

# Antenna Test Report



**South  
Star**

**South Star Technology Hong Kong CO., LTD**

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# 一、 Authentication requirement information

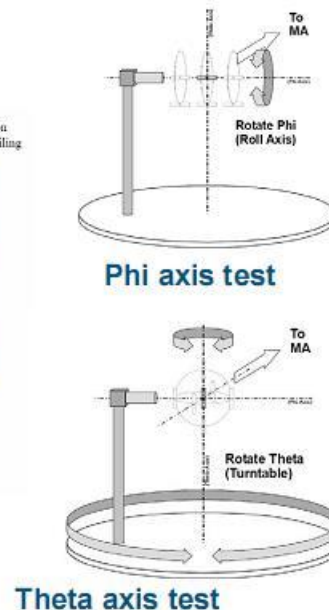
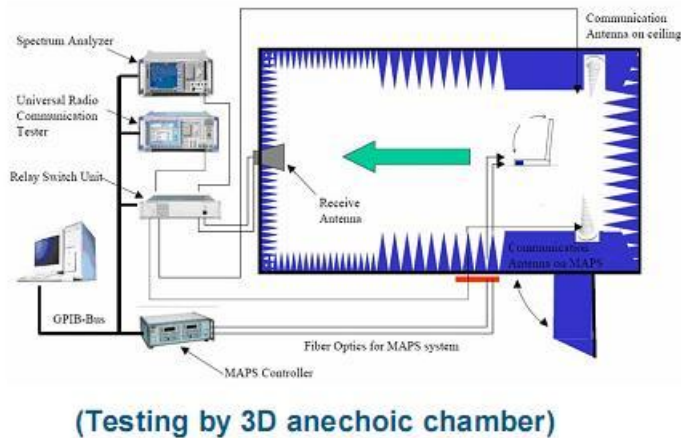
A. Electrical Characteristics	
Frequency	2402MHz~2480MHz
VSWR	ANT-R ANT-L Dongle <2 <2 <4.5
Impedance	50 Ohm
Polarization	Linear
Peak Gain	ANT-R -3.2dBi
Peak Gain	ANT-L -1.54dBi
Peak Gain	Dongle 0.1dBi
Antenna type	PIFA
B. Material & Mechanical Characteristics	
Material of Radiator	FPC Black
C. Information about the antenna manufacturer	
Test date:	2023. 3. 18
Name of Tester:	Jian He
Name of antenna factory:	South Star Technology Hong Kong CO., LTD
Antenna factory address:	No.3 Nanfang 1st Rd. ChiGang Community, HuMen Town, Dongguan City, Guangdong Province, China.

## 二、 Test Equipment & Conditions

### 1、 Antenna standing wave measuring instrument:

The VSWR was tested using an Agilent E5063A connected to the mechanism in the free space state.

### 2、 Test environment and method of antenna efficiency and gain: 3D Chamber Test System

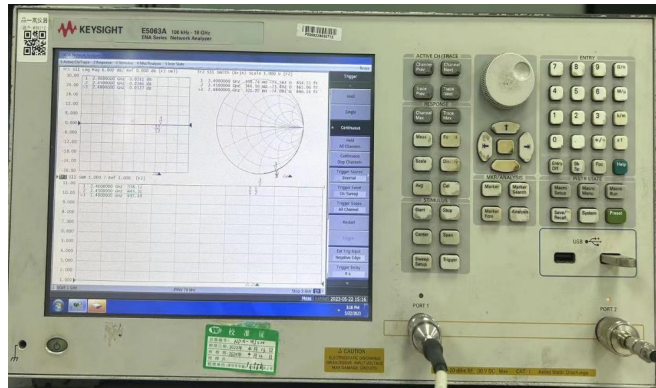


Description of how measurements are made:

- Position the DUT on the test turntable.
- Record the coordinates and take picture.
- Connect the RF cable.
- Leave the chamber and close the door.
- Run the software.
- Wait for the test to end and confirm the data.



### 三、 Name of test equipment calibration table and test software



1、 Test equipment : E5063A

CALIBRATION DATE: 2022/4/13

VAILD DATE OF CALIBRATION : 2023/4/12



2、 Test software name :



OTAtester

Test equipment : E5071C:

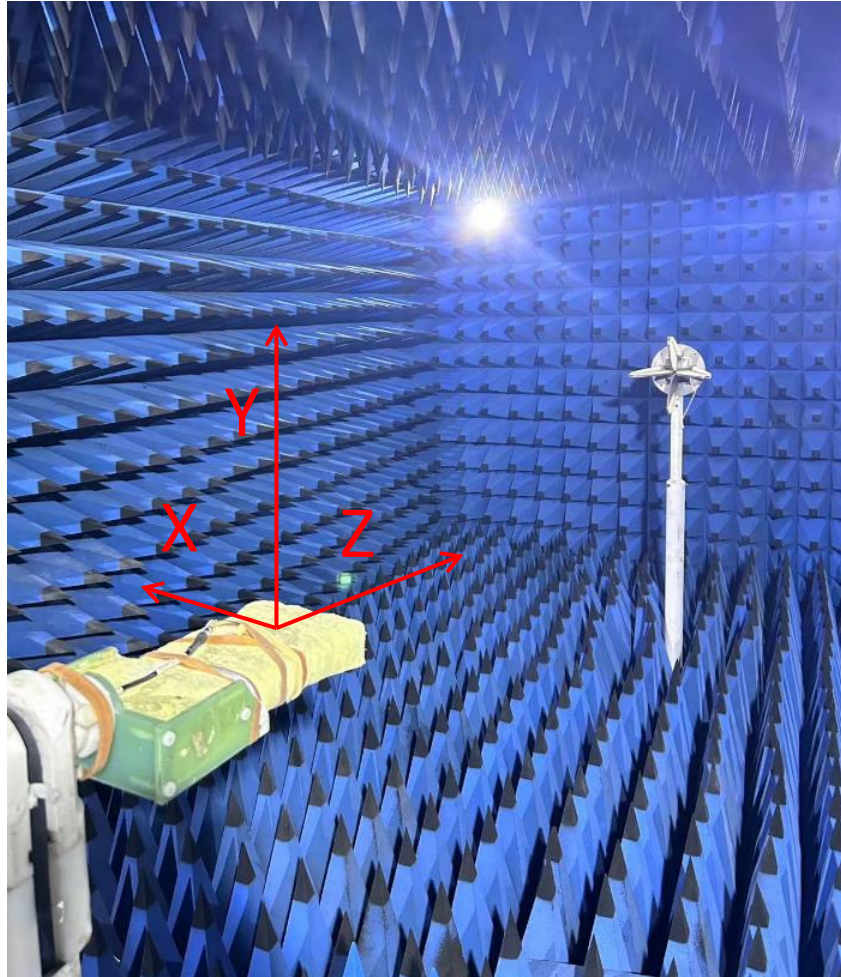
CALIBRATION DATE: 2022/4/13

VAILD DATE OF CALIBRATION :

2023/4/12



## 四、 Darkroom image and axis definition



Definition of darkroom coordinate axis:

H-plane: XY axis

E1-plane: XZ axis

E2-plane: YZ axis



## 测试设备 (Test Equipment & Conditions)

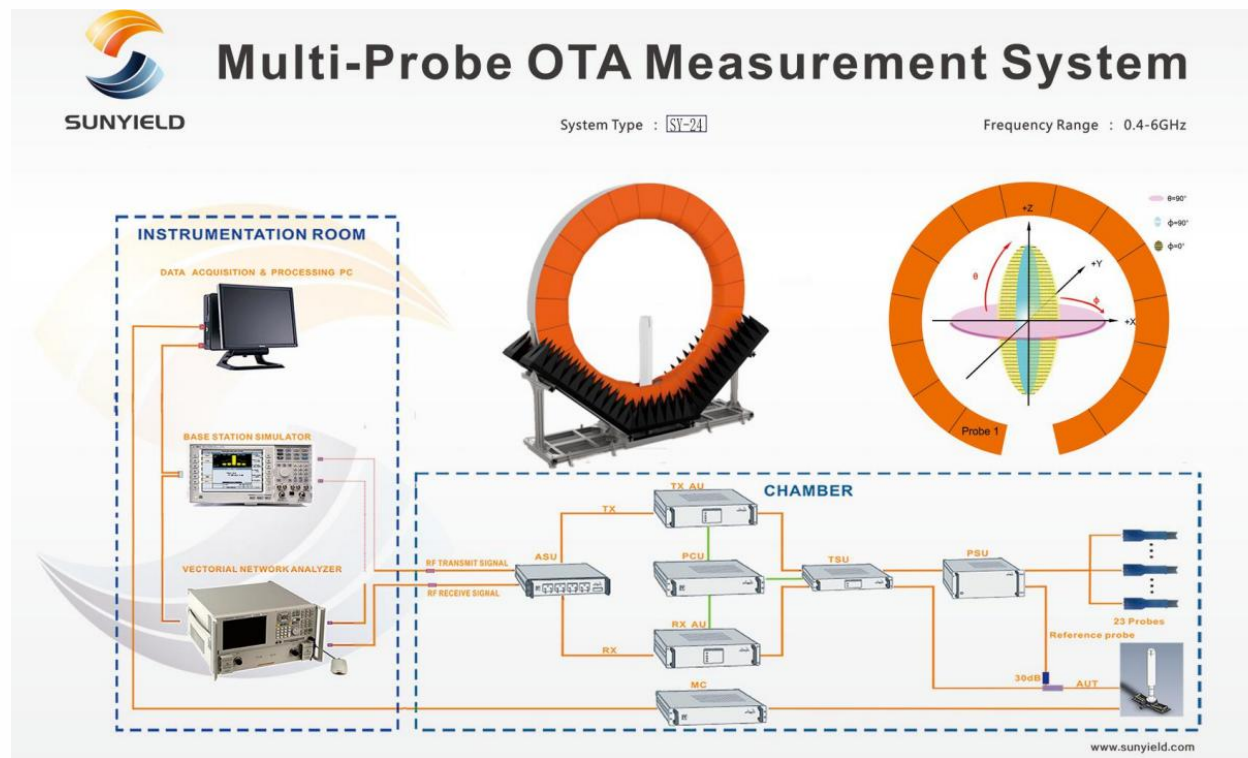
### 1. 网络分析仪 Network Analyzers:

Keysight E5071C

### 2. 综合测试仪 Comprehensive tester:

CMW500 、 MT8000A、 MT8862A

### 3. 3D 暗室测试系统 3D Chamber Test System:

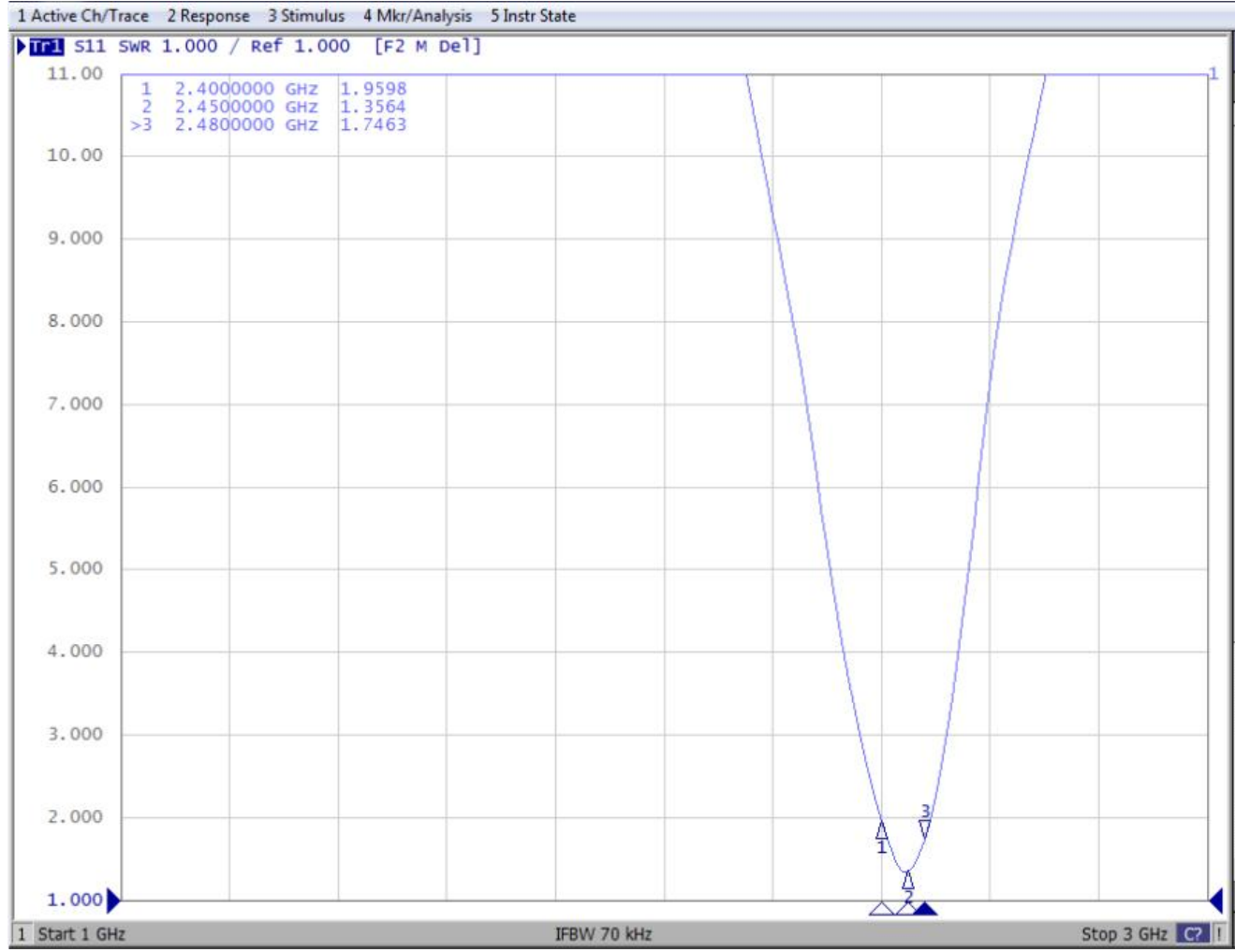






# 六、Passive data of R antenna

S11\_SWR (R)





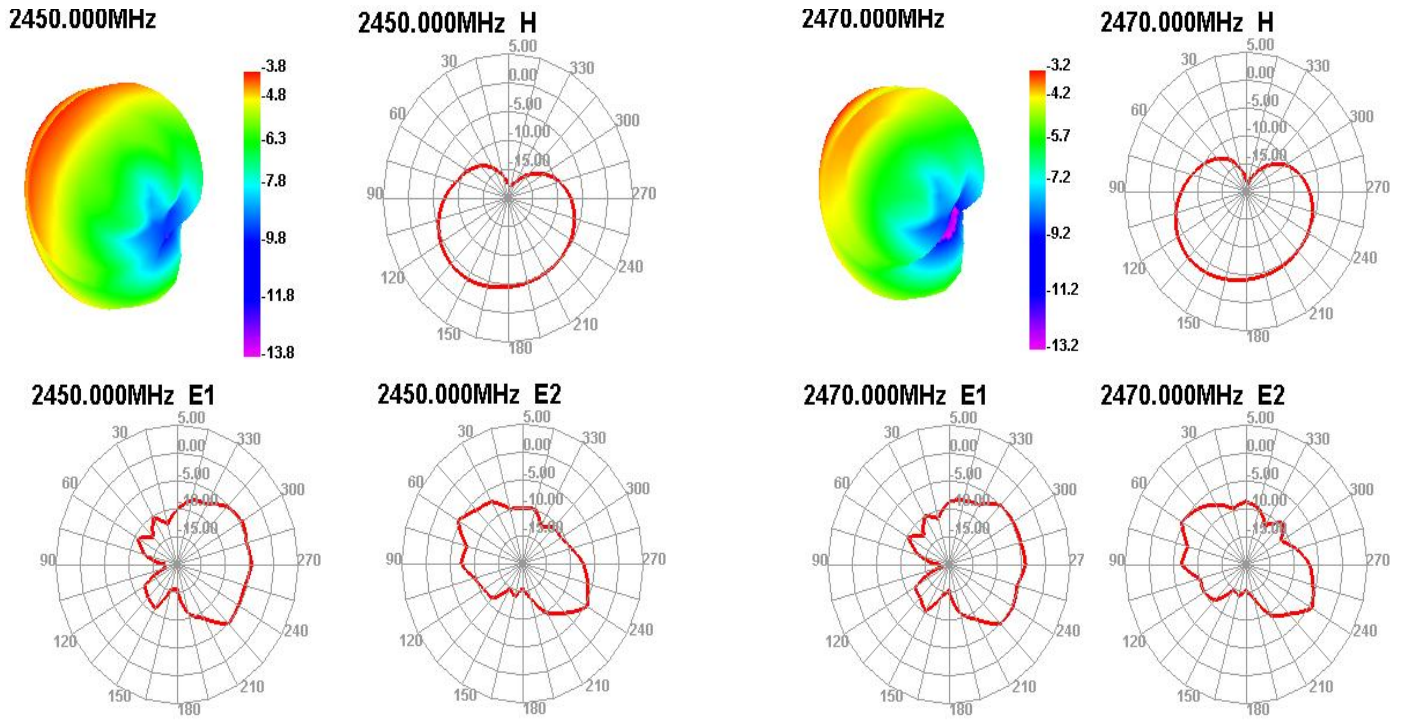
Efficiency, gain, and directional pattern (R) Right Earbud-Model : CEB006

**Eff. And Gain**

Freq (MHz)	Effi (%)	Peak Gain (dBi)
2402	16.89	-4.4
2410	16.97	-4.06
2420	17.19	-4.16
2430	17.27	-4.18
2440	17.38	-4.13
2450	17.61	-3.79
2460	17.69	-3.48
2470	17.92	-3.2
2480	16.94	-3.51

**Peak Gain:-3.2dBi**

**Directional graph**

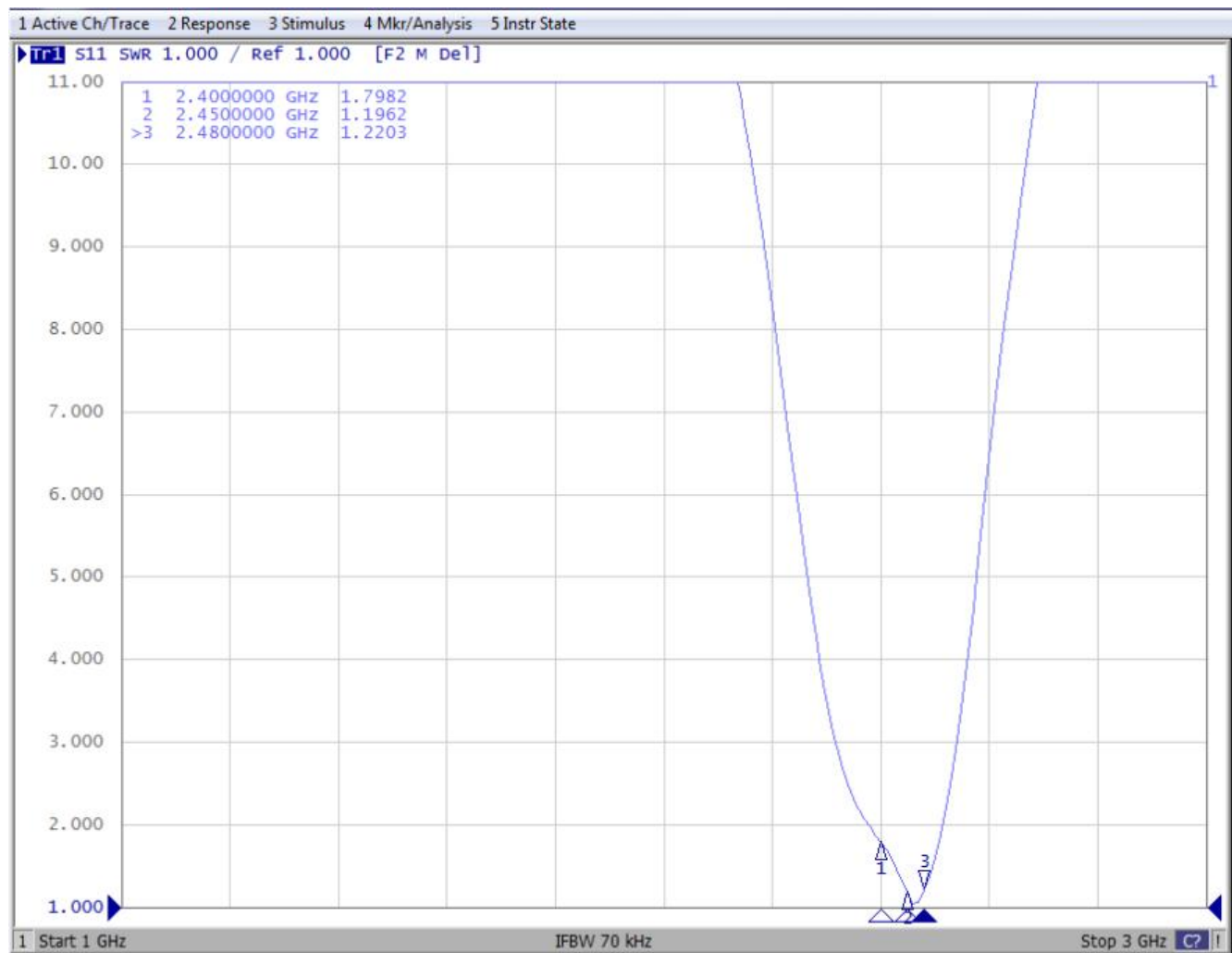


2402~2480MHz  
 The maximum gain value frequency point in the range is 2470MHz  
 Intermediate channel 2450MHz



# 七、Passive data of L antenna

S11\_SWR (L)



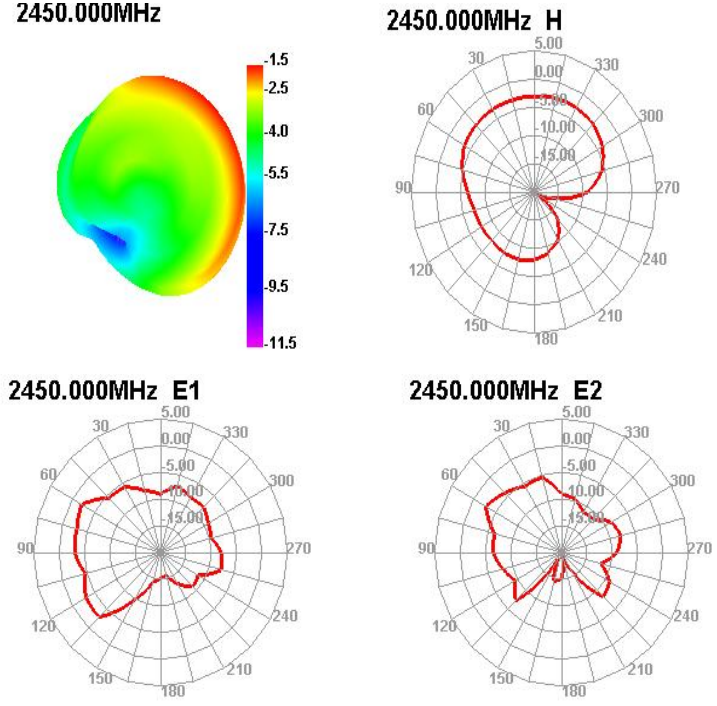
Efficiency, gain, and directional pattern (L) Left Earbud-Model : CEB006

**Eff. And Gain**

Freq (MHz)	Effi (%)	Peak Gain (dBi)
2402	18.2	-1.83
2410	18.35	-1.86
2420	18.36	-2.07
2430	19.12	-2.07
2440	18.69	-1.72
2450	18.76	-1.54
2460	18.63	-1.58
2470	18.26	-1.92
2480	18.23	-2.25
avg.	18.51	-1.87

**Peak Gain:-1.54dBi**

**Directional graph**



2402~2480MHz  
 The maximum gain value frequency point in the range is 2450MHz  
 Intermediate channel 2450MHz



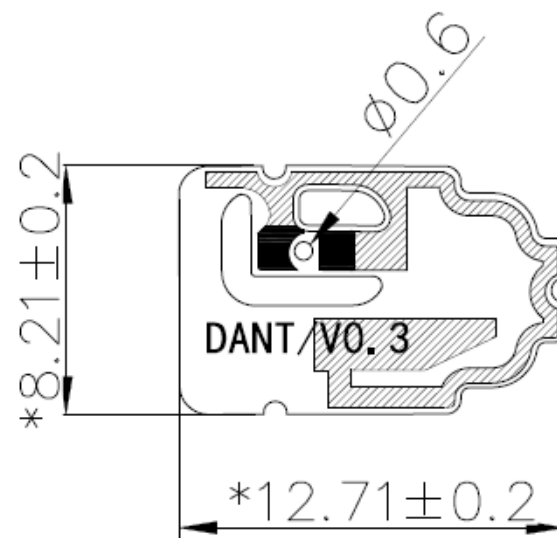
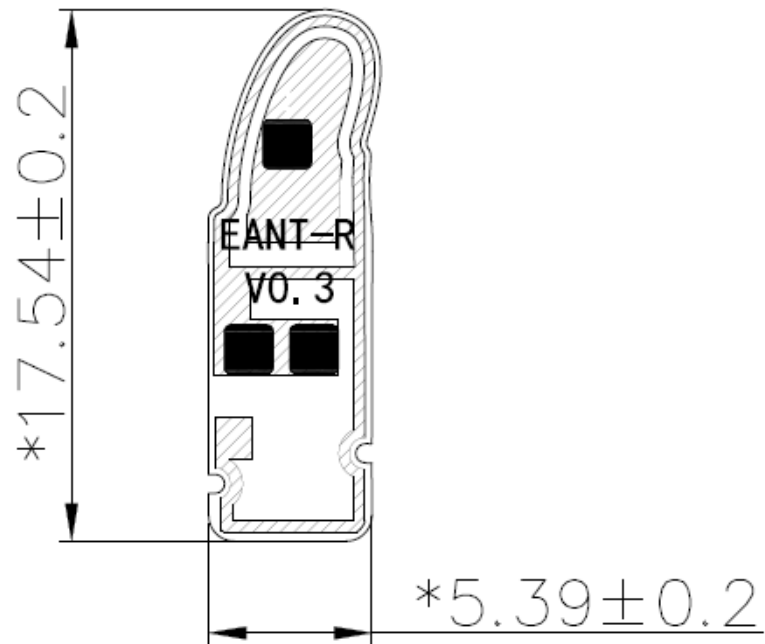
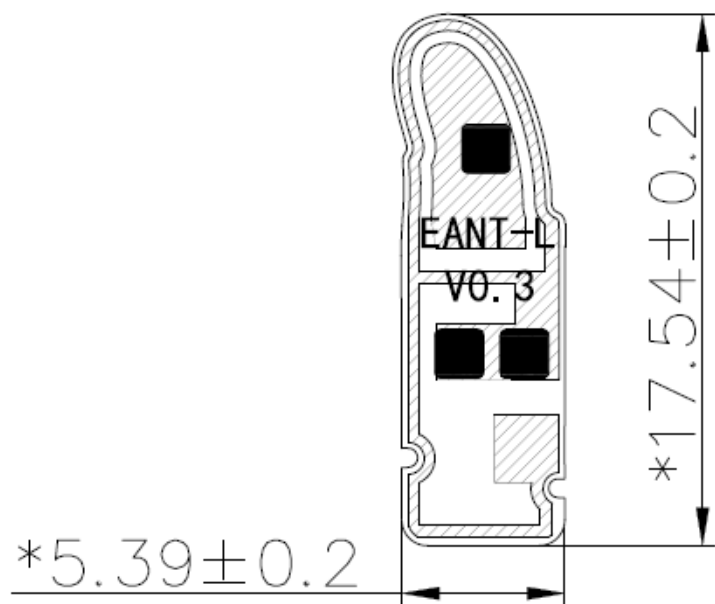
# 八、Passive data of Dongle antenna

S11\_SWR (Dongle)



Base with data cable





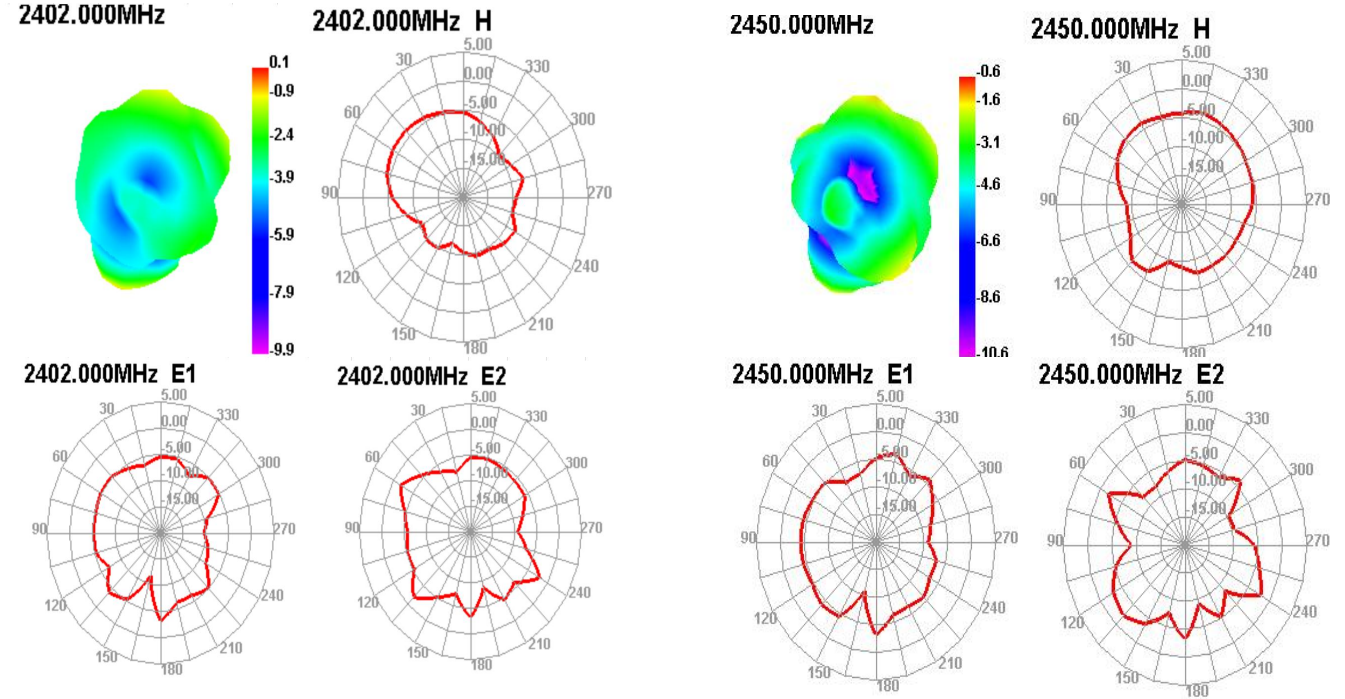
# Efficiency, gain, and directional pattern (Dongle) Model: CEB006WD

## Eff. And Gain

Freq (MHz)	Effi (%)	Gain (dBi)
2402	24.09	0.1
2410	25.29	-0.63
2420	24.99	-1.27
2430	23.34	-1.39
2440	26.81	-1.04
2450	31.17	-0.61
2460	31.43	-0.79
2470	29.71	-1.26
2480	29.27	-1.64

Peak Gain:0.1dBi

## Directional graph



2402~2480MHz  
 The maximum gain value frequency point in the range is 2402MHz  
 Intermediate channel 2450MHz



## 九、OTA data

OTA data of headphone antenna

1#_R		
信道	TRP	TIS
0	2.47	-89.89
39	2.66	-89.97
78	1.89	-90.55

1#_L		
信道	TRP	TIS
0	1.9	-89.66
39	2.31	-90.45
78	1.68	-91.03

2#_R		
信道	TRP	TIS
0	1.97	-89.91
39	2.22	-90.51
78	1.68	-90.46

2#_L		
信道	TRP	TIS
0	2.31	-90.39
39	2.38	-90.63
78	1.64	-91.04

3#_R		
信道	TRP	TIS
0	2.12	-89.69
39	2.5	-90.67
78	2.06	-90.61

3#_L		
信道	TRP	TIS
0	2.94	-90.51
39	3.09	-90.48
78	2.55	-91.16

OTA data of Dongle antenna

信道	TRP	TIS
0	0.12	-87.24
39	0.45	-87.83
78	1.04	-88.38





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**Thank you**

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