

SPECIFICATION

Daxian Communication Technology Limited



Shenzhen Daxian Technology Co., Ltd.

lchse TW241 Left ear
Bluetooth headset antenna

Material Recognition Letter

Guest households	lchse	frequency band	2400MHz~2500MHz
Project name	TW241	version	V1.1
Material No.	1T-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

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– **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
Left ear BT	2400 ~ 2500	≤ 2

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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

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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:

L-Free space			
BAND	CH	TRP (dBm)	TIS (dBm)
BT	0	6.28	-86.82
	39	6.69	-88.07
	78	5.87	-87.15

Passive Test:

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	35.91	-4.45	-0.16
2410	36.68	-4.36	0.07
2420	36.98	-4.32	0.25
2430	36.72	-4.35	0.31
2440	36.89	-4.33	0.32
2450	37.47	-4.26	0.46
2460	38.44	-4.15	0.56
2470	38.45	-4.15	0.54
2480	37.72	-4.23	0.25
2490	36.32	-4.4	0.04
2500	35.92	-4.45	-0.1

OTA head mold active test

L-headform			
BAND	CH	TRP (dBm)	TIS (dBm)
BT	0	1.03	-82.12
	39	1.12	-82.41
	78	1.08	-82.16

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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

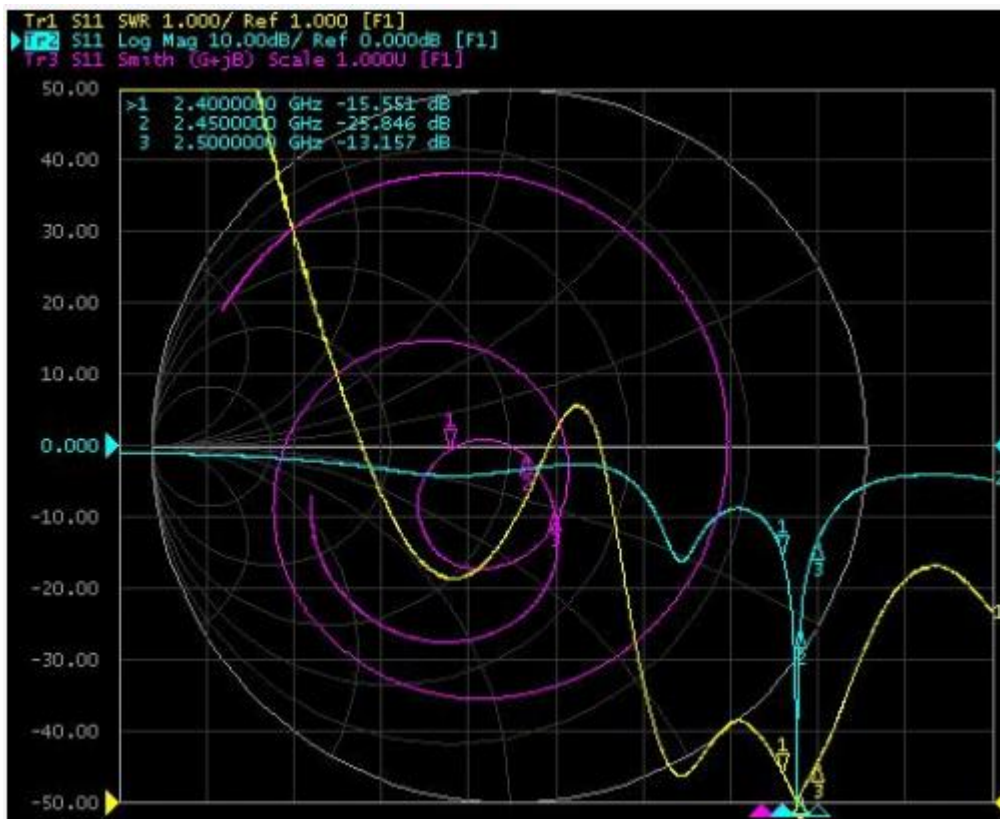


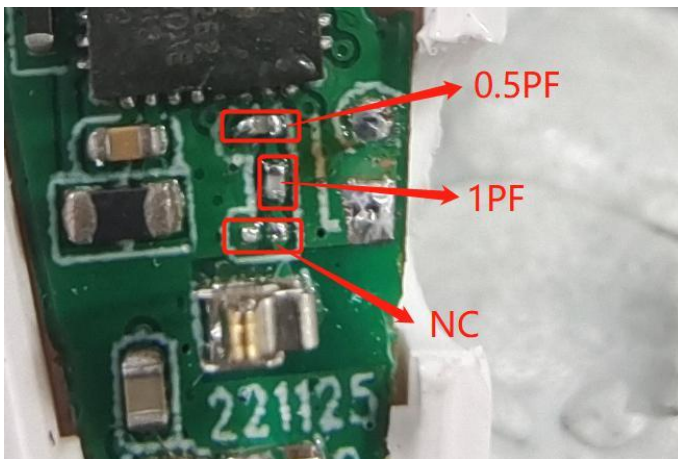
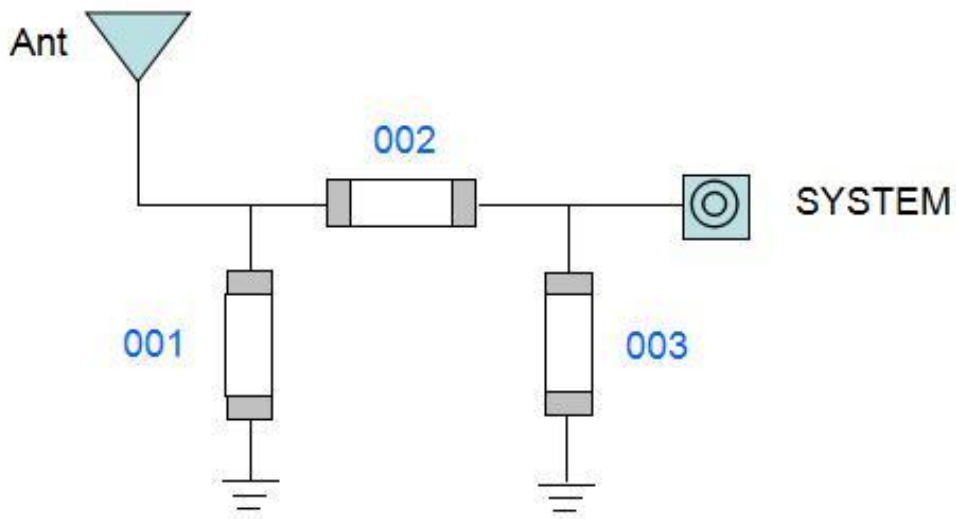
Figure 3

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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

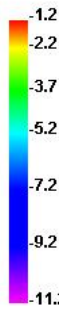
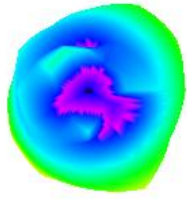
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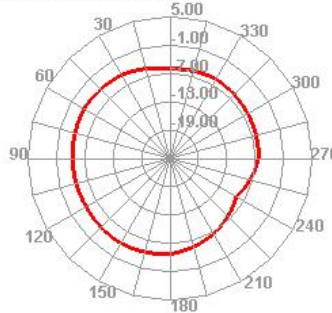
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6、Passive field pattern diagram-L:

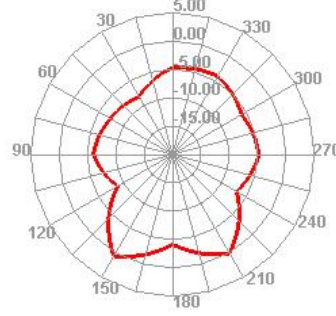
2400.000MHz



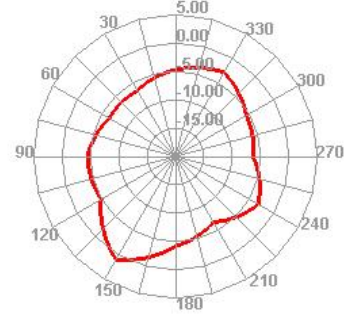
2400.000MHz H



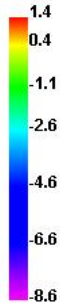
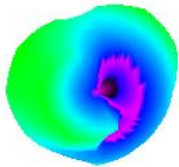
2400.000MHz E1



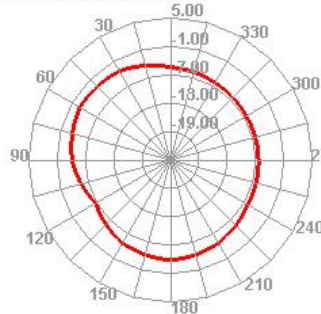
2400.000MHz E2



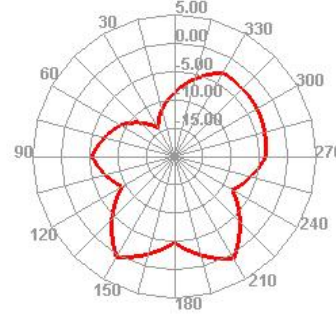
2450.000MHz



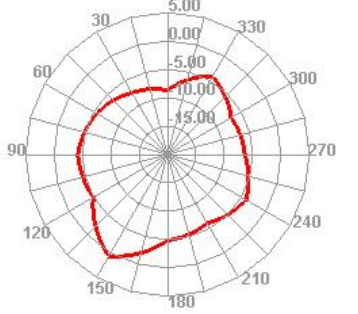
2450.000MHz H



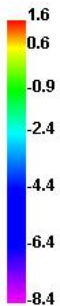
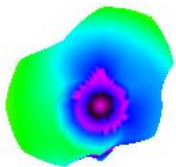
2450.000MHz E1



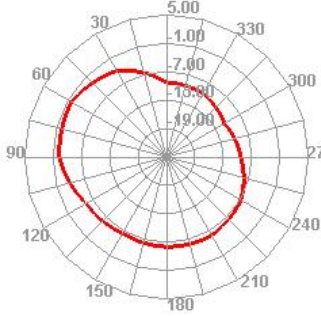
2450.000MHz E2



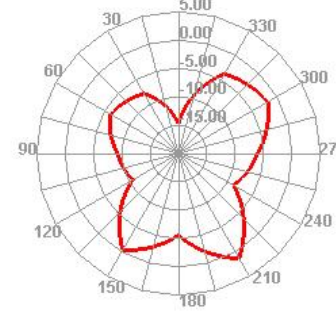
2500.000MHz



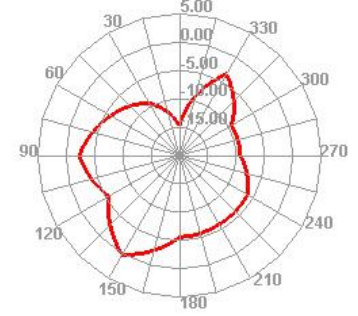
2500.000MHz H



2500.000MHz E1



2500.000MHz E2

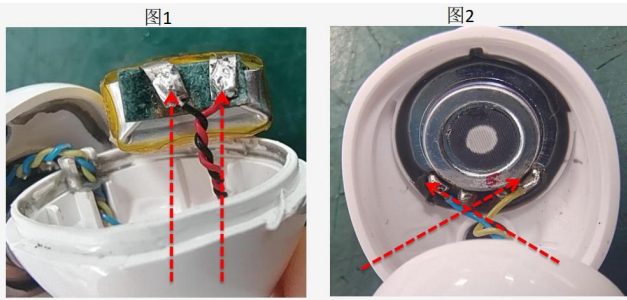


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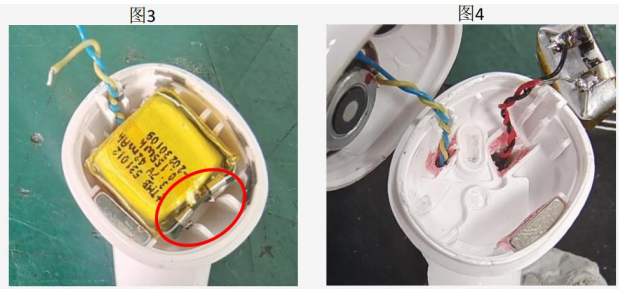
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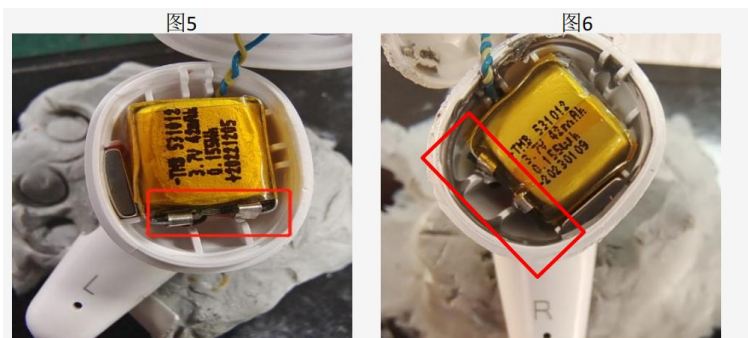
7、Environmental treatment



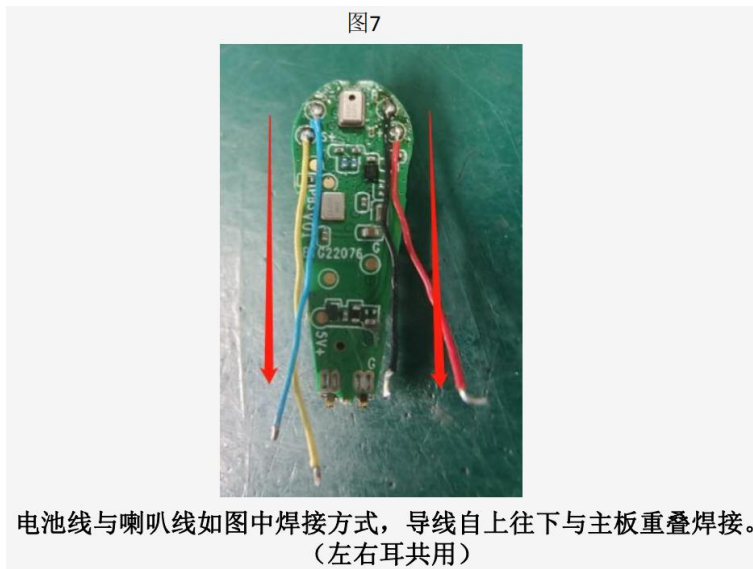
如图1示，电池线焊接在电池极耳末端，平行相交焊接（左右耳共用）；
如图2示，喇叭线左右交叉焊接在喇叭焊盘（左右耳共用）。



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）

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