

SPECIFICATION

Shenzhen Daxian Technology Co., Ltd.



Tymphony BB4 BT antenna assembly

Product specification

Guest households	Tymphony	frequency band	2400MHz~2500MHz
Project name	BB4	version	V1.0
Material No.	1B-B4XXX-113	color	Black
Customer Item Number	T690800045900		
R F design	Chuan.Shen	structure design	RuiBin.Zhou
Quality Manager	ZiYin.Hu	R & D director	Lei.Zhang
Date	2025-1-11		



client confirmation:

Whether the assembly meets your requirements: OK NG

Shenzhen Daxian Technology Co., Ltd.

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Confidential requirement

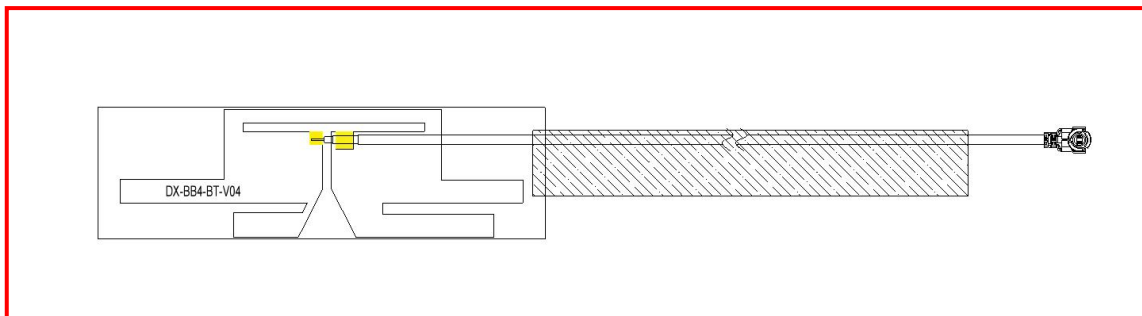
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— Project description

Customer name:	Tymphony
Whole machine type:	Loudspeakerbox
Antenna band:	2400 ~ 2500MHz
Antenna form:	FPC+coaxialline+wiresponge
Feed form:	weld
Hardwareversion:	/

一、BT antenna

This report provides a variety of measurements of the electrical performance of the **BB4 Bantenna**. Figure 1 shows the antenna designed by the display.



antenna appearing diagram

Figure 1

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1.1 Electrical specification standard

The frequency range of the antenna is 2400 ~ 2500MHz. The following table indicates the electrical performance specifications of the antenna. The antenna is designed and manufactured by a large display.

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

1.2 Antenna composition

The antenna is mainly composed of FPC+coaxialline+wiresponge.

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2、 The Equipment of Active Test

Satimo 3D Chamber 6×4×4(m)

Agilent 8960 E5515c

Network analyzer-R&S ZVL



Figure 2

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3 test

3.1 The Test of standing Wave (VSWR)

3.1.1 The Test of standing Wave (VSWR): In turn, the connection of the VSWR testing device is as follows: RES ZVL Network Analyzer / testing Line / testing tool

Actual measurement (with diagram)

3.2 Measurement of Efficiency, Power (TRP) and Sensitivity (TIS)

3.2.1 Test site:

Large-scale microwave darkroom. The test frequency range is 400MHz / 6GHz, the static range is 50cm circumferential and the reflectivity is less than-50 dB..

3.2.2 Test instrument:

Rs ZVL Network Analyzer, Agilent8960 E5515C, Standard Horn Antenna, French SATIMO-SG24SYSTEM system, Printer, etc.

3.2.3 test data : In microwave anechoic chambers, the power and sensitivity values measured are shown in the following table:

OTAactivetesting:

BAND	CH	TRP (dBm)	TIS (dBm)
BT	0	6.36	-92.29
	39	6.85	-92.68
	78	6.42	-92.39

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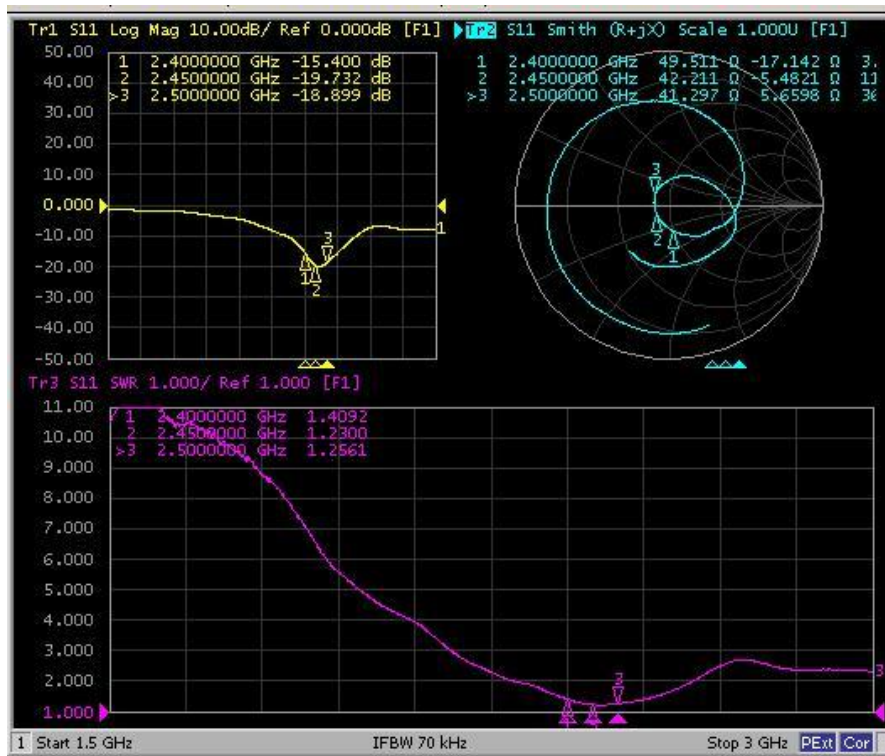
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Passive efficiency & gain:

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	49.12	-3.09	2.15
2410	49.87	-3.02	2.26
2420	50.72	-2.95	2.34
2430	50.36	-2.98	2.29
2440	51.18	-2.91	2.36
2450	51.95	-2.86	2.48
2460	51.71	-2.84	2.25
2470	51.43	-2.89	2.33
2480	50.65	-2.95	2.22
2490	50.17	-3.00	2.31
2500	50.04	-3.01	2.34

4、VSWR parameter diagram

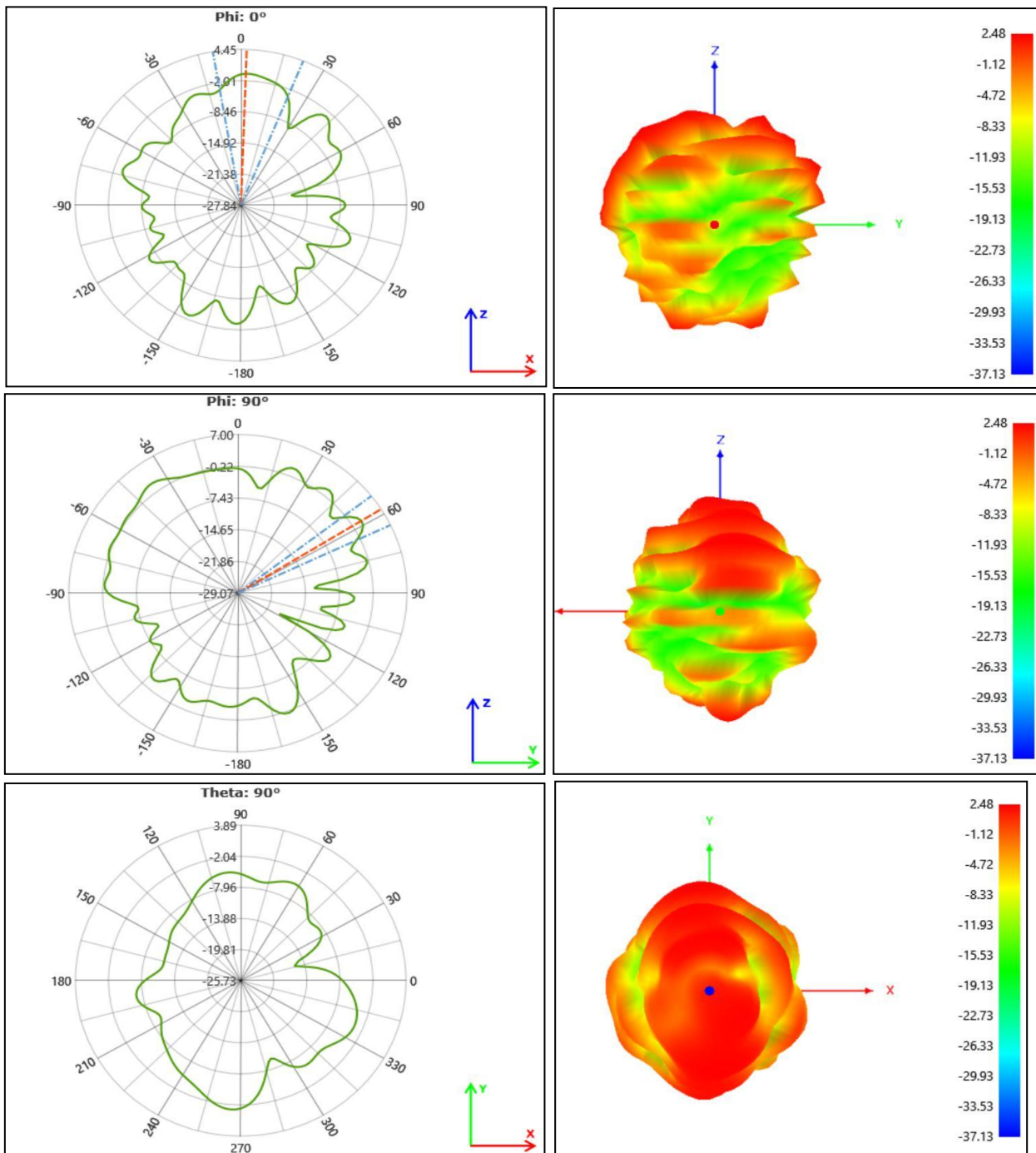


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5、 Antenna passive field pattern diagram



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6、Outdoor Pull distance test:

Pull distance test:

Testing time: 2025/02/08

test site : Near Tiegang Reservoir, Shenzhen

Test Cell Phones : Iphone 14 Pro

Test direction	ahead	empress	left	right
	Test Distance			
BT	100M	100M	100M	100M

7、Harman RF attenuation test data:

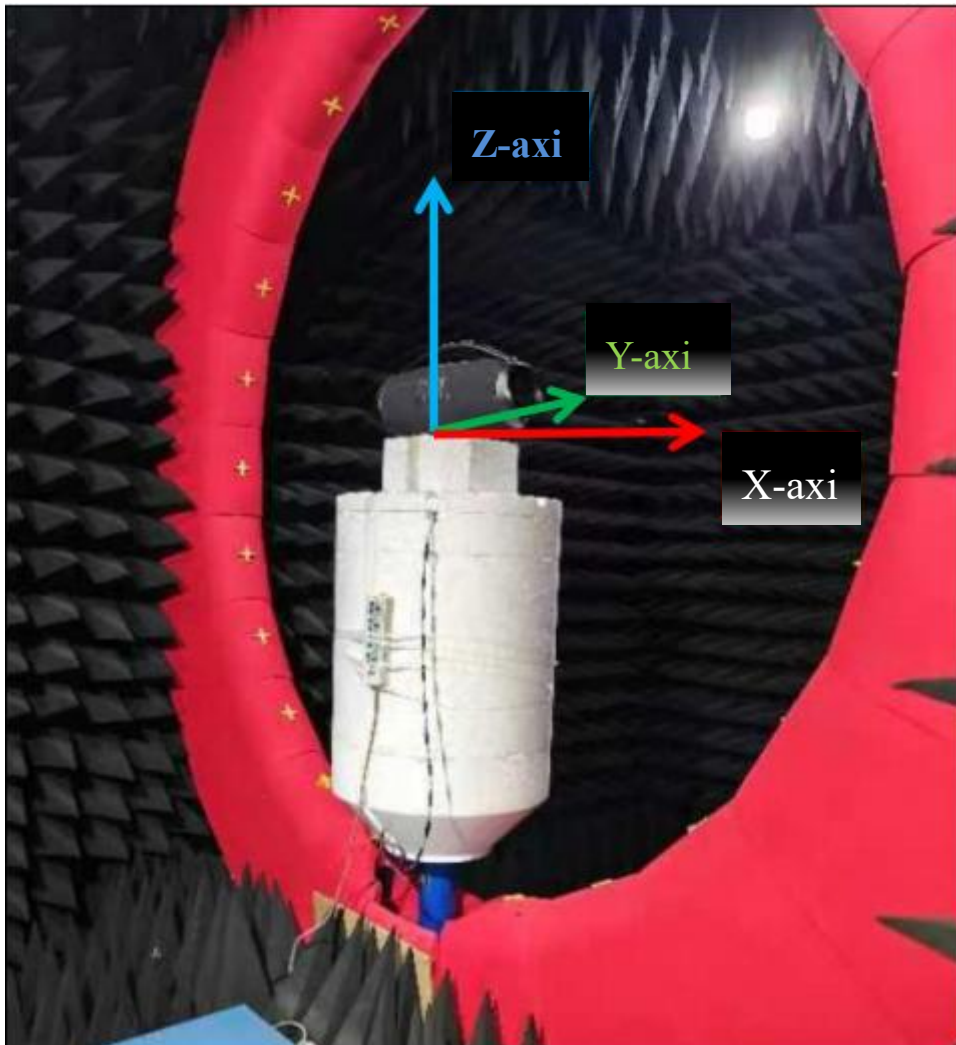
Machine Orientation Surface	BT
ahead	30 db
left	29 db
empress	30 db
right	29 db

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8、 Darkroom coordinate system



9、 conclusion:

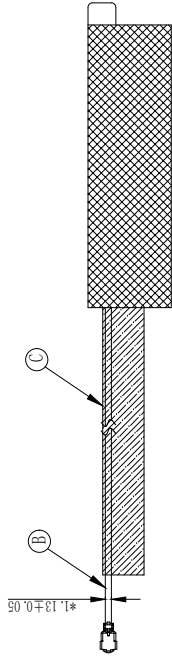
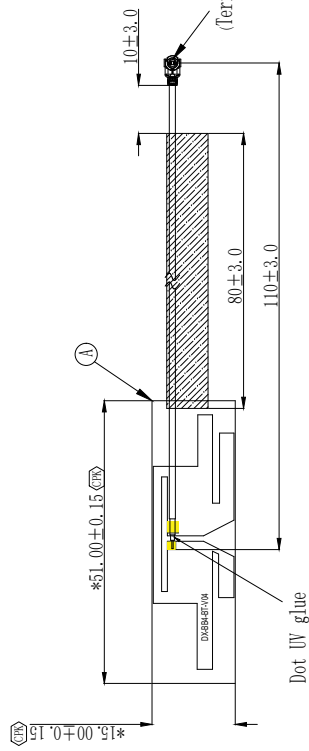
This antenna is designed on the basis of the prototype provided by the customer, electrical parameters and structural performance have reached the technical requirements, please confirm!

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A	B	C	D
1	2	3	4
5	6	7	8
9	10	11	12



C

C	Cable sponge	PU	black
B	RF connector	Cable	black
A	FPC	Electrolytic copper PI	black
Serial number	Part Name	Material	Colour

Technical requirement:

1. "*" is the key dimension;
2. Please refer to the drawing for unspecified dimensions;
3. There should be no poor operation such as faulty soldering, missing soldering, short wires, broken wires, etc;
4. Meet RoHS requirements.



Shenzhen Daxian Technology Co., Ltd.

Machine model	BB4	Product Color	Black	Date	2025/03/04
Project Code	CB-B4XXX-113	Mold surface treatment	NA	MD	RuibinZhou
Part Name	BT antenna	unit	mm	RF	ChuanShen
Part Number	1B-B4XXX-113	比例 (scale)	1:1	Check	KangZhou
material	FPC+sponge+RF connector	Third perspective		Ratify	LeiZhang
Save Path		Current version			A

D

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