Antenna Part Specification

Customers:	Risuntek
Project name:	TWS-2072
Antenna type:	FPC
Antenna morphology:	Monopole
Antenna directional characteristics:	Omnidirectional
Antenna polarization characteristics:	Elliptical polarization
Connection type:	Cable welding method
Antenna version:	V4
Specification version:	V2.0
Date:	2024.04.26
Supplier Address:	505-506 ,ABlock,Donglian Building,Chuangye 2 road,Baoan District,Shenzhen,Guangdong,P.R china
Supplier:	Shenzhen Cicent Communication Technology Co., Ltd.

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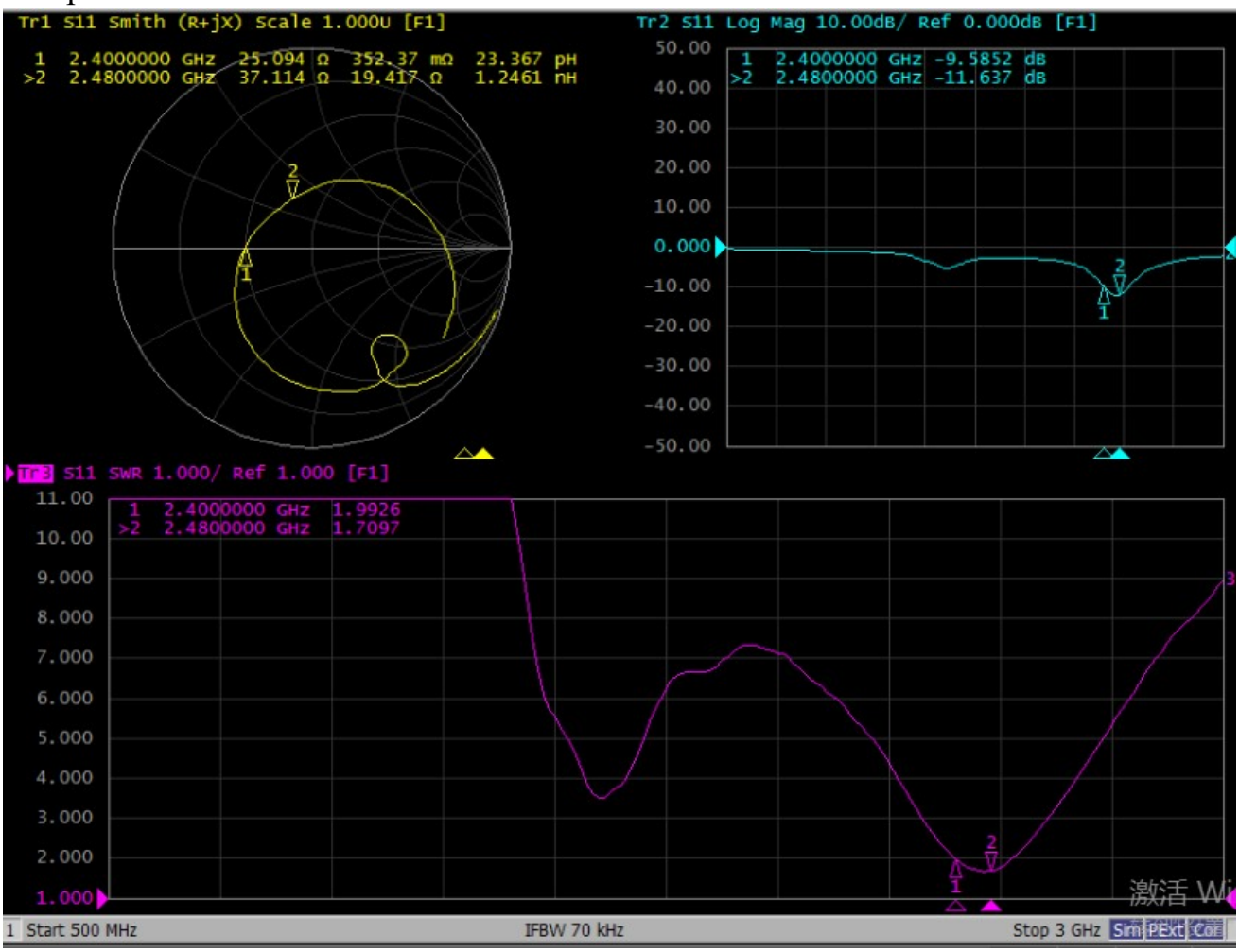
Change record			
Compile / change date	Reason for change	Changed content	Version
2024.04.15	First edition	First edition	V1.0
2024.04.26	Trial production status	Trial production status	V2.0

I: The report of passive data

Angilent E5071C

S11 parameter：

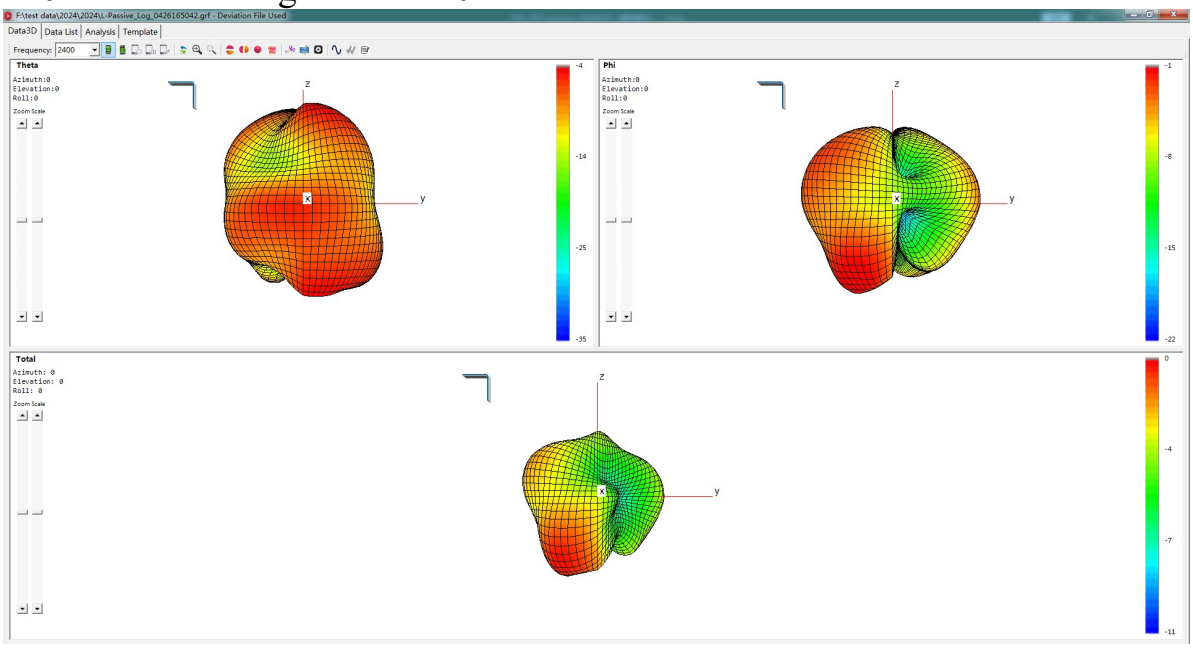


Efficiency：

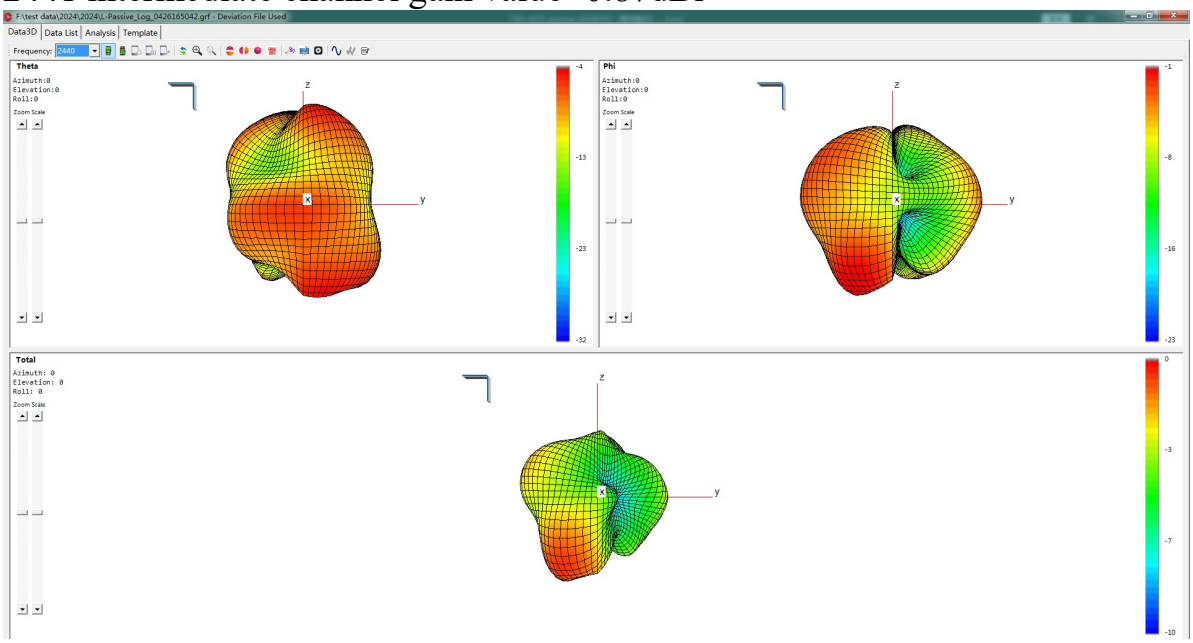
L			
Frequency（MHz）	Efficiency	Efficiency (dB)	Gain (dBi)
2400	36.1%	-4.43	-0.44
2410	36.5%	-4.38	-0.41
2420	37.0%	-4.32	-0.44
2430	36.0%	-4.44	-0.62
2440	34.6%	-4.61	-0.87
2450	35.0%	-4.56	-0.93
2460	34.0%	-4.68	-1.11
2470	36.0%	-4.44	-0.93
2480	37.4%	-4.28	-0.89
Average value	35.8%	-4.46	-0.74

3D Antenna radiation pattern(Unit：dBi):

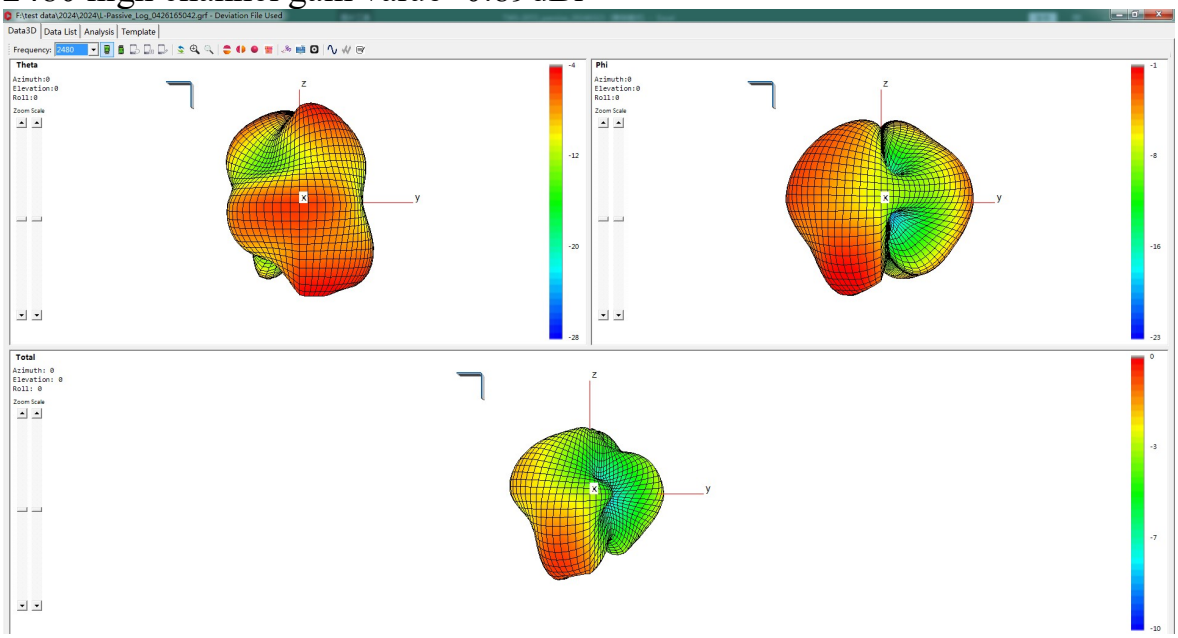
2402 low channel gain value -0.44dBi



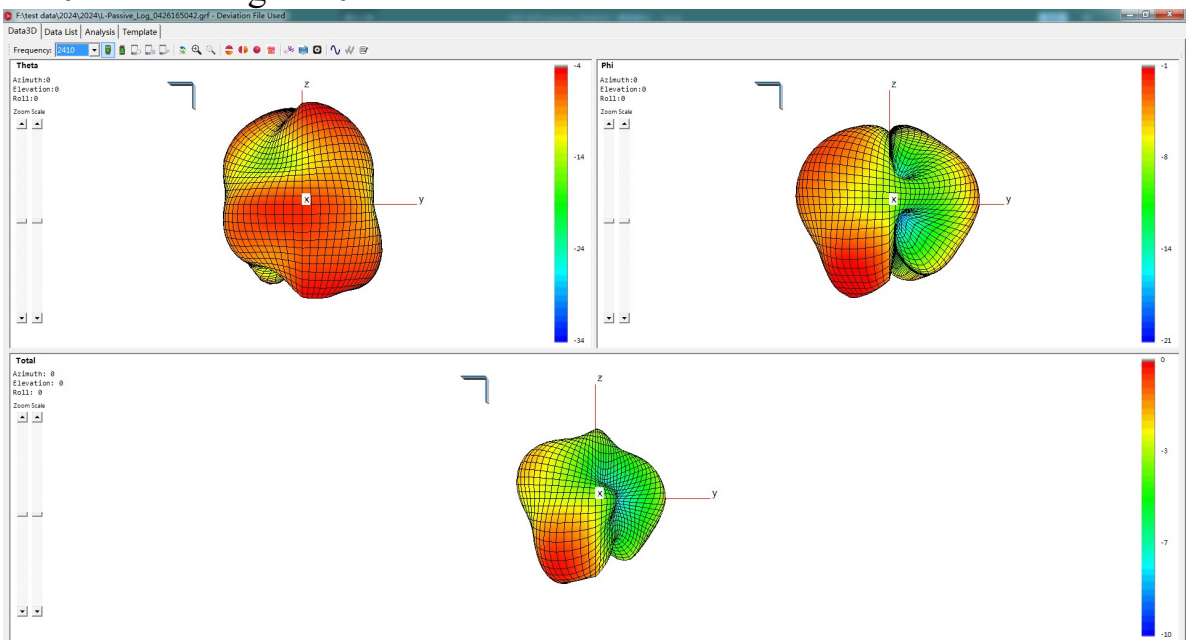
2441 intermediate channel gain value -0.87dBi



2480 high channel gain value -0.89dBi



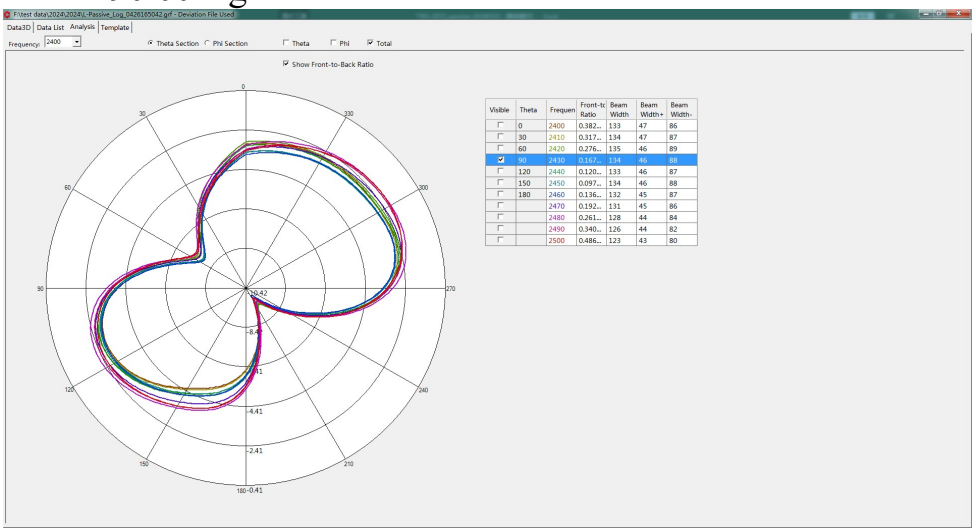
2410 maximum gain -0.41dBi



Antenna radiation pattern(Unit：dBi):

2402 low channel gain value -0.44dBi

Theta=90.00deg



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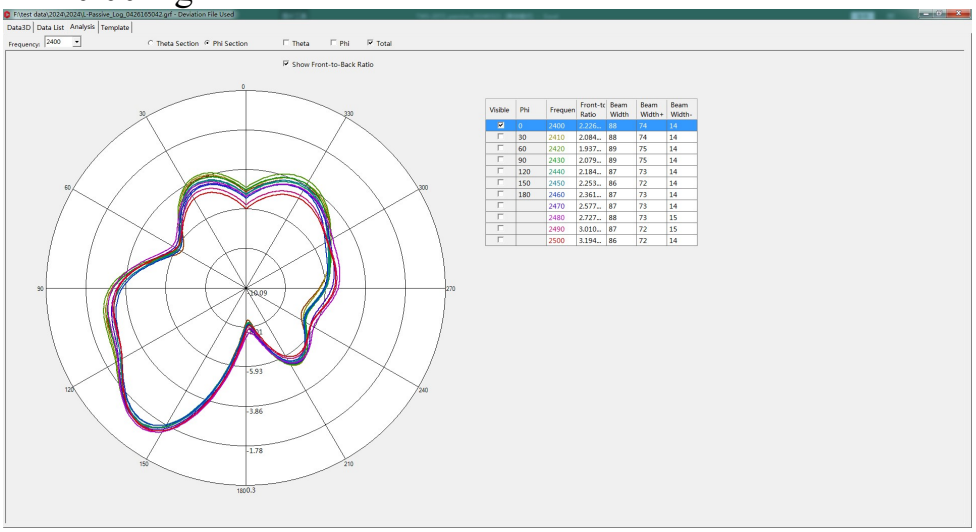

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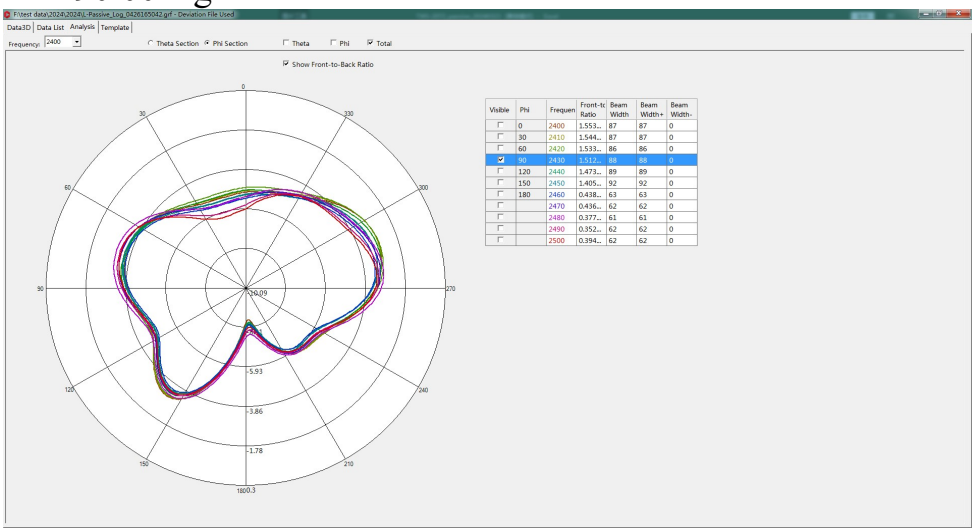
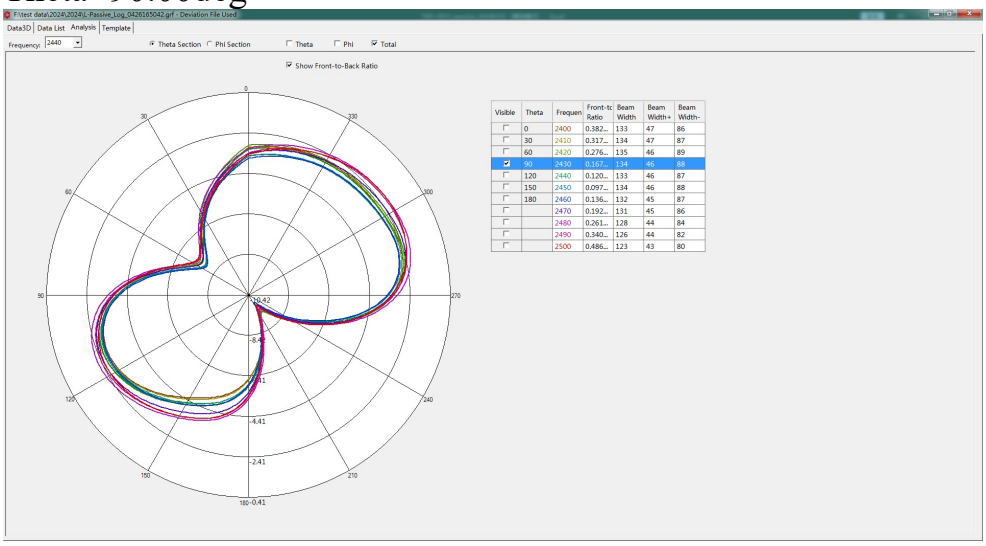


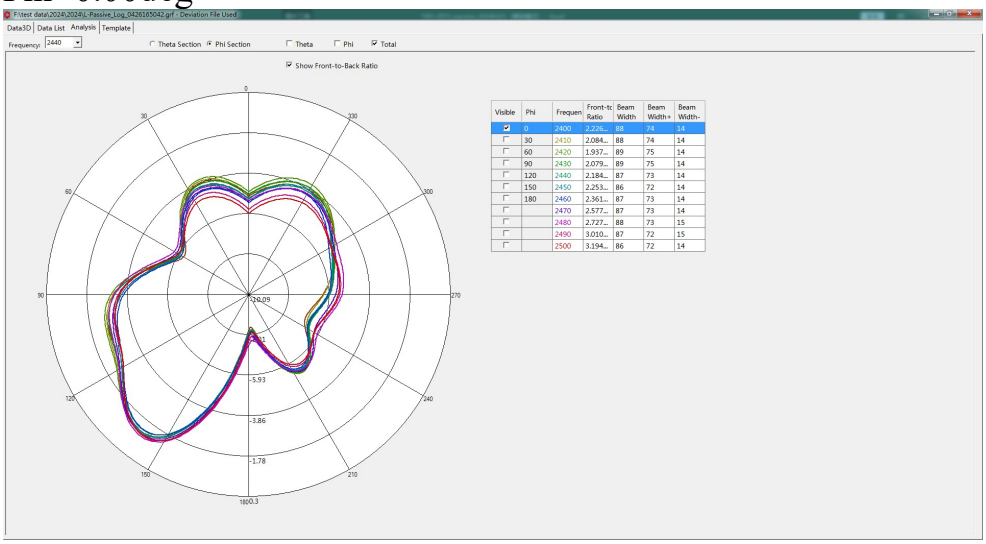
2441 intermediate channel gain value -0.87dBi

Theta=90.00deg



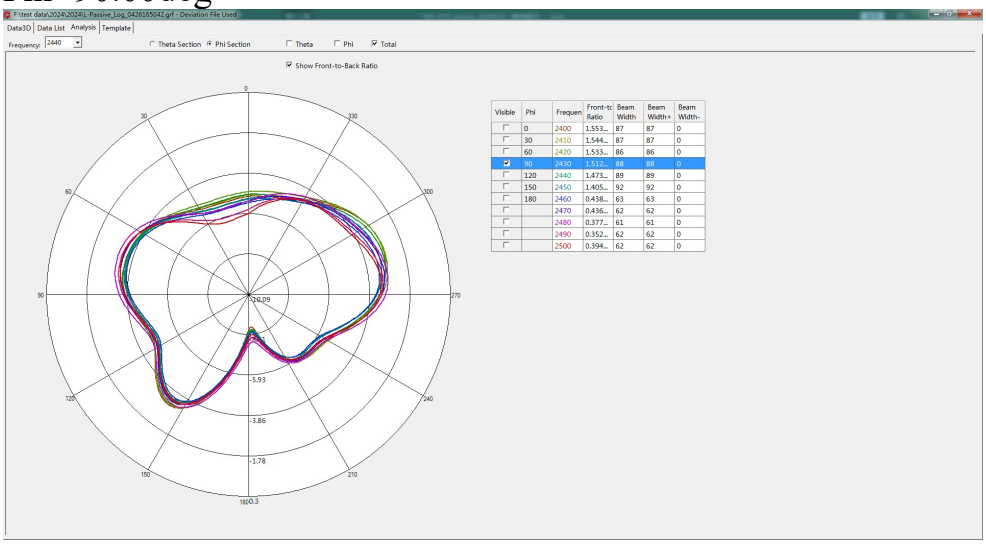
Visible	Theta	Frequen	Front-to Ratio	Beam Width	Beam Width+	Beam Width-
☐	0	2400	0.382...	133	47	86
☐	30	2410	0.317...	134	47	87
☐	60	2420	0.276...	135	46	89
☑	90	2430	0.107...	134	46	88
☐	120	2440	0.120...	133	46	87
☐	150	2450	0.097...	134	46	88
☐	180	2460	0.136...	132	45	87
☐		2470	0.192...	131	45	86
☐		2480	0.261...	128	44	84
☐		2490	0.340...	126	44	82
☐		2500	0.486...	123	43	80

Phi=0.00deg



Visible	Phi	Frequen	Front-to Ratio	Beam Width	Beam Width+	Beam Width-
☑	0	2400	2.226...	88	74	14
☐	30	2410	2.084...	88	74	14
☐	60	2420	1.937...	89	75	14
☐	90	2430	2.079...	89	75	14
☐	120	2440	2.184...	87	73	14
☐	150	2450	2.253...	86	72	14
☐	180	2460	2.361...	87	73	14
☐		2470	2.577...	87	73	14
☐		2480	2.727...	88	73	15
☐		2490	3.010...	87	72	15
☐		2500	3.194...	86	72	14

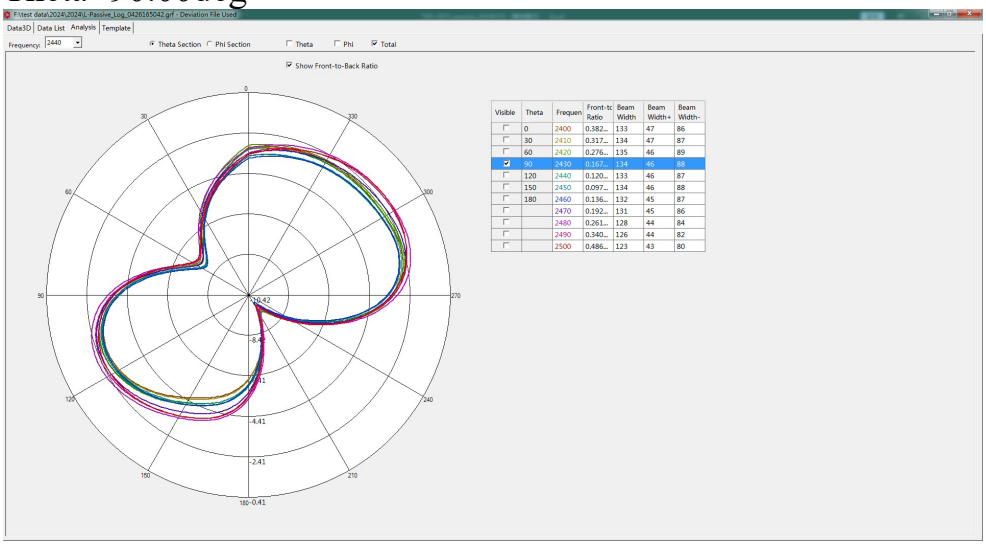
Phi=90.00deg



Visible	Phi	Frequen	Front-to Ratio	Beam Width	Beam Width+	Beam Width-
☐	0	2400	1.553...	87	87	0
☐	30	2410	1.544...	87	87	0
☐	60	2420	1.533...	86	86	0
☑	90	2430	1.512...	88	88	0
☐	120	2440	1.473...	89	89	0
☐	150	2450	1.405...	92	92	0
☐	180	2460	0.438...	63	63	0
☐		2470	0.436...	62	62	0
☐		2480	0.377...	61	61	0
☐		2490	0.352...	62	62	0
☐		2500	0.394...	62	62	0

2480 high channel gain value -0.89dBi

Theta=90.00deg



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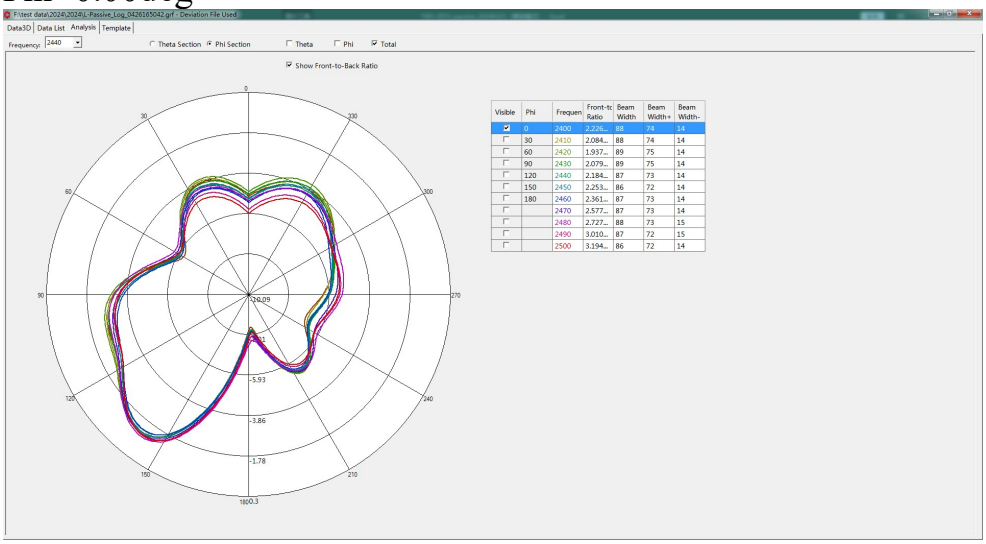

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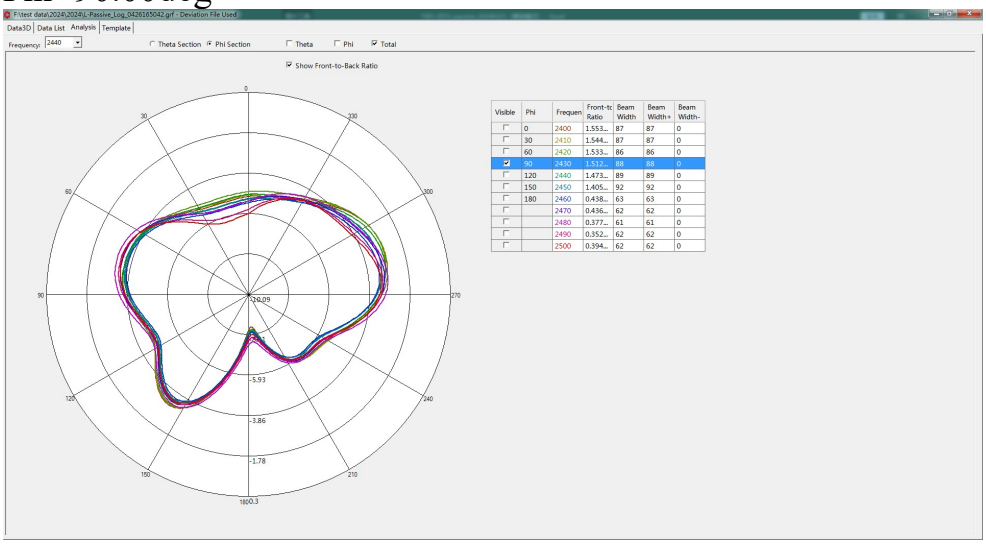

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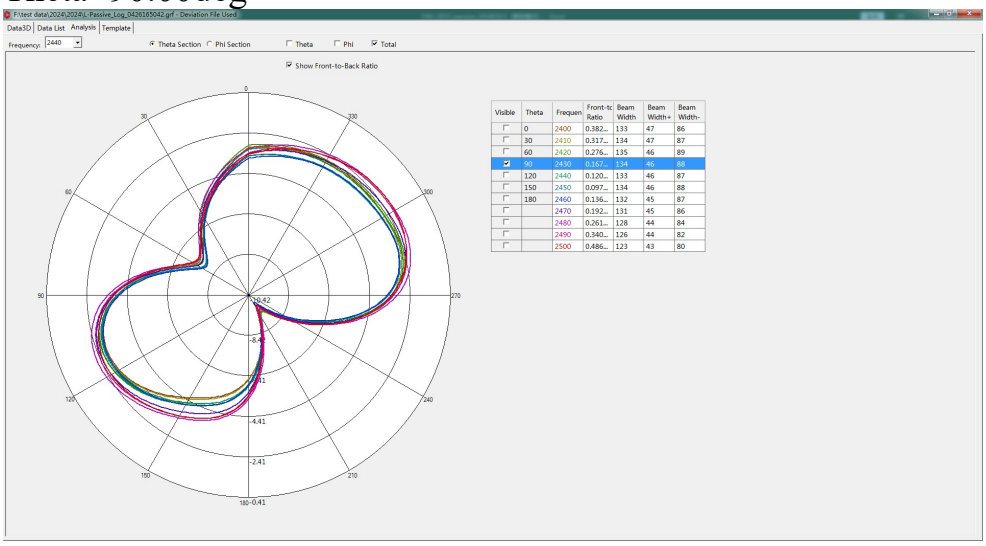

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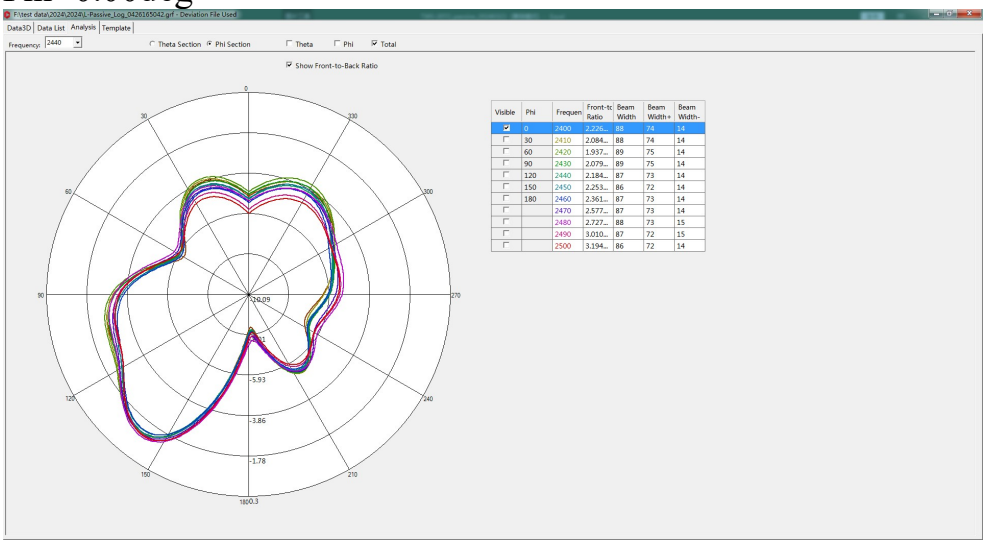

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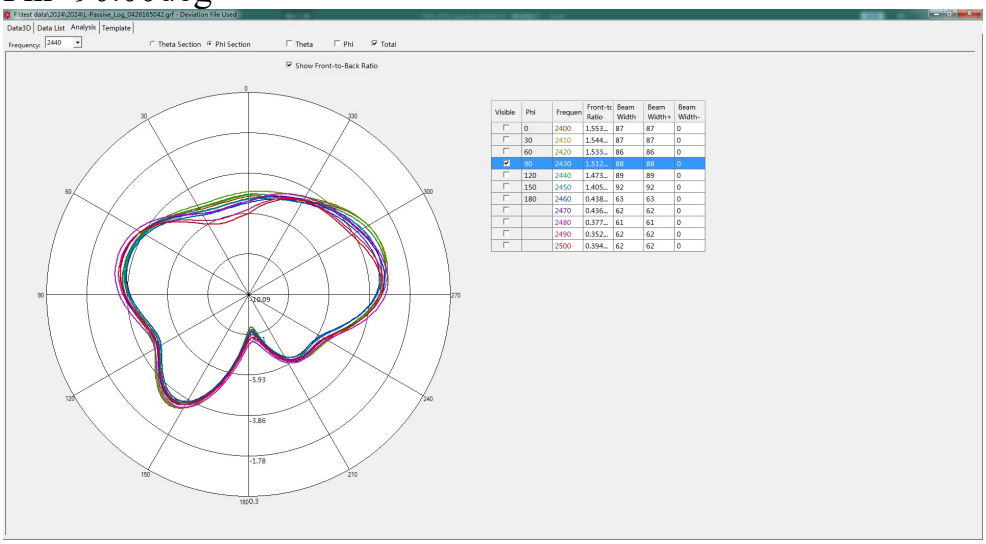

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II：3D Active test report of antenna

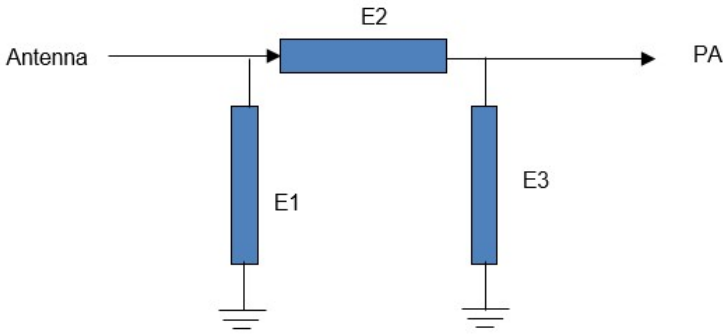
Free space	Channel	TRP（dBm）	TIS （dBm）
L	CH 0	4.5	-91.0
	CH 39	5.6	-91.4
	CH 78	6.1	-91.9

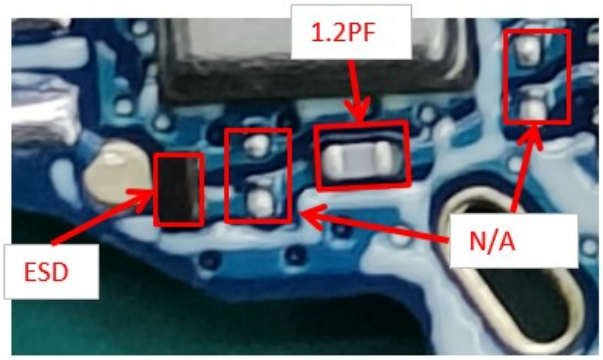
Headform	Channel	TRP（dBm）	TIS （dBm）
L	CH 0	1.2	-87.5
	CH 39	1.5	-87.9
	CH 78	1.5	-88.0

OTA Standard Chamber

III：Matching circuit

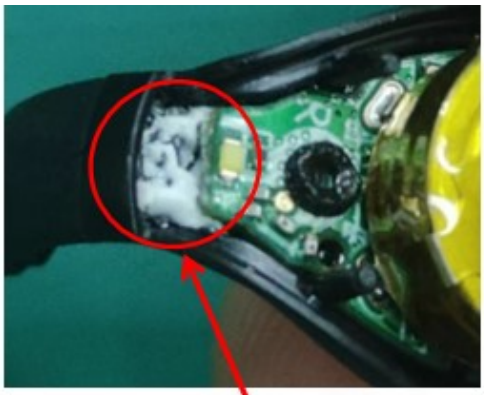
Element	Value
E1(0201)	N/A
E2(0201)	1.2PF
E3(0201)	N/A



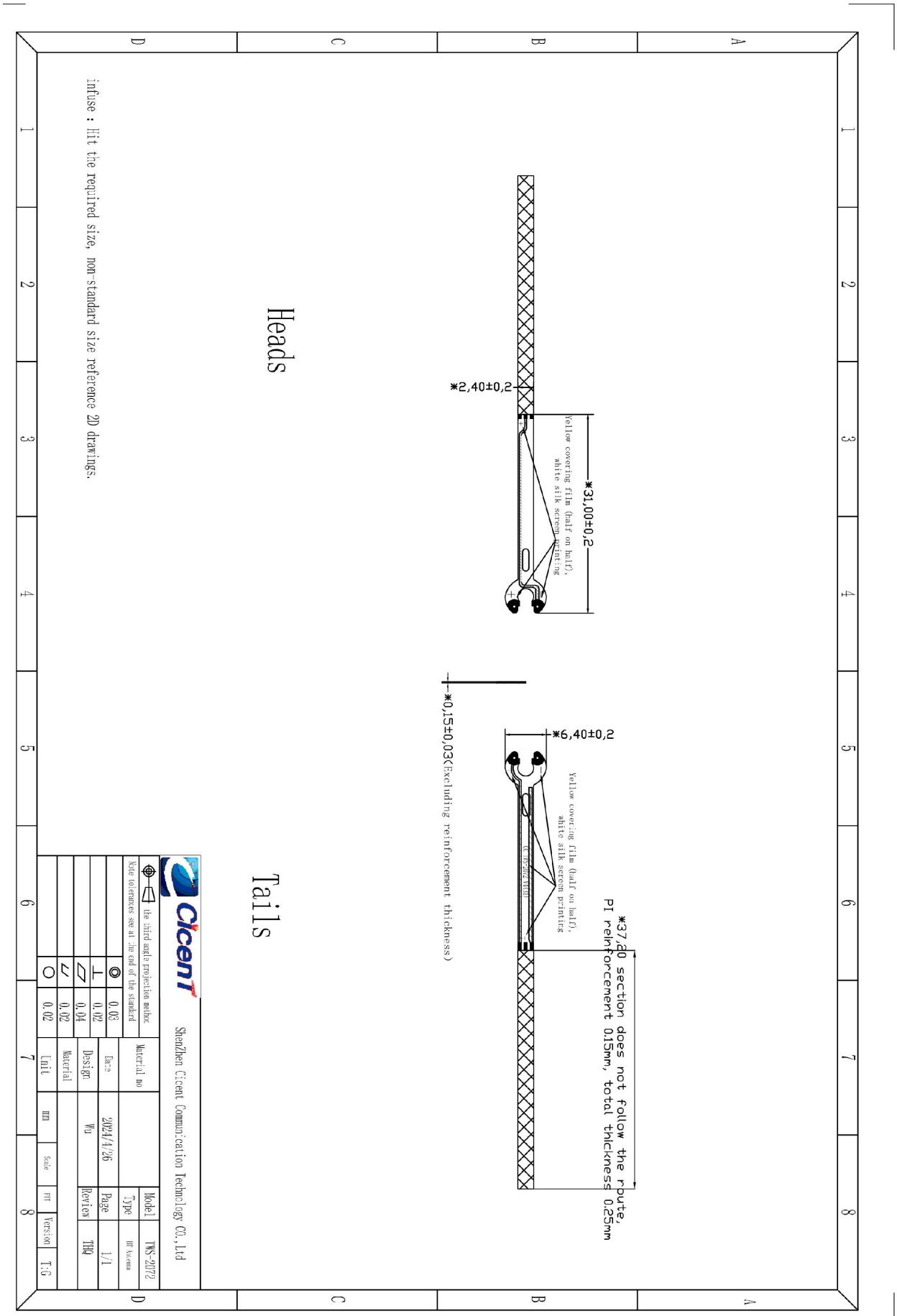


IV：Installation precautions

As shown in the above figure, the welding point between the horn and the antenna FPC cable should not be raised during assembly; Keep the battery in its original state, with a layer of magnetic separator attached to it. The button ribbon cable needs to be fixed and pasted on the bracket, and the L and R ears should be consistent!



As shown in the above figure, the assembly of the speaker and antenna FPC cables needs to be glued in the same way as this trial production. Pay attention to the amount of glue applied and the pressure holding state, which need to be consistent with this trial production state. Otherwise, there is a risk of consistency. The L and R ears should be consistent!

The wiring inside the speaker chamber is bent and assembled as shown inthe above picture, with theleft and right ears being the same.

V：Structure file：