

承认书

SPECIFICATION

Customer Name: Kailai

Product Name: EPA355 BT antenna

Specifications: EPA355 FPC antennaR L

Productnumber: 23-0012110-0

Customer code: 23-0012110-0

Complies with environmental standards: RoHS/WEEE/PAHS/RAECH SVHC/POP-SCCP/AZ0/Prop 65

supplier

Customer

Creation Date

Creation Date

Approved Date

Approved Date

Date of
approval

Date of
approval

Manufacturer: Shenzhen Kaipushen Communication Technology Co., Ltd

Supplier address: 2nd Floor, Building 1, Yulong Building, Longcheng Industrial Zone, No.440, Longguan Avenue, Longhua District, Shenzhen

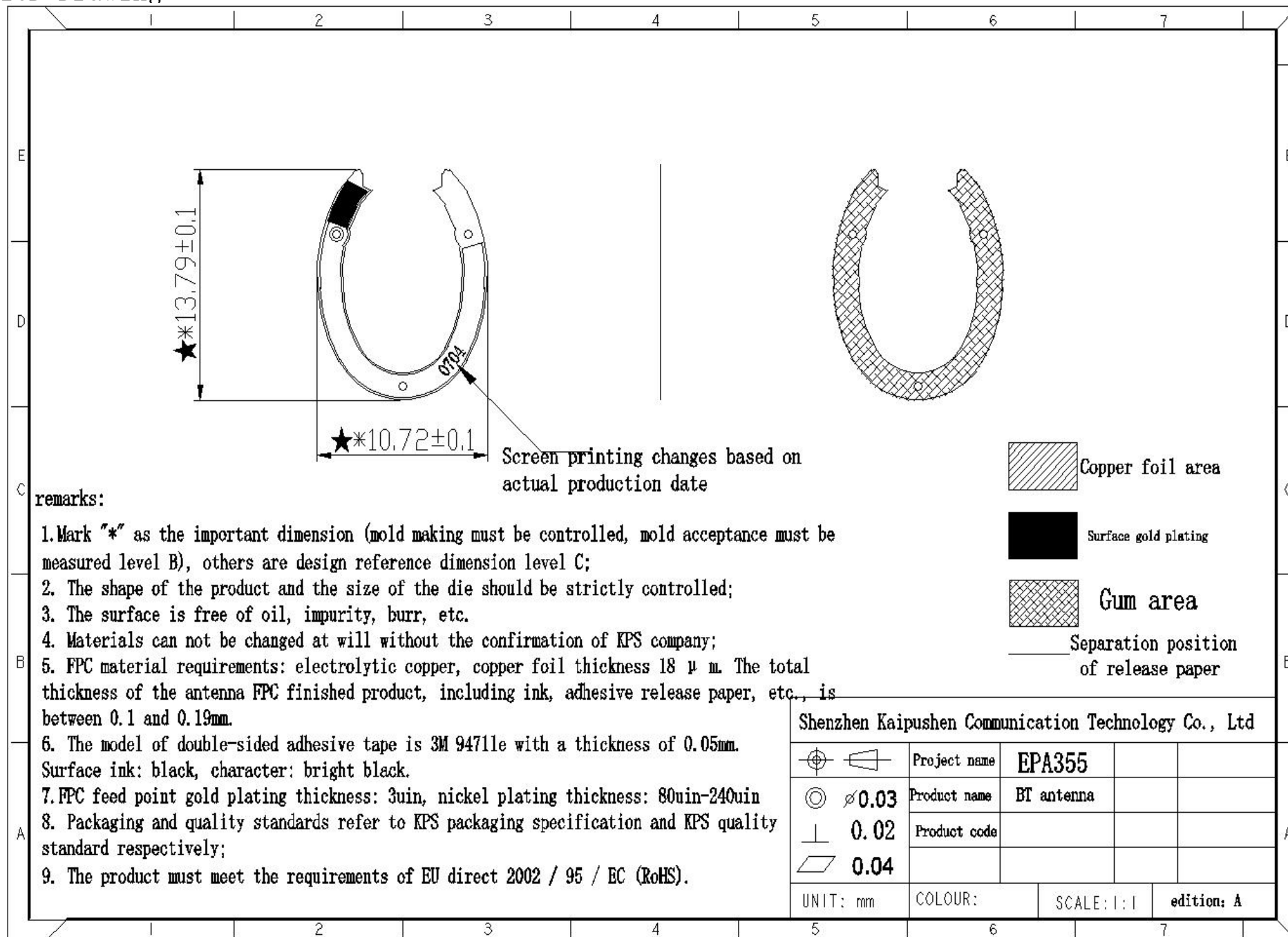
Tel: 0755-29351613

Fax:0755-29351510

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3. ICD Drawing



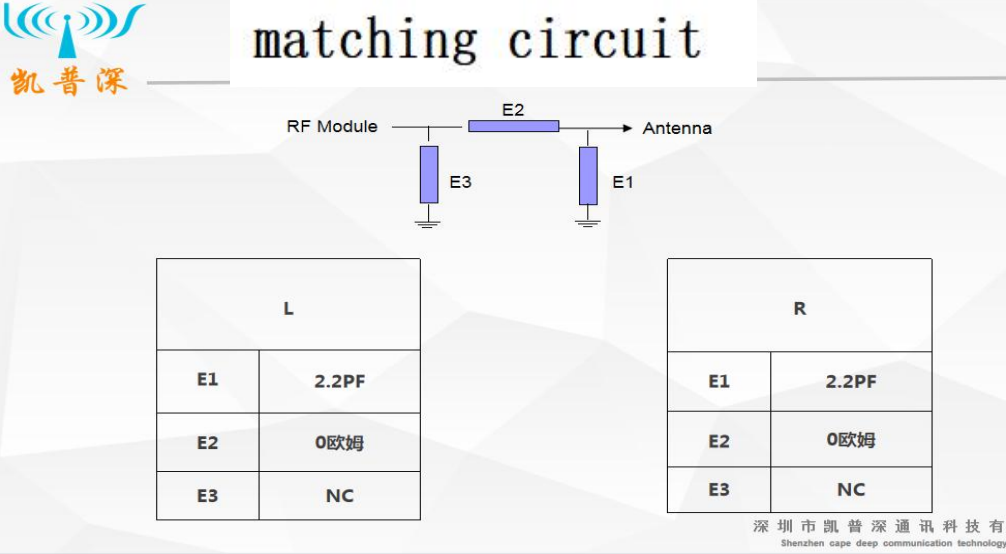
5.1 electrical properties

5.1-1 specification

BT antenna resonates at 2400m-2480m 。

5.1-2 Matching circuit of antenna .

The matching circuit is as follows:



5.2 Standing wave ratio (SWR) test

5.2-1 Test settings

The standing wave ratio (SWR) test device is connected in turn to: E5071B Network analyzer-50 ohm coaxial Cable→150 mm long copper tube→Test the fixture.

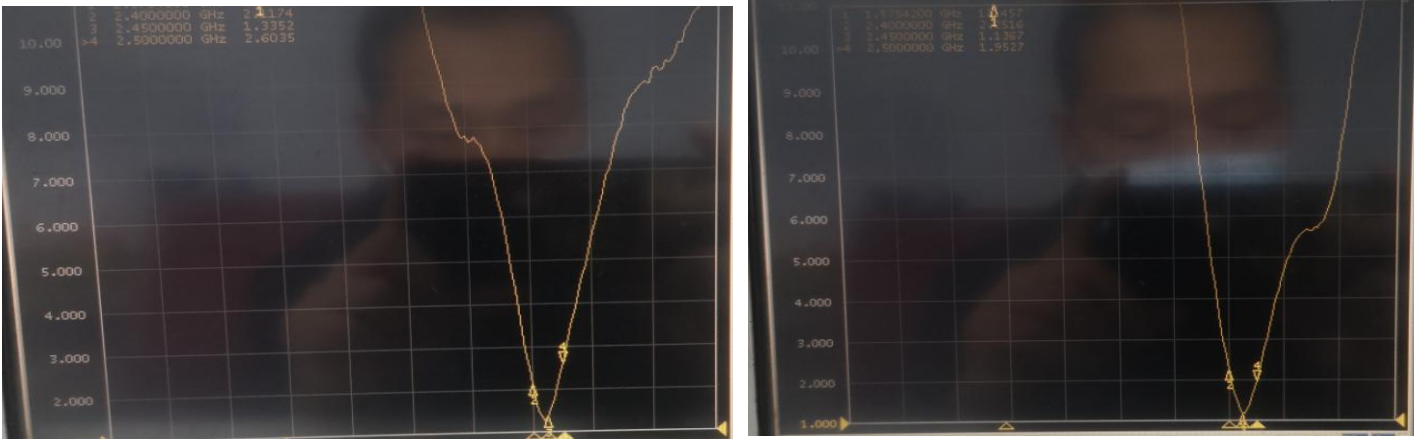
Test the treatment of fixture: Draw out the SMA-J connector from the PCB antenna at the 50 point with a hard cableConnect with copper tube with choke ring and connect other devices i

The following table shows the standing wave ratio of the edge frequency points of the worki
The following table, shown as: Standing Wave Ratio of Edge Frequency Points in the
Frequency Band of BT Antennas

L	Fre(MHZ)	2402	2440	2480
	SRW	2.1	1.3	2.6

The following table, shown as: Standing Wave Ratio of Edge Frequency Points in the Operativ
Frequency Band of BT Antennas


R	Fre(MHZ)	2402	2440	2480
	SRW	2.2	1.1	1.9



The above diagram shows the standing wave ratio curve

6.2-4 Whole machine active test data

Main antenna test data:



OTA		Antenna performance (free space)		Antenna performance (head mold)	
		L	R	L	R
Channel	Frequency	Total	Total	Total	Total
0	2402	3.6	4.5	-2.3	-2.8
39	2441	4	4.3	-2	-2.5
78	2480	4.2	4	-2.3	-2.8
0	2402	-88.2	-88.7	-82	-81.6
39	2441	-88.4	-88.4	-81.9	-81.4
78	2480	-88.6	-88.3	-82	-81

1#

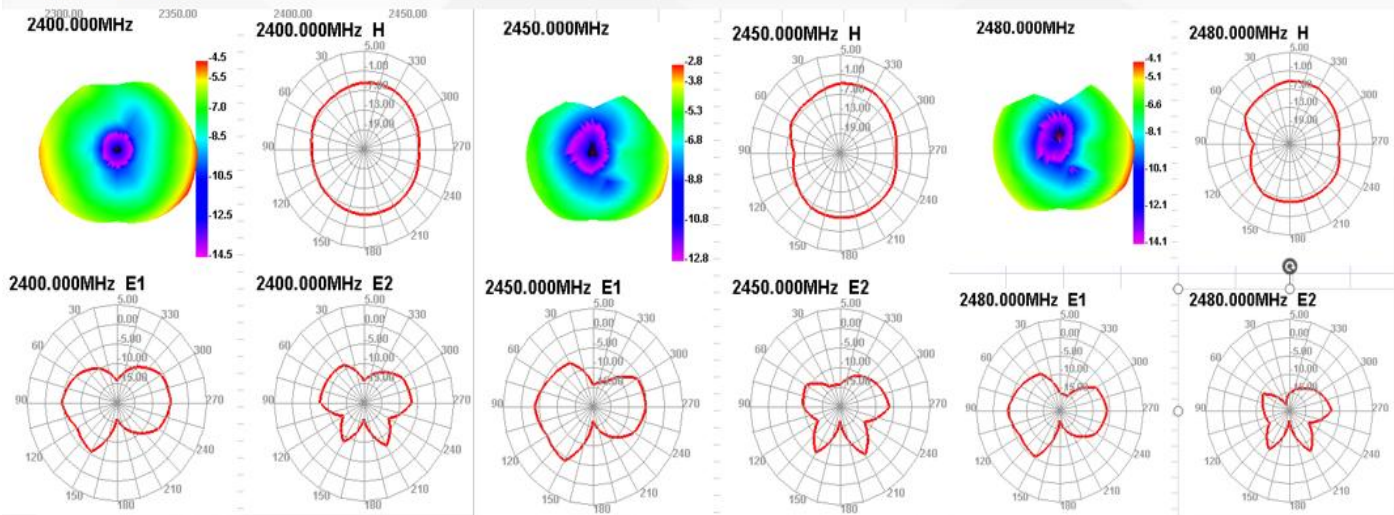
Passive Efficiency and Gain of Antennas

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	23.32	-6.32	-2.18
2410	23.68	-6.25	
2420	24.56	-6.09	
2430	24.98	-6.02	
2440	25.32	-5.96	
2450	25.42	-5.94	
2460	25.65	-5.91	
2470	26.12	-5.86	
2480	26.58	-5.75	
2490	26.77	-5.72	
2500	26.87	-5.71	



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Antenna passive field pattern diagram



environmental treatment:



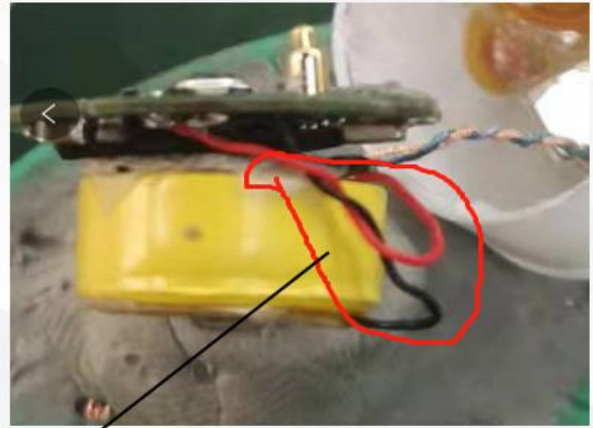
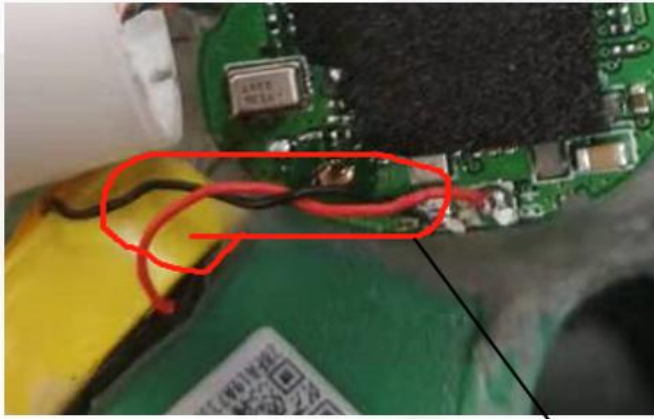
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Complete machine assembly processing



As shown in the figure

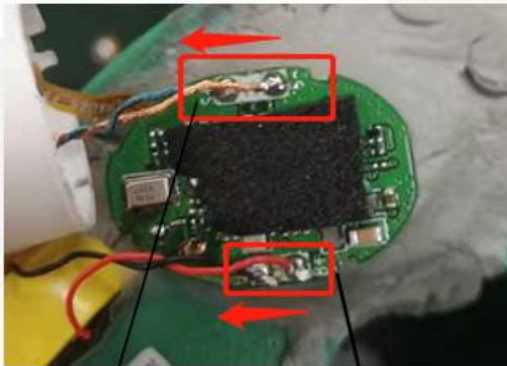
Twist the speaker cable and weld the motherboard from the edge of the battery, Cannot be placed between the battery and motherboard



As shown in the figure

Cannot be placed between the battery and motherboard, Twist the battery cable twice, with the positive electrode facing the motherboard, Line placed on the side of the battery

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The welding method of the battery horn is shown in the figure



Stick 12mm long and 9mm wide insulation sponge on the motherboard BT chip as shown in the figure

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As shown in the figure, the battery cathode is pasted with Double-sided tape, Positive insulation sponge and Double-sided tape are used to fix the battery inside










Full dimensional measurement report

	Customer	Kailai		part name		BT aerial		Qty					Material	Electrolytic copper
	Supplier	Kaipushen		Measure tools		Quadratic		Measure unit		mm			Measure date	2023/3/8
NO.	Size (DIMENSION)	Upper	+ TOL.	- TOL.	Lower	Act mea 1	Act mea 2	Act mea 3	Act mea 4	Act mea 5	Act mea 6	Act mea 7	UPPER \leq 100%	LOWER \leq 100%
1	13.79	13.89	0.10	0.10	24.95	13.81	13.78	13.77	13.81	13.82	13.82	13.77	30%	20%
2	10.72	10.82	0.10	0.10	10.62	10.71	10.70	10.70	10.71	10.73	10.73	10.73	10%	20%
5	13.79	13.89	0.10	0.10	24.95	13.82	13.82	13.77	13.81	13.82	13.81	13.78	30%	20%
6	10.72	10.82	0.10	0.10	10.62	10.70	10.71	10.73	10.73	10.70	10.70	10.74	20%	20%
7														
8														
9														
10														
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16														
17														
18														
19														
20														

Table: Chenjian

Audit: Wuxingtuo

Date: April 6th, 2023

 深圳市凯普深通讯科技有限公司 天线专家 Shenzhen cape deep communication technology co., LTD			QC schedule drawing			file number KPS--QPA-QA004		Enactment Date				
						file version A/01		Page		page 1		
technological process			Control focus		management responsibility	method		Inspection method			corrective action	
Order Number	Main Processes	project name	aControl Project	Regulatory standards	person liable	Normal sampling number	person in charge	Inspection method	Examines the tool	Record type	Solution	
		begin										
1		Receiving	quantity/product name/specifications	《Engineering BOM》 《Material receiving operation instruction》	Material clerk					《Electronic account》	Contact the supplier and issue 《returning note》	
2		Incoming inspection	specifications/model/pack	《Engineering BOM》 《Sampling inspection plan》 《IQC incoming material inspection instruction》	IQC	MA=0.25 MI=0.65	IQC	1.visual 2.Machine test 3.sample	Two dimensional vernier caliper	《IQC incoming inspection record》	Inspection: OK, stamped with pass seal. The inspection shall be labeled as nonconforming product and issued at the same time 《8D Report Problem Solving Report》, Notify the supplier of return and improve.	
3		material	quantity/product name/specifications	《production instruction》 《Material receiving operation instruction》	Material clerk					《Material requisition and distribution		
4		pack	pack quantity/indicate	《Finished product packaging operation instruction》	packager							
5		Delivery inspection	product appearance bad record Dimensional test Bad sign Good product packaging ROHS compliance	《Engineering BOM》 《Sampling inspection plan》 《OQC Final inspection operation instruction》	OQC	MA=0.25 MI=0.65	OQC	1.visual 2.Machine test 3. sample	Two dimensional vernier caliper	《OQC finished product inspection record》	If the number of times of the same type of the same type missing in the daily inspection is greates, OQC issues the 8D report problem solving report to the production manager for analysis and improve	
6		delivery	product namespecification quantity delivery note	《Finished product shipping operation instruction》	Material clerk					《Electronic account》		
		finish										
character	Revision date	Revised content				Revised ; Revised	Acknowledged by	Fiction		auditing	approval	
①												
②												
③								date		date	date	

Shenzhen Kaipushen Communication Technology Co., Ltd				file NO		
				Enactment Date		
	FPC antenna inspection specification			Page		
				edition	A0	
1. Purpose and purpose: rigorous testing , Control the use of defective products and ensure product quality requirements.						
2. applicable scope: FPC aerial.						
3. content						
	item	content	tool	Inspection standards and technical requirements	Defect Description	stratum
	packin g	characteristic	visual	The outer package is clearlylabeled, Indicate, product name、specifications、quantity、date.	The identification is not clear and cannot be identified.	MIN
		Matter	visual	Uniform packaging, Clean and tidy, unabroken , No impact on handling 、Storage, No wrong installation 、mixed 、Less clothes.	Inconsistent packaging, Dirty、damp、damaged., Affect handling 、Storage.	MIN
	appeara nce	surface	visual	FPC is not damaged、Copper Exposed、dehiscence、chromatic aberration、Yijiao,Gold finger is free of oxidation and brittle crack.	FPC is damaged、Copper Exposed、dehiscence、chromatism、rubber overflowing ,Oxidation of golden finger、Brittle crack .	MAJ
	structu re	measurement	vernier caliper	Board size (dimensions) Same as template	The size is different from the sample .	MAJ
		Material	sample plate	Same as template .	Material is different from template	MAJ
	perform ance	Electroplate	electro plating Machine	Golden finger degree golden brightness, coverage rate 100%	The gold plating is not bright,or the gold plating coverage is low.	MAJ
		forced jointing	chassis	FPC is pasted on its enclosure consistent with the preset pasting position,None.	FPC is pasted on its enclosure,Inconsistent with the preset pasting position ,More or less .	MAJ
	Formulate :				auditing :	Approve:

RoHS restricted substance composition questionnaire

Information of supplied products												
Customer name		Description of Material/model		entry name		manufacturer				Green material identification		
Kailai		BT aerial		EPA355		Shenzhen Kaipushen Communication Technology Co., Ltd				/		
Product composition information												
Order Number	part name	Specification	component supplier	Third party test report		Content of restricted substances PPM						remarks
				date for	number	(Pb)	(Cd)	(Hg)	(Cr ⁶⁺)	(PBB)	(PBDE)	
1	adhesive	3M9471LSE	3M	2023.01.04	SHAEC2217569205	○	○	○	○	○	○	
2	base material	One and a half electrolytic	Kwai Lungti	2023.02.15	SHAEC23001049106	○	○	○	○	○	○	
3	plating	FPC Electrolytic Nickel Gold	Xindasheng	2022.04.12	A2220136788101001E	○	○	○	○	○	○	
4	Solder mask black oil	PSM-800FSDM-A	Youli	2022.08.05	ETR22705905	○	○	○	○	○	○	
5	Text white oil	KTM-150FWM	Chuanyu	2022.10.17	ETR22A01347M01	○	○	○	○	○	○	

written by: Wuxintuo

Filled by: Department: Quality

Salt spray test report

Date: April 6th, 2023

Item	EPA355-BT aerial	Customer	Kailai
Supplier	Shenzhen Kaipushen Communication Technology Co., Ltd	National Test standard	GB/T 2423.2-2008
Sample situation	Sample qty: 5PCS		
	Base material: one-sided, one-to-half adhesive electrolytic copper	Plating: Sinking Gold $\geq 3U''$	
Test time	2023年04月06日 9时 00 分至 2023年04月07日 9时 00 分 共计 24 H		
Test type:	<input checked="" type="checkbox"/> NSS	<input type="checkbox"/> ASS	<input type="checkbox"/> CASS
Test condition	Salt solution: 5%		PH:7.0
	Chamber temp: 35° C		Relative humidity: 85%
	Spray way: <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> intermittent		Compressed air pressure: 1kg/cm ²
	Salt spray sedimentation rate: 1-2ml/80cm ² /h		Fog fluid collection: 1.4ml/80cm ² /h
	Test cycle: __1__cycle		Spray time: 24 h
Test results	Appearance after test: appearance intact, without obvious change		
	Coating: no spalling, no rust		
	Surface spraying, silk screen: no falling off, no bubbles.		
Explanation: 1、Salt spray test operating standards in accordance with the People's Republic of China national standard GB/T2423.17-2008 implementation. 2、The test piece results are determined according to the national standard GB/T6451-02 of the People's Republic of China.			
Operator by/date: Jian Chen Approved by/date: : Wu Xingtuo April 7th, 2023			

High-low temperature test record

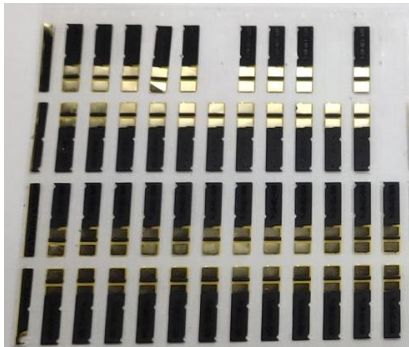
Product name	EPA355	Customer name	Kilai	
Test qtu	6 pcs	Test date	2023/4/6	
Cycle number	1	Time	24H	
TestCondition: High temp: + <u>65</u> degree Humidity: <u>90</u> % RH Low temp: - <u>20</u> degree Test time: high temp: <u>24</u> H low temp: <u>24</u> H				
Test item	Uncycled test		Cycled test	
No	After high temp	After low temp	After high temp	After low temp
1	OK	/		
2	OK	/		
3	OK	/		
4	OK	/		
5	OK	/		
6	OK	/		
After test deficiency:				
Reason analysis:				
Improvement measures:				
Test results: ✓ Pass <input type="checkbox"/> Fail				

Operator by/date: Jian Chen

Approved by: Wu Xingtuo

Packing

Customer:	Kailai	Material name:	EPA355-BT aerial
packing qty:	one carton	Packing material:	Carton
Qty/carton:		Packing way :	Ziplock bag



Picture 1:Single package



Picture 2: Packing way



Picture 3: Packing view (front, side, top)



Picture 4:packing label

Note: If you need to fit the antenna processing, according to the shell factory

Fiction : Wu Xingtuo

auditing: LiMinghui