

# Testing Report

Customer Name: Finder S.p.A. con unico socio

Product Name: 8A.04 series

Sample Model: 8A.04.9.024.8320

Reference Standard: *GB/T 9410-2008; ANSI/IEEE Std 149-1979*

Issue Date: 2023.3.16

|                 |                 |
|-----------------|-----------------|
| Engineer: Zkm's | Date: 2023.3.16 |
| Auditor: Eason  | Date: 2023.3.16 |
| Approver: Aason | Date: 2023.3.16 |

A circular blue seal with a serrated edge. The outer ring contains the text "Shenzhen RFI-LAB Communication Technology Co., Ltd." in white. The center of the seal is dark blue with "RFI-LAB" written in white capital letters.

## Version

| Version No. | Date      | Description                   | Formulate | Approval |
|-------------|-----------|-------------------------------|-----------|----------|
| A0          | 2023.3.16 | For the first time, formulate | Zkris     | Eason    |
|             |           |                               |           |          |
|             |           |                               |           |          |

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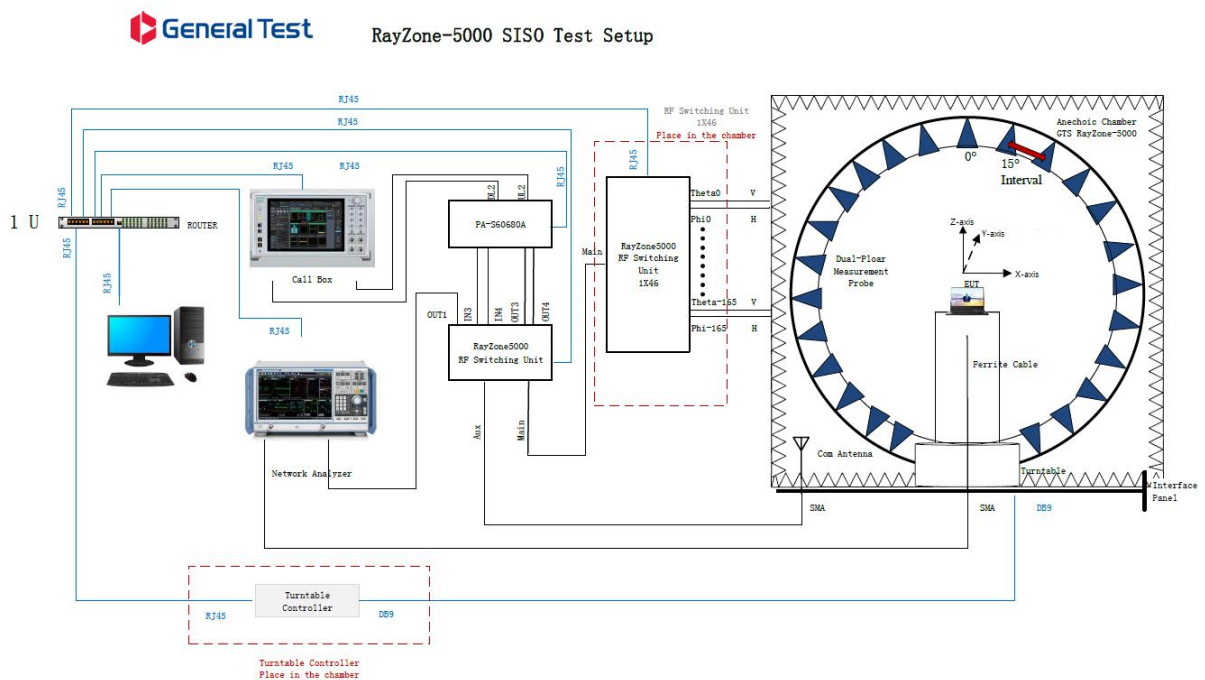
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## 1.General Information

## 1.1 General information of testing institutions

|                  |                                                                                                                                                               |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Name</b>      | Shenzhen RFI-LAB Communication Technology Co., Ltd.                                                                                                           |
| <b>Address</b>   | 10/F A, Lingyun Bld, Liufang Rd, Baoan District, SZ                                                                                                           |
| <b>Tel</b>       | 13682621346                                                                                                                                                   |
| <b>E-mail</b>    | rfi-lab@tech-now.com                                                                                                                                          |
| <b>Equipment</b> | All the equipment used in the report is fixed in Zone B, West Side of 1/F, Building 1, Tingwei Industrial Park, No.6 Liufang Road, Bao 'an District, Shenzhen |

## 1.2 Testing principle



### 1.3 Test equipment

| Equipment        | Model No.    | Serial No.     | Manufacturer | Calibration date | Next calibration date |
|------------------|--------------|----------------|--------------|------------------|-----------------------|
| OTA Test System  | RayZone-5000 | RFI-LAB-RF-D00 | GTS          | 2023.3.14        | 2025.3.13             |
| Network Analyzer | E5071C       | RFI-LAB-RF-D01 | KEYSIGHT     | 2022.5.13        | 2023.5.12             |

### 1.4 Test environment

|             |           |
|-------------|-----------|
| Temperature | 23.2°C    |
| Humidity    | 58%RH     |
| Pressure    | 100.14kPa |

### 1.5 Statement

- (1) The test results in the report are only applicable to the tested samples and the tested samples work under the environment described in the report.
- (2) Only Shenzhen RFI-LAB Communication Technology Co., Ltd. have the right to modify the report, and the modification information shall be annotated in the revision form.
- (3) Any objection to this report shall be raised within 30 days after formal confirmation of the report.
- (4) This report is invalid if there is any evidence that the sample information provided is falsified.
- (5) The report is invalid without the signature of the auditor and approver.

## 2.Sample Information

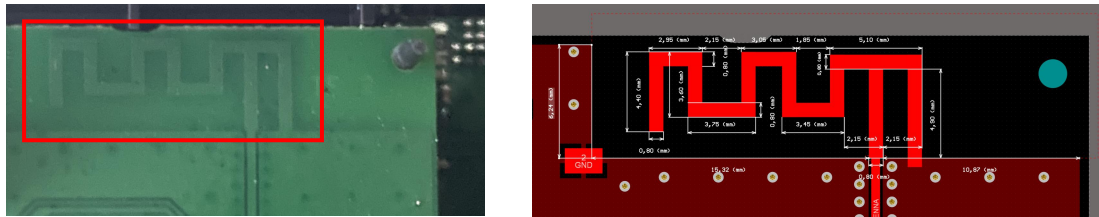
### 2.1 Client information

|                     |                               |
|---------------------|-------------------------------|
| <b>Manufacturer</b> | Finder S.p.A. con unico socio |
| <b>Address</b>      | /                             |
| <b>Contacts</b>     | Engineer Tang                 |
| <b>Tel</b>          | 13724280130                   |
| <b>E-mail</b>       | 2417686790@qq.com             |

### 2.2 Description of EUT(S)

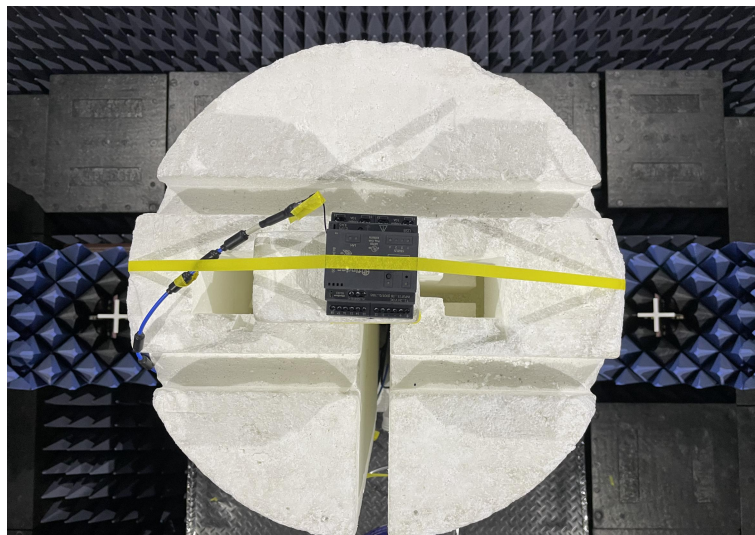
|                        |                                             |
|------------------------|---------------------------------------------|
| <b>Product Name</b>    | 8A.04 series                                |
| <b>Sample Model</b>    | 8A.04.9.024.8320                            |
| <b>Antenna Size</b>    | /                                           |
| <b>Serial No.</b>      | /                                           |
| <b>Antenna Type</b>    | PCB Antenna                                 |
| <b>Test Item</b>       | Antenna gain; Efficiency; Radiation pattern |
| <b>Frequency Range</b> | 2400-2500MHz                                |
| <b>Received Date</b>   | 2023.3.14                                   |
| <b>Test Date</b>       | 2023.3.16                                   |
| <b>Remark</b>          | The length of the RF cable is 45mm          |

## 2.3 EUT appearance

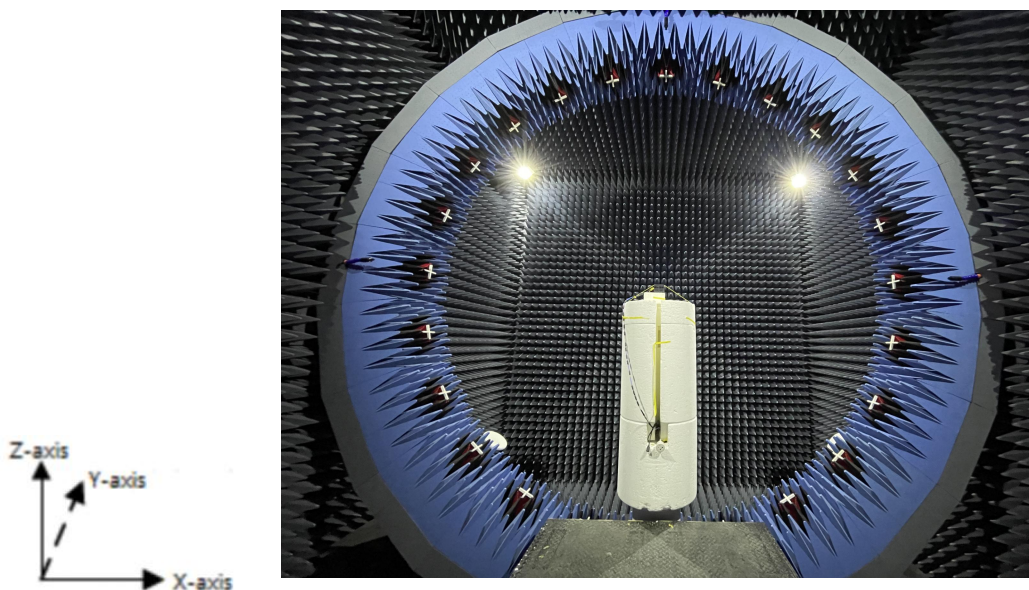


## 2.4 EUT setup photo of free space OTA testing

Planform



Front view



## 3. Test Results

### 3.1 Test standard

| Name                         | Parameter            | Method                                                               | Standard no.           |
|------------------------------|----------------------|----------------------------------------------------------------------|------------------------|
| Mobile communication antenna | Antenna gain         | Generic specification for antennas used in the mobile communications | GB/T 9410-2008         |
|                              | Radiation pattern    |                                                                      |                        |
| Antenna                      | Radiation efficiency | IEEE Standard Test Procedures for Antennas                           | ANSI/IEEE Std 149-2021 |
|                              | Gain and directivity |                                                                      |                        |

### 3.2 Test uncertainty

The uncertainty was calculated on the basis of the GUM published by ISO, using the inclusion factor of K=2 and the 95% confidence level to express the extended uncertainty.

| Item                 | Uncertainty         |
|----------------------|---------------------|
| Antenna gain         | $\pm 0.72\text{dB}$ |
| Radiation efficiency | $\pm 0.72\text{dB}$ |

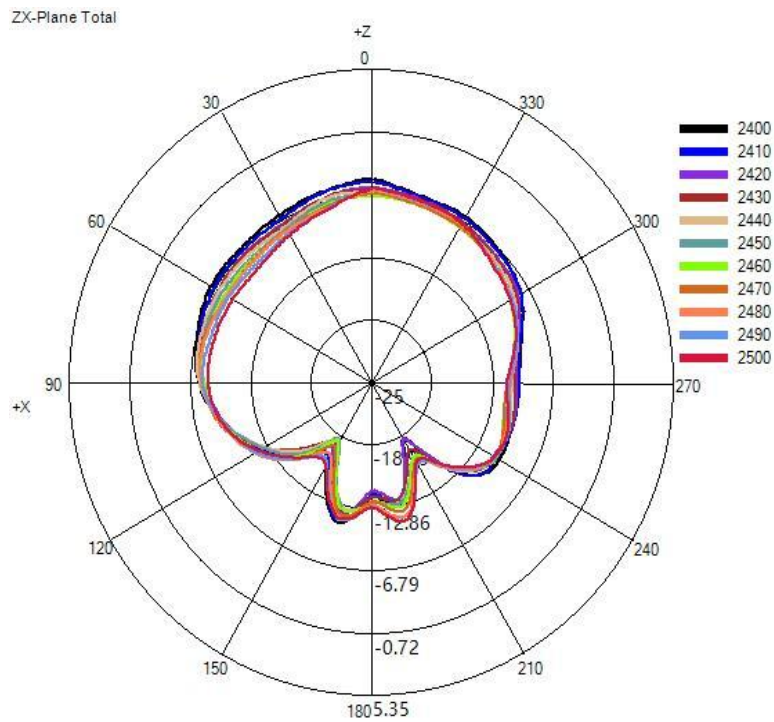
### 3.3 Test data

#### 3.3.1 Typical free space efficiency and gain

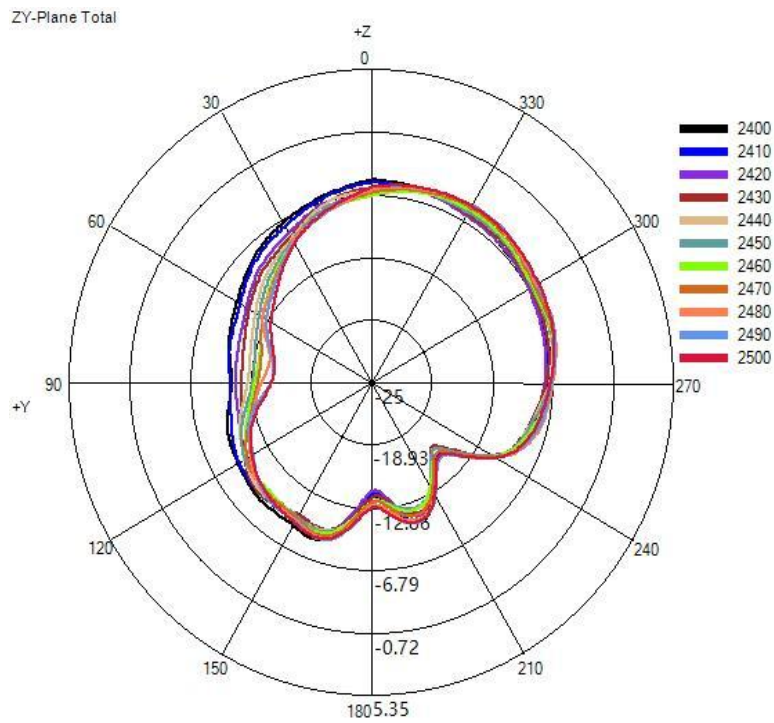
| Frequency/MHz | 2400  | 2410  | 2420  | 2430  | 2440  | 2450  | 2460  | 2470  | 2480  | 2490  | 2500  |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak Gain/dBi | -5.03 | -5.27 | -5.61 | -5.55 | -5.61 | -5.62 | -5.47 | -5.24 | -4.96 | -4.97 | -5.06 |
| Efficiency/%  | 14.48 | 13.87 | 12.68 | 12.63 | 12.51 | 12.09 | 12.02 | 12.31 | 12.66 | 12.55 | 12.21 |

### 3.3.2 Typical free space radiation pattern

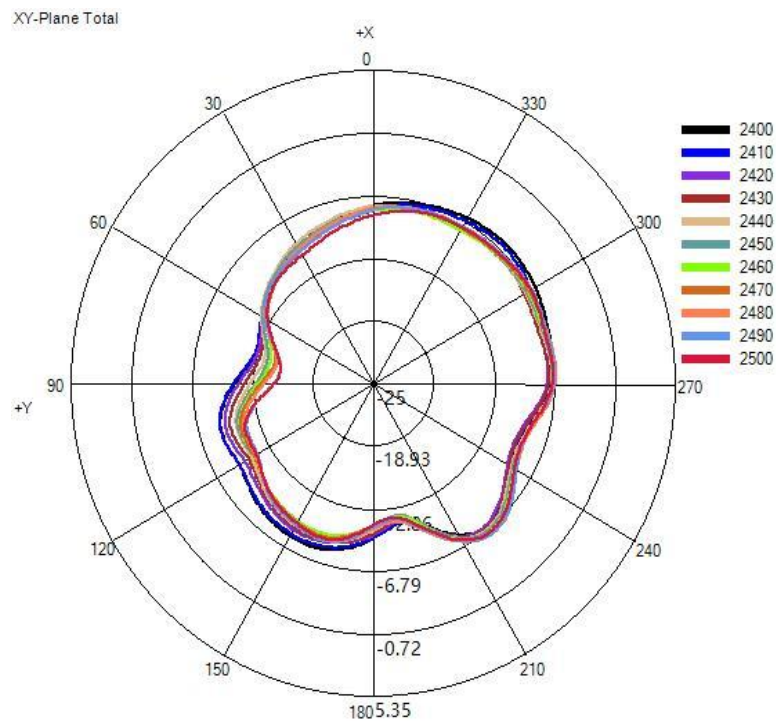
(1) X-Z Plane(unit:dBi):



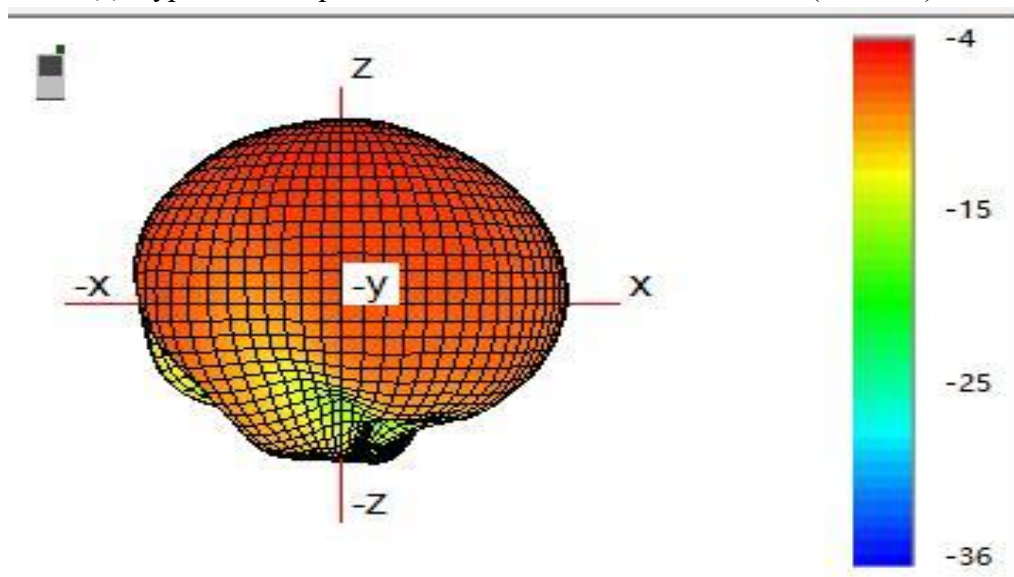
(2) Y-Z Plane(unit:dBi):



(3) X-Y Plane(unit:dBi):



(4) Typical Free Space 3D Radiation Pattern at 2.48GHz(unit:dBi):



End

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