

SPECIFICATION

Daxian Communication Technology Limited



Shenzhen Daxian Technology Co., Ltd.

lchse TW241 Right ear
Bluetooth headset antenna

Material Recognition Letter

Guest households	lchse	frequency band	2400MHz~2500MHz
Project name	TW241	version	V1.1
Material No.	2T-W241X-075	color	Black
R F design	Qiang.Wang	structure design	YeZhi.Bi
Quality Manager	Ziyin.Hu	R & D director	Lei.Zhang
Date	2023-09-21		

client confirmation:

Whether the assembly meets your requirements: OK NG

Shenzhen Topant Technology Co., Ltd.

Shangshuijing Village, No. 513, ihua Road, BujiTown, Longgang District, Shenzhen (opposite to theNational Defense Training Base)reached the 7thfloor of the Industrial Park Complex

TEL:0755-28576002

FAX:0755-84276383

Shanghai Branch: Room 201, Building 8 No, 3000Longdong Avenue, Integrated Circuit IndustrialZone, Zhangjiang Hi-tech Park, Shanghai

TEL:021-61630552

FAX:755-84276383

Change resume

version number	Change content	Reason for change	Initiate change Party	date	Modifier
V1.0	create			2023.09.21	

www.Topant.com.cn

Confidential requirement

Shenzhen Daxian limited company of science and technology has proprietary technology to provide information, which should be kept strictly confidential and proprietary information, without the prior written consent of Shenzhen Daxian Co. Ltd. are not allowed to disclose to any person or company.

Index

一、 Project description.....	4
二、 BT antenna.....	4
1、 specifications.....	4
1.1 Electrical specification standard.....	4
1.2 Antenna composition.....	4
2、 The Equipment of Active Test.....	5
3、 test.....	6
3.1 The Test of standing Wave (VSWR).....	6
3.1.1 test connection.....	6
3.2 Measurement of Efficiency, Power (TRP) and Sensitivity (TIS).....	6
3.2.1 Test site.....	6
3.2.2 Test instrument.....	6
3.2.3 test data	6
4、 conclusion	7
5、 Attachment chart.....	7
5.1、 VSWR parameter diagram.....	7
5.2、 Matching circuit.....	8
6、 Passive fielde pattern	9
7、 Environmental treatment.....	10
三、 schedule drawing.....	11

www.Topant.com.cn

Confidential requirement

Shenzhen Daxian limited company of science and technology has proprietary technology to provide information, which should be kept strictly confidential and proprietary information, without the prior written consent of Shenzhen Daxian Co. Ltd. are not allowed to disclose to any person or company.

– **Project description**

Customer name:	lchse
Whole machine type:	Bluetooth headset
Antenna band:	2400 ~ 2500MHz
Antenna form:	FPC
Feed form:	welding
Number of feed feet:	2 left and right ears
Hardware version:	motherboard:

一、**BT antenna**

This report provides a variety of measurements of the electrical performance of the TW241 antenna. Figure 1 shows the antenna designed by the display.



Whole machine appearance chart

antenna appearing diagram

Figure 1

1.1 **Electrical specification standard**

The frequency range of the antenna is 2400 ~ 2500 MHz. The following table indicates the electrical performance specifications of the antenna. The antenna is designed and manufactured by a large display.

Frequency Range	Frequency (MHz)	VSWR
Right ear BT	2400 ~ 2500	≤ 2

www.Topant.com.cn

Confidential requirement

Shenzhen Daxian limited company of science and technology has proprietary technology to provide information, which should be kept strictly confidential and proprietary information, without the prior written consent of Shenzhen Daxian Co. Ltd. are not allowed to disclose to any person or company.

1.2 Antenna composition

The antenna is mainly composed of FPC.

2、 The Equipment of Active Test

Satimo 3D Chamber 6×4×4(m)

Agilent 8960 E5515c

Network analyzer-R&S ZVL



Figure 2

www.Topant.com.cn

Confidential requirement

Shenzhen Daxian limited company of science and technology has proprietary technology to provide information, which should be kept strictly confidential and proprietary information, without the prior written consent of Shenzhen Daxian Co. Ltd. are not allowed to disclose to any person or company.

3 test

3.1 The Test of standing Wave (VSWR)

3.1.1 The Test of standing Wave (VSWR): In turn, the connection of the VSWR testing device is as follows: RES ZVL Network Analyzer / testing Line / testing tool

Actual measurement (with diagram)

3.2 Measurement of Efficiency, Power (TRP) and Sensitivity (TIS)

3.2.1 Test site:

Large-scale microwave darkroom. The test frequency range is 400MHz / 6GHz, the static range is 50cm circumferential and the reflectivity is less than-50 dB..

3.2.2 Test instrument:

Rs ZVL Network Analyzer, Agilent8960 E5515C, Standard Horn Antenna, French SATIMO-SG24SYSTEM system, Printer, etc.

3.2.3 test data : In microwave anechoic chambers, the power and sensitivity values measured are shown in the following table:

OTA free space active test:

Passive Test:

R-Free space			
BAND	CH	TRP (dBm)	TIS (dBm)
BT	0	6.75	-87.01
	39	6.44	-88.87
	78	6.40	-87.94

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	35.6	-4.49	-0.72
2410	34.94	-4.57	-0.71
2420	36.04	-4.43	-0.71
2430	38	-4.2	-0.24
2440	38.76	-4.12	0
2450	39.47	-4.04	-0.84
2460	38.68	-4.13	-0.94
2470	35.76	-4.47	-1.34
2480	34.78	-4.59	-1.23
2490	32.54	-4.88	-1.37
2500	30.38	-5.17	-1.53

OTA head mold active test

R-headform			
BAND	CH	TRP (dBm)	TIS (dBm)
BT	0	1.06	-82.05
	39	1.25	-82.35
	78	1.11	-82.26

www.Topant.com.cn

Confidential requirement

Shenzhen Daxian limited company of science and technology has proprietary technology to provide information, which should be kept strictly confidential and proprietary information, without the prior written consent of Shenzhen Daxian Co. Ltd. are not allowed to disclose to any person or company.

4、 conclusion:

This antenna is designed on the basis of the prototype provided by the customer, electrical parameters and structural performance have reached the technical requirements, please confirm!

5、 Attachment chart

5.1 VSWR parameter diagram

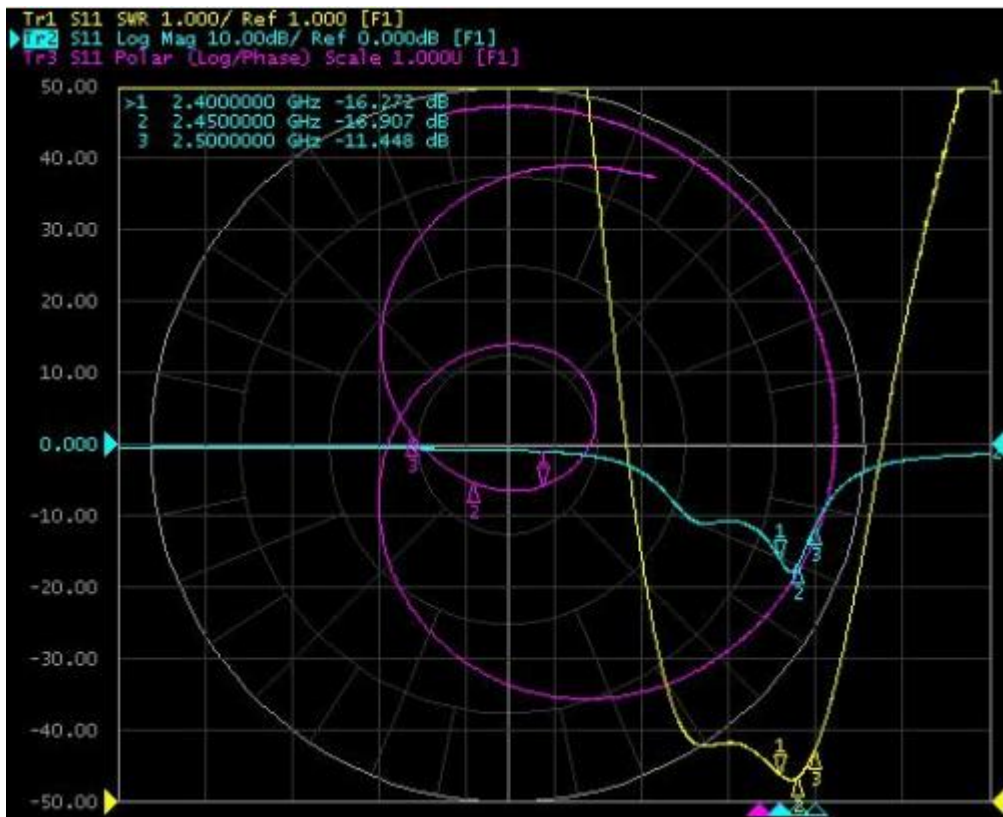


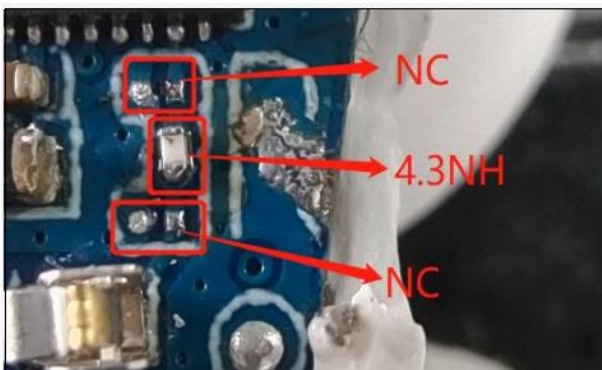
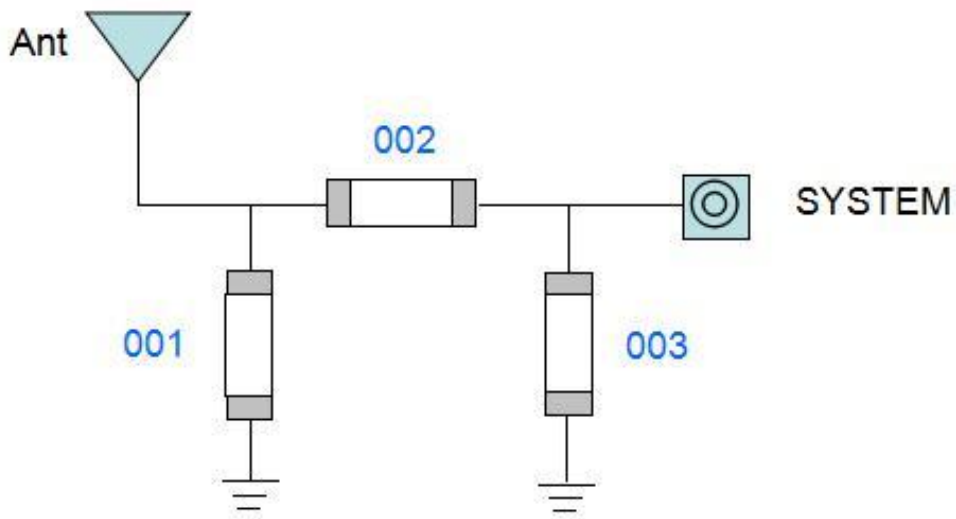
Figure 3

www.Topant.com.cn

Confidential requirement

Shenzhen Daxian limited company of science and technology has proprietary technology to provide information, which should be kept strictly confidential and proprietary information, without the prior written consent of Shenzhen Daxian Co. Ltd. are not allowed to disclose to any person or company.

5.2 Matching circuit



Element	Left	Right
001	N/C	N/C
002	1PF	4.3NH
003	0.5PF	N/C

注意：匹配电路有变更

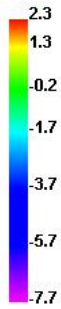
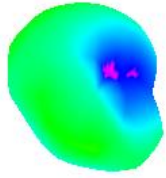
www.Topant.com.cn

Confidential requirement

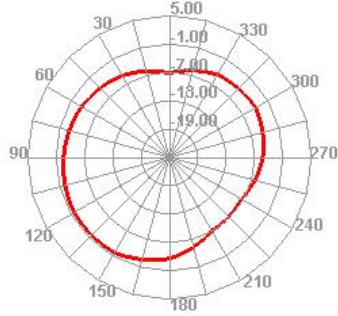
Shenzhen Daxian limited company of science and technology has proprietary technology to provide information, which should be kept strictly confidential and proprietary information, without the prior written consent of Shenzhen Daxian Co. Ltd. are not allowed to disclose to any person or company.

6、Passive field pattern diagram-R:

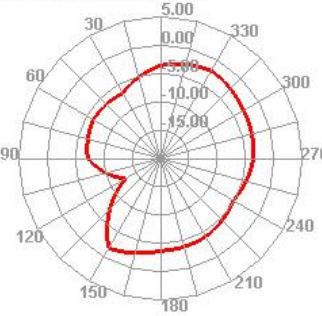
2400.000MHz



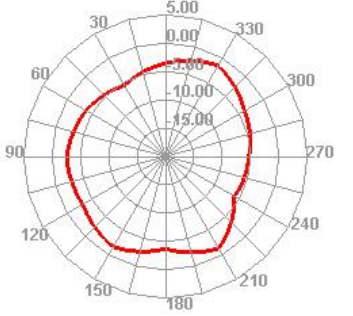
2400.000MHz H



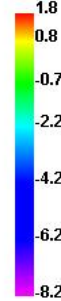
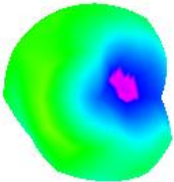
2400.000MHz E1



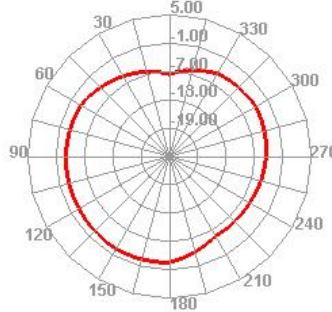
2400.000MHz E2



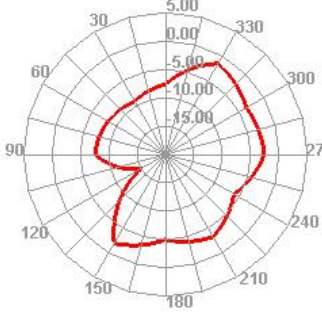
2450.000MHz



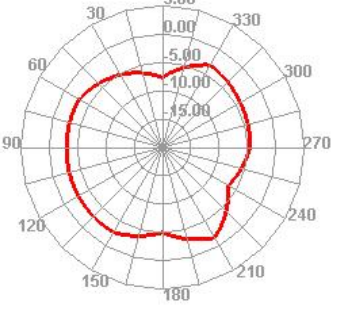
2450.000MHz H



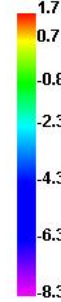
2450.000MHz E1



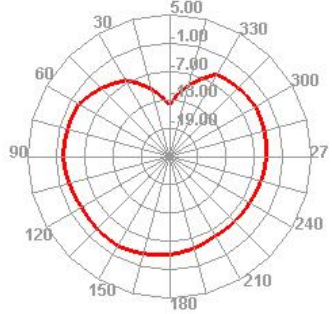
2450.000MHz E2



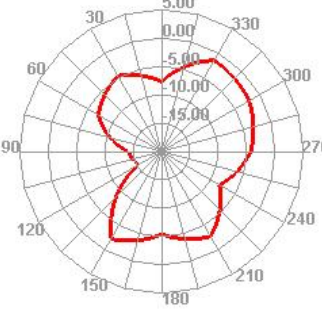
2500.000MHz



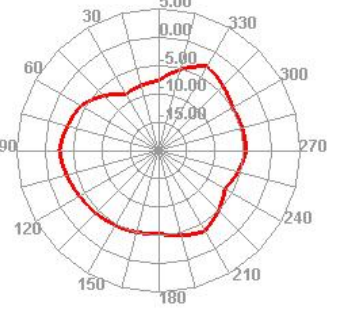
2500.000MHz H



2500.000MHz E1



2500.000MHz E2

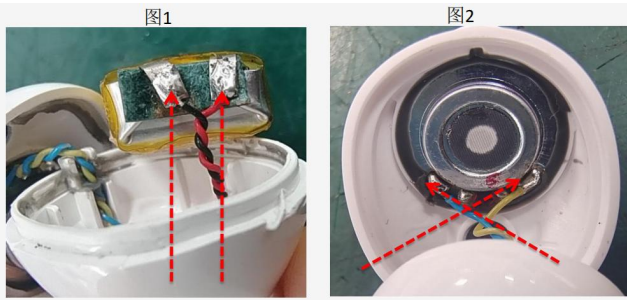


www.Topant.com.cn

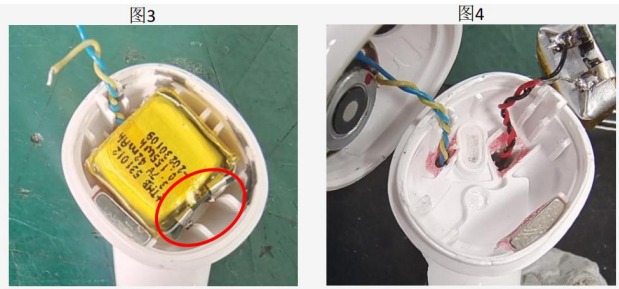
Confidential requirement

Shenzhen Daxian limited company of science and technology has proprietary technology to provide information, which should be kept strictly confidential and proprietary information, without the prior written consent of Shenzhen Daxian Co. Ltd. are not allowed to disclose to any person or company.

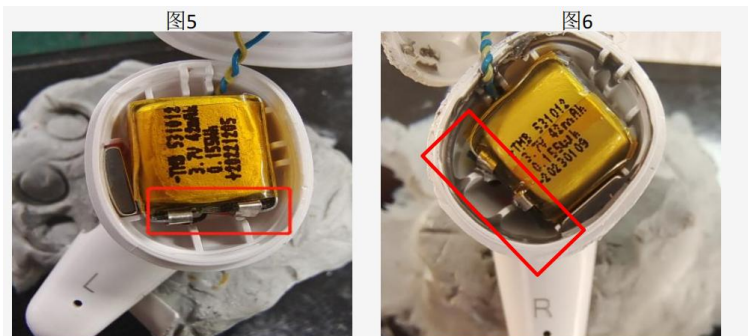
7、Environmental treatment



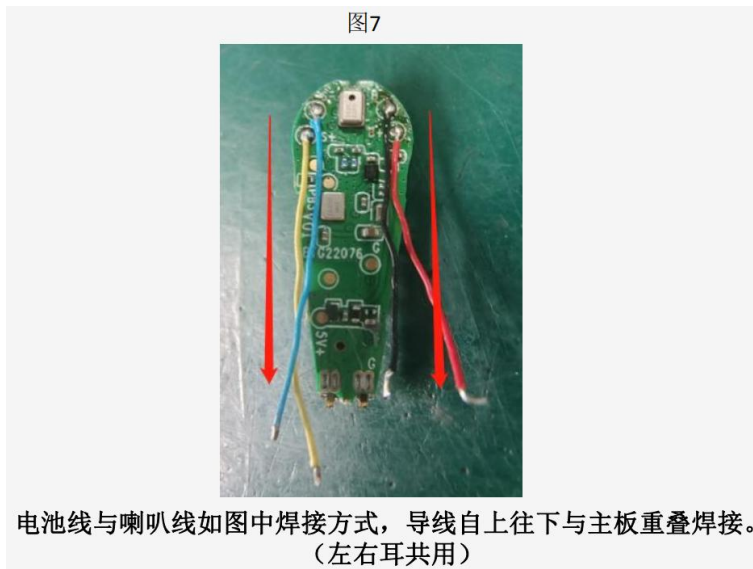
如图1示，电池线焊接在电池极耳末端，平行相交焊接（左右耳共用）；
如图2示，喇叭线左右交叉焊接在喇叭焊盘（左右耳共用）。



如图3示，电池线压在电池下方，注意电池线不要超出极耳（左右耳共用）；
如图4示，电池线、喇叭线正负极做缠绕动作（缠到缠不动），
电池正负极线长：20mm
喇叭正负极线长：23mm
（左右耳共用）



左耳电池极耳按图5示意位置摆放，右耳电池极耳朝图6示意位置摆放



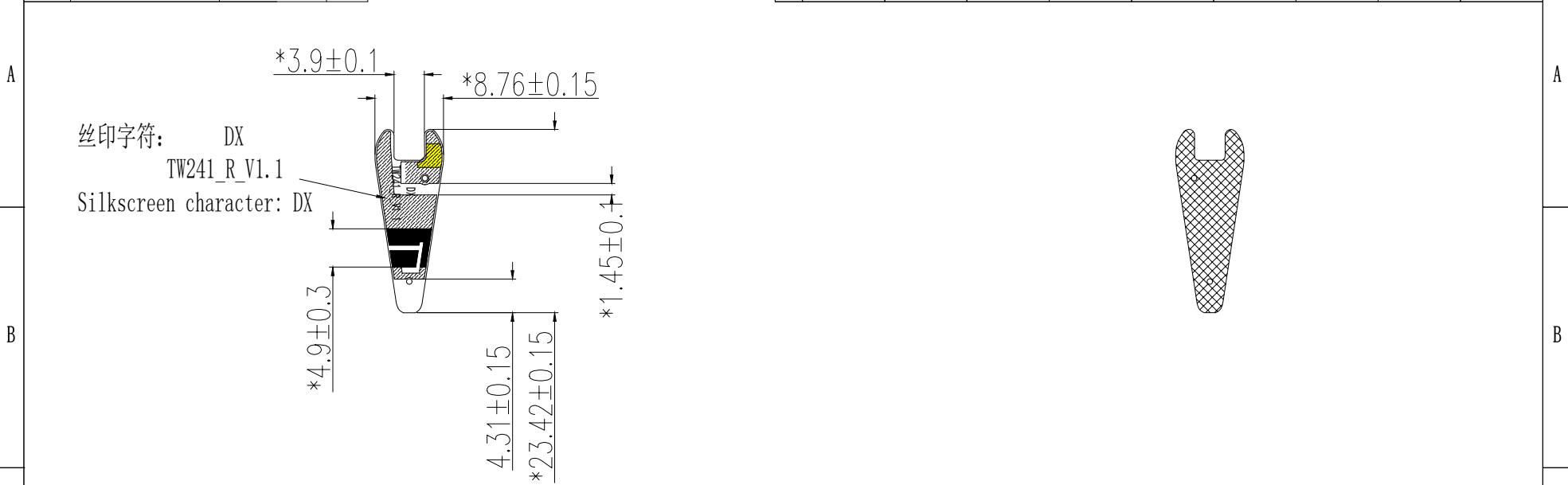
电池线与喇叭线如图中焊接方式，导线自上往下与主板重叠焊接。
（左右耳共用）

www.Topant.com.cn

Confidential requirement

Shenzhen Daxian limited company of science and technology has proprietary technology to provide information, which should be kept strictly confidential and proprietary information, without the prior written consent of Shenzhen Daxian Co. Ltd. are not allowed to disclose to any person or company.

1		2		3		4		5		6				
The third perspective						0~10	10~30	30~50	50~	Angle	○	◎	⊥	
Unit	mm	Proportion	1:1			0.05	0.10	0.15	0.20	1°	0.02	0.02	0.03	0.05



丝印字符: DX
TW241_R_V1.1
Silkscreen character: DX

白色字符

反面(tails)

Note:

- "*" for the key size;
- FPC Material Science:Electrolytic copper
- 3m300 series double-sided adhesive tape is pasted on the back of the product
- No tolerance dimension is marked, and the tolerance of die stamping dimension is ± 0.1
- Gold plated area, Copper foil area, Gum;
- FPC incoming material shall be made by half cutting of release film;

正面(Heads)



Shenzhen Daxian Technology Co., Ltd.

A	New Figure		
version	Description	Date	Remark

Model	TW241	Product color	black	Date	2023/2/13
Project Coding	CT-W241X-075	Mol dsurfacetreat ment		Structural Design	biyezhi
Part Name	BT-R FPC			RF design	wangqiang
Parts coding	1T-W241X-075-1			Check	zhoukang
Material	PI Electrolytic copper			Approve	zhanglei
Save Path				current version	A