

Shanghai Shangyuan Communication Technology Co., LTD

Sample Approval

Customer Name: Shenzhen Besiter Technology Co., LTD

Name of supplier: 0208 U.S.-WiFi antenna

Specifications: 26.78*22.32mm, with one generation terminal 140mm

Material Numbers: _____

☐ New material

☐ Alternative materials

Applicable models: **0208 U.S.** Datelanded: 2022/07/11

Sample Quantity: 1

Sign the sample date:

Supplier's Approval		
FICTION	CHECKER	APPROVER

Customer Approval		
CONFIRMER	EXAMINER	CHECKER
APPROVER		
Nature of the instrument of recognition	☒ official recognition	
	☐ provisional recognition	
	Temporary cycle: _____	

Shanghai Shangyuan Communication Technology Co., LTD**Antenna recognition**

Customer name: Besiter		Project name: 0208 U. S.
Operating frequency: WiFi2.4G		
Motherboard version:		
Shangyuan material specifications		
Specifications and models	Shangyuan Part Number	Customer material number
WiFi antenna	SZ22345IB77-3	

Change the resume			
Compilation/change date	Change content	Change person	Versions
2022.07.11	New release	Yang Xin	A

Shang Yuan Sign bar				
Research and Development	Structure:	Check:	Quality Engineer:	Approve:
	Radio frequency	Check:		
Customer Sign bar				
Electronics engineer	Project Manager	Structural Engineer	Quality Engineer	

Tel: +86-021-64842326 (上海); +86-0755-82504258 (深圳) Fax: +86-021-64842328

Shanghai R&D Center: 1st Floor, Building 4, No. 99, Lane 215, Gaoguang Road, Qingpu District, Shanghai

Shenzhen R&D Center: 6th Floor, Building 5, Nantai Yunchuanggu Center, Guangming District, Shenzhen

Chongqing R&D Center: 1F, ARM Eco-Industrial Park, No. 19, Xiantao Data Valley East Road, Yubei District, Chongqing

Huizhou Factory Address: 4th-5th Floor, No. 1, Central Village Road, Longhu Industrial Zone, Shuikou Town, Huicheng District, Huizhou City

Catalogue

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 2. **Test fixture**
 3. **Matching circuit**
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 - 4.2 Parameter picture
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 7. **Mass production antenna indicators**
 8. **Structural drawings**
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 11. **Material composition list**
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 13. **MSDS**
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1. Project picture

project picture is as follows:



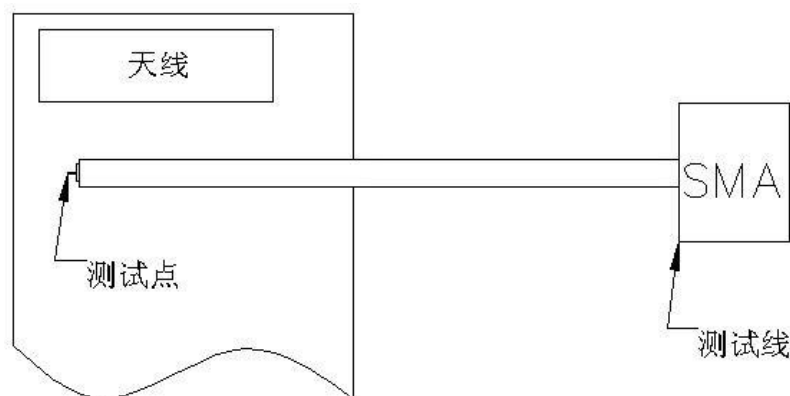
Note: The customer will keep the machine for final verification of the antenna performance in our company for at least one year, which is convenient for analyzing and solving the abnormal situation in the mass production of the antenna and ensuring the quality of the antenna shipment.

2. Test Fixture

Purpose: To test the passive parameters of the antenna as accurately as possible.

Production method: A 50 ohm coaxial cable is used for the mobile phone, one end is connected to the test point at the back end of the matching circuit (front end of the RF test hole) on the main board of the machine, and the other end is connected to the SMA connector.

The schematic diagram is as follows:



3. Matching circuit

No change

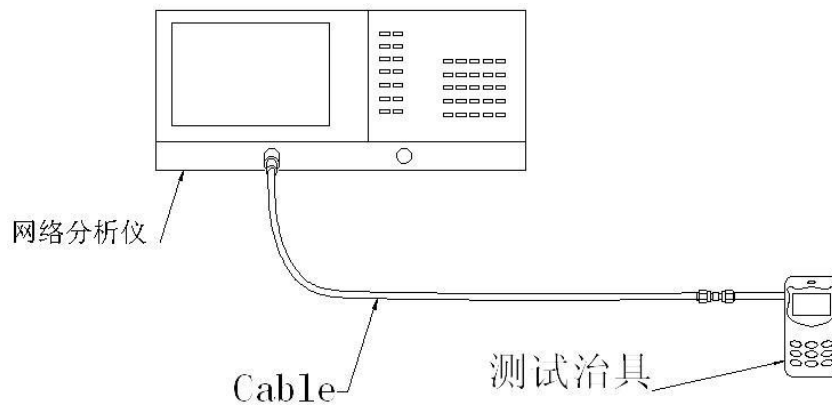
4.S11 test

4.0 S11 Test Method Description

Test equipment: Network analyzer (Agilent E5071C)

Test method: Use a 50 ohm CABLE cable to export from the test port of the instrument, use the calibration piece to calibrate and connect to the SMA connector of the machine tool, and record the return loss and standing wave ratio corresponding to the relevant frequency point.

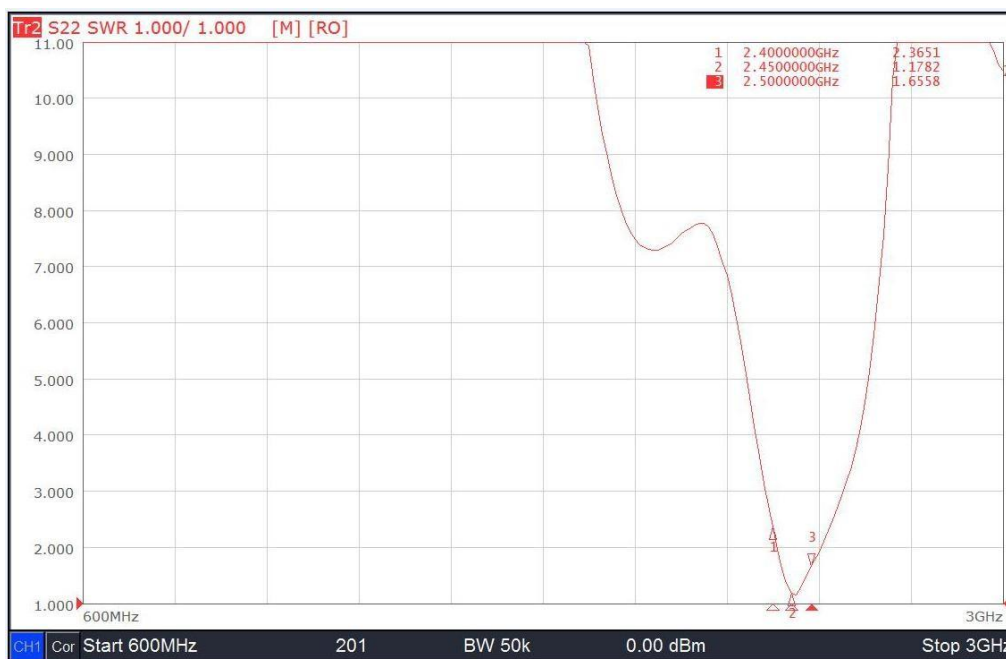
The test diagram is as follows:



4.1S11 parameters

Frequency (MHZ)	2400	2450	2500
VSWR	2.36	1.17	1.65

4.2Parameter picture



5. Darkroom test data

Test Equipment

Test System: Shielded Dark Room

Test Environment: Temperature $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, Humidity $50\% \pm 15\%$

Test Equipment: When testing passive data, use network analyzer AgilentE5071C

When testing active data, use comprehensive tester StarPoint SP8315

OTA test data

Passive data:

Frequency	Efficiency	MaxGain
Mhz	%	dBi
2400	41.02	2.15
2410	41.5	2.46
2420	45.5	2.64
2430	47.42	3.09
2440	47.86	2.91
2450	50.23	3.22
2460	51.05	3.28
2470	49.89	3.21
2480	49.89	3.33
2490	49.89	3.3
2500	49.2	3.38

Active data:

Band	Channel	TRP(dBm)	TIS(dBm) (亮屏)
WIFI_B (11M)	1	12.11	-83.53
	6	11.28	-84.27
	11	10.57	-84.61
WIFI_G (54M)	1	10.85	-69.71
	6	10.88	-69.83
	11	9.33	-69.92
WIFI_N_ISM (65M)	1	10.8	-67.46
	6	11.03	-67.72
	11	10.31	-67.88

6. Antenna environment and mounting position



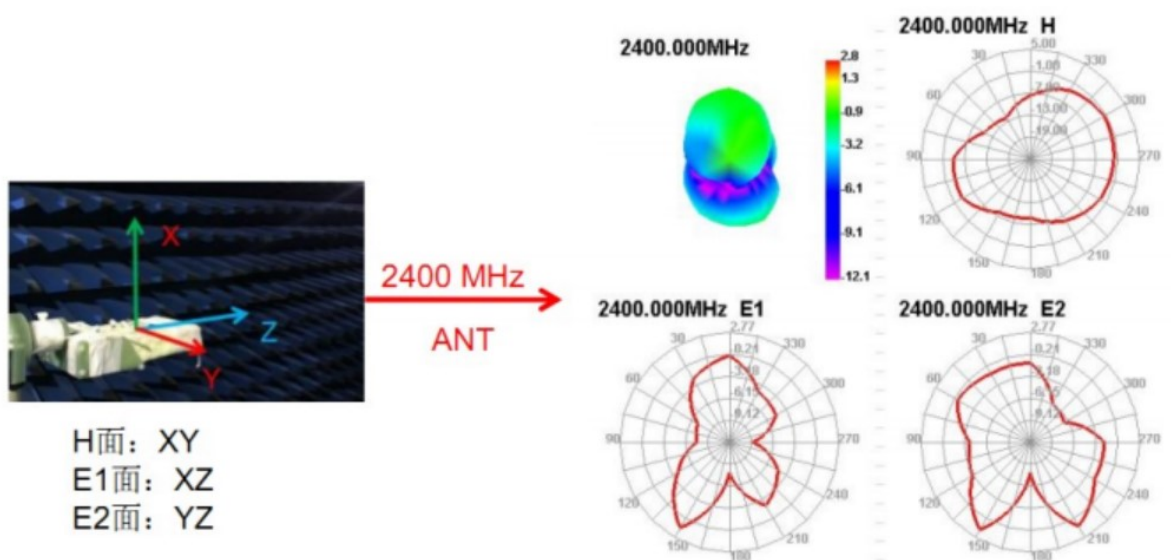
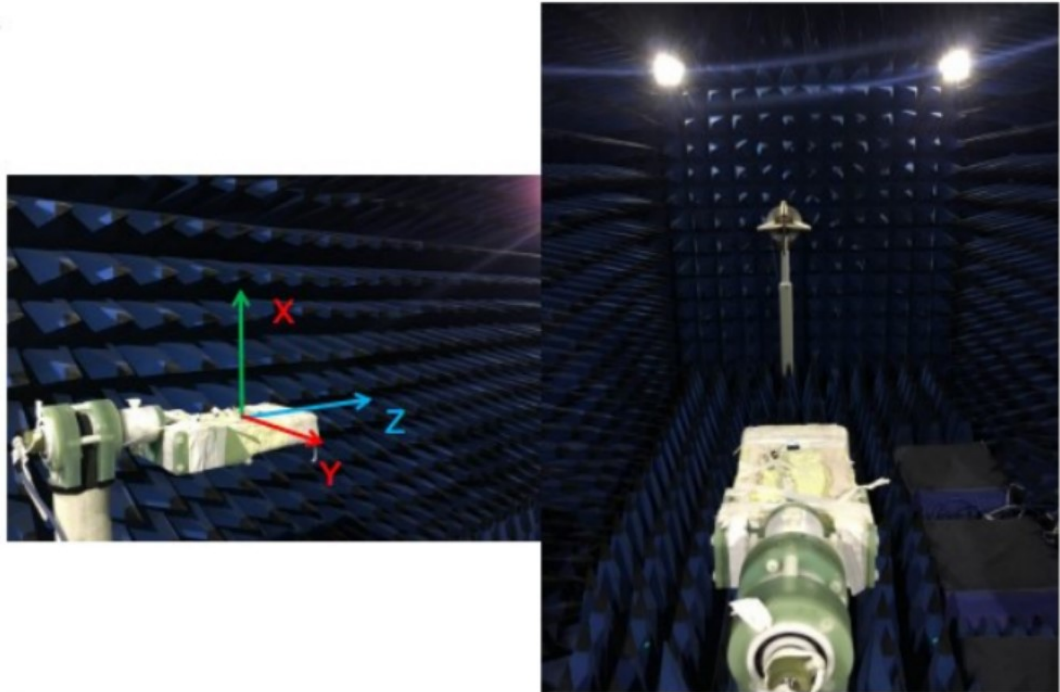
7. Mass production antenna indicators

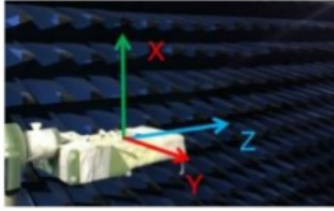
When the antenna is mass-produced, the standing wave ratio is used as the mass-production test standard.

According to the differences of the project itself, the following standards are given:

Frequency	Mass production standard
2400~2500MHz	VSWR ((mass production performance) < VSWR(approval performance)+0.5

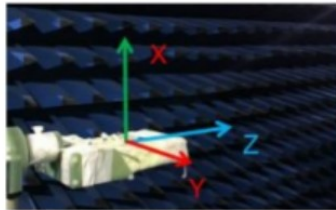
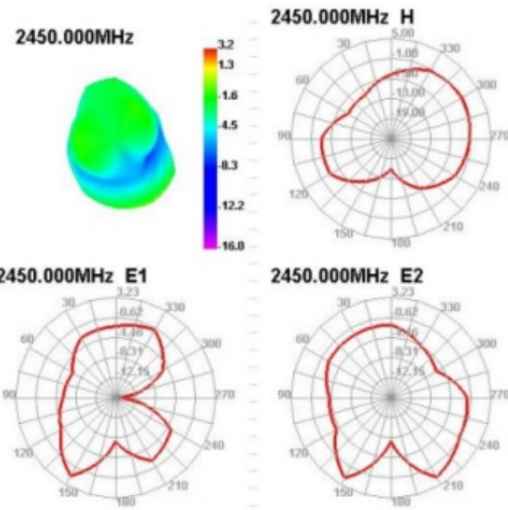
7.2. Radiation Pattern





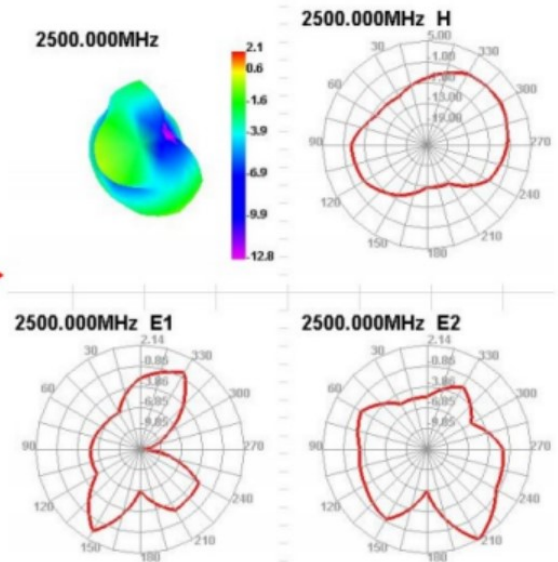
H面: XY
E1面: XZ
E2面: YZ

2450 MHz
ANT

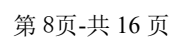


H面: XY
E1面: XZ
E2面: YZ

2500 MHz
ANT



8. Structural drawings



9. Terminal Insertion Force Test Report



昆山科信成电子有限公司实验室

地址：江苏省昆山市巴城镇迎宾西路 1688 号

电话: 0512-57850555 传真: 0512-57008118

Test Report

Specimen Name	RF1 1.13	Part Number	ANCZ113L-1C1
Manufacturer	CCT	Model/Type	N/A
Department	QE	Applicant	Tan chun zhi
Sample Quantity	10PCS	Sample State	Receptacle: 5pcs Connector: 5pcs
Date of Receipt	2020/6/15	Date of Testing	2020/6/15
Environment	23.5℃ ; 56%RH	Report Type	CCT-20200615-005
Description: Such as testing pictures, according to the requirements of the project.			
Test Item: Mating force and Un-mating force test			
Based on testing: Refer to the EIA - 364-13 part test specification requirements, testing			
Test Conclusion: Test qualified			

Approve : Liyongqi

Check : Panliangyu

Test : Zhengweisong

Date : 2020/6/15

Date : 2020/6/15

Date : 2020/6/15



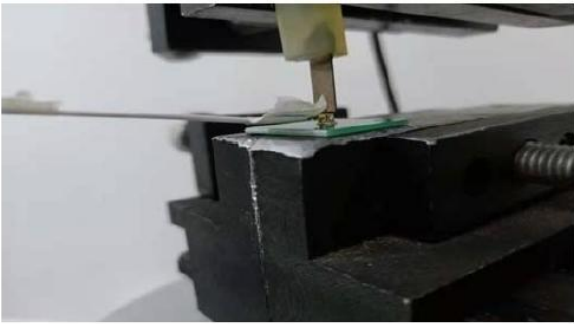
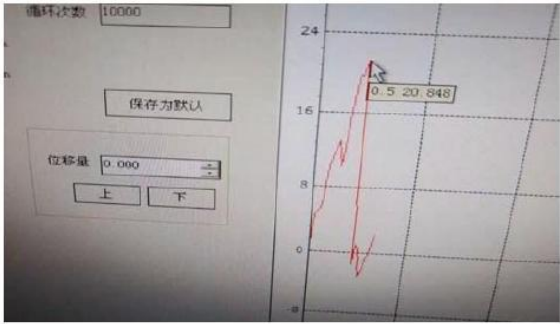
- * The results of the Test Record relate only to the items tested and the specimen received.
- * This test document cannot be reproduced in any way, except in full content or the prior approval in writing of the laboratory.

Test Summary

Un-mating force test (单位: N)

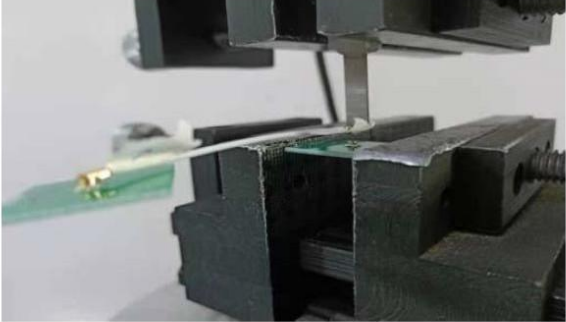
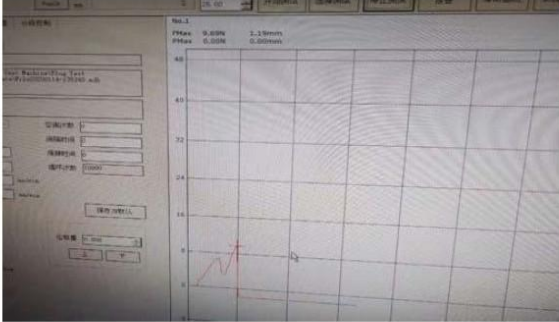
Project Matching mode	Spec	Result			PASS FAIL
		NO	Mating force	Un-mating force	PASS
Un-mating force test	Mating force 30N max Un-mating force 5N min Speed:25±3mm/min	1	20.84	9.69	PASS
		2	24.68	12.30	PASS
		3	24.06	11.10	PASS
		4	21.87	10.56	PASS
		5	19.70	9.91	PASS

Test Photo

Plug-and-pull machine	
	
Mating force	DATA



昆山科信成电子有限公司实验室
地址: 江苏省昆山市巴城镇迎宾西路 1688 号
电话: 0512-57850555 传真: 0512-57008118

	
Un-mating force	DATA

Testing equipment

Serial number	Name	Specification Model	Control Number	Term of validity
1	Plug-and-pull machine	1220S	CCT-NJ-006	2020/6/24

10. Product Specifications

Physical characteristics			
Appearance size (mm)	26.78*22.32	Length of feeder (mm)	140
Type of wire joint	A generation of Kexin terminals	Connection line type	RF1.13 coaxial cable
antenna material	FPC	Antenna welding resistance layer	black oil
operating temperature	-40℃~80℃	operating humidity	10%~95%
storage temperature	-45℃~85℃	Storage Humidity	10%~95%
Electrical parameters			
Action frequency (MHz)	2400-2500	tape width (MHz)	140/980
Gain increase (maximum direction)	2dBi	impedance	50Ω
polarization	linear polarization	standing-wave ratio	≤2.0

11. Material composition list

Part Name	No.	Raw material name	substance name
FPC	1	substrate	Halogen-free epoxy resin adhesive
			Polyimide film
			copper foil
	2	application of gum	Viscosifying acrylic polymer
	3	printing ink	Epoxy acrylic derived resin
			Barium sulfate
			aromatic solvent
			silicon dioxide
			Dipropylene glycol methyl ether
	4	gold	potassium aurous cyanide
coaxial cable	1	restrictive coating	Polyperfluoroethylene propylene FEP
	2	Tinned Copper	tin
			Cu
	3	insulation layer	Polyperfluoroethylene propylene FEP
	4	inner wire	Ag
			Cu

12. ROHS Report

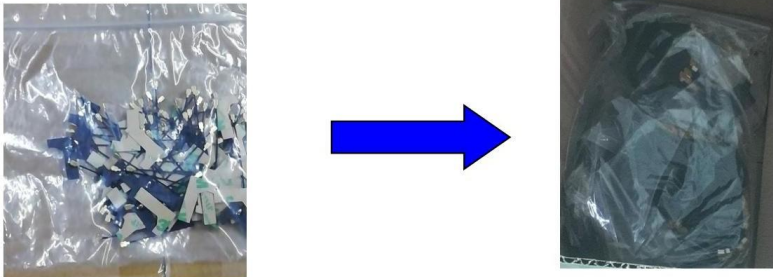
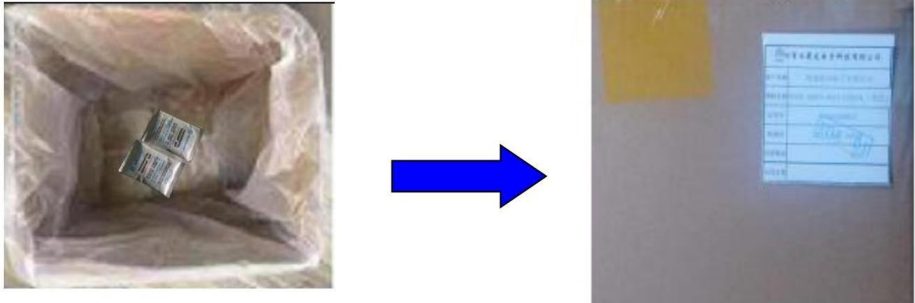
Materials	Report Number	report date	SGS Report
FPC substrate	SHAEC2001939104	2020. 3. 2	 2020电解ROHS(中) .PDF
printing ink	CE/2019/A0149	2019. 10. 14	 CE_2019_A0149(ROHS)黑色系列.p
overgild	SZXEC1901714501	2019. 08. 13	 SZX19-017145-0 1_EC_20167253_
300LSE	CANEC1925631401	2019. 12. 27	 300LE ROHS 20191227.pdf
Coaxial line sheath layer	HKGEC1900447641	2017. 07. 17	 FCM STT 1372 BLACK - 2019-07
Coaxial outer conductor	CANEC1820135904	2019. 03. 19	 Reach 混测 江西3-19(1).PDF
Coaxial line insulation layer	CANEC1912726001	2019. 7. 8	 CAN19-127260- 01_EC_20074650
Coaxial inner conductor	CANEC2000055808	2020. 1. 8	 TC 江西 1-8.PDF

上海尚远科技有限公司天线承认书

13. MSDS

Department Name	No.	Raw Material Name	Substance Name	CAS No.	Release(Y/N)	SVHC(Y/N)
FPC	1	substrate	Halogen-free epoxy resin adhesive	24969-06-0	N	N
			Polyimide film	25038-81-7	N	N
			copper foil	7440-50-8	N	N
	2	gum	Tackifying Acrylate Polymer	08-9111-9	N	N
	3	printing ink	Epoxy Acrylic Derivative Resin	28064-14-4	N	N
			Barium sulfate	7727-43-7	N	N
			Aromatic solvent	64742-94-5	N	N
			silicon dioxide	7631-86-9	N	N
			Dipropylene glycol methyl ether	34590-94-8	N	N
	5	gold	Potassium gold cyanide	13967-50-5	N	N
coaxial line	1	jacket layer	Polyperfluoroethylene propylene FEP	25067-11-2	N	N
	2	outer conductor	Sn	7440-31-5	N	N
			Cu	7440-50-8	N	N
	3	Insulation	Polyperfluoroethylene propylene FEP	25067-11-2	N	N
	4	inner conductor	Ag	7440-22-4	N	N
			cu	7440-50-8	N	N

14. packing

零件包装说明报告 日期: 2022/7/11			
客户名称	倍斯特	制造商	尚远
项目名称	0208美国版	装箱数	<u>10000PCS</u>
产品名称	FPC	外箱尺寸	280MM*240MM*195MM
捆包数量	<u>1000</u> PCS * <u>1</u> ◆PE袋 ☐ 捲 (捆) ☐ 盒 ☐ 层 ☐ 其它_____		
防潮&缓行	■干燥剂 ☐ 真空包 ☐ 气泡袋 ☐ 泡棉 ☐ 纸材 ◆其它_____		
内包装方式标示 (采用防静电PE袋)	 将检验好的放100pcs在小密封袋中 每大袋1000pcs		
外包装方式示意图 (采用K=K材质纸箱)	 将产品整齐放入箱子 检验打包包装粘贴产品信息封箱出货		
		制作	
		陈敏	
*包装图为示意图, 不代表图片为实际产品。			