

SPECIFICATION



深圳市大显科技有限公司

Shenzhen Daxian Technology Co., Ltd.

通力 Z100-SW BT 天线组件

Tonly Z100-SW 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	Z100-SW	版 本 edition	V4.0
物料编号 Material No	2Z-100SW-012	颜 色 Color	黑色 Black
客户料号 Customer Item Number	290000-019633		
环保要求 environmental requirement	☒ RoHS ☒ REACH ☒ HF		
R F 设计 R F Design	刘柱东 ZhuDong.Liu	结构设计 Structural Design	周锐斌 Rui Bin.Zhou
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日 期 Date	2025-04-23		

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

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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			2025-02-26	
V2.0	更新 modify	天线性能及设计结构更新 Antenna performance and design structure update	DX	2025-3-13	
V3.0	更新 modify	天线线路及出线方式更新 Antenna wiring and outlets updated	DX	2025-3-19	
V4.0	更新 modify	天线电性能数据更新 Antenna Electrical Performance Data Update	DX	2025-04-23	

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索引

Indexes

一、项目说明 Project Description.....	4
二、 BT 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.....	7-8
4、VSWR 参数图 Parameter diagram.....	9
5、天线测试结果：整机数据-隔离度 Antenna Test Results: Whole Unit Data - Isolation	9
6、无源场型图 Passive field pattern diagram.....	10
7、OTA 场型图 OTA Field pattern diagram.....	11
8、无源场型图 Passive field pattern diagram.....	12
9、环境处理 Environmental treatment	12
10、结论 conclusion.....	12
三、工程图 schedule drawing.....	13

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一 项目说明 Project Description

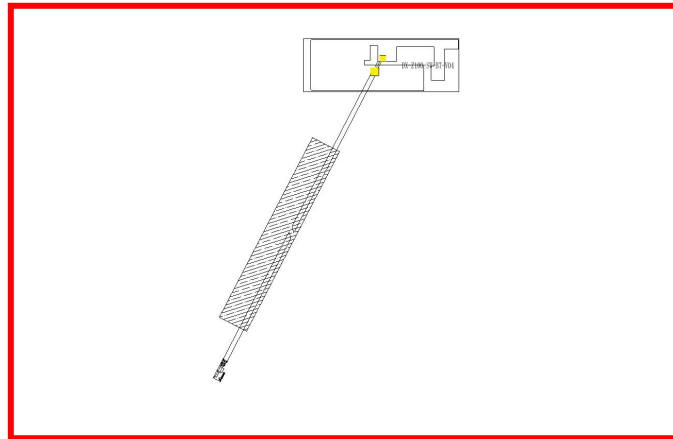
客户名: Customer Name:	通力 Tonly
整机类型: Type of complete machine:	低音箱 subwoofer box
天线频段: Antenna band:	2400 ~ 2500MHz
天线形式: Antenna form:	FPC+同轴线+线材海绵 FPC + coaxial cable + cable sponge
馈电形式: Feed form:	焊接 weld
硬件版本: Hardware version:	/

二 BT 天线组件 Antenna assembly

1 规格 specifications

本报告主要提供 Z100-SW 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 Z100-SW 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

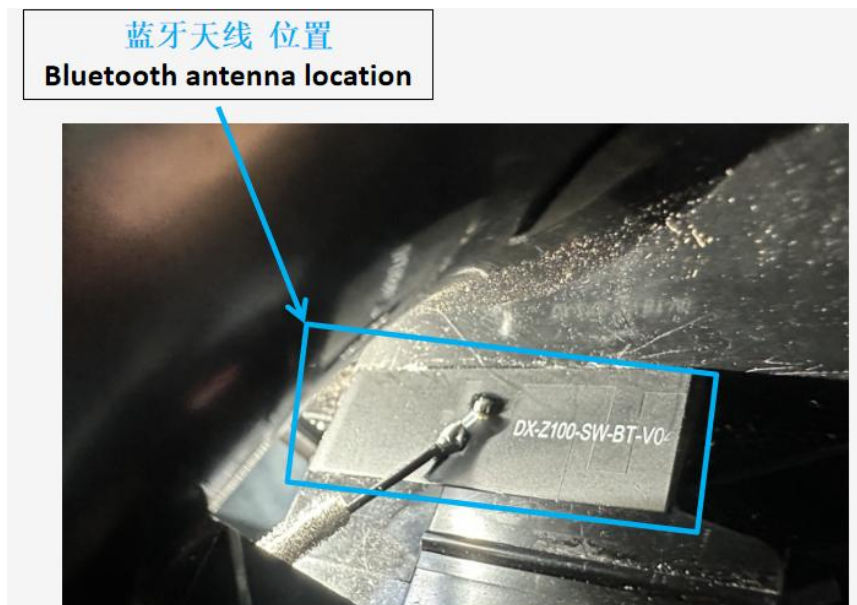
1.1.1 电性能指标 Electrical performance index

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	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+线材海绵 组成。

The antenna is mainly composed of FPC + coaxial cable + cable 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有源传导数据: OTA active conduction data:

BAND	CH	TRP (dBm)	TIS (dBm)
BT	0	9.52	-94
	39	9.65	-94
	78	9.37	-94

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OTA 有源数据: OTA active data:

BAND	CH	TRP (dBm)	TIS (dBm)
BT	0	6. 32	-90. 52
	39	6. 41	-90. 66
	78	6. 12	-90. 34

无源效率&增益 Passive efficiency&gain:

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	44. 39	-3. 53	2. 11
2410	44. 91	-3. 48	2. 14
2420	45. 65	-3. 41	2. 17
2430	45. 82	-3. 39	2. 19
2440	45. 78	-3. 39	2. 18
2450	46. 1	-3. 36	2. 35
2460	45. 51	-3. 42	2. 19
2470	45. 18	-3. 45	2. 17
2480	44. 99	-3. 47	2. 13
2490	44. 81	-3. 49	2. 09
2500	44. 27	-3. 54	2. 1

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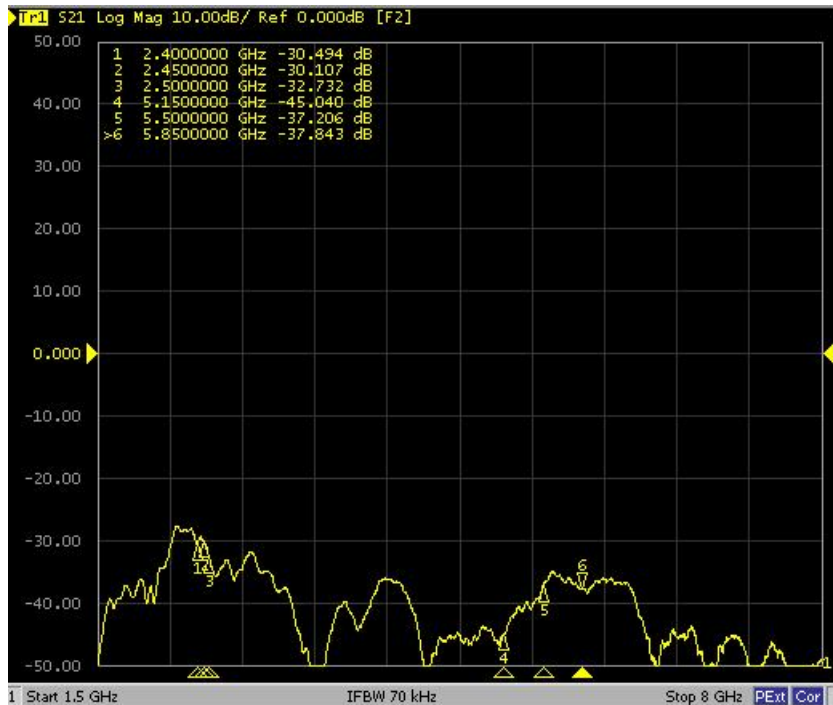
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4、VSWR 参数图 VSWR parameter diagram



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

WIFI--BT

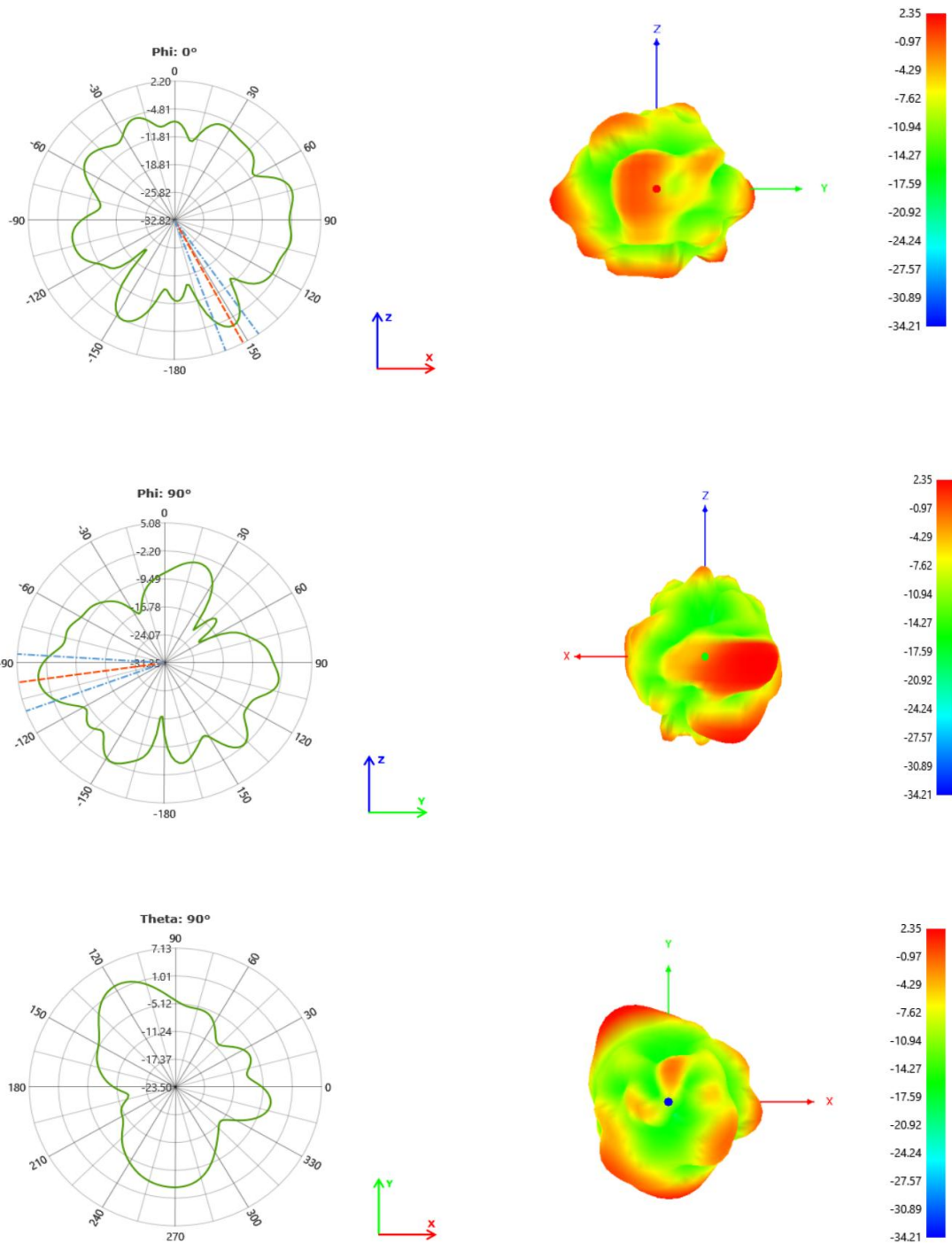


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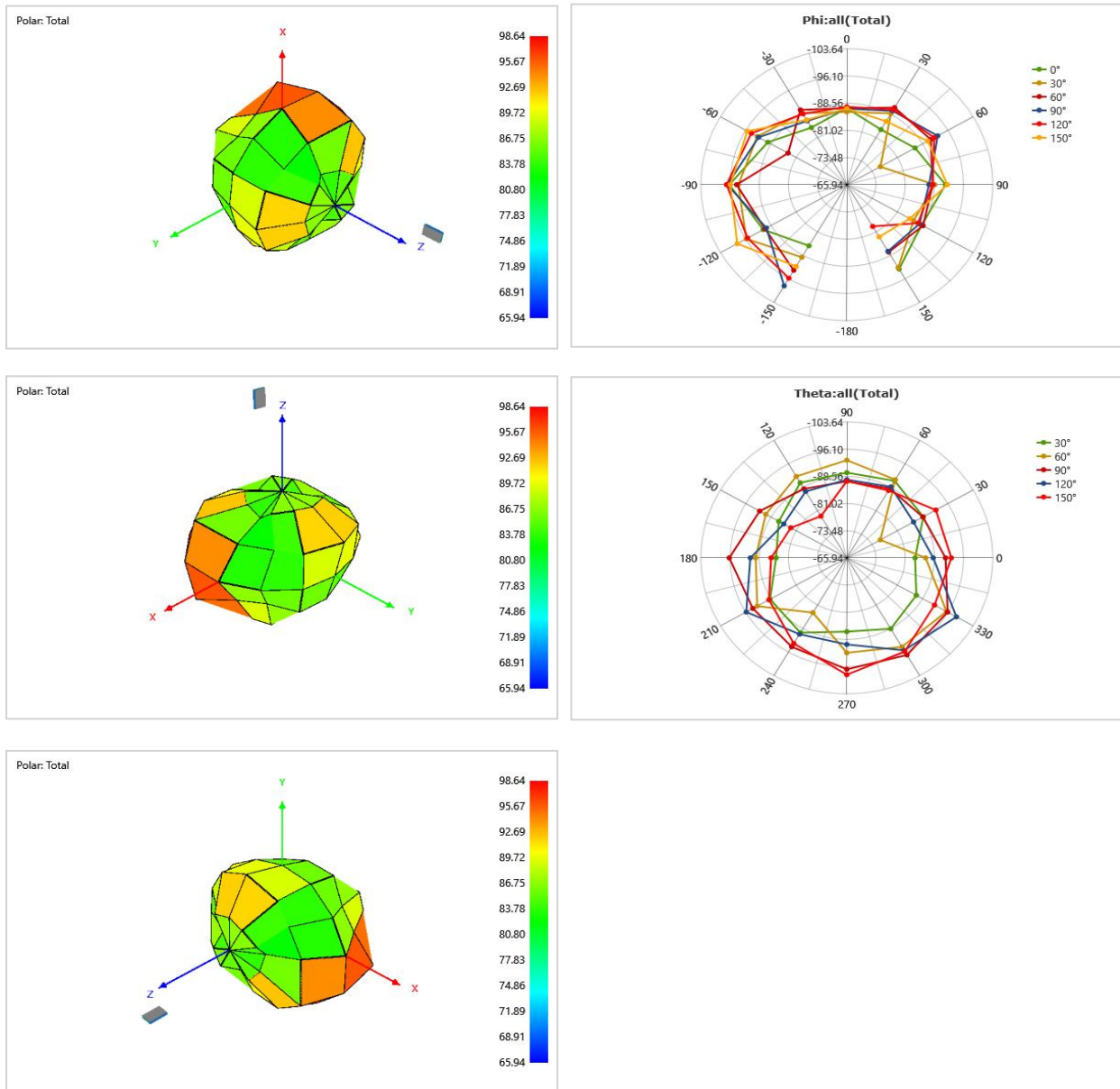
6、无源场型图 Passive Field Pattern Diagram



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7、OTA 场型图 OTA Field pattern diagram:



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8、天线安装方式 Antenna mounting method:



9、环境处理 Environmental treatment:



10、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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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。