

Yuande Electronics (Shenzhen) Co., Ltd.

Sample Approval Sheet

Product Information:

Customer	Guangzhou Panyu Juda Car Audio Equipment Co., Ltd.
Material Description	SB550 BT Antenna
Customer's Part number	
Specifications	FPC (L58*W17.5mm) +Black Coaxial Cable (φ 1.13*370mm) +Welding
Supplier's Part number	136-SB550-10A
Date	2023-12-12

Supplier:

Prepared By	Checked By	Approved By
Zhang Dengqiao	Li Yuepeng	Zhang Xiangting



Customer Approval:

Accepted By	Checked By	Approved By

Results:

- Full Approval
- Conditional Approval
- Unqualified
- Others:

Yuande Electronics (Shenzhen) Co., Ltd.

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Contents

1、 Specification.....	3
1.1 Electrical specification standard.....	3
1.1.1 Electrical Specifications.....	3
1.1.2 Antenna Matching Network.....	3
2、 Test.....	3
2.1 Test of passive S11.....	3
2.1.1 Test connection.....	3
2.1.2 Passive S11.....	4
2.2 Gain and efficiency test.....	4
2.2.1 Test Position.....	4
2.2.2 Test equipment.....	4
2.2.3 Results Summary.....	5
2.2.4 Radiation Pattern Results.....	5-6
2.3 OTA test.....	6
2.3.1 Results Summary.....	6
2.4 Isolation test.....	7
2.4.1 Results Summary.....	7
3、 Conclusion.....	7
4、 Part Drawing.....	8

1、 Specification

This report mainly provides the testing status of various electrical and structural performance parameters of SB550 BT Antenna.



Figure 1 Antenna

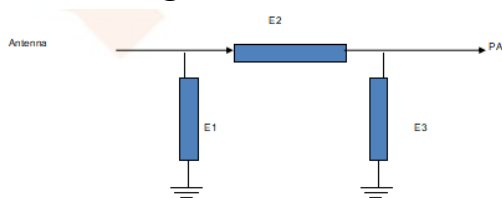
1.1 Electrical specification standard

1.1.1 Electrical Specifications

The antenna operates in the 2400-2480 MHz. The following table is the electrical performance index of the antenna designed by our company.

Antenna	SB550 BT Antenna
Frequency Range	2400-2480MHz
VSWR	< 2.0
Efficiency	> 40%
Impedance	50 ohm
Polarization	Linear polarization

1.1.2 Antenna Matching Network



Element	Value
E1(0402)	2PF
E2(0402)	1.2NH
E3(0402)	2PF

2、 Test

The antenna was debugged and tested with the prototype provided by the customer.

2.1 Test of passive S11

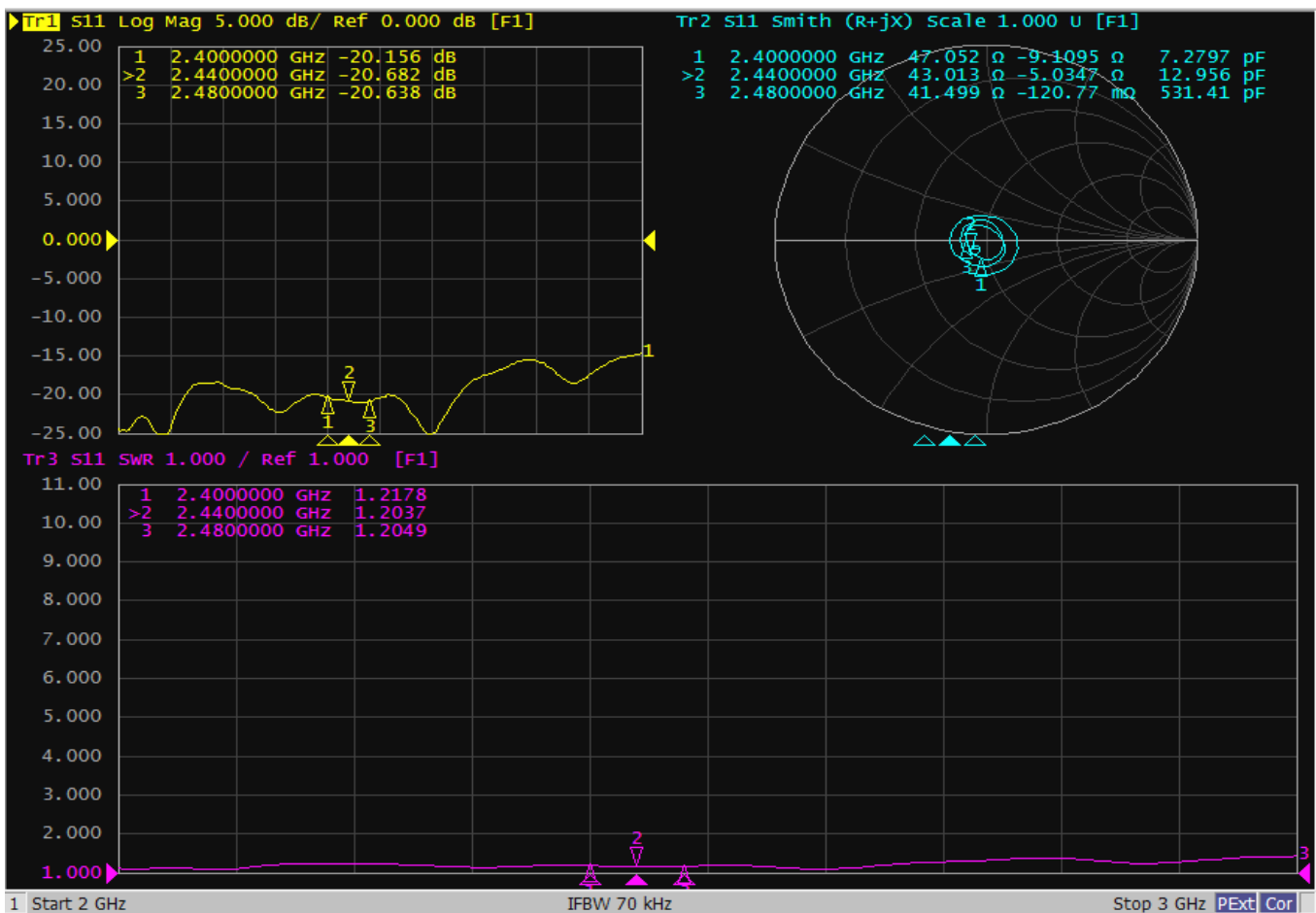
2.1.1 Test connection

The passive S11 test device is connected as follows: Network Analyzer → Test Line → Test Fixture.

2.1.2 Passive S11

The following table shows the standing wave ratio values of the edge frequency points of the antenna operating frequency band. The waveform of Return Loss and VSWR obtained by the test is shown as follows.

Frequency (MHz)	2400	2440	2480
VSWR	1.22	1.20	1.20
Return Loss	-20.16	-20.68	-20.64



2.2 Gain and efficiency test

2.2.1 Test Position

Yuande microwave anechoic chamber, the test frequency range is 400MHz-6GHz.

2.2.2 Test equipment

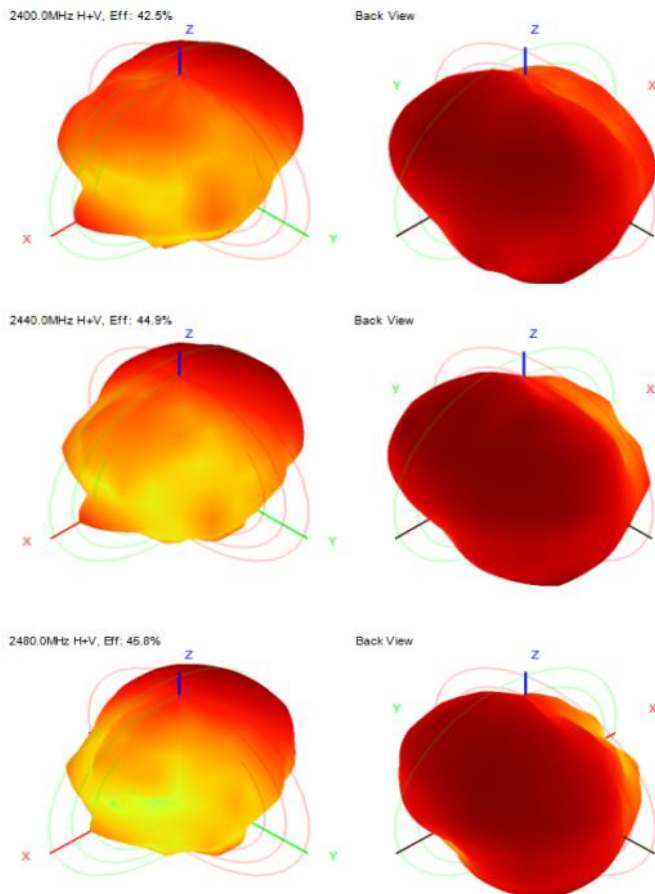
Network analyzer, standard horn antenna, multi-probe near field antenna test system, test computer, etc

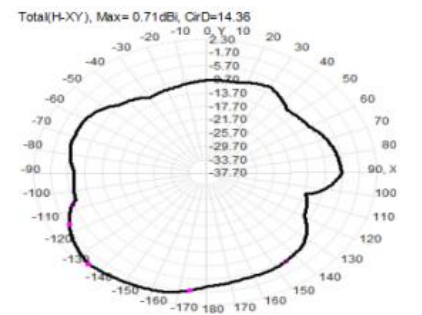
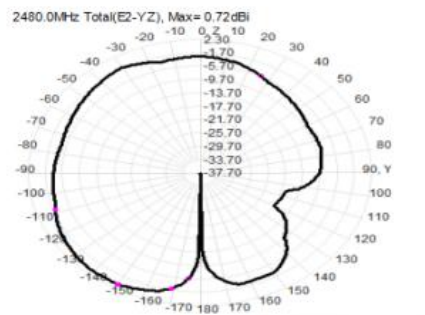
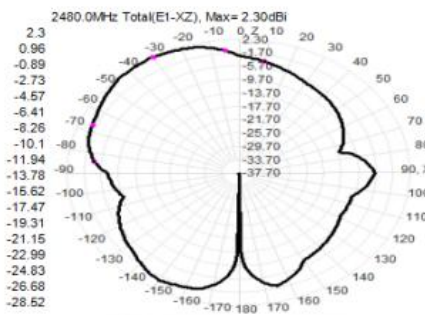
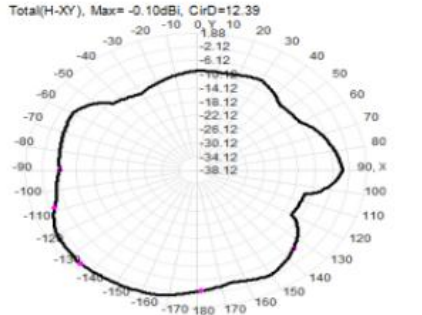
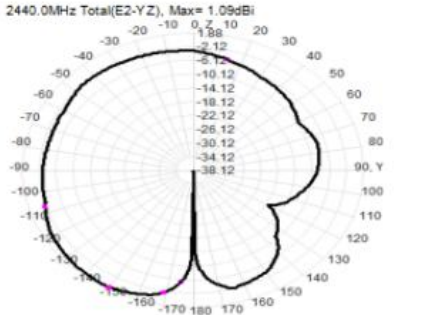
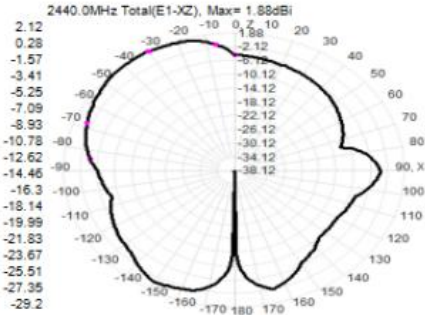
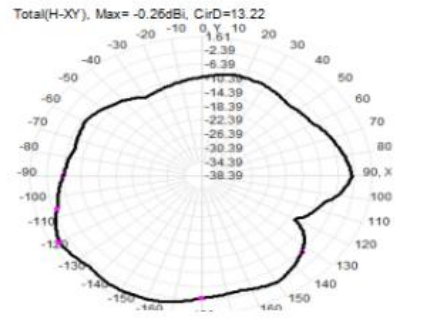
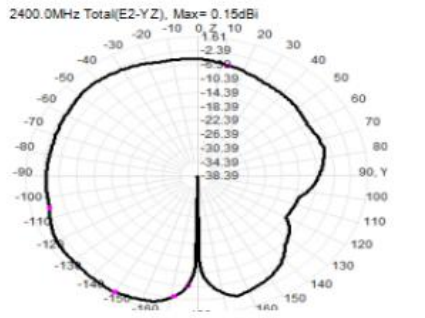
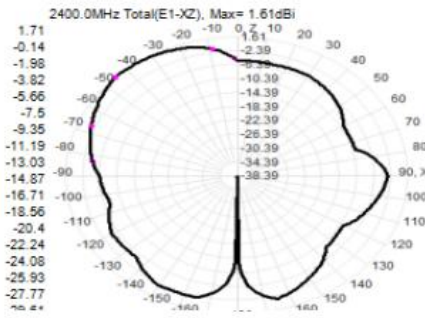
2.2.3 Results Summary

In the microwave anechoic chamber, the measured values related to efficiency and gain are shown in the table below.

Frequency (MHz)	Gain (dBi)	Efficiency (%)
2400	1.71	42.50
2410	2.00	43.80
2420	2.16	44.10
2430	2.25	45.00
2440	2.12	44.90
2450	2.16	45.10
2460	2.30	45.30
2470	2.23	45.50
2480	2.26	45.80
2490	2.37	45.50
2500	2.40	45.00

2.2.4 Radiation Pattern Results





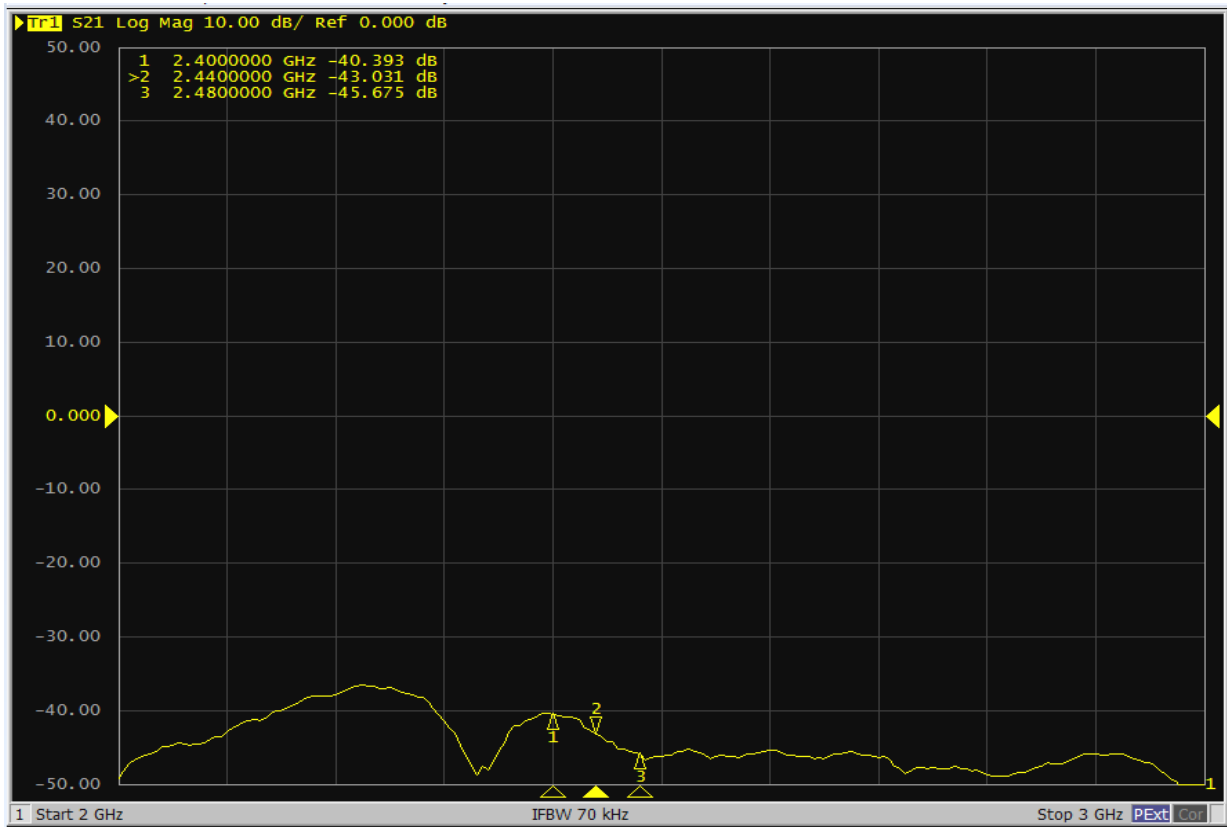
2.3 OTA test

2.3.1 Results Summary

Channel	Power (dBm)	Sensitivity (dBm)
0	4.15	-89.55
39	4.46	-86.48
78	4.14	-85.51

2.4 Isolation test

2.4.1 Results Summary



Frequency (MHz)	2400	2440	2480
Isolation (dB)	-40.39	-43.03	-45.68

3、 Conclusion

This antenna is designed on the basis of the prototype provided by the customer. The above electrical performance parameters are tested under the environmental treatment conditions of the test prototype. The electrical parameters and structural performance have met the technical requirements. Please confirm!

4、Part Drawing

技术要求:
 1. 未标注尺寸依照图纸;
 2. 无虚焊、假焊、连锡、短路、断路等焊接不良现象;
 3. 所有部件需符合RoHS/REACH要求。

1	2	3	4	5	6	7	8		
No.	Part No.	Name	Specification	Amount	Remark	Rev	Description	Date	Remark
2	164-SB510-12A	SB510 BT 同轴线	Ø1.13*370mm/黑色同轴线/一代端子	1		A	New drawing		
1	100-SB550-11A	SB550 BT PFC	单面板PT电焊铜, 黑色, 背胶3M9471	1					

远德电子(深圳)有限公司 Yuan de Electronics (Shenzhen) Co. LTD			
Third Angle	Project	Date	2023-08-11
0~10 ±0.05	SB550	Designed by	张登桥
10~18 ±0.10	BT天线	Checked by	RF
18~30 ±0.12	136-SB550-10A	Approved by	MD
30~40 ±0.15	/	Unit	mm
40~ ±0.20	Technology	Scale	1:1
Location		Rev	AI