Antenna Test Report

South Star

South Star Technology Hong Kong CO., LTD

www.sz-southstar.com

Directory

一、Authentication requirement information
二、Test Equipment & Conditions
三、Name of test equipment calibration table and test software
四、Darkroom image and axis definition
五、Earphone antenna matching_ RF end
六、Passive data of R earbud antenna (CEB006R)
七、Passive data of L earbud antenna (CEB006L)
八、Passive data of Dongle antenna (CEB006WD)
九、OTA data

一、Authentication requirement information

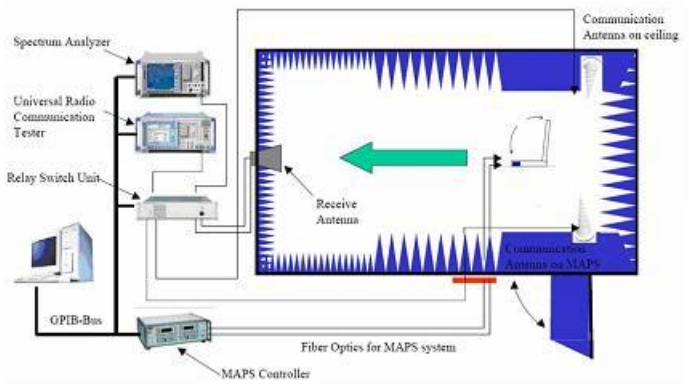
A. Electrical Characteristics	
Frequency	2402MHz~2480MHz
VSWR ANT-R ANT-L Dongle	<2 <2 <4.5
Impedance	50 Ohm
Polarization	Linear
Peak Gain ANT-R	-3.2dBi
Peak Gain ANT-L	-1.54dBi
Peak Gain Dongle	0.1dBi
Antenna type	PIFA
B. Material & Mechanical Characteristics	
Material of Radiator	FPC Black
C. Information 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

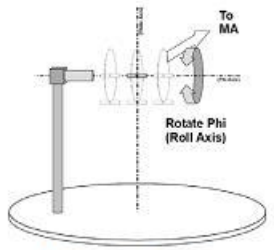
1、**Antenna standing wave measuring instrument**:

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

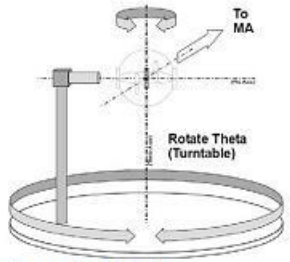
2、**Test environment and method of antenna efficiency and gain：**
3D Chamber Test System



(Testing by 3D anechoic chamber)



Phi axis test



Theta axis test

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

Test equipment : E5071C:

CALIBRATION DATE: 2022/4/13

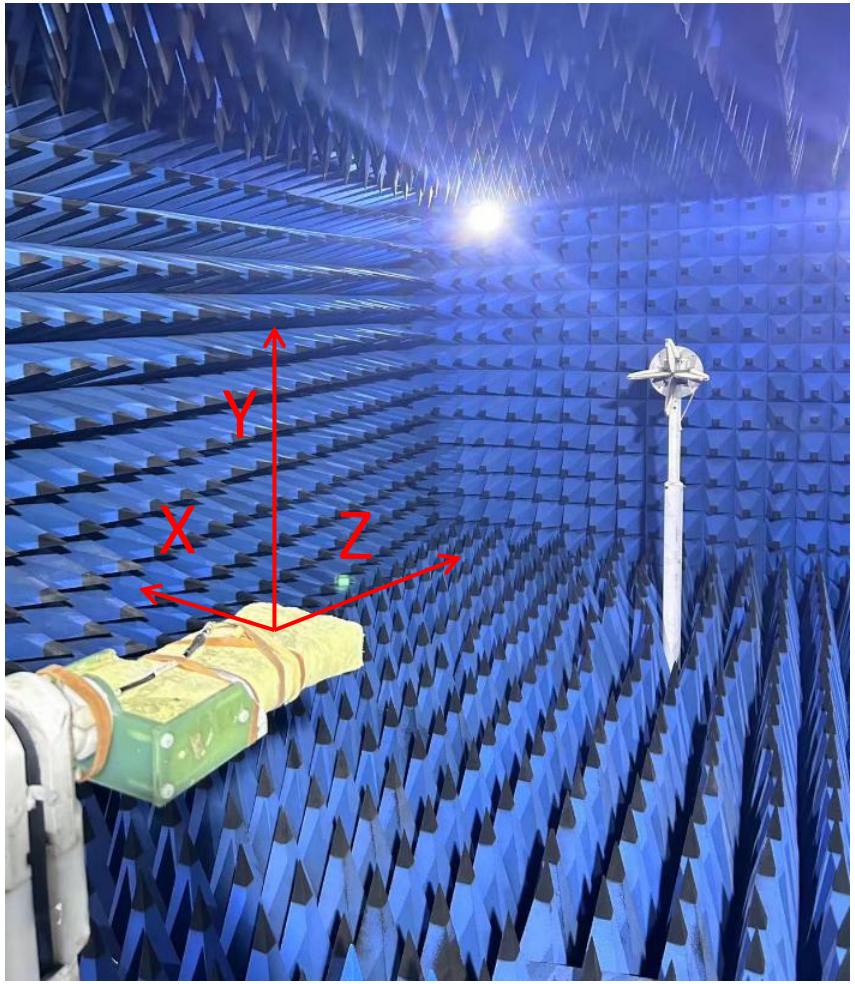
VAILD DATE OF CALIBRATION :

2023/4/12

2、**Test software name:**

OTAtester

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)

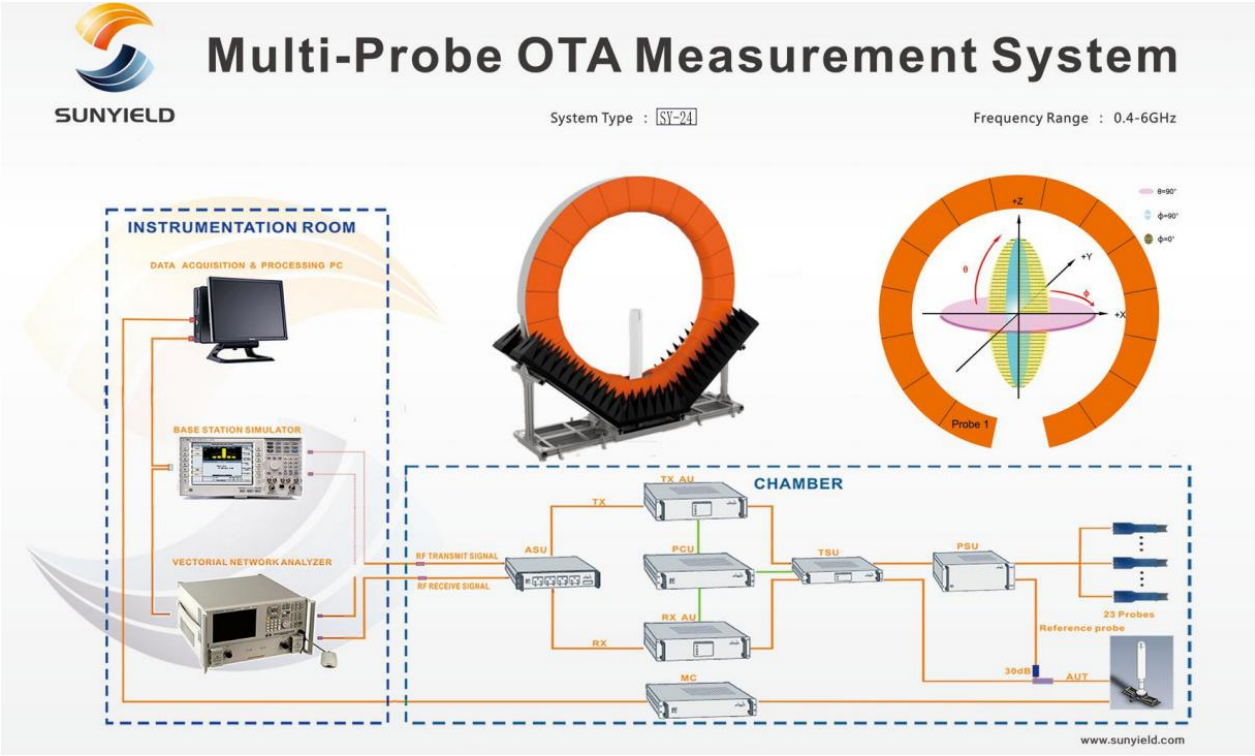
1. 网络分析仪 NetWork Analyzers:

Keysight E5071C

2. 综合测试仪 Comprehensive tester：

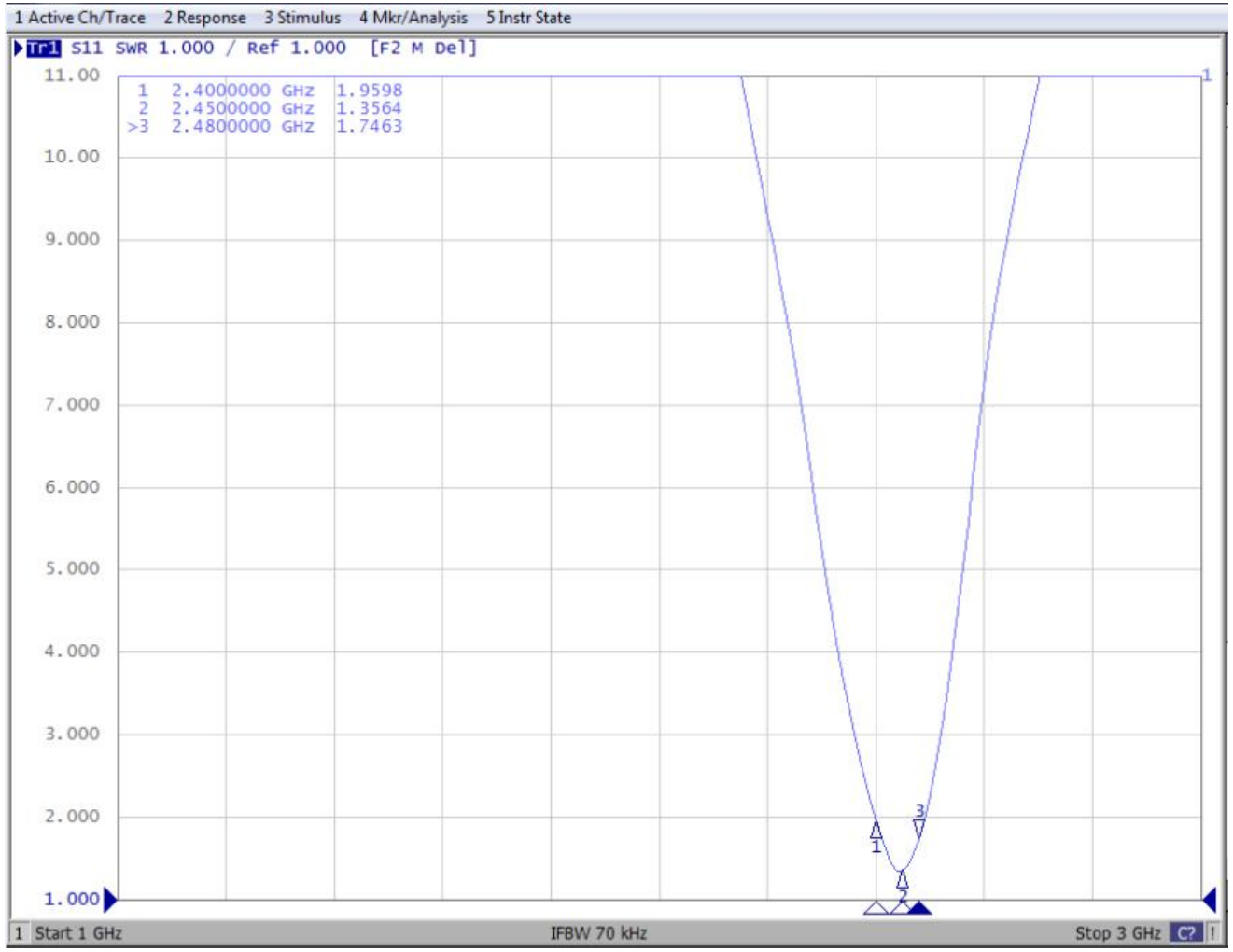
CMW500 、MT8000A、MT8862A

3. 3D 暗室测试系统 3D Chamber Test System:



六、Passive data of R antenna

S11_SWR（R）



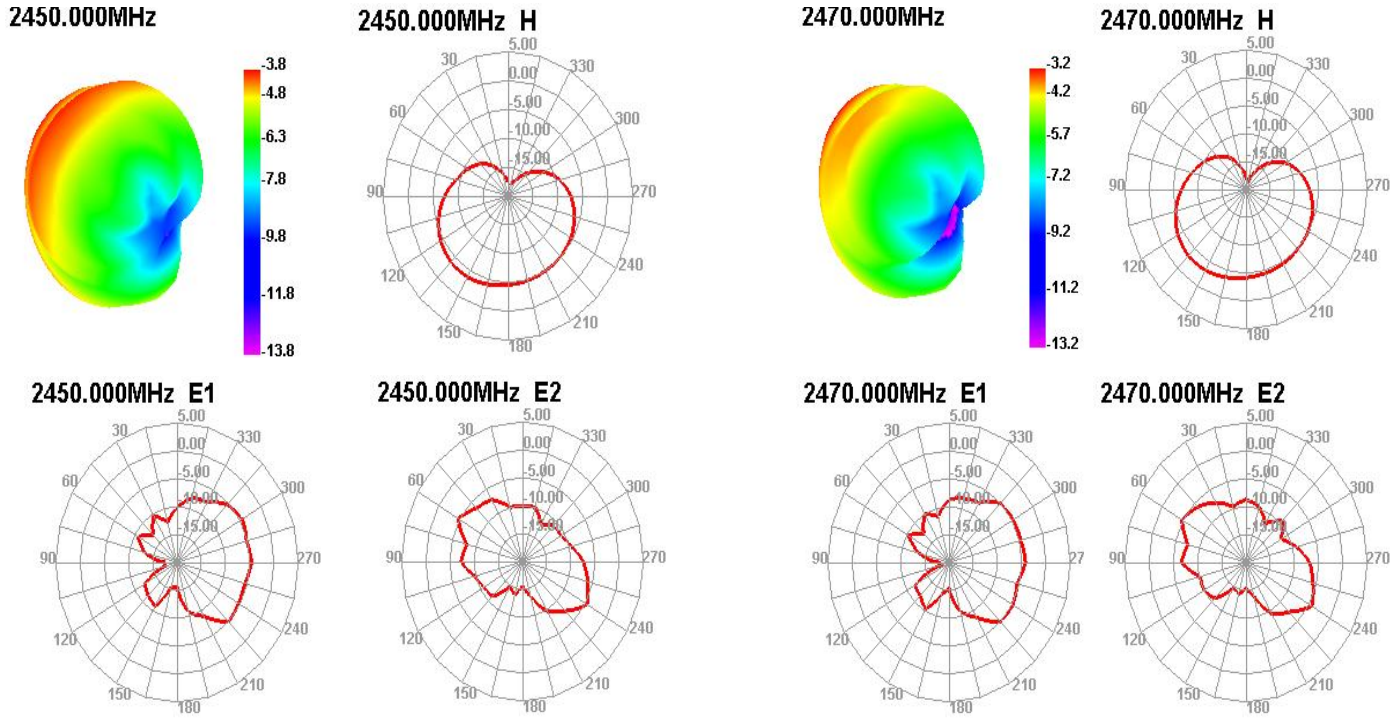
Efficiency, gain, and directional pattern （R） Right Earbud-Model : CEB006

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

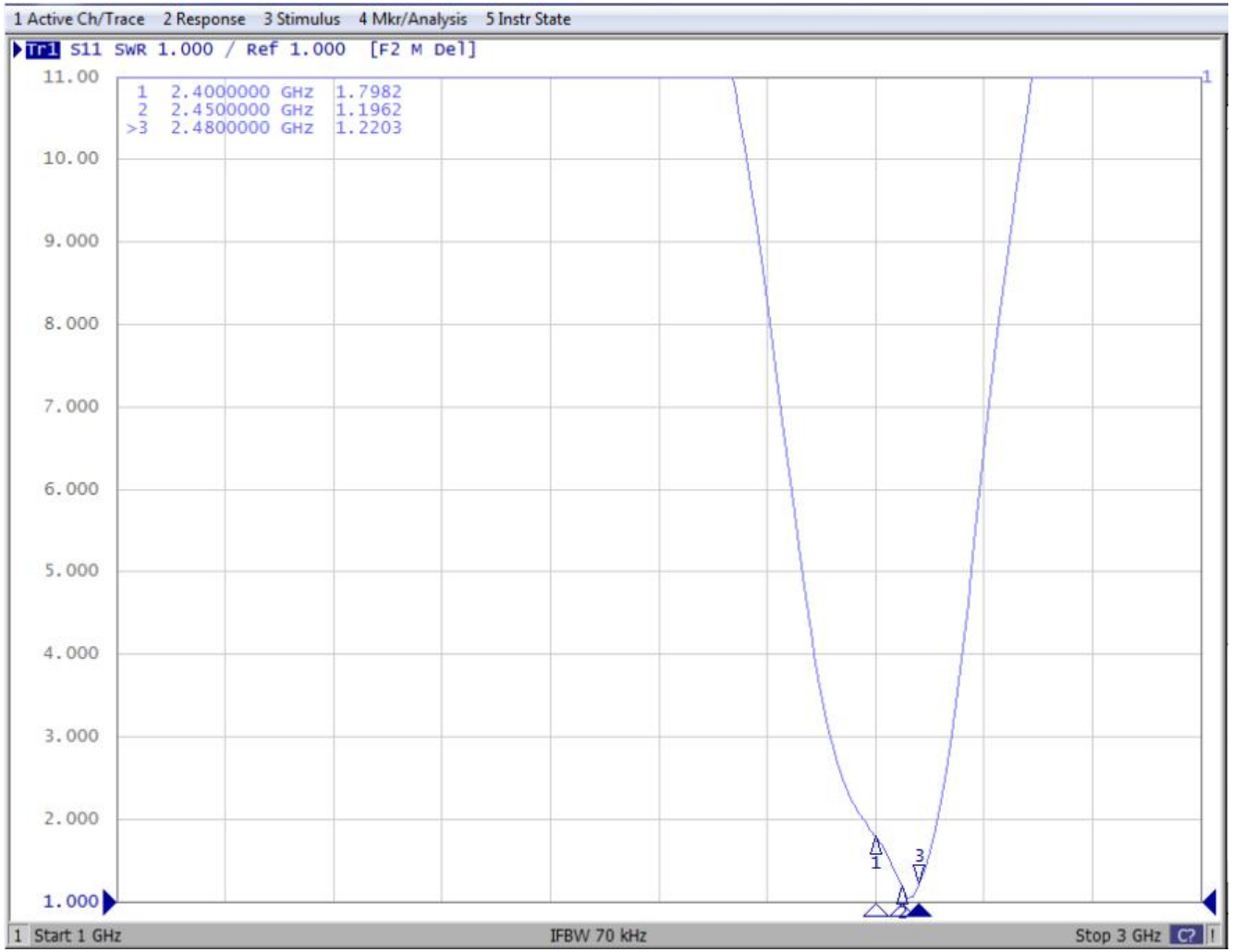
Directional graph



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）



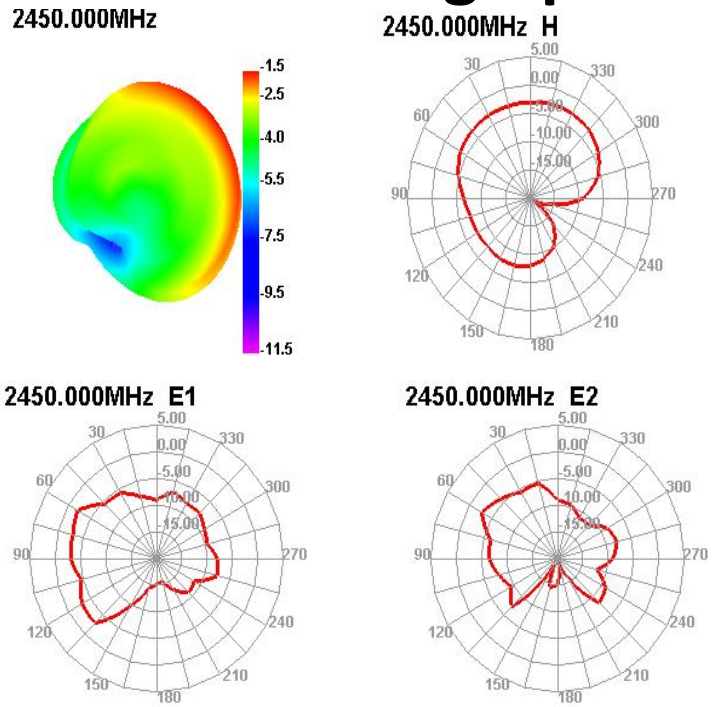
Efficiency, gain, and directional pattern （L） Left Earbud-Model : CEB006

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

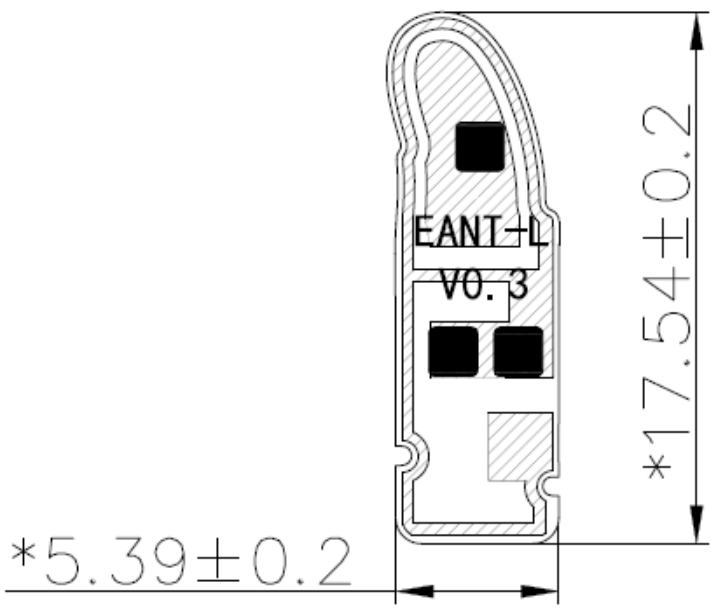


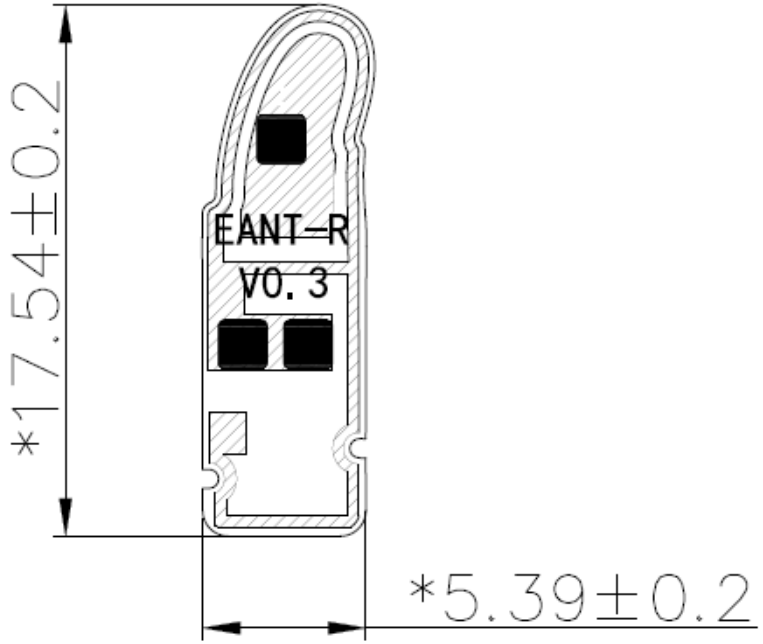
2402~2480MHz
The maximum gain value frequency point in the range is 2450MHz
Intermediate channel 2450MHz

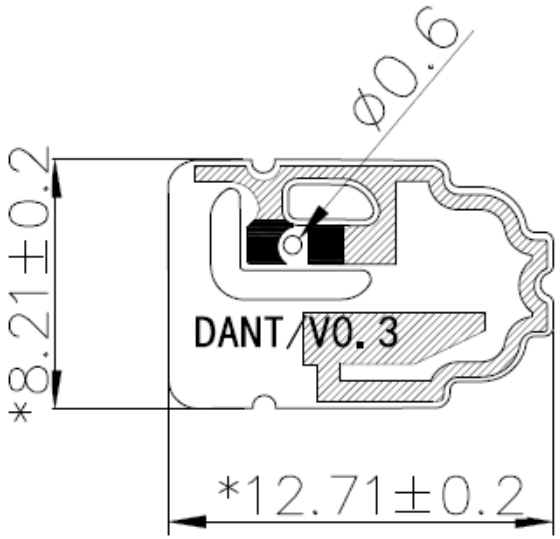
八、Passive data of Dongle antenna

S11_SWR（Dongle）

Base with data cable


EANT-L
V0.3
*17.54±0.2
*5.39±0.2


EANT-R
V0.3
*17.54±0.2
*5.39±0.2


Ø0.6
*8.21±0.2
DANT/V0.3
*12.71±0.2

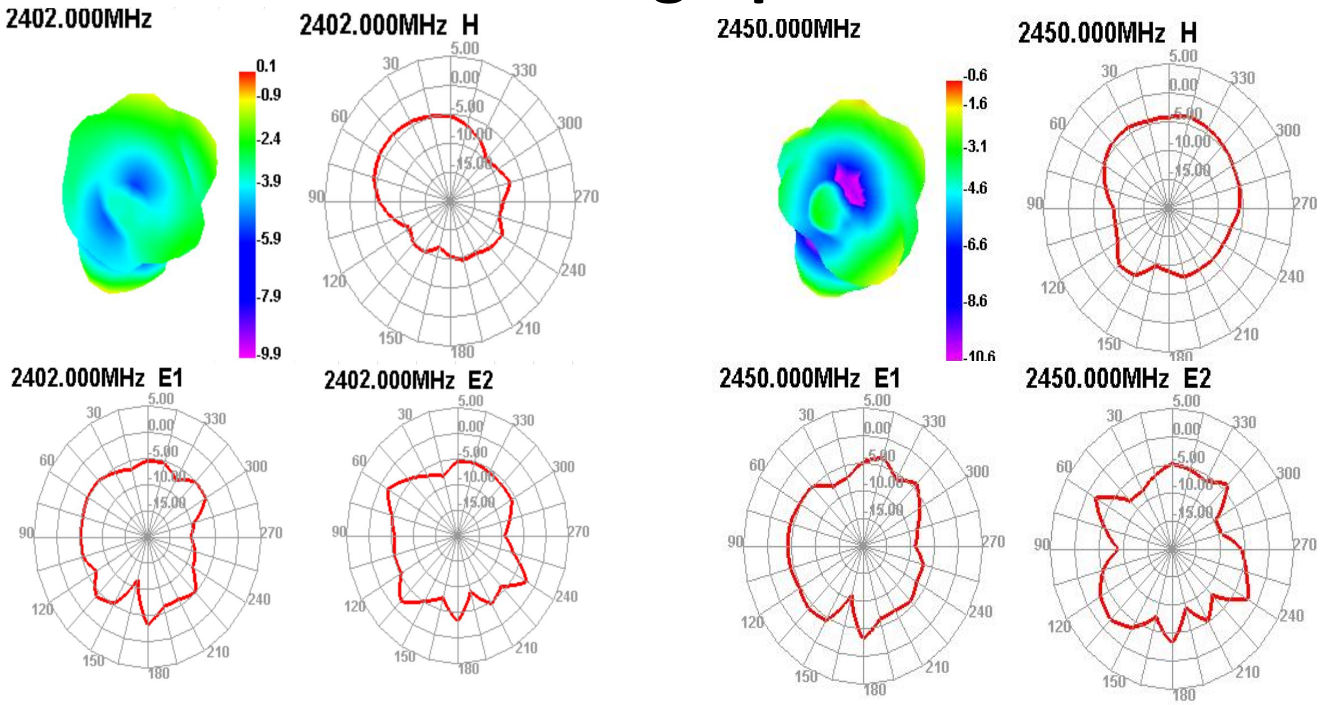
Efficiency, gain, and directional pattern （Dongle） Model: CEB006WD

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

South Star

South Star Technology Hong Kong CO., LTD

Thank you

www.sz-southstar.com