



# Antenna Part Specification

|                    |            |
|--------------------|------------|
| Project name:      | MTW4       |
| Material category: | BT antenna |
| Version:           | V3.0       |
| Date:              | 2023.06.13 |



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| Change record         |                      |                      |         |
|-----------------------|----------------------|----------------------|---------|
| Compile / change date | Reason for change    | Changed content      | Version |
| 2023.04.14            | First edition        | First edition        | V1.0    |
| 2023.05.31            | Antenna optimization | RF data update       | V2.0    |
| 2023.06.13            | Antenna optimization | Antenna optimization | V3.0    |

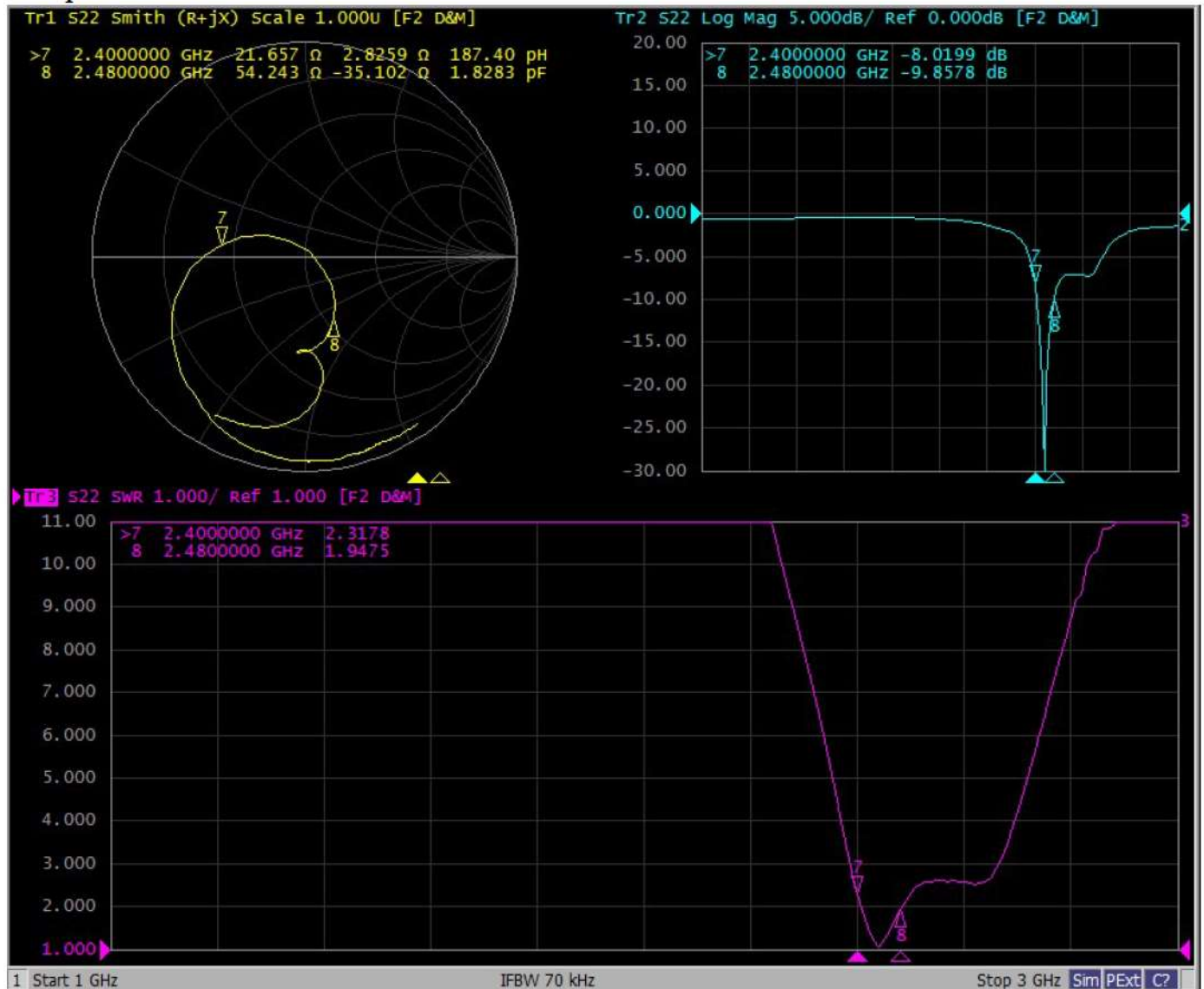


I: The report of passive data



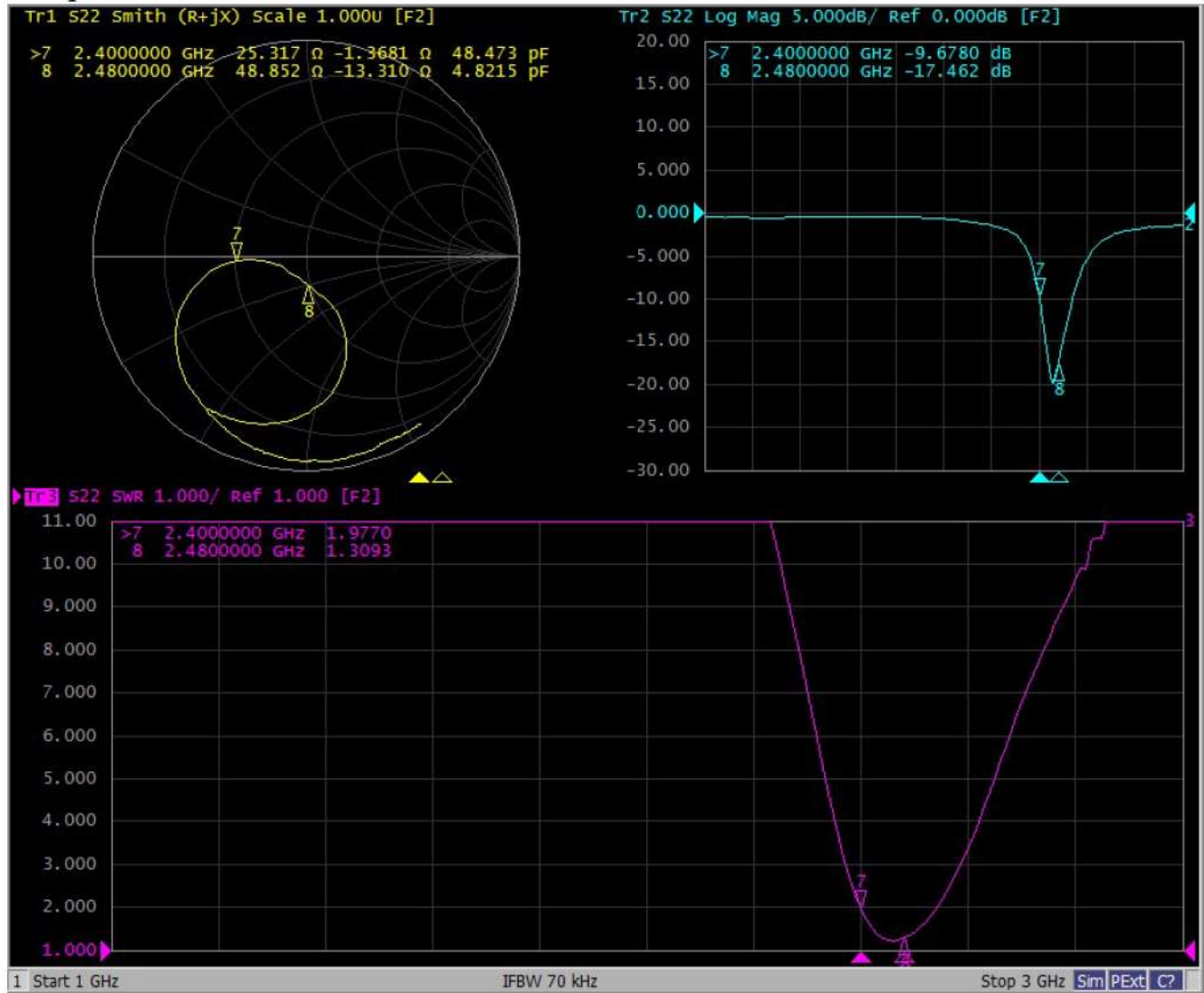
Angilent E5071C

S11 parameter (L) :





S11 parameter (BHL) :

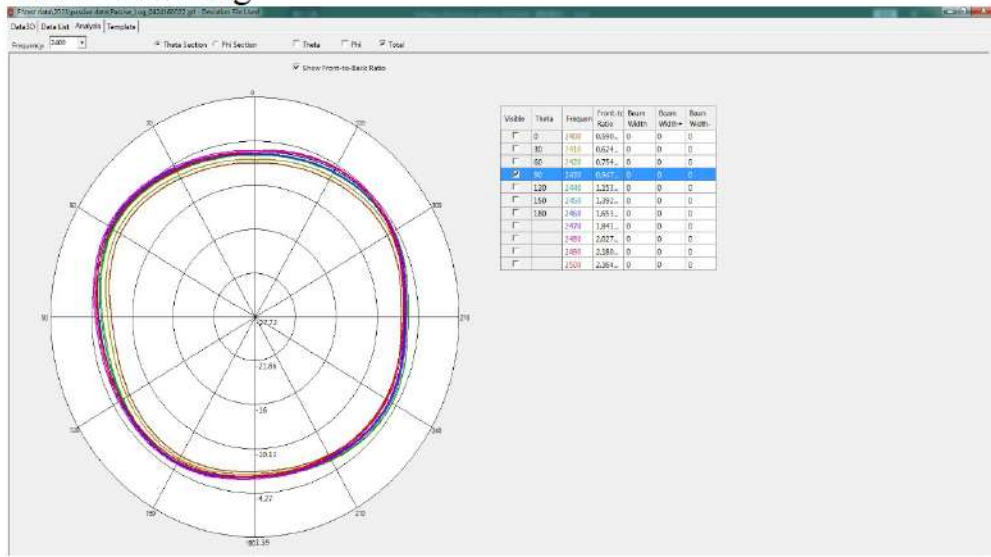


Efficiency:

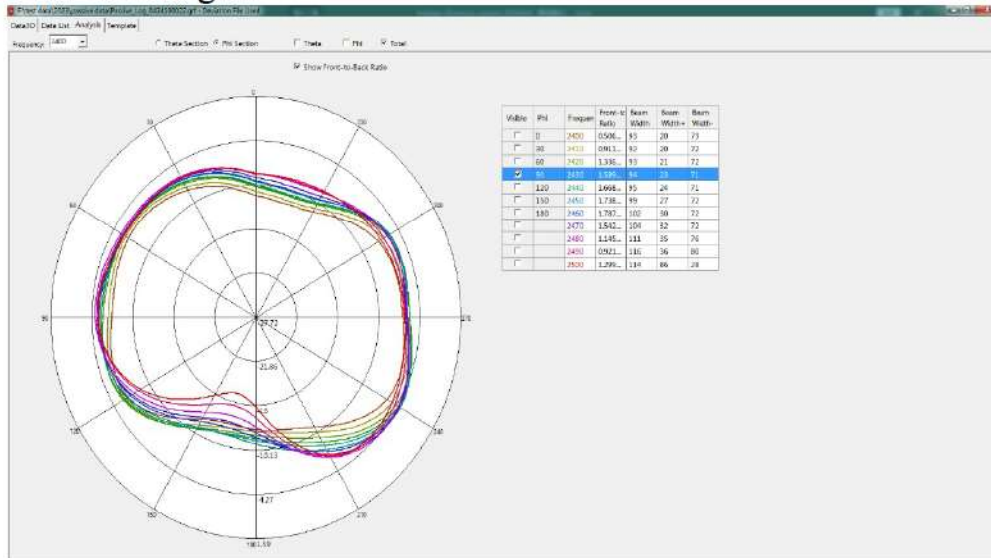
| L               |            |                 |           |
|-----------------|------------|-----------------|-----------|
| Frequency (MHz) | Efficiency | Efficiency (dB) | Max gain: |
| 2402            | 19%        | -7.3            | -0.4dBi   |
| 2410            | 21%        | -6.7            |           |
| 2420            | 22%        | -6.5            |           |
| 2430            | 22%        | -6.5            |           |
| 2440            | 23%        | -6.4            |           |
| 2450            | 22%        | -6.6            |           |
| 2460            | 23%        | -6.5            |           |
| 2470            | 23%        | -6.4            |           |
| 2480            | 20%        | -6.9            |           |
| Average value   | 22%        | -6.6            |           |



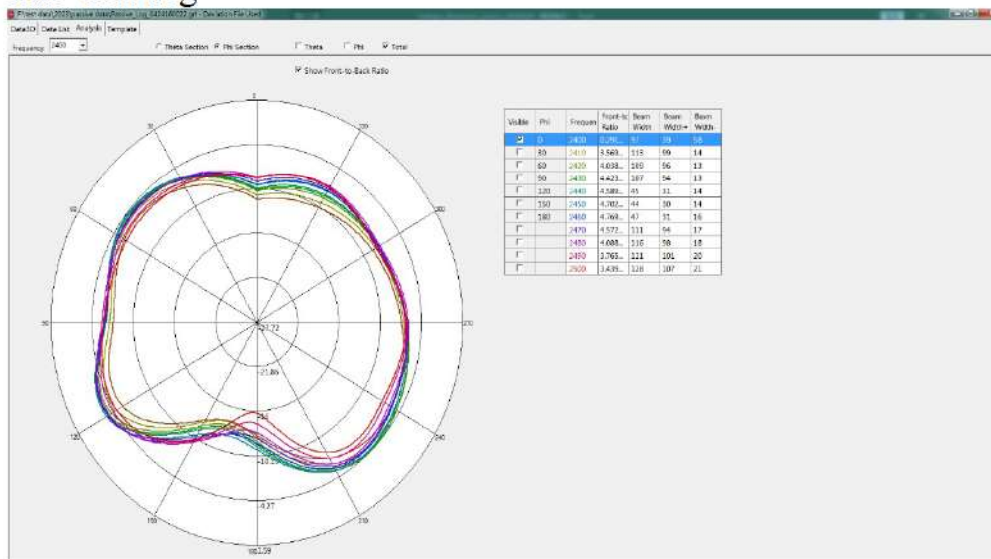
### Antenna radiation pattern: Theta=90.00deg



### Phi=90.00deg

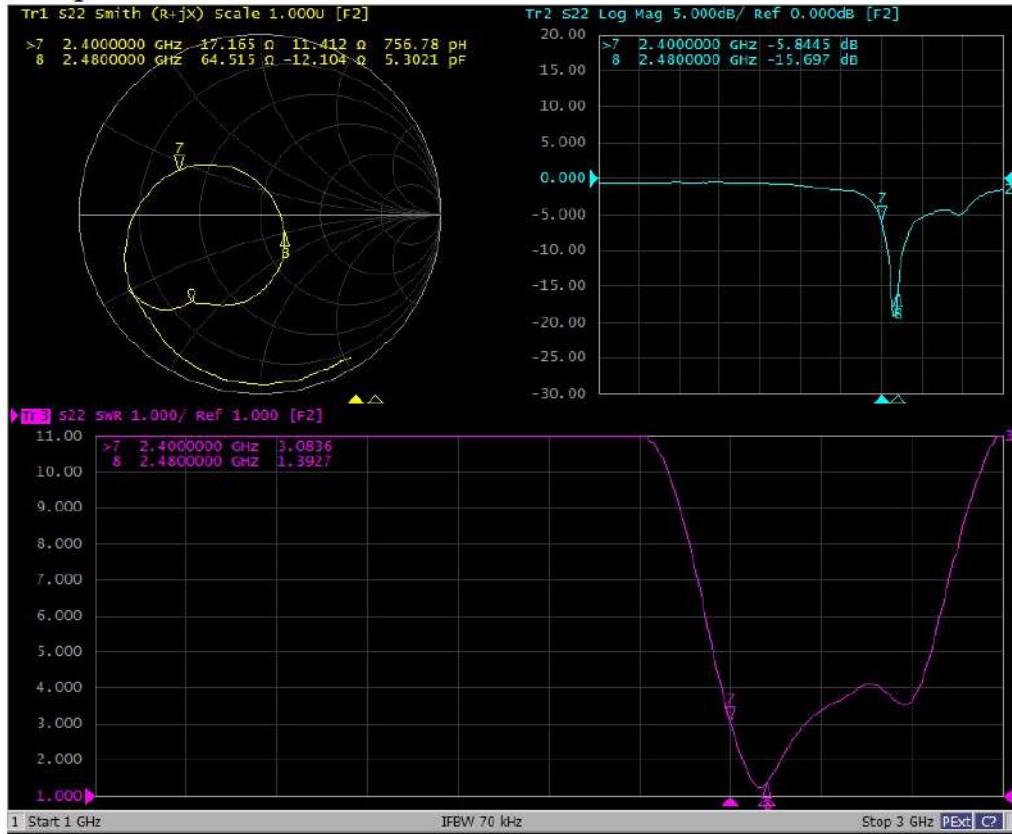


### Phi=0.00deg

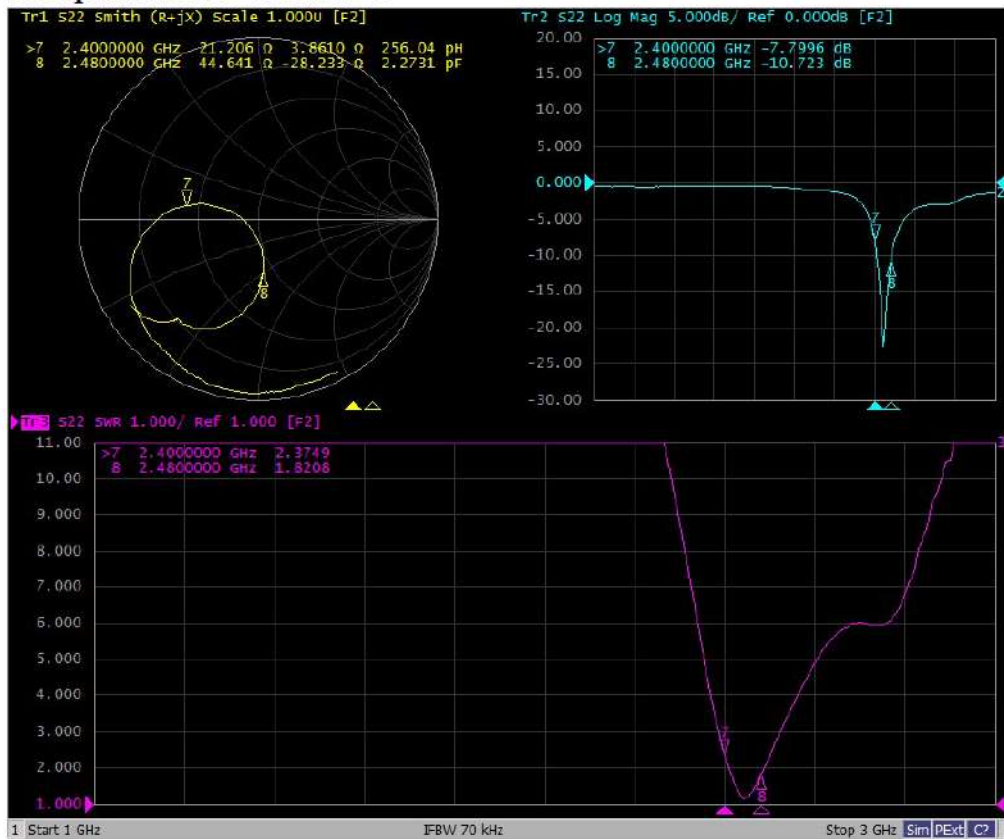




### S11 parameter (R) :



### S11 parameter (BHR) :

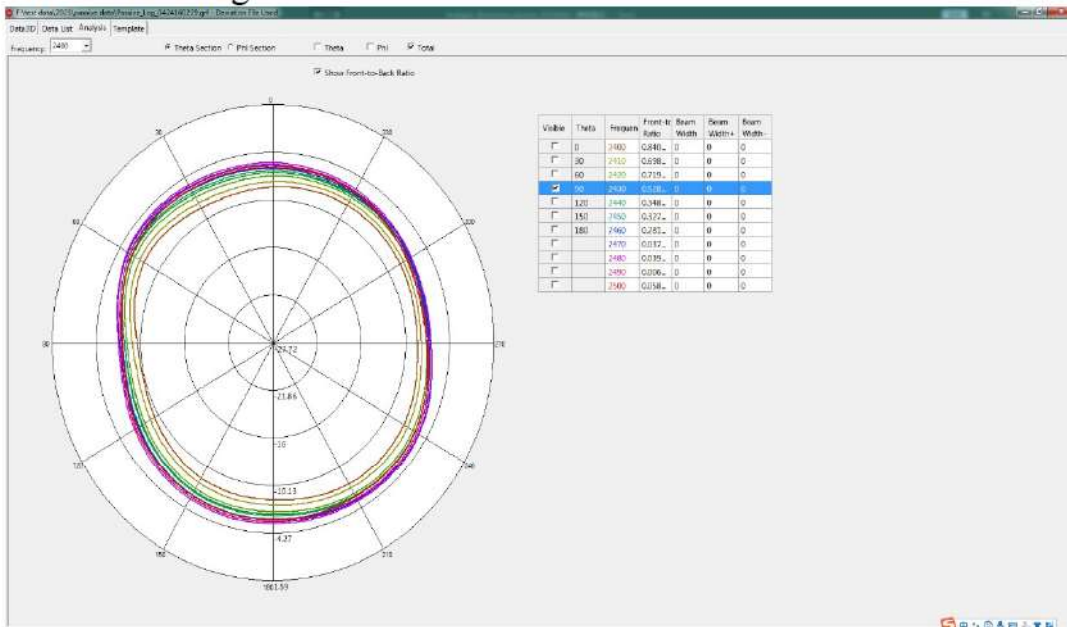




Efficiency:

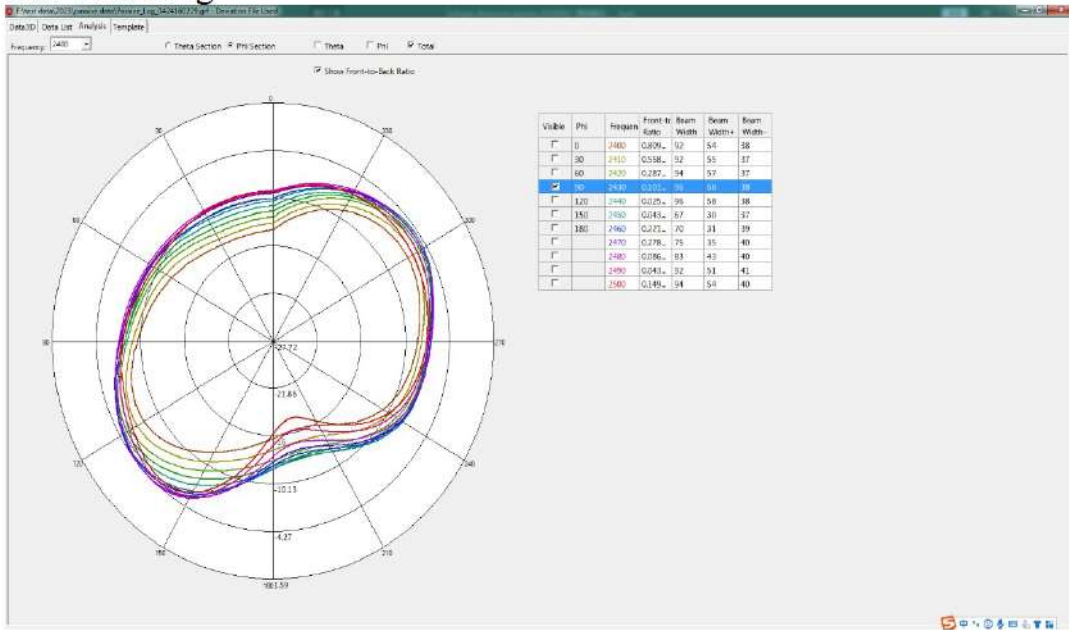
| R               |            |                 |           |
|-----------------|------------|-----------------|-----------|
| Frequency (MHz) | Efficiency | Efficiency (dB) | Max gain: |
| 2402            | 18%        | -7.4            | -0.2dBi   |
| 2410            | 20%        | -7.0            |           |
| 2420            | 21%        | -6.7            |           |
| 2430            | 23%        | -6.4            |           |
| 2440            | 23%        | -6.4            |           |
| 2450            | 24%        | -6.3            |           |
| 2460            | 24%        | -6.3            |           |
| 2470            | 21%        | -6.8            |           |
| 2480            | 19%        | -7.2            |           |
| Average value   | 21%        | -6.7            |           |

Antenna radiation pattern:  
Theta=90.00deg

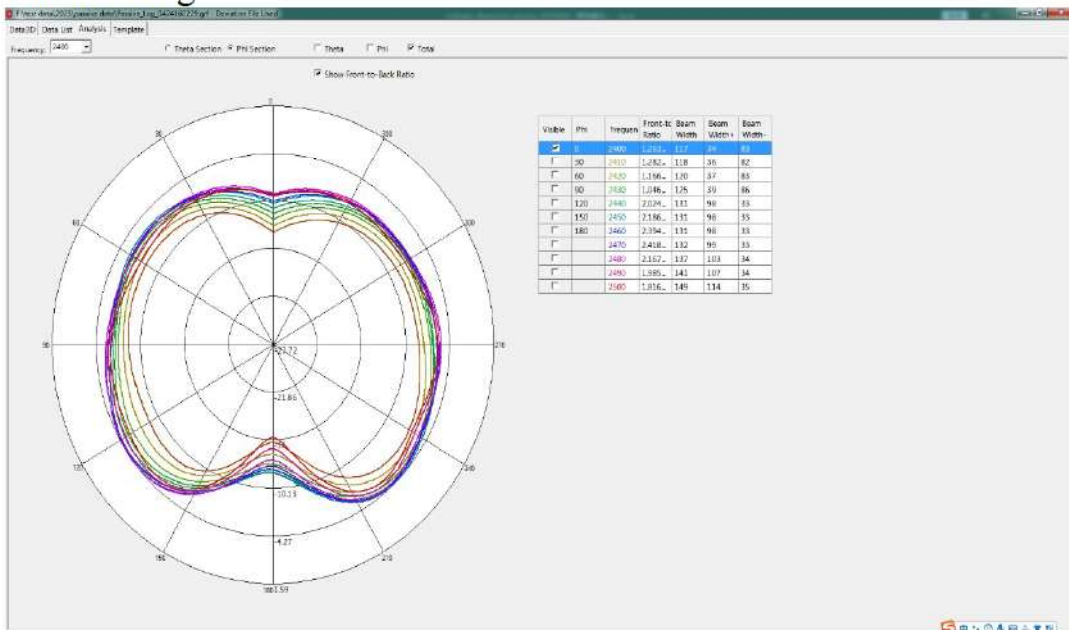




### Phi=90.00deg



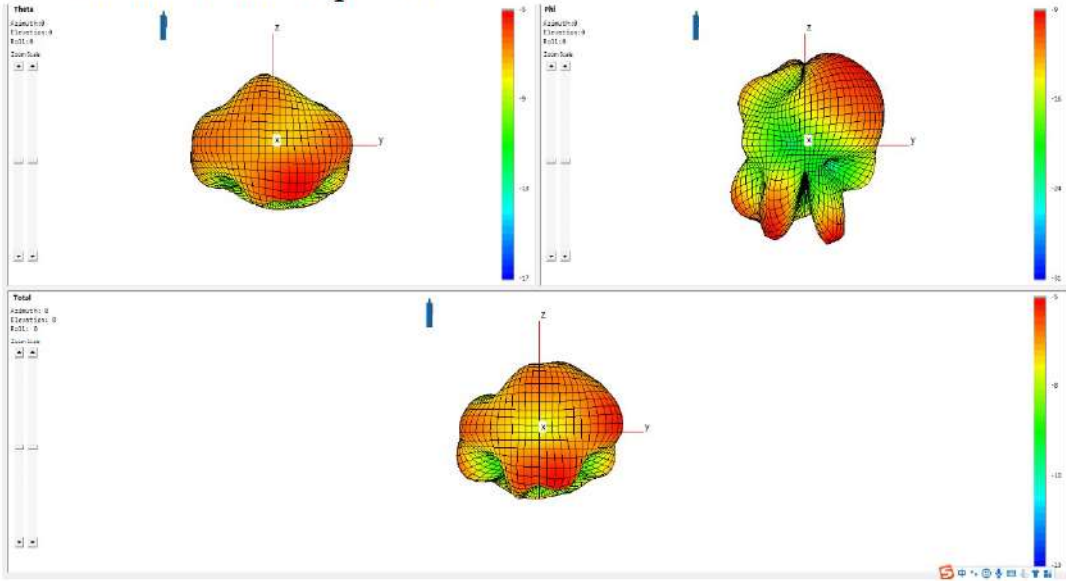
### Phi=0.00deg



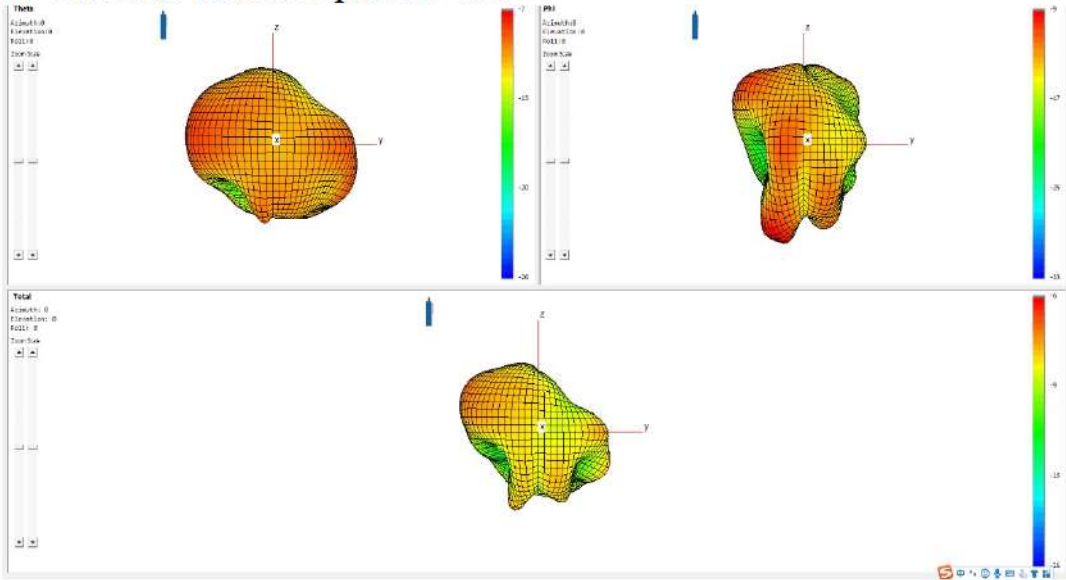




3D Antenna radiation pattern (L) :



3D Antenna radiation pattern (R) :





II: 3D Active test report of antenna



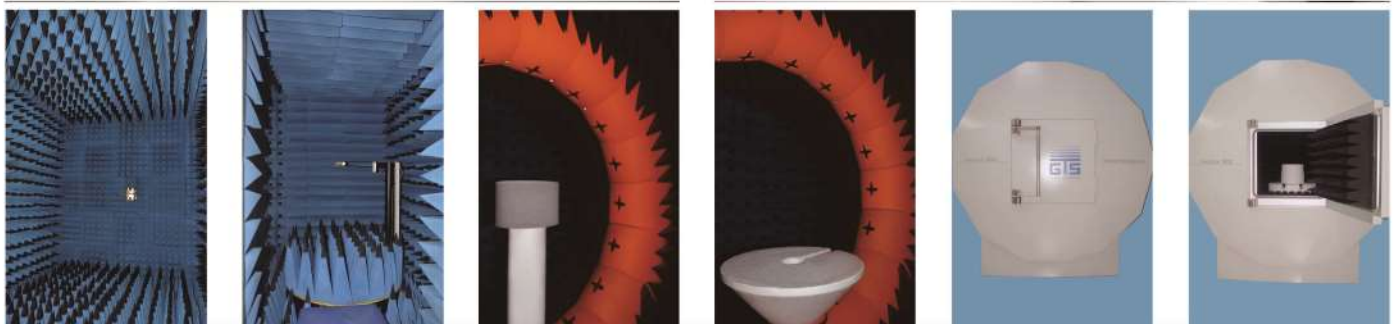
ROHDE&SCHWARZ CMW500

| White | Channel | TRP (dBm) | TIS (dBm) |
|-------|---------|-----------|-----------|
| L     | CH 0    | 7.6       | -89.0     |
|       | CH 39   | 7.6       | -90.0     |
|       | CH 78   | 9.4       | -91.4     |

| White | Channel | TRP (dBm) | TIS (dBm) |
|-------|---------|-----------|-----------|
| R     | CH 0    | 8.2       | -90.0     |
|       | CH 39   | 9.4       | -92.0     |
|       | CH 78   | 9.1       | -91.3     |

| Black | Channel | TRP (dBm) | TIS (dBm) |
|-------|---------|-----------|-----------|
| L     | CH 0    | 7.5       | -89.8     |
|       | CH 39   | 7.1       | -91.6     |
|       | CH 78   | 7.7       | -92.6     |

| Black | Channel | TRP (dBm) | TIS (dBm) |
|-------|---------|-----------|-----------|
| R     | CH 0    | 8.1       | -90.2     |
|       | CH 39   | 9.5       | -91.4     |
|       | CH 78   | 9.3       | -92.0     |



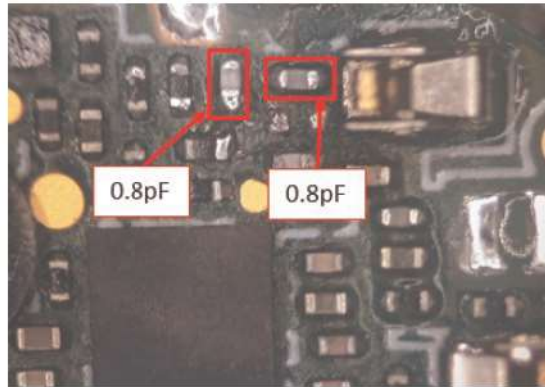
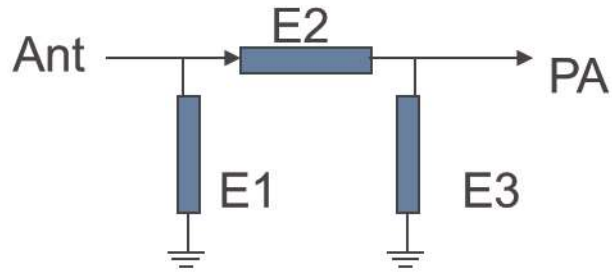
OTA Standard Chamber



III: Matching circuit

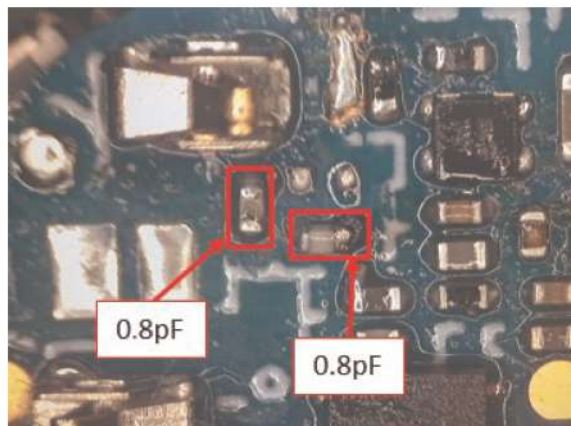
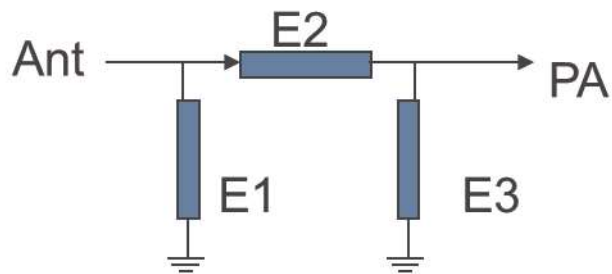
L:

| Element | Value        |
|---------|--------------|
| E1      | N/A          |
| E2      | <b>0.8pF</b> |
| E3      | <b>0.8pF</b> |



R:

| Element | Value        |
|---------|--------------|
| E1      | N/A          |
| E2      | <b>0.8pF</b> |
| E3      | <b>0.8pF</b> |



Notice: modification of matching circuit



IV: Performance Specifications

applicable frequency of antenna: 2400~2480

V: Test instructions

Test Dates: 20230607

Name of Test Personnel: qin honglang

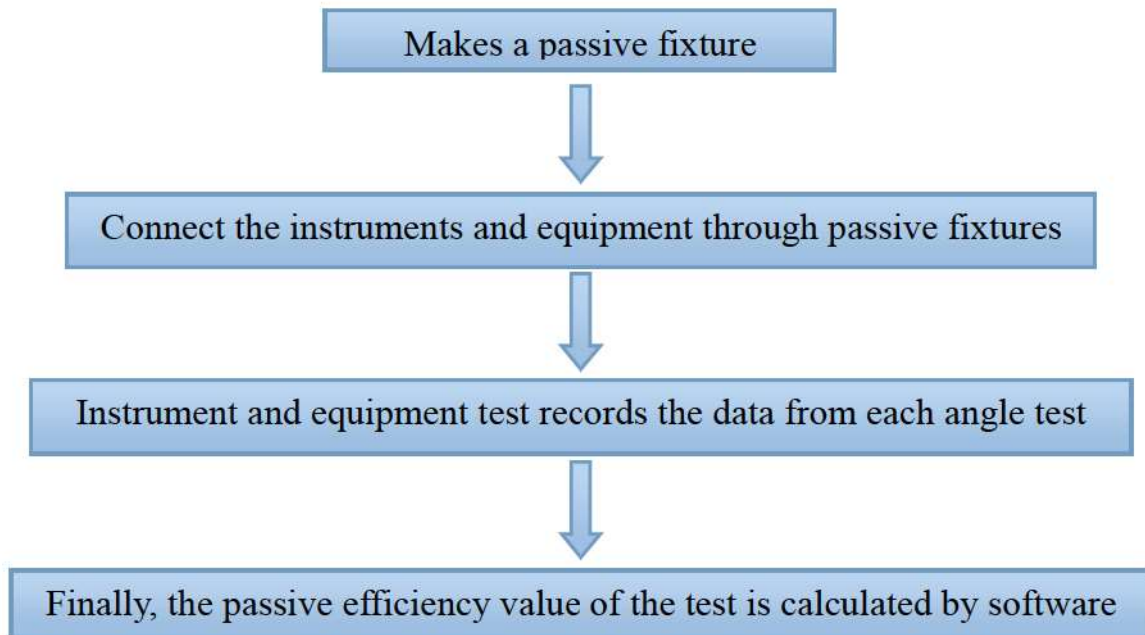
Names of Commercial Test Software Being Used: Wave studio

Passive and Active Test Setup Photos:

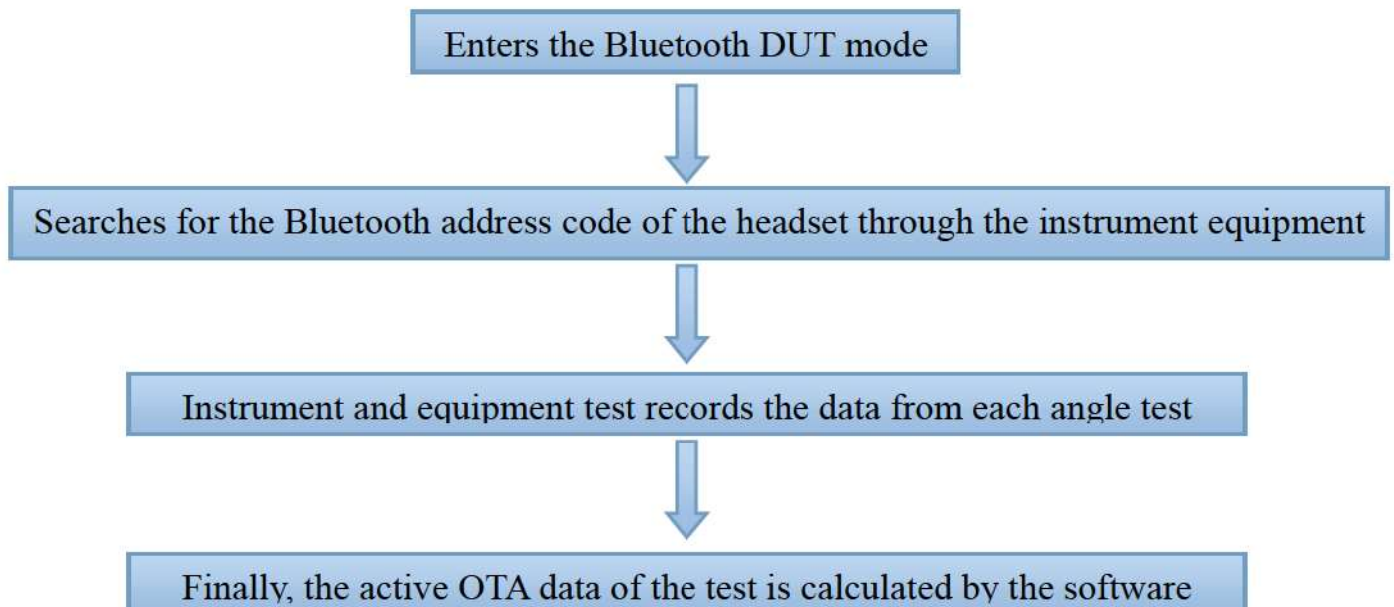




Description of passive test methods:



Description of the active test method:





VI: Calibration certificate of testing equipment



深圳精宇航检测技术有限公司

SHENZHEN JINGYUHANG DETECTION TECHNOLOGY CO.,LTD



中国认可  
国际互认  
校准  
CALIBRATION  
CNAS L7875

# 校准证书

## CALIBRATION CERTIFICATE

证书编号  
Certificate No. 22AA147710003

委托方  
Client 深圳市思讯通信技术有限公司

委托方地址  
Address 深圳市宝安区创业二路东联大厦A座505-506

计量器具名称  
Description 综合测试仪

规格/型号  
Model/Type ROHDE&SCHWARZ CMW500

制造单位  
Manufacturer ROHDE&SCHWARZ

出厂编号  
Serial No. /

管理编号  
Asset No. SX-009

接收日期  
Date of Receiving 2022 年 11 月 05 日  
Year Month Day

校准日期  
Date of Calibration 2022 年 11 月 05 日  
Year Month Day

发布日期  
Date of Release 2022 年 11 月 07 日  
Year Month Day

批准人  
Approved Signatory 李彦劭 总经理

核验员  
Inspected by 陈毅

校准员  
Calibrated by 曾伟浩



实验室地址: 广东省深圳市宝安区航城街道鹤洲社区洲石路739号恒丰工业城C6栋综合楼1604D  
ADD: 1604D, building C6, Hengfeng Industrial City, 739, Zhoushi Road, Hezhou Community, Hangcheng Street, Baoan District, Shenzhen, Guangdong Province  
邮编(Post Code): 518101 电话(Tel): 0755-23057616 传真(Fax): 0755-23057616  
网址(HTTP): www.jyhtest.com 邮箱(E-mail): szjyhjc@126.com



深圳精宇航检测技术有限公司

SHENZHEN JINGYUHANG DETECTION TECHNOLOGY CO.,LTD



中国认可  
国际互认  
校准  
CALIBRATION  
CNAS L7875

# 校准证书

## CALIBRATION CERTIFICATE

证书编号 Certificate No. 22AA147710001

委托方 Client 深圳市思讯通信技术有限公司

委托方地址 Address 深圳市宝安区创业二路东联大厦A座505-506

计量器具名称 Description 网络分析仪

规格/型号 Model/Type E5071C

制造单位 Manufacturer Keysight

出厂编号 Serial No. /

管理编号 Asset No. SX-048

接收日期 Date of Receiving 2022 年 11 月 05 日  
Year Month Day

校准日期 Date of Calibration 2022 年 11 月 05 日  
Year Month Day

发布日期 Date of Release 2022 年 11 月 07 日  
Year Month Day

批准人 Approved Signatory 李孟劭 总经理

核验员 Inspected by 陈毅

校准员 Calibrated by 曾伟浩

签发单位(专用章)  
Stamp



实验室地址: 广东省深圳市宝安区航城街道鹤洲社区洲石路739号恒丰工业城C6栋综合楼1604D  
ADD: 1604D, building C6, Hengfeng Industrial City, 739, Zhoushi Road, Hezhou Community, Hangcheng Street, Baoan District, Shenzhen, Guangdong Province

邮编(Post Code): 518101 电话(Tel): 0755-23057616 传真(Fax): 0755-23057616

网址(HTTP): www.jyhtest.com 邮箱(E-mail): szjyhjc@126.com