

环保:	
版本:	

承认书

SPECIFICATION FOR APPROVAL

客户名称	佳禾
Customer	
品名	Bluetooth Antenna-L
Product:	
客户料号	300116190162C00
Part No.:	

客户（业务）确认回复:	
Customer (Business) Approval Status:	
签核:	
Signature	
合格 PASSED	拒收 REJECTED

产品资料 PRODUCT INFORMATION

产品名称	Bluetooth Antenna-L
Product:	
产品型号	CE-2159N
Part No.:	
样品编号	
Samples No.:	
图纸编号	1E-2159N-081-1
Drawing No.:	
日期	2023/3/6
Date:	

承办	校对	审核
Prepared By	Proofed By	Checked By
DATE:	DATE:	DATE:

创新INNOVATION 信赖RELIABILITY 满意SATISFACTION

深圳市大显科技有限公司

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表单编号: CO-ENG-031A

—DESCRIPTION

Manufacturer:	Shenzhen Quanzhi Information Technology Co., Ltd.
Machine type:	Bluetooth earphones
Antenna frequency band:	2400 ~ 2500MHz
Antenna form:	FPC
Feed form:	welding
Number of feed legs:	2
Hardware version:	motherboard

一、BT antenna

This report mainly provides various test results of the electrical performance of the CE-2159N project antenna. Figure 1 shows the antenna designed by the large display



Overall appearance diagram

Left antenna appearance diagram

图 1

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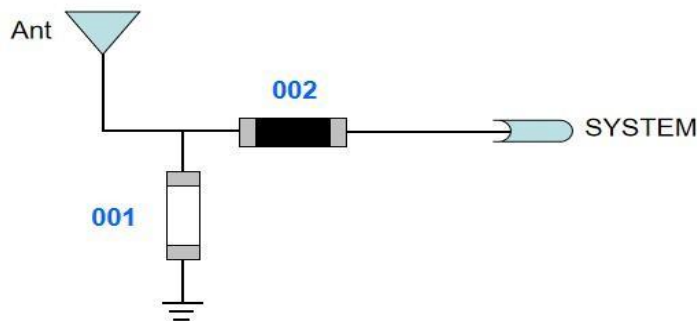
1.1.1 Electrical performance description

Electrical performance specifications

The frequency range of the antenna is 2400-2500MHz. The table below indicates the electrical performance specifications of the antenna. This antenna is designed and produced by Da Xian.

Frequency Range	Frequency (MHz)	VSWR
Left ear BT	2400 ~ 2500	≤ 2

1.1.2 Matching circuit



Element	左边	右边
001	0.3PF	0.5PF
002	0Ω	0Ω

当前版本天线主板匹配有更改，如上

1.2 Structural specification standards

1.2.1 Antenna composition

The antenna is mainly composed of FPC.

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2、 The Equipment of Active Test

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

Agilent 8960 E5515c

Network analyzer-R&S ZVL



图 2

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3.1.1 Testing

3.1.2 Testing of Standing Wave (VSWR)

3.1.3 TEST CONNECTION: The VSWR testing device is sequentially connected as follows: R&S ZVL network analyzer→TEST→Actual measurement of testing fixtures (attached figure)

3.1.4 Testing of Efficiency, Power (TRP), Sensitivity (TIS)

3.1.5 Testing site :

Large display microwave darkroom. The testing frequency range is 400MHz -6GHz, the quiet zone range is 50cm circumference, and the reflectivity is less than -50 dB.

3.1.6 Testing instruments:

R&S CMW500, Agilent 8960, network analyzer E5071C, standard horn antenna, France

SATIMO-SG24SYSTEM system, printer, etc.

3.1.7 Test data: In the microwave anechoic chamber, the values related to the power and sensitivity tested are shown in the table below:

Free space active testing:

L-自由空间			
BAND	CH	TRP (dBm)	TIS (dBm)
BT	0	4.61	-87.13
	37	5.16	-88.48
	78	5.63	-87.49

Head mold active testing:

L-头模			
BAND	CH	TRP (dBm)	TIS (dBm)
BT	0	1.04	-82.19
	37	1.36	-82.37
	78	1.11	-82.23

Passive efficiency testing:

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	23.06	-6.08	-2.52
2410	24.73	-6.07	-2.45
2420	25.17	-6.28	-2.9
2430	26.47	-6.18	-2.77
2440	27.25	-6.18	-2.76
2450	28.37	-6.05	-2.87
2460	29.33	-6.13	-3.15
2470	28.92	-6.04	-3.13
2480	27.18	-6.24	-3.28
2490	26.35	-6.24	-3.32
2500	25.16	-6.46	-3.42

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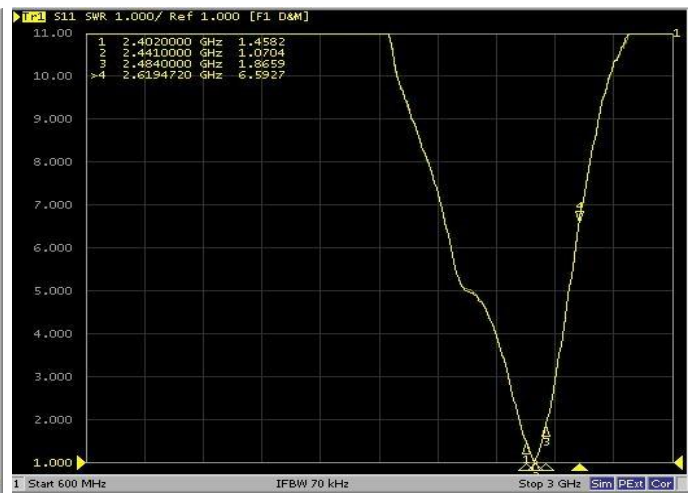
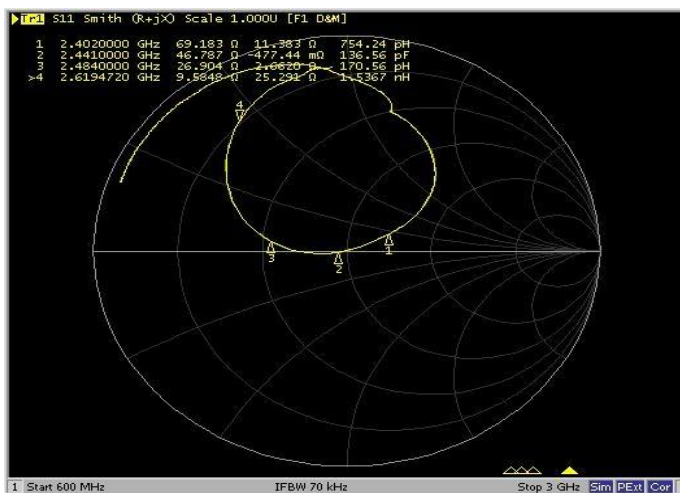
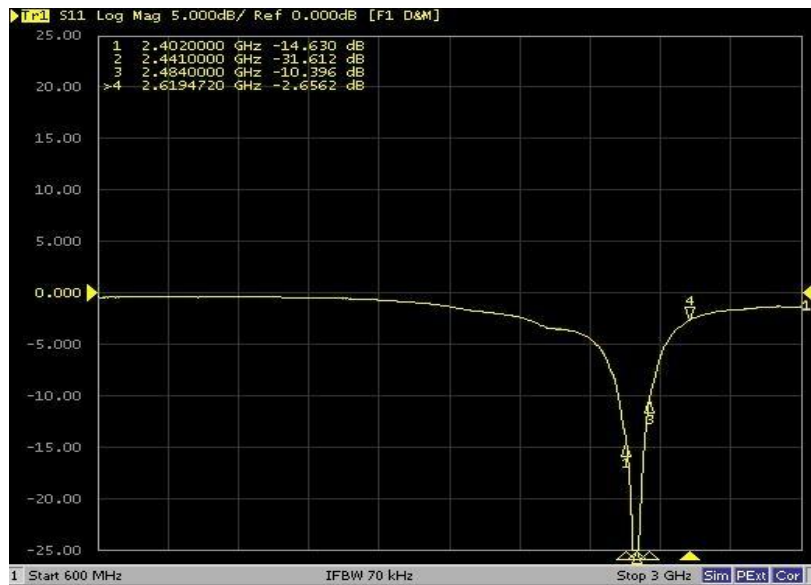
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4、conclusion:

This antenna is designed based on the prototype provided by the customer, and the electrical parameters and structural performance have met the technical requirements. Please confirm!

5、Attachment Chart

5.1 VSWR parameter map - left ear

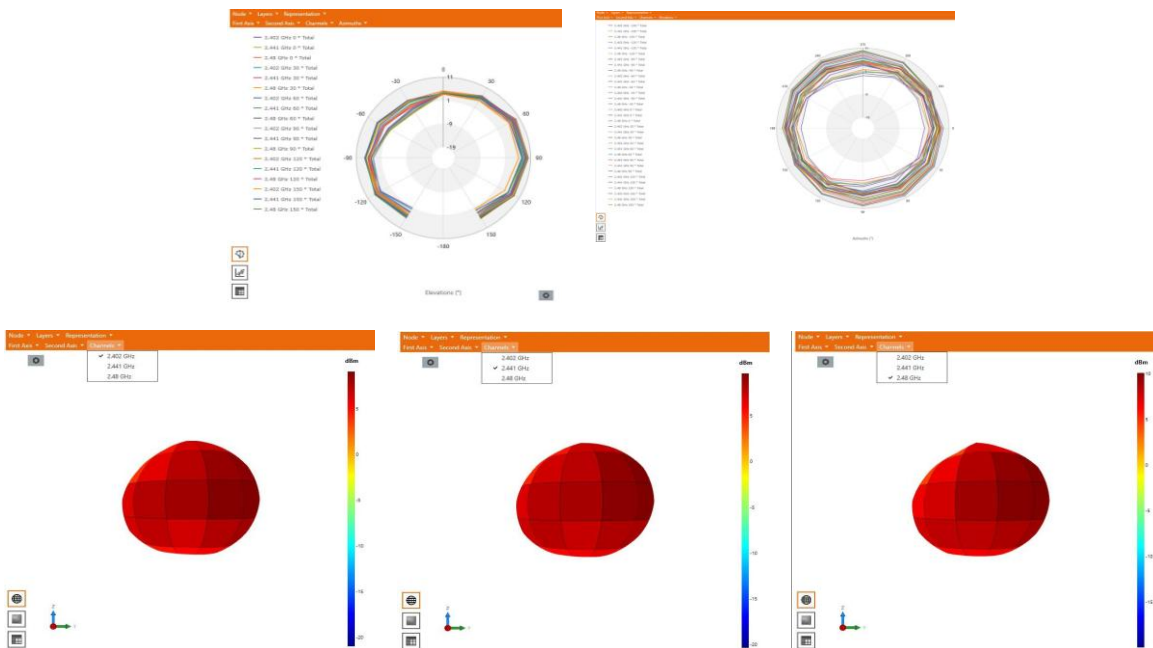


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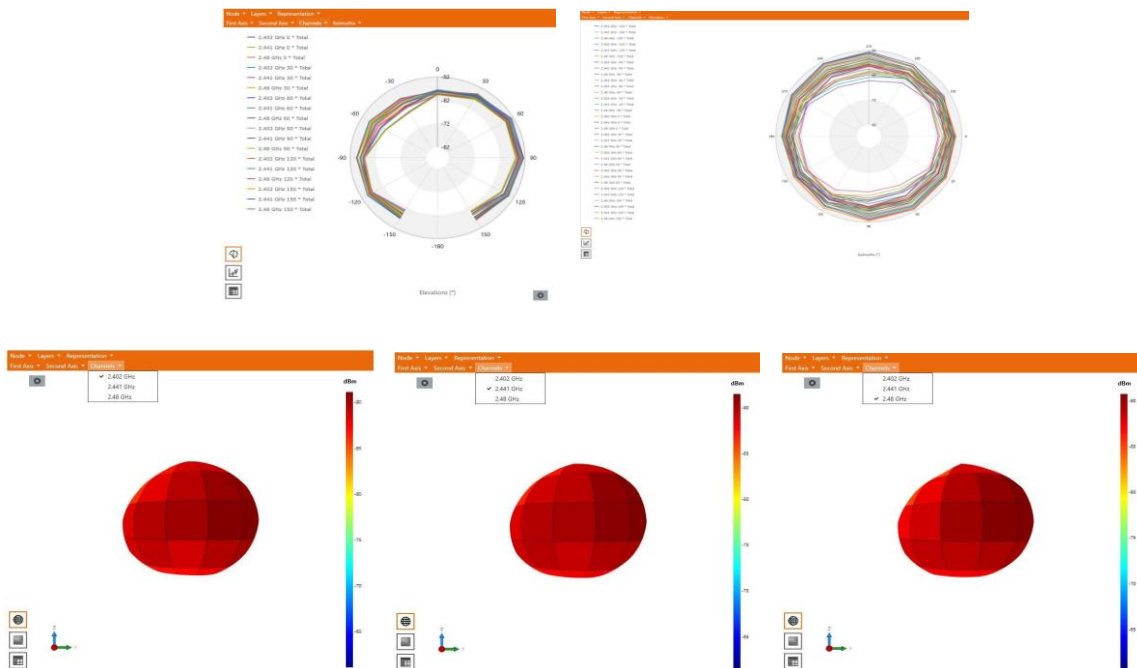
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6、Free Space – Directional Map – TRP:



6.1、Free Space – Directional Map – TIS:

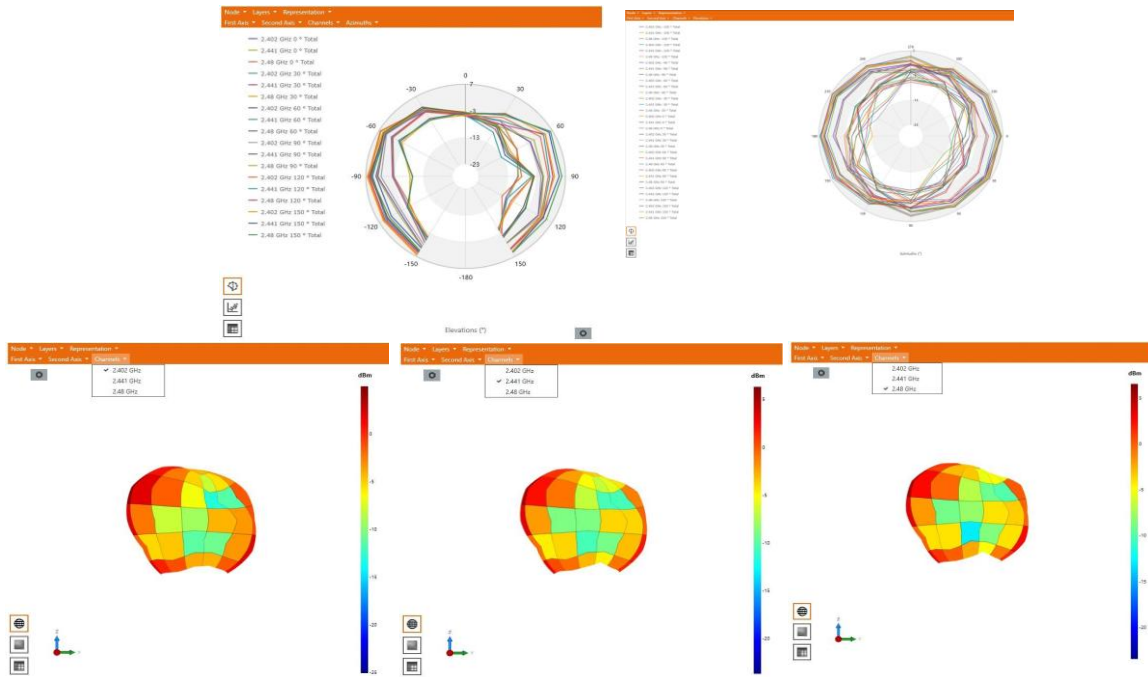


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7、Head mold – directional diagram – TRP:



7.1、Head mold – directional diagram – TIS:

