

SPECIFICATION



Shenzhen Daxian Technology Co., Ltd.

Risuntek TWS-2066 Right ear
Bluetooth headset antenna

Material Recognition Letter

| | | | |
|------------------|-------------|------------------|-----------------|
| Guest households | Risuntek | frequency band | 2400MHz~2500MHz |
| Project name | TWS-2066 | version | V22 |
| Material No. | 2W-2066-124 | color | Black |
| R F design | Peng.Hu | structure design | RuiBin.Zhou |
| Quality Manager | Jin.Yang | R & D director | Lei.Zhang |
| Date | 2024-05-06 | | |

client confirmation:

Whether the assembly meets your requirements: OK NG

Shenzhen DanXian Technology Co., Ltd.

Shangshuijing Village, No. 513, ihua Road, Bujitown, Longgang District, Shenzhen (opposite to the National Defense Training Base) reached the 7th floor of the Industrial Park Complex

TEL:0755-28576002

FAX:0755-84276383

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

TEL:021-61630552

FAX:755-84276383

Index

| | |
|---|----|
| I、 Project description..... | 4 |
| II、 BT antenna..... | 4 |
| 1、 specifications..... | 4 |
| 1.1 Electrical specification standard..... | 5 |
| 1.2 Antenna composition..... | 5 |
| 2、 The Equipment of Active Test..... | 6 |
| 3、 test..... | 7 |
| 3.1 The Test of standing Wave (VSWR)..... | 7 |
| 3.1.1 test connection..... | 7 |
| 3.2 Measurement of Efficiency, Power (TRP) and Sensitivity (TIS)..... | 7 |
| 3.2.1 Test site..... | 7 |
| 3.2.2 Test instrument..... | 7 |
| 3.2.3 test data | 7 |
| 4、 conclusion | 7 |
| 5、 VSWR parameter diagram..... | 8 |
| 6、 Loading Notes:..... | 8 |
| 7、 Bill of materials | 9 |
| III、 schedule drawing..... | 10 |

www.Topant.com.cn

Confidential requirement

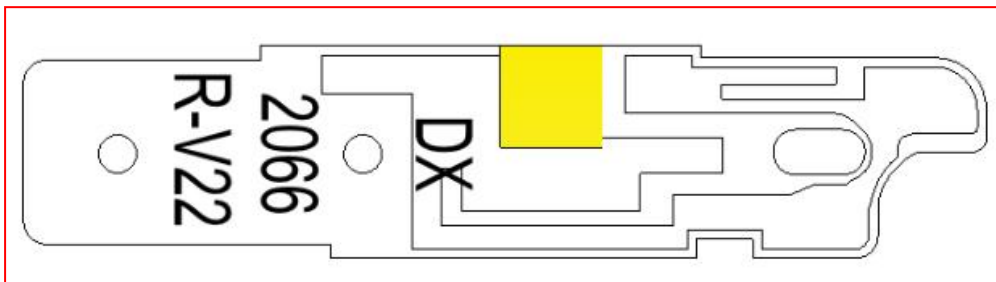
Shenzhen Daxian limited company of science and technology has proprietary technology to provide information, which should be kept strictly confidential and proprietary information, without the prior written consent of Shenzhen Daxian Co. Ltd. are not allowed to disclose to any person or company.

I、 Project description

| | |
|-----------------------------|-----------------------|
| Customer name: | Risuntek |
| 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: |

II、 BT antenna

This report provides a variety of measurements of the electrical performance of the TWS-2066 antenna. Figure 1 shows the antenna designed by the display.



antenna appearing diagram

Figure 1

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.

1.1 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 |
|-----------------|-----------------|----------|
| Roght ear BT | 2400 ~ 2500 | ≤ 3 |

1.2 Antenna composition

The antenna is mainly composed of FPC.

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.

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 Active Test:

| R (right ear) free space | | | |
|--------------------------|----|------|--------|
| BAND | CH | TRP | TIS |
| E6B5 | 0 | 4.61 | -89.39 |
| | 39 | 5.12 | -90.08 |
| | 78 | 5.37 | -89.63 |

| R (right ear) head mold | | | |
|-------------------------|----|-------|--------|
| BAND | CH | TRP | TIS |
| E6B5 | 0 | -5.05 | -79.56 |
| | 39 | -4.71 | -80.1 |
| | 78 | -4.16 | -79.66 |

Passive Test:

| Freq (MHz) | Effi (%) | Effi (dB) | Gain (dBi) |
|------------|----------|-----------|------------|
| 2400 | 20.69 | -6.84 | -0.63 |
| 2410 | 21.57 | -6.66 | -0.36 |
| 2420 | 21.46 | -6.68 | -0.32 |
| 2430 | 22.01 | -6.57 | -0.45 |
| 2440 | 23.2 | -6.34 | -1.01 |
| 2450 | 22.52 | -6.47 | -1.18 |
| 2460 | 23.55 | -6.28 | -1.48 |
| 2470 | 24.3 | -6.14 | -1.96 |
| 2480 | 23.3 | -6.33 | -0.89 |
| 2490 | 22.17 | -6.54 | -0.8 |
| 2500 | 20.94 | -6.79 | -1.01 |

4、 conclusion:

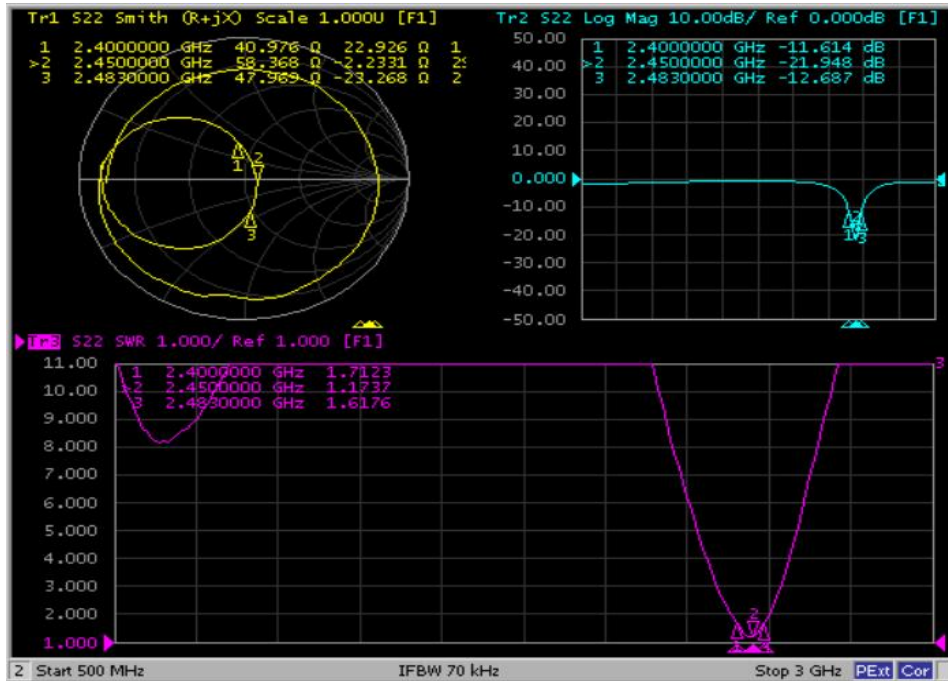
This antenna is designed on the basis of the prototype provided by the customer, electrical parameters and structural performance have reached the technical requirements, please confirm!

www.Topant.com.cn

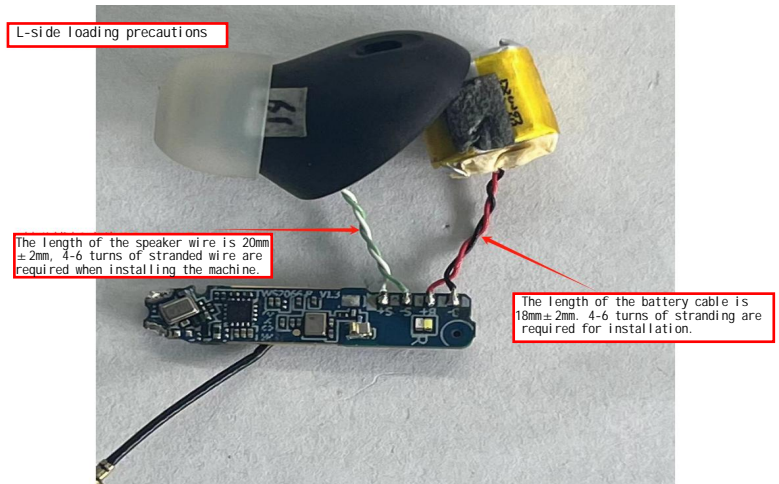
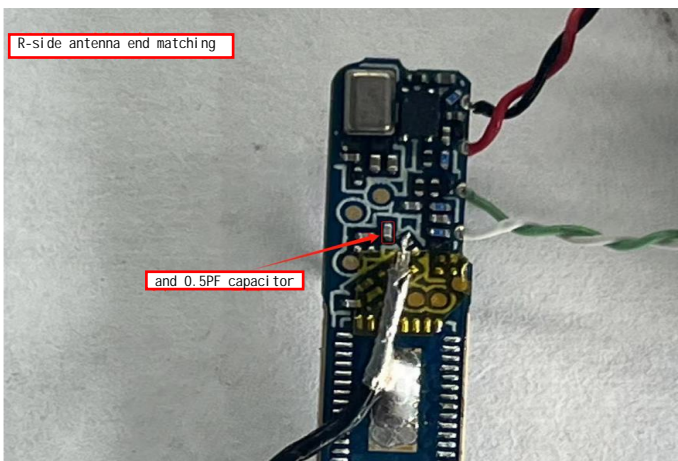
Confidential requirement

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、 VSWR parameter diagram-Right ear



6、 Loading Notes:



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.

henzhen Daxian Technology Co., Ltd.

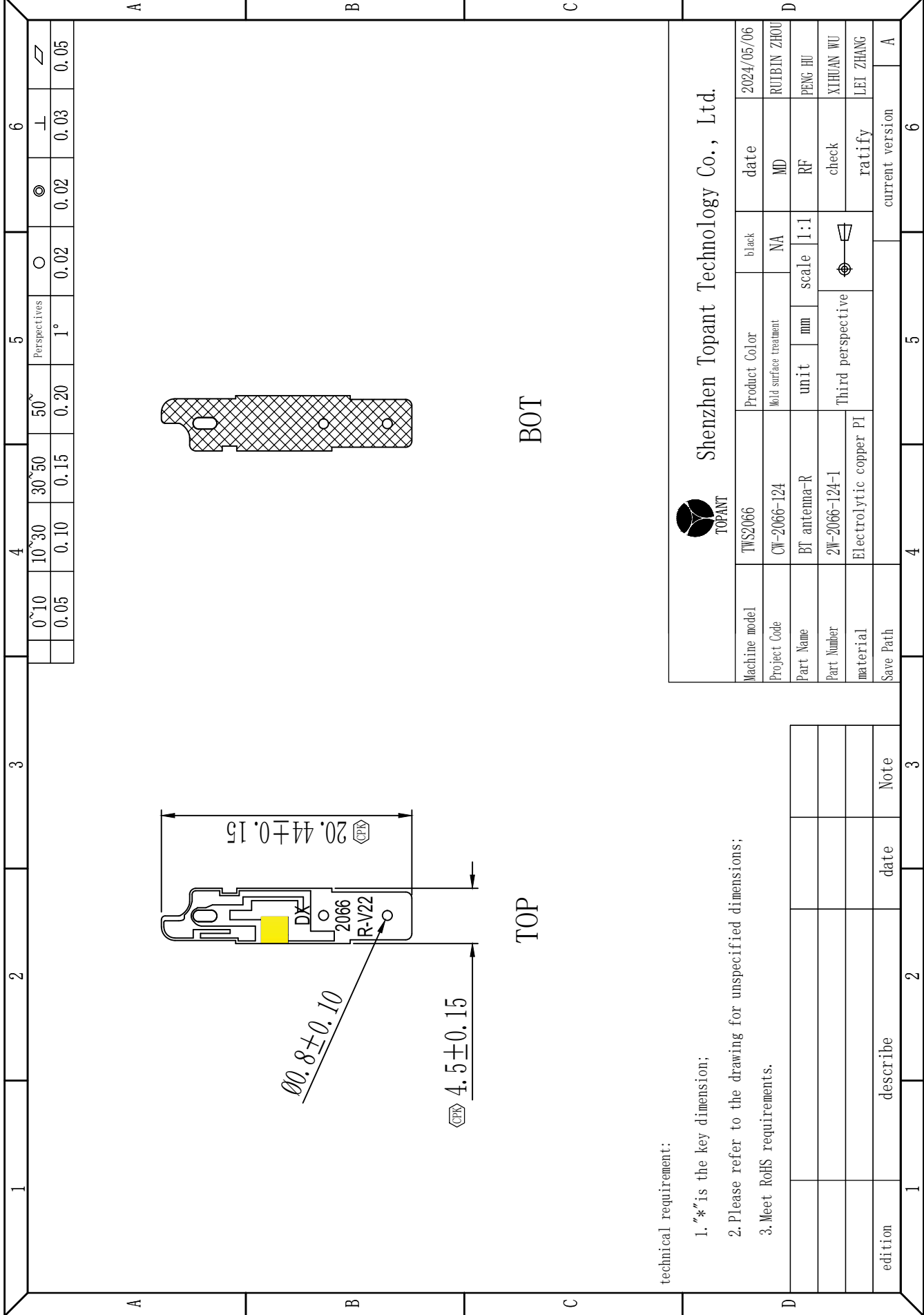
Bill of materials

Client: Risuntek Model: TWS-2066 Project No.: CW-2066-124 Date: March 14, 2024 No.: QR/RD-P01-10 Version: A1

| Serial Number | Material Number | Brand Name | Typology | Releases | Norm | Makings | Color | Work Unit | Dosage | Note |
|---|-----------------|---|----------|----------|------------------|--|-------|-----------|--------|-------------------|
| 1 | 1W-2066-124 | Bluetooth Antenna-L Finished Product | Z | A | | | | | | |
| 1 | 1W-2066-124-1 | Bluetooth Antenna-L FPC | W | A | 20.44*4.5*0.13mm | Single-sided pair of half-substrate copper foil, 3M9471 adhesive backing, surface printing black oil, gold plating \geq 0.05um | Black | PCS | 1 | Half-cut shipment |
| 2 | 2W-2066-124 | Bluetooth Antenna-R Finished Product | Z | A | | | | | | |
| 1 | 2W-2066-124-1 | Bluetooth Antenna-R FPC | W | A | 20.44*4.5*0.13mm | Single-sided pair of half-substrate copper foil, 3M9471 adhesive backing, surface printing black oil, gold plating \geq 0.05um | Black | PCS | 1 | Half-cut shipment |
| <p>Note: 1. Packaging materials and components must comply with RoHS and REACH requirements.</p> <p>Type: W: Outsourced B: Homemade Z: Finished product</p> | | | | | | | | | | |



Approved by: Lei.Zhang Reviewed by: Xin. Xu Scheduled by: Rujin. Zhou



| | | | | | | | | | | | |
|------|-------|-------|------|--------------|------|------|------|------|------|------|------|
| 1 | | 2 | | 3 | | 4 | | 5 | | 6 | |
| 0~10 | 10~30 | 30~50 | 50~ | Perspectives | ⊥ | ⊙ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ |
| 0.05 | 0.10 | 0.15 | 0.20 | 1° | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.05 |

technical requirement:

1. "*" is the key dimension;
2. Please refer to the drawing for unspecified dimensions;
3. Meet RoHS requirements.

| | | | |
|---------|----------|------|------|
| edition | describe | date | Note |
| | | | |
| | | | |
| | | | |



Shenzhen Topant Technology Co., Ltd.

| | | | | | |
|---------------|------------------------|------------------------|-----------------|--------|------------|
| Machine model | TWS2066 | Product Color | black | date | 2024/05/06 |
| Project Code | CW-2066-124 | Mold surface treatment | NA | MD | RUBIN ZHOU |
| Part Name | BT antenna-R | unit | mm | scale | 1:1 |
| Part Number | 2W-2066-124-1 | Third perspective | ⊙ | check | PENG HU |
| material | Electrolytic copper PI | Save Path | current version | ratify | XIHUAN WU |
| | | | | | LEI ZHANG |
| | | | | | A |