

SPECIFICATION



深圳市大显科技有限公司

Shenzhen Daxian Technology Co., Ltd.

联创 24232 左耳蓝牙天线

Lchse24232 Left ear Bluetooth Antenna

产 品 规 格 书

Product Specification

客 户 connection	联创 Lchse	频 段 frequency range	2400 ~ 2500MHz
项目名称 entry name	24232	版 本 edition	V1.0
物料编号 Material No	12-4232X-069	颜 色 Color	黑色 Black
客户料号 Customer Item Number			
R F 设计 R F Design	胡 鹏 Peng.Hu	结构设计 Structural Design	周锐斌 RuiBin.Zhou
品质经理 Quality Manager	胡子寅 ZiYin.Hu	技术总监 Technical Director	张 磊 Lei.Zhang
日 期 Date	2024-11-18		

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

深圳市大显科技有限公司

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一 项目说明 Project Description

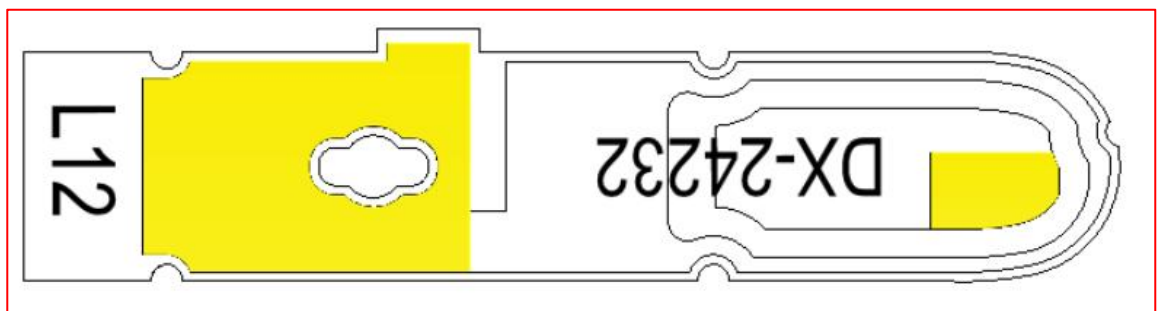
客户名: Customer Name:	联创 Lchse
整机类型: Type of complete machine:	蓝牙天线 Bluetooth antenna
天线频段: Antenna band:	2400 ~ 2500MHz
天线形式: Antenna form:	PIFA 天线 PIFA antenna
天线极性: Antenna polarity:	线性极化 Linear polarization
硬件版本: Hardware version:	主板: 左耳 Motherboard: left ear
天线制造商: Antennamanufacturer:	深圳市大显科技有限公司 Shenzhen daxian technology co., ltd
测试实验室: Testing laboratory:	SATIMO 微波实验室 SATIMO microwave laboratory

二 B T 天线组件 Antenna assembly

1 规格 specifications

本报告主要提供 24232 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 24232 project. The following image shows an antenna with a large display design.



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

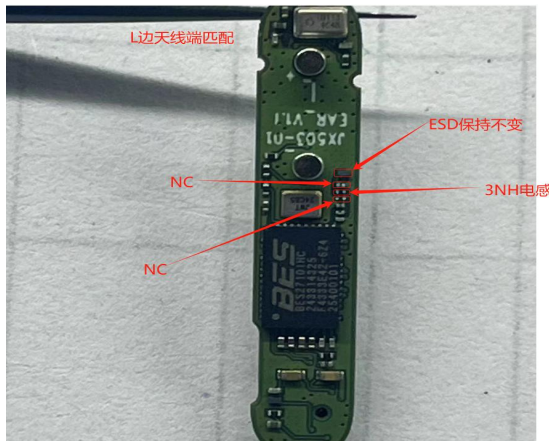
天线工作频段在 **2400 ~ 2500 MHz。** 下表是大显设计和量产天线的电性能指标。

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	≤ 2

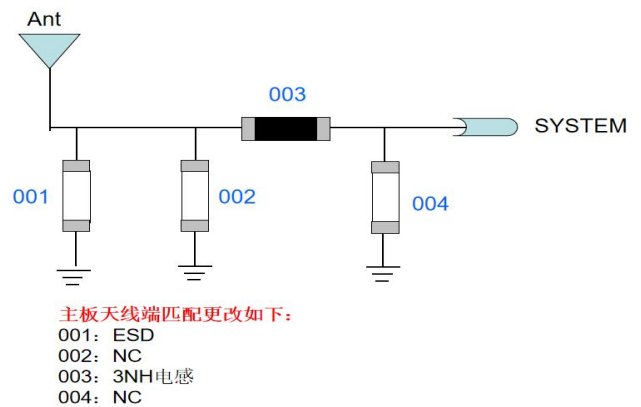
2 结构规格标准 Structural specifications and standards

1.2.1 主板匹配图 Motherboard Matching Diagram



1.2.2 天线组成 Antenna composition

L边主板天线端匹配:



天线主要是由 FPC 组成。

The antenna is mainly composed of FPC sponge.

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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 测试装置依次的连接为: 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

OTA 有源测试 OTAActive Test:

L (左耳) 自由空间 L (left ear) free space			
BAND	CH	TRP	TIS
BT	0	5.41	-89.15
	39	5.26	-88.35
	78	4.93	-87.78
L (左耳) 头模 L (left ear) head mold			
BAND	CH	TRP	TIS
BT	0	1.43	-83.23
	39	1.52	-83.37
	78	1.46	-83.56

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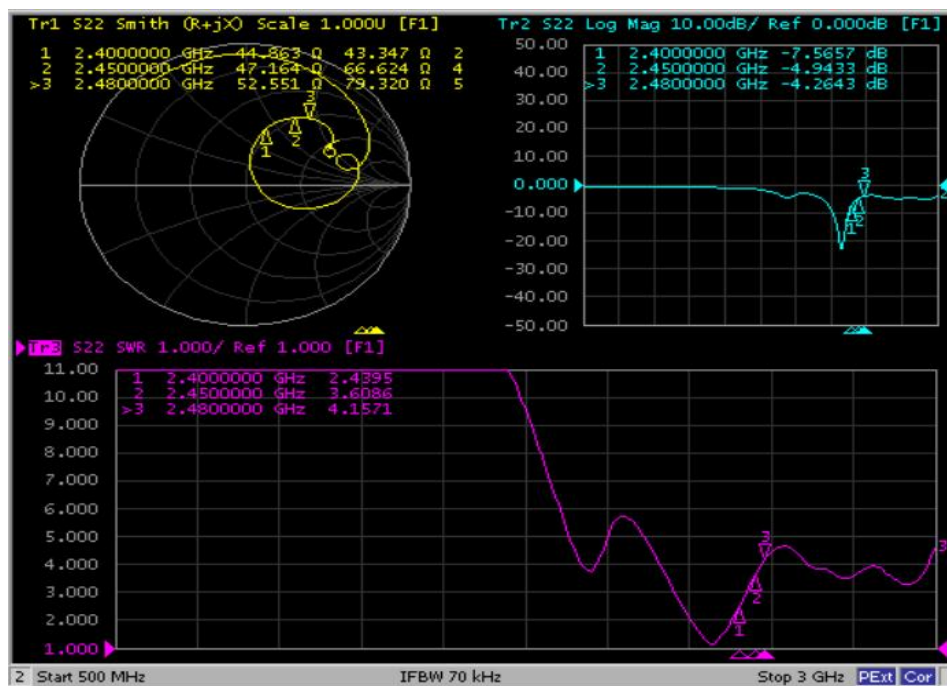
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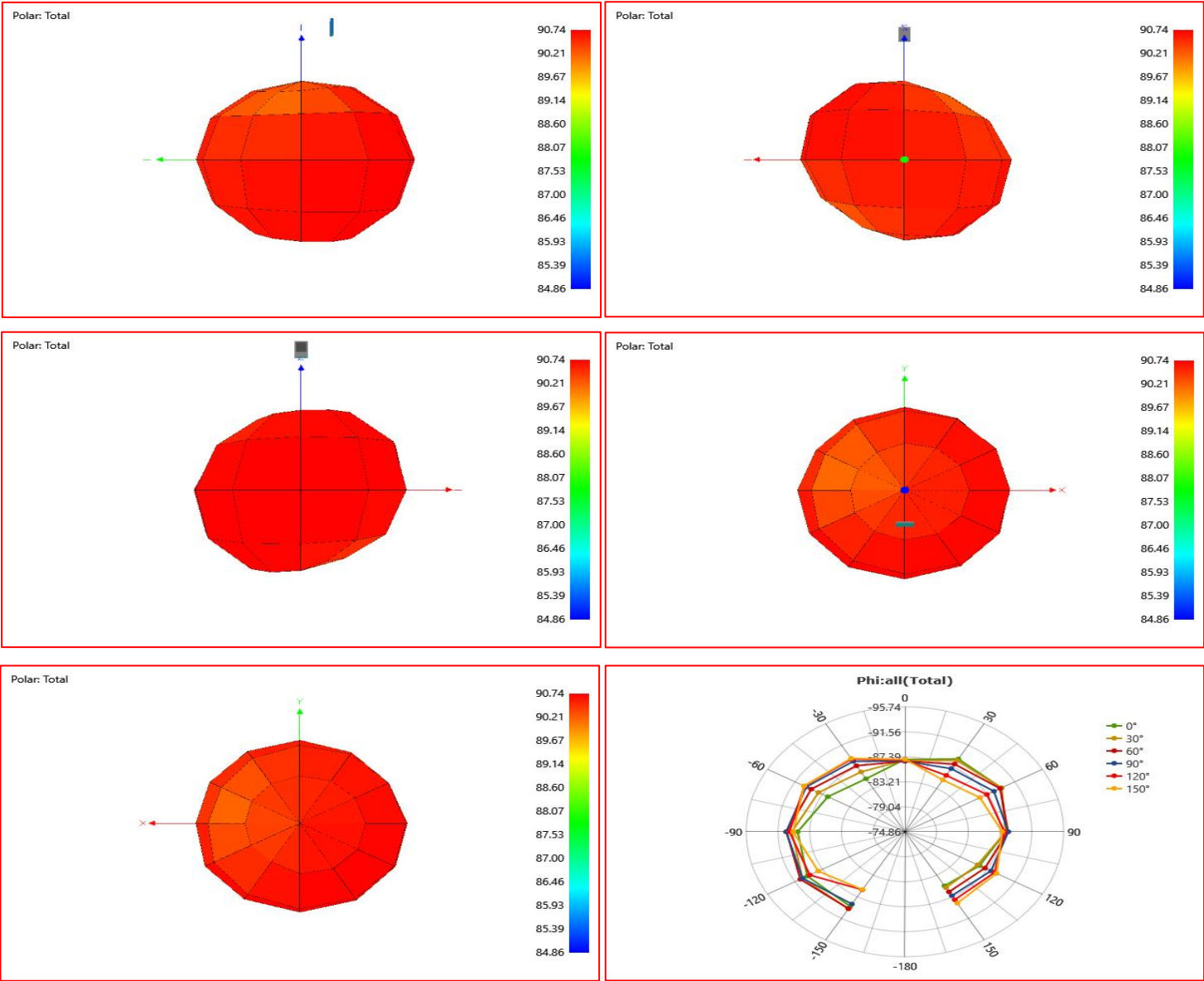
无源效率&增益 Passive efficiency&gain:

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	23.38	-6.31	-2.96
2410	23.31	-6.32	-2.98
2420	23.46	-6.3	-3.23
2430	23.82	-6.23	-3.46
2440	23.94	-6.21	-3.31
2450	23.24	-6.34	-2.96
2460	22.93	-6.4	-2.9
2470	22.54	-6.47	-2.93
2480	21.94	-6.59	-3.16
2490	21.64	-6.65	-3.31
2500	20.79	-6.82	-3.36

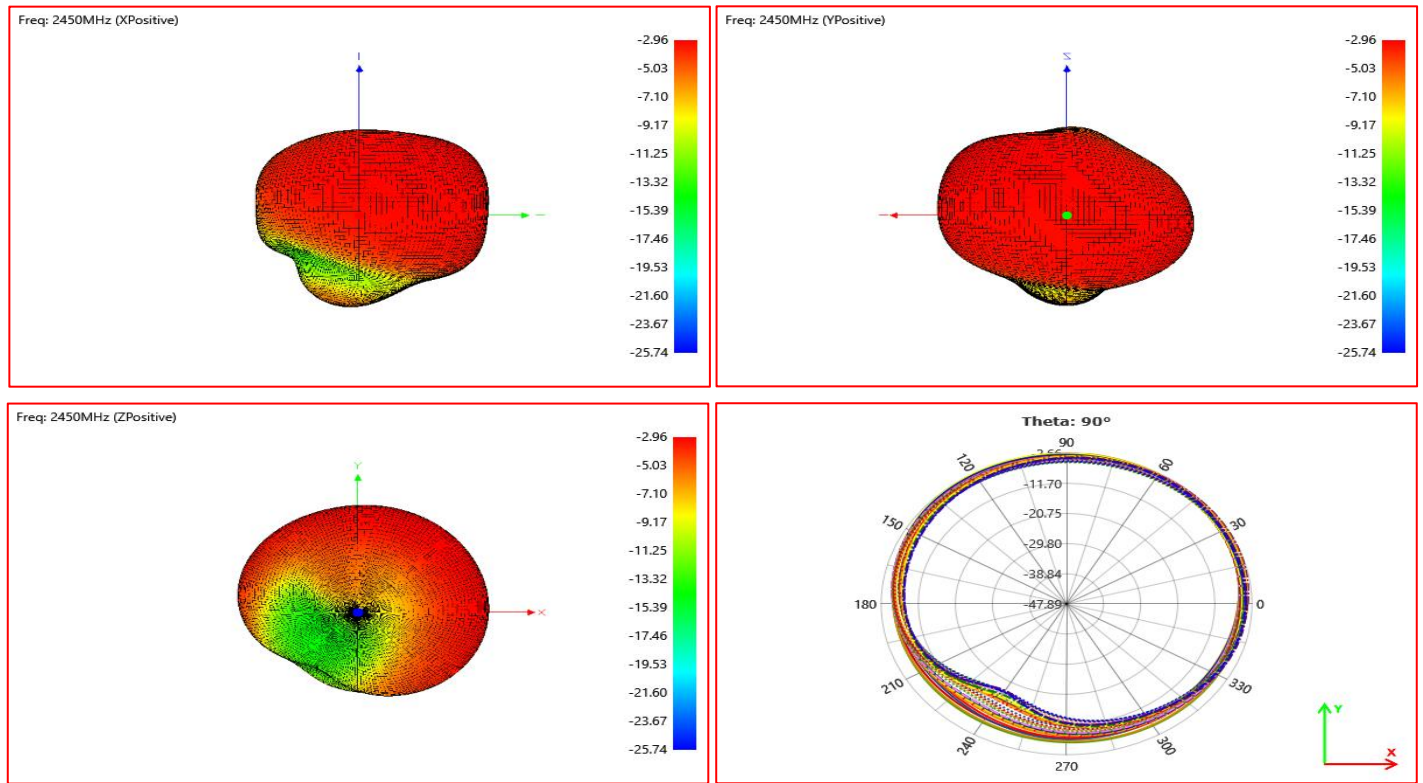
4、VSWR 参数图 VSWR parameter diagram



5、有源场型图 Passive Field Pattern Diagram



6、无源场型图 Passive field pattern diagram



7、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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