

acknowledgement

Product Description:

Manufacturer: Shenzhen Yusheng Communication Equipment Co., LTD

Material name: Bluetooth RF antenna

Material code: 3.01.A200F00000

Version No.: R:a

Project Model: A200/FPC Bluetooth RF antenna

Spec/Color: White

Date of signature: 2023-08-17

Remarks : (This cover needs to be stamped with supplier's seal)

Attachment: Instructions for electrical and mechanical manufacturing flowchart

CPK report

full size survey report

Raw Materials List /RoHS report /HF/REACH

Lay down QC engineer sample

Reliability test report

packing method

Supplier:

Proposed: Review: Approved:

(All of the above require a hand signature, printing is not allowed)

(Everything that needs to be provided needs to be filled in color)

The above is to be filled out by the vendor and the following by Aidu

	Department	Confirm content				Confirm results	Confirm the person/date
Technical confirmation field	Supplier quality	<input type="checkbox"/> RoHS materials <input type="checkbox"/> Non-Rohs materials	<input type="checkbox"/> Meet the REACH requirements	<input type="checkbox"/> It meets the halogen free requirements	<input type="checkbox"/> Other environmental protection requirements		
	ID of Design Department:	<input type="checkbox"/> ID required by customer	<input type="checkbox"/> Color confirmation	<input type="checkbox"/> Surface workmanship is confirmed	<input type="checkbox"/> Shell, hardware, key material		
	Structural Engineer	<input type="checkbox"/> 2D drawing file size confirmation <input type="checkbox"/> Specifications technical requirements	<input type="checkbox"/> Focus on size marking <input type="checkbox"/> Electrical performance parameters	<input type="checkbox"/> Adaptation verification <input type="checkbox"/> Functions	<input type="checkbox"/> Shell, hardware, key material <input type="checkbox"/> Effect		
	Hardware Engineer	<input type="checkbox"/> 2D drawing file size confirmation <input type="checkbox"/> Specifications technical requirements	<input type="checkbox"/> Focus on size marking <input type="checkbox"/> Electrical performance parameters	<input type="checkbox"/> Adaptation verification <input type="checkbox"/> Functions	<input type="checkbox"/> Shell, hardware, key material <input type="checkbox"/> Effect		
	Research and development quality:	<input type="checkbox"/> Test standards confirmed <input type="checkbox"/> Appearance	<input type="checkbox"/> Specification of dimensions (key dimensions)	<input type="checkbox"/> Reliability verification <input type="checkbox"/> Adaptation Verification	<input type="checkbox"/> Function <input type="checkbox"/> Effect		

Project Manager: Acknowledge the Specifications and Electrical performance Function effect

Conditions:

☐ Formal recognition

☐ Limited recognition

☐ Denial of recognition

Distribution:

☐ IQC

☐ Suppliers

☐ Customers

☐ After sales

☐ SQE/ Document Control

☐ Others _____

Catalogue

1. Cover
- 2, Contents
- 3, Electrical, mechanical properties description (sp
4. Bill of materials.RoHS.REACH.HF report
5. Full scale measurement report
6. Cpk report
- 7, CPK Reliability test report
8. QC engineering drawing
9. Packaging Information
10. Material list MSDS(required to meet REACH, no halogen and other environmental requirements provided)
11. ~~Environmental substance specification (provided when the~~ requirements meet REACH, halogen free and other environmental requirements)

1. Brief account

1.1 Scope of applicati

This requirement specifies the antenna technical requirements and material requirements specifications for A200 products.
This requirement applies to antenna selection, testing and acceptance of A200 products.

1.2 Project basic infoi

Antenna name:	A200
Antenna band:	BT: 2400-2500MHZ
Antenna material:	Electrolytic copper + PI gold-plated
Antenna version:	V2

2. Technical Metric

2.1 Introduction to te

Detailed list	Test items	Equipment
S11 parameters	Standing wave ratio, echo loss	Network analyzer
Active testing	TRP,TIS	Comprehensive tester, microwave dark room
Passive testing	Gain and efficiency	Network analyzer

2.2.1 Test Instruction

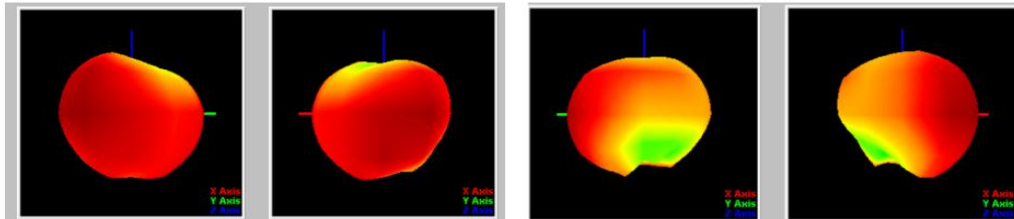
Test tools: Agilent8960 comprehensive tester, R&SCMW500, full-wave far field ETS dark room, high-precision positioning system, its controller and computer with automatic test program
Test environment: temperature 22°C±3°C, humidity 50%±15%
Test method: The DUT is fixed on the center of the turntable with the H side, on the same horizontal line as the center of the speaker antenna. The positioning system enables the DUT to rotate on the whole sphere to meet high-precision three-dimensional positioning. RF instruments, turntable controllers communicate with PCs with automatic test software through the GPIB interface.

2.2.2 Antenna passive parameters

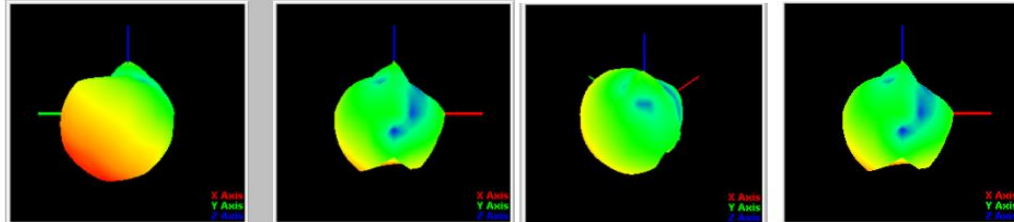


2.2.3 Antenna Apple Diagram

FS

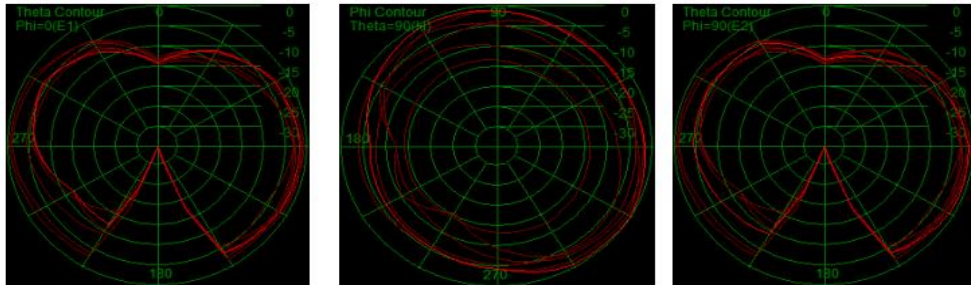


ARM

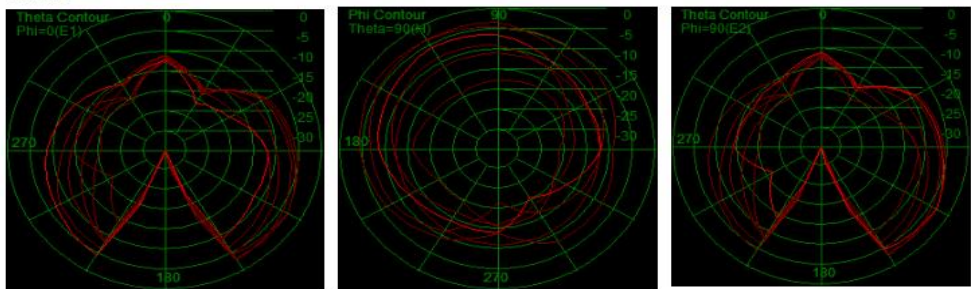


2.2.4 Antenna Direction Diagram

FS



ARM



2.2.5 Antenna active parameters

Test	Free-space								
Test Point ID	1	2	3	4	5	6	7	8	9
Freq. (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480
Efficiency (%)	36.7	37.8	38.2	39.1	40.2	40.6	39.8	38.7	37.6
Efficiency(dB)	-4.3	-4.2	-4.2	-4.1	-4.0	-3.9	-4.0	-4.1	-4.3
Gain(dBi)	-0.21	-0.12	0.24	0.35	0.41	0.54	0.47	-0.34	-0.24

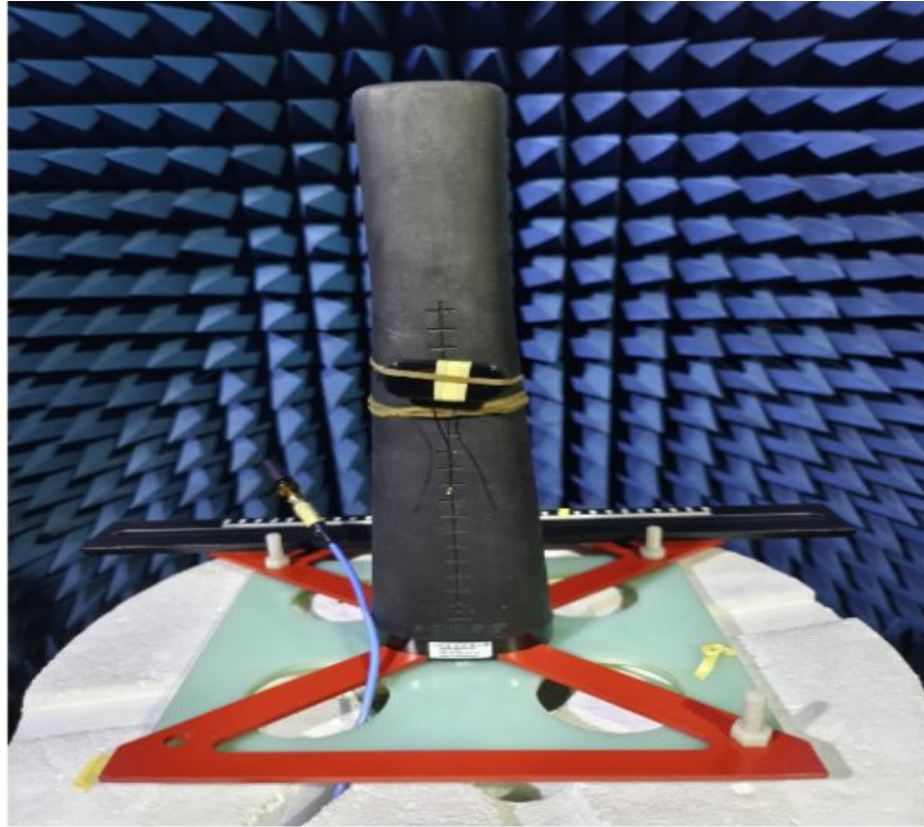
Test	ARM								
Test Point ID	1	2	3	4	5	6	7	8	9
Freq. (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480
Efficiency (%)	13.5	13.7	13.8	14.2	14.7	14.5	14.3	14.1	13.6
Efficiency(dB)	-8.7	-8.6	-8.6	-8.5	-8.3	-8.4	-8.5	-8.5	-8.6
Gain(dBi)	-4.12	-4.31	-4.52	-4.71	-4.92	-4.74	-4.55	-4.30	-4.07

2.2.7 Antenna Match Changes
















For example, the day area, the match is as shown

2.2.8 Antenna Test Environment



1	2	3	4	5	6	7	8
A				A			
B				B			
C				C			
D				D			
1				2			
2				3			
3				4			
4				5			
5				6			
6				7			
7				8			
8				9			
9				10			
10				11			
11				12			
12				13			
13				14			
14				15			
15				16			
16				17			
17				18			
18				19			
19				20			
20				21			
21				22			
22				23			
23				24			
24				25			
25				26			
26				27			
27				28			
28				29			
29				30			
30				31			
31				32			
32				33			
33				34			
34				35			
35				36			
36				37			
37				38			
38				39			
39				40			
40				41			
41				42			
42				43			
43				44			
44				45			
45				46			
46				47			
47				48			
48				49			
49				50			
50				51			
51				52			
52				53			
53				54			
54				55			
55				56			
56				57			
57				58			
58				59			
59				60			
60				61			
61				62			
62				63			
63				64			
64				65			
65				66			
66				67			
67				68			
68				69			
69				70			
70				71			
71				72			
72				73			
73				74			
74				75			
75				76			
76				77			
77				78			
78				79			
79				80			
80				81			
81				82			
82				83			
83				84			
84				85			
85				86			
86				87			
87				88			
88				89			
89				90			
90				91			
91				92			
92				93			
93				94			
94				95			
95				96			
96				97			
97				98			
98				99			
99				100			
100				101			
101				102			
102				103			
103				104			
104				105			
105				106			
106				107			
107				108			
108				109			
109				110			
110				111			
111				112			
112				113			
113				114			
114				115			
115				116			
116				117			
117				118			
118				119			
119				120			
120				121			
121				122			
122				123			
123				124			
124				125			
125				126			
126				127			
127				128			
128				129			
129				130			
130				131			
131				132			
132				133			
133				134			
134				135			
135				136			
136				137			
137				138			
138				139			
139				140			
140				141			
141				142			
142				143			
143				144			
144				145			
145				146			
146				147			
147				148			
148				149			
149				150			
150				151			
151				152			
152				153			
153				154			
154				155			
155				156			
156				157			
157				158			
158				159			
159				160			
160				161			
161				162			
162				163			
163				164			
164				165			
165				166			
166				167			
167				168			
168				169			
169				170			
170				171			
171				172			
172				173			
173				174			
174				175			
175				176			
176				177			
177				178			
178				179			
179				180			
180				181			
181				182			
182				183			
183				184			
184				185			
185				186			
186				187			
187				188			
188				189			
189				190			
190				191			
191				192			
192				193			
193				194			
194				195			
195				196			
196				197			
197				198			
198				199			
199				200			
200				201			
201				202			
202				203			
203				204			
204				205			
205				206			
206				207			
207				208			
208				209			
209				210			
210				211			
211				212			
212				213			
213				214			
214				215			
215				216			
216				217			
217				218			
218				219			
219				220			
220				221			
221				222			
222				223			
223				224			
224				225			
225				226			
226				227			
227				228			
228				229			
229				230			
230				231			
231				232			
232				233			
233				234			
234				235			
235				236			
236				237			
237				238			
238				239			
239				240			
240				241			
241				242			
242				243			
243				244			
244				245			
245				246			
246				247			
247				248			
248				249			
249				250			
250				251			
251				252			
252				253			
253				254			
254				255			
255				256			
256				257			
257				258			
258				259			
259				260			
260				261			
261				262			
262				263			
263				264			
264				265			
265				266			
266				267			
267				268			
268				269			
269				270			
270				271			
271				272			
272				273			
273				274			
274				275			
275				276			
276				277			
277				278			
278				279			
279				280			
280				281			
281				282			
282				283			
283				284			
284				285			
285				286			
286				287			
287				288			
288				289			
289				290			
290				291			
291				292			
292				293			
293				294			
294				295			
295				296			
296				297			
297				298			
298				299			
299				300			
300				301			
301				302			
302				303			
303				304			
304				305			
305				306			
306				307			
307				308			
308				309			
309				310			
310				311			
311				312			
312				313			
313				314			
314				315			
315				316			
316				317			
317				318			
318				319			
319				320			
320				321			
321				322			
322				323			
323				324			
324				325			
325				326			
326				327			
327				328			
328				329			
329				330			
330				331			
331				332			
332				333			
333				334			
334				335			
335				336			
336				337			
337				338			
338				339			
339				340			
340				341			
341				342			
342				343			
343				344			
344				345			
345				346			
346				347			
347				348			
348				349			
349				350			
350				351			
351				352			
352				353			
353				354			
354				355			
355				356			
356				357			
357				358			
358				359			
359				360			
360				361			
361				362			
362				363			
363				364			
364				365			
365				366			
366				367			
367				368			
368				369			
369				370			
370				371			
371				372			
372				373			
373				374			
374				375			
375				376			
376				377			
377				378			
378				379			
379				380			
380				381			
381				382			
382				383			
383				384			
384				385			
385				386			
386				387			
387				388			
388				389			
389				390			
390				391			
391				392			
392				393			
393				394			
394				395			
395				396			
396				397			
397				398			
398				399			
399				400			
400				401			
401				402			
402				403			
403				404			
404				405			
405				406			
406				407			
407				408			
408				409			
409				410			
410				411			
411				412			
412				413			
413				414			
414				415			
415				416			
416				417			
417				418			
418				419			
419				420			
420				421			
421				422			
422				423			
423				424			
424				425			
425				426			
426				427			
427				428			
428				429			
429				430			
430				431			
431				432			
432				433			
433				434			
434				435			
435				436			
436				437			
437				438			
438				439			
439				440			
440				441			
441				442			
442				443			
443				444			
444				445			
445				446			
446				447			
447				448			
448				449			
449				450			
450				451			
451				452			
452				453			
453				454			
454				455			
455				456			
456				457			
457				458			
458				459			
459				460			
460				461			
461				462			
462				463			
463				464			
464				465			
465				466			
466				467			
467				468			
468				469			
469				470			
470				471			
471				472			
472				473			
473				474			
474				475			
475				476			
476				477			
477				478			
478				479			

Confirmation: Review: Production: FJW

aterials/R	Material name:						Bluetooth RF antenna				
munica	Material number:						3.01. A200F00000				
A200 custom/FPC Bluetooth RF antenna											
ial num	Material name	aterial specif	Material Suppliers			RoHS/REACH /HF	Test Institution	Test Lab	Report number	Report Date	Remarks
1	PI-CCL electrolytic flexible copper	Halogen-free epoxy resin adhesives Halogen-free epoxy resin additive	Zelengerty	Yes	Yes	Yes	SGS	SHAEC23001049106 SHAEC23001049108			
	Note: Third-party reports should be inserted into the form or packaged with the documents										
	Copper foil copper foil										
4	TESA 68532 backing glue	Polyester film	TESA	Yes	Yes	Yes	SGS	REACH: SHAEC221756903		Note: The third party report is inserted into the form or packaged together with the report (named according to the material name + report number + report date), and the report must be valid within one year	
	REACH:2023-01-04						Acrylic Adhesive	Halogen: SHAEC2217569207			
	Halogen: 2023-01-04						Aliphatic Hydrocarbon Resin	ROHS: SHAEC2217569205			
	ROHS:2023-01-04										
5	Nickel Gold Plating Nickel Plating	Ni nickel	Qian Sheng	Yes	Yes	Yes	CTI China Test	ROHS: A2230153997101001 E			
	2023/04/07										
	6										
7	Brightener brightener	8	White covering film	Epoxy	Fubon	Yes	Yes	Yes			
	REACH: A22301080 06102001E ROHS: A22301080 06101003E										
	9										
	Ten										
11											

Note: The third party report is inserted into the form or packaged together with the report (named according to the material name + report number + report date), and the report must be valid within one year

3. 2D file

Shenzhen Yusheng Communication Equipment Co., Ltd.

YUSHENG COMMUNICATION TECHNOLOGY CO., LTD.

063016 (A200) - BOM Table

Item	Part No Item	Name name	Types of Type	Version Edition	Specification specification	Material quality material	Colour color	Surface treatment surface treatment	Unit Unit
1	063016-IA	BT-FPC	Z	R:A	17. 05*5. 00*0. 12 mm	Electrolytic copper one-on-one	White White	Gold plated gold plating	PCS
1.1	063016-IA-01	BT-FPC	Z	R:A	17. 05*5. 00*0. 12 mm	Electrolytic copper one-on-one	White White	Gold plated gold plating	PCS
1									
The above parts meet the environmental requirements of ROHS2.0 HF Reach GP									

Type: W. Outsourcing B. Semi-finished products Z. Finished products C. Customer supply

Shenzhen Yusheng Communication Equipment Co., LTD

A200-FPC full-scale test report

Customer name		Aidu		Product name		A200				Ingredient number		063016	
Mold hole number				The 1st inspection						Date		2023.08.04	
Inspection of appearance													
Serial numb	Standard values		Measured value						Decision		Notes		
			1	2	3	4	5	6	OK	NG			
1	2.91	+0.15 -0.15	2.96	2.88	2.94	2.87	2.91	2.93	OK				
2	5.00	+0.15 -0.15	5.02	4.96	5.04	4.98	5.01	5.04	OK				
3	17.15	+0.15 -0.15	17.22	17.19	17.21	17.09	17.15	17.11	OK				
4	2.70	+0.30 -0.30	2.75	2.66	2.79	2.68	2.71	2.81	OK				
5	0.11	+0.02 -0.02	0.12	0.11	0.12	0.10	0.11	0.12	OK				
6													
7													
8													
9													
10													
11													
12													
13													
Judgment result: Qualified													

Surveyor:

Chung Qiu-hung

Confirmed: Feng Jiwu

Process Capability Calculation Worksheet

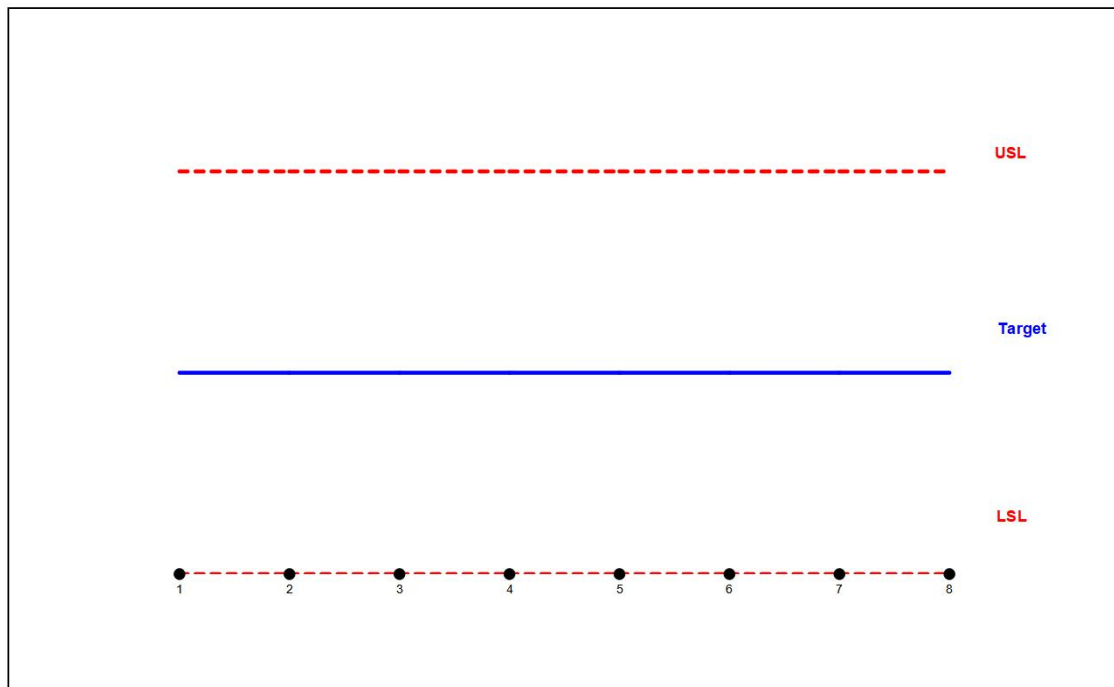
Part Number: BT
Part Description: A200
Part Revision: FPC

Supplier : YUSHENG COMMUNICATION TECHNOLOGY CO., LTD. Cavity / Tool # : #REF!
Submission Date: 27/Jul/23 Inspector:

Cpk Data

DRAWING SPECIFICATIONS

	Cpk1 - #	Cpk2 - #	Cpk3 - #	Cpk4 - #	Cpk5 - #	Cpk6 - #	Cpk7 - #	Cpk8 - #	
Nominal	2.910	5.000	2.700	17.150					
Upper Tol.	0.150	0.150	0.300	0.150					
Lower Tol.	0.150	0.150	0.300	0.150					
USL	3.060	5.150	3.000	17.300					
LSL	2.760	4.850	2.400	17.000					
Total Tol	0.300	0.300	0.600	0.300					
Xbar	2.912	5.023	2.828	17.112					
Stdv	0.027	0.024	0.029	0.017					
Zu	1.852	1.788	1.951	3.723					
Zl	1.907	2.426	4.873	2.204					
Cp	1.879	2.107	3.412	2.964					
Cpk	1.852	1.788	1.951	2.204					
Max	2.960	5.060	2.900	17.140					
Min	2.880	4.980	2.760	17.090					



DIMENSIONAL DATA

Sample	Cpk1 - #	Cpk2 - #	Cpk3 - #	Cpk4 - #	Cpk5 - #	Cpk6 - #	Cpk7 - #	Cpk8 - #
1	2.96	5.03	2.81	17.130				
2	2.88	4.99	2.79	17.100				
3	2.91	5.05	2.83	17.110				
4	2.89	5.03	2.86	17.140				
5	2.93	4.98	2.81	17.110				
6	2.96	5.03	2.77	17.090				
7	2.88	5.06	2.83	17.110				
8	2.91	5.04	2.80	17.090				
9	2.89	5.02	2.82	17.130				
10	2.91	5.05	2.81	17.110				
11	2.89	5.01	2.83	17.090				
12	2.93	4.98	2.84	17.110				
13	2.89	5.03	2.81	17.090				
14	2.93	5.04	2.88	17.120				
15	2.96	5.02	2.83	17.140				
16	2.88	5.02	2.81	17.110				
17	2.91	4.99	2.84	17.130				
18	2.89	5.03	2.85	17.110				
19	2.91	5.02	2.81	17.090				
20	2.89	4.99	2.83	17.110				
21	2.93	5.05	2.86	17.130				
22	2.89	5.03	2.81	17.140				
23	2.93	4.99	2.86	17.090				
24	2.96	5.02	2.90	17.100				
25	2.88	4.99	2.76	17.130				
26	2.91	5.05	2.85	17.120				
27	2.89	5.03	2.81	17.090				
28	2.93	5.06	2.83	17.110				
29	2.95	5.02	2.86	17.130				
30	2.93	5.00	2.83	17.090				
31	2.91	5.05	2.85	17.120				
32	2.88	5.03	2.83	17.100				

Reliability test report

Cold and heat shock test report

Customer	Aidu	Date	2023/08/04	In-plant number	THOT-063016-001
Ingredient number	A200	Quantity	5PCS each	Testing time	48H
Material specification	Single side half and half electrolytic copper	Suppliers	Yu Sheng	Reference standard	MIL-SDT-202Method017IEC60749-25 JEDEC JESD22-A104-B IEC68-2-1MIL-STD-2168-85

Test purpose: To test the reliability of the product and the binding force of the coating, the oxidation resistance and corrosion resistance of the coating.

Name of equipment: high and low temperature test box

Laboratory environment

Temperature	22 to 26 °C	Relative humidity	65-75%	Atmospheric pressure	1MPA
-------------	-------------	-------------------	--------	----------------------	------

Test parameters

Temperature	High temperature		80 °C	Low temperature	-40C		Temperature tolerance	2 °C
Time	Constant temperature	High temperature	0.30 H.	High temperature warming	10min		Notes	2. Low temperature cooling refers to falling from the set high temperature to the set low temperature
		Low temperature	0.30 H.	Low temperature cooling	10min			
Number of cycles	32 cycles		Other	Relative humidity	95%			
Inspection of appearance	Layering	ACC	Oxidation	ACC	Blistering	ACC	Peeling ink	ACC
Testing	Peel resistance	Acuity 0.8 KGF/cm2	Spot welding	ACC	Hundred-cell test	ACC	Wear resistance	ACC

Test record:

Product No.	Product test results	Decision
	After the end of the experiment, the product has no warping, no rubber overflow.	ACC

Producer: Chung Qiu-hung

Confirmed: Feng Jiwu

Shenzhen Yusheng Communication Equipment Co., LTD

Salt spray test report

Client:	Aidu	Model number: A200	
Sample condition	Number of samples: 5PCS		
	Material: single side half and half electrolytic copper	Coating: Gold plating	
Manufacturer address: 407-411,4th Floor, Building 2, South Taiyun Chuanggu Park, Guangming Avenue, Guangming New District, Shenzhen			
Types of experiments	<input checked="" type="checkbox"/> NSS <input type="checkbox"/> ASS <input type="checkbox"/> CASS		
Experimental conditions	Salt solution: 5%	PH: 7.0	
	Temperature in box 35°C	Relative humidity: 85%℃	
	Spray method: <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> intermittent	Compressed air pressure: 1kg/ square meter	
	Salt spray settlement rate:	Mist collection: PH7.0anc	
	Experiment period: 1-- cycle	Spray time: 48H	
		Placement time: 2H	
Observe results every 16 hours	The test temperature was: 36℃	The pressure barrel temperature is: 47.5℃	
Experimental results	Appearance after experiment: appearance intact and undamaged, no obvious changes		
	Coating: No peeling, no rust		
	Surface spraying, screen printing: no shedding, no bubbles		
Producer:	Chung Qiu-hung		Confirmed: Feng Jiwu

Packing			
Aidu Material Number:	3.01. A200F00000	Product Name:	Bluetooth RF antenna
Product Specifications:	A200/FPC Bluetooth RF antenna	Packing material:	Cardboard boxes/waterproof bags
Number of packages:	Subject to actual conditions	Packing method:	Semi-sticky process shipping
Packing quantity:	Maximum quantity in a box: 10000PCS		
Figure 1: Single package (semi-sticky process full plate shipment)		Figure 2: Packing method (2000/ pack label in small package)	
			
Figure 3: View of packing box (front, side, top)		Figure 4: Outer box label 100*100mm	
			
Remarks: (Fill in the name and quantity of materials used in packing in the remarks column)			
Materials used: covering mold/waterproof bag/carton			
Quantity: The quantity used depends on the order quantity			