



Item: PM131

fabrication:LYX

Date: 2024.11.2

# Baseus PM131 RF Test report

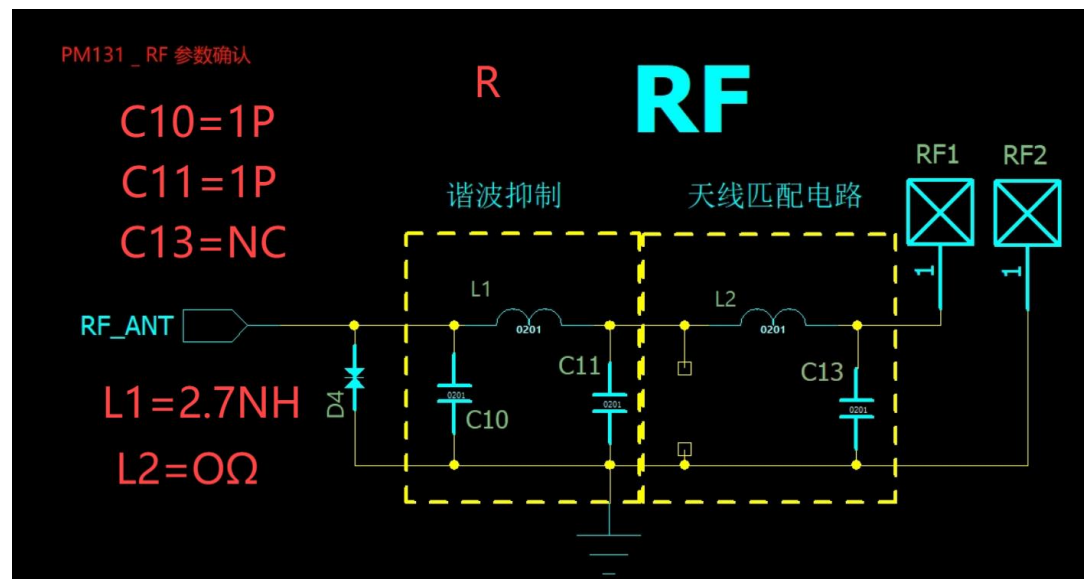
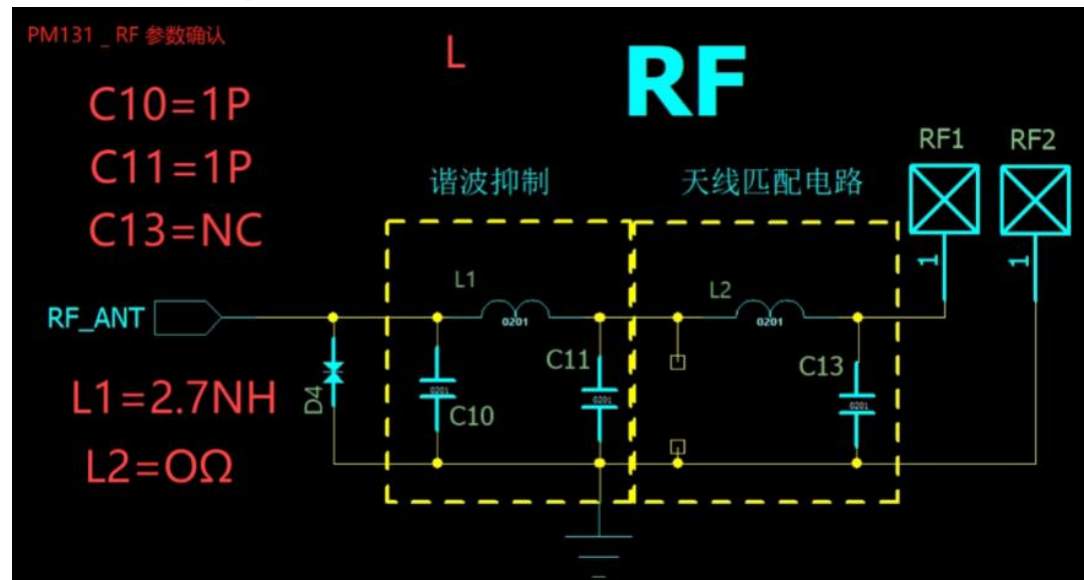
Project resume							
date	Antenna version	software release	Hardware version	Change the reason	Change the content	The test person	remarks
2024.5.18	V1					LYX	
2024.5.22	V2		Antenna bracket change	Waterproof cause		LYX	
2024.7.30	V4		The antenna structure area is reduced			LYX	
2024.8.24	V8					LYX	
2024.9.14	V6		The latest board			LYX	
2024.9.20	V6					LYX	
2024.10.11	V9						
2024.11.2	V10						

## catalogue:

- antenna
- loading coil
- Passive data
- OTA data
- Field test data
- Environmenta
- I treatment
- conclusion

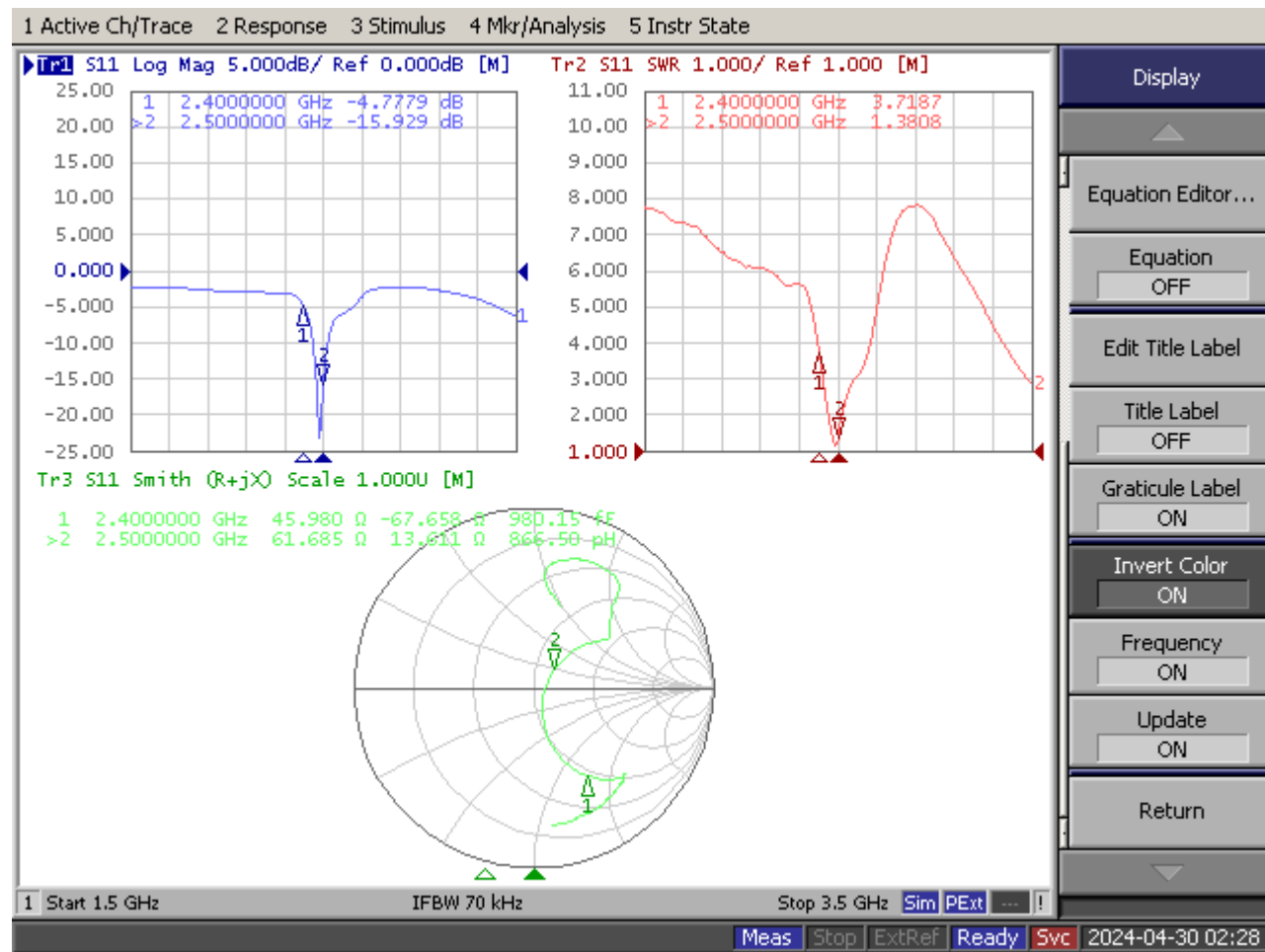


# antenna loading coil



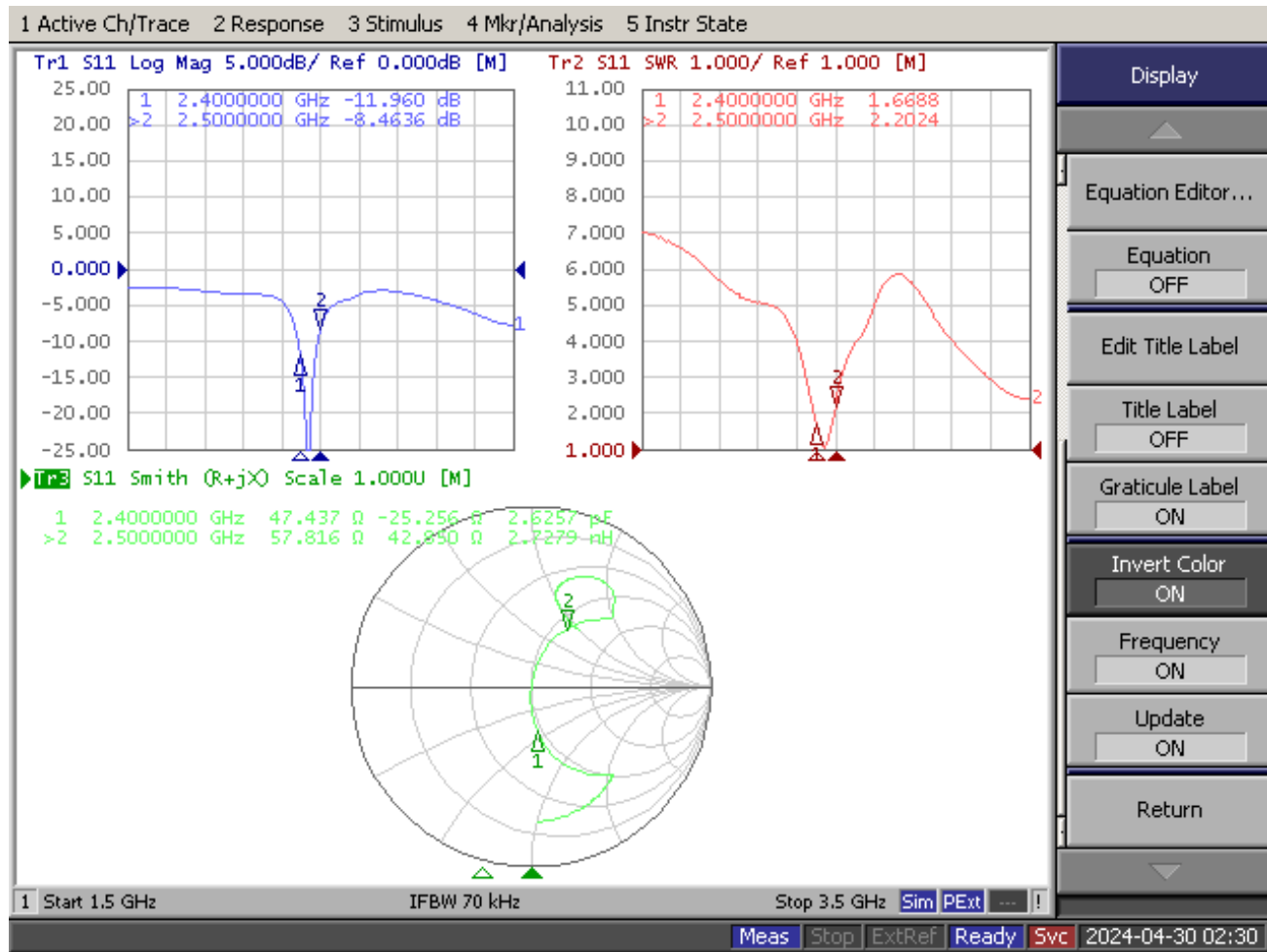
# VSWR@SMITH@LOG MAG

L



# VSWR@SMITH@LOG MAG

R



# Passive efficiency, L

free space

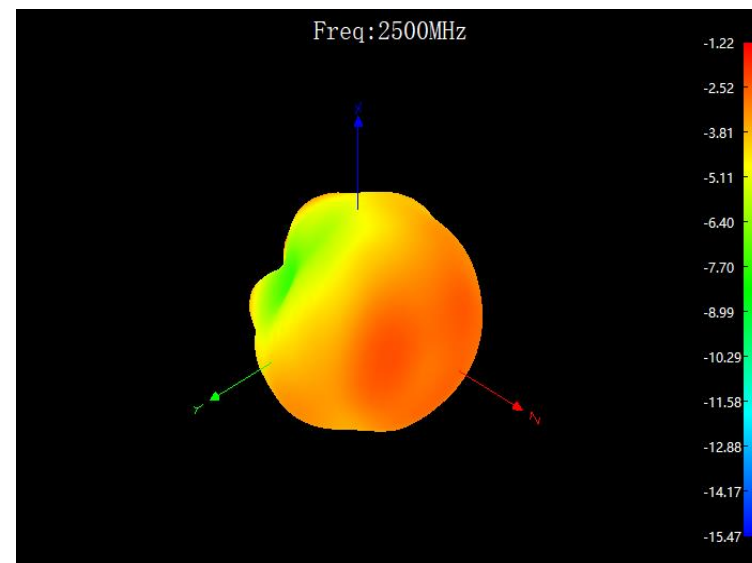
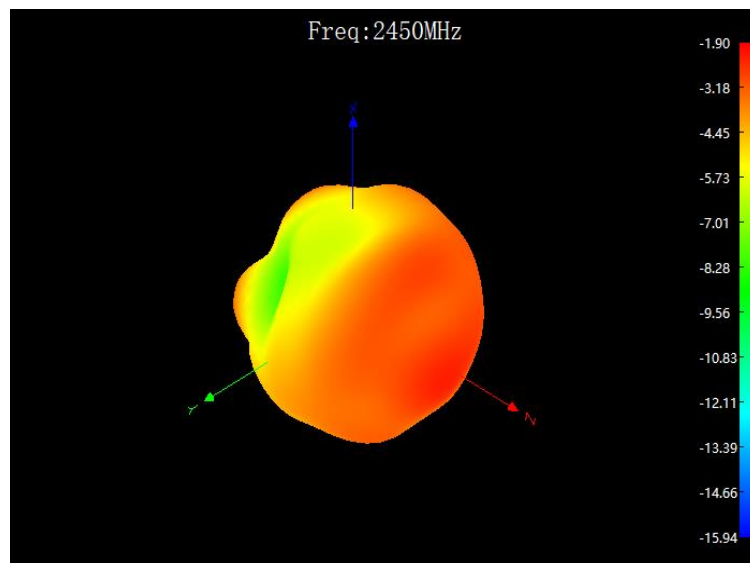
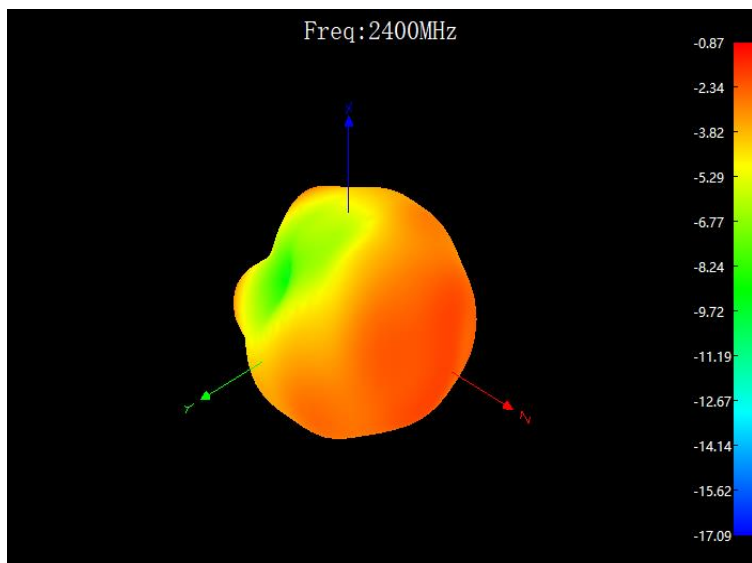
Frequency MHz	Efficiency %	Gain dBi
2400	24.66	-0.87
2410	23.17	-0.98
2420	23.6	-0.6
2430	22.59	-1.1
2440	22.86	-1.55
2450	22.34	-1.9
2460	22.96	-1.7
2470	22.86	-1.42
2480	21.33	-1.27
2490	20.84	-1.13
2500	20.42	-1.22

headfor

Frequency MHz	Efficiency %	Gain dBi
2400	5.51	-7.98
2410	5.24	-8.12
2420	5.38	-8.28
2430	5.35	-8.35
2440	5.62	-8.22
2450	5.6	-8.02
2460	6.05	-7.44
2470	6.24	-7.36
2480	6.04	-7.28
2490	6.1	-7.15
2500	6.08	-6.88

## Antenna gain spectrum

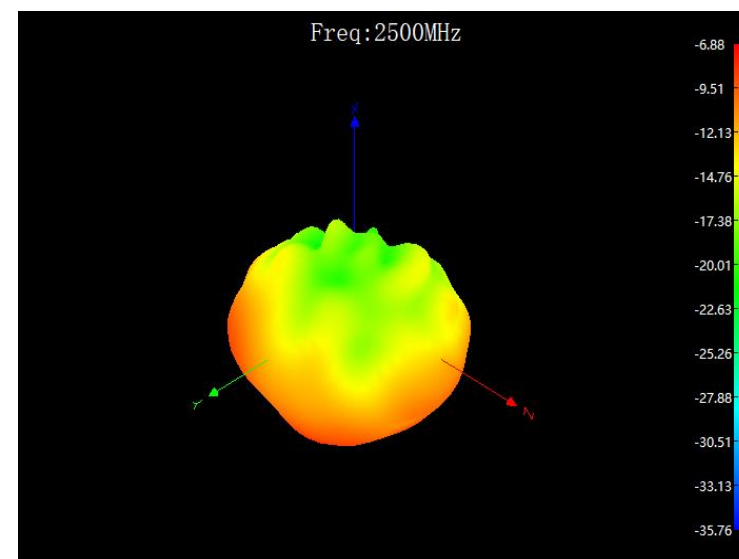
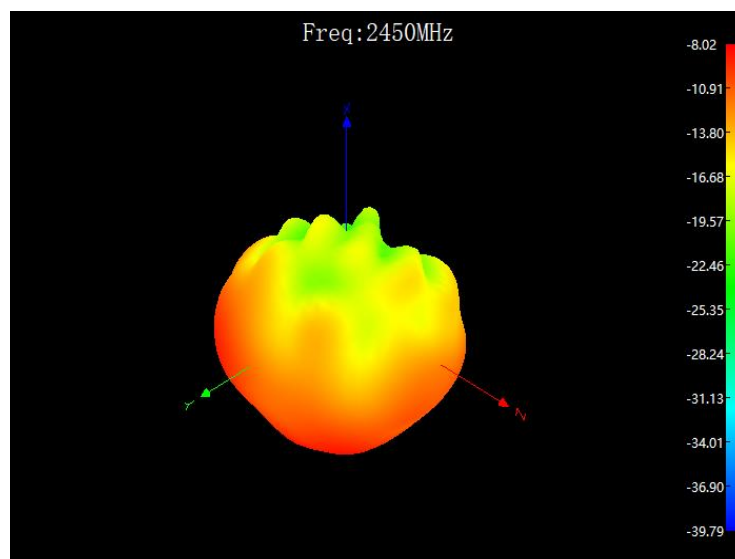
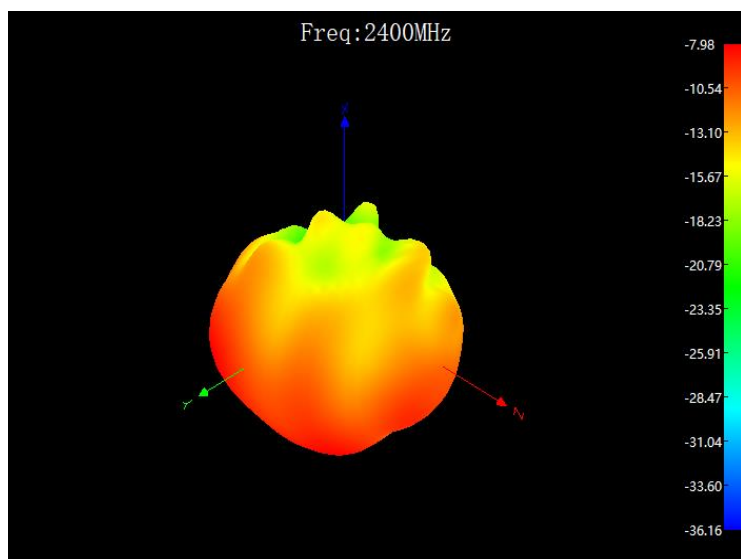
free space L





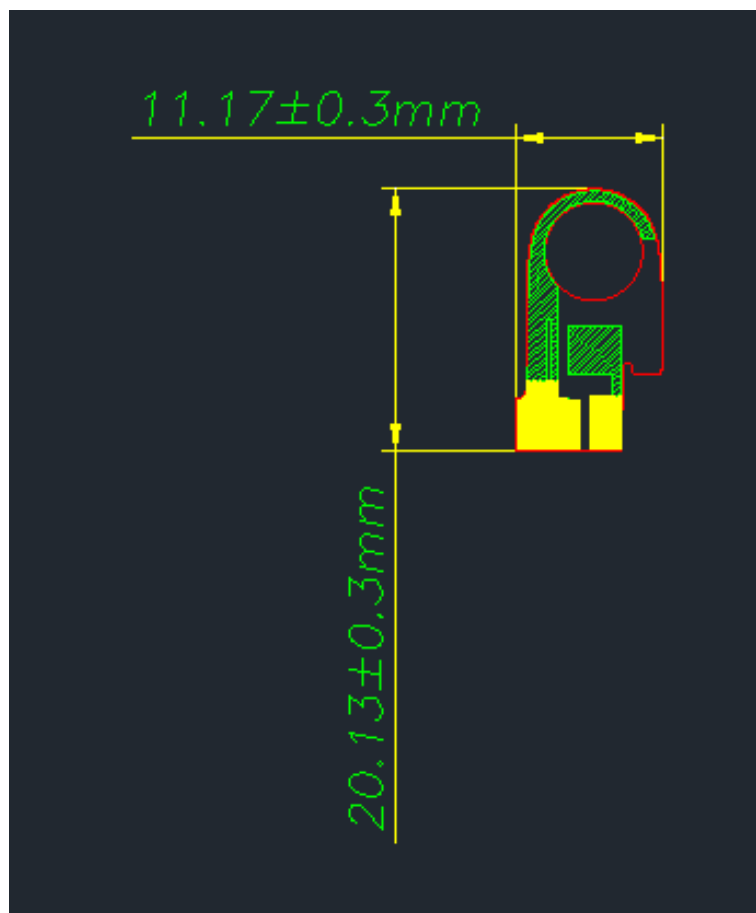
## Antenna gain spectrum

headfor L



## Diagram of antenna size

L





# Passive efficiency, R

free space

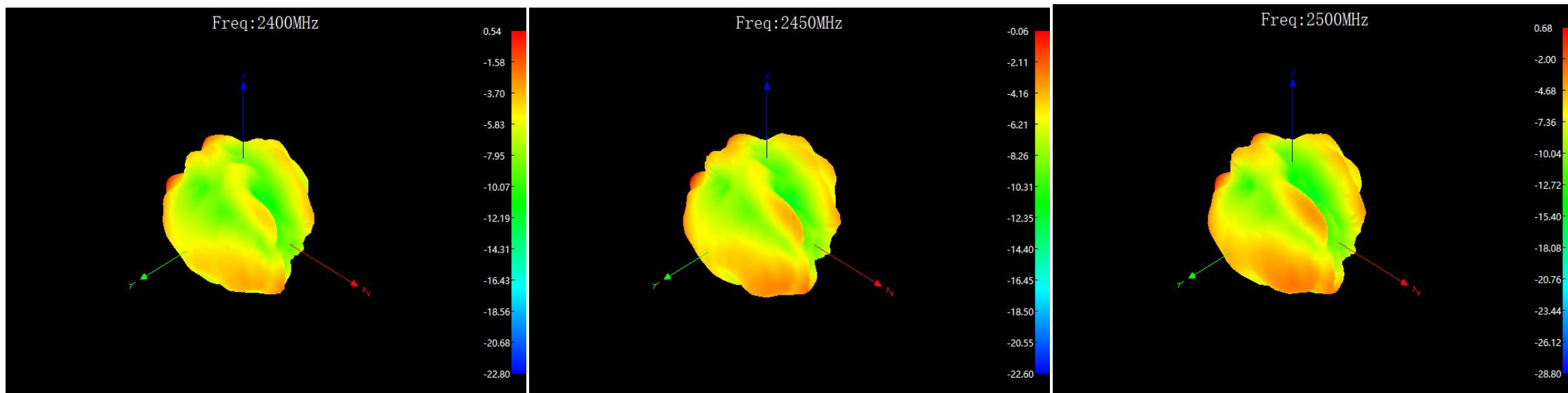
Frequency MHz	Efficiency %	Gain dBi
2400	17.66	0.54
2410	16.41	0.02
2420	17.34	0.44
2430	17.22	0.18
2440	18.24	0.06
2450	18.2	-0.06
2460	19.1	-0.26
2470	20.18	0.05
2480	20.28	0
2490	21.93	0.56
2500	22.28	0.68

headfor

Frequency MHz	Efficiency %	Gain dBi
2400	4.88	-8.5
2410	4.59	-8.92
2420	4.9	-8.56
2430	4.98	-8.76
2440	5.32	-8.65
2450	5.2	-8.29
2460	5.28	-8.28
2470	5.24	-8.04
2480	4.9	-8.58
2490	4.86	-8.6
2500	4.67	-8.91

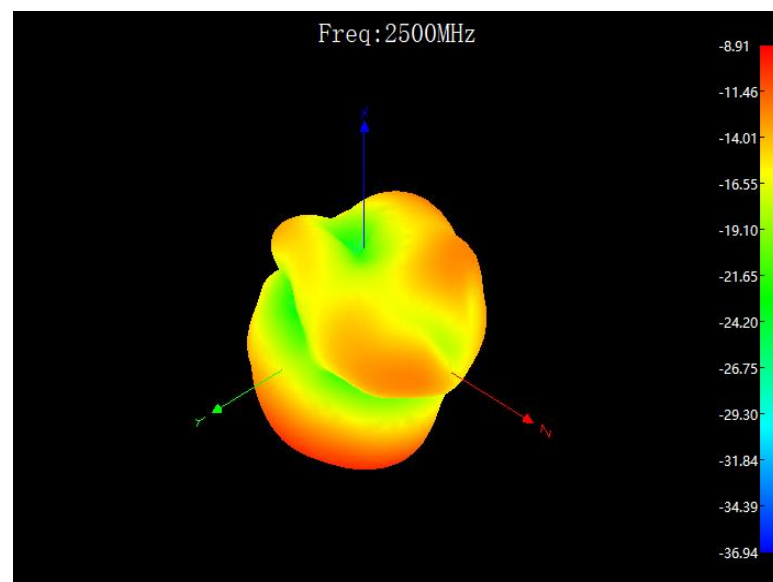
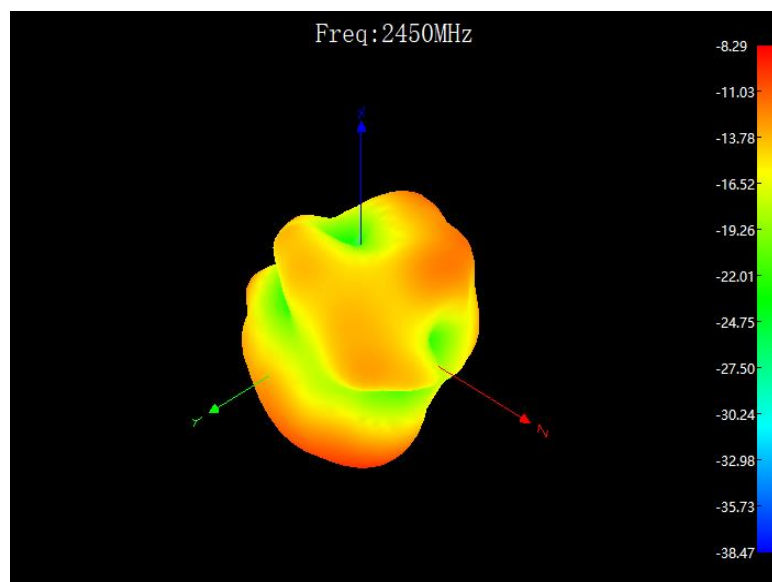
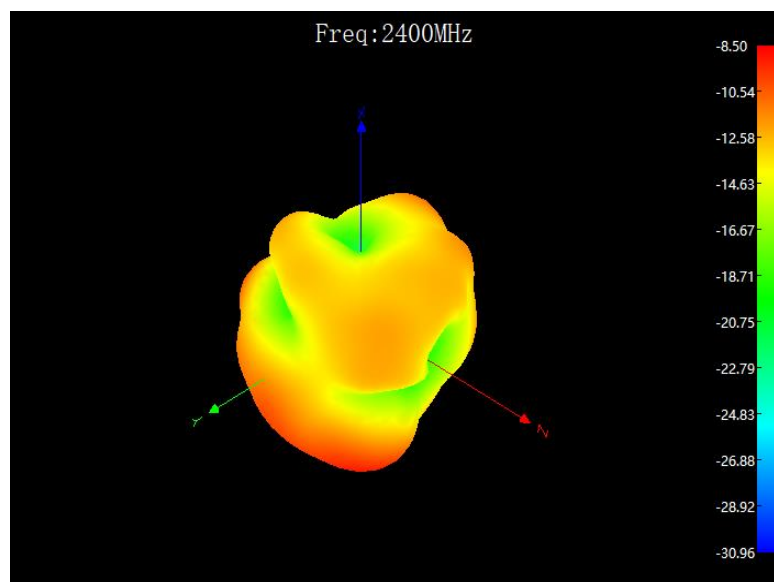
## Antenna gain spectrum

free space R



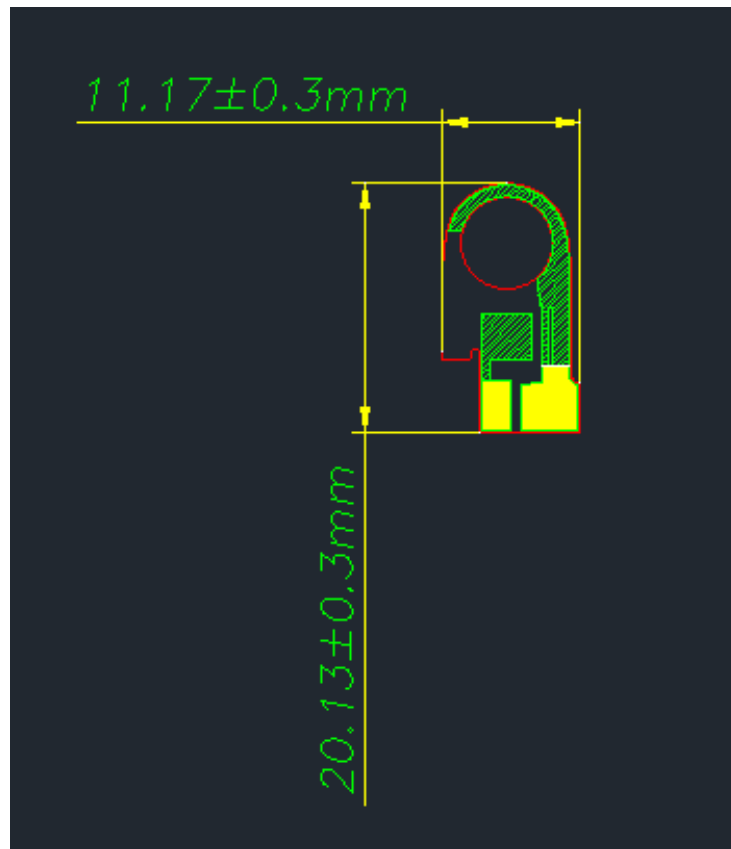
## Antenna gain spectrum

headfor R



## Diagram of antenna size

R



## OTA data

## Main board conduction test (remove matching)

R	Channel	TRP	TIS		L	Channel	TRP	TIS
	CH 0	10.3	-94.5			CH 0	10.8	-94.5
	CH39	10.01	-94.5			CH39	10.5	-94.5
	CH78	9.54	-92			CH78	10.1	-92.5

## OTA test

freedom R	Channel	TRP	TIS		freedom L	Channel	TRP	TIS
	CH 0	1.72	-85.09			CH 0	2.24	-85.12
	CH39	2.53	-85.56			CH39	2.01	-85.72
	CH78	2.59	-86.73			CH78	2.74	-86.6
headform R	Channel	TRP	TIS		headform L	Channel	TRP	TIS
	CH 0	-2.08	-83.06			CH 0	-1.42	-84.69
	CH39	-1.78	-84.42			CH39	-1.13	-84.82
	CH78	-1.12	-85.13			CH78	-0.8	-85.24

# Field test- -anti-interference test

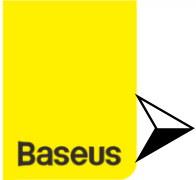
## Anti-interference test (Anti-interference test)

Test requirements:

1. During the test, confirm whether the status of the antenna is the latest and pass the RF test, tentatively test each stage
2. The tester should follow the prescribed route in the test process to avoid the deviation of the test results
- 3, the card collection standard: as long as the sound is broken (the sound is broken) to record once, continuous card to record the number of continuous card
- 4, the tester in the test process, automatically adjust the walking speed, can not stop in place, need to keep the movement state
5. Play local songs continuously along the underground railway line. Listen to the songs and call them at both the subway transfer station and the north high-speed railway station, record the abnormal times and compare them with the comparison machine
6. Mobile phone placement: Go: top down, screen inside the skin, return: top down, screen outside
- 7, test mobile phone: Samsung S8, Redmi K30, headphone comparison machine: Huawei FreeBuds 3, OPPO Enco X, the test number is not less than 5 PCS

Charging box version:				Headphone version:				Test date:	2024.10.11		Test weather:	clear day		
Sample name / number	Headphone power	Test route	testing stage	The test person	Body fat (BMI)> 39 Body weight was> 80kg	stature cm	cellphone	play music			make and receive a phone call			
								Mobile phone location (Rear left pocket / rear right pocket)	Caton times	The lag duration	Mobile phone location (Front left pocket / front right pocket)	Caton times	duration	
		Metro line	EVT					Before the right			Before the right			
								Before the left			Before the left			
		high-speed rail station							Before the right			Before the right		
								Before the left			Before the left			
		market							Before the left			Before the right		
								Before the left			Before the left			





# Field test- -pull distance test

## Bluetooth Distance Test (Bluetooth distance test)

test specification:

1. Place the test mobile phone at a height of about 120cm above the ground, fix the mobile phone still, and connect the prototype to the mobile phone with Bluetooth

2. The tester normally wears the prototype, gradually moves away from the mobile phone in one direction, find a maximum distance of music without lag, turn around 360 degrees, and shake his head 15 degrees, no music lag, record the maximum distance without lag is Bluetooth distance.

3. The call range test, the mobile phone and the prototype Bluetooth connection, wear the headset normally, put the mobile phone in the designated position, the slight noise should be no more than 2 times and no more than 2 times within 5 minutes of the call, the maximum distance of the recorded call signal with good sound quality and the call without delay is the call Bluetooth distance

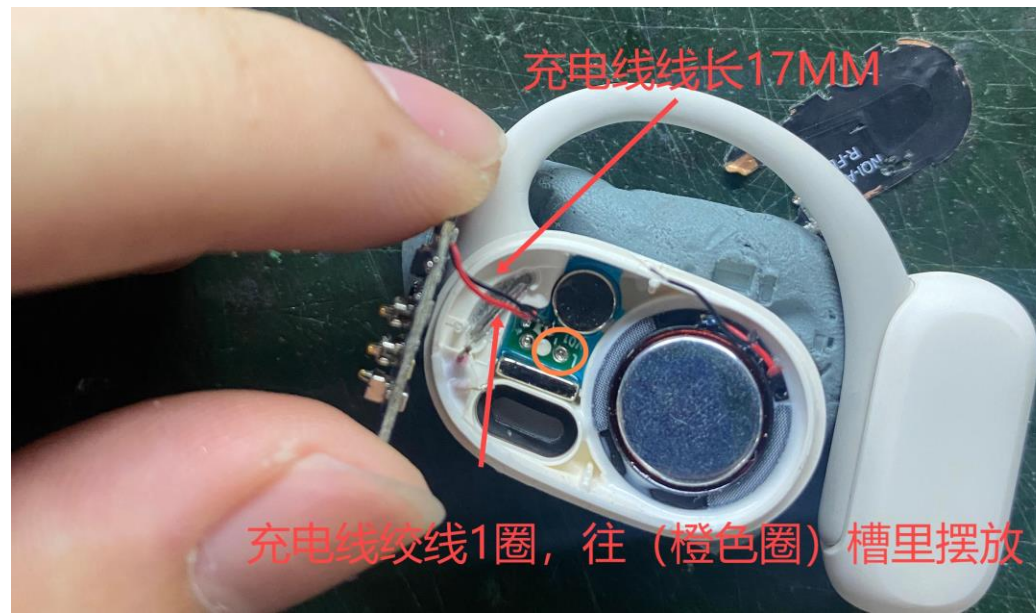
4. Music double ear / single ear Bluetooth distance is 15 meters Bluetooth distance is 12 meters The distance between headphones is 10 meters

5. Test the mobile phone: Apple 6

The prototype number	stage	Test the mobile phone	The test person	body fat (BMI)	test zone	Take out L and R headset at the same time, connect the phone to play local music, put R headset into the charging case, test the distance between L headset and the phone, require 360° to turn around naturally, without lag, without direction (meters)	Take out L and R headset at the same time, connect the phone to play local music, put L headset into the charging case, test the distance between R headset and the phone, require 360° to turn around naturally, without lag, without direction (meters)	L and R headphones take out at the same time, connect the phone to play local music, test the distance between the ears and the phone, require 360° to turn around naturally, without lag, without direction (meters)	L and R headphones take out at the same time, connect the phone to play local music, put any headset together with the phone, move the other headset, test the distance between the two headphones, requiring 360° to turn around naturally, no lag, no direction (meters)	L and R headphones are taken out at the same time, connected to the phone for call, test the distance between the ears and the phone, requiring 360° to turn around naturally, without lag, without direction (meters)	The front pocket	After the pocket	Cover your ears (Both ears should cover tightly at the same time)	test result	remarks
Charging box version:				Headphone Version:				Test Date:	2024.11.2			Test weather: sunny day			
2#		Apple 6	Luo Gong, Wang Gong		Empty area	L: 19.5M	R:19M								



# Environment



As shown in the figure, the battery line is not twisted, the horn wire is twisted 2 whole circle, and leans to the outside.

The charging line is 17MM and twisted for 1 circle, and the charging line is placed in the slot.

The charging line is welded in the above direction.





# conclusion

At present, the new version of the machine horn position after the data is good, the machine pull distance is good.

# Continuous preferred continuous improvement