

SPECIFICATION



深圳市大显科技有限公司

Shenzhen Daxian Technology Co., Ltd.

HORN MB058 BT 天线组件HORN MB058 BT Antenna assembly

产 品 规 格 书

Product Specification

客 户 connection	豪 恩 HORN	频 段 frequency range	2400 ~ 2500MHz
项目名称 entry name	MB058	版 本 edition	V0.5
天线型号 Antenna Model	1M-B058X-096	颜 色 Color	黑色 Black
天线丝印 Antenna Silk Screen Printing	DX-MB058-BT-V0.5	厂牌 Label	深圳市大显科技有限公司
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	李崇瑞 ChongRui.Li	技术总监 Technical Director	张 磊 Lei.Zhang
日 期 Date	2025-10-16		

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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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			2025-08-13	
V2.0	更新 modify	天线性能及设计结构 更新 Antenna performance and design structure update	DX	2025-09-15	
V3.0	更新 modify	天线电性能数据更新 Antenna Electrical Performance Data Update	DX	2025-10-16	

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I 项目说明 Project Description

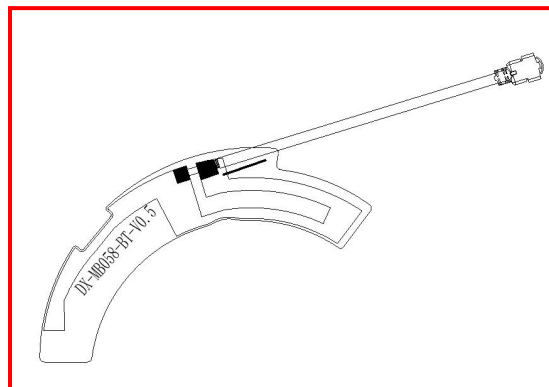
客户名: Customer Name:	豪恩 HORN
整机类型: Type of complete machine:	头戴式蓝牙耳机 Headband Bluetooth Headset
天线频段: Antenna band:	2400 ~ 2500MHz
天线形式: Antenna form:	FPC+同轴线 FPC+coaxial line
馈电形式: Feed form:	I-PEX 连接 I-PEX Connectors
硬件版本: Hardware version:	天线 Antenna
天线制造商: Antennamanufacturer:	深圳市大显科技有限公司 Shenzhen daxian technology co., ltd
测试实验室: Testing laboratory:	SATIMO 微波实验室 SATIMO microwave laboratory

II B T 天线组件 B T Antenna assembly

1 规格 specifications

本报告主要提供 **MB058** 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 **MB058** 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

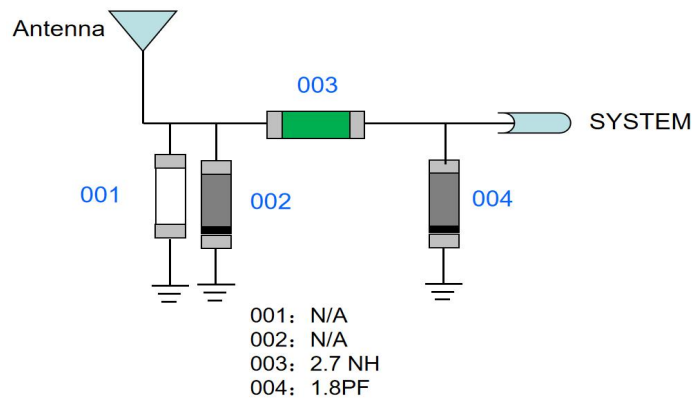
1.1.1 电性能指标 Electrical performance index

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

1.1.2 匹配电路图 Match the circuit diagram



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 组成。

The antenna is mainly composed of FPC+coaxial line sponge.

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2、测试设备 The Equipment of Active Test

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

CMW500 E5071C

Network analyzer-R&S ZVL

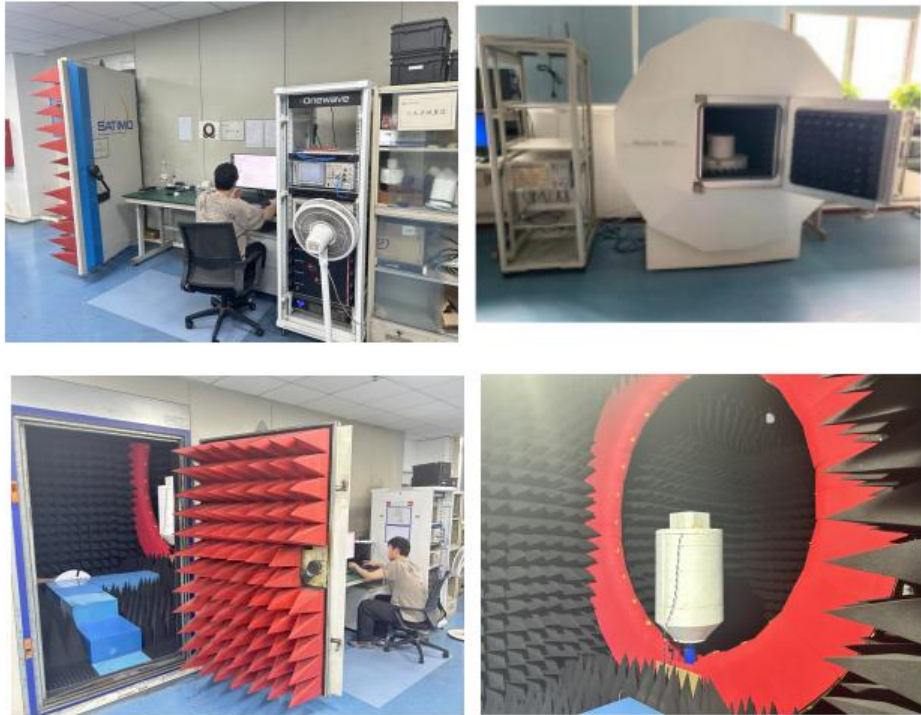


图 2

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 → 测试治具

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、CMW500 E5071C、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 OTA Active Test:

自由空间状态 Free space status			
BAND	CH	TRP	TIS
BT	0	9.76	-90.52
	39	9.51	-90.17
	78	8.91	-90.95

头模状态 Head model status			
BAND	CH	TRP	TIS
BT	0	8	-89.05
	39	7.92	-89.09
	78	7.67	-89.18

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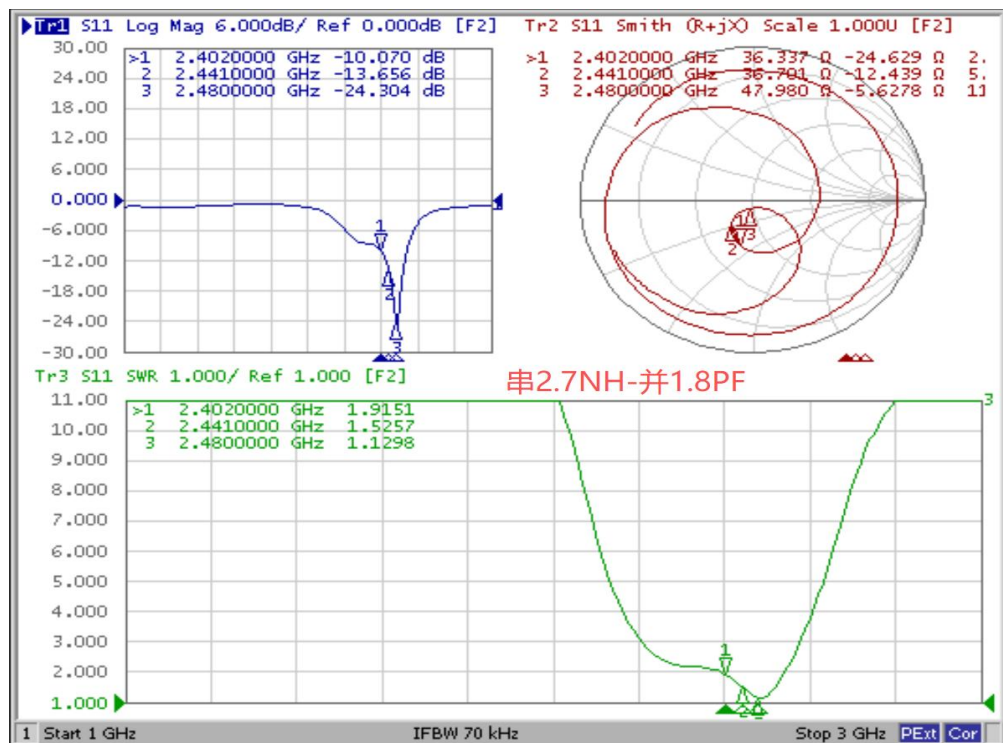
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无源效率&增益 Passive efficiency&gain:

自由空间状态			
Frequency(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
2400	3.04	-3.36	46.17
2410	2.82	-3.43	45.35
2420	2.96	-3.38	45.94
2430	3.1	-3.24	47.45
2440	3.1	-3.15	48.42
2450	3.23	-3.05	49.56
2460	3.17	-3.08	49.19
2470	3.1	-3.16	48.34
2480	3	-3.21	47.71
2490	2.88	-3.29	46.91
2500	2.7	-3.41	45.62

4、VSWR 参数图 VSWR parameter diagram



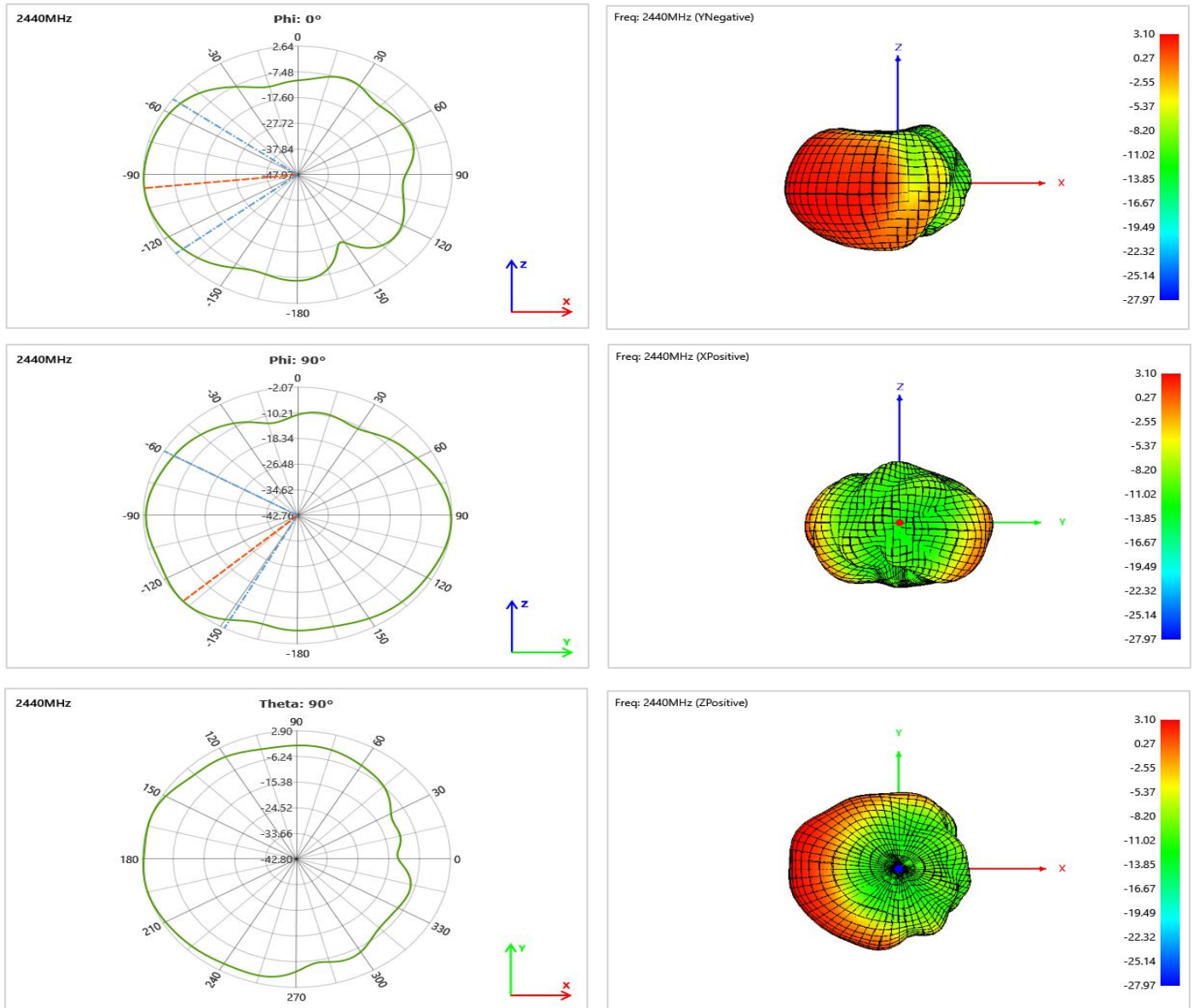
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5、无源场型图 Passive Field Pattern Diagram

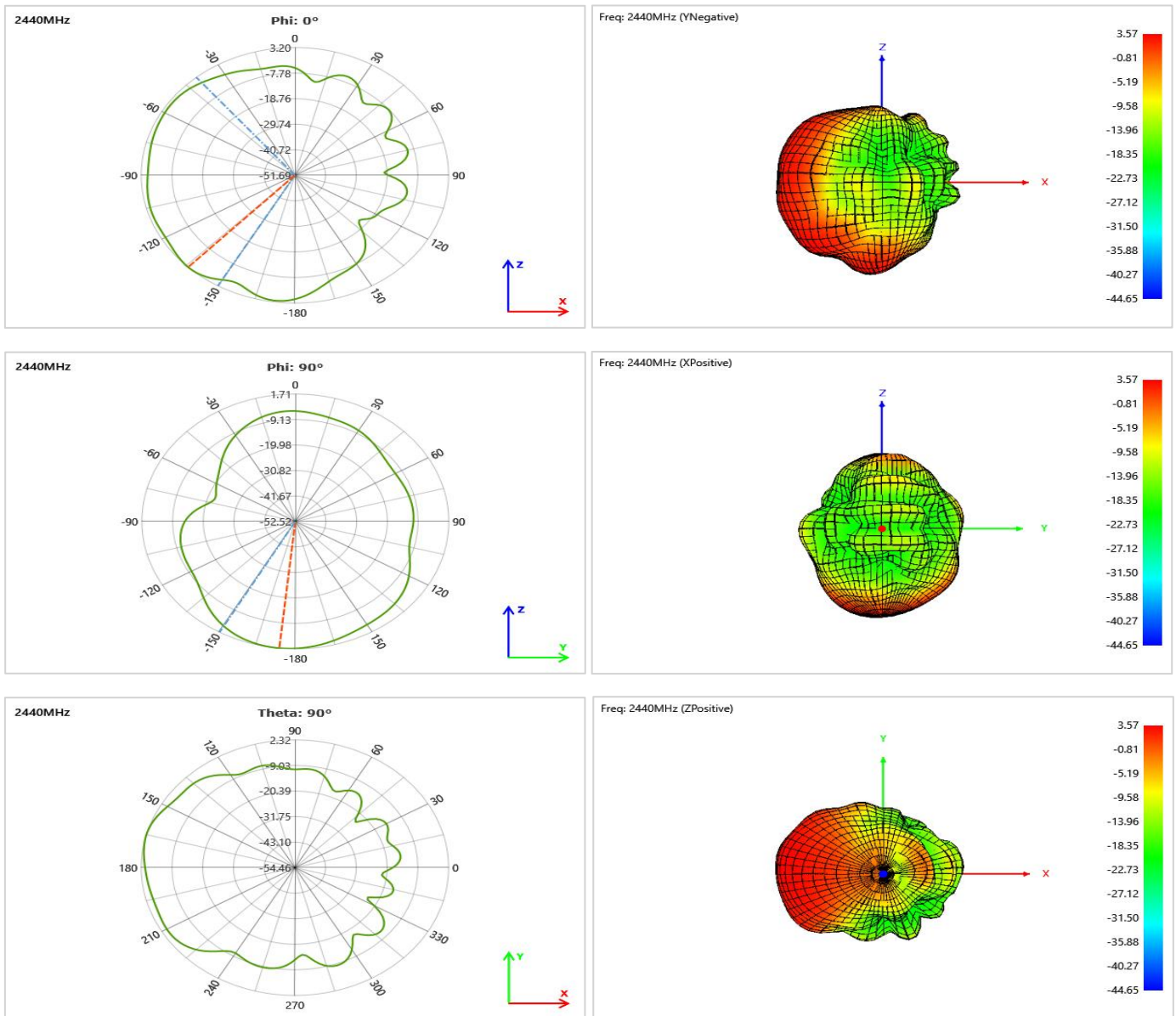
自由空间状态 Head model status



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头模状态 Head model status

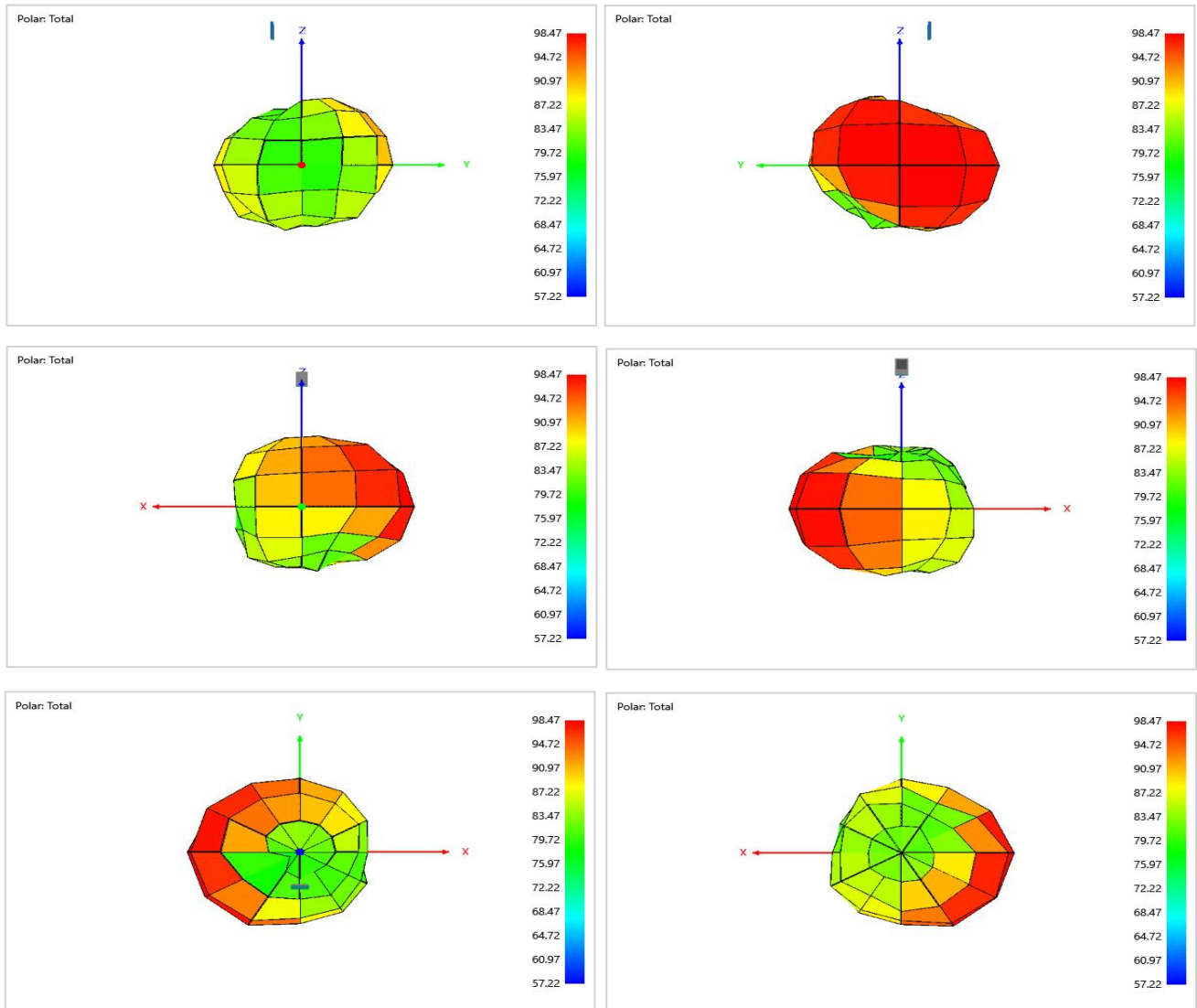


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6、有源场型图 Active field pattern diagram

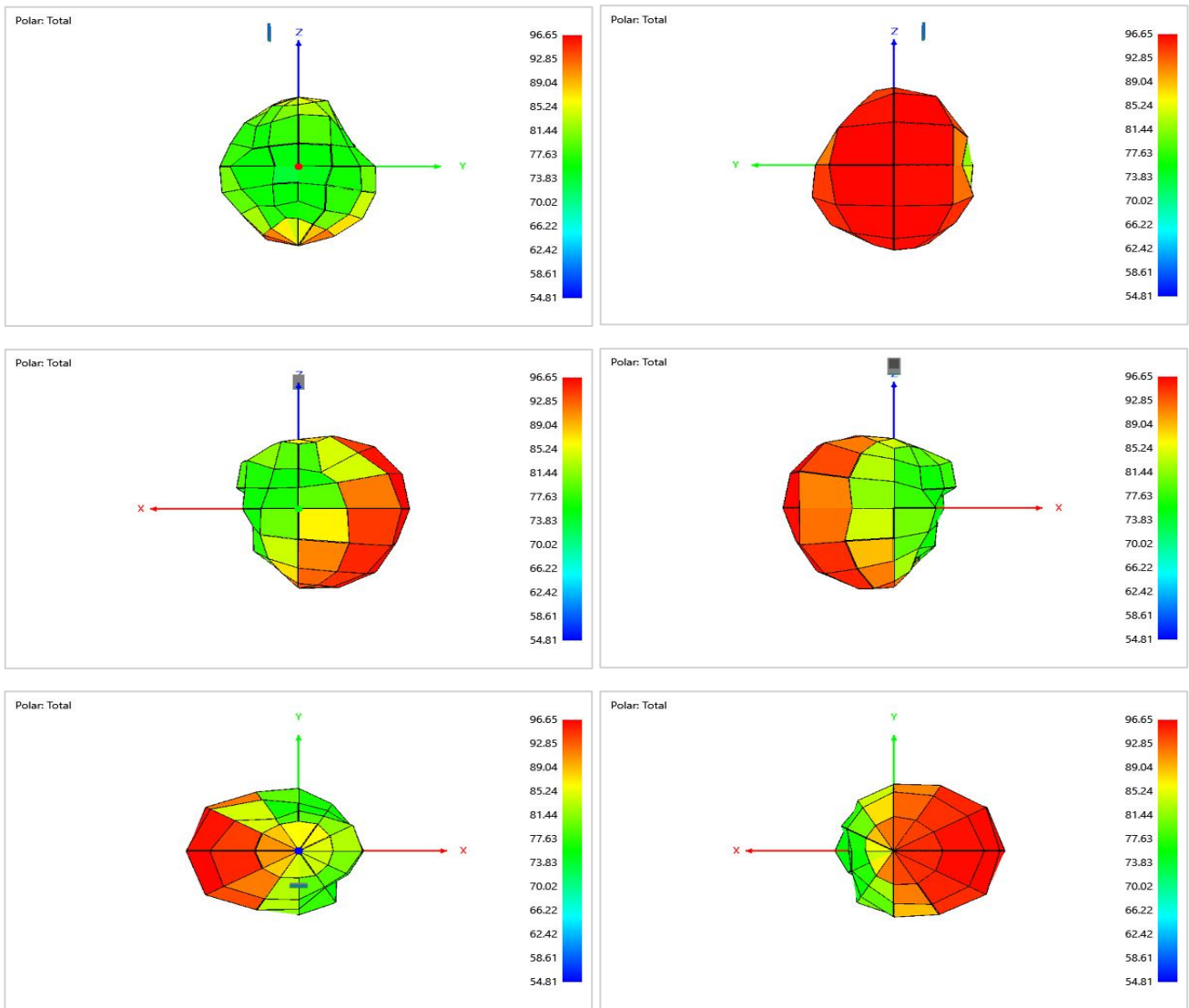
自由空间状态 Head model status



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头模状态 Head model status



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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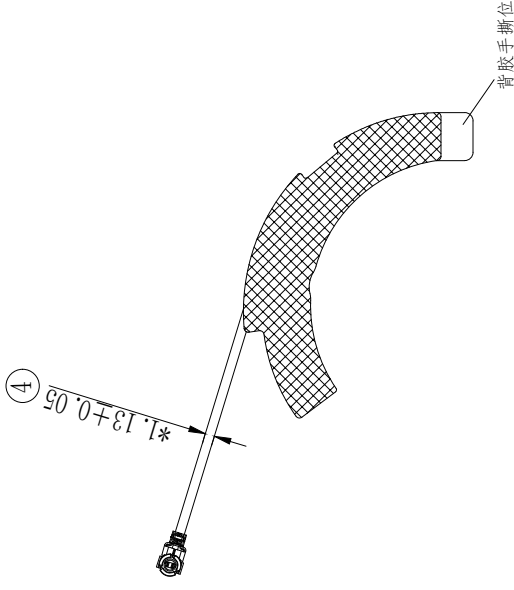
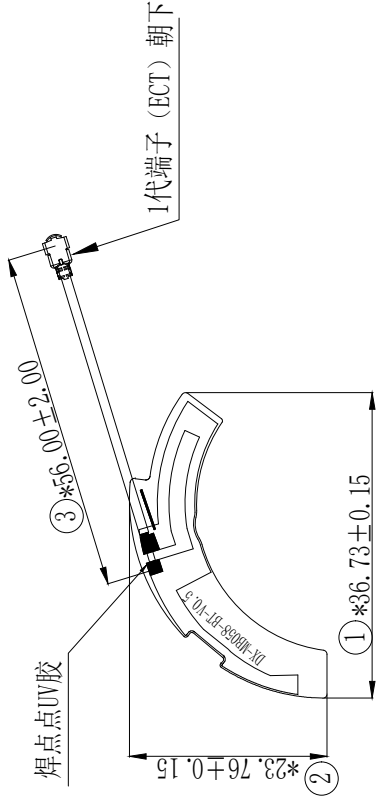
1		2		3		4		5		6	
第三视角	第三视角	第三视角		第三视角		第三视角		第三视角		第三视角	
	单位	mm		mm		mm		mm		mm	
		比例		比例		比例		比例		比例	
		1:1		1:1		1:1		1:1		1:1	

A

B

C

D



注:

- "*"为重点尺寸；
- 未标注尺寸请依图纸；
- 不可有虚焊、漏焊、短线、断线等操作不良；
- 符合 RoHS 要求；

B	端子同轴线	Cable线	黑色	
A	FPC	电解铜 PI	黑色	
序号	零件名称	材质	颜色	备注

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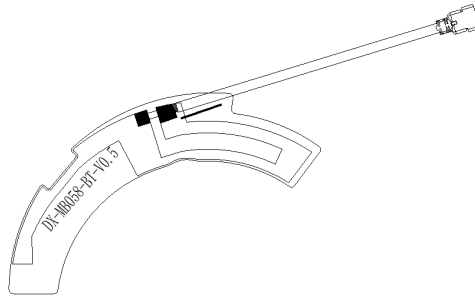


机型	MB058	产品颜色	黑色	日期	2025/09/15
项目编码	BM-B058X-096	模面处理		结构设计	周锐斌
零件名称	BT天线组件			射频设计	胡鹏
零件编码	1M-B058X-096			审核	周康
材质	FPC+同轴线			批准	张磊
保存路径				当前版本	A

版本	描述	日期	备注
1	2	3	6

一、包装方式 Packing method:

1 .FPC+同轴线FPC + coaxial cable :



2、装袋，每袋装200cs ;每10袋 装 1pcs 纸箱（根据订单数量可调整）.

Bagging, each bag is 2 00cs; Packed in 1pcs carton per 10 bags (adjustable according to the order quantity).



每 10 小袋装入 1pcs纸箱
Every 10 small bags are
packed into a 1pcs carton.



所附图片仅供参考， 以实物为准

The attached pictures are for reference only, subject to the real thing.

二、运输要求 Transport requirements:

产品包装件运输时，应防潮、防破损、防污染。

When the product package is transported, it should be moisture-proof, damage-proof and pollution-proof.

三、存储要求 Storage requirements:

产品包装件应在仓库内堆放，库房应干燥、通风、清洁。

Product packages should be stacked in the warehouse, which should be dry, ventilated and clean.

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