control Plan	<input checked="" type="checkbox"/> SPEC Blueprint
	<input checked="" type="checkbox"/> CPK Report	<input checked="" type="checkbox"/> Full Size	<input checked="" type="checkbox"/> Reliability Test	<input checked="" type="checkbox"/> Electrical performance
	<input checked="" type="checkbox"/> Materials/ RoHS reports	<input checked="" type="checkbox"/> Packing	<input checked="" type="checkbox"/> Sample	
Vendor endorsement	Proposed:	Audit:	Ratification:	
The above shall be completed by the supplier, and the following shall be completed by the customer				
Technical confirmation column	Structure:	Hardware:	ID:	
	Project Manager:	Testing Department:	R & D quality:	
	Environmental Engineer:			
Final confirmation	Supplier Quality:	<input type="checkbox"/> RoHS Material	<input type="checkbox"/> not RoHS Material	
	RoHS status determination:	<input type="checkbox"/> meet halogen-free	<input type="checkbox"/> meet REACH requirements	
	other environmental compliance:	<input type="checkbox"/> other environmental requirements	requirements	
Conditions of recognition	<input type="checkbox"/> Official recognition			
	<input type="checkbox"/> limited recognition			
	<input type="checkbox"/> refused to admit			
Distribution department	<input type="checkbox"/> IQC	<input type="checkbox"/> customer	<input type="checkbox"/> SQE/ Document Control	
	<input type="checkbox"/> Other _____	<input type="checkbox"/> after sale	<input type="checkbox"/> suppliers	

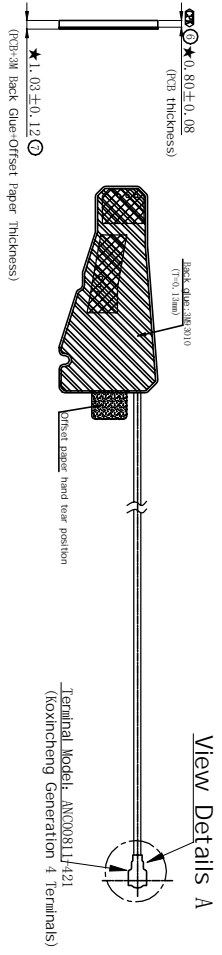
Directory

- 1、 cover
- 2、 Directory
- 3、 SPEC Blueprint
- 4、 Electrical performance
- 5、 Materials/ RoHS reports
- 6、 Full Size
- 7、 CPK Report
- 8、 Reliability test report
- 9、 Manufacturing Flow Chart/Quality Control Plan
- 10、 Packing

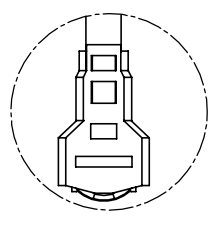
1	2	3	4	5	6	7	8	
				Edition	Sign	Change Content	Name	Date
				T01		Mass Production drawings	Xiaobo li	2021.04.28



Front (Side A)



Reverse side (Side B)



View Details proportion 5:1
Terminal Head Direction towards
GoldenFinger Face (Welded Face)

Note:
1. Material: PCB base material: the total thickness of FR4; product is 1.03 mm, dielectric constant 4.6, copper foil is electrolytic copper;
2. The back glue treatment, the drawing does not mark the R angle is the R0.5mm;
3. Tin plating is used in yellow welding;
4. Surface greenery treatment;
5. There should be no obvious scratches, dents, burrs, grease and dirt on the surface of the PCB plate.

Technical Requirements:

- "★" The size is the key size, The size of "CPK" once refer to tolerance table. actual matching size, "△" For design changes, Unmarked tolerance, short circuit and hout bump, no virtual welding, ti other.
- Require smooth solder joint with phenomena. Surface dimensions are used to test shape function and assembly.
- Meet the requirements of salt spray experiment/supplementary self-reliance test and other.
- relevant reliability tests: according to INNOWAVE internal RX-WI-0AC-014 reliability test standard, all materials conform to INNOWAVE RX-WI-0AC-008 product environmental substances prohibited management standard.
- Packing according to the packing requirements provided by Rui Xiang Project.

1	2	3	4	5	6	7	8
No.	Name	Material number	Describe	Design	Date	Date	Dosage
3	Double faced adhesive Tape	M083459199A0001	Back glue : 3M 93010, yellow paper with hand tear	RF			1
2	Cable	XXXXXX	Diameter: 0.81mm, Black, Koxincheng Generation 4 Terminals	RF			1
1	PCB	M08345936980001	Double panel, FR4 substrate, surface green ink, T=0.80mm	To examine			1
type of machine		SL02		Date		Date	
Name		SL02_WIFL_ANT_Finished components		Date		Date	
Material number		XXXXXX		Date		Date	
Edition		T01		Date		Date	
Proportion		FIT		Date		Date	
Company		mm		Date		Date	



KunShan Innowave Communication Technology CO., Ltd.

Electrical performance Report

S11:

Fre (MHZ)	Return loss (dB)
2400	-5.24
2500	-1.93



Efficiency & Gain:

Freq (MHz)	Effi (%)	Effi (dB)	Peak Gain (dB)
2400	21%	-6.9	-2.8
2410	21%	-6.8	-2.9
2420	20%	-7.0	-3.1
2430	19%	-7.3	-3.3
2440	18%	-7.4	-3.6
2450	17%	-7.7	-4.1
2460	17%	-7.8	-4.2
2470	16%	-8.0	-4.4
2480	15%	-8.3	-4.7
2490	13%	-9.0	-5.0
2500	12%	-9.3	-5.3
AVG	17%	-7.8	-3.9

CPK Report

	INNOWAVE Number				Part Name	SL02 WIFI antenna	
	Specifications	WIFI antenna			材 料	PCB+Cable	
	Supplier	INNOWAVE			Measuring tools	Quadratic element	
	测量单位	mm			Dateofmeasurement	2021/4/28	
Dim. Designator(尺寸序号)	1	5	6				
Nominal(公称尺寸)	23.85	11.38	0.80				
+ Tolerance(正公差)	0.20	0.20	0.08				
- Tolerance(负公差)	-0.20	-0.20	-0.08				
Upper Limit(规格上限)	24.05	11.58	0.88				
Lower Limit(规格下限)	23.65	11.18	0.72				
1	23.86	11.33	0.79				
2	23.82	11.43	0.79				
3	23.80	11.34	0.81				
4	23.86	11.43	0.78				
5	23.90	11.43	0.78				
6	23.83	11.43	0.81				
7	23.82	11.34	0.79				
8	23.80	11.40	0.79				
9	23.89	11.43	0.78				
10	23.87	11.35	0.78				
11	23.82	11.43	0.81				
12	23.88	11.33	0.82				
13	23.84	11.43	0.79				
14	23.80	11.36	0.79				
15	23.87	11.41	0.79				
16	23.89	11.35	0.79				
17	23.83	11.42	0.81				
18	23.83	11.41	0.79				
19	23.84	11.43	0.78				
20	23.90	11.34	0.81				
21	23.90	11.36	0.79				
22	23.87	11.34	0.82				
23	23.89	11.42	0.82				
24	23.90	11.33	0.82				
25	23.89	11.43	0.82				
26	23.83	11.34	0.79				
27	23.82	11.42	0.81				
28	23.82	11.41	0.81				
29	23.84	11.43	0.82				
30	23.89	11.43	0.80				
31	23.83	11.34	0.79				
32	23.82	11.40	0.78				
MAX.	23.90	11.43	0.82				
MIN.	23.80	11.33	0.78				
AVERAGE	23.85	11.39	0.80				
STDEV	0.03	0.04	0.01				
CP	1.98	1.59	2.01				
Cpk	1.97	1.50	1.96				

Reliability Test Report

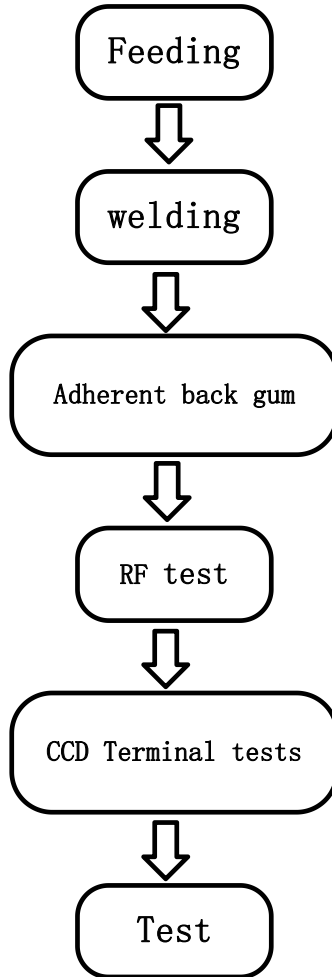
Client		Project name	SL02 WIFI antenna	Innowave Number		Test date	2021/3/18	Completion date	2021/4/28	
NO.	Test project	Testing instruments	Test conditions	Criteria	Test samples					Decision
					1	2	3	4	5	
1	Drawing test	Tension gauge	Fasten wire at one end PCB, start tension gauge at the other end	Tension 8-18 N, feeder no damage, mesh test OK	OK	OK	OK	OK	OK	OK
2	Hot and cold impact	Hot and cold impact box	Put the product into the cold and hot impact test box, the temperature of the box immediately drops to -40°C, the duration of 1 H;5 minutes with the box into the hot box, maintain 80°C, the duration of 1 H;5 minutes with the box into the cold box; repeat the above cycle 24 times	No cracking, shedding	OK	OK	OK	OK	OK	OK
3	Constant temperature and humidity	Constant temperature and humidity box	Put the sample in a constant temperature and humidity box, set the temperature 60°C, humidity 80, duration :48 H	No cracking, shedding	OK	OK	OK	OK	OK	OK
4	Saltspray Test	Salt water spray box	Place the product flat at 5% NaCl, PH 6.5~7.0, and spray continuously for 48 hours at 35°C temperature	No corrosion, oxidation	OK	OK	OK	OK	OK	OK

Saltspray Test Report

Client		Project name	SL02 WIFI antenna
Sample situation	Number of samples: 5PCS		
Test start and end time	18 March 2021 0940 to 20 March 2021 0940, a total of 48 H		
Type of test	<input checked="" type="checkbox"/> NSS	<input type="checkbox"/> ASS	<input type="checkbox"/> CASS
Test conditions	Salt solution: 5%		PH:7.0
	Box temperature: 35° C		relative humidity: 5%
	Spray mode: <input checked="" type="checkbox"/> continuity <input type="checkbox"/> intermission		Compressed air pressure: 1kg/cm ²
	Salt spray settling rate: 1-3ml/80cm ² .h		Fog collection: 1.2ml
	Test cycle: 1 cycle		Spray time: 48H
Decision criteria	Post test appearance: The appearance is intact, no obvious change		
	Plating: No peeling and no rust		
	Surface spray, silk printing: No shedding, no bubbles		
Result	OK		
<p>Explain:</p> <p>1、The salt spray test operation standard was performed in accordance with the national standard of the people's Republic of China GB / t2423.17-2008</p> <p>2、Subject outcome adjudication criteria were performed in accordance with the national standard of the people's Republic of China GB / t6461-02</p>			

Process Flow Chart(制造流程图)

Customer(客户)		Written By(制作)	刘丽芳	Orig. Date(制作日期)	2021/4/28
Part Number(料号)		Revised By(校订)	刘丽芳	Revised Date(校订日期)	2021/4/28
Description(零件名称)	SL02 WIFI antenna	Approved By(确认)	刘强	Approved Date(确认日期)	2021/4/28



Control Plan

<input type="checkbox"/> 样件 Prototype		<input type="checkbox"/> 试生产 Prelaunch		<input checked="" type="checkbox"/> 生产 Production		主要联系人/电话 Key Contact/Phone		日期(编制) Date(Original)		2021/4/28			
			产品名称 Part Name	序号 Version	变更内容 Contents of change			制定人/日期 Prepared by/Date		审批人/日期 Approval by/Date			
零件编号 Part Number		顾客工程批准/日期(如需要) Customer Engineering Approval/Date(if Required)		制作 Build by	SL02	初版发行 First Issue			2021/3/19		2021/3/20		
料号				李志枫	客户名 Customer	/							
零件名称 Part Name		其它批准/日期(如需要) Approval by others (if required):		审批 Approval by	/								
WIFI组件天线		/											
零件/过程编号 Part/ Process No.	过程名称/ 操作描述	机器、装置 夹具、工装	特性			特殊特性 分类 Special Char. Class	方法 Methods				反应计划 Reaction plan		
	Process Name/ Operation Description	Machine, Device, Jig, Tools For Mfg.	编号 No.	产品 Product	过程 Process		产品/过程规范/公差 Specification/Tolerance	评价测量技术 Evaluation Measurement Technique	样品Sample			控制方法 Control method	
1	IQC Incoming inspection	Quadratic element	1	Appearance		No virtual weld, missed weld, tin tip, pile tin, isometric braid layer deformation, oil class no pressure injury, skin breaking, the terminal has no directional error, pressure injury, scratch injury, poor deformation. Attachments, kimblebs without breakage, soiling,	visual	According to gb2828-2003 criteria, general test level II was taken; For severe defects, AQL < 0.25 The main defect is taken as AQL 0.25 The secondary defects take AQL 1.0		Engineering drawings Sampling plan Supplier shipment report IQC feed inspection report		MRB Material review	
			2	Size		Refer to drawings for focused tubulation size	Quadratic element	5pcs/batch		Full size test report			
			3	RoHS		Source minimum packaging is RoHS labeled and other requirements are detailed in the specification for the management of substances in environmental control (SW / GZ 5.4-01)	1. Validation of third party reports 2. Check that there is a RoHS label on the minimum packaging of the feed	100%		IQC feed inspection report			
			4	Packing		The packaging is free of dirty change, breakage, deformation, no less material, blend, mismaterial, products are scattered, etc.; the label is legible, the information is accurate and without smear	visual	100%		IQC test statement			
			5	Pull			8-18N	Tensimeter	5pcs/batch				

2	Welding. Back glue	Electric iron	1	Welding			Weld point no virtual weld, missed weld, tin tip, pile tin, isometric braiding layer deformation, etc., back glue no	visual	100%	Production self inspection report SOP Engineering drawings. Presenteeism	End of life Notification of line change procedure Notified line leader to change person Notified PE / line leader
3	RF test	RF Test equipment	1	RF test			See RF test assignment guide	Net Score	100%		
4	FQC	Quadratic element RF Test equipment	1	Appearance			No virtual weld, missed weld, tin tip, pile tin, isometric braid layer deformation, oil class no pressure injury, skin breaking, the terminal has no directional error, pressure injury, scratch injury, poor deformation.	visual	According to gb2828-2003 criteria, general test level II was taken; For severe defects, AQL < 0.25 The main defect is taken as AQL 0.25 The secondary defects take AQL 1.0	IPQC in-process product checklist IPQC inspection report	End of life
			2	Size			Refer to drawings for focused tubulation size	Quadratic element	5pcs/batch	Engineering drawings. IPQC in-process product checklist	
			3	RF test			See RF test assignment guide	Net Score	10pcs/batch	IPQC in-process product checklist IPQC inspection report	
5	Packing		1	Appearance			No scratch, scratch, stain, homochromatic foreign body spots, bump, scuff, spray surface no air bubbles, paint accumulation, leaky substrate, color difference. Package is dirty, broken, and deformed.No wrong	visual	100%	BOM	1. Return for revision 2. End of life
			2	Number			Quantity accurate, no multi material, little material		100%		
			3	Packing			The packaging is free of dirty change, breakage, deformation, no less material, blend, mismaterial, product dishevelled, etc.; the label is legible and the information accurate without smear change; the smallest	visual	100%		

6	OQC	Quadratic element Film thickness tester	1	Appearance		No virtual weld, missed weld, tin tip, pile tin, isometric braid layer deformation, oil class no pressure injury, skin breaking, the terminal has no directional error, pressure injury, scratch injury, poor deformation	visual	According to gb2828-2003 criteria, general test level II was taken For severe defects, AQL < 0 The main defect is taken as AQL 0.25 The secondary defects take AQL 1.0	Engineering drawings. BOM Shipment inspection report	1. Return for revision 2. End of life	
			2	Size		Refer to drawings for focused tubulation size	Quadratic element	5pcs/batch			
			3	Label		1. Check that the present ticket on the outsourcing box matches the customer order requirements; 2. Check that the number of packages (boxes) of the product corresponds; 3. Check that there is a RoHS label on the product packaging box (box); 4. Verify that there is an FQC inspection qualification label or seal on the product package box (box); 5. Check that labels match date / Does the bidimensional code label correspond	visual	100%			
											Does monomer packing meet demand
											RoHS Identify if there is a paste
4	Packing		Minimum pack with ROHS label, legible label lettering and accurate information; pack free of dirty, broken, deformed.	visual	100%						

Packing

INNOWAVE Number:		Material Name:	SL02 WIFI antenna
Specifications	WIFI antenna	Packaging materials:	Carton + self sealing bag + pearl cotton
Number of packages:	1 Box	Packing method:	Single pack
Packing number:	5000 PCS		

Figure 1:Single package



Figure 2:Packing Method



Figure3:Box view (front, side, top)



Figure4:Outer box label



Remarks:

1. The product is packed in 50pcs, and the top of the coaxial line (conductor part) is wrapped with pearl cotton. Then it is put into the self sealing bag, and then into the carton
2. The quantity of each case is subject to the actual delivery quantity