

电连技术股份有限公司

ELECTRIC CONNECTOR TECHNOLOGY CO., LYD.

APPROVAL SHEET

承認書

CUSTOMER NAME (客户名称)	亚洲光学股份有限公司
CUSTOMER P/N (客户料号)	CR5020605U9
PART NAME (品 名)	ANT_IN_2. 4G_DC338-WIFI
ECT P/N (料 号)	81800V576
APPROVAL REV. 版次	A
DELIVERY DATE 送样日期	2023. 09. 18
PREPARED BY (承 办)	梁兑泉
CHECKED BY (审 核)	
APPROVED BY (核 准)	

Customer Approved (客户承认)

Approved By (核 准)	Checked By (审 核)	Prepared By (承 办)

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产品承认书

Product Specification

P/N:

81800V576

Title :

ANT_IN_2. 4G_DC338-WIFI

Rev.	ECN	Release and Revision Description	Prepared By/Date:	Approved By/Date:
X1	ECN235449	FIRST RELEASE	梁兑泉/2023-07-17	牛宝星/2023-07-17

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1. Antenna Specification/天线标准

Antenna Specification/天线技术参数

Electrical Specification/电气特性

Item/目录	Specification/规格	Comment/备注
Freq. Range/频段范围	2400MHz-2500MHz	
Impedance/阻抗	50 (Ω)	
VSWR/驻波比	≤ 6.0	
Directional/辐射方向	Omni directional/全向天线	
Polarization/极化形式	linear polarization/线极化	
Peak Gain/峰值增益	-1.39(dBi)	
Test condition/测试条件	passive test/无源测试	
Total Efficiency/无源效率	$\geq 15\%$	

Mechanical Specification/机械指标

Antenna type/天线类型	FPC+Cable	
Connector Type/连接器类型	USS RF II(818000097)	
RF Cable Type/射频线型号	OD0.81mm (Black)	
Connector Torque Test/连接器扭力	N/A	
Connector Pull Test/连接器拉力	N/A	
Salt Spray/盐雾测试	48 (H)	

Environmental Specification /环境指标

Operating temp/工作温度	-40°C ~ +80°C	
Storage temp/存储温度	-40°C ~ +80°C	

P/N:

81800V576

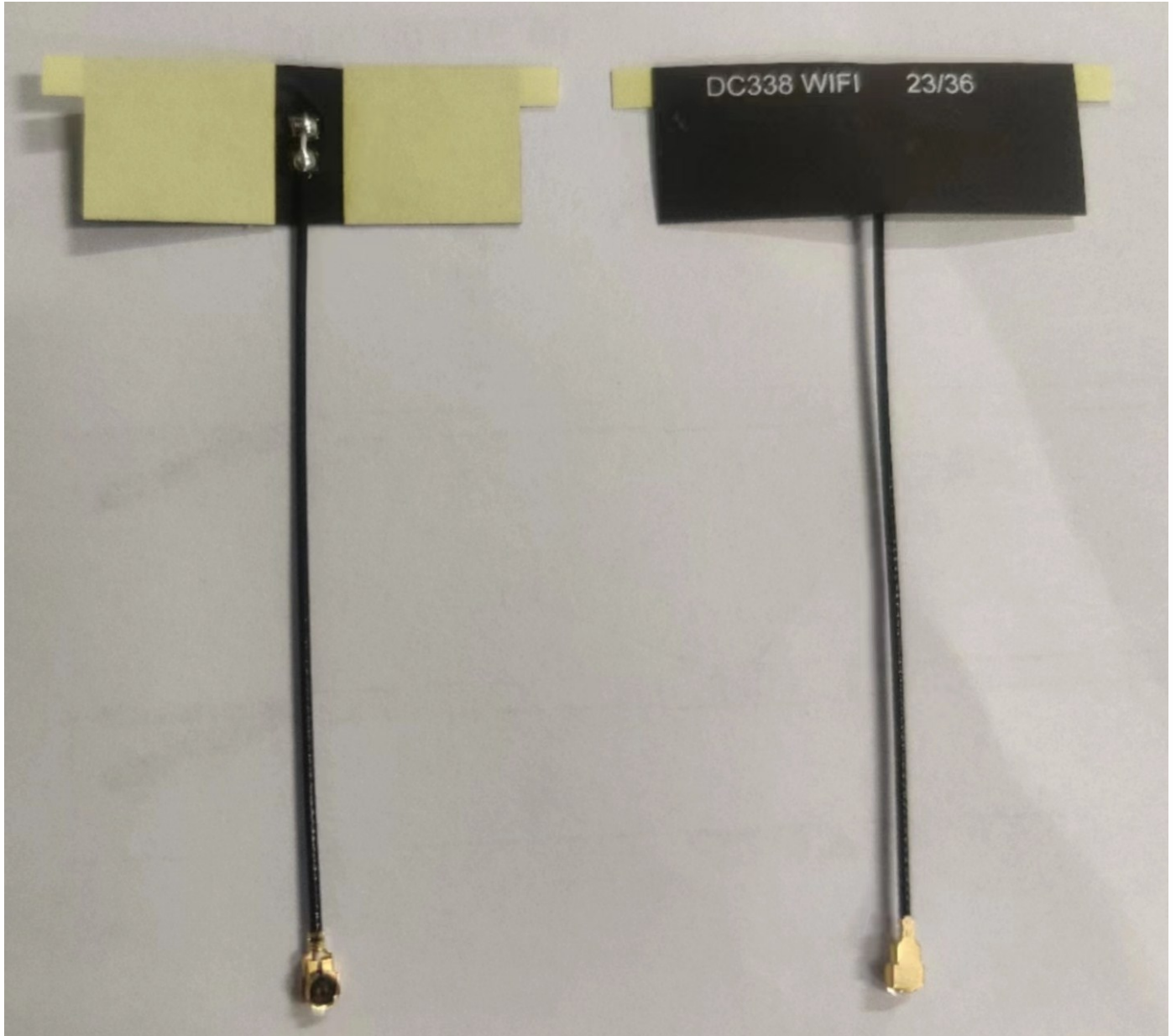
Rev.:

A

Page:

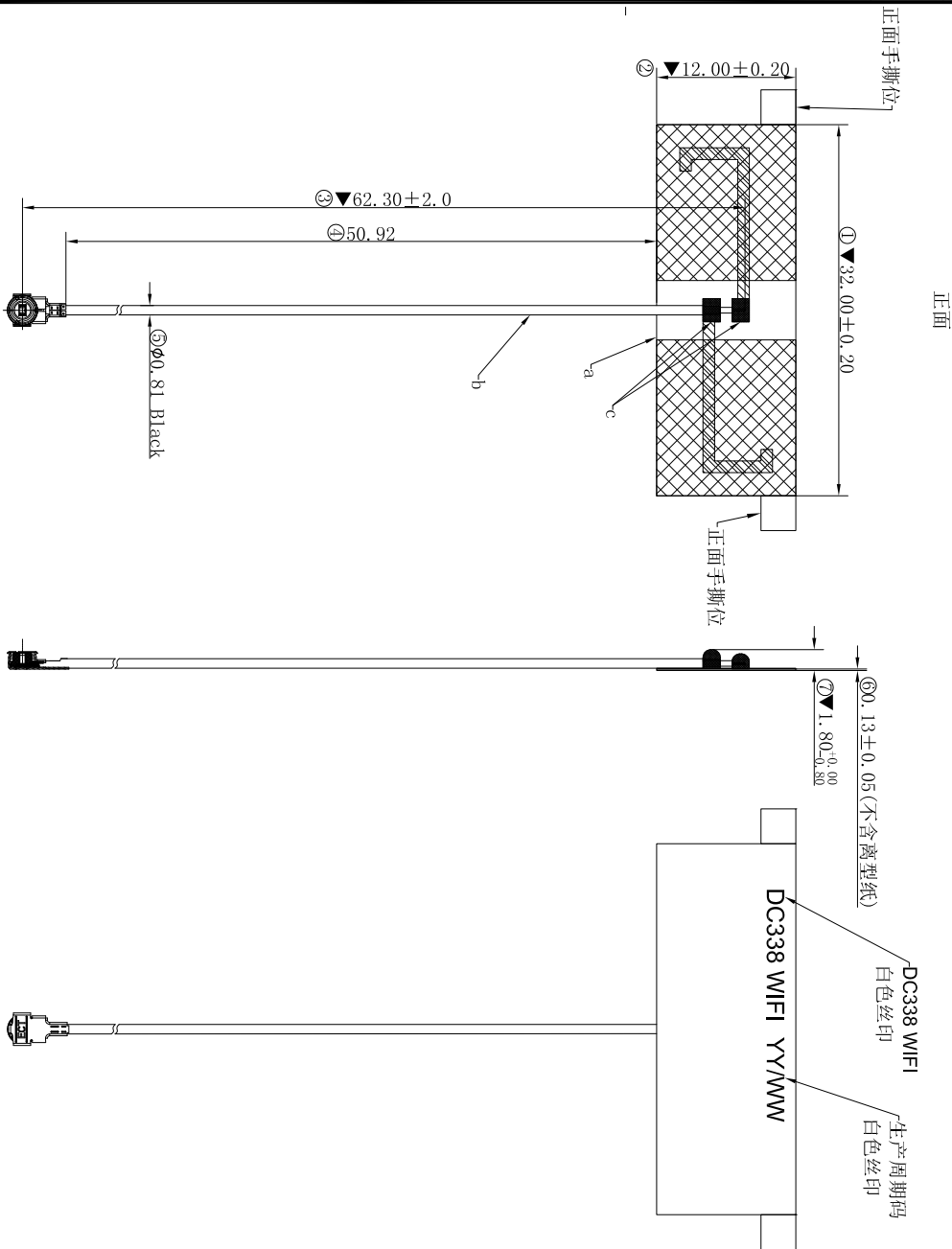
5/15

2. Antenna Picture/天线图片



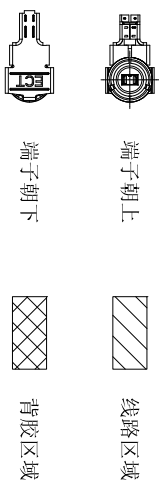
文档等级：
商业秘密

REV.	ECN NUMBER	DESCRIPTION	DATE	DRAWN	CHECKED	APPROVED
A	ECN235449	初版发行	10/24'23	梁克泉	丁第斌	牛宝星



备注：
1. 焊接不能虚焊、假焊，焊点须饱满，屏蔽层不能有烫伤。
2. 允许最大毛边0.05MAX。
3. 测试要求：全检VSWR测试，矩阵测试。
测试频率：2400-2480MHz, VSWR≤6.0。
4. 标有“▼”为QC重点检测尺寸。
5. 有害物质须符合ECT《QE-Q-19-001-环境有害物质管理基准》管控标准。

NOTE:
1. The welding can't virtual welding, welding, solder joints must be full, shielding layer cannot have burns.
2. Allow maximum flash 0.05 MAX.
3. The test requirements: pattern all inspection VSWR test, test matrix.
Test frequency:2400-2480MHz, VSWR≤6.0.
4. Marked with "▼" key size detection for QC.
5. HSF shall conform to the standard QE-Q-19-001 Environmental Hazardous Substances Management.

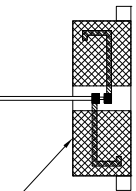


ITEM	PART NAME	MATERIAL / FINISH
c	Tin	环保锡丝, 0D0.80mm
b	CABLE(Φ0.81)	USS RF CABLE G1, SG, 081BK, 62.30, 097
a	PPC	DC338 WIFI_1L_BK-FPC_HF_32.0*12.0

客户料号: CR5020605019		DWG. NO: 600-V576-01		TITLE: ANT_IN_2_4G_DC338-WIFI		REV. A	
DRAWN: 梁克泉		DATE: 10/24'23		PARTS NO. (INTENDED USED): 81800V576		SHEET: 1/1	
SCALE: 1:1		CHECK: APPROVE:		DATE: DATE:		GENERAL TOLERANCE	
UNIT: mm		DATE: DATE:		SIZE: A4		.XXX ± 0.05	
SIZE: A4		DATE: DATE:		DATE: DATE:		.XX ± 0.10	
DATE: DATE:		DATE: DATE:		DATE: DATE:		.X ± 0.2	



文档等级:
商业秘密



81800V576-DC338 成品

25PCS/扎

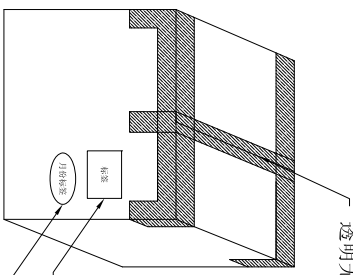
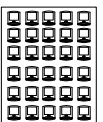
自封口

干燥剂 (1PCS/袋)

50PCS/袋
2扎/袋

6面各放1块珍珠棉
纸箱 (60袋/箱)
即3000PCS/箱

纸箱正面透视图



透明无100G封箱胶

出货标签
月份标签

以商务提供的
标签模版为准

REV.	ECN NUMBER	DESCRIPTION	DATE	DRAWN	CHECKED	APPROVED
A	ECN235449	初版发行	10/24'23	梁克泉	丁第斌	牛宝星

- 注释:
1. 包装时产品轻拿轻放, 避免产品变形.
 2. 检查是否有漏装, 产品的放置方向是否正确.
 3. 检查是否有产品被压死.
 4. 若有未装满之零数箱, 须以缓冲材料塞满.
 6. 大防水袋封口须缠紧.
 7. 整箱封好后, 检查标签是否贴好, 干净, 字迹清晰, 标签内容是否正确, 完善.
 8. 外纸箱: 内尺寸 L340*W240*H180mm.
- Note:
1. When packing product light to take light put, avoid the product deformation.
 2. Check for leaks installs, product placement direction is correct.
 3. Check whether the product have been killed.
 4. If there is not a null box full of cushion material should be related to fill.
 6. Large waterproof bag sealing must be intertwined.
 7. After sealed the whole case, check the label is good, clean, clear, the label content is correct, perfect.
 8. Outer carton: inner size L340*W240*H180mm.

包装材料		数量	产品包装容量	产品包装重量
项目	料号		Pcs/袋 袋/外箱	PCS/外箱 单重(g) 净重(kg) 总重(kg)
外纸箱	604010020	1	50	60
PE袋	840000511	60		3000
干燥剂	708040129	60		
PE袋	840000501	1		
上带				
三角纸板				
作业标签				
珍珠棉				
透明胶带				

GENERAL TOLERANCE

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XX ± 0.25	XY ° ± 2°
X. ± 0.20	X. ° ± 1°
.X ± 0.13	.X ° ± 0.5°
.XX ± 0.05	

SCALE: 1:1

DRAWN: 梁克泉

DATE: 10/24'23

DMG. NO.: 600-V576-01

TITLE: ANT_IN_2_4G_DC338-WIFI1
包规图

REV. X1

CHECK:

DATE:

PARTS NO. (INTENDED USE): 81800V576

SHEET: 1/1

APPROVE:

DATE:

SIZE: A4

DATE:

DATE:

DATE:

DATE:

5. Antenna test result/测试结果

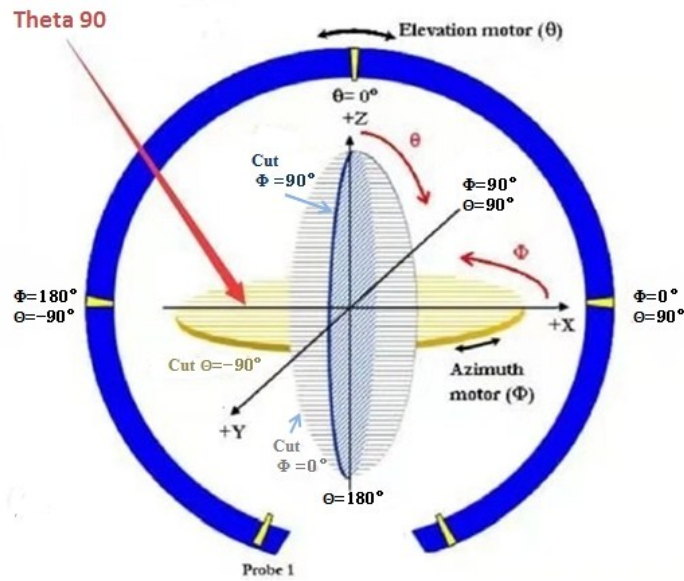
5.1 Return loss/Smith chart/VSWR/回波损耗/史密斯图/驻波比

9/5/2023 8:38:58 AM
1328.5170K92-101247-Tw

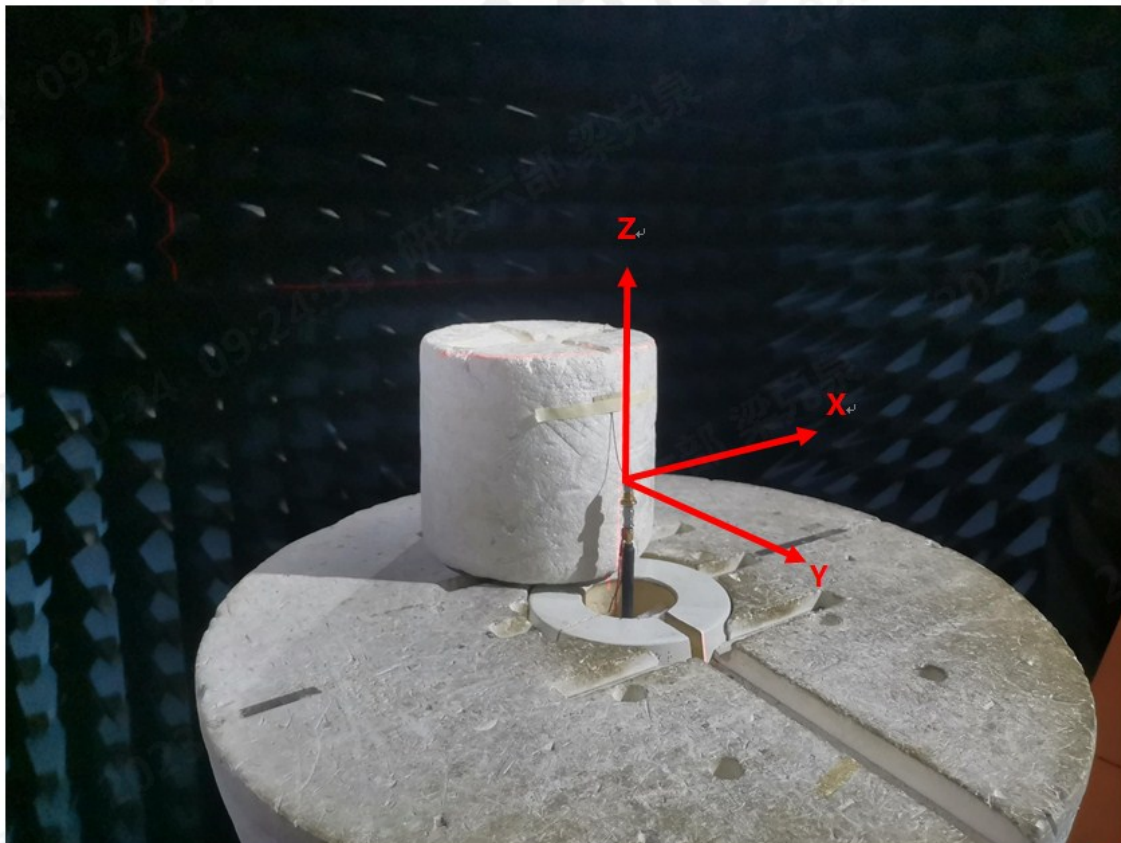


5.2 The gain and total efficiency test/增益和效率测试

5.2.1 The definition of coordinate system/坐标系定义-Satimo SG24



The coordinate system of Chamber/暗室坐标系



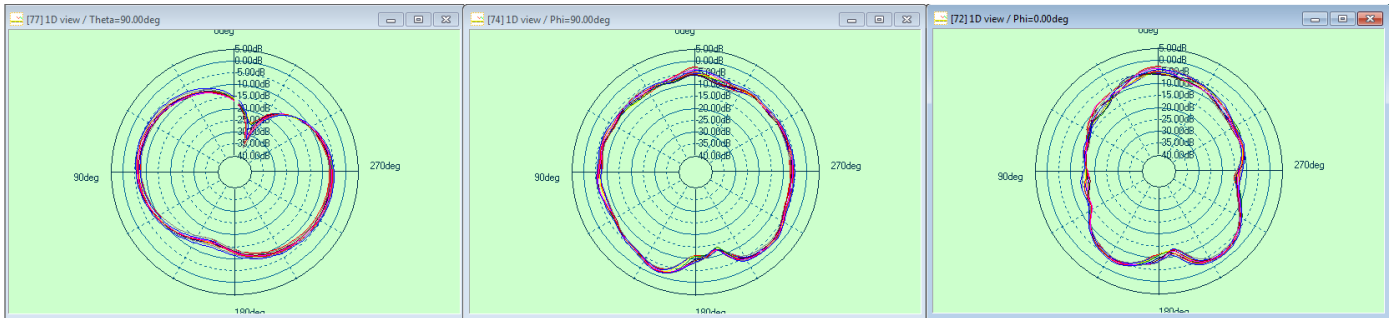
The production test position/天线测试放置位置

5.2.2 The test result of total efficiency and total gain/天线效率及增益测试结果**2400MHz-2500MHz**

Frequency	Efficiency(%)	Gain (dBi)
2400MHz	15%	-2.86
2410MHz	15%	-2.97
2420MHz	16%	-2.51
2430MHz	18%	-1.97
2440MHz	19%	-1.66
2450MHz	18%	-1.72
2460MHz	17%	-2.22
2470MHz	18%	-2.22
2480MHz	20%	-1.90
2490MHz	21%	-1.39
AVG.	18%	-2.142

5.2.3 The antenna radiation pattern(2D)/天线辐射方向图 (2D)

2400MHz-2500MHz



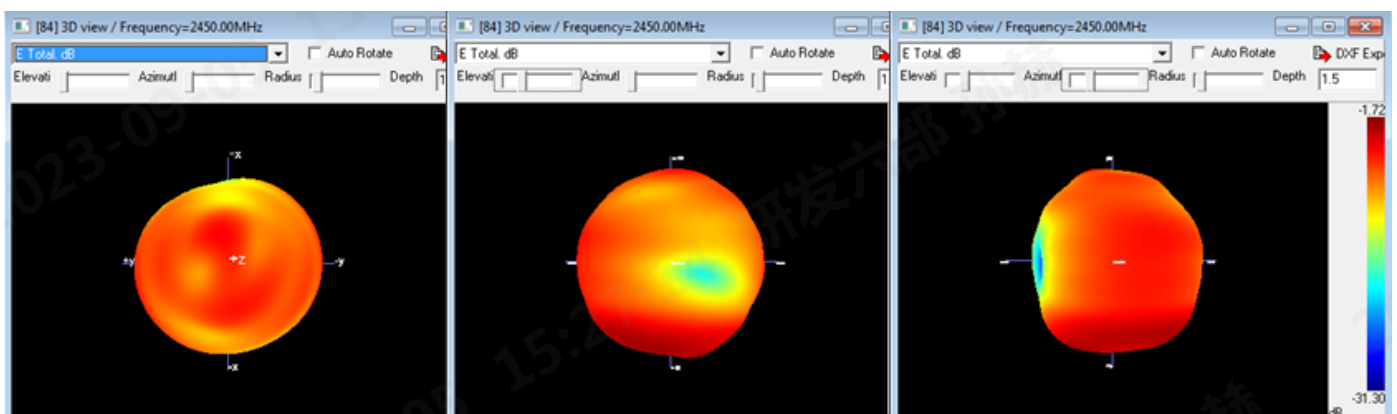
XOY

YOZ

XOZ

5.2.4 The antenna radiation pattern(3D)/天线辐射方向图 (3D)

Frequency/频点 2400MHz-2500MHz



XOY

YOZ

XOZ

6. Reliability Test / 可靠性测试

Test Items		Test Condition and Procedure	Requirements
1	Vibration	Amplitude:0.76mm Freq:10 to 55Hz 2 hours for each direction	1.No Visual Damage 2.Frequency Tol.≤5%
2	Random Drop	Height:1.2m; 3 directions; 1 time for each direction	1.No parts separated 2.Frequency Tol.≤5%
3	Salt Spray	Temp:35°C; RH:≥ 85%; NaCl solution:≥ 5%; Time:24 hours	After 2 Hours Recovery 1.No Visual Damage 2.Frequency Tol.≤5%
4	Thermal Shock	Cycle:-40°C±2°C(1 hours) to +80°C±2°C (1hours) Cycles:48 times	After 2 Hours Recovery 1.No Visual Damage 2.Frequency Tol.≤5%
5	Low Temp	Temp:-40°C±3°C; Time:48 hours	After 2 Hours Recovery 1.No Visual Damage 2.Frequency Tol.≤5%
6	High Temp	Temp: 80°C±3°C; Time:48 hours	After 2 Hours Recovery 1.No Visual Damage 2.Frequency Tol.≤5%
7	Temperature and Humidity Chamber	Temp: 80°C±3°C; RH: ≥85%; Time: 48 hours	After 2 Hours Recovery 1.No Visual Damage 2.Frequency Tol.≤5%
8	RoHS	With Reference to IEC62321 with flow chart Directive RoHS2015/863	Directive RoHS 2015/863/EU



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BOM List

编号:	81800V576	创建时间:	2023/7/17
名称:	天线	发布时间:	
规格:	ANT_IN_2.4G_DC338-WIFI	制表者:	梁兑泉

序号	编号	名称	规格	单位	组成用量	备注
0010	605042736	电器类	DC338-WIFI_1L_BK-FPC_HF_32.0*12.0	PCS	1	
0020	74V576001	USS RF CABLE	USS RF CABLE试,G2,SG,081BK,62.3,097	PCS	60/3000	
0030	840000505	PE袋	防水袋,开口100*150*T0.06mm,PE料,透明,自封	PCS	60/3000	
0040	708040129	干燥剂	干燥剂,1500小袋/包,3克/小袋	PCS	60/3000	
0050	840000501	PE袋	防水袋,开口600*650*T0.06mm,PE料,透明	PCS	1/3000	
0050	604010020	纸箱	内尺寸L340*W240*H180mm,七层纸,K三K,加强芯	PCS	1/3000	

Electric Connector Technology (CP/CPK)

Part Description (物料描述)	ANT_IN_2.4G_DC338-WIFI				Unit of Measurement (尺寸单位)	MM								
Part Number(物料编号)	81800V576				Supplier (供应商)									
Revision (版本)	A				Customer (客户)	亚洲光学股份有限公司								
Tool No. (模具编号)	/				Measured By / Date (测量员/日期)	王瑞霞/2023/09/18								
Cavity No. (穴位编号)	/				Reviewed By / Date (审核人/日期)									
Ton of equipment (设备吨位)	/				Supplier P/N (供应商产品编号)									
Equipment Used (测量设备)	CMM	CMM	CMM	CMM	CMM	CMM	CMM	CMM	CMM	CMM	CMM	CMM	CMM	CMM
Equipment Calibration Due Date (测量设备校验到期日)	20240107	20240107	20240107	20240107										
Dimension Serial# (尺寸编号)	1	2	3	7										
Dimension (尺寸要求)	32.00	12.00	62.30	1.80										
+ Tol (公差)	0.20	0.20	2.00	0.00										
- Tol (公差)	0.20	0.20	2.00	1.00										
1	32.07	11.92	62.30	1.05										
2	31.98	11.95	62.20	1.00										
3	32.02	11.98	62.20	1.06										
4	32.08	11.95	62.00	1.05										
5	32.04	11.96	62.30	1.05										
6	32.03	11.95	62.50	1.00										
7	31.98	11.98	62.00	1.05										
8	32.05	11.97	62.20	1.00										
9	31.97	12.02	62.10	1.03										
10	32.09	11.97	62.00	1.05										
11	31.99	11.97	62.30	1.05										
12	31.98	11.96	62.10	1.02										
13	32.09	11.97	62.30	1.05										
14	31.98	12.02	62.20	1.04										
15	32.05	11.95	62.10	1.05										
16	32.04	11.98	62.10	1.02										
17	32.08	11.95	62.30	1.00										
18	31.98	11.98	62.00	1.03										
19	32.06	12.06	62.30	1.05										
20	32.03	12.03	62.00	1.02										
21	32.04	11.96	62.20	1.03										
22	31.99	11.94	62.40	1.00										
23	32.02	12.02	62.10	1.03										
24	32.09	12.02	62.00	1.03										
25	32.03	11.92	62.40	1.02										
26	31.98	11.96	62.20	1.03										
27	32.02	12.06	62.00	1.03										
28	31.98	11.98	62.40	1.05										
29	32.02	11.97	62.00	1.02										
30	31.96	11.97	62.20	1.03										
31	31.92	11.98	62.10	1.03										
32	32.03	11.97	62.00	1.02										
MAX.	32.09	12.06	62.50	1.06										
MIN.	31.92	11.92	62.00	1.00										
AVERAGE	32.02	11.98	62.17	1.03										
STDEV	0.04	0.03	0.15	0.02										
CP	1.55	1.92	4.55	9.25										
CPK	1.39	1.70	4.26	4.27										
Measuring	Vemier caliper													

ROHS List

料号P/N	描述description	材料料号P/N	材料名称 material	物料各构成名称 Material by name	检测报告编号 Test report No	有效日期 effective date	REACH声明	重要组件 Important	其它else
81800V576	ANT_IN_2. 4G_DC338 -WIFI	605042736	FPC	FPC-基材+铜箔	A2230108006101004E	2024.03.21	/	/	/
				FPC-镀金	A2220497610101001ER1	2023.11.10	/	/	/
				FPC-3M9471	SHAEC2217569205	2024.01.24	/	/	/
				FPC-丝印油墨(白)	ETR23A00862M01	2024.10.13	/	/	/
				FPC-阻焊油墨(黑)	ETR23701480	2024.07.13	/	/	/
		820097016	线材	镀银铜线	SHAEC2217007511	2023.12.15	/	/	/
				镀锡铜线	A2230173541101001E	2024.04.24	/	/	/
				FEP绝缘	SHAEC22004639301	2023.12.15	/	/	/
				FEP护套	SHAEC23000346911	2024.01.13	/	/	/
				色母(黑)	SHAEC23002162901	2024.03.09	/	/	/
		830097101	端子	PP	A22230525843101001E	2024.10.17	/	/	/
		710097202		C5191	CANEC23010562802	2024.09.28	/	/	/
		820097301		C5210	SZXEC23002333606	2024.09.28	/	/	/
Au	CANEC2302637848			2024.03.07	/	/	/		
		Ni	CANEC2302637827	2024.03.07	/	/	/		