



# Antenna Part Specification

|                       |                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------|
| Customers:            | Cosonic Intelligent Technologies Co., Ltd.                                                     |
| Project name:         | A3958                                                                                          |
| Material category:    | LDS                                                                                            |
| Antenna type:         | LDS Antenna                                                                                    |
| Version:              | V3.0                                                                                           |
| Date:                 | 2024.03.01                                                                                     |
| Manufacturer Address: | 505-506 ,A Block,Donglian Building,Chuangye 2 road,Baoan District,Shenzhen,Guangdong,P.R china |



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| Change record         |                      |                                                              |         |
|-----------------------|----------------------|--------------------------------------------------------------|---------|
| Compile / change date | Reason for change    | Changed content                                              | Version |
| 2024.01.06            | First edition        | First edition                                                | V1.0    |
| 2024.01.25            | Antenna optimization | Change FPC cable layout and correct antenna frequency offset | V2.0    |
| 2024.03.01            | Antenna fine-tuning  | Increase Touch area                                          | V3.0    |

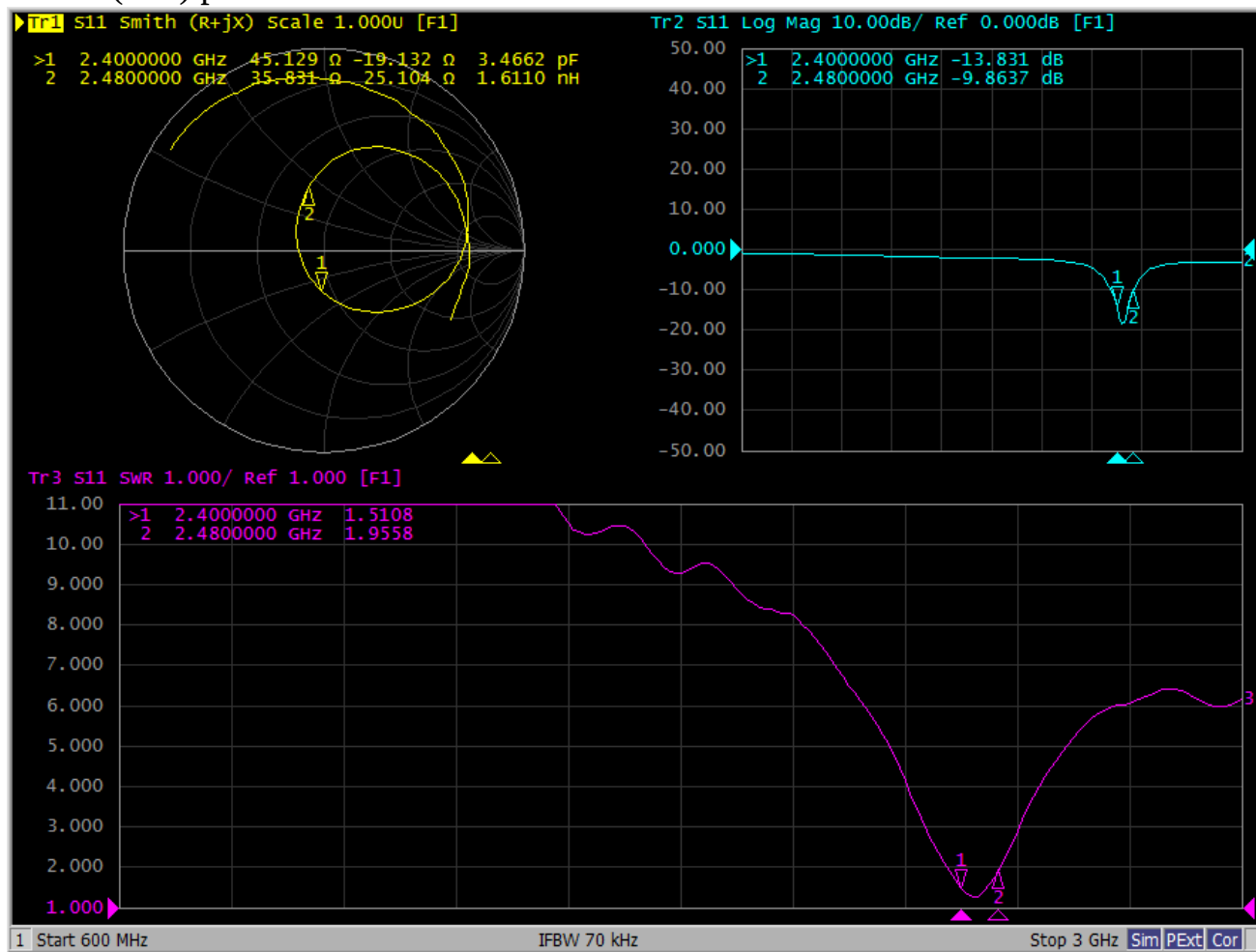


I: The report of passive data



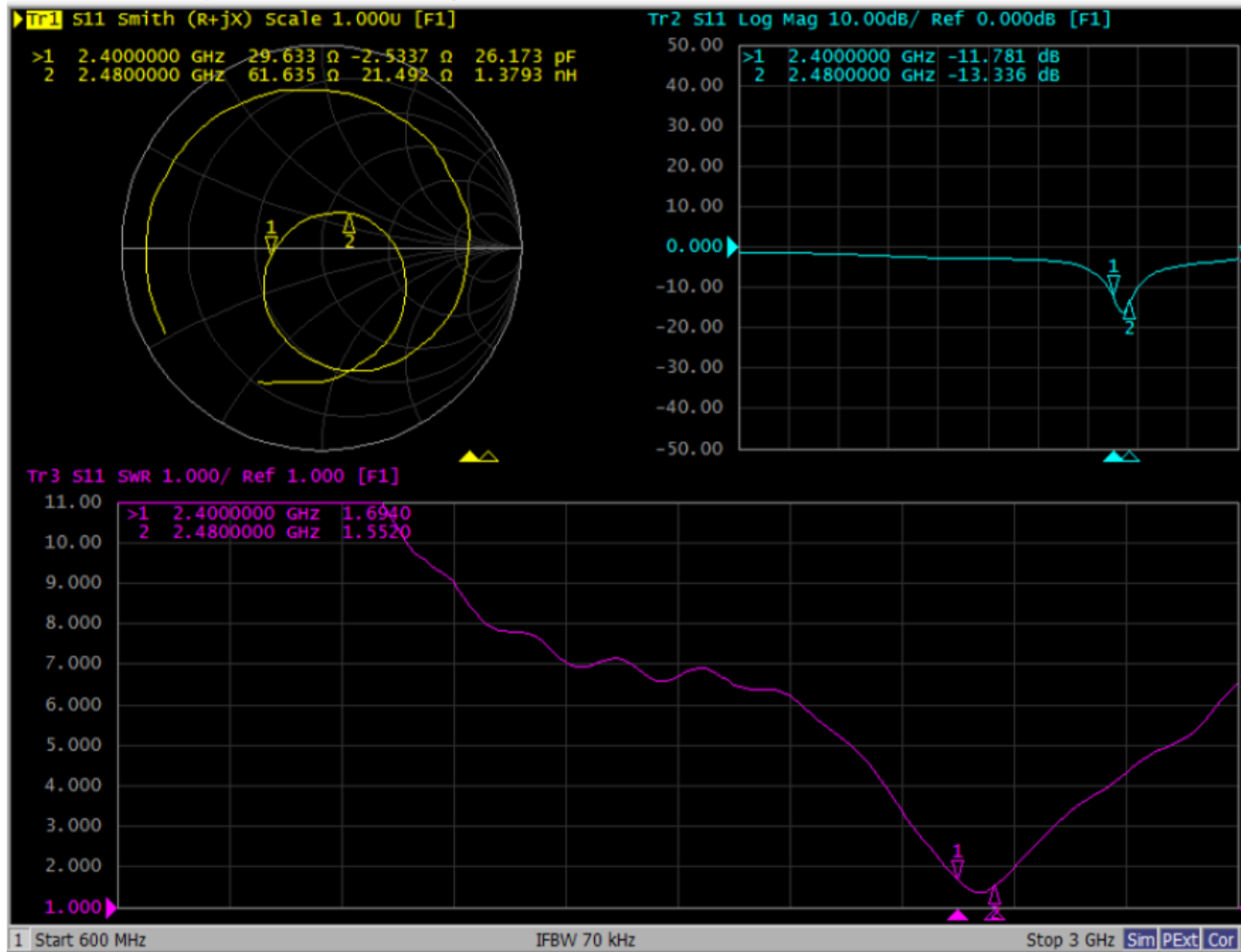
Angilent E5071C

VSWR(S11) parameter (L) :





VSWR(S11) parameter (R) :





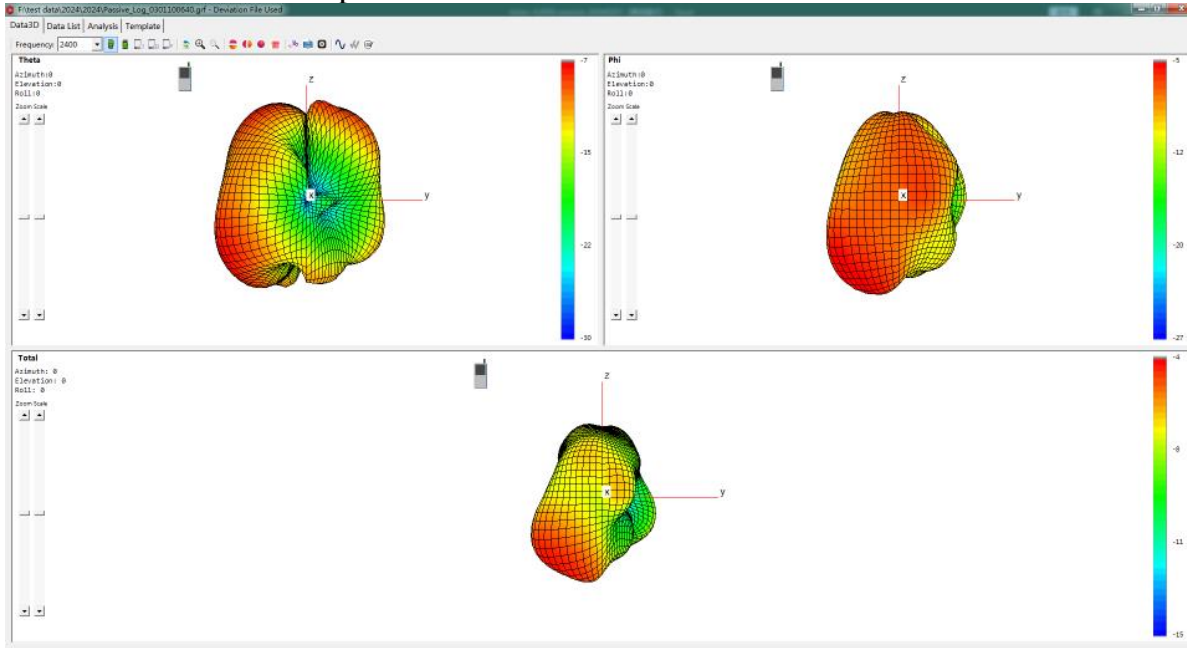
Efficiency:

| L               |            |                  |            |                    |
|-----------------|------------|------------------|------------|--------------------|
| Frequency (MHz) | Gain (dBi) | Efficiency (dB ) | Efficiency | Maximum gain (dBi) |
| 2400            | -5.4       | -7.2             | 19.2       | -4.9               |
| 2410            | -5.2       | -7.0             | 20.1       |                    |
| 2420            | -5.2       | -6.8             | 20.7       |                    |
| 2430            | -5.0       | -6.6             | 21.7       |                    |
| 2440            | -4.9       | -6.7             | 21.5       |                    |
| 2450            | -4.9       | -6.5             | 22.2       |                    |
| 2460            | -5.1       | -6.5             | 22.3       |                    |
| 2470            | -5.7       | -6.9             | 20.4       |                    |
| 2480            | -6.2       | -7.3             | 18.6       |                    |
| Average value   | -5.3       | -6.8             | 20.7       |                    |

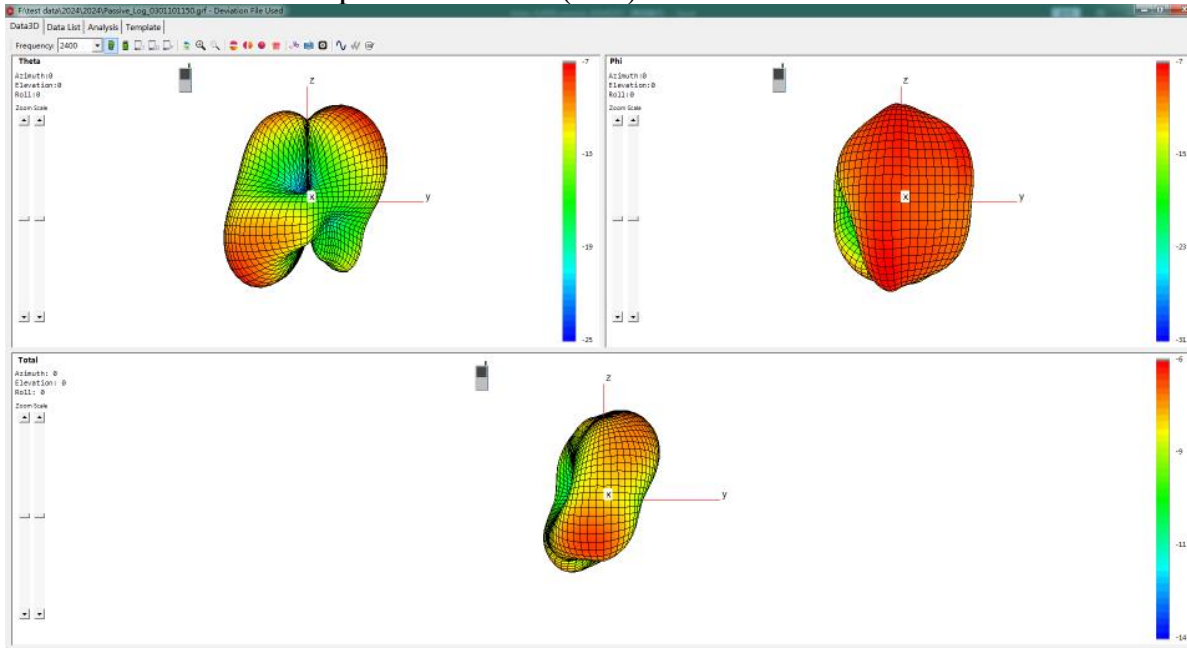
| R               |            |                  |            |                    |
|-----------------|------------|------------------|------------|--------------------|
| Frequency (MHz) | Gain (dBi) | Efficiency (dB ) | Efficiency | Maximum gain (dBi) |
| 2400            | -6.7       | -7.4             | 18.2       | -5.4               |
| 2410            | -6.2       | -7.1             | 19.7       |                    |
| 2420            | -5.8       | -6.9             | 20.4       |                    |
| 2430            | -5.7       | -6.8             | 20.8       |                    |
| 2440            | -5.5       | -6.7             | 21.5       |                    |
| 2450            | -5.5       | -6.8             | 21.1       |                    |
| 2460            | -5.4       | -6.7             | 21.4       |                    |
| 2470            | -5.4       | -6.7             | 21.3       |                    |
| 2480            | -5.9       | -7.1             | 19.3       |                    |
| Average value   | -5.8       | -6.9             | 20.4       |                    |



### 3D Antenna radiation pattern (2.4GHz (dBi) L) :



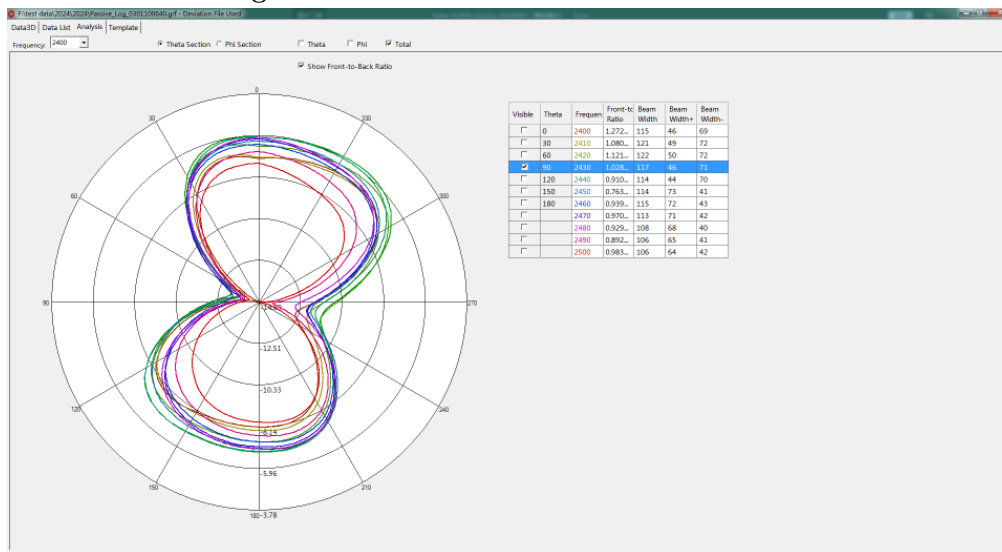
### 3D Antenna radiation pattern 2.4GHz(dBi) (R) :



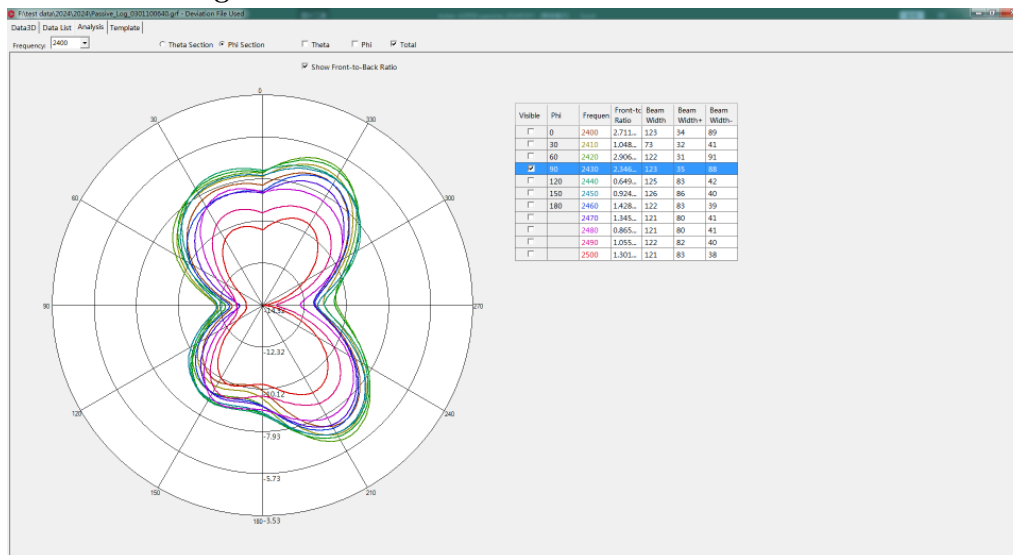


## 2D Antenna radiation pattern(dBi) (L) :

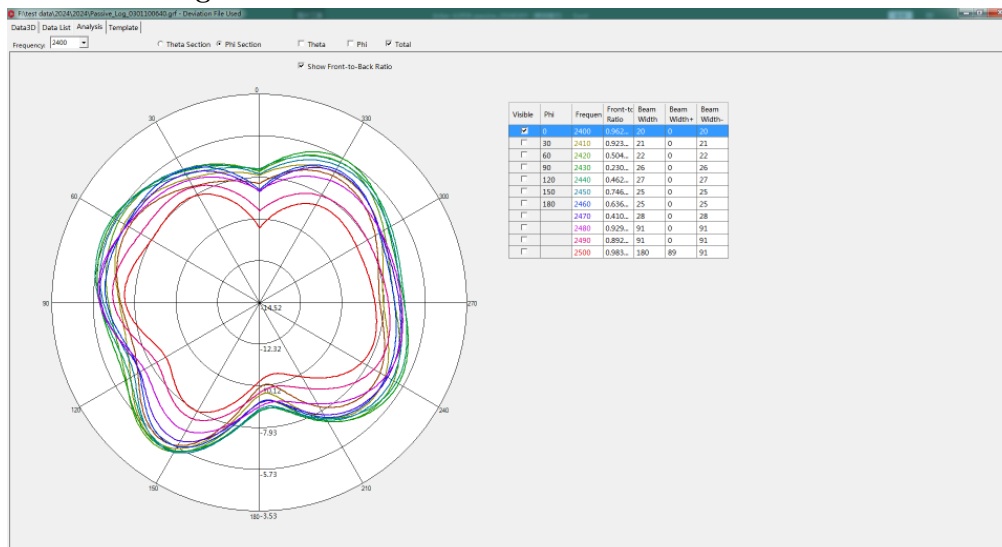
Theta=90.00deg



Phi=90.00deg



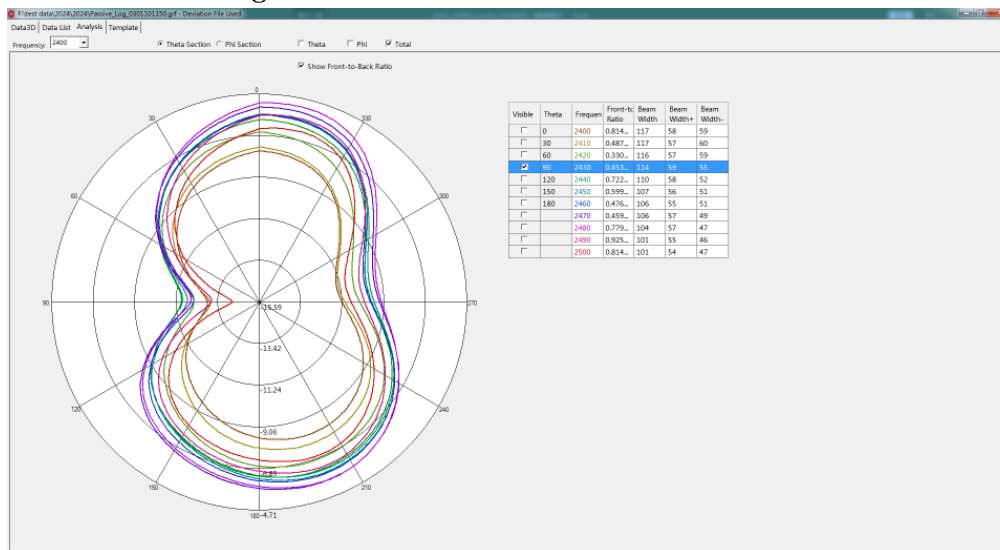
Phi=0.00deg



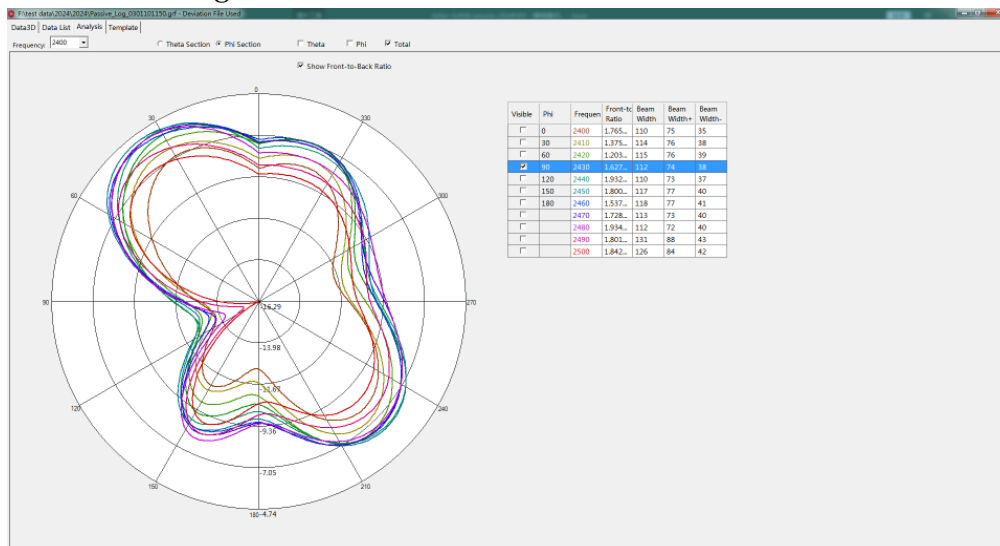


## 2D Antenna radiation pattern(dBi) (R) :

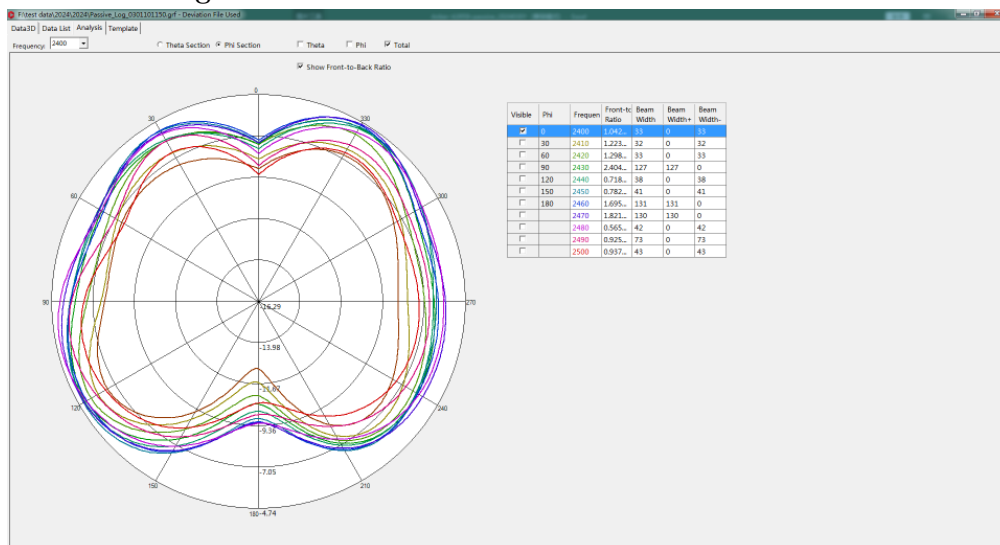
Theta=90.00deg



Phi=90.00deg



Phi=0.00deg





II: 3D Active test report of antenna

| L          | Channel | TRP (dBm) | TIS (dBm) |
|------------|---------|-----------|-----------|
| free space | CH 0    | -0.6      | -85.3     |
|            | CH 39   | 0.7       | -87.7     |
|            | CH 78   | 0.2       | -87.1     |

| L        | Channel | TRP (dBm) | TIS (dBm) |
|----------|---------|-----------|-----------|
| headform | CH 0    | -4.0      | -81.9     |
|          | CH 39   | -3.5      | -82.8     |
|          | CH 78   | -5.4      | -81.6     |

| R          | Channel | TRP (dBm) | TIS (dBm) |
|------------|---------|-----------|-----------|
| free space | CH 0    | -1.1      | -85.2     |
|            | CH 39   | 0.5       | -87.7     |
|            | CH 78   | 0.4       | -87.7     |

| R        | Channel | TRP (dBm) | TIS (dBm) |
|----------|---------|-----------|-----------|
| headform | CH 0    | -4.2      | -82.1     |
|          | CH 39   | -3.4      | -83.1     |
|          | CH 78   | -4.9      | -82.3     |



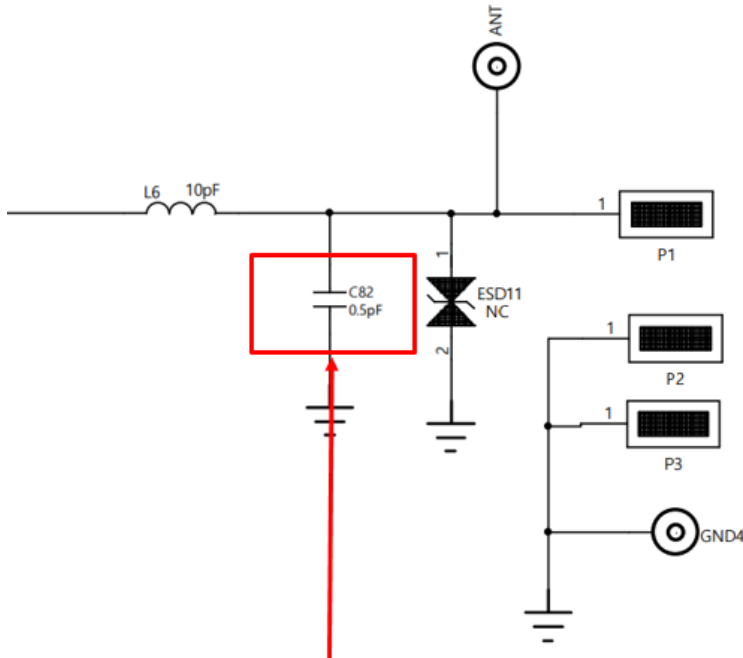
OTA Standard Chamber



### III: Matching circuit

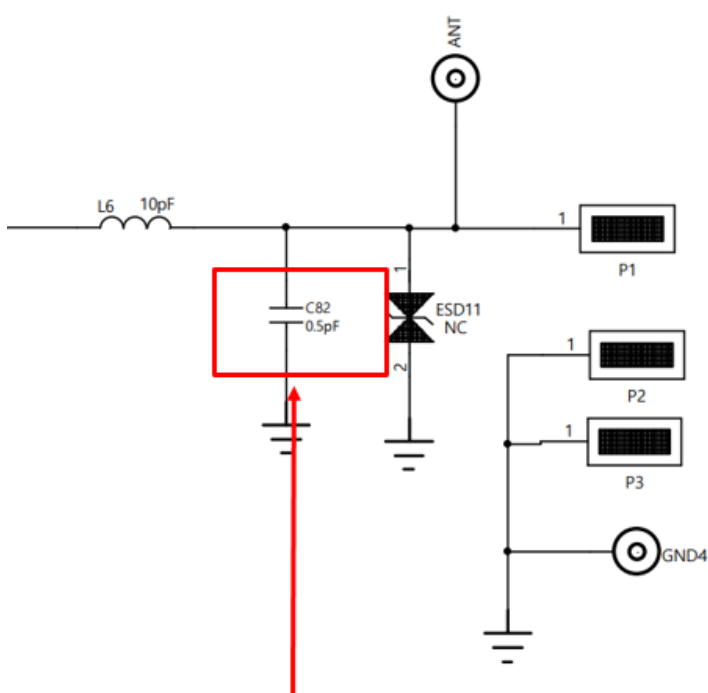
#### L-matching circuit

Left ear C82 changed to 1.8pF



#### R-matching circuit

Right ear C82 changed to 2.2pF



#### IV: Structure file

