

## SPECIFICATION



深圳市大显科技有限公司

Shenzhen Daxian Technology Co., Ltd.

通力 Bar1300 MK2 BT 天线组件

Tonly Bar1300 MK2 BT Antenna assembly

## 产 品 规 格 书

## Product Specification

|                                      |                                                                                                                           |                            |                     |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------|
| 客 户<br>connection                    | 通力<br>Tonly                                                                                                               | 频 段<br>frequency range     | 2400 ~ 2500MHz      |
| 项目名称<br>entry name                   | Bar1300 MK2                                                                                                               | 版 本<br>edition             | V1.2                |
| 物料编号<br>Material No                  | 3B-ar1300-076                                                                                                             | 颜 色<br>Color               | 黑色+蓝色<br>Black+Blue |
| 客户料号<br>Customer Item<br>Number      | 290000-019579                                                                                                             |                            |                     |
| 环保要求<br>environmental<br>requirement | <input checked="" type="checkbox"/> RoHS <input checked="" type="checkbox"/> REACH <input checked="" type="checkbox"/> HF |                            |                     |
| R F 设计<br>R F Design                 | 沈 川<br>Chuan.Shen                                                                                                         | 结构设计<br>Structural Design  | 周锐斌<br>Rui Bin.Zhou |
| 品质经理<br>Quality Manager              | 杨 进<br>Jin.Yang                                                                                                           | 技术总监<br>Technical Director | 张 磊<br>Lei.Zhang    |
| 日 期<br>Date                          | 2024-11-5                                                                                                                 |                            |                     |



客户确认:

Customer confirmation:

装配是否符合贵司要求: ☐OK ☐NG

Whether the assembly meets your company's requirements: ☐OK ☐NG

深圳市大显科技有限公司

Shenzhen Daxian Technology Co., Ltd.

深圳市龙岗区布吉镇吉华路 513 号上水径村(国防培训基地  
对面) 达成工业园综合楼 7 楼

TEL:0755-28576002

FAX:0755-84276383

上海分部: 上海市张江高科技园区集成电路产业区龙东大道  
3000 号 8 号楼 201 室

TEL:021-61630552

FAX:755-84276383

Buji Town, Longgang District, Shenzhen, China Jihua Road 513,  
Shangshuijing Village (opposite the national defense  
training base) Dacheng Industrial Park, Building 7.

TEL:0755-28576002

FAX:0755-84276383

Room201, Building8, LongDongRoad3000#, Semiconductor Industry  
Park, ZhangJiang Hitech Zone, ShangHai

TEL:021-61630552

FAX:755-84276383

## 变更履历

### Revision history

| 版本号<br>Version number | 变更内容<br>Change content | 变更理由<br>Reason for change                                                      | 发起变更方<br>Originating<br>Party | 日期<br>Date | 修改人<br>Modified by  |
|-----------------------|------------------------|--------------------------------------------------------------------------------|-------------------------------|------------|---------------------|
| V1.0                  | 创建<br>found            |                                                                                |                               | 2024-8-26  |                     |
| V1.1                  | 更新<br>modify           | 同轴线加长5mm；海绵<br>宽度改窄<br>Coaxial line 5mm<br>longer; sponge width<br>narrower    | 客户<br>our<br>customers        | 2024-9-12  | 李娟娟<br>JuanJuan. Li |
| V1.2                  | 更新<br>modify           | 端子头变更为电连1代<br>端子头<br>Terminal header<br>changed to Denso 1<br>terminal header. | 客户<br>our<br>customers        | 2024-11-5  | 李娟娟<br>JuanJuan. Li |
|                       |                        |                                                                                |                               |            |                     |
|                       |                        |                                                                                |                               |            |                     |
|                       |                        |                                                                                |                               |            |                     |
|                       |                        |                                                                                |                               |            |                     |
|                       |                        |                                                                                |                               |            |                     |
|                       |                        |                                                                                |                               |            |                     |
|                       |                        |                                                                                |                               |            |                     |
|                       |                        |                                                                                |                               |            |                     |
|                       |                        |                                                                                |                               |            |                     |
|                       |                        |                                                                                |                               |            |                     |
|                       |                        |                                                                                |                               |            |                     |
|                       |                        |                                                                                |                               |            |                     |
|                       |                        |                                                                                |                               |            |                     |
|                       |                        |                                                                                |                               |            |                     |
|                       |                        |                                                                                |                               |            |                     |
|                       |                        |                                                                                |                               |            |                     |
|                       |                        |                                                                                |                               |            |                     |
|                       |                        |                                                                                |                               |            |                     |

[www.Topant.com.cn](http://www.Topant.com.cn)  
Confidentiality requirements

Shenzhen Daxian Technology Co., Ltd. already possesses the information provided by the proprietary technology, which should be strictly confidential and not allowed to be disclosed to any person or company without the prior written consent of Shenzhen Daxian Technology Co., Ltd

# 索引 Indexes

|                                                                                       |    |
|---------------------------------------------------------------------------------------|----|
| 一、项目说明 Project Description.....                                                       | 4  |
| 二、 B T 天线 antenna.....                                                                | 4  |
| 1、 规格 specifications.....                                                             | 4  |
| 1.1 电气规格标准 Electrical specifications and standards.....                               | 5  |
| 1.1.1 电性能指标 Electrical performance index.....                                         | 5  |
| 1.1.2 天线位置图片 Antenna position picture.....                                            | 5  |
| 1.2 结构规格标准 Structural specifications and standards.....                               | 5  |
| 1.2.1 天线组成 Antenna composition..                                                      | 5  |
| 2、测试环境 testing environment.....                                                       | 6  |
| 3、测试 test. ....                                                                       | 7  |
| 3.1 驻波(VSWR)的测试 Test of standing wave (VSWR).....                                     | 7  |
| 3.1.1 测试连接 Test connection.....                                                       | 7  |
| 3.2 效率、功率（TRP）、灵敏度（TIS）的测试 Testing of efficiency, power (TRP), sensitivity (TIS)..... | 7  |
| 3.2.1 测试的场地 Test site.....                                                            | 7  |
| 3.2.2 测试的仪表 Tested Instruments.....                                                   | 7  |
| 3.2.3 测试数据 test data.....                                                             | 7  |
| 4、VSWR 参数图 Parameter diagram.....                                                     | 8  |
| 5、无源场型图 Passive field pattern diagram.....                                            | 8  |
| 6、天线测试结果：整机数据-隔离度 Antenna Test Results: Whole Unit Data - Isolation .....             | 9  |
| 7、天线装机注意事项： Antenna mounting notes:.....                                              | 10 |
| 8、结论 conclusion.....                                                                  | 10 |
| 三、工程图 schedule drawing.....                                                           | 11 |

[www.Topant.com.cn](http://www.Topant.com.cn)  
Confidentiality requirements

Shenzhen Daxian Technology Co., Ltd. already possesses the information provided by the proprietary technology, which should be strictly confidential and not allowed to be disclosed to any person or company without the prior written consent of Shenzhen Daxian Technology Co., Ltd

## 一 项目说明 Project Description

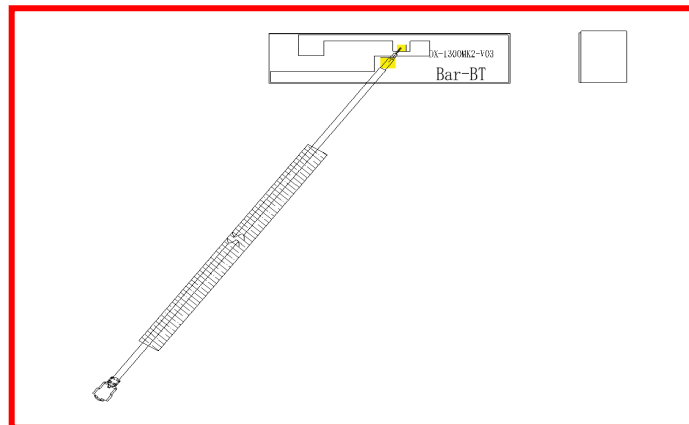
|                                    |                                     |
|------------------------------------|-------------------------------------|
| 客户名:<br>Customer Name:             | 通力<br>Tonly                         |
| 整机类型:<br>Type of complete machine: | 音箱<br>loudspeaker box               |
| 天线频段:<br>Antenna band:             | 2400 ~ 2500MHz                      |
| 天线形式:<br>Antenna form:             | FPC+同轴线+EVA<br>FPC+coaxial line+EVA |
| 馈电形式:<br>Feed form:                | 焊接<br>weld                          |
| 硬件版本:<br>Hardware version:         | /                                   |

## 二 BT 天线组件 Antenna assembly

### 1 规格 specifications

本报告主要提供 Bar1300 MK2 项目天线的各项电气和结构性能参数的测试状况。下图为大显设计的天线图片。

This report mainly provides the testing status of various electrical and structural performance parameters of the antenna for the Bar1300 MK2 project. The following image shows an antenna with a large display design.



天线外观图

antenna appearing diagram

[www.Topant.com.cn](http://www.Topant.com.cn)  
Confidentiality requirements

Shenzhen Daxian Technology Co., Ltd. already possesses the information provided by the proprietary technology, which should be strictly confidential and not allowed to be disclosed to any person or company without the prior written consent of Shenzhen Daxian Technology Co., Ltd

## 1.1 电气规格标准 Electrical specifications and standards

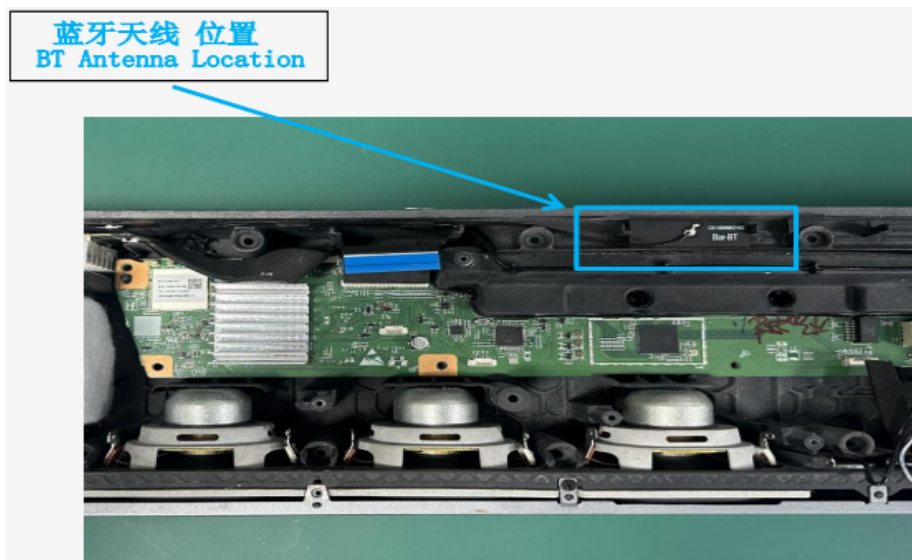
### 1.1.1 电性能指标 Electrical performance index

天线工作频段在 **2400 ~ 2500 MHz**。下表是大显设计和量产天线的电性能的指标。

The operating frequency band of the antenna is between **2400 and 2500 MHz**. The following table shows the electrical performance indicators of large display design and mass production antennas.

| Frequency Range | Frequency (MHz) | VSWR     |
|-----------------|-----------------|----------|
| BT              | 2400 ~ 2500     | $\leq 2$ |

### 1.1.2 天线位置图片 Antenna position picture



## 2 结构规格标准 Structural specifications and standards

### 1.2.1 天线组成 Antenna composition

天线主要是由 **FPC+同轴线+EVA** 组成。

The antenna is mainly composed of **FPC+coaxial line+EVA**.

[www.Topant.com.cn](http://www.Topant.com.cn)  
Confidentiality requirements

Shenzhen Daxian Technology Co., Ltd. already possesses the information provided by the proprietary technology, which should be strictly confidential and not allowed to be disclosed to any person or company without the prior written consent of Shenzhen Daxian Technology Co., Ltd

## 2. 测试设备 The Equipment of Active Test

Satimo 3D Chamber  $6 \times 4 \times 4$  ( m )

Agilent 8960 E5515c

Network analyzer-R&S ZVL



图 2

Figure 2

[www.Topant.com.cn](http://www.Topant.com.cn)  
Confidentiality requirements

Shenzhen Daxian Technology Co., Ltd. already possesses the information provided by the proprietary technology, which should be strictly confidential and not allowed to be disclosed to any person or company without the prior written consent of Shenzhen Daxian Technology Co., Ltd

### 3 测试 test

#### 3.1 驻波(VSWR)的测试 Test of standing wave (VSWR)

3.1.1 测试连接: VSWR 测试装置依次连接为: R&S ZVL 网络分析仪 → 测试线 → 测试治

Test connection: The VSWR test device is sequentially connected as follows: R&S ZVL network analyzer → test line → test fixture

实测(附图)Actual measurement (attached drawing)

#### 3.2 增益及效率、功率 (TRP)、灵敏度 (TIS) 的测试

Gain and efficiency, power (TRP), sensitivity (TIS) testing

##### 3.2.1 测试的场地 Test site:

大显微波暗室。测试频率范围为 400MHz—6GHz, 静区范围为 50cm 圆周, 反射率小于-50 dB。

Large display microwave anechoic chamber. The test frequency range is 400MHz - 6GHz, the static zone range is 50cm circumferential, and the reflectivity is less than - 50dB.

##### 3.2.2 测试的仪表 Tested Instruments:

R&S ZVL 网络分析仪、Agilent8960 E5515C、标准喇叭天线、法国 SATIMO-SG24SYSTEM 系统、打印机等。

R&S ZVL network analyzer, Agilent 8960 E5515C, standard horn antenna, French SATIMO-SG24SYSTEM system, printer, etc.

##### 3.2.3 测试数据: 在微波暗室中, 测试的功率和灵敏度相关的数值如下表

Test data: In a microwave anechoic chamber, the values related to the power and sensitivity tested are shown in the table below

无源效率&增益 Passive efficiency&gain:

| Freq<br>(MHz) | Gain<br>(dBi) | Eff i<br>(dB) | Eff i<br>(%) |
|---------------|---------------|---------------|--------------|
| 2400          | 2. 11         | -3. 62        | 43. 42       |
| 2410          | 2. 21         | -3. 59        | 43. 77       |
| 2420          | 2. 32         | -3. 61        | 43. 56       |
| 2430          | 2. 34         | -3. 55        | 44. 11       |
| 2440          | 2. 38         | -3. 53        | 44. 32       |
| 2450          | 2. 43         | -3. 44        | 45. 47       |
| 2460          | 2. 41         | -3. 42        | 45. 27       |
| 2470          | 2. 37         | -3. 46        | 45. 11       |
| 2480          | 2. 33         | -3. 48        | 44. 89       |
| 2490          | 2. 31         | -3. 53        | 44. 35       |
| 2500          | 2. 27         | -3. 58        | 43. 87       |

[www. Topant.com.cn](http://www.Topant.com.cn)

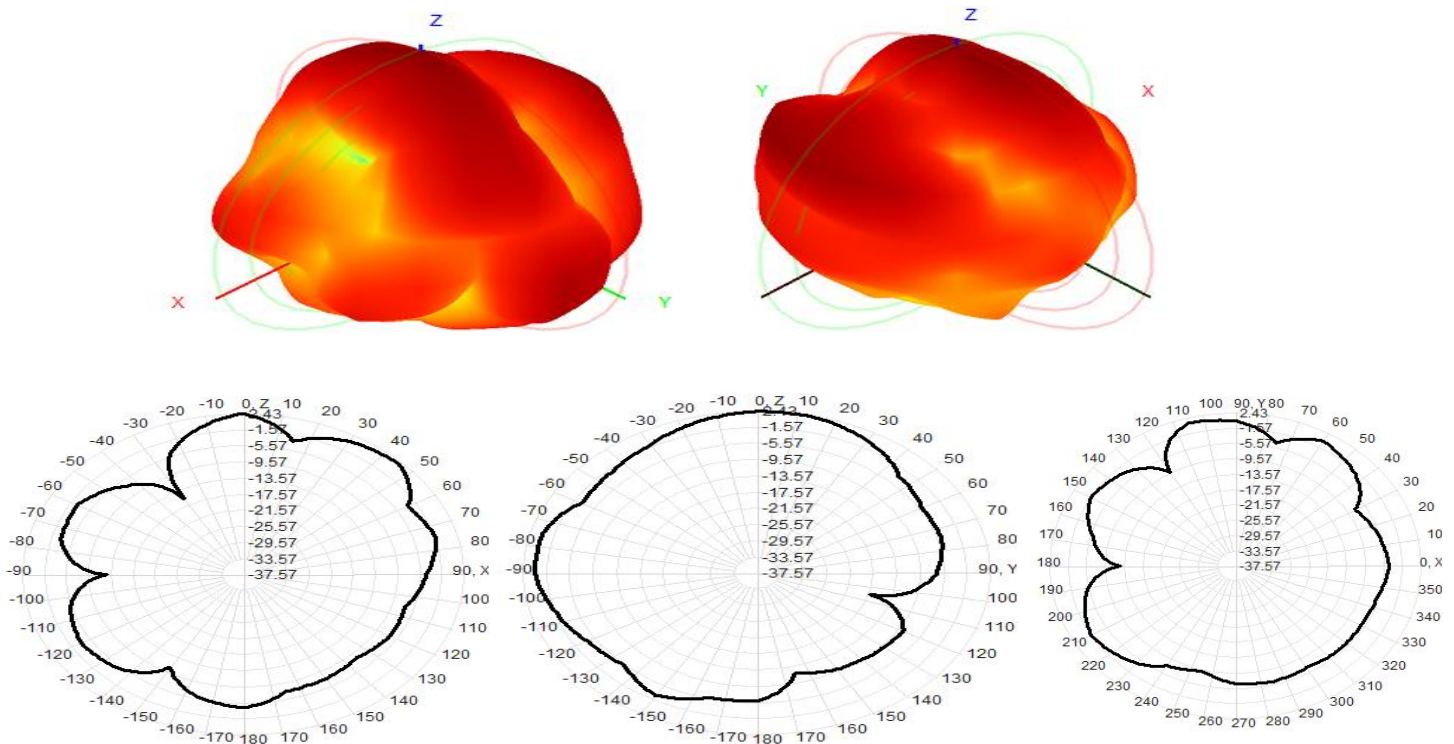
Confidentiality requirements

Shenzhen Daxian Technology Co., Ltd. already possesses the information provided by the proprietary technology, which should be strictly confidential and not allowed to be disclosed to any person or company without the prior written consent of Shenzhen Daxian Technology Co., Ltd

#### 4、VSWR 参数图 VSWR parameter diagram



#### 5、无源场型图 Passive Field Pattern Diagram

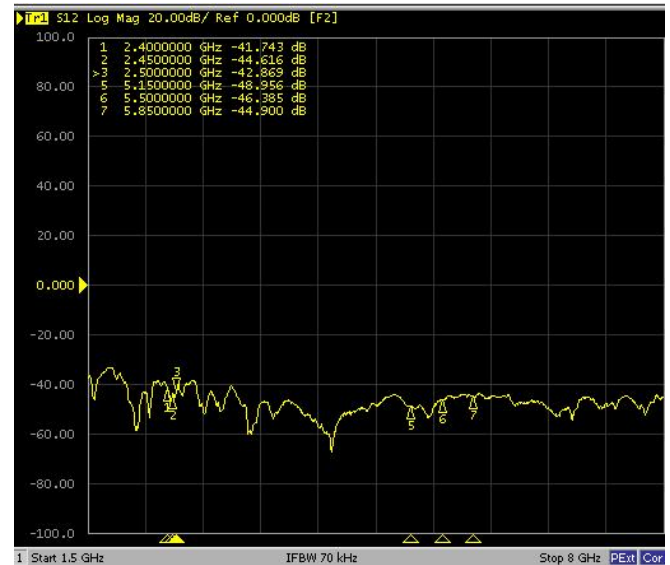
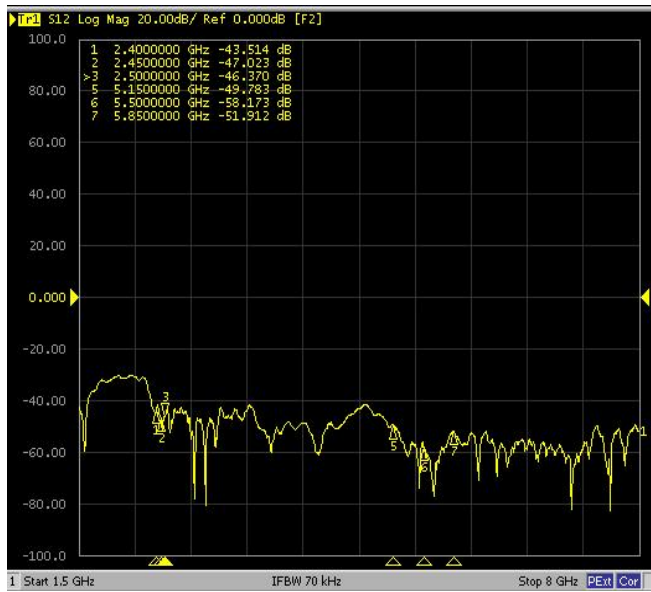


[www.Topant.com.cn](http://www.Topant.com.cn)  
Confidentiality requirements

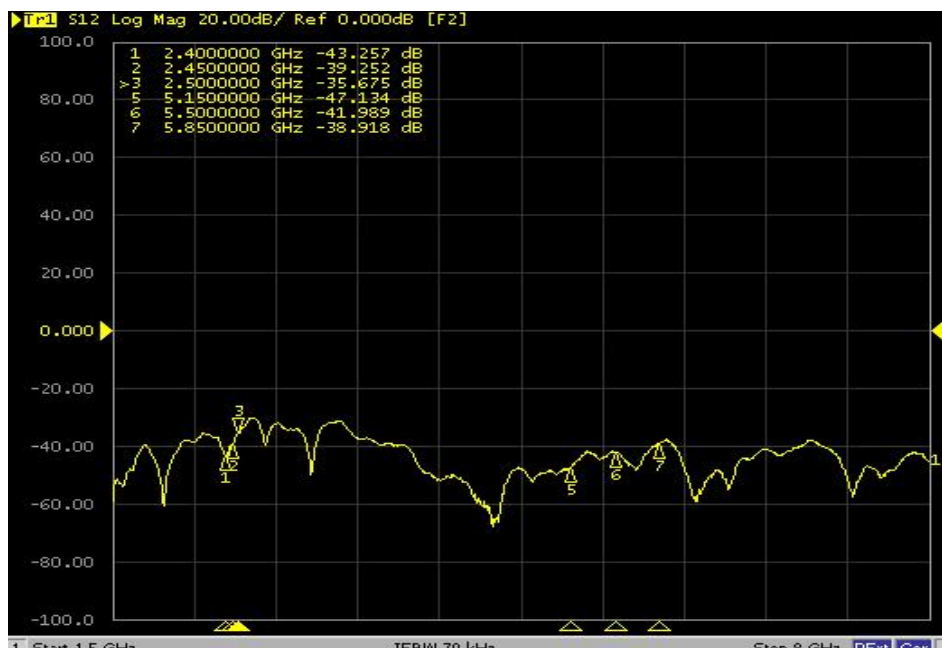
Shenzhen Daxian Technology Co., Ltd. already possesses the information provided by the proprietary technology, which should be strictly confidential and not allowed to be disclosed to any person or company without the prior written consent of Shenzhen Daxian Technology Co., Ltd

## 6、天线测试结果：整机数据--隔离度 Antenna Test Results: Whole Unit Data - Isolation

### WIFI0--BT



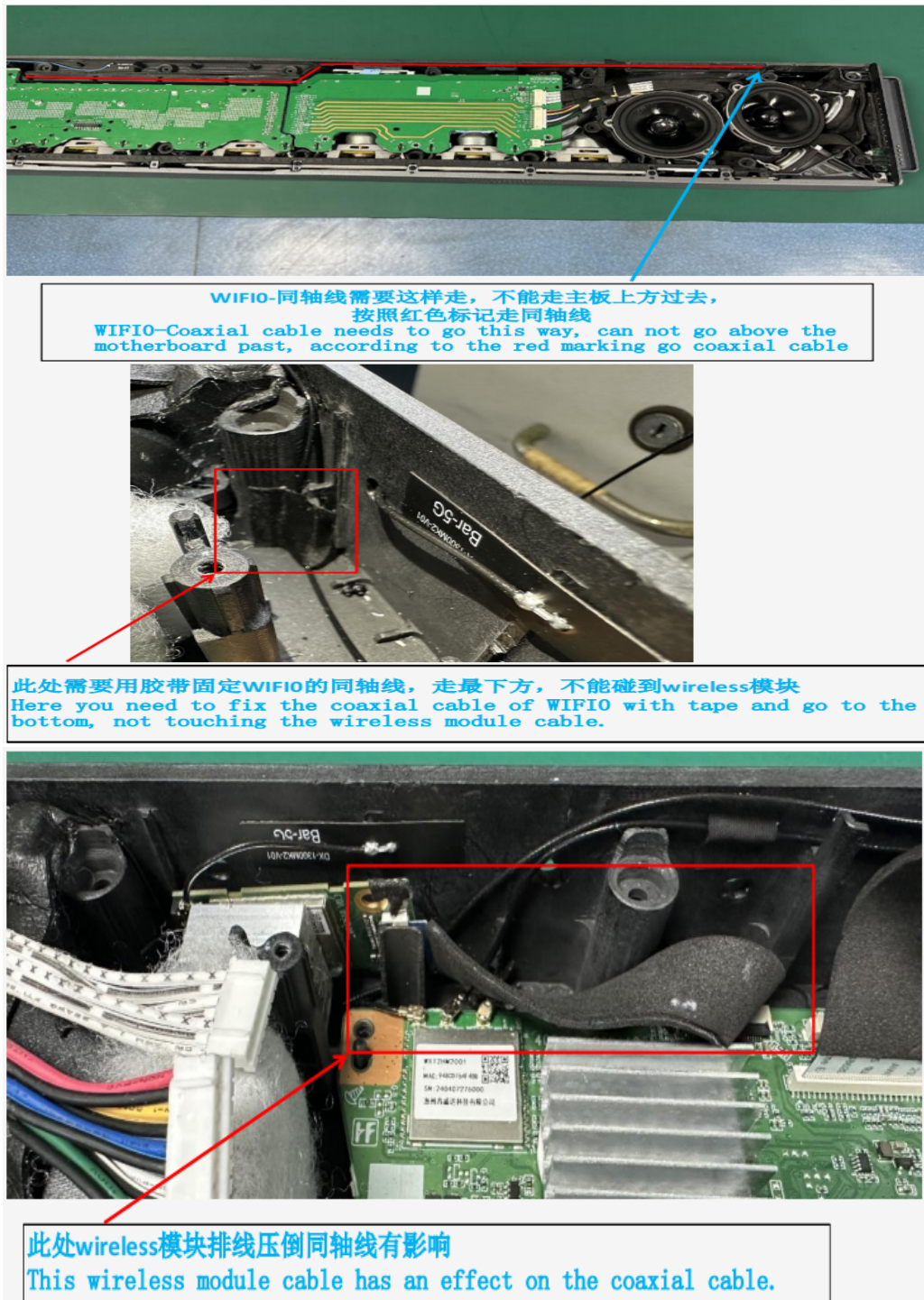
### BT--5G



[www.Topant.com.cn](http://www.Topant.com.cn)  
Confidentiality requirements

Shenzhen Daxian Technology Co., Ltd. already possesses the information provided by the proprietary technology, which should be strictly confidential and not allowed to be disclosed to any person or company without the prior written consent of Shenzhen Daxian Technology Co., Ltd

## 7、天线装机注意事项 Antenna mounting precautions



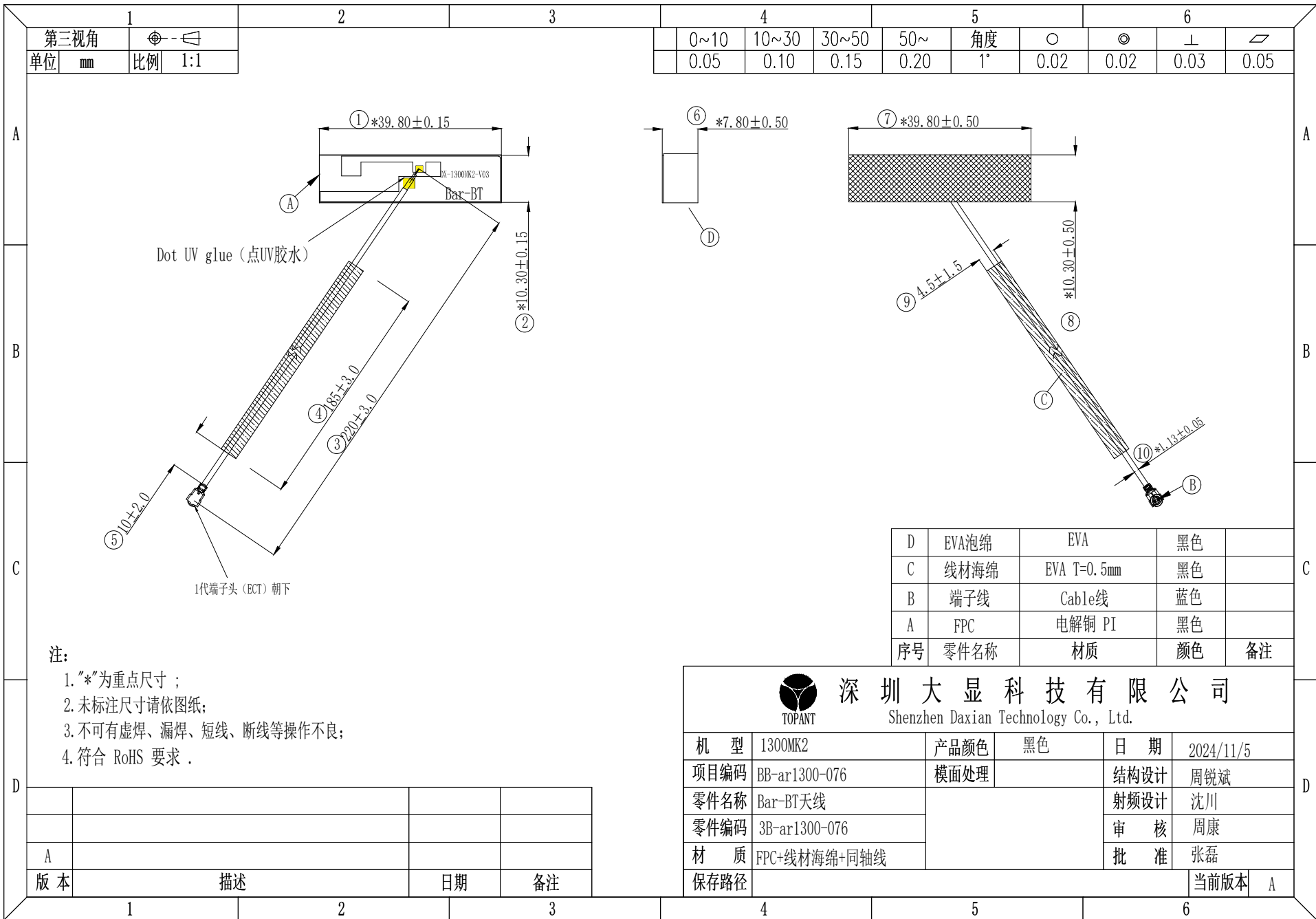
## 8、结论 conclusion

此天线是在客户提供样机基础上设计，电参数和结构性能已达到技术要求，请确认！

This antenna is designed based on the prototype provided by the customer. The electrical parameters and structural performance have met the technical requirements, please confirm!

[www.Topant.com.cn](http://www.Topant.com.cn)  
Confidentiality requirements

Shenzhen Daxian Technology Co., Ltd. already possesses the information provided by the proprietary technology, which should be strictly confidential and not allowed to be disclosed to any person or company without the prior written consent of Shenzhen Daxian Technology Co., Ltd



注:

1. “\*”为重点尺寸；
2. 未标注尺寸请依图纸；
3. 不可有虚焊、漏焊、短线、断线等操作不良；
4. 符合 RoHS 要求 .