

Admit it

The product description:	The manufacturer: Welletronics Communication Technology Limited The name of the material: Bluetooth RF antenna Material code: 3.01.IDW13F1000 The version number: V1.0	Project type: IDW13 Specification/Color: white Sign the sample date: 2022.12.08 note:			
The attachment:	■ Description of electrical and mechanical properties (Specification) ■ Manufacturing flow chart ■ QCEngineering drawing ■ The sample ■ CPK report ■ Full size measurement report ■ Reliability test report ■ The packing way ■ Raw material list report /RoHS report/HF/REACH				
Supplier sign and approve	artificial:	approval:			
The above shall be filled in by the supplier and the following shall be filled in by Aidu					
	department	Confirm the content	Verify the results	Confirm person/date	
Technical confirmation column	Supplier quality	☐ RoHS material ☐ no RoHS material	☐ Meet REACH requirements ☐ Meet halogen-free requirements ☐ Other Environmental Requirements		
	ID of Design Department	☐ The customer request ID ☐ Color confirmation	☐ Surface process confirmation ☐ Shell, hardware, key material		
	Structural engineer	☐ Confirm the size of 2D drawing files ☐ Specifications and technical requirements	☐ Focus on size marking control ☐ Electrical performance parameter ☐ Adapter validation ☐ function	☐ Shell, hardware, key material ☐ The effect	
	Hardware engineer	☐ Confirm the size of 2D drawing files ☐ Specifications and technical requirements	☐ Focus on size marking control ☐ Electrical performance parameter ☐ Adapter validation ☐ function	☐ Shell, hardware, key material ☐ The effect	
	R&d quality	☐ Test standard confirmation ☐ appearance	☐ Standardization of dimension marking (key dimensions) ☐ Reliability verification ☐ Adapter validation	☐ function ☐ The effect	
Final confirmation	Project Manager	☐ Acknowledge the completeness of the documents ☐ Standardization of dimension marking (key dimensions) ☐ Specifications and technical requirements ☐ appearance	☐ Electrical performance parameter ☐ function ☐ The effect		
Admitted conditions:	☐ Official recognition ☐ Set limit to admit ☐ Refuse to admit				
Distribution department:	☐ IQC ☐ supplier ☐ The customer ☐ after-sales ☐ SQE/ Document control ☐ other _____				

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Three 、 Change history**Change of resume**

Serial number	Date of change	entry name	Edition	Change content	Remarks
1	Dec 8, 2022	IDW13 BT antenna	V1.0	nothing	New issue

Four、 Electrical characteristics

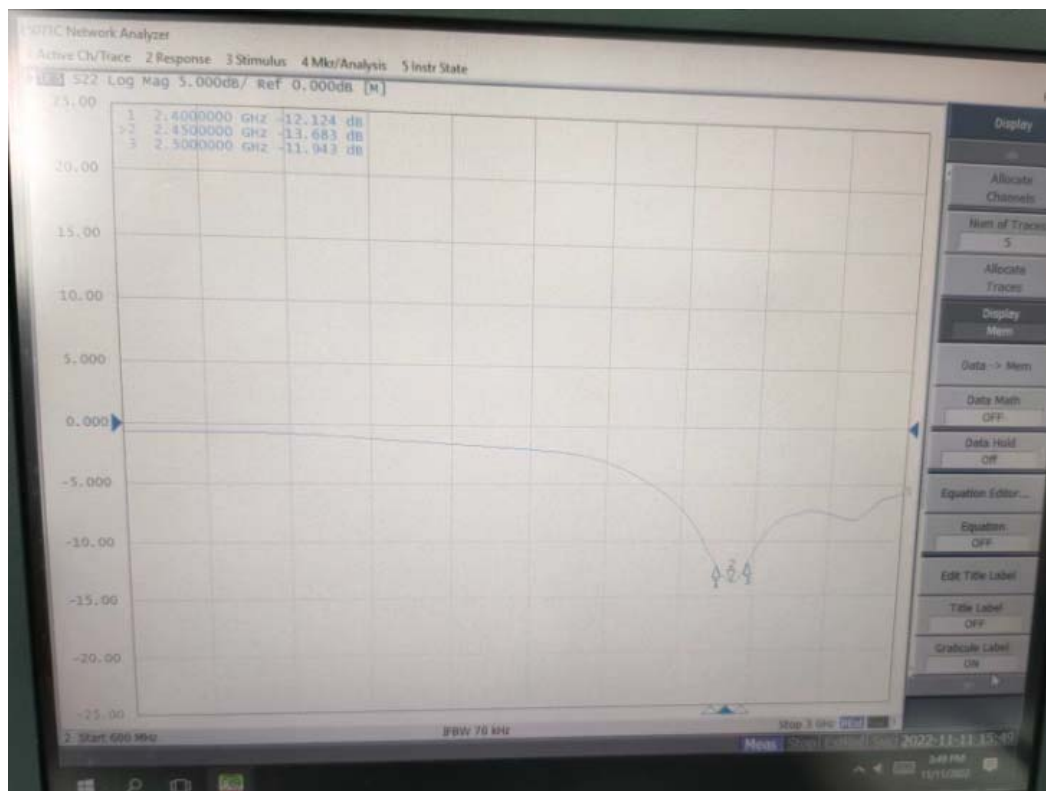
1. Antenna Structure



Figure antenna structure

2. Test Results

BT-Return Loss/VSWR



3. Test Repor No source by space test efficiency/pattern

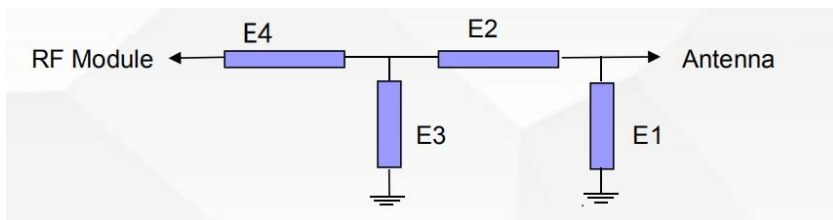
Free space

Freq (MHz)	Effi (dB)	Effi (%)	Gain (dBi)
2400	-4.14	38.5	-0.18
2410	-4.56	35.0	-0.61
2420	-4.62	34.5	-0.42
2430	-4.8	33.1	-0.56
2440	-4.8	33.1	-0.69
2450	-4.95	32.0	-0.80
2460	-5.21	30.1	-1.11
2470	-5.26	29.8	-1.15
2480	-5.41	28.8	-1.34

Add the arm

Freq (MHz)	Effi (dB)	Effi (%)	Gain (dBi)
2400	-9.66	10.8	-6.01
2410	-9.97	10.1	-6.36
2420	-9.94	10.1	-6.38
2430	-10.05	9.9	-6.53
2440	-9.98	10.0	-6.49
2450	-10.07	9.8	-6.71
2460	-10.28	9.4	-6.86
2470	-10.26	9.4	-6.84
2480	-10.35	9.2	-7.06

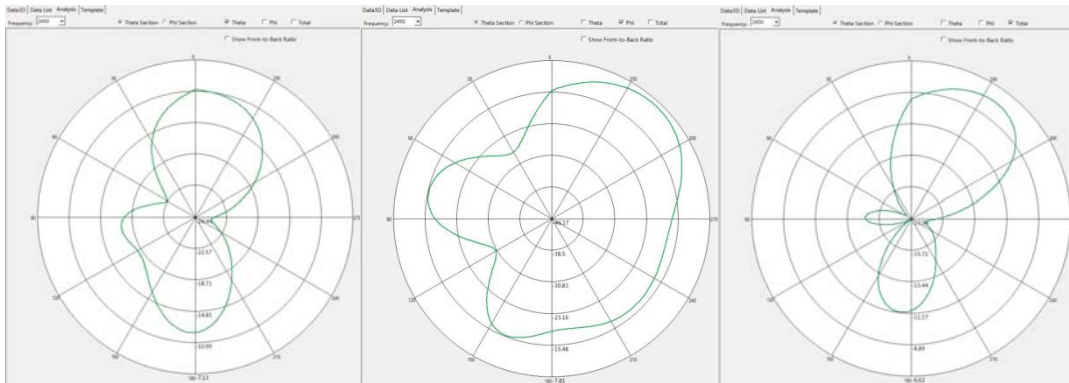
Match



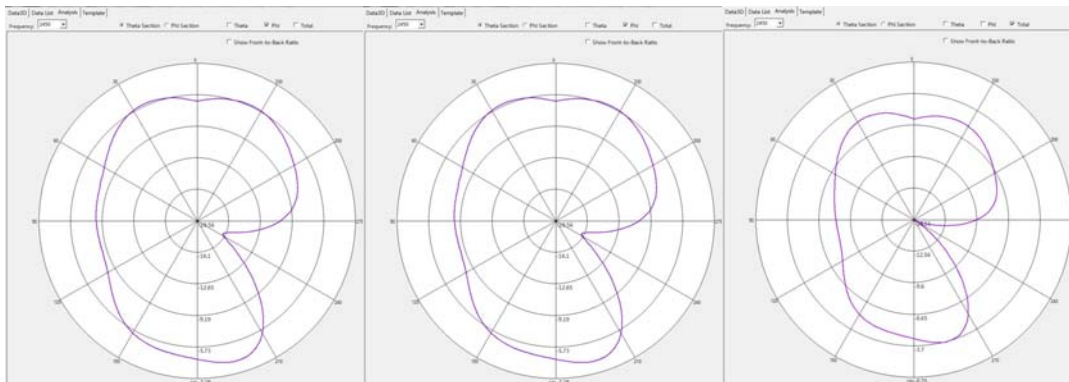
The antenna	Element	Value
	E1	1.2PF
	E2	0 Ω
	E3	
	E4	

3. The direction of figure

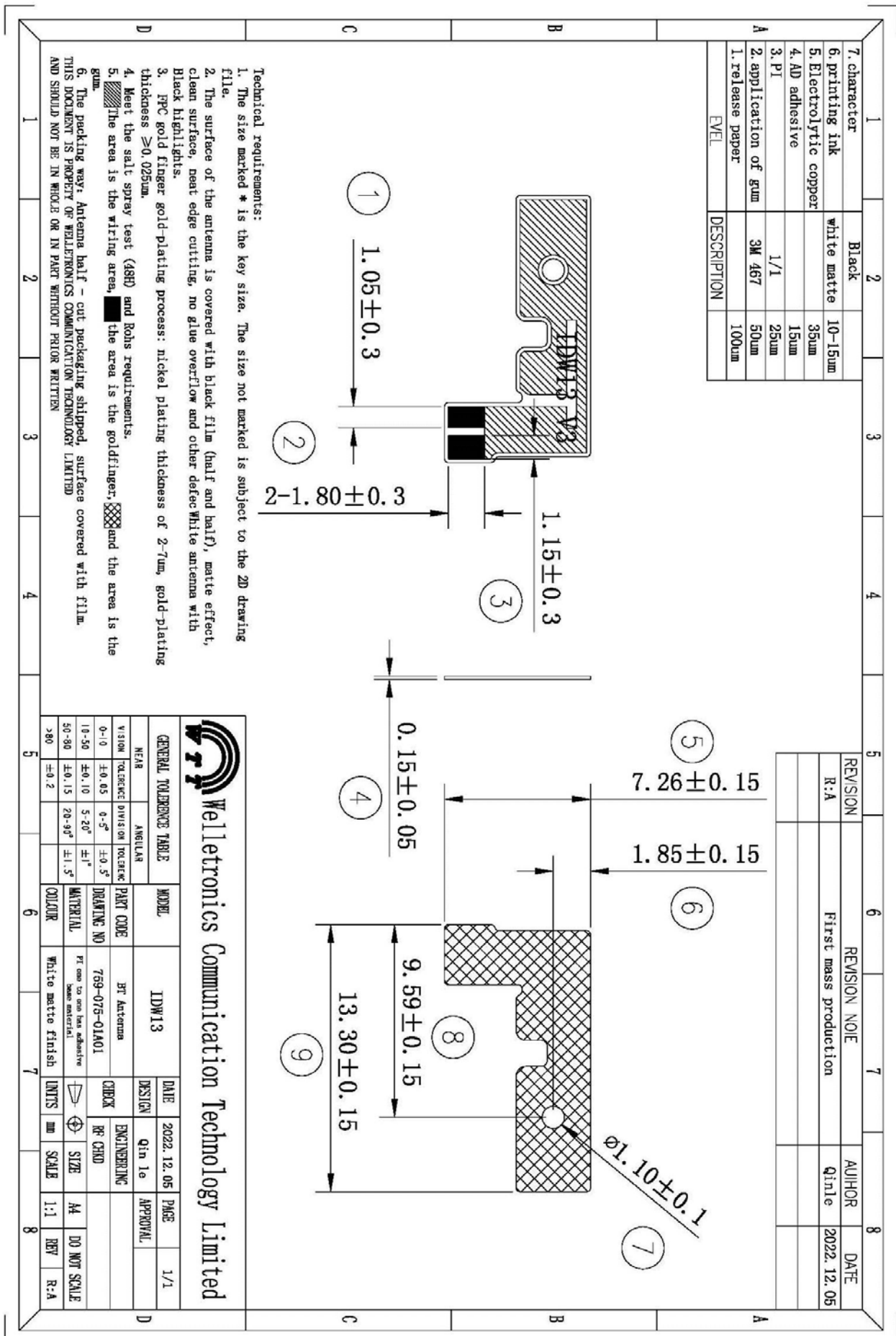
Free space



Add the arm



Five、The 2D drawings



Six、Full-scale measurement report

Vendor		Material name	FPC	Part NO	759-075-01A01		Tool Number		Cav. Number		Unit		Comments											
WTT		Material Code		Part Name	IDW13 BT antenna	Rev			☐ INCHES ☒ MILLIMETERS															
Date		07/Dec/22			MEASURED DIMENSION					% TOLERANCE USED		DISPOSITION					ACCEPTABLE VARIANCE							
# DIM.	DIMENSION	DRAWING ZONE	+ TOL.	- TOL.	NOTE	SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4	SAMPLE 5	UPPER	LOWER	0%-25%	25%-50%	50%-75%	75%-100%	100%+	Re-Measure	Accept	Fix Tool	Accept With Variance	DIMEN SION	+ TOL.	- TOL.
1	1.05		0.30	0.30		1.03	1.04	1.01	1.05	1.07	7%	13%	X											
2	1.80		0.30	0.30		1.79	1.79	1.77	1.80	1.80	0%	10%	X											
3	1.15		0.30	0.30		1.14	1.13	1.23	1.14	1.12	27%	10%		X										
4	0.15		0.05	0.05		0.15	0.15	0.15	0.15	0.15	0%	0%	X											
5	7.26		0.15	0.15		7.25	7.29	7.29	7.23	7.28	20%	20%	X											
6	1.85		0.15	0.15		1.89	1.81	1.84	1.88	1.87	27%	27%		X										
7	1.10		0.10	0.10		1.13	1.07	1.10	1.13	1.11	30%	30%		X										
8	9.59		0.15	0.15		9.61	9.58	9.59	9.56	9.59	13%	20%	X											
9	13.30		0.15	0.15		13.33	13.30	13.34	13.27	13.27	27%	20%		X										
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								

Full-scale measurement report

Seven、Cpk Report

CPK Report

Part Number	759-075-01A01		Vendor	WTT	
Description	IDW13 BT antenna		Inspected	肖洁	
Tool Number			Inches/MM	mm	
Cavity			Material Name	FPC	
			Material Code		
Revision	R:A		Date	7-Dec-22	
Dim. Designator	5	9			
Nominal	7.26	13.30			
+ Tolerance (All	0.15	0.15			
- Tolerance	-0.15	-0.15			
Upper Limit	7.41	13.45			
Lower Limit	7.11	13.15			
1	7.25	13.33			
2	7.29	13.30			
3	7.29	13.34			
4	7.23	13.27			
5	7.28	13.27			
6	7.28	13.35			
7	7.20	13.32			
8	7.22	13.30			
9	7.28	13.28			
10	7.28	13.28			
11	7.25	13.27			
12	7.22	13.25			
13	7.20	13.26			
14	7.23	13.24			
15	7.20	13.28			
16	7.24	13.33			
17	7.21	13.32			
18	7.28	13.34			
19	7.28	13.27			
20	7.20	13.25			
21	7.23	13.26			
22	7.20	13.24			
23	7.24	13.28			
24	7.21	13.33			
25	7.26	13.32			
26	7.26	13.34			
27	7.24	13.27			
28	7.27	13.25			
29	7.28	13.30			
30	7.20	13.32			
MAX.	7.29	13.35			
MIN.	7.20	13.24			
AVERAGE	7.24	13.29			
STDEV	0.03	0.03			
CP	1.55	1.47			
Cpk	1.38	1.39			
TOOLING	CMM	CMM			

Approved By: Kun Yao

Written By: Jie Xiao



Welletronics Communication Technology CO., Ltd

Environment-Concerned Stbstance report

supplier' s Name : Welletronics Communication Technology CO.,Ltd

(Raw material Manufacturer) : Welletronics Communication Technology CO., Ltd

Names of material and type : IDW13 BT antenna

RoHS test report NO.

Name of hazardous substance	Threshold value ppm (mg/Kg)	If yes, which products/part numbers	Do you products contain this substance (Yes or No)	How much ppm (mg/kg)	Implement schedule
Cadninnm and its compounds	100	759-075-01A01	NO	/	07/Dec/22
Lead and its compounds	1000		NO	/	07/Dec/22
Chromium VI and its compounds	1000		NO	/	07/Dec/22
Mercury and its compounds	1000		NO	/	07/Dec/22
Poly bramijnated Biphenyls (PBBS)	1000		NO	/	07/Dec/22
Poly bramijnated Diphenyl ethers(PBDES)	1000		NO	/	07/Dec/22

(Contact Person) : Tianhua Liu (Position) : Quality Manager (TEL): 0755-29076623

e-Mail: qc1@wt-china.com (Date) : 07/Dec/22

Nine、Salt spray test

Salt spray test

Customer	AiDu	Written By	Jie Xiao	Orig. Date	7-Dec-22		
Part Number	759-075-01A01	Revised By	Kun Yao	Revised Date	7-Dec-22		
Description1	IDW13 BT antenna	Approved By	TianHua Liu	Approved Date	7-Dec-22		
Date of trial	Starting at 09.00 on Dec 5, 2022						
	And end at 09.00 on Dec 7, 2022						
	A total of 48 hours of continuous spray						
Experimental operation	1、Test operation status					OK	
	2、Test box temperature					35℃	
	3、Saturated Air Bucket Temperature					47℃	
	4、Specific gravity of salt spray test					5%	
	5、Specimen supported angle					30°	
	6、Compressed air pressure					1kg/cm ²	
	Time	Testing time	Laboratory thermometer (℃)	Saturated Air Barrel Temperature (℃)	compressed air pressure (kg/cm ²)	Machine running condition	Remarks
	17:00 on Dec 5	8	35	47	1kg/cm ²	OK	
	1:00 on Dec 6	16	35	47	1kg/cm ²	OK	
	9:00 on Dec 6	24	35	47	1kg/cm ²	OK	
	17:00 on Dec 6	32	35	47	1kg/cm ²	OK	
	1:00 on Dec 7	40	35	47	1kg/cm ²	OK	
	9:00 on Dec 7	48	35	47	1kg/cm ²	OK	
NO	Post-test status					Determine	Remarks
1	No oxidation on coating surface and no foammg and falling off of ink					OK	5PCS
2							
3							
4							
Remarks:							

Approved By: Kun Yao

Written By: Jie Xiao

Ten、 High and Low Temperature Testing

High and Low Temperature Testing

Customer	AiDu		Written By	Jie Xiao	Orig. Date	7-Dec-22	
Part Number	759-075-01A01		Revised By	Kun Yao	Revised Date	7-Dec-22	
Description1	IDW13 BT antenna		Approved By	TianHua Liu	Approved Date	7-Dec-22	
Test time	Starting at 08:30 on 1 Dec ,2022					Hot test (60℃)	
	Ending at 08:30 on 3 Dec, 2022						
	Starting at 08:35 on 3 Dec, 2022					Room temperature test(20℃)	
	Ending at 10:35 on 3 Dec, 2022						
	Starting at 10:40 on 3 Dec, 2022					low temperature test(-20℃)	
	Ending at 10:40 on 5 Dec, 2022						
	Starting at 10:45 on 5 Dec ,2022					Room temperature test(20℃)	
	Ending at 12:45 on 5 Dec, 2022						
	Starting at 12:50 on 5 Dec ,2022					High Temperature and Humidity Test (60℃)	
	Ending at 12:50 on 7 Dec, 2022						
	Starting at 12:55 on 7 Dec ,2022					Room temperature test(20℃)	
	Ending at 14:55 on 7 Dec, 2022						
	Total 150H Test						
Experimental operation	Time		Test time(h/m)	Test box temperature(℃)	Air humidity intest box(%)	Machine running condition	Remarks
	02/Dec/22	08 :30 A.M	24	59.91℃		OK	High temperature section
	03/Dec/22	08:30 A.M	48	60.01℃		OK	
	03/Dec/22	10 :35 A.M	2	20.07℃		OK	normal temperature section
	04/Dec/22	10:40 A.M	24	-19.91		OK	low temperature section
	05/Dec/22	10 :40 A.M	48	-20.02		OK	
	05/Dec/22	12 :45 P.M	2	19.97		OK	normal temperature section
	06/Dec/22	12 :50 P.M	24	59.92		OK	High temperature and high humidity section
	07/Dec/22	12 :50 P.M	48	60.04	95	OK	
	07/Dec/22	14 :55 P.M	2	20.01	95.10	OK	normal temperature section
NO	Post-test status				Determine	Remarks	
1	No Foaming Abnormality On Ink Surface				OK		
2							
3							
4							

Revised By: Kun Yao

Written By: Jie Xiao

Eleven、Material quality proves

Customer		Aibb		Written By		Jie Xiao		Orig. Date		7-Dec-22							
Part Number		759-075-01A01		Revised By		Kun Yao		Revised Date		7-Dec-22							
Description1		IDW13 BT antenna		Approved By		Tianhua Liu		Approved Date		7-Dec-22							
The serial number	Part name	The name of the material	Material supplier	Test Report No. of Hazardous Material	Hazardous substance content										Inspection date	Note	MSDS
					Cd	Pb	Hg	Cr+6	PBB	PBDE	DIBP	DEHP	DBP	BBP			
1	Base material	Cai lungti	Electrolytic copper	SHAEC2202460504	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2022. 2. 21	 电解中文ROHS (1).Pdf	 成品MSDS_2019.pdf
2	The back glue	3m agents	467 of gum	ROHS/CANEC2205384301 HF/CANEC2205384302	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2022. 4. 8	 铅酸-31M67-HF.pdf  铅酸-31M67-R OH5.pdf	 467 468 9667 9668 MSDS报告
3	ink	Arcane armor	FCR-1000A	ROHS/A22200235891010 01E HF/A2220023589101002 E	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2022. 1. 22	 RoHS申明.pdf  虚票.pdf	 安全资料表Safety Data Sheet.pdf
4	character	Yichangshun	HS-3003BK	S22022301801C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2022. 2. 28	 S22022301801C(1).pdf	 亿昌国际循环管理程序支持性文件
5	electroplate	Jiahongtai	Nickel plated gold	A2220171849101001C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2022. 5. 14	 A2220171849101001C.pdf	 物质安全数据表.pdf

Material quality proves

Twelve、Shipment packaging

Packing

General requirements:

- 1.State customer name, project name, model number,
- 2.The pictures show the inner and outer cases, the packing method when shipping, the number of layers, the quantity of single layer, etc
- 3.Fill in the name and quantity of packing materials in the remarks column
- 4.Signature of quality supervisor, date

	Product material no:	759-075-01A01	
	The product name:	IDW13 BT antenna	
	Product version:	R:A	
	The packing way:	Full page half cut package shipping	
	Blister tray	very dish:	1000pcs/bag
	carton	Each box number:	20000pcs/bag
	note:		
Put each 1000pcs into PE bag with protective film protection;20 bags in one case, 20000pcs. Signature:Qinle			