

# SPECIFICATION

Daxian Communication Technology Limited

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

## SKYLARK EM112 Microphone TX antenna

### Product specification

Guest households	SKYLARK	frequency band	2400MHz~2500MHz
Project name	EM112	version	V01
Material No.	2E-M112X-031	color	stainless steel
R F design	Chuan.Shen	structure design	Yezhi.Bi
Quality Manager	Jin.Yang	R & D director	Lei.Zhang
Date	2023-09-07		

client confirmation:

Whether the assembly meets your requirements: ☐OK ☐NG**Shenzhen Topant Technology Co., Ltd.**

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## Confidential requirement

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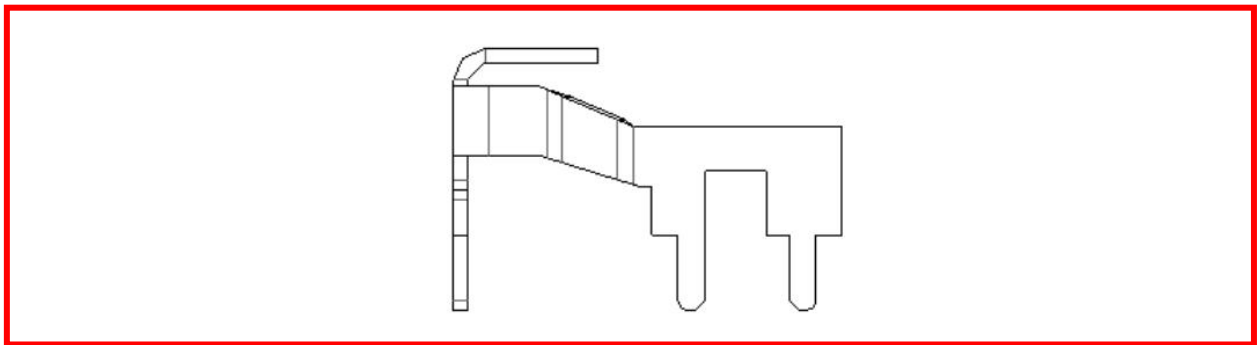
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## — Project description

<b>Customer name:</b>	SKYLARK
<b>Whole machine type:</b>	Microphone
<b>Antenna band:</b>	2400 ~ 2500MHz
<b>Antenna form:</b>	shrapnel
<b>Feed form:</b>	weld

## 一、TX antenna

This report provides a variety of measurements of the electrical performance of the EM112 antenna. Figure 1 shows the antenna designed by the display.



antenna appearing diagram

Figure 1

### 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.

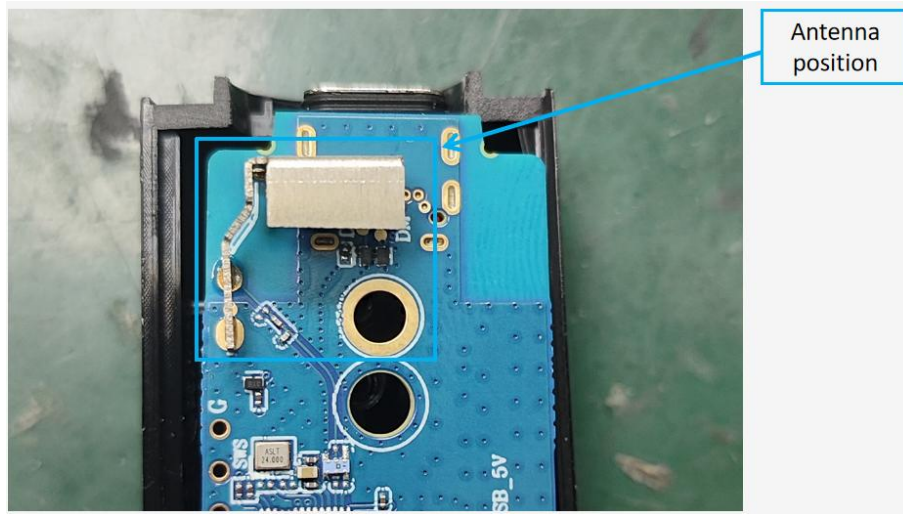
Frequency Range	Frequency (MHz)	VSWR
TX	2400 ~ 2500	$\leq 3$

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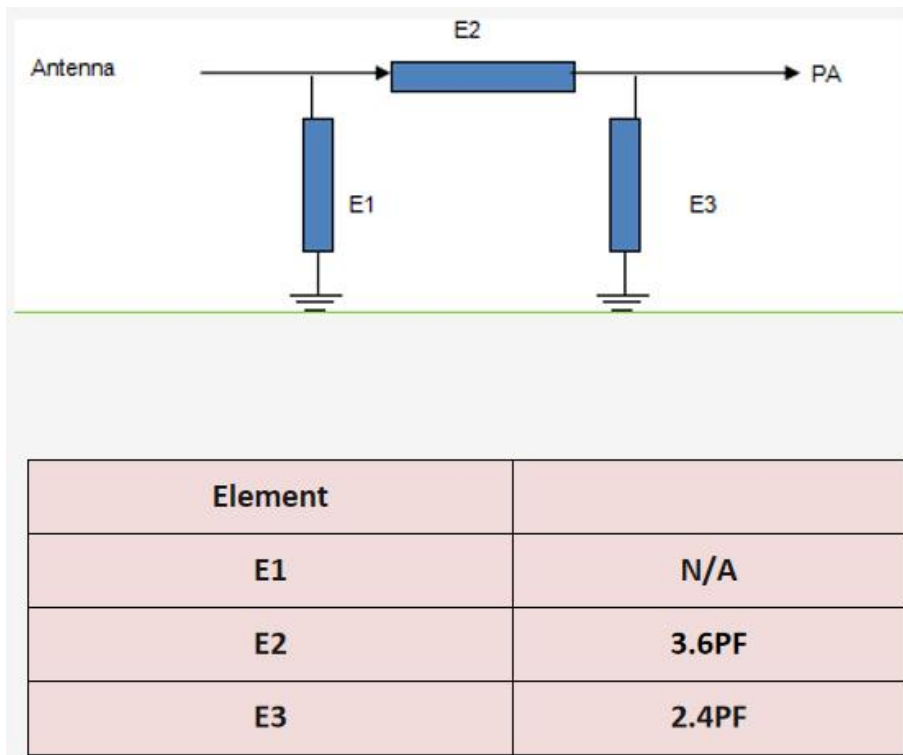
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## 1.2 Antenna position picture



### 1.2.1 antenna matching



## 1.3 Antenna composition

The antenna is mainly composed of shrapnel.

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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:

BAND	CH	TRP (dBm)	TIS (dBm)
BT	0	9.37	-87.13
	39	9.76	-88.80
	78	9.81	-88.41

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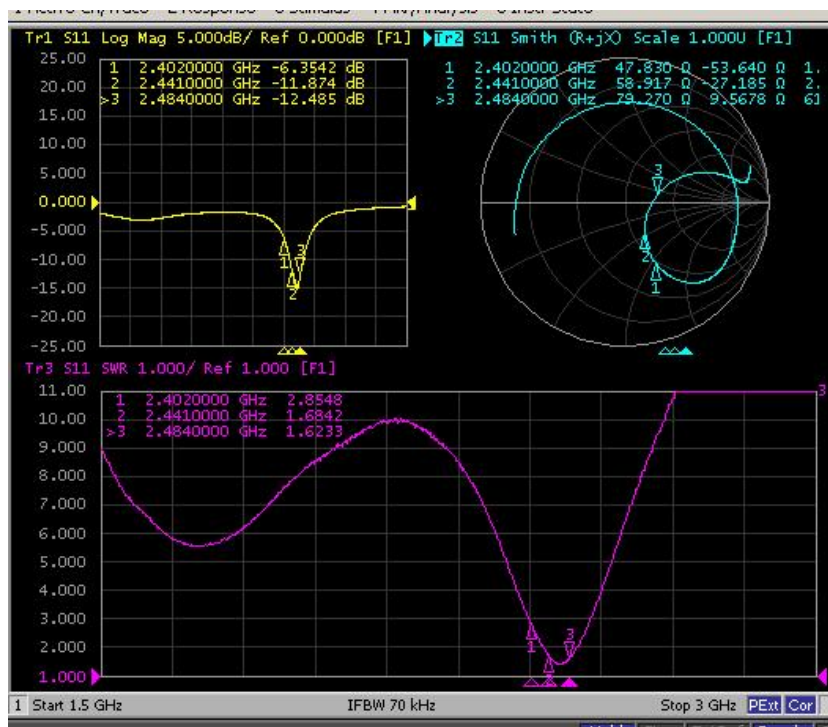
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## OTA Passive Efficiency&Gain Test:

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	41.48	-3.82	1.11
2410	41.84	-3.78	1.28
2420	42.07	-3.76	1.31
2430	42.27	-3.74	1.29
2440	42.43	-3.72	1.17
2450	43.11	-3.65	1.33
2460	43.26	-3.64	1.22
2470	42.81	-3.68	1.18
2480	42.62	-3.70	1.25
2490	41.93	-3.77	1.16
2500	41.21	-3.85	1.24

## 4、 Attachment chart

### 4.1 VSWR parameter diagram



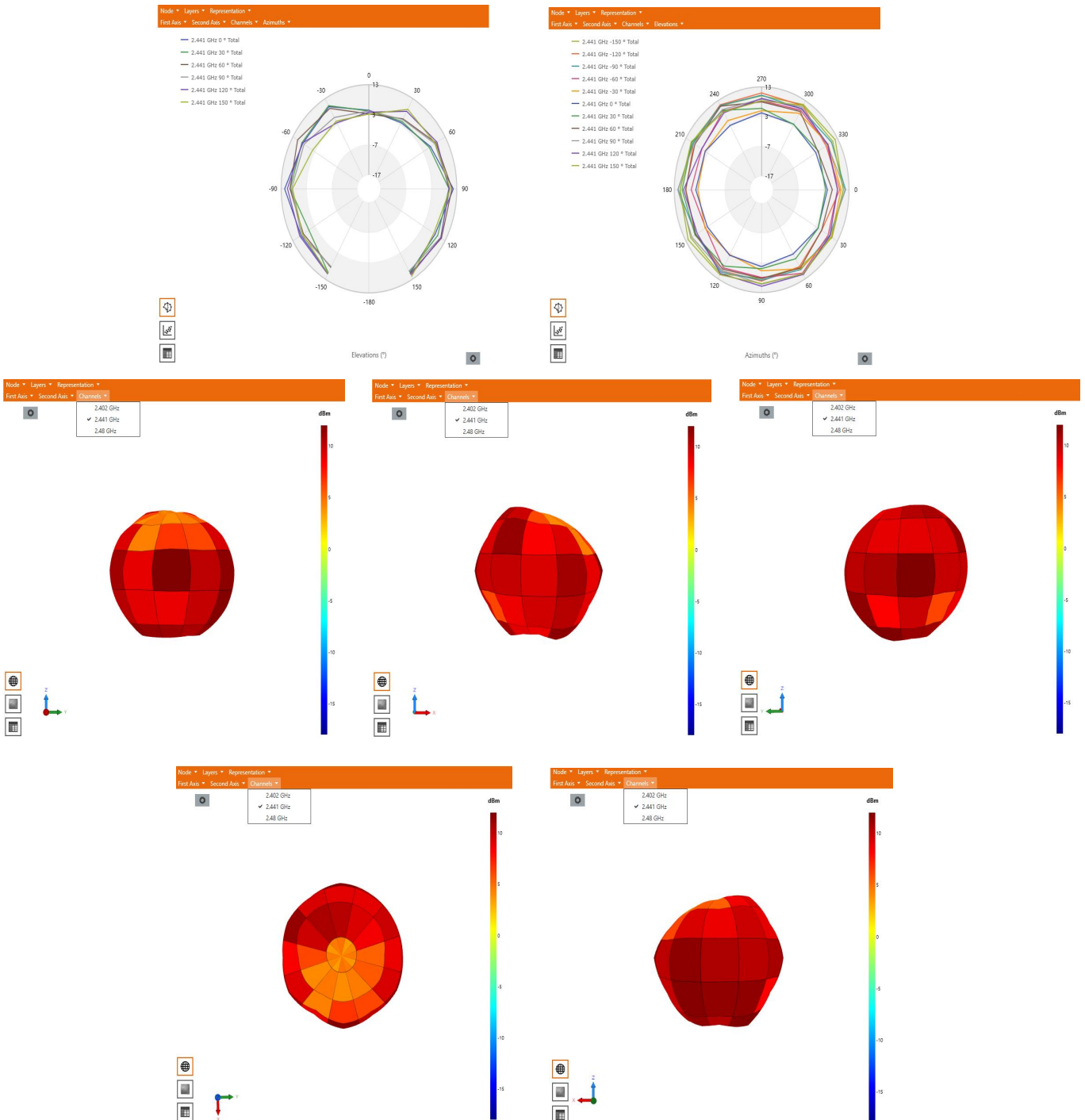
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## 5、Antenna active field pattern diagram--TRP

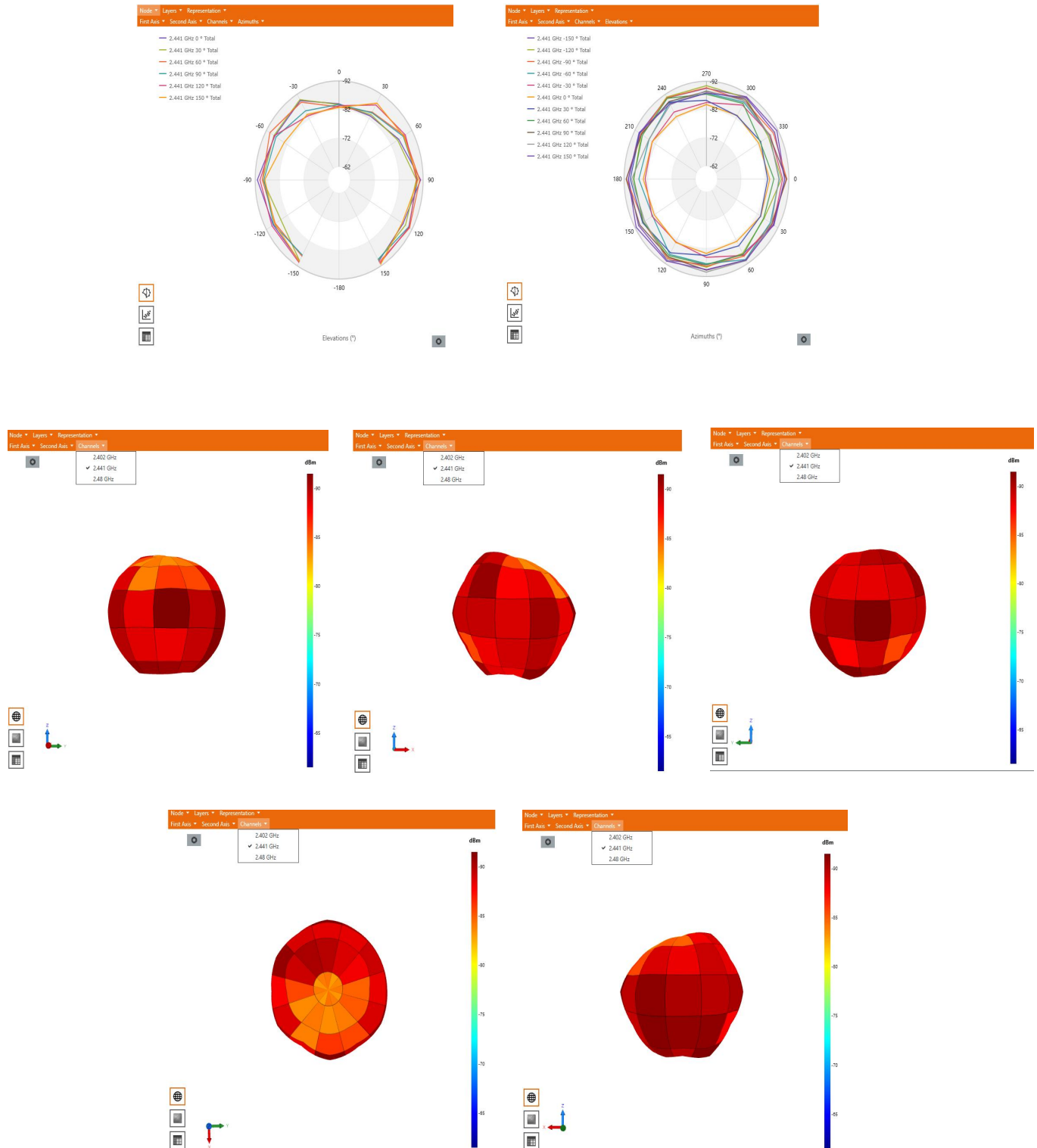


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## 5.1、Antenna active field pattern diagram--TIS

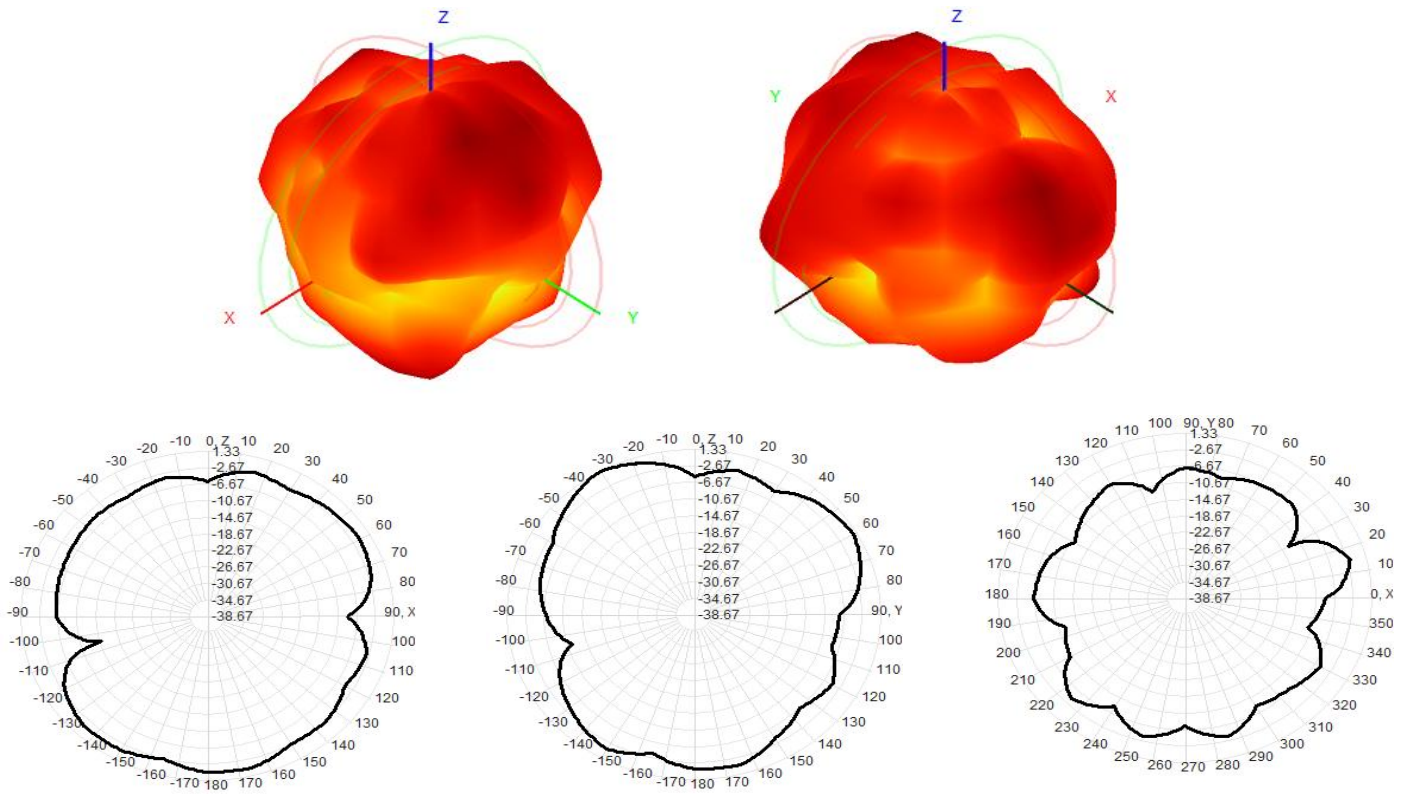


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## 6、Antenna passive field pattern diagram




## 7、 conclusion:

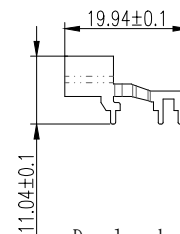
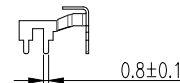
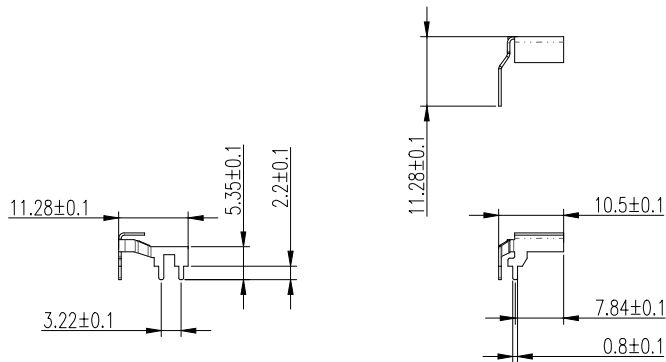
This antenna is designed on the basis of the prototype provided by the customer, electrical parameters and structural performance have reached the technical requirements, please confirm!

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1				2	3	4			5			6				
Third perspective							0~10	10~30	30~50	50~	Angle	○	◎	⊥	▨	
Unit	mm	A	scale	1:1			A	0.05	0.10	0.15	0.20	1°	0.02	0.02	0.03	0.05
							B	0.10	0.15	0.20	0.25	2°	0.03	0.05	0.05	0.08




Developed view

sus304 3/4H T=0.4, plating can be welded nickel after forming, nickel layer 3-6um, welding effectiveness can not be less than 12 months

注:

- 1."\*" is the key size;
2. Please follow the drawing if the dimensions are not marked;
3. Meet our RoHS,REACH, halogen-free requirements.

A	New map	2023-06-09	
Edition	Description	Date	Remark

<div>Shenzhen Topant Technology Co., Ltd.</div>						
Model	EM112	Product color	Natural quality	Date	2023-6-9	
Project Coding	CE-M112X-031	Die surface treatment		Structural design	biyezhi	
Part Name	TX_ANT	Quality requirement		Radio frequency design	shenchuan	
Parts coding	2E-M112X-031-1			Audit	zhoukang	
Material	SUS304 T=0.4 3/4H			Approval	zhanglei	
Save Path					Current version	A