

# SPECIFICATION



**Shenzhen Daxian Technology Co., Ltd.**

Cosonic CE-2176N Right ear  
Bluetooth headset antenna

## Material Recognition Letter

Guest households	Cosonic	frequency band	2400MHz~2500MHz
Project name	CE-2176N	version	V7.9
Material No.	2E-2176N-108	color	Black
R F design	Peng.Hu	structure design	RuiBin.Zhou
Quality Manager	Jin.Yang	R & D director	Lei.Zhang
Date	2024-05-11		

client confirmation:

Whether the assembly meets your requirements: OK NG

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## Change resume

version number	Change content	Reason for change	Initiate change Party	date	Modifier
V1.0	create			2024.5.11	

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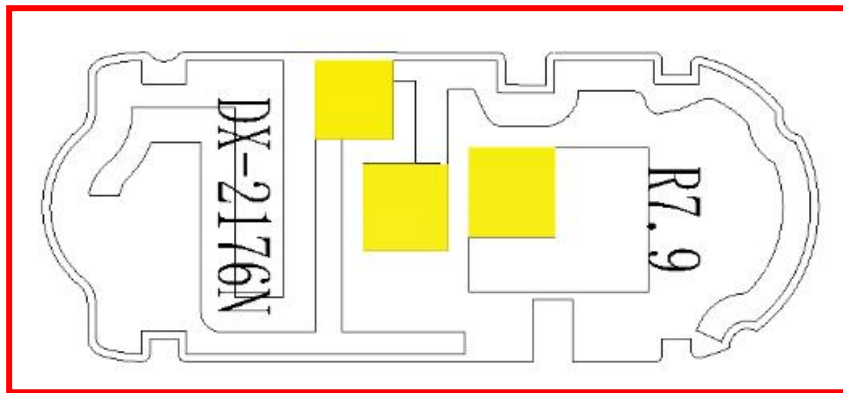
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## I、 Project description

<b>Customer name:</b>	Cosonic
<b>Whole machine type:</b>	Bluetooth headset
<b>Antenna band:</b>	2400 ~ 2500MHz
<b>Antenna form:</b>	FPC
<b>Feed form:</b>	flick a foot
<b>Number of feed feet:</b>	2 left and right ears
<b>Hardware version:</b>	<b>motherboard:</b>

## II、 BT antenna

This report provides a variety of measurements of the electrical performance of the CE-2176N antenna. Figure 1 shows the antenna designed by the display.



antenna appearing diagram

Figure 1

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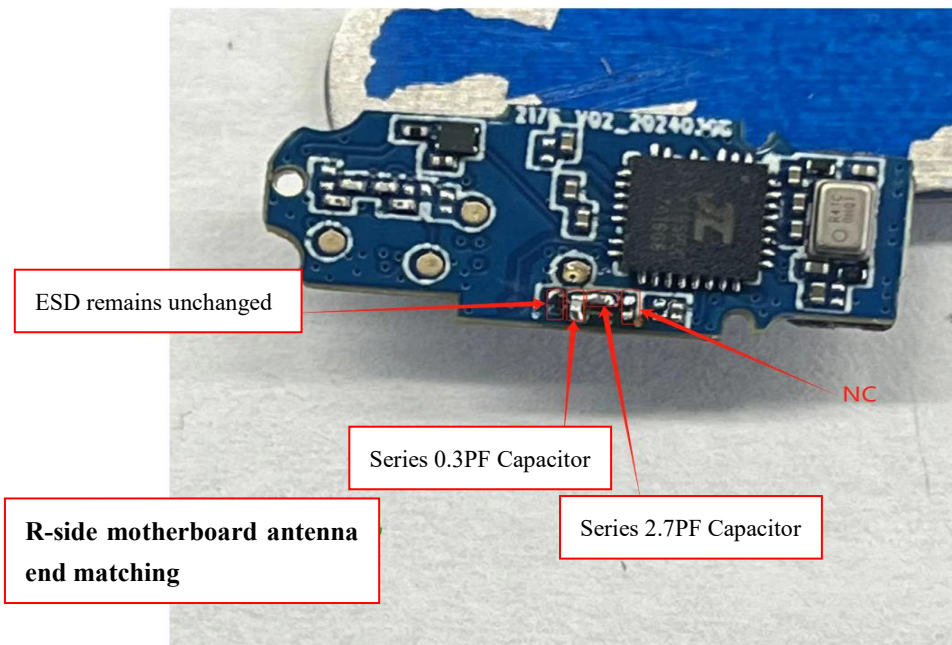
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## 1.1 Electrical specification standard

The frequency range of the antenna is 2400 ~ 2500 MHz. 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
Right ear BT	2400 ~ 2500	$\leq 3$

## 1.2 Motherboard antenna end match:



## 1.3 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



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:**

**OTA Active Test:**

R (Right ear)Free Space			
BAND	CH	TRP	TIS
BT	0	2.59	-86.79
	39	3.23	-87.43
	78	2.83	-87.37

R(Riht ear)head Mold			
BAND	CH	TRP	TIS
BT	0	-2.55	-82.03
	39	-2.17	-82.39
	78	-1.79	-82.58

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**Passive Test: R-side-freedom efficiency**

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	20.11	-6.21	-1.72
2410	21.08	-5.94	-1.47
2420	22.44	-5.58	-1.46
2430	23.52	-5.32	-1.38
2440	24.35	-5.13	-1.16
2450	25.47	-4.89	-0.79
2460	26.03	-4.77	-0.6
2470	25.95	-4.79	-0.43
2480	25.71	-4.84	-0.3
2490	25.09	-4.97	-0.28
2500	23.97	-5.22	-0.32

**R-side-head mold efficiency:**

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	8.13	-10.63	-5.96
2410	8.22	-10.56	-5.74
2420	8.28	-10.52	-5.82
2430	8.18	-10.59	-5.82
2440	8.05	-10.68	-5.66
2450	8.04	-10.69	-5.42
2460	7.88	-10.8	-5.52
2470	7.71	-10.94	-5.54
2480	7.55	-11.05	-5.52
2490	7.39	-11.18	-5.57
2500	7.21	-11.33	-5.84

**4、 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!

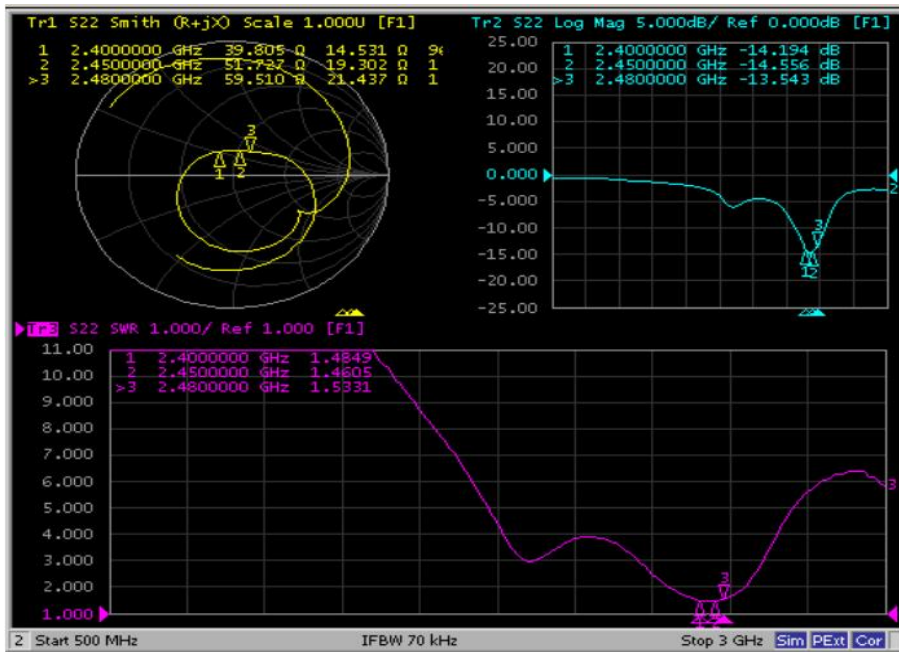
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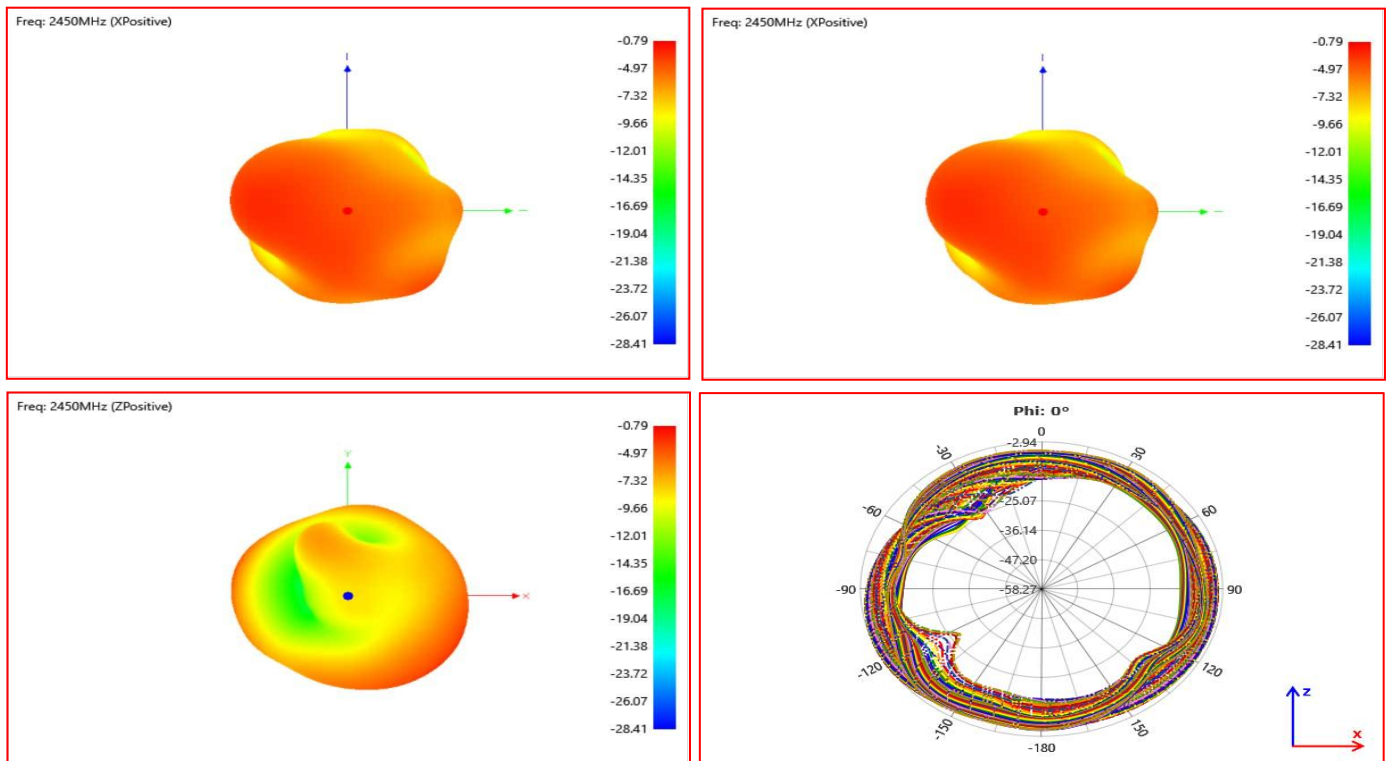
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## 5、 VSWR parameter diagram-Right ear



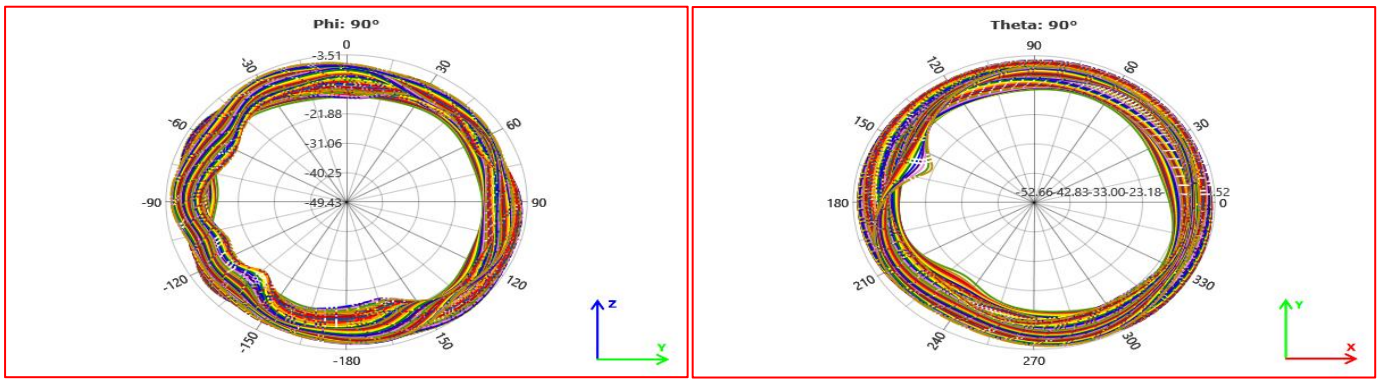
## 6、 Antenna passive field pattern:



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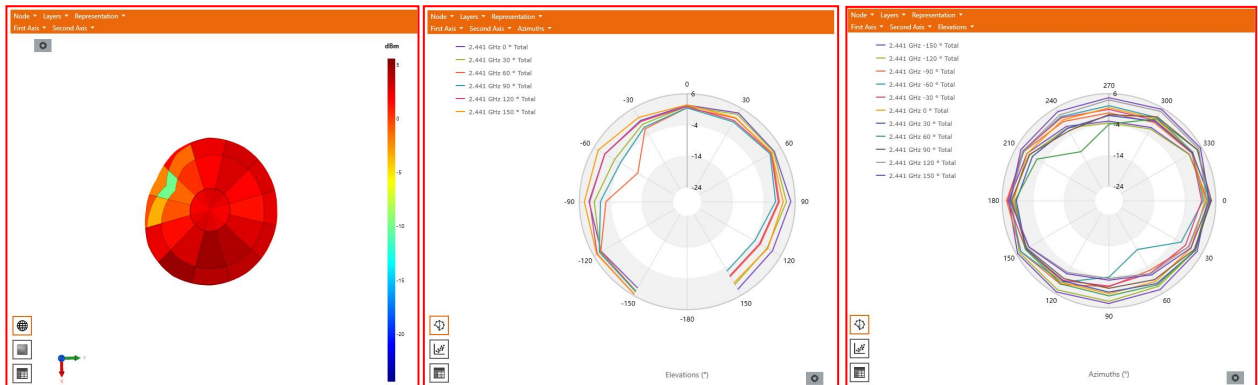
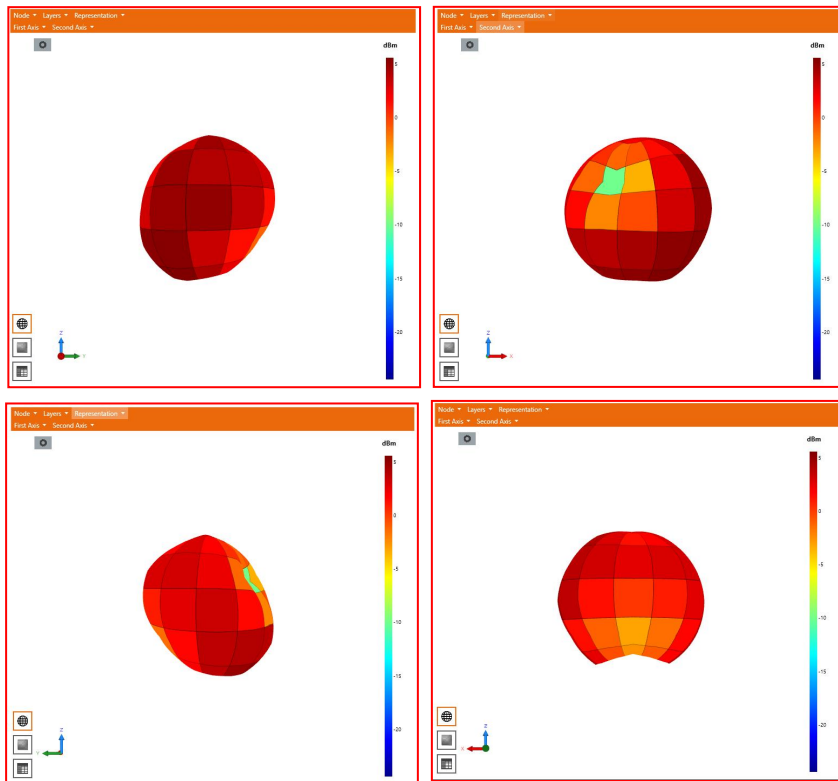
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## 7、 Antenna Active Field Patterns:

TRP:

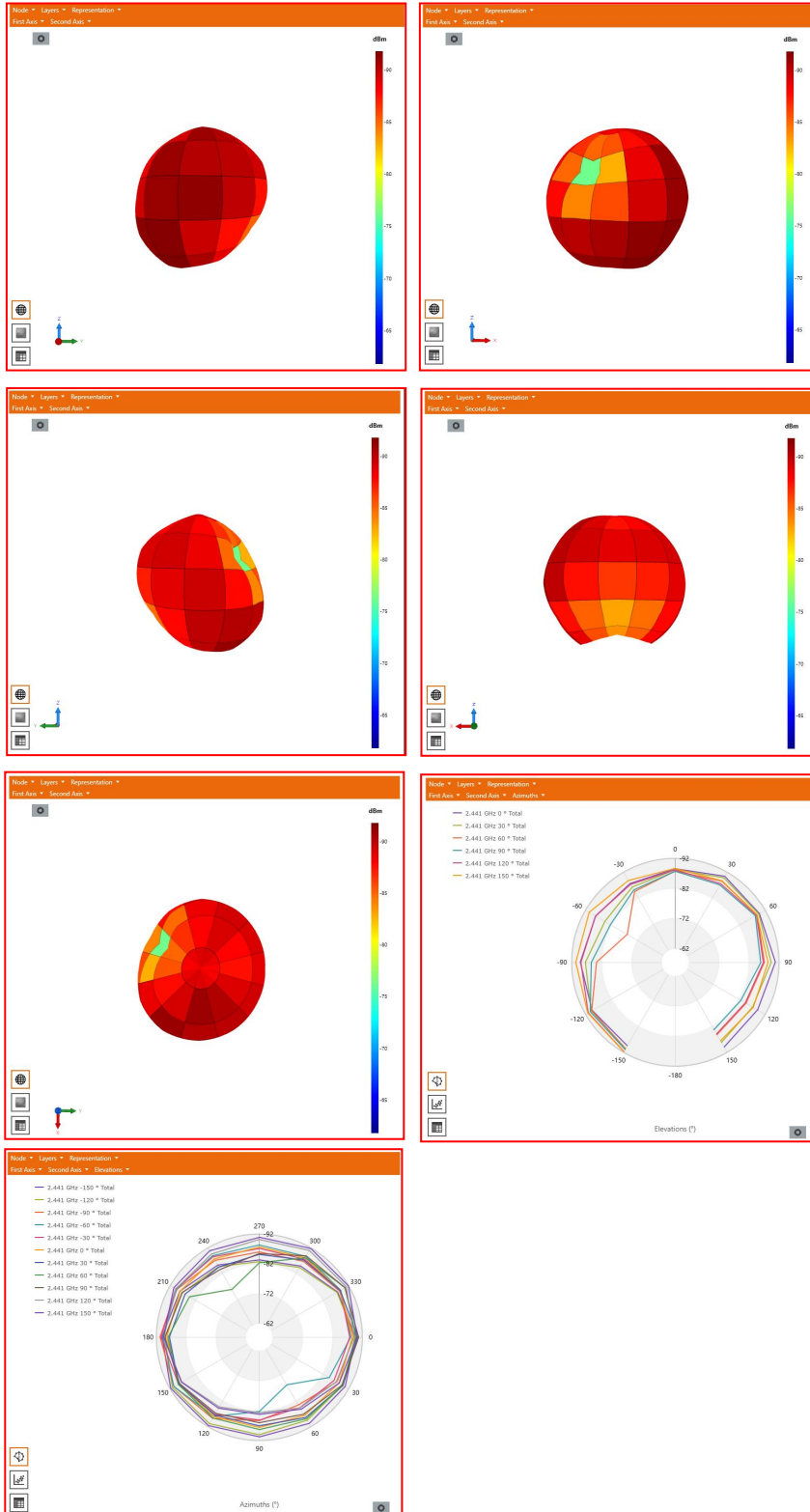


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TIS:

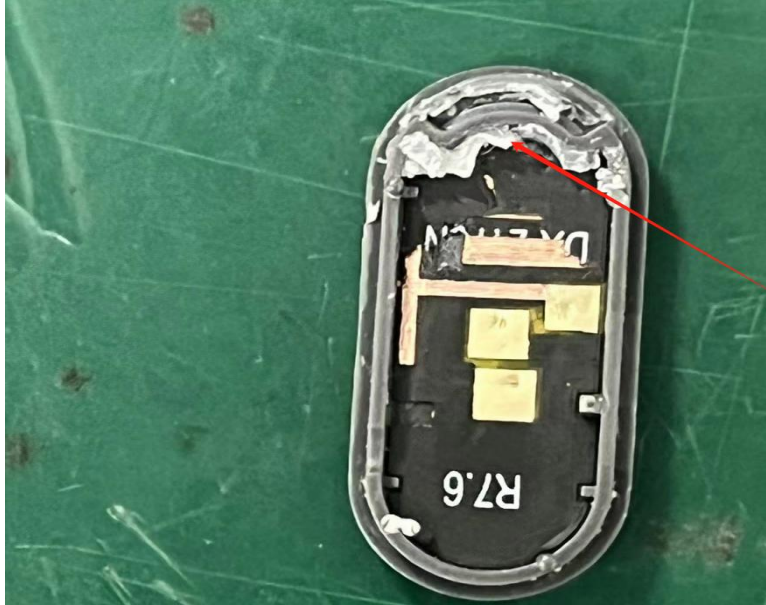


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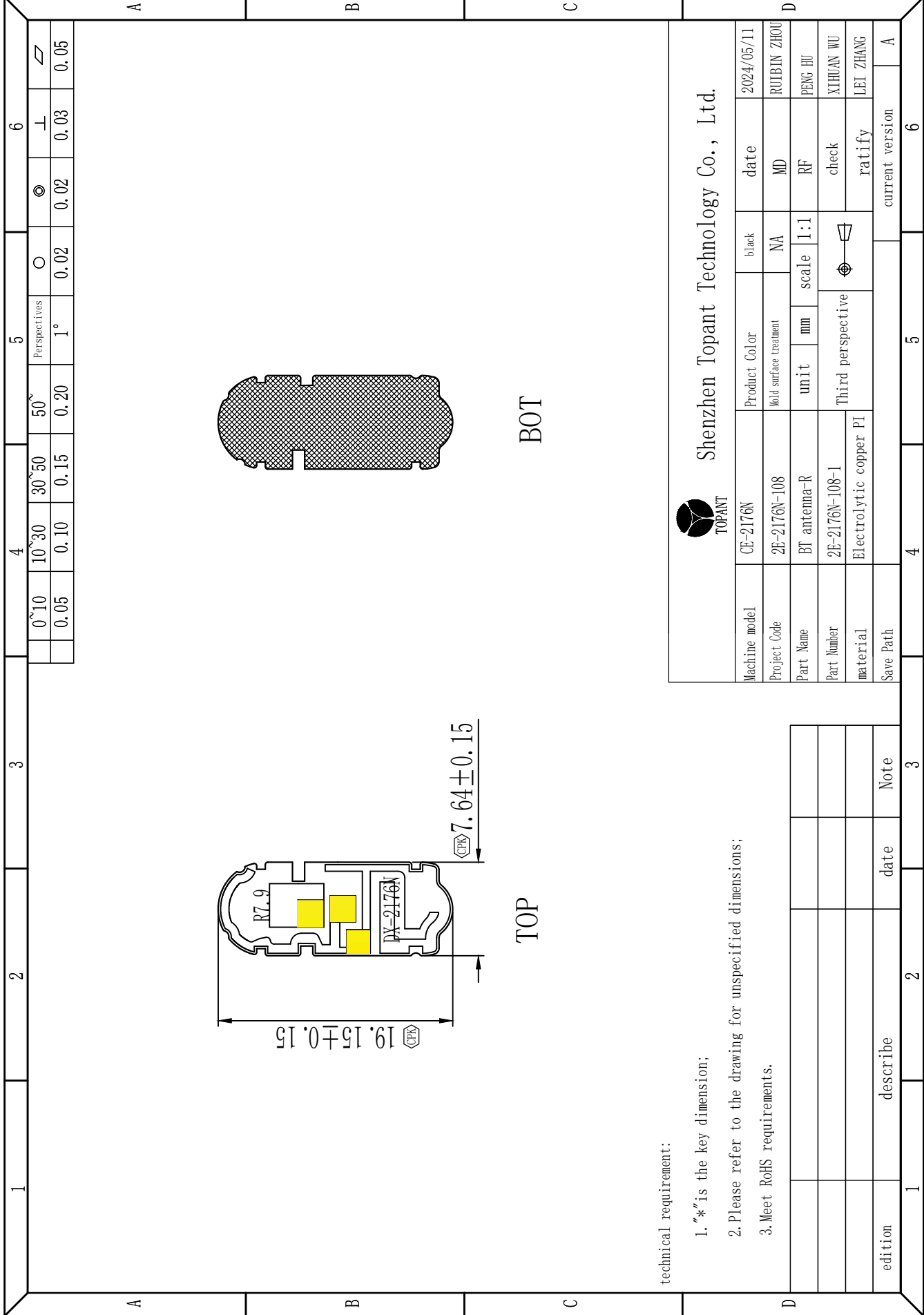
## 8、 Loading Notes:



Reference picture: need to reduce the control of the amount of glue, can not let the glue directly overflow to the top of the FPC antenna.

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TOP

BOT

technical requirement:

1. "\*" is the key dimension;
2. Please refer to the drawing for unspecified dimensions;
3. Meet RoHS requirements.



Shenzhen Topant Technology Co., Ltd.

Machine model	CE-2176N	Product Color	black	date	2024/05/11
Project Code	2E-2176N-108	Mold surface treatment	NA	MD	RUBIN ZHOU
Part Name	BF antenna-R	unit	mm	scale	1:1
Part Number	2E-2176N-108-1	Third perspective	RF	check	PENG HU
material	Electrolytic copper PI			ratify	XIHUAN WU
Save Path				current version	LEI ZHANG
					A

edition	describe	date	Note