

SPECIFICATION

深圳市大显科技有限公司

Shenzhen Daxian Technology Co., Ltd.



通力 Bar1300 MK2 SOD-L BT 天线组件

Tonly Bar1300 MK2 SOD-L BT Antenna assembly

产 品 规 格 书

Product Specification

客 户 connection	通力 Tonly	频 段 frequency range	2400 ~ 2500MHz
项目名称 entry name	Bar1300 MK2	版 本 edition	V1.3
物料编号 Material No	5B-ar1300-076	颜 色 Color	黑色 Black
客户料号 Customer Item Number	290000-019578		
环保要求 environmental requirement	☒ RoHS ☒ REACH ☒ HF		
R F 设计 R F Design	沈 川 Chuan.Shen	结构设计 Structural Design	周锐斌 Rui Bin.Zhou
品质经理 Quality Manager	杨 进 Jin.Yang	技术总监 Technical Director	张 磊 Lei.Zhang
日 期 Date	2024-11-25		

客户确认:

Customer confirmation:

装配是否符合贵司要求: ☐OK ☐NGWhether the assembly meets your company's requirements: ☐OK ☐NG

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变更履历

Revision history

版本号 Version number	变更内容 Change content	变更理由 Reason for change	发起变更方 Originating Party	日期 Date	修改人 Modified by
V1.0	创建 found			2024-8-26	
V1.1	更新 modify	同轴线剪短24mm; 海绵 长度剪短宽度改窄 Coaxial line cut 24mm shorter; sponge length cut width narrow	客户 our customers	2024-9-12	李娟娟 Juan Juan. Li
V1.2	更新 modify	端子头变更为电连1代 端子头 Terminal header changed to Denso 1 terminal header.	客户 our customers	2024-11-5	李娟娟 Juan Juan. Li
V1.3	更新 modify	同轴线线长加长5mm, 海绵长度加长15mm Coaxial thread length extended by 5mm, sponge length extended by 15mm	客户 our customers	2024-11-25	李娟娟 Juan Juan. Li

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一 项目说明 Project Description

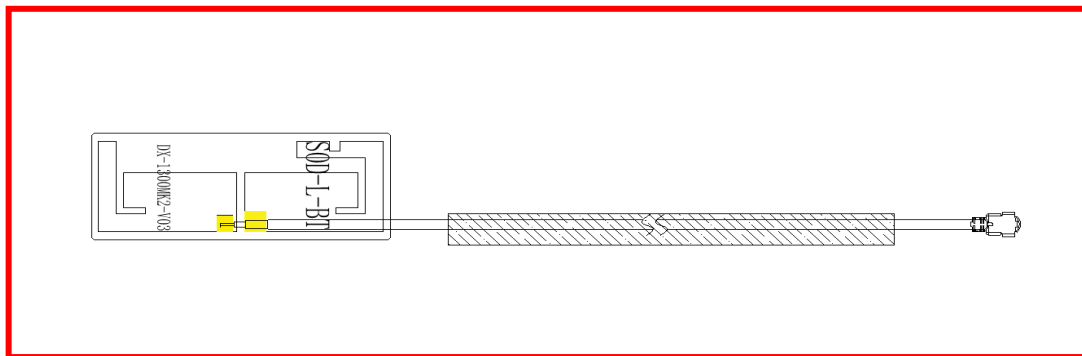
客户名: Customer Name:	通力 Tonly
整机类型: Type of complete machine:	音箱 loudspeaker box
天线频段: Antenna band:	2400 ~ 2500MHz
天线形式: Antenna form:	FPC+同轴线+EVA FPC+coaxial line+EVA
馈电形式: Feed form:	焊接 weld
硬件版本: Hardware version:	/

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

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1.1 电气规格标准 Electrical specifications and standards

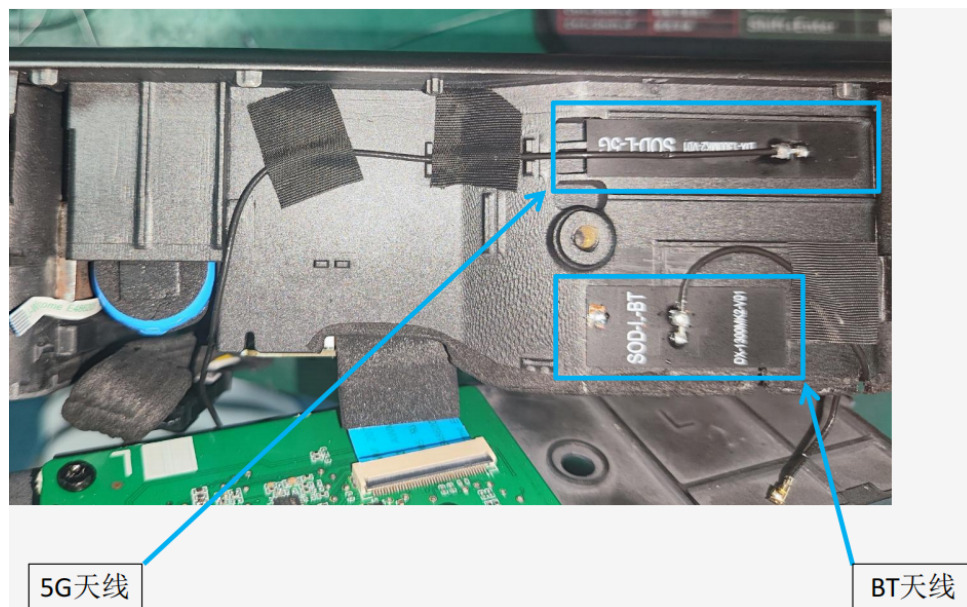
1.1.1 电性能指标 Electrical performance index

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-L	2400 ~ 2500	≤ 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.

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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

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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:

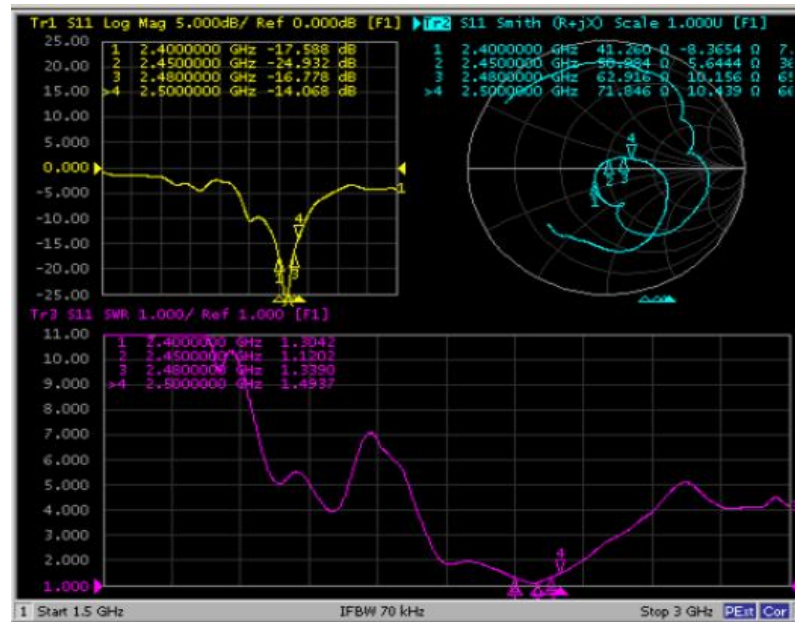
Freq(MHz)	Efficiency (%)	Efficiency (dB)	Gain (dBi)
2400	46.23	-3.35	1.62
2410	46.92	-3.29	1.73
2420	47.39	-3.24	1.59
2430	47.86	-3.20	1.77
2440	48.42	-3.15	1.75
2450	48.71	-3.16	1.84
2460	48.31	-3.12	1.66
2470	47.80	-3.21	1.48
2480	47.56	-3.23	1.53
2490	46.94	-3.28	1.36
2500	46.21	-3.35	1.49

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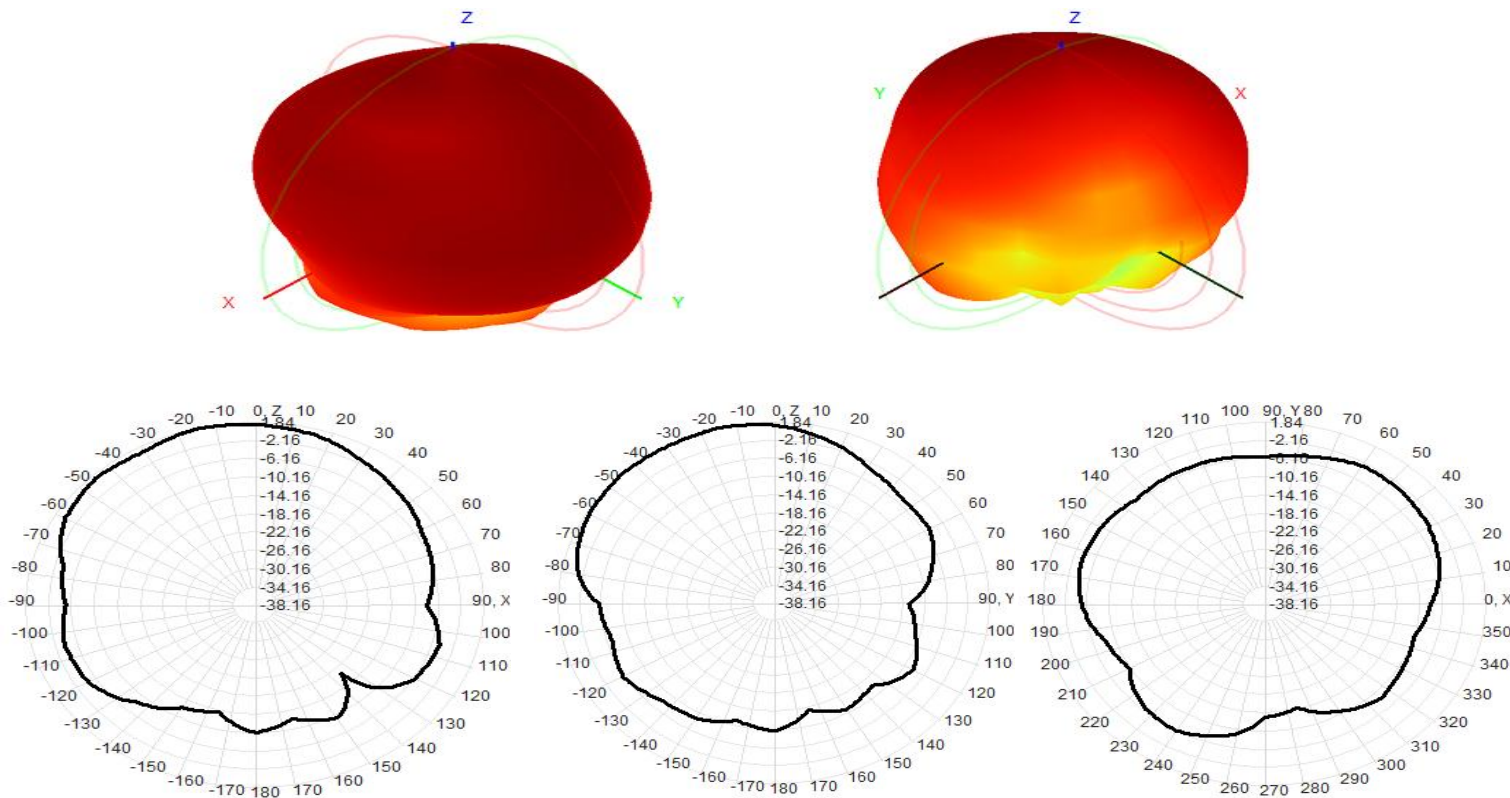
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4、VSWR 参数图 VSWR parameter diagram



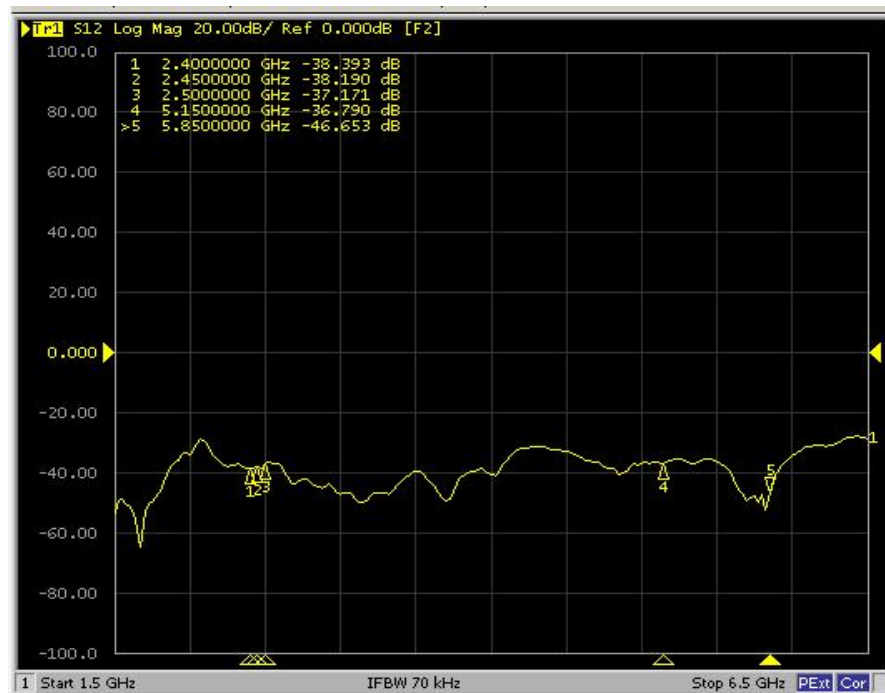
5、无源场型图 Passive Field Pattern Diagram



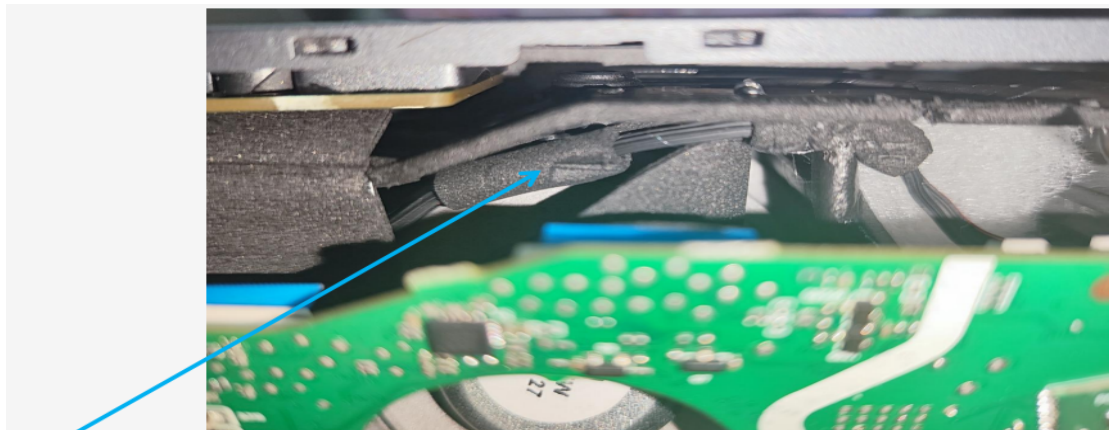
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6、天线测试结果：整机数据--隔离度 Antenna Test Results: Whole Unit Data - Isolation BT-5G



7、天线装机注意事项：Antenna mounting notes



喇叭线和排线在天线的正下方，对天线有影响。建议都做长一些，从其它地方绕过去
Horn wires and row wires are directly below the antenna and have an effect on the antenna. Suggest making both longer and bypassing them elsewhere

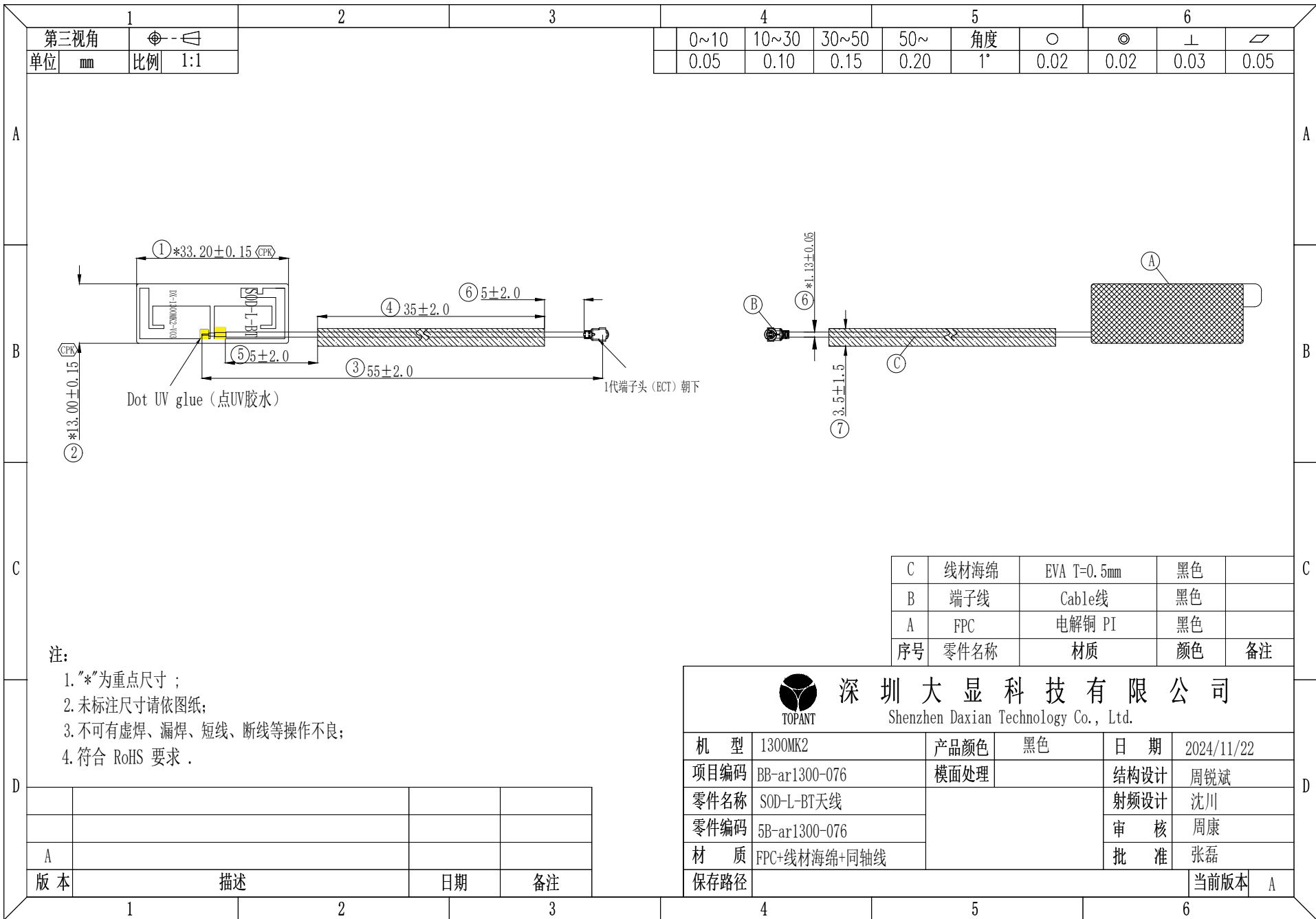
8、结论 conclusion

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!

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机 型	1300MK2	产品颜色	黑色	日 期	2024/11/22	
项目编码	BB-ar1300-076	模面处理		结构设计	周锐斌	
零件名称	SOD-L-BT天线			射频设计	沈川	
零件编码	5B-ar1300-076		审 核	周康		
材 质	FPC+线材海绵+同轴线		批 准	张磊		
保存路径					当前版本	A