

深圳市昱晟通讯设备有限公司
SHENZHEN YUSHENG COMMUNICATION EQUIPMENT CO., LTD

承认书 acknowledgement

客户名称 customer name	深圳市科奈信科技有限公司 Shenzhen CANNICE Technology Co., Ltd.
产品名称 product name	A1142-01, 左右耳机, FPC 天线 A1142-01, left & right headphone, FPC
客户料号 Customer material number	300012000236
项目名称 project name	左右耳机天线 Left & right headset antenna
产品品牌 Product brand	深圳市昱晟通讯设备有限公司 SHENZHEN YUSHENG COMMUNICATION EQUIPMENT CO., LTD
产品型号 product model	A1142

附件 appendix	封面 Cover	图纸 drawing	FAI 报告 FAI report	CPK 报告 CPK report
	规格书 specification	可靠性测试报告 Reliability test report	环保 environmental protection	其他 3D 文件 Other 3D files

供应商签核 supplier sign	制作 make	审核 check
	袁淑君 yuanshujun	陈柯鸿 kevin

客户 签核 client sign	制作 make	审核 check	批准 approve

承认条件 condition of recognition	☐ 承认 admit	☐ 拒绝承认 disallow
	☐ 条件承认 Conditional recognition 需满足条件 Need to meet the conditions:	
	☐ 临时承认 限量 _____ PCS	

供应商信息 Supplier information
名称: 深圳市昱晟通讯设备有限公司 联系人: 邓成雨 Name: Shenzhen Yusheng Communication Equipment Co., LTD. Contact person: Deng Chengyu
地址: 深圳市光明区光明大道与东长路交叉口东南侧南太云创谷园区 2 栋 4 层 4A Address: 4A, Floor 4, Building 2, Nantaiyun Chuangu Park, southeast of the intersection of Guangming Avenue and Dongchang Road, Guangming District, Shenzhen City
电话: 0755-23984257 传真: 0755-86090455 Tel.: 0755-23984257 Fax: 0755-86090455
EMAIL: meng.yuan@szthot.com

A1142 项目天线物料需求规格书

A1142 Project antenna material requirements specification

客户名称: 深圳市科奈信科技有限公司

customer name: Shenzhen CANNICE Technology Co., Ltd.

项目型号: A1142

Project model: A1142

产品名称: A1142-01,左右耳机,FPC 天线

product name: A1142-01, left & right headphone, FPC antenna

产品规格: 26.97*11.74*0.12 mm

Product specification: 26.97*11.74*0.12 mm

物料编码: 300012000236

Material code: 300012000236

变更内容履历 Change Content CV::

序号 NO	版本 edition	状态 status	生效日期 availability date	责任人 person liable	页码 pagination	备注 remarks
1	初版 first edition	初版 first edition	2023-04-12	袁淑君 Yuan Shujun	22	

以下为认签页:

The following is the signature page:

供方承认签字

The supplier acknowledges the signature

责任人/日期 Responsible person / date		IQC/日期 IQC/ date	审核/日期 Review / Date	核准/日期 Approval / Date
MD				
RF				

需方承认签字 (认签后请寄回) :

The Demander acknowledges the signature (please send it back after the confirmation):

需方判定结果: ☐ 合格 ☐ 不合格 The demander the result: ☐ qualified ☐ unqualified			
开发设计工程师/日期 Development & Design Engineer / Date	SQE 工程师/日期 SQE Engineer / Date	采购负责人/日期 Purchasing Leader / Date	开发部经理批准/日期 Development Manager approval / date

目录 catalogue

1.概述 OVERVIEW	5
1.1 适用范围 SCOPE OF APPLICATION	5
1.2 项目基础信息 BASIC INFORMATION OF THE PROJECT	5
2.技术指标要求 TECHNICAL INDEX REQUIREMENTS	6
2.2.1 测试项目及设备介绍 INTRODUCTION OF THE TEST ITEMS AND THE EQUIPMENT	6
2.2 有源报告 ACTIVE REPORTING	6
2.2.1 测试说明 TEST SPECIFICATION	6
2.2.2 天线无源参数 ANTENNA PASSIVE PARAMETER	7
2.2.3 L 边无源数据 L SIDE PASSIVE DATA	8
FREE SPACE TEST DATA/L	8
HEAD/EAR TEST DATA/L	8
2.2.4 L 边无源场强图 THE L-SIDE PASSIVE FIELD STRENGTH MAP	9
FREE SPACE TEST DATA/L	9
HEAD/EAR TEST DATA/L	9
2.2.5 R 边无源数据 R SIDE PASSIVE DATA	10
FREE SPACE TEST DATA/R	10
HEAD/EAR TEST DATA/R	10
2.2.6 R 边无源场强图 R-EDGE PASSIVE FIELD STRENGTH MAP	11
FREE SPACE TEST DATA/R	11
HEAD/EAR TEST DATA/R	11
2.3 测试环境 TESTING ENVIRONMENT	12
2.4 OTA 数据 OTA DATA	13
2.4.1 L 边 OTA 数据 THE L-SIDE OTA DATA	13
2.4.2 R 边 OTA 数据 R SIDE OTA DATA	14
2.5 装配方式 ASSEMBLY MODE	15
2.6 主板匹配 MOTHERBOARD MATCHING	16
3.结构图纸 STRUCTURAL DRAWINGS	17
3.1 左耳机图纸 LEFT HEADSET DRAWINGS	17
4.可靠性测试报告 RELIABILITY TEST REPORT	18
5.物料清单 BOM	21
6.包装示意图 SCHEMATIC DIAGRAM OF PACKAGING	22

1.概述 Overview

1.1 适用范围 scope of application

本要求规定了 A1142 产品的天线技术要求和物料需求规范。

This requirement specifies the antenna technical requirements and material requirements specifications for A1142 products.

本要求适用于 A1142 产品的天线选型、测试和验收。

This requirement is applicable to the antenna selection, testing and acceptance of A1142 products.

1.2 项目基础信息 Basic information of the project

天线名称: Antenna name:	<u>A1142</u>
天线频段: Antenna band:	BT
天线材质: Antenna material:	电解铜+镀金 Electrolyzed copper + gold-plated

2.技术指标要求 Technical index requirements

2.2.1 测试项目及设备介绍 Introduction of the test items and the equipment

清单 inventory	测试项目 test item	设备 equipment
有源测试 Active test	TRP,TIS	综合测试仪、微波暗室 Integrated tester, microwave darkroom

2.2 有源报告 Active Reporting

2.2.1 测试说明 test specification

测试工具：Agilent8960综测仪、R&SCMW500、全电波远场ETS暗室，高精度定位系统及其控制器和带自动测试程序的电脑

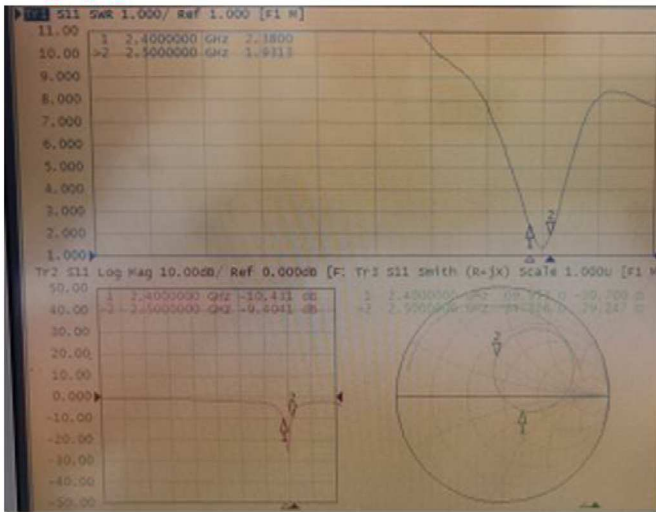
测试环境：温度 $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$ ，湿度 $50\% \pm 15\%$

测试方法：DUT以H面放于转台中心位置固定，与喇叭天线中心位置在同一个水平线上。定位系统使 DUT 在整个球面进行旋转，满足高精度的三维定位。各射频仪器、转台控制器与带自动测试软件的 PC 通过 GPIB 接口进行通信

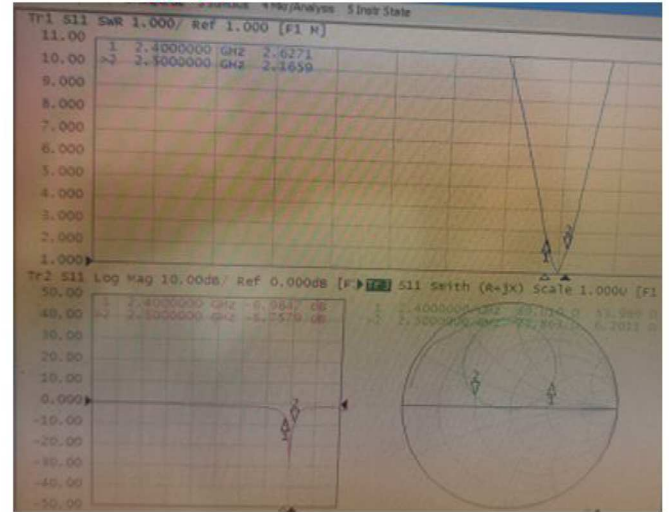
Test tools: Agilent8960 instrument, R & SCMW500, full wave far field ETS dark room, high precision positioning system and its controller and computer with automatic test program Test environment: temperature $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, humidity $50\% \pm 15\%$ Test method: The DUT is 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 the PC with automatic test software through the GPIB interface

2.2.2 天线无源参数 Antenna passive parameter

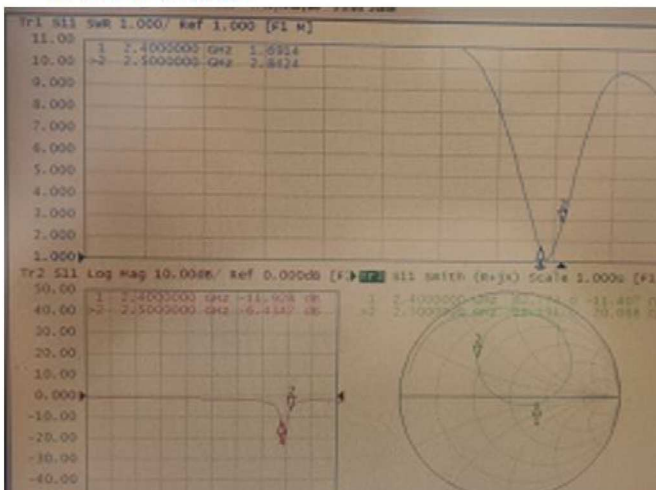
L-FS



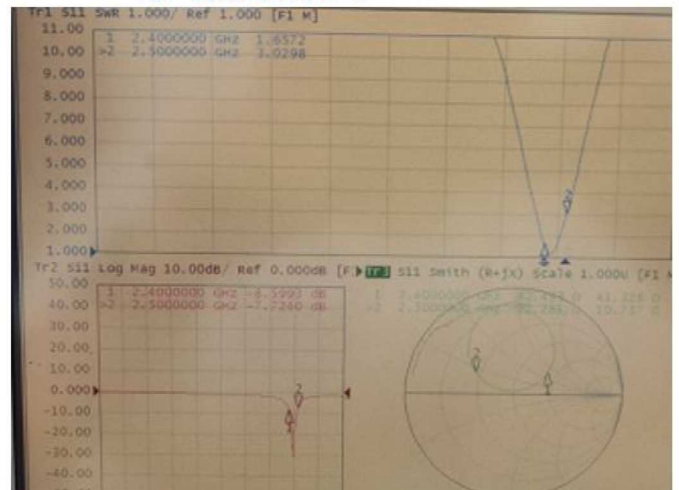
R-FS



L-Head/ear



R-Head/ear



2.2.3 L 边无源数据 L Side passive data

Free space test data/L

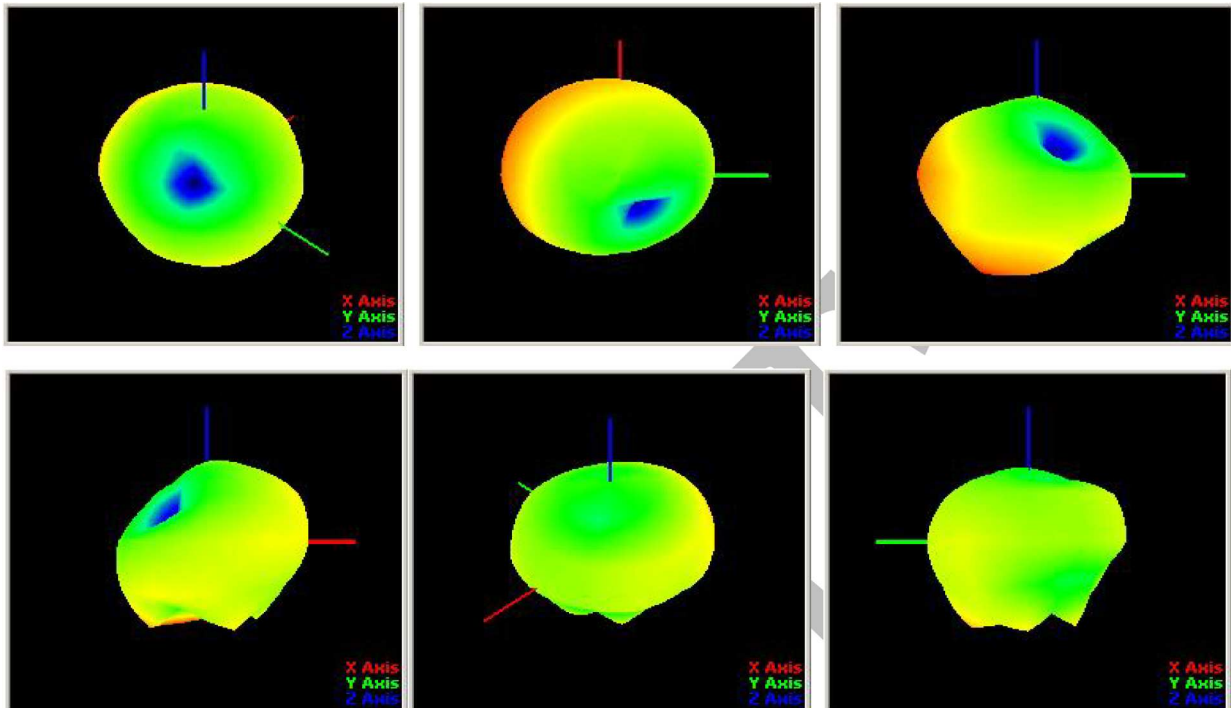
Test Point ID	1	2	3	4	5	6	7	8	9	10	11
Freq. (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (%)	16.4%	17.3%	18.6%	19.9%	20.7%	21.4%	21.8%	20.7%	19.8%	19.1%	18.3%
Gain (dbi)	-2.04	-1.89	-1.53	-1.45	-1.28	-1.05	-1.19	-1.48	-1.68	-1.75	-1.89

Head/Ear test data/L

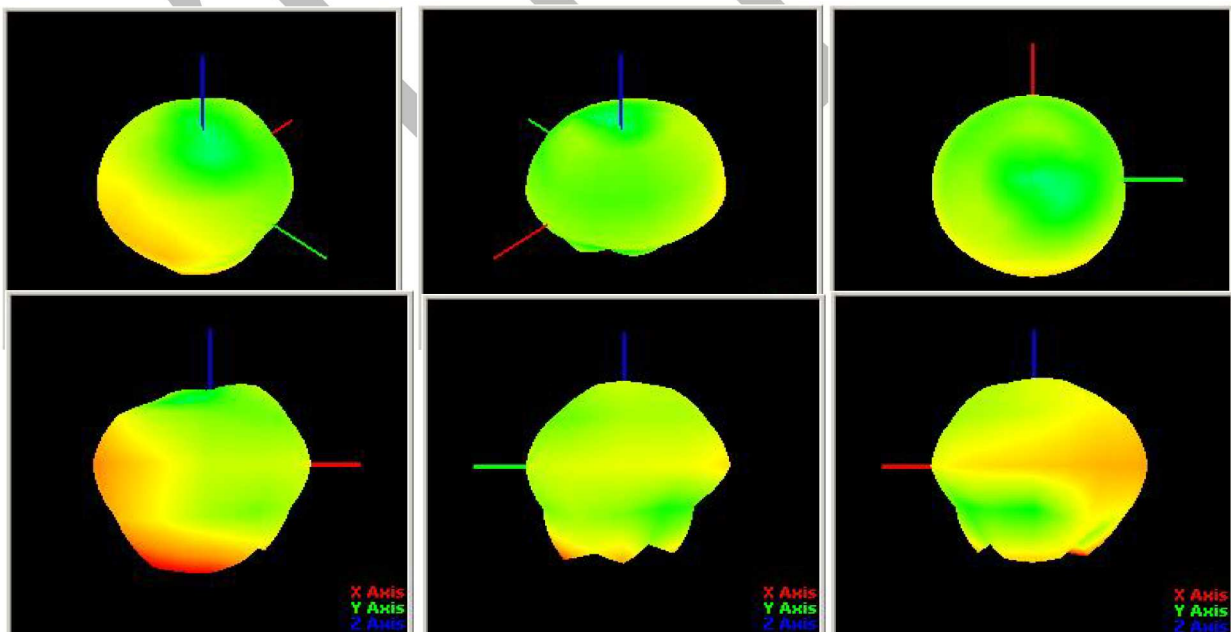
Test Point ID	1	2	3	4	5	6	7	8	9	10	11
Freq. (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (%)	6.8%	7.4%	8.2%	8.8%	9.4%	10.6%	9.9%	9.1%	8.4%	7.6%	7.1%
Gain (dbi)	-5.05	-4.85	-4.73	-4.56	-4.42	-4.28	-4.47	-4.85	-4.81	-4.97	-5.11

2.2.4 L 边无源场强图 The L-side passive field strength map

Free space test data/L



Head/Ear test data/L



2.2.5 R 边无源数据 R Side passive data

Free space test data/R

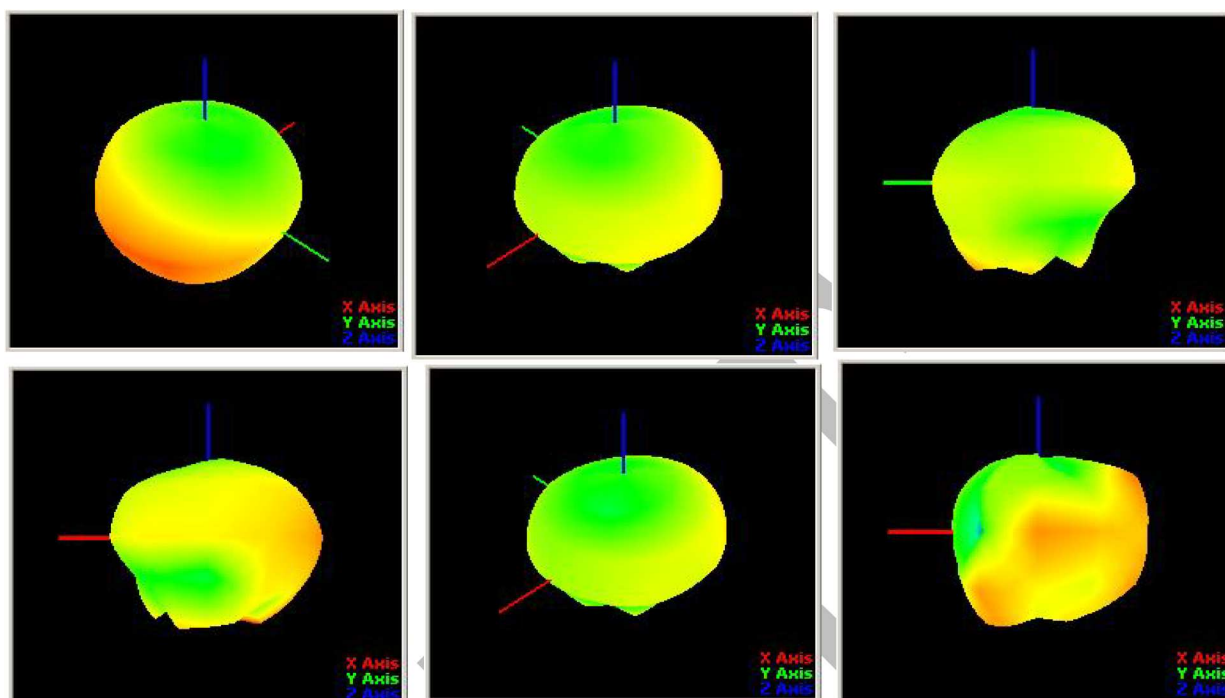
Test Point ID	1	2	3	4	5	6	7	8	9	10	11
Freq. (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (%)	16.2%	16.9%	18.4%	19.2%	20.3%	20.9%	20.4%	19.7%	19.2%	18.6%	17.5%
Gain (dbi)	-1.97	-1.73	-1.39	-1.22	-1.08	-0.98	-1.06	-1.34	-1.57	-1.68	-1.76

Head/Ear test data/R

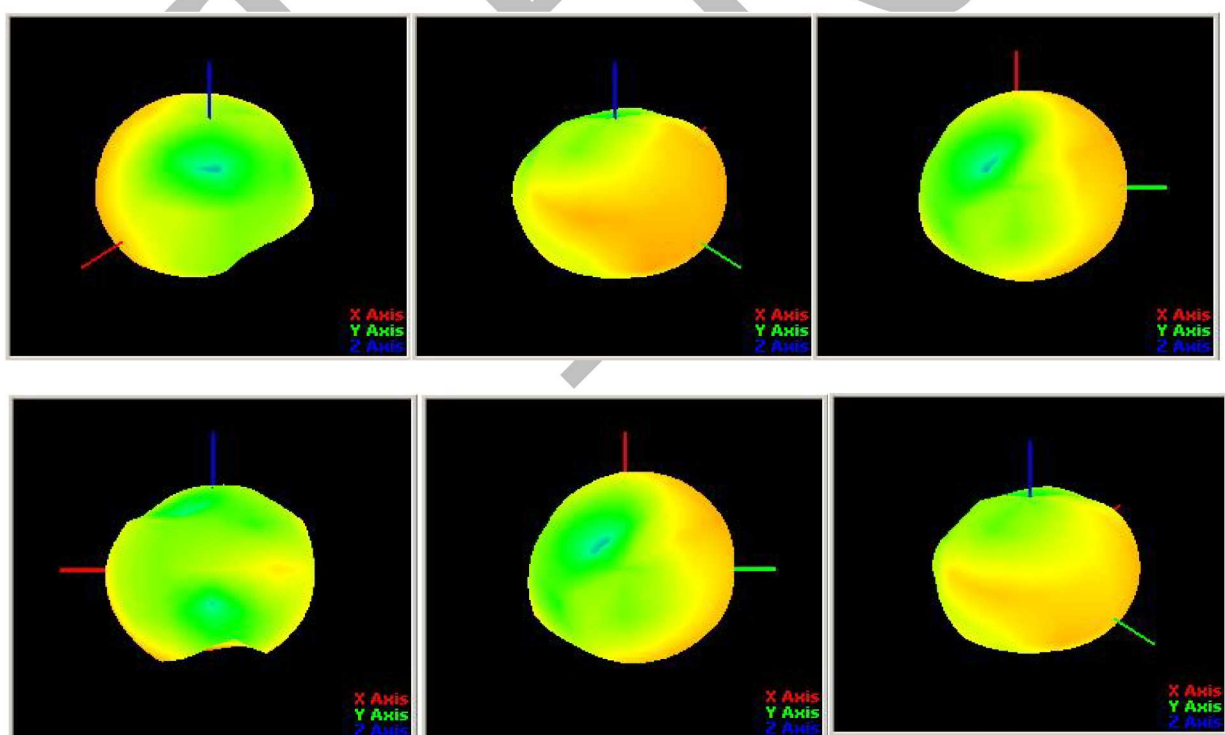
Test Point ID	1	2	3	4	5	6	7	8	9	10	11
Freq. (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (%)	6.6%	7.3%	8.5%	9.2%	9.7%	10.4%	9.5%	8.9%	8.3%	7.8%	7.4%
Gain (dbi)	-4.88	-4.71	-4.59	-4.34	-4.28	-4.11	-4.29	-4.61	-4.79	-4.84	-5.03

2.2.6 R 边无源场强图 R-edge passive field strength map

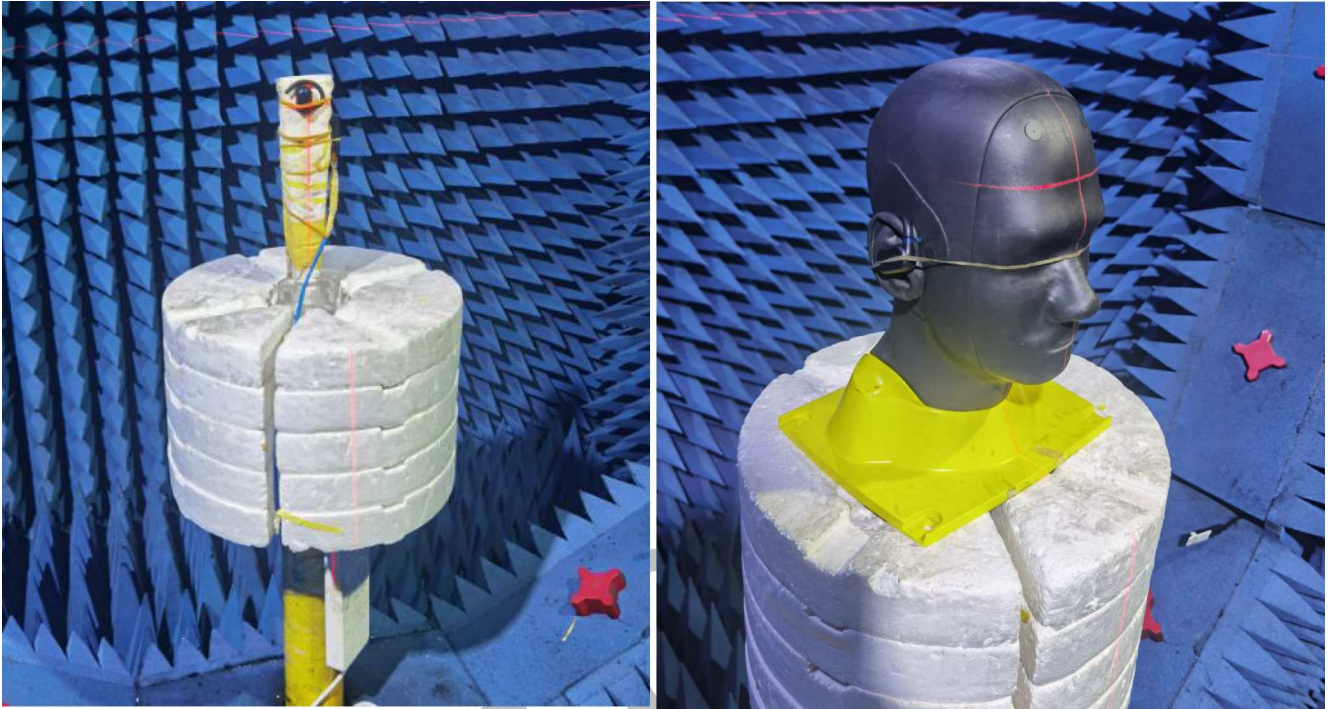
Free space test data/R



Head/Ear test data/R



2.3 测试环境 testing environment



2.4 OTA 数据 OTA data

2.4.1 L 边 OTA 数据 The L-side OTA data

自由场 OTA 数据 Free-field OTA data

Channel No.	Free space test data/L	
	TRP (dBm)	TIS (dBm)
0	2.24	-84.75
39	1.67	-84.52
78	0.95	-84.46

头模 OTA 数据 Head die OTA data

Head/Ear test data	
TRP (dBm)	TIS (dBm)
-0.38	-81.55
-0.78	-81.89
-1.42	-81.72

2.4.2 R 边 OTA 数据 R side OTA data

自由场 OTA 数据 Free-field OTA data

Channel No.	Free space test data/R	
	TRP (dBm)	TIS (dBm)
0	2.15	-84.89
39	1.43	-84.62
78	0.82	-84.37

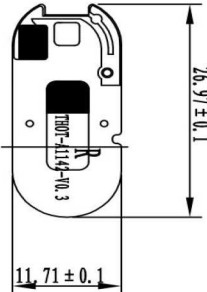
头模 OTA 数据 Head die OTA data

Head/Ear test data	
TRP (dBm)	TIS (dBm)
-0.23	-81.72
-0.92	-81.47
-1.63	-81.25

3.1 左耳机图纸 left headset drawings

由 Autodesk 教育版产品制作

3.2 右耳机图纸 Right headset drawings

A				由 Autodesk 教育版产品制作																																							
skills requirement: <table border="1"> <tr> <td>1. FPC substrate specifications:</td> <td>PI substrate:</td> <td>Electrolytic copper (1 to half)</td> </tr> <tr> <td>2. Electroplating specifications:</td> <td>Electrolytic copper:</td> <td>0.5oz (B)</td> </tr> <tr> <td>3. Surface ink requirements:</td> <td>Double-sided tape:</td> <td>TESA 68532</td> </tr> <tr> <td></td> <td>Nickel plated:</td> <td>38um</td> </tr> <tr> <td></td> <td>Surface ink color:</td> <td>Mat black</td> </tr> <tr> <td></td> <td>Printing font color:</td> <td>Bright black</td> </tr> <tr> <td></td> <td>Printing font height:</td> <td>According to drawings</td> </tr> </table>				1. FPC substrate specifications:	PI substrate:	Electrolytic copper (1 to half)	2. Electroplating specifications:	Electrolytic copper:	0.5oz (B)	3. Surface ink requirements:	Double-sided tape:	TESA 68532		Nickel plated:	38um		Surface ink color:	Mat black		Printing font color:	Bright black		Printing font height:	According to drawings	26.97 ± 0.1  11.71 ± 0.1																		
1. FPC substrate specifications:	PI substrate:	Electrolytic copper (1 to half)																																									
2. Electroplating specifications:	Electrolytic copper:	0.5oz (B)																																									
3. Surface ink requirements:	Double-sided tape:	TESA 68532																																									
	Nickel plated:	38um																																									
	Surface ink color:	Mat black																																									
	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.				Gold plated Area																																							
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 RH62.0/9F/Roach/CP environmental protection requirements																																											
8. Packaging requirements: Picked in PE bags, the quantity of each bag is 100PCS, there is a mark on the outside of the bag																																											
D				Shenzhen Yu Sheng Communication Equipment Co., Ltd. <table border="1"> <tr> <td>Model</td> <td>A1142</td> <td>DATE</td> <td>20230407</td> </tr> <tr> <td>Name</td> <td>R-BT-PPC</td> <td>Design</td> <td>JFB</td> </tr> <tr> <td>Part NO</td> <td>336023-1B</td> <td>Review</td> <td>MD JFB</td> </tr> <tr> <td>Material quality</td> <td>Electrolytic copper (half to half)</td> <td>RF</td> <td>CKH</td> </tr> <tr> <td>Surface treatment</td> <td></td> <td>confirm</td> <td></td> </tr> <tr> <td>Appearance treatment</td> <td></td> <td>UNIT</td> <td>mm</td> </tr> <tr> <td></td> <td></td> <td>proportion</td> <td>1:1</td> </tr> <tr> <td></td> <td></td> <td>PIT</td> <td>Revise</td> </tr> <tr> <td></td> <td></td> <td></td> <td>R: A</td> </tr> </table>				Model	A1142	DATE	20230407	Name	R-BT-PPC	Design	JFB	Part NO	336023-1B	Review	MD JFB	Material quality	Electrolytic copper (half to half)	RF	CKH	Surface treatment		confirm		Appearance treatment		UNIT	mm			proportion	1:1			PIT	Revise				R: A
Model	A1142	DATE	20230407																																								
Name	R-BT-PPC	Design	JFB																																								
Part NO	336023-1B	Review	MD JFB																																								
Material quality	Electrolytic copper (half to half)	RF	CKH																																								
Surface treatment		confirm																																									
Appearance treatment		UNIT	mm																																								
		proportion	1:1																																								
		PIT	Revise																																								
			R: A																																								
1 2 3 4 5 6 7 8				1 2 3 4 5 6 7 8																																							

由 Autodesk 教育版产品制作

4.可靠性测试报告 Reliability test report

冷热冲击测试报告 Hot and cold shock test report

consumer	科奈信 CANNICE		日期 date	2023-03-18	厂内编号 Factory number	/		
P / N	336023		数量 quantity	各 5PCS	测试时间 testing time	48H		
材料规格 material specification	单面半对半有胶电解铜 Single face half to half glue electrolytic copper		供应商 supplier	昱晟 THOT	参考标准 reference standard	MIL-SDT-202Method017IEC60749-25 JEDEC JESD22-A104-B IEC68-2-1MIL-STD-2168-85		
测试目的：检测产品的可靠性及镀层的结合力、镀层抗氧化及抗腐蚀能力。 Test purpose: To test the reliability of products and coating binding force, coating and oxidation resistance and corrosion resistance.								
设备名称：高低温测试箱 Equipment name: high and low temperature test box								
实验室环境 laboratory environment								
温度 temperature	22-26℃		相对湿度 relative humidity	65-75%	大气压 atmos	1MPa		
测试参数 test parameter								
温度 temperature	高温 high temperature		80℃	低温 low temperature	负 40℃ minus forty °C	温度公差 Temperature tolerance	2℃	
时间 time	恒温 constant temperature	高温 high temperature	0.30H	高温升温 High temperature heating	10min	备注 remarks	1、高温升温是从常温升至设定高温 2、低温降温是指从设定高温降至设定低温 1. High temperature heating up rises from room temperature to set high temperature 2.Low temperature cooling refers to falling from the set high temperature to the set low temperature	
		低温 low temperature	0.30H	低温降温 Low temperature cooling	10min			
循环次数 ycle index	32 次 32 Times		其它 else	相对湿度 relative humidity	95%			
外观检验 visual inspection	分层 lamination	ACC	氧化 oxidize	ACC	起泡 blister	ACC	油墨脱落 The ink fell off	ACC
测试 test	抗剥离 antistripping	≥0.8kgf/cm2	点焊 spot welding	ACC	百格测试 Wear-resistant experiment	ACC	耐磨实验 Wear-resistant experiment	ACC

测试记录 test record:		
产品编号 NO	产品测试结果 identification of product	判定 judge
	实验结束后, 产品无起翘, 无溢胶。 After the experiment, the product has no warping and no glue overflow.	ACC

THOT

深圳市昱晟通讯设备有限公司 Shenzhen Yusheng Communication Equipment Co., LTD

盐雾测试报告 Salt mist test report

客户 consumer: 科奈信 CANNICE 型号 model: A1142

试样情况 Sample condition

试样数量 Number of samples: 5PCS

材料: 单面半对半有胶电解铜

Material: single side half to half glue electrolytic copper

镀层: 镀金

Plated layer: gold plated

实验起止时间: 2022 年 03 月 18 号 09 时 25 分至 2023 年 03 月 20 日 09 时 25 分 共 48 小时

Start time of the experiment: 09:25 on March 18,2022 to 09:25 on March 20,2023

实验类型

Type of experiment

■ NSS

□ ASS

□ CASS

盐溶液 Salt solution: 5%

PH:7.0

箱内温度 Temperature in the box 35°C

相对湿度 relative humidity: 85%℃

喷雾方式: ■连续 □间歇

Spray method: ■ Continuous □ interval

压缩空气压力 Compressed air pressure: : 1kg / m 2

盐雾沉降率 precipitation rate of salt spray:

雾液收集 Fog collection: PH7.0anc

实验周期: 1--个循环

Experimental period: 1- -cycle

喷雾时间 Spray time: 48H

放置时间 storage period: 2H

每 16 小时观察结果

The results were observed every 16 hours

试验温度 test temperature : 36°C

压力桶温度 storage period: 47.5°C

实验结果

experimental result

实验后的外观: 外观完整无损, 无明显变化

Appearance after the experiment: the appearance is intact and intact, no obvious change

镀层: 无剥落, 无锈蚀

Plating: no peeling, no corrosion

表面喷涂, 丝印: 无脱落, 无气泡

Surface spraying, screen printing: no shedding, no bubbles

5.物料清单 BOM

深圳市昱晟通讯设备有限公司

YUSHENG COMMUNICATION TECHNOLOGY CO.,LTD.

A1142(336023)-BOM

Edition/版本: R:A client/机种:336 Model/项目: 336023 date/日期: 20230407

Item	Part No 项次	Name 名称	Types of 类型	version 版本	specification 规格	Material quality 材质	colour 颜色	Craft 表面 处理	unit 单 位	Quantity 数量
1	336023 -IA	L-FPC	Z	R:A	26.97*11.74* 0.12 mm	Electrolytic copper (half to half) 电解铜半对半	black 黑 色	Gold plated 镀 金	PCS	1
1.1	336023 -IA-01	L-FPC	Z	R:A	26.97*11.74* 0.12 mm	Electrolytic copper (half to half) 电解铜半对半	black 黑 色	Gold plated 镀 金	PCS	1
2	336023 -IB	R-FPC	Z	R:A	26.97*11.74* 0.12 mm	Electrolytic copper (half to half) 电解铜半对半	black 黑 色	Gold plated 镀 金	PCS	1
2.1	336023 -IB-01	R-FPC	Z	R:A	26.97*11.74* 0.12 mm	Electrolytic copper (half to half) 电解铜半对半	black 黑 色	Gold plated 镀 金	PCS	1

以上部件满足 ROHS2.0 HF 到达 GP 的环境要求

The above parts meet the environmental requirements of ROHS2.0 HF Reach GP

类型: W.外包 B. 半成品 Z.成品 C. 客户的供应

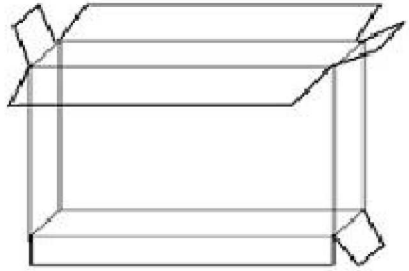
Type: W. Outsourcing B. Semi-finished products Z. Finished products C. Customer supply

确认 Confirmation:

审核 Review:

制作 Production: FJW

6.包装示意图 Schematic diagram of packaging

包装方式图 Packing pattern drawing																				
产品名称 Product name	天线组件 Antenna module																			
料号 Material number																				
项目型号 Project model																				
装箱明细 Packing details	纸箱尺寸 1Carton Size 1: 270*260*200MM 纸箱尺寸 2Carton Size 2: 260*200*200MM 纸箱尺寸 3Carton Size 3: 根据订单数量/体积而定 Subject to order quantity/volume																			
	装箱方式 Packing method	按订单数量包装 Packing as per order quantity																		
	装箱总数 Total number of cases	按订单数量包装 Packing as per order quantity																		
标签要求 Label requirement	标签尺寸 Label Size 1: 通用 100*100mm Universal 100*100mm 标签尺寸 2Label Size 2: 根据客户要求 According to customer requirements	<table border="1"> <tr> <th colspan="2">深圳市昱晟通讯设备有限公司</th> </tr> <tr> <th colspan="2">SHENZHEN YUSHENG COMMUNICATION EQUIPMENT CO., LTD</th> </tr> <tr> <td>Customer name 客户名称</td> <td>*****</td> </tr> <tr> <td>Order reference 订单编号</td> <td>*****</td> </tr> <tr> <td>Project name 项目名称</td> <td>*****</td> </tr> <tr> <td>Material code 物料编码</td> <td>*****</td> </tr> <tr> <td>Quantity 出货数量</td> <td>****PCS</td> </tr> <tr> <td>Date 出货日期</td> <td>*****</td> </tr> <tr> <td colspan="2">Address: 407-411, Floor 4, Building 2, Yuntai Chuanggu Park, southeast of the intersection of Guangming Avenue and Dongchang Road, Guangming District, Shenzhen</td> </tr> </table>	深圳市昱晟通讯设备有限公司		SHENZHEN YUSHENG COMMUNICATION EQUIPMENT CO., LTD		Customer name 客户名称	*****	Order reference 订单编号	*****	Project name 项目名称	*****	Material code 物料编码	*****	Quantity 出货数量	****PCS	Date 出货日期	*****	Address: 407-411, Floor 4, Building 2, Yuntai Chuanggu Park, southeast of the intersection of Guangming Avenue and Dongchang Road, Guangming District, Shenzhen	
深圳市昱晟通讯设备有限公司																				
SHENZHEN YUSHENG COMMUNICATION EQUIPMENT CO., LTD																				
Customer name 客户名称	*****																			
Order reference 订单编号	*****																			
Project name 项目名称	*****																			
Material code 物料编码	*****																			
Quantity 出货数量	****PCS																			
Date 出货日期	*****																			
Address: 407-411, Floor 4, Building 2, Yuntai Chuanggu Park, southeast of the intersection of Guangming Avenue and Dongchang Road, Guangming District, Shenzhen																				
注意事项 Matters needing attention 1.因订单数量限制，每款物料的装箱方式根据订单总数量或者实物体积选择箱子大小 Due to the quantity limitation of the order, the packing method of each item shall be based on the total quantity of the order or the physical volume 2.保存温度：常温 Storage temperature: normal temperature 3. 保存条件：贮藏在阴凉干燥处 Storage condition: Store in a cool and dry place																				