

Shenzhen QiBing Technology Co.,Ltd

Antenna Specification for Approval

NO. QBAC202404150001

Customer Name: TenVeo

Product Name: WIFI Antenna

Product descriptinon: 2DB Black Cable Type, L=109mm, SMA

Part NO.: Q2458A

Customer NO.: 01. 23. 0007

Version number: V1.0

Issued Date: 2024-4-15

| QIBING        |  |
|---------------|--|
| R&D Dept      |  |
| Business Dept |  |
| Approved By   |  |

| CUSTOMER      |  |
|---------------|--|
| R&D Dept      |  |
| Business Dept |  |
| Approved By   |  |

## ● Specification Summary

| A. Electrical Characteristics            |                                                   |
|------------------------------------------|---------------------------------------------------|
| Frequency                                | 2400MHz ~2500MHz                                  |
|                                          | 5150MHz ~5850MHz                                  |
| LogMag                                   | <-10                                              |
| Efficiency                               | >45%                                              |
| Peak Gain                                | 2.4G wifi: 2.61dBi, 5G B1:1.98dBi, 5G B4: 2.39dBi |
| Impedance                                | 50 Ω                                              |
| Polarization                             | Line                                              |
|                                          |                                                   |
| B. Material & Mechanical Characteristics |                                                   |
| Material of Radiator                     | CU                                                |
| Cable Type                               | RG178 LINE                                        |
| Connector Type                           | SMA                                               |
| Dimension                                | At Attachment                                     |
|                                          |                                                   |
|                                          |                                                   |
| C. Environmental Characteristic          |                                                   |
| Storage Temperature                      | - 30 °C ~ + 85 °C                                 |
| Heat-durability                          | 280±5°C, 10sec.                                   |
| Weld Temperature                         | 320±5°C 2-3sec.                                   |
|                                          |                                                   |

## ● Test Equipment & Conditions

### 1. Network Analyzers :

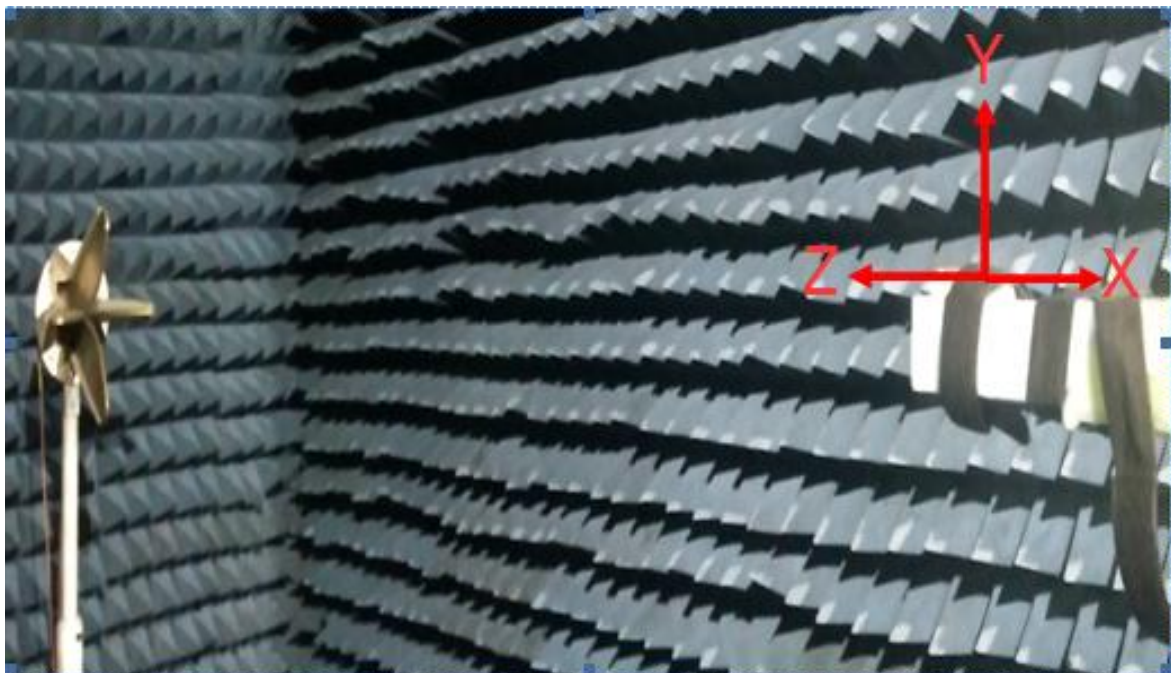
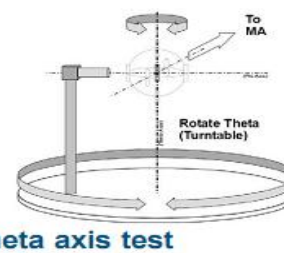
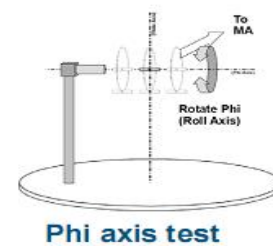
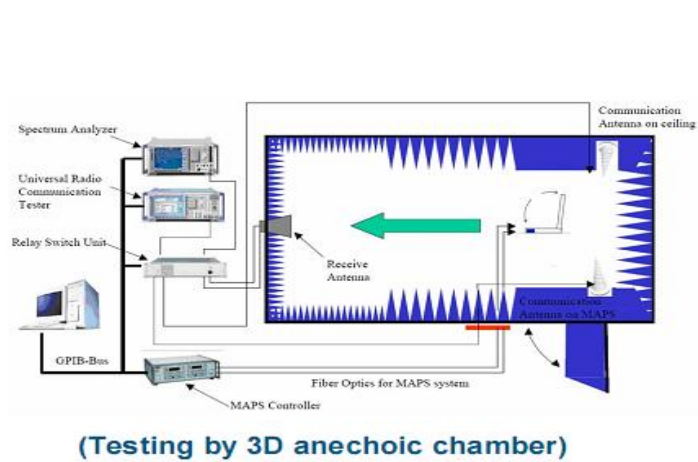
Agilent 8753D

5071B

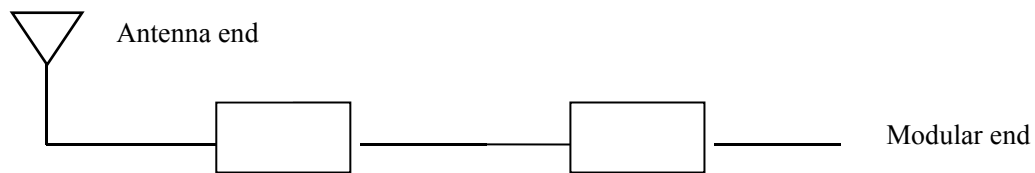
Communications Test Set:

Agilent E5515C CMW500

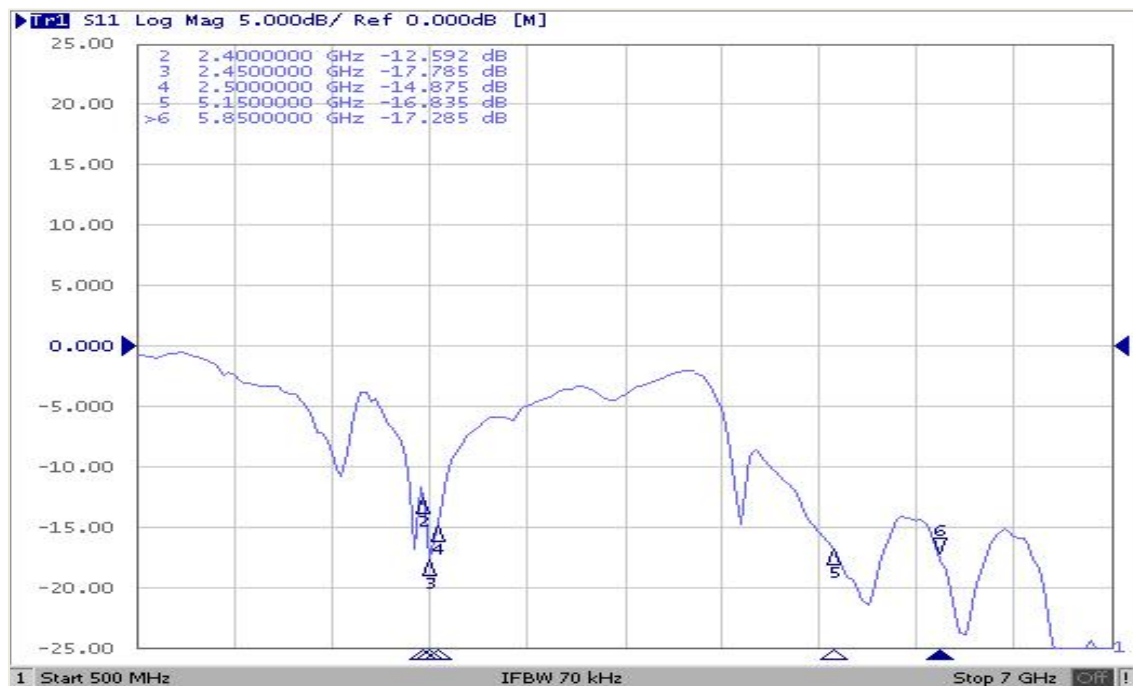
### 2. 3D Chamber Test System



## ● Matching Cricuit



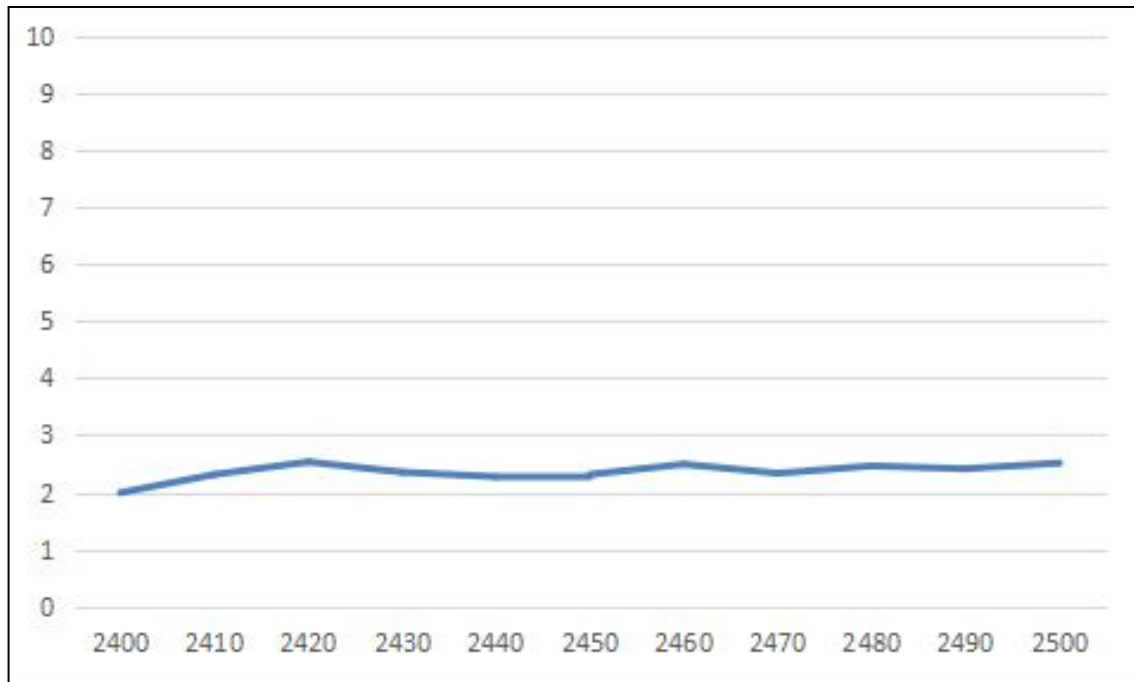
## ● Return Loss



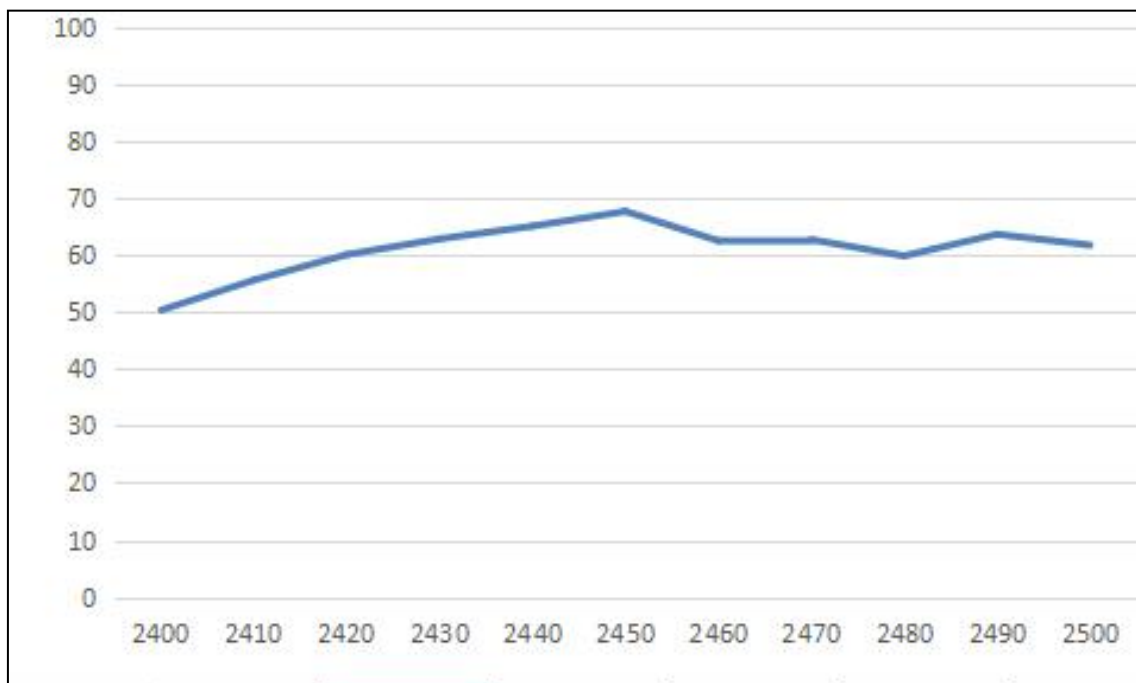
| Passive Test For 2.4-2.5G |       |      |       |       |      |       |       |       |       |       |
|---------------------------|-------|------|-------|-------|------|-------|-------|-------|-------|-------|
| Freq(MHz)                 | 2400  | 2410 | 2420  | 2430  | 2440 | 2450  | 2460  | 2470  | 2480  | 2500  |
| Gain(dBi)                 | 2.12  | 2.55 | 2.61  | 2.53  | 2.48 | 2.3   | 2.57  | 2.41  | 2.5   | 2.48  |
| Effi(%)                   | 50.11 | 56.3 | 60.07 | 63.53 | 65.8 | 68.78 | 62.34 | 62.31 | 60.46 | 64.63 |

| Passive Test For 5.0-5.8G |       |       |      |       |       |       |       |       |       |       |       |       |       |
|---------------------------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Freq(MHz)                 | 5150  | 5200  | 5250 | 5300  | 5350  | 5400  | 5450  | 5500  | 5550  | 5600  | 5650  | 5700  | 5750  |
| Gain(dBi)                 | 1.36  | 1.53  | 1.98 | 1.57  | 1.58  | 1.45  | 1.48  | 1.76  | 2.07  | 1.81  | 2.2   | 2.26  | 2.39  |
| Effi(%)                   | 47.81 | 45.23 | 48.1 | 48.93 | 48.32 | 57.55 | 46.11 | 46.54 | 63.81 | 63.14 | 58.82 | 58.35 | 59.71 |

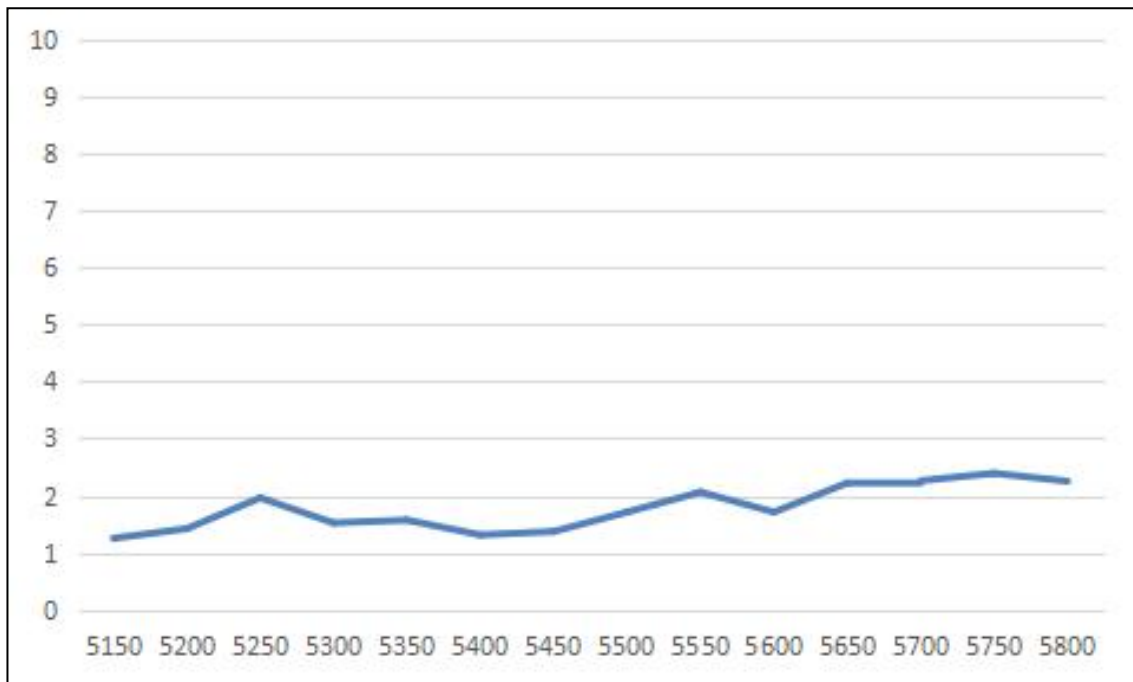
## ◆ 2.4G Gain



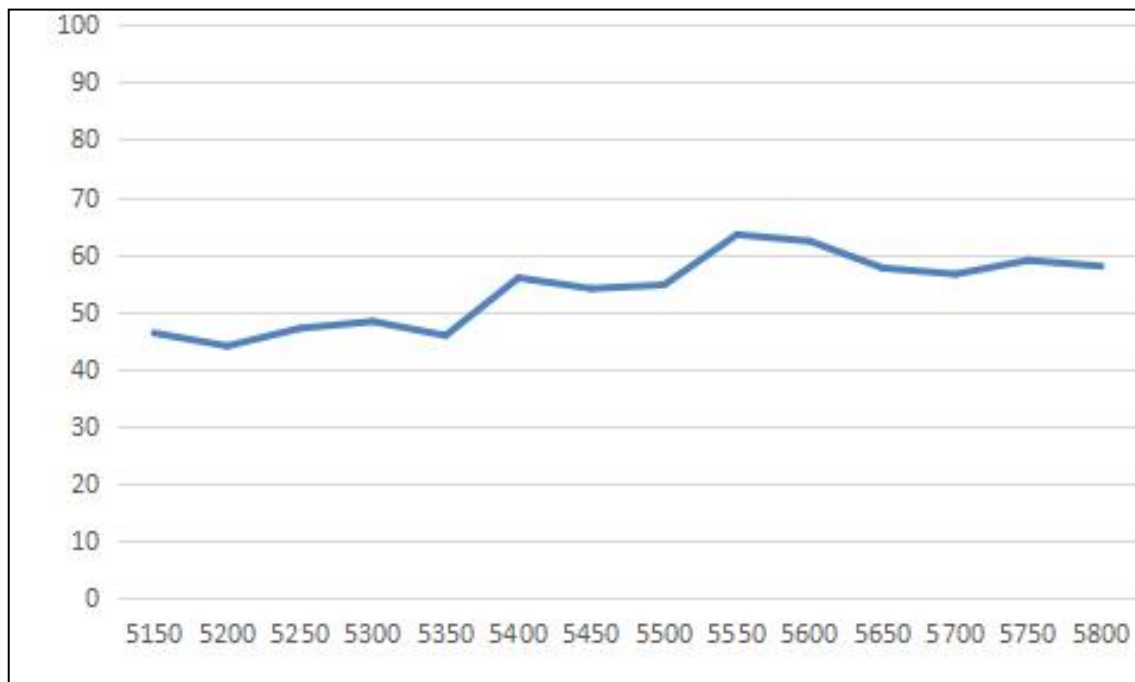
## ◆ 2.4G Efficiency



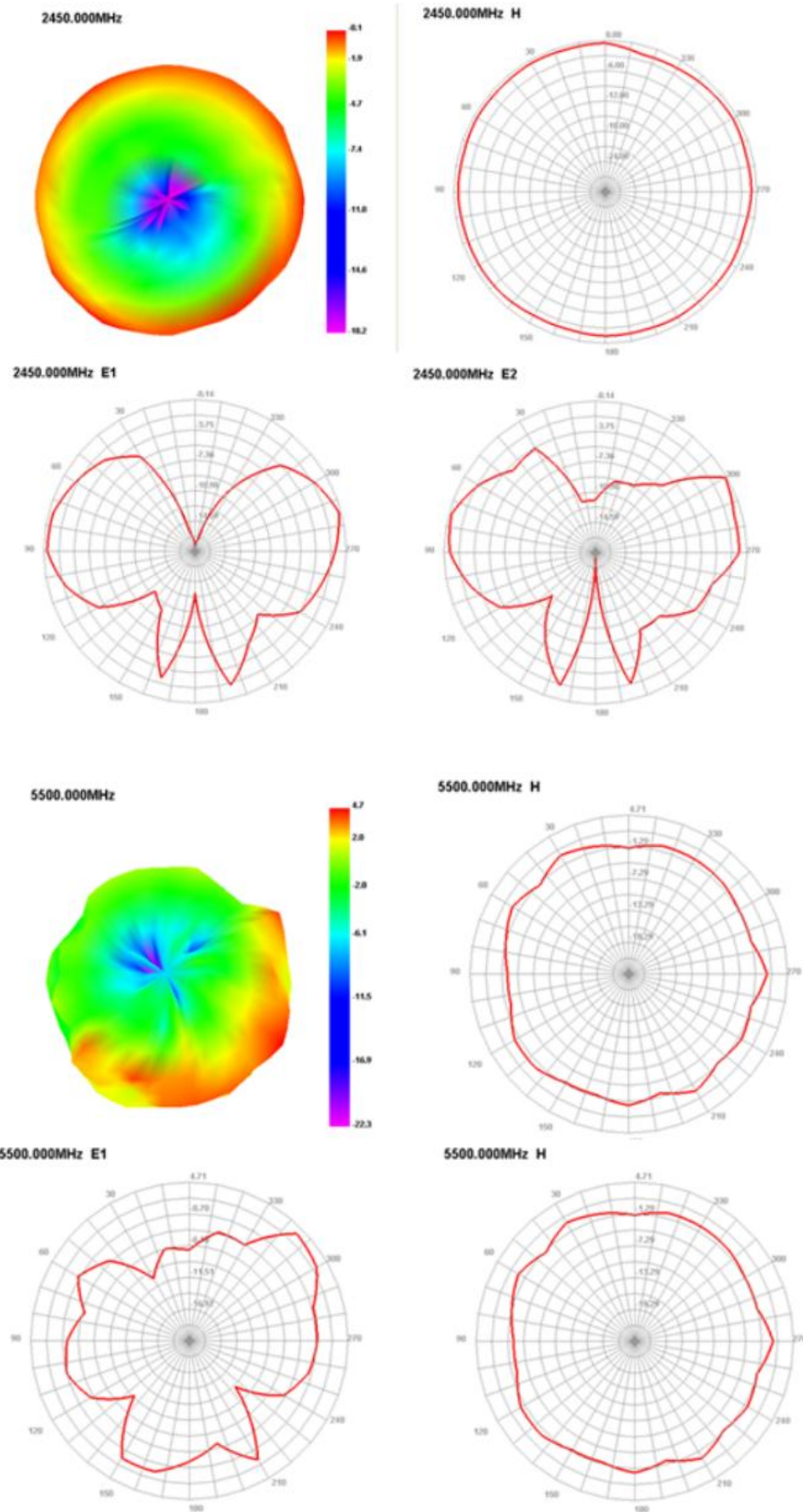
### ◆ 5.8G Gain



### ◆ 5.8G Efficiency



- Radiation Pattern:



●

[illegible]

## ● Reliability Test

| Test Item |                                              | Test condition                                                                                                                                                                                                                                                                                                                    | Equipment             | Specification                                                      | Result |
|-----------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------|--------|
| 1         | Low Temp.<br>Storage<br>Test                 | Temperature: -30℃, Time:48hrs<br>Test condition: Placing antenna in a Low/High Temperature Chamber, keep the temp is 25℃ and humidity is 65% for one hour, then step-down the temp. to -30℃ in one hour, store antenna for 44 hours; step-up temp to 25℃, test antenna after 2 hours.                                             | Temp.&Humi.<br>Tester | No material deformation is allowed. Electronic Performance is ok . | PASS   |
| 2         | High<br>Temp. /High<br>Humid<br>Storage Test | Temperature: 85℃ Humidity: 85% RH<br>Time:48hrs<br>Test condition: Placing antenna in a Low/High Temperature Chamber, keep the temp is 25℃ and humidity is 65% for one hour, then step-up the temp. to 80℃ and the humidity up to 85% in one hour, store antenna for 44 hours; step-down temp to 25℃, test antenna after 2 hours. | Temp.&Humi.<br>Tester | No material deformation is allowed. Electronic Performance is ok . | PASS   |
| 3         | Salt-Spray 6<br>pray Test                    | Placing antenna in the Salt-Spray Tester ,set the test condition , Temp: $35\pm 2^{\circ}\text{C}$<br>Humidity: 85%<br>NaCl salt spray : $5\pm 1\%$ .PH value :6.5~7.2 Test time:24hours                                                                                                                                          | Salt-Spray<br>Tester  | No color change<br>No appear rusting                               | PASS   |