

SPECIFICATION



深圳市大显科技有限公司

Shenzhen Daxian Technology Co., Ltd.

HORN MH056(23282) 左耳蓝牙天线HORN MH056(23282) Left BT Antenna

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	MH056	版 本 edition	V1.0
物料编号 Material No	/	颜 色 Color	白色 White
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	潘永杰 YongJie.Pan	技术总监 Technical Director	张 磊 Lei.Zhang
日 期 Date	2025-06-25		

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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一 项目说明 Project Description

客户名: Customer Name:	豪恩 HORN
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 B T Antenna

1 规格 specifications

本报告主要提供 **MH056(23282)** 项目天线的各项电气和结构性能参数的测试状况。

This report mainly provides the testing status of various electrical and structural performance parameters of the antenna for the **MH056(23282)** project.

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
Left BT	2400 ~ 2500	≤ 2

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2、测试设备 The Equipment of Active Test

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

CMW500 E5071C

Network analyzer-R&S ZVL

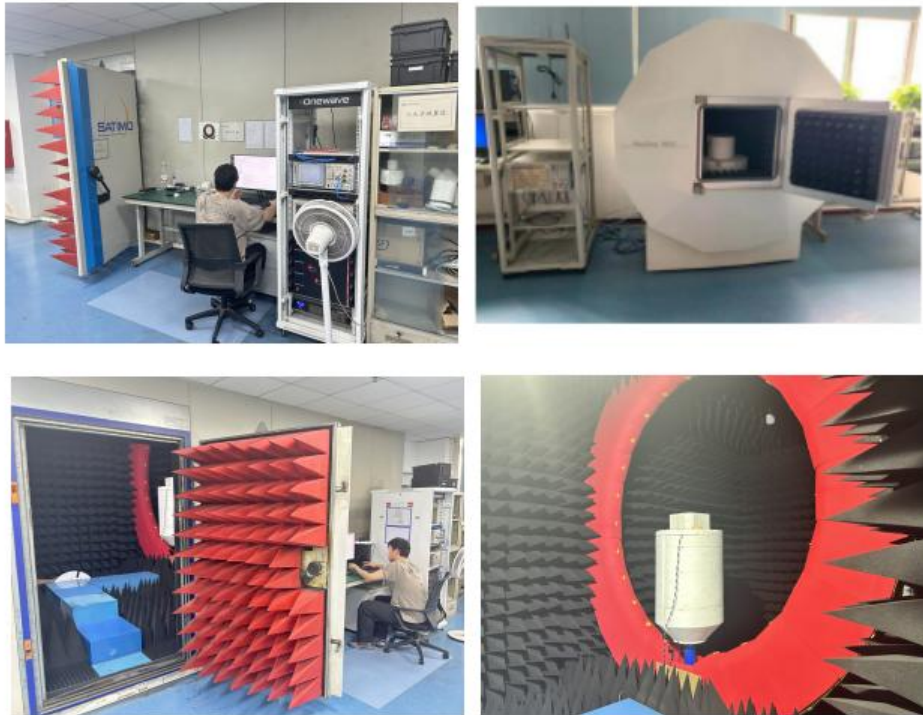


图 2

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、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:

L 边---自由状态 L-edge-free space state		
Channel	TRP(dBm)	TIS(dBm)
0	7.14	-90.71
39	8.23	-90.45
78	8.04	-89.08

L 边---头模状态 L-edge-die state		
Channel	TRP(dBm)	TIS(dBm)
0	3.12	-84.84
39	2.65	-84.91
78	2.09	-84.6

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无源效率&增益 Passive efficiency&gain:

L 边---自由状态 L-edge-free space state			
Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
2400	-1.14	-5.53	27.98
2410	-1.3	-5.56	27.77
2420	-1.55	-5.68	27.01
2430	-1.6	-5.7	26.93
2440	-1.56	-5.65	27.23
2450	-1.62	-5.61	27.45
2460	-1.65	-5.62	27.43
2470	-1.49	-5.53	27.97
2480	-1.33	-5.45	28.48
2490	-1.18	-5.41	28.79
2500	-0.96	-5.34	29.21

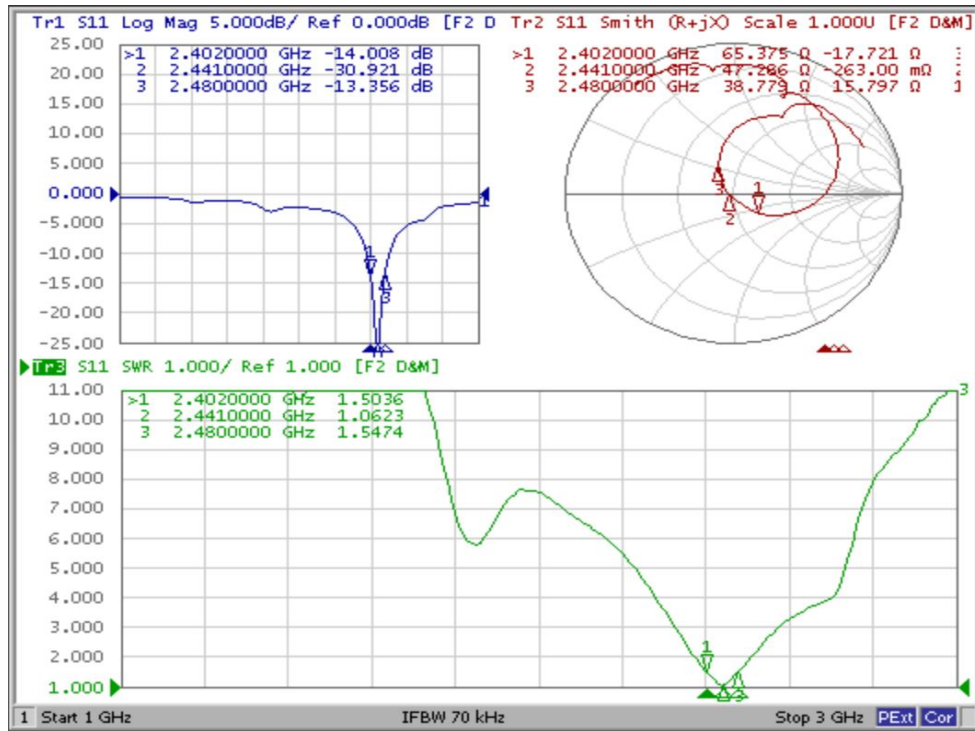
L 边---头模状态 L-edge-die state			
Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
2400	-6.57	-12.61	5.48
2410	-6.76	-12.52	5.6
2420	-6.91	-12.39	5.77
2430	-7.23	-12.31	5.88
2440	-7.33	-12.2	6.02
2450	-7.37	-12.12	6.13
2460	-7.32	-12.08	6.19
2470	-7.57	-12.14	6.11
2480	-7.71	-12.23	5.98
2490	-7.7	-12.3	5.88
2500	-7.67	-12.39	5.77

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4、VSWR 参数图 VSWR parameter diagram



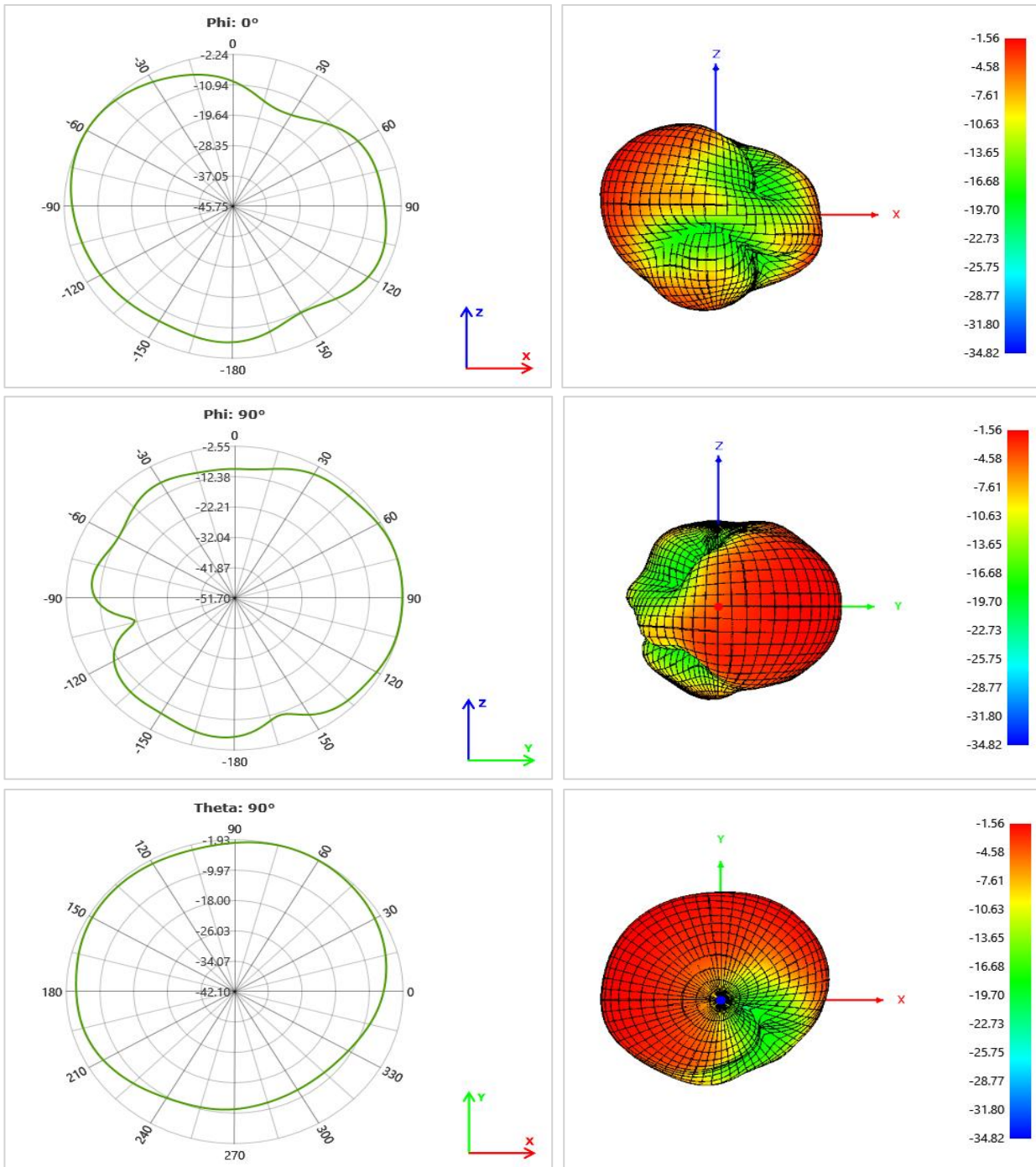
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5、无源场型图 Passive Field Pattern Diagram

L 边--自由空间状态 L-edge-free space state:

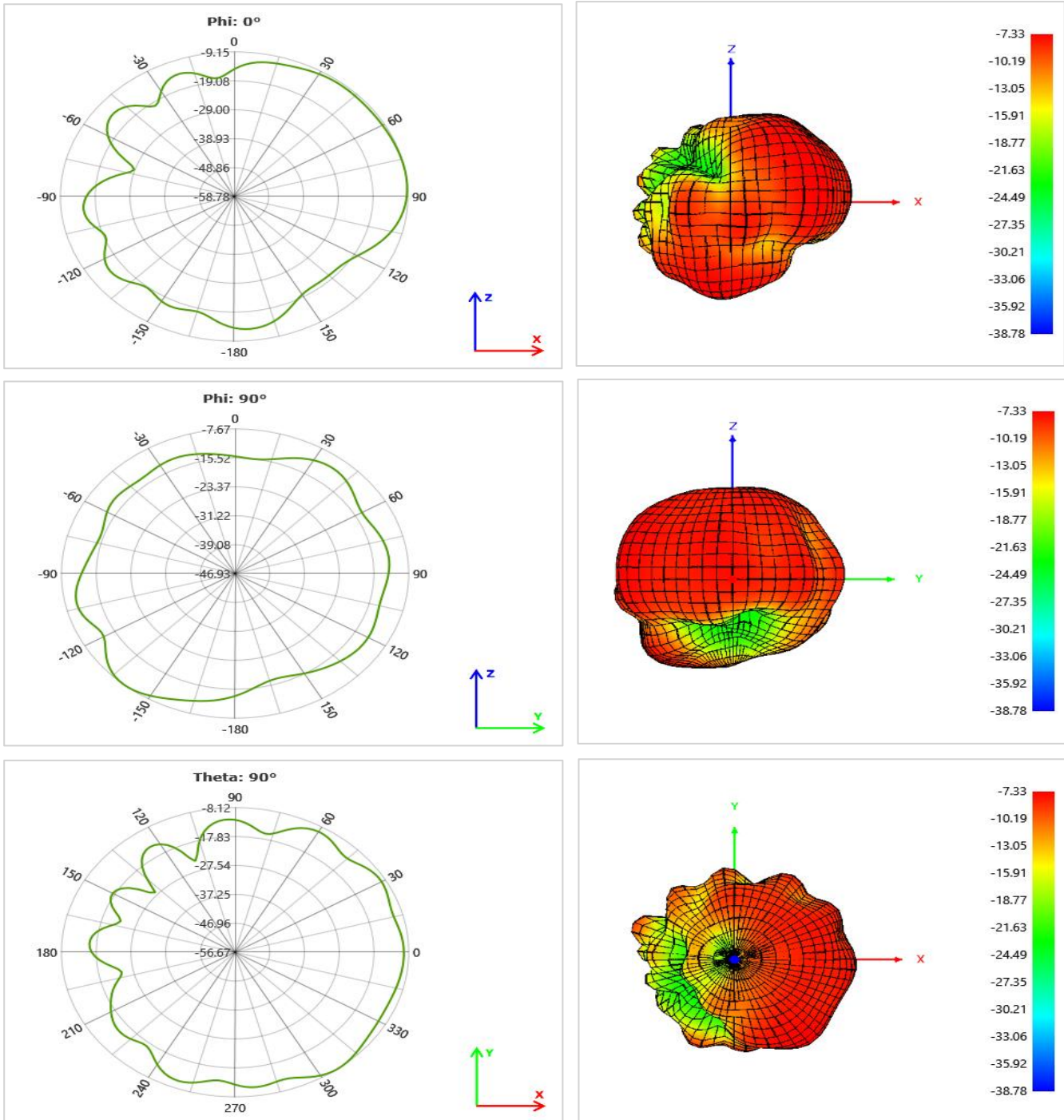


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L 边--头模状态 L-edge-die state

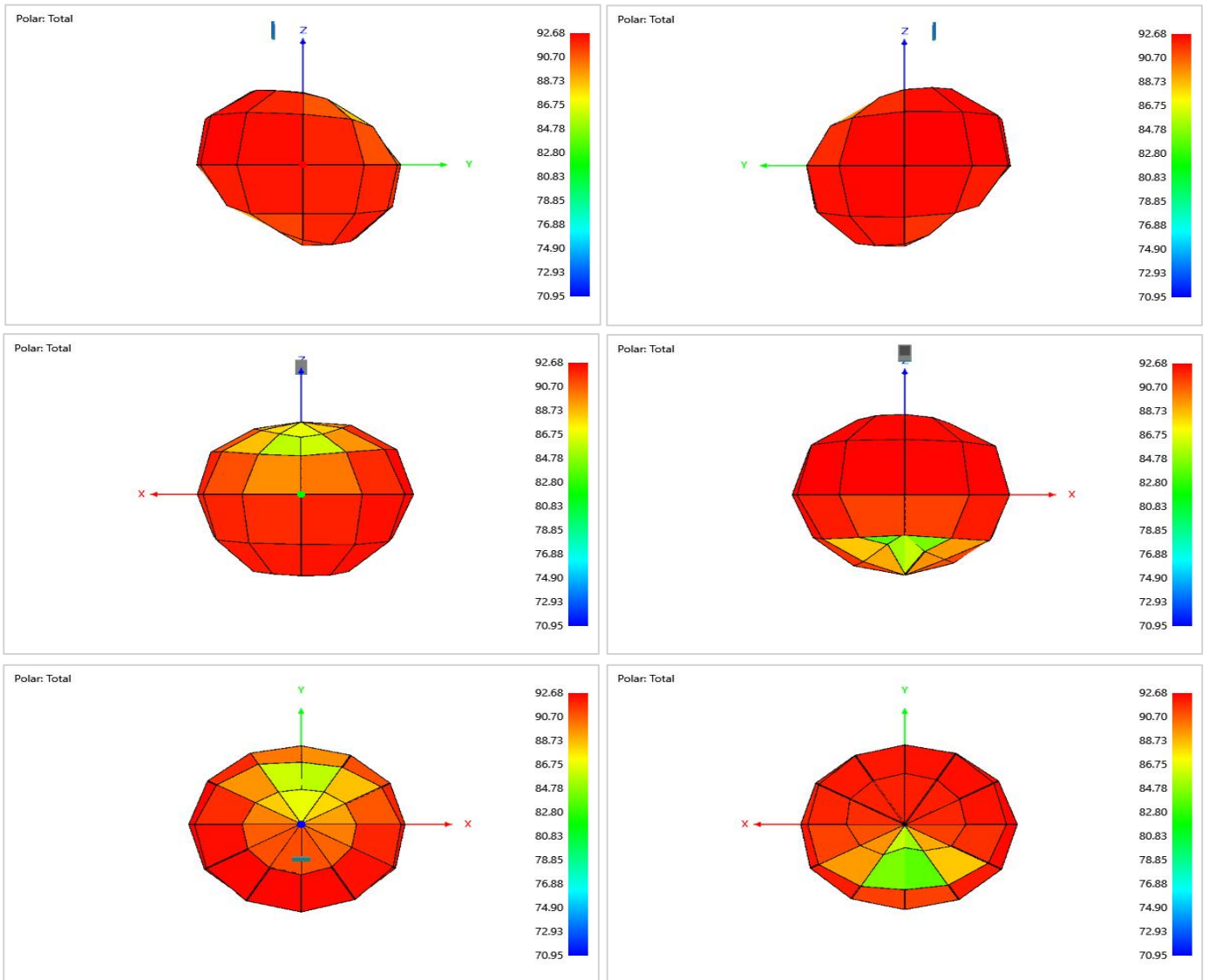


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6、有源场型图 Active field pattern diagram

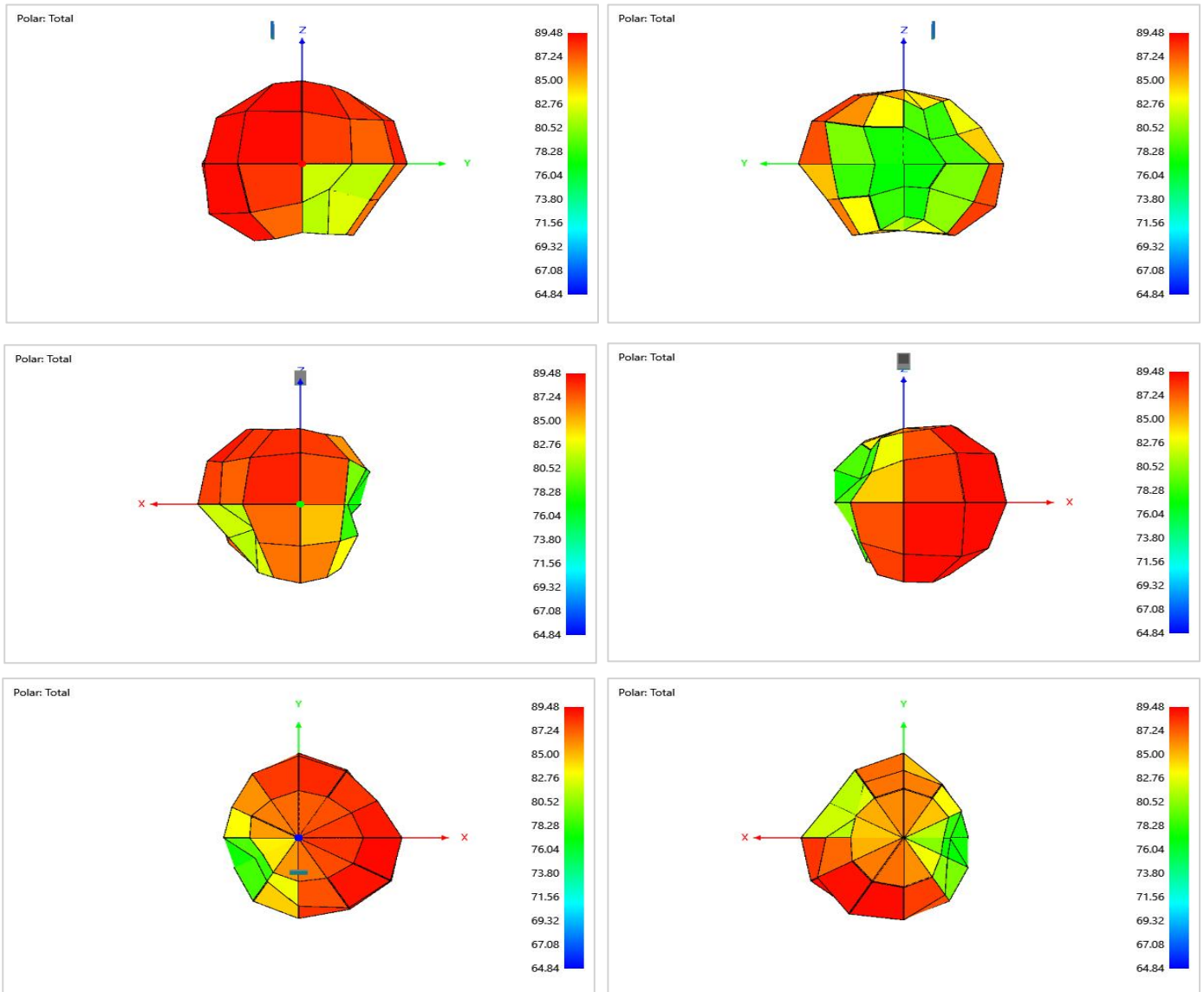
L 边--自由空间状态 L-edge-free space state:



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L 边--头模状态 L-edge-die state



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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