

acknowledgement

product description:

Manufacturer:Shenzhen Yusheng Communication Equipment Co., LTD

Project model: IDB 03

Material:Bluetooth antenna

Specification / Color: white

Name:

Sample signing date: 2023-12-01

Material:R:a

Note: (This cover requires supplier seal)

Code:

␣ QC engineering drawing ␣ sample

version number:

␣ Reliability test report ␣ Packaging mode

␣ Electrical and mechanical performance description (specifications) ␣ manufacturing flow chart

(Everything needs to be provided)

␣ CPK Report the ␣ full-size measurement report

ratify:

␣ List of raw materials / RoHS Report / HF / REACH

Supplier signature and approval: Review:
(All of the above require manual signature, and printing is not allowed)

The above should be filled in by the supplier and the following by Aidu

	department	confirm content				confirm the results	valfirm person / date
Technic al conf irma tion colum n	Supplier quality	☐ RoHS material ☐ Non-RoHS materials	☐ Compliance with the REACH requirements	☐ Meet the halogen-free requirements	☐ Other environmental protection requirements		
	Design department ID:	☐ Customer request ID	☐ color confirmation	☐ Surface process validation	☐ Shell, hardware, key material		
	construction engineer	☐ 2D drawing file dimensional confirmation ☐ Specification and technical requirements	☐ Focus on controlling the dimension labeling ☐ electrical performance parameters	☐ adaptation validation ☐ function	☐ Shell, hardware, key material ☐ effect		
	hardware engineer	☐ 2D drawing file dimensional confirmation ☐ Specification and technical requirements	☐ Focus on controlling the dimension labeling ☐ electrical performance parameters	☐ adaptation validation ☐ function	☐ Shell, hardware, key material ☐ effect		
	Research and development quality:	☐ Test criteria confirm the appearance	☐ Normative dimension labeling (key ruler cun)	☐ reliability verification ☐ adaptation validation	☐ Function ☐ effect		

Final Confirmation of the Project Manager: ☐ Acknowledge the integrity of the documents ☐ Normalization of dimensions (key dimensions) ☐ Specification and technical requirements ☐ appearance ☐ Electrical performance parameters ☐ function ☐ effect

Conditions of recognition: ☐ formal recognition

☐ limited recognition

☐ disallow

Distribution department: ☐ IQC ☐ supplier ☐ customer ☐ after-sales ☐ SQE / text control

☐ other_____

QF -QMP -QA 01-01

catalogue

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1. Overview

1.1 Scope of application

This requirement specifies the antenna technical requirements and material requirements specifications for IDB03 products.

This requirement applies to the selection, testing and acceptance of IDB03 antennas.

2. Technical index requirements

2.1 Introduction of test items and equipment

inventory	test item	equipment
S11 parameter	Standing wave ratio, echo loss	network analyzer
Active test	TRP,TIS	Integrated tester, microwave darkroom
Passive test	Gain, efficiency	network analyzer

2.2 Active Reporting

2.2.1 Test instructions

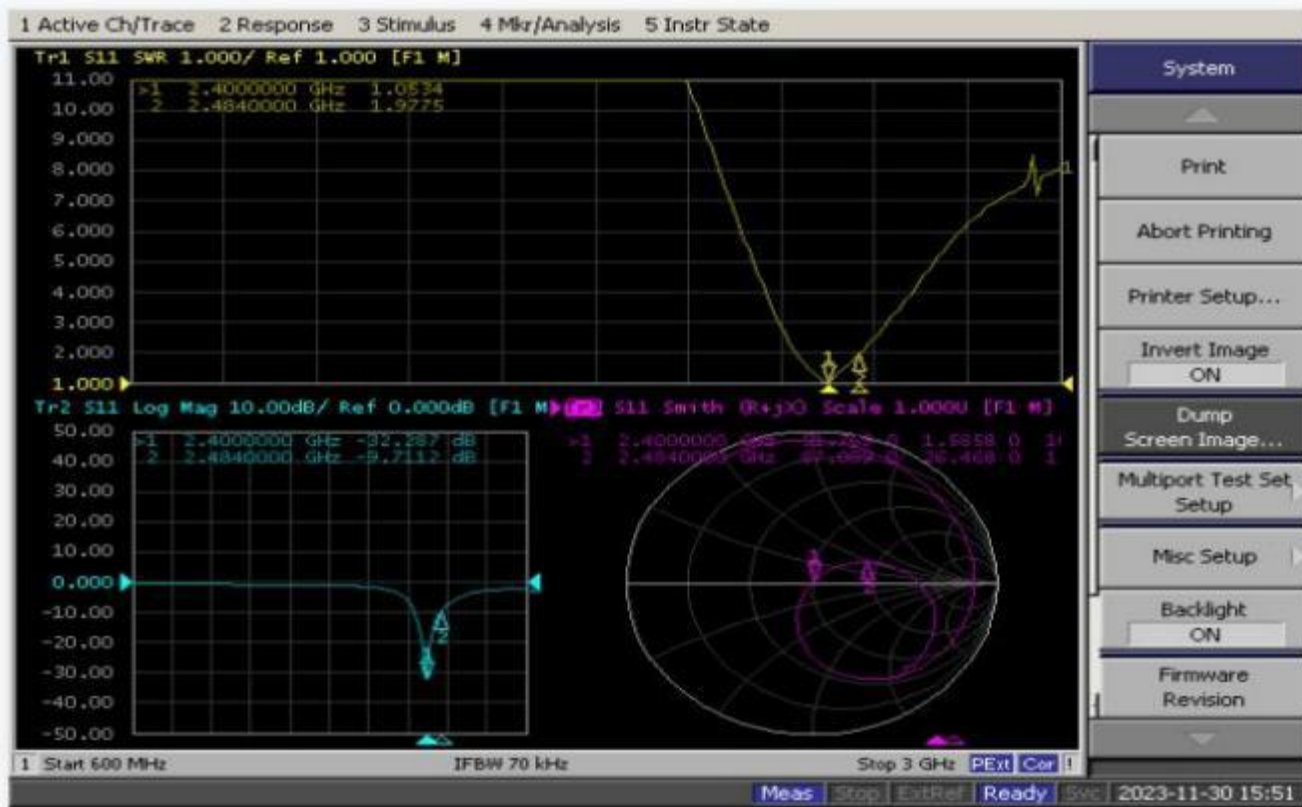
Test tools: Agilent8960 instrument, R & SCMW500, full wave far field ETS dark room, high precision positioning system and its controller and computer with automatic test program

Test environment: temperature $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, humidity $50\% \pm 15\%$

Test method: The DUT is fixed in the center of the turntable with the H plane, on the same horizontal line as the center of the horn antenna.

The positioning system enables the DUT to rotate in the whole sphere to satisfy the high-precision 3 D positioning. Each RF instrument and turntable controller communicate with PC with automatic test software through GPIB interface.

2.2.2 Antenna passive parameters



2.2.3 Antenna matching



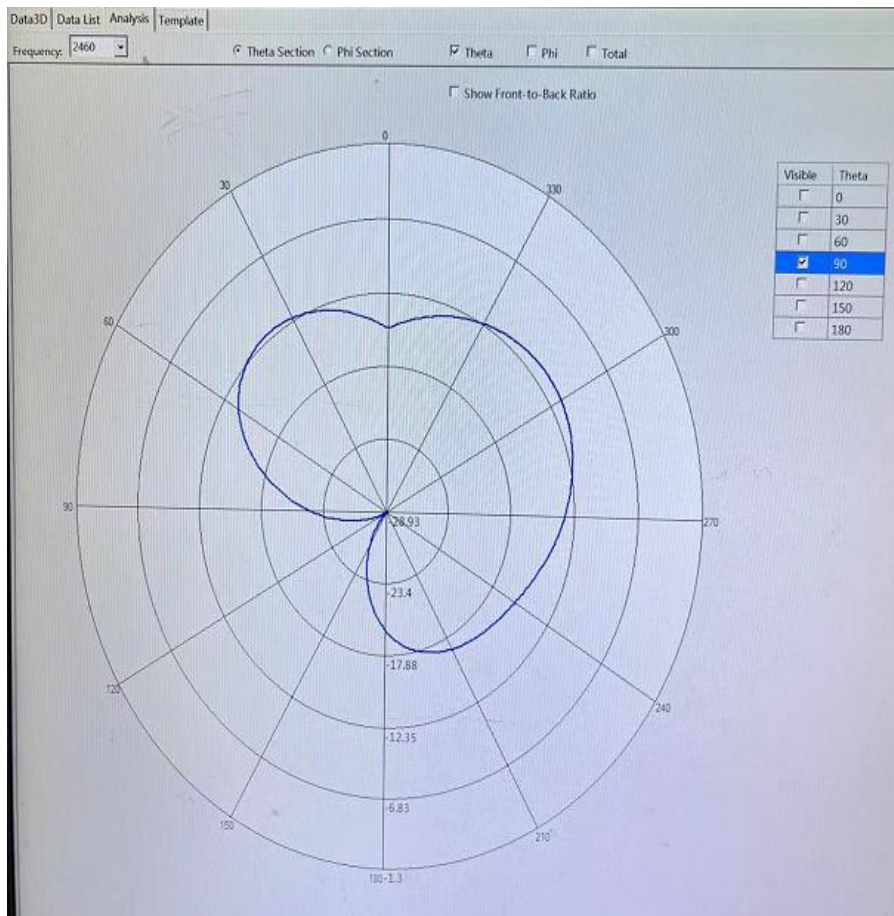
The 1.2nH inductors are connected in parallel

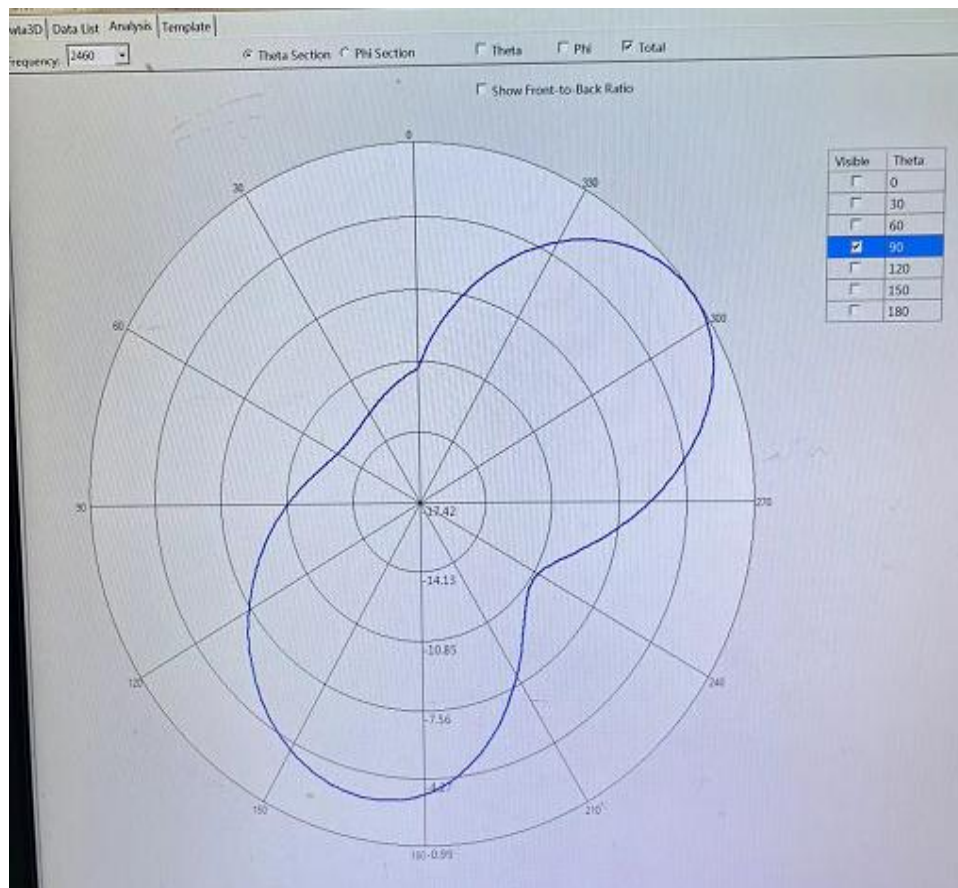
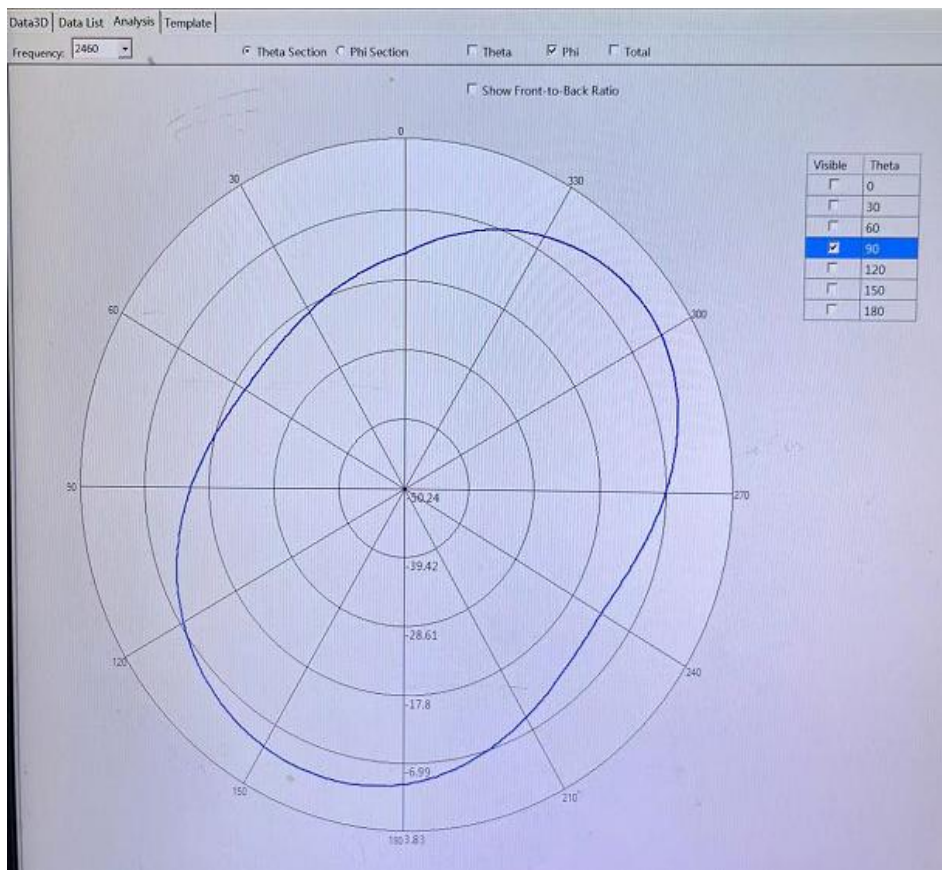
2.2.4 Antenna passive parameters

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 (%)	24.7	26.3	27.5	28.1	28.4	28.2	27.6	27.1	25.2
efficiency(dB)	6.1	-5.8	-5.6	-5.5	-5.5	-5.5	-5.6	-5.7	-6.0
gain(dBi)	-3.9	-3.7	-3.6	-3.2	-2.7	-3.1	-3.6	-3.7	-3.8

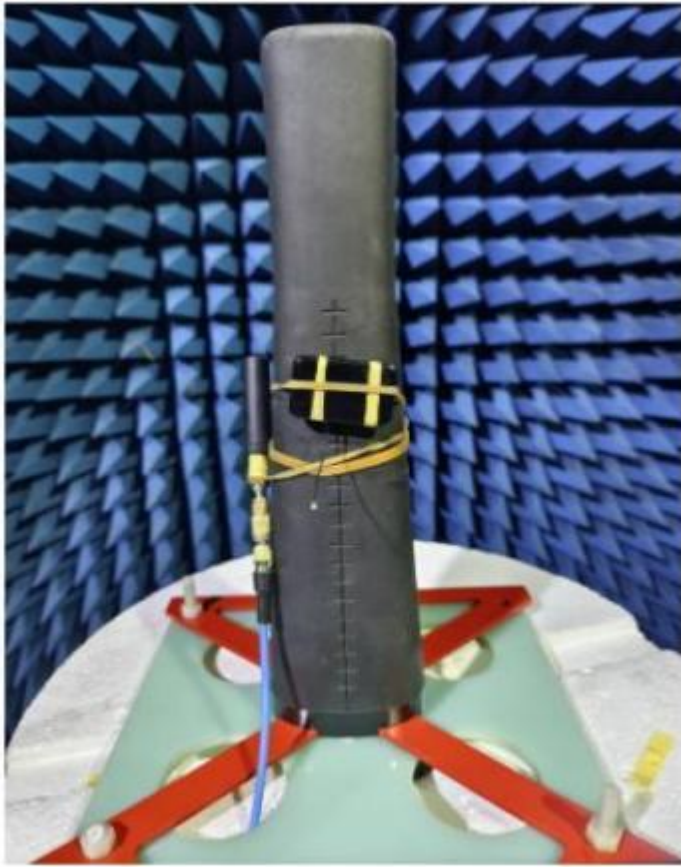
Test	-3.7								
Test Point ID	1	2	3	4	5	6	7	8	9
Freq. (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480
Efficiency (%)	5.9	6.4	6.9	7.2	7.5	7.3	6.7	6.4	5.7
efficiency(dB)	-12.3	-11.9	-11.6	-11.4	-11.3	-11.4	-11.7	-11.9	-12.4
gain(dBi)	-7.0	-6.8	-6.7	-6.4	-6.1	-6.4	-6.6	-6.8	-6.9

2.2.5 Antenna direction diagram

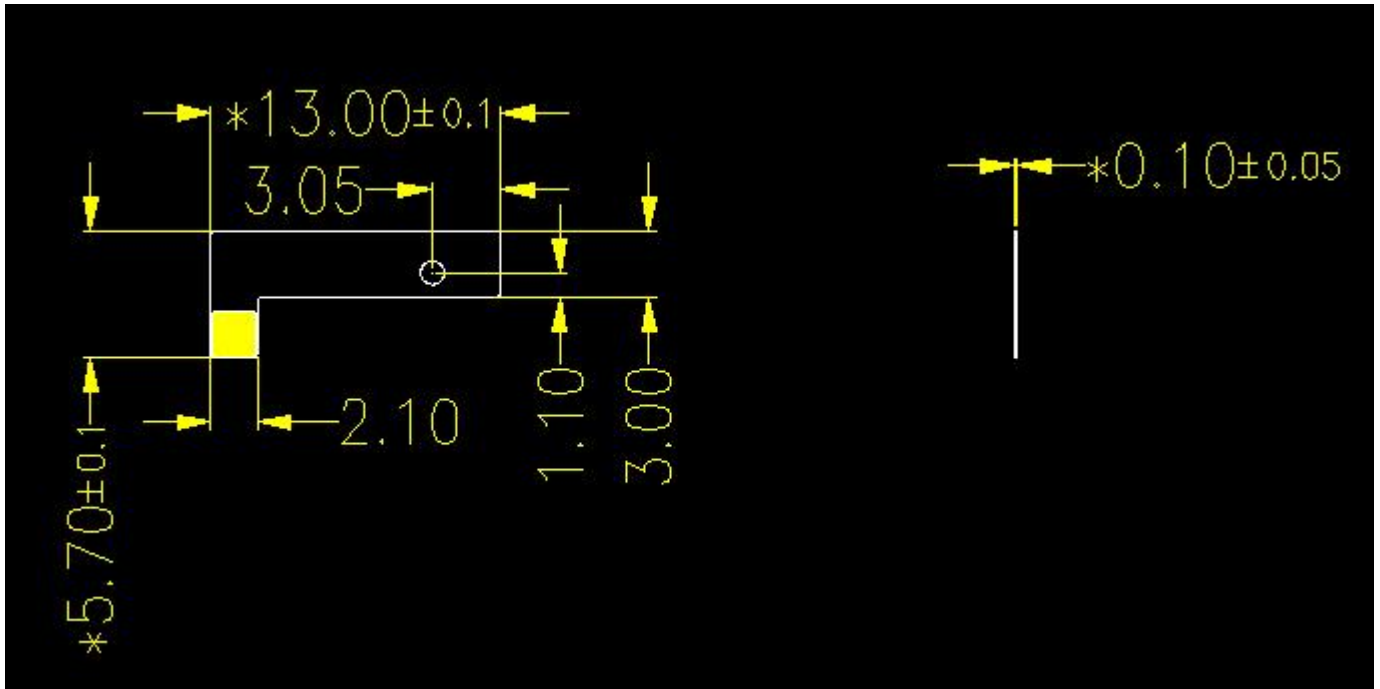




2.2.6 Antenna test environment



3. Engineering drawing





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4. List of materials



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063025 (IDB03) -BOM表

edition: R:A

client: 063

Type of aircraft: 063025

Set a date: 2023/12/01

Item numb	*Material code	*Material name	name	*Machine type	Specification and model	colour	*UNIT .	dosage	remark
1	063025-IA-RA	BT-FPC		IDB03	WHIET BT-FPC Electrolytic copper weld 113.00*5.70*0.12MM	WHIET	PCS	1	
1.1	063025-IA-01-TA	BT-FPC		IDB03	WHIET BT-FPC Electrolytic copper weld 113.00*5.70*0.12MM	WHIET	PCS	1	
verify:			examine:			manufacture: FJV			

5. Full test size report

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IDB03-FPC Full scale inspection report

customer name		Love all		the name or description of a commodity		IDB03				object ID		063025	
Number of mold holes				The first test						date		20231201	
visual inspection													
serial number	standard figures	measured value								decide		remark	
		1	2	3	4	5	6	OK	NG				
1	13.00	+0.15 -0.15	12.98	12.99	13.05	13.02	13.03	13.02	OK				
2	5.70	+0.15 -0.15	5.75	5.66	5.69	5.67	5.67	5.67	OK				
3	1.95	+0.30 -0.30	1.85	1.88	1.89	1.95	2.02	2.02	OK				
4	1.05	+0.10 -0.10	1.02	1.03	1.05	1.06	1.04	1.01	OK				
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
Judgment result: Qualified													

measurer:

Zhong QiuHong

Confirmed: Feng Jiwu

6. FPC-CPK

Process Capability Calculation Worksheet

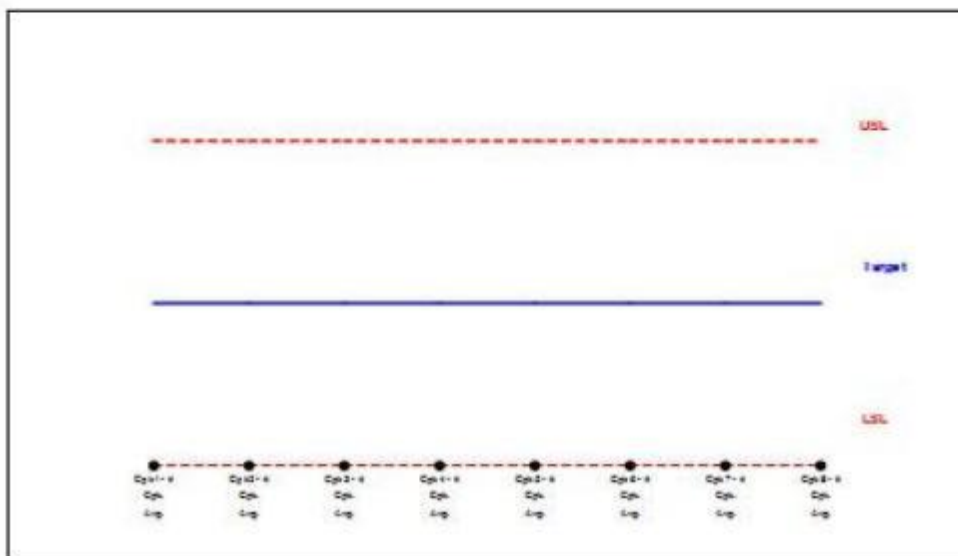
Part Number: BT
Part Description: ID503
Part Revision: FPC

Supplier: 深圳市品源通信设备有限公司
Submission Date: 1/26/23

Cavity / Tool #: 41221
Inspector:

Cpk Data

DRAWING SPECIFICATIONS								
	Cpk1 - #	Cpk2 - #	Cpk3 - #	Cpk4 - #	Cpk5 - #	Cpk6 - #	Cpk7 - #	Cpk8 - #
Nominal	13.000	5.700	1.950	1.050				
Upper Tol	0.150	0.150	0.300	0.100				
Lower Tol	0.150	0.150	0.300	0.100				
USL	13.150	5.850	2.250	1.150	0.000	0.000	0.000	0.000
LSL	12.850	5.550	1.650	0.950	0.000	0.000	0.000	0.000
Total Tol	0.300	0.300	0.600	0.200	0.000	0.000	0.000	0.000
Xbar	13.015	5.712	1.945	1.053				
Stdv	0.031	0.036	0.074	0.021				
Zu	1.471	1.332	1.377	1.498				
Zl	1.798	1.664	1.335	1.604				
Cp	1.635	1.443	1.356	1.651				
Cpk	1.471	1.332	1.335	1.498				
Max	13.070	5.770	2.120	1.080	0.000	0.000	0.000	0.000
Min	12.960	5.680	1.820	1.010	0.000	0.000	0.000	0.000



DIMENSIONAL DATA								
Sample	Cpk1 - #	Cpk2 - #	Cpk3 - #	Cpk4 - #	Cpk5 - #	Cpk6 - #	Cpk7 - #	Cpk8 - #
1	12.95	5.70	1.95	1.010				
2	12.97	5.69	1.91	1.020				
3	12.99	5.70	1.82	1.050				
4	13.07	5.72	1.90	1.050				
5	13.01	5.73	1.95	1.050				
6	13.02	5.72	1.98	1.060				
7	13.05	5.71	2.03	1.070				
8	13.04	5.75	1.95	1.080				
9	13.04	5.68	1.91	1.070				
10	12.98	5.69	1.82	1.010				
11	12.97	5.70	1.90	1.020				
12	12.99	5.72	1.95	1.050				
13	12.99	5.70	1.98	1.050				
14	13.01	5.72	2.03	1.050				
15	13.02	5.71	1.95	1.060				
16	13.05	5.75	1.91	1.070				
17	13.04	5.68	1.82	1.080				
18	13.04	5.69	1.90	1.070				
19	12.98	5.70	1.95	1.010				
20	12.97	5.72	1.98	1.020				
21	12.99	5.73	2.03	1.050				
22	12.99	5.77	1.95	1.050				
23	13.01	5.72	1.91	1.050				
24	13.02	5.75	1.82	1.060				
25	13.05	5.68	1.90	1.070				
26	13.04	5.69	1.95	1.080				
27	13.04	5.70	1.98	1.070				
28	13.01	5.72	2.03	1.060				
29	13.02	5.73	2.12	1.070				
30	13.05	5.77	2.11	1.080				
31	13.04	5.68	1.95	1.070				
32	13.04	5.75	1.91	1.050				

7. Reliability test report

Hot and cold shock test report

client	Love is	date	2023-12-02	Factory number	/
P / N	IDB03	quantity	Each 5PCS	testing time	48H
Material specification	FPC antenna	supplier	Renesola	reference standard	MIL-SDT-202Method017IEC60749-25 JEDEC JESD22-A104-B IEC68-2-1MIL-STD-2168-85

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

Equipment name: high and low temperature test box

laboratory environment

temperature	22-26°C	relative humidity	65-75%	atmos	1MPA
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test parameter

temperature	high temperature		80℃	low temperature	minus forty ℃		Temperature tolerance	2℃
time	constant temperature	High temperature	0.30H	High temperature heating	10min		remarks	1. High temperature warming rises from normal temperature to set high temperature. 2
		Low temperature	0.30H	Low temperature cooling	10min			
cycle index	32 Times		else	relative humidity	95%			
visual inspection	laminati on	ACC	oxidize	ACC	blister	ACC	The ink fell off	ACC
test	antistrip ping	≥0.8kgf/cm2	spot welding	ACC	Bige test	ACC	Wearresista ntexperim ent	ACC

test record:

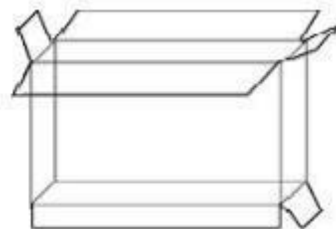
identification of product	Product test results	judge
	After the experiment, the product was oxidized and rusted.	ACC

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Salt mist test report

client:	Love is	Model number: IDB 03
Sample condition	Number of samples: 5 PCS	
	Material: FPC antenna	cladding material:
Start time of the experiment: 10:25 on November 28,2023 to 10:25 on November 20,2023,48 hours		
Type of experiment	☒ NSS ☐ ASS ☐ CASS	
experiment condition	Salt solution: 5%	PH:7.0
	Box temperature: 35 · C	Relative humidity: 85% °C
	Spray method: ☒ Continuous ☐ interval	Compressed air pressure: 1kg / m 2
	precipitation rate of salt spray:	Fog liquid collection: PH7.0anc
	Experimental period: 1- -cycle	Spray time: 48H
		Hold time: 2H
The results were observed every 16 hours	The test temperature is: 36°C	Pressure barrel temperature: 47.5°C
experimental result	Appearance after the experiment: the appearance is intact and intact, no obvious change	
	Plating: no peeling, no corrosion	
	Surface spraying, screen printing: no falling off, no bubbles	

8. Packaging information

Packaging method diagram		
product name	FPC antenna	
P / N	063025	
Project model	IDB03	
File details	Carton Size 1: 270*260*200MM Carton Size 2: 260*200*200MM Carton Size 3: Depending on the order quantity / volume	
	Boating method	Packaging by order quantity
	Total number of binning	Packaging by order quantity
labeling requirement	Tag Size 1: Universal use 100 * 100mm Tag Size 2: According to customer requirements	
matters need attention		
1. Due to the limitation of order quantity, the packing method of each material is the size of the box according to the total quantity of the order or the physical volume		
2. Storage temperature: room temperature		
3. Preservation conditions: store them in a cool and dry place		



Shenzhen Yusheng Communication Equipment Co., LTD

9. manufacturer

manufacturer : Shenzhen Yusheng Communication Equipment Co., LTD

Address: 407-411, Building 2, Nantaiyun Chuanggu Park, intersection of Guangming Avenue and Dongchang Road, Guangming District, Shenzhen