Material acknowledgement

product description	Manufacturer: Shenzhen Yusheng Communication Equipment Co., Ltd Project model:CWS07G Item name: FPC antenna Specifications / Colors: Material code: Sample delivery date: year, month, day Version number: Note: (this cover requires supplier seal) Antenna manufactureraddres: 407-411, 4th Floor, Building 2, South Taiyun ChuangguPark, southeastof the intersection of GuangmingAvenue and DongchangRoad, GuangmingDistrict, Shenzhen	
appendix	☐ sample ☐ Manufacturing flow chart / 2D diagram ☐ Electrical and Mechanical Property Description (Specification) ☐ Full-size measurement report ☐CPK report ☐QC schedule drawing	☐ Reliability test report ☐ packaging information ☐ List of raw materials / RoHS & REACH & HF Report ☐ Bill of Materials, MSDS ☐ Environmental material questionnaire
Supplier audit	Formulation: review: approval: (All of the above require manual signature, and printing is not allowed)	

The above is filled by the supplier, the following is filled by Xiao Che Technology

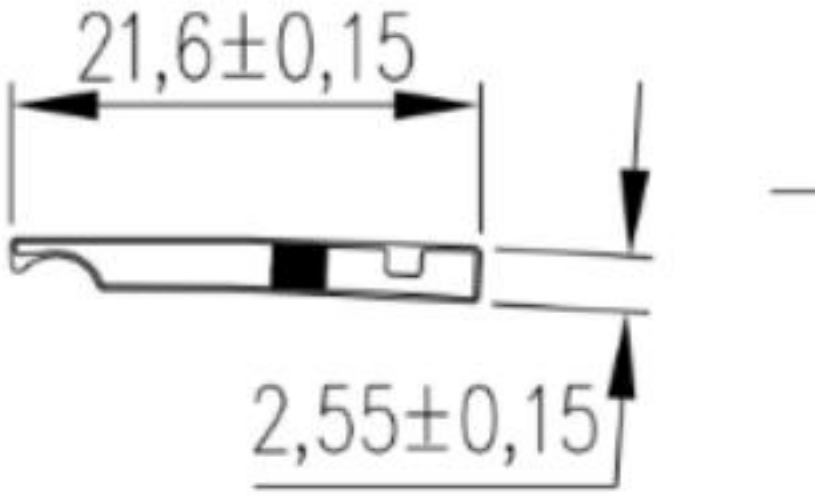
discriminate	**Confirmation of the person**	**Confirm content**	**Confirm the results**	**Signature of confirmation**	**Confirmation date**
Technical confirmation	ID	☐ Appearance ☐ color ☐ process ☐ material			
	structure	☐ Material ☐ dimension (including the key control dimension annotation) ☐ Specification and technical requirements ☐ adaptation verification			
	hardware	☐ Specification and technical requirements (including electrical performance parameters) ☐ Adaptation to verify the ☐ effect			
	quality	☐ RoHS materials ☐ Non-RoHS materials ☐ meet the requirements of REACH ☐ Compliance with halogen free requirements ☐ other environmental requirements ☐			

		test standard confirmation ☐ appearance ☐ normative dimension ☐ reliability confirmation			
Final confirmation	project	☐ Acknowledge the integrity of the document ☐ dimension dimensions ☐ Appearance ☐ Electrical performance parameter ☐ function ☐ effect			
condition of recognition:	☐ formal admission ☐ Limited recognition (Limited _____ PCS) ☐ disallow				
Distribution Department:	☐ Supplier ☐ Factory IQC ☐ Quality ☐ Project ☐ After-sales ☐ Customer ☐ Other _____				

Antenna type：FPC antenna

Antenna material: Copper foil

Antenna size:：21.6mm*2.55mm



Catalogue

1. Overview

1.1 Scope of application

This requirement specifies the antenna technical requirements and material requirements for CWS07G products. This requirement applies to the selection, testing and acceptance of CWS07G antennas.

1.2 Basic information of the project

Antenna name:	**CWS07G**
Antenna band:	BT
Antenna material:	FPC

2. Technical index requirements

2.1 Introduction of test items and equipment

inventory	test item	equipment
Active testing	TRP,TIS	Comprehensive test instrument, microwave anechoic chamber

2.2 Active reporting

2.2.1 Test description

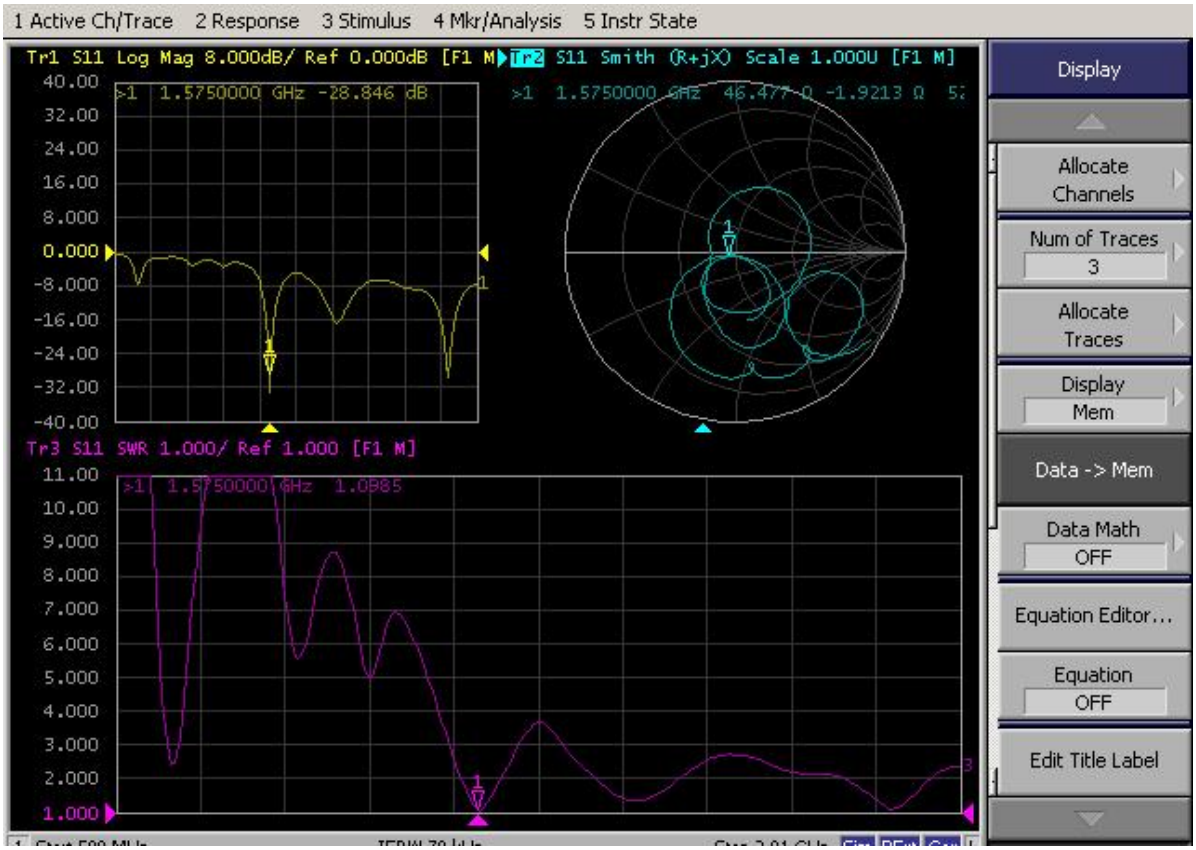
Test tools: Agilent8960 comprehensive tester, R&SCMW500, full wave far field ETS anechoic chamber, high pre cision positioning system and its controller, and computer with automatic test program

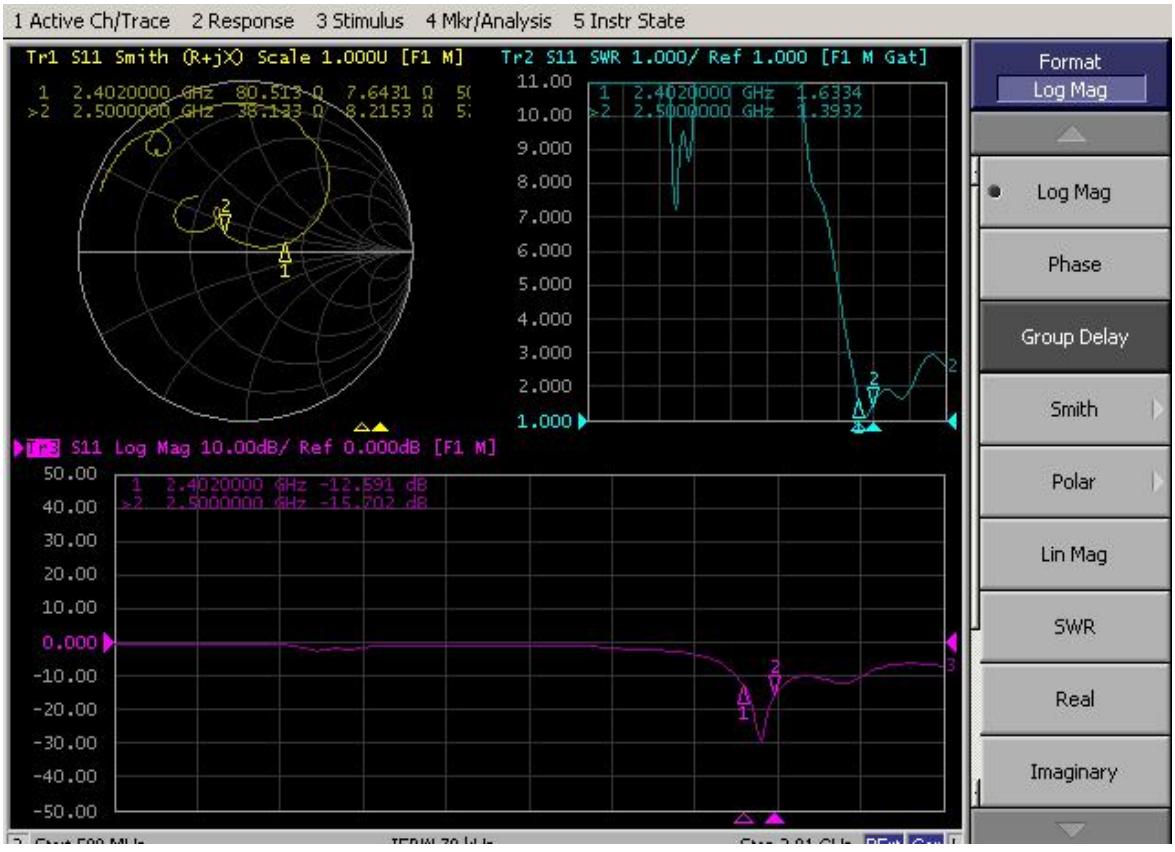
Test environment: temperature 22℃±3℃, humidity 50%±15%

Test method: The DUT is placed at the center of the turntable in H plane and fixed, and the center of the spea ker antenna is on the same horizontal line.

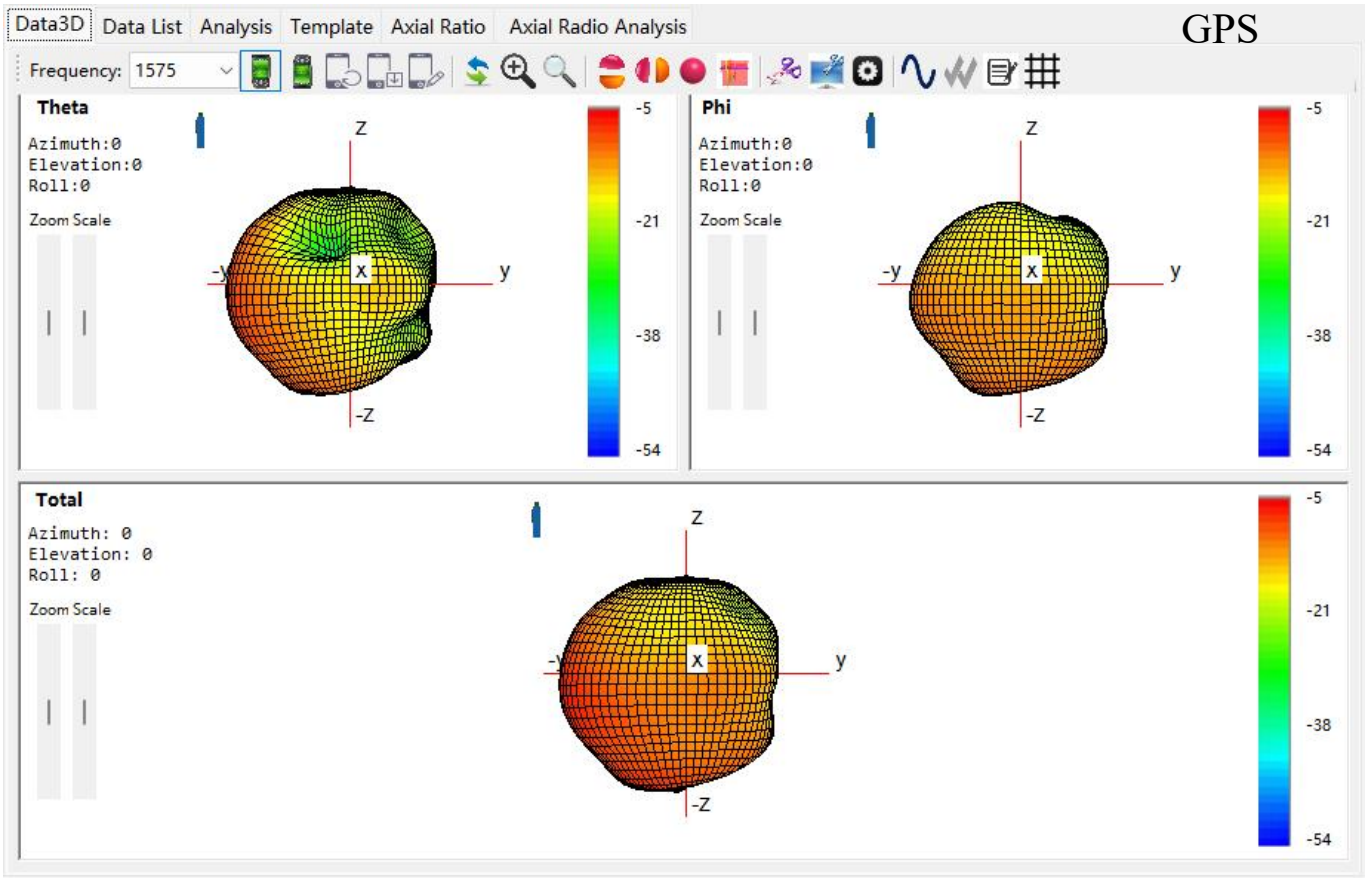
The positioning system enables the DUT to rotate on the whole sphere to meet the requirements of high-precision three-dimensional positioning. Each RF instrument, turntable controller and PC with automatic test software communicate through the GPIB interface.

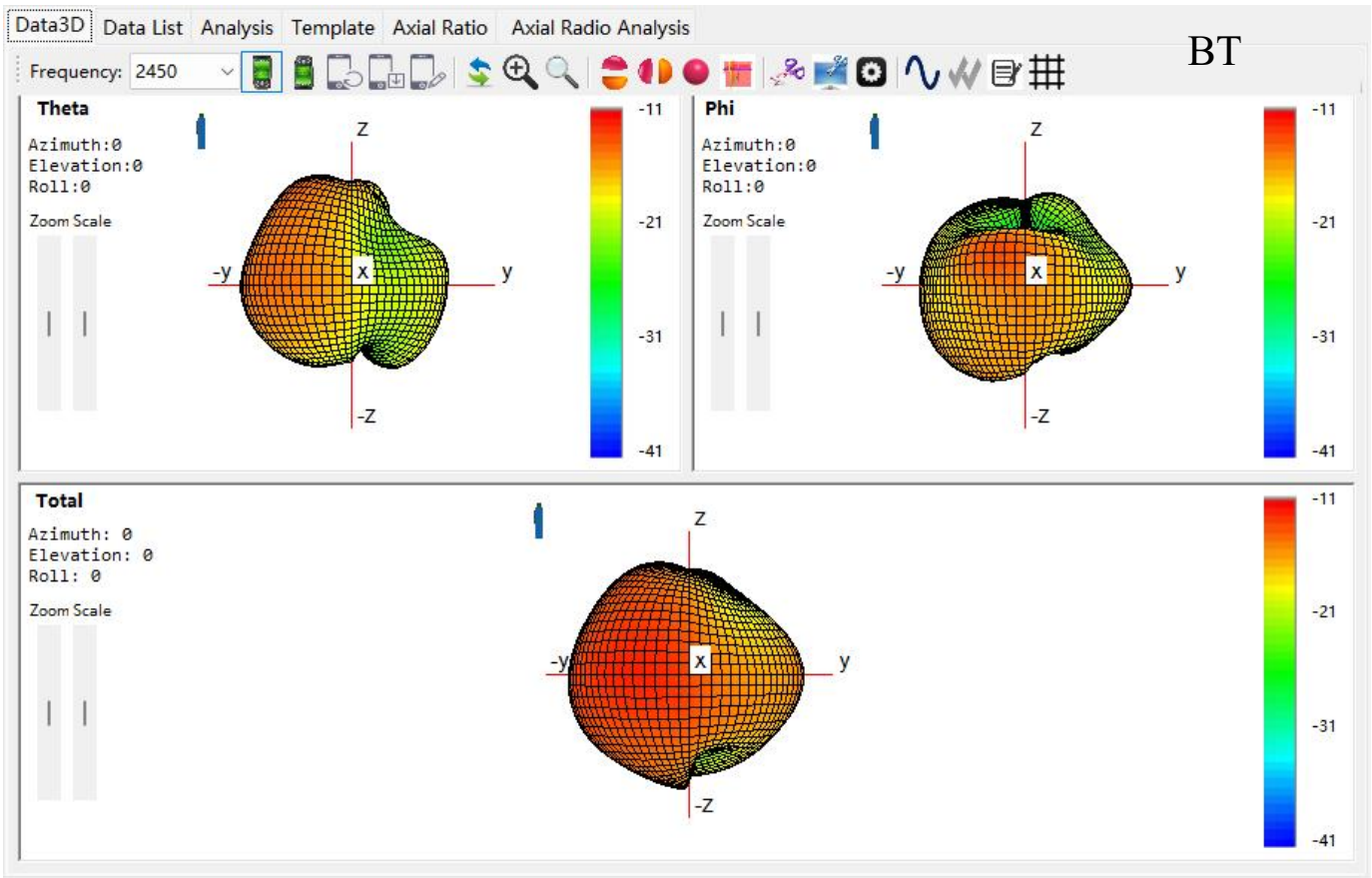
2.2.2 Passive diagram





2.2.3 Passive direction pattern/field pattern



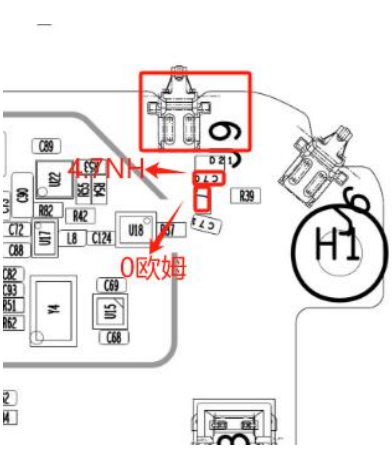


2.2.4Antenna efficiency parameter test situation (ARM)

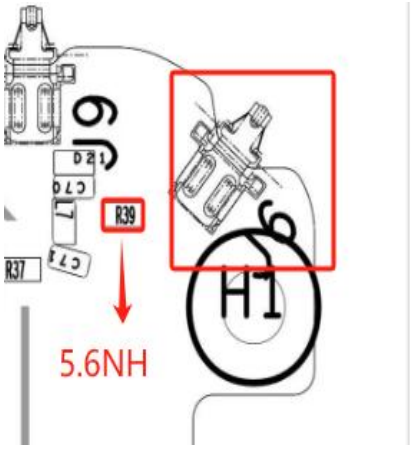
	frequency point	productiveness %	productiveness db	gain
GSP ARM	1550	5%	-12.7	-9.3
	1555	6%	-11.9	-8.9
	1560	6%	-12.0	-8.7
	1565	6%	-12.3	-8.7
	1570	6%	-12.0	-8.6
	1575	6%	-11.9	-8.3
	1580	6%	-11.9	-8.4
	1585	6%	-11.9	-8.6
	1590	6%	-11.9	-8.7

	frequency point	productiveness %	productiveness db	gain
BT ARM	**2400**	4.8%	**-13.2**	-12.6
	2410	4.9%	**-13.1**	-12.4
	2420	5.2%	**-12.8**	-12.1
	2430	5.3%	**-12.8**	-11.8
	2440	5.2%	**-12.8**	-11.5
	2450	5.4%	**-12.7**	-11.3
	2460	5.1%	**-12.9**	-11.1
	2470	5.0%	**-13.0**	-12.7
	2480	4.8%	**-13.2**	-12.6
	2490	4.7%	**-13.3**	-13.1
	2500	4.6%	**-13.4**	-13.4

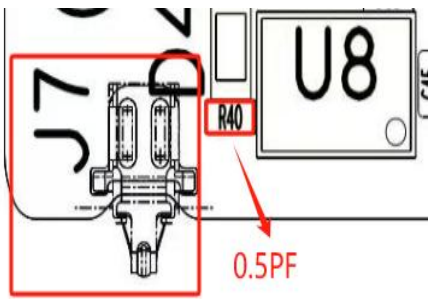
2.2.5 GPS matching



GPS main road matching
The shrapnel uses the J9 feed point
C70 is 4.7NH/L and 7 is 0 ohm

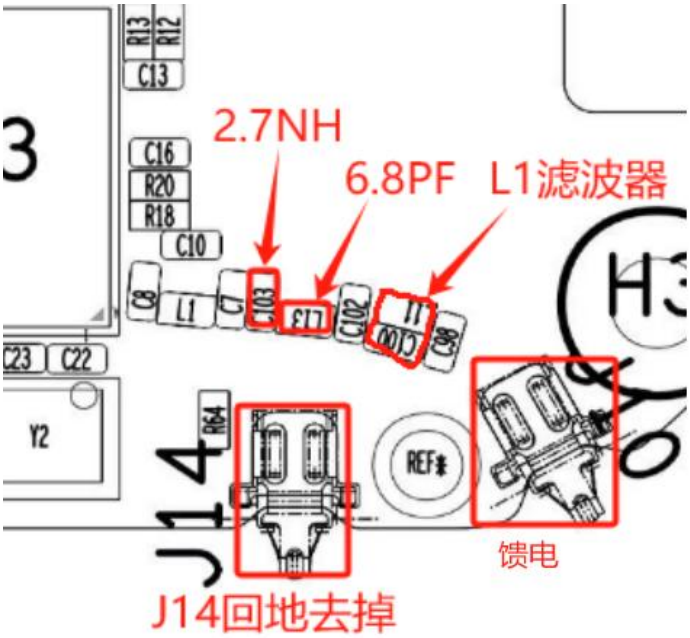


Back to the drawing board
The shrapnel uses J6 return feet / R39 to attach 5.6NH



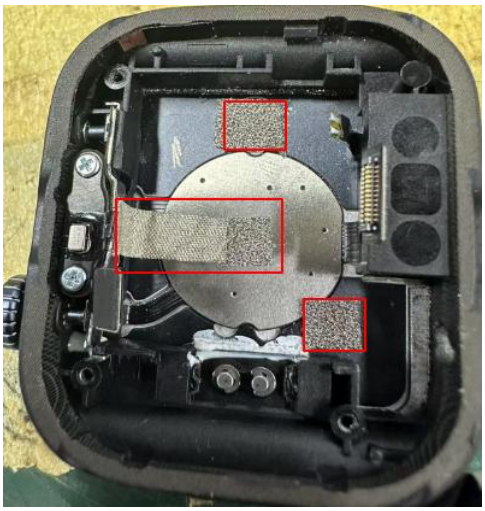
Back to the drawing board
The shrapnel uses J7 return feet / R40 to attach 0.5PF

2.2.6 BT matching



The shrapnel is powered by J10
Filter-L11 is 3NH and C100 is 3.6PF
L13 is attached to 6.8PF
L103 is posted at 2.7NH

2.2.7 Environmental treatment



1. The bottom shell is grounded with conductive sponge by laser engraving at two places
The key steel plate and the heart rate board are attached with conductive cloth
The heart rate plate is attached to the conductive sponge and grounded to the battery

2. Copper leakage on the motherboard is covered with 4 conductive sponges and battery grounding/battery conductive cloth wrapping

3. The display screen is made of conductive cloth, and the main board components are insulated with insulating glue

2.2.8Whole machine CN value test

3. Bill Of Material

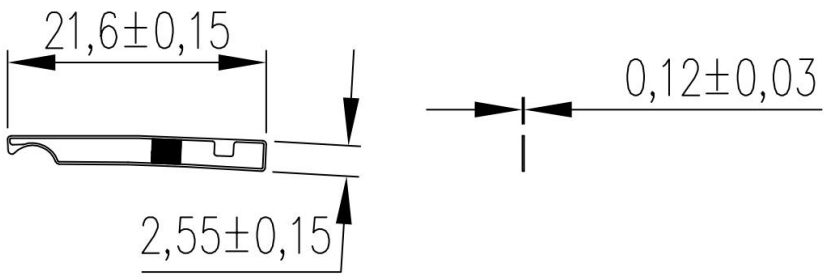
Shenzhen Yusheng Communication Equipment Co, LTD

604050 (CWS07G) BOM

edition: R:A　　client: 604　　Type of aircraft: 604050　　Set a date: 20250524

Item numb	* Material code	* Material	Material class	*Machine type	Specification and model	colour	*unit.	dosage	remark
1	604050-IA-RA	BT-FPC		CWS07G	BT-FPC white Electrolytic copper (half to half) gilt 21.60*2.55*0.12MM	white	PCS	1	
1.1	604050-IA-01-RB	BT-FPC		CWS07G	BT-FPC white Electrolytic copper (half to half) gilt 21.60*2.55*0.12MM	white	PCS	1	
verify:			examine:				manufacture: BYZ		

4. 2D drawings



skills requirement:		
1. FPC substrate specifications:	PI substrate:	Electrolytic copper (half to half)
	Electrolytic copper:	0.5oz(ED)
	Double-sided tape:	3M-9471LSE
2. Electroplating specifications:	Nickel plated: 3~8um;	Gilded: 0.025um
3. Surface ink requirements:	Surface ink color:	White
	Printing font color:	Bright black
	Printing font height:	According to drawings
4. Reliability requirements:	1. Reliability test: salt spray test\rubber friction test\alcohol resistance test\100 grid test. 2. The front ink, the surface of the ink is required to be folded in half without cracking, scratching, etc.	
5. Tolerance requirements:	1. Shape tolerance ±0.10; 2. Copper foil circuit tolerance ±0.05; 3. The position of the copper foil to the shape is ±0.15; 4. Hole-to-hole position tolerance ±0.10; hole-to-shape position tolerance ±0.15; 5. The size tolerance of gold finger is ±0.20. 6. For other unmarked dimensions, refer to 2D drawings.	
6. Key control size:	The dimensions marked with numbers are regarded as important dimensions, and the others refer to 2D drawings	
7. Environmental requirements:	Parts meet ROHS2.0/HF/Reach/GP environmental protection requirements	
8. Packaging requirements:	Packed in PE bags, the quantity of each bag is 100PCS, there is a mark on the outside of the bag	

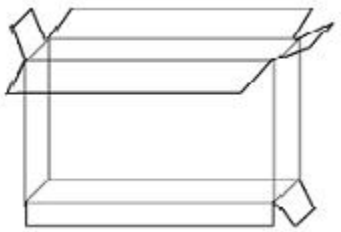
DATE	Modify the content	Version	Revise

位置			
0~10	±0.10	○	0.02
10~20	±0.12	◎	ø0.03
20~40	±0.15	⊥	0.02
40~50	±0.20	▱	0.04
		⌿	0.02

ShenZhen Yu Sheng Communication Equipment Co.,Ltd.

Model	CWS07G	DATE	20250618
Name	BT-FPC	Design	JFB
Part NO	604050-IA	Review	MD JFB
Material quality	Electrolytic copper (half to half)		RF CKH
Mold surface treatment		confirm	
Appearance treatment		UNIT	mm proportion FIT Revise R:A

5. Packaging diagram

<table>
<tr><td colspan="3">Packaging method diagram</td></tr>
<tr><td>product name</td><td colspan="2">FPC antenna</td></tr>
<tr><td>Project model</td><td colspan="2">CWS07G</td></tr>
<tr><td rowspan="3">Details of packing</td><td>Carton size 1:
270*260*200MM
Carton size 2:
260*200*200MM
Carton size 3:
Depending on the quantity/volume of orders</td><td>  </td></tr>
<tr><td>Packaging method</td><td>It depends on the project</td></tr>
<tr><td>Total number of boxes packed</td><td>Pack according to order quantity</td></tr>
<tr><td>labeling
requirement</td><td>Tag size 1:
General 100 by 100mm
Tag size 2:
At the customer's request</td><td></td></tr>
<tr><td colspan="3">matters need attention</td></tr>
<tr><td colspan="3">1. Due to the limitation of order quantity, the packing method of each material is selected according to the total quantity of the order or the actual volume of the box</td></tr>
<tr><td colspan="3">2. Storage temperature: room temperature</td></tr>
<tr><td colspan="3">3. Storage conditions: store in a cool and dry place</td></tr>
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