

# Testing Report

Customer Name: Beijing Robint Technology Co., Ltd.

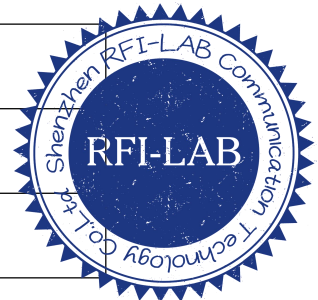
Product Name: Robint-Clean

Sample Model: RCL1

Reference Standard: *GB/T 9410-2008; ANSI/IEEE Std149-1979*

Issue Date: 2024.1.31

Engineer: Zkm's	Date: 2024.1.31
Auditor: Eason	Date: 2024.1.31
Approver: Janson	Date: 2024.1.31



## Version

Version No.	Date	Description	Formulate	Approval
A0	2024.1.31	For the first time, formulate	Zkris	Eason

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### 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	2023.5.11	2024.5.10
Network Analyzer	E5071C	RFI-LAB-RF-C02	KEYSIGHT	2023.5.11	2024.5.10

### 1.4 Test environment

Temperature	24.2°C
Humidity	58%RH
Pressure	100.17kPa

### 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

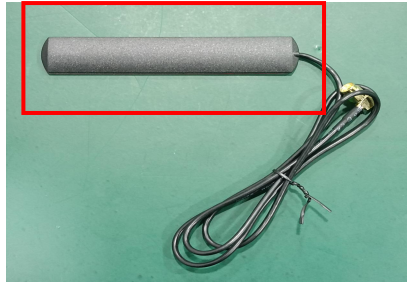
### 2.1 Client information

<b>Name</b>	Beijing Robint Technology Co., Ltd.
<b>Address</b>	Room 2006, Jinqiu International Building, No.6 Zhichun Road, Haidian District, Beijing
<b>Contacts</b>	Mr. Xiao
<b>Tel</b>	13538218145
<b>E-mail</b>	m13538218145@163.com
<b>Manufacturer</b>	Beijing Robint Technology Co., Ltd.
<b>Manufacturer Address</b>	Room 2006, Jinqiu International Building, No.6 Zhichun Road, Haidian District, Beijing

### 2.2 Description of EUT(S)

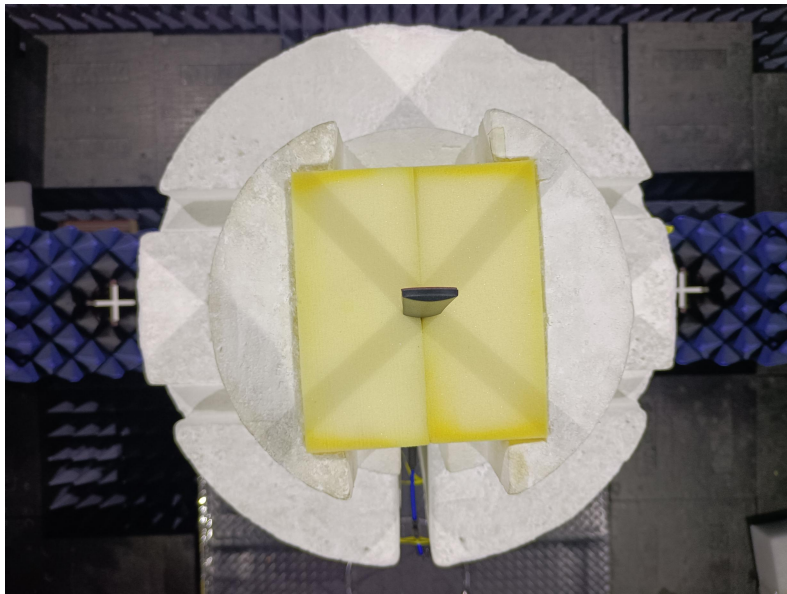
<b>Product Name</b>	Robint-Clean
<b>Sample Model</b>	RCL1
<b>Antenna Size</b>	/
<b>Serial No.</b>	/
<b>Antenna Type</b>	External antenna
<b>Test Item</b>	VSWR; Antenna gain; Efficiency; Radiation pattern
<b>Frequency Range</b>	2400-2500MHz; 5000-6000MHz
<b>Received Date</b>	2024.1.31
<b>Test Date</b>	2024.1.31
<b>Remark</b>	/

### 2.3 EUT appearance

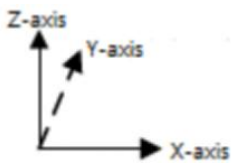
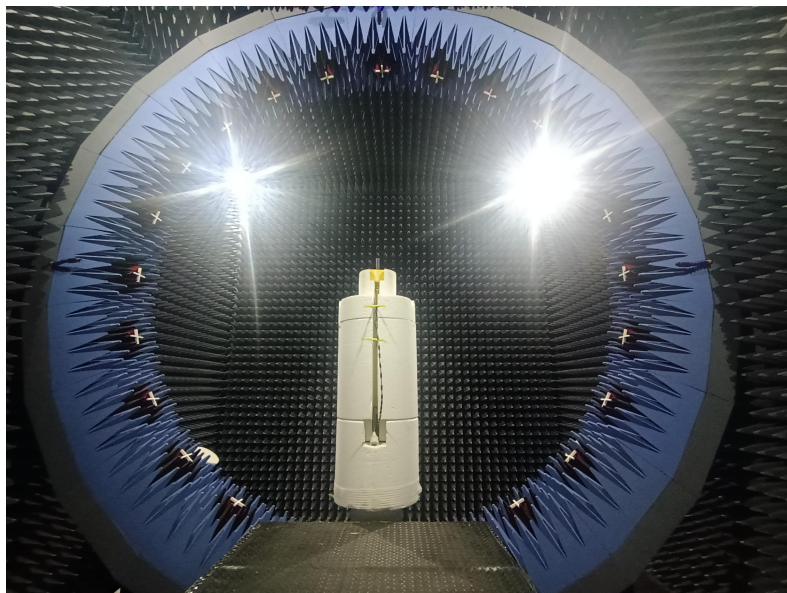


### 2.4 EUT setup photo of free space OTA testing

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		
	VSWR		
Antenna	Radiation efficiency	IEEE Standard Test Procedures for Antennas	ANSI/IEEE Std 149-1979
	Gain and directivity		

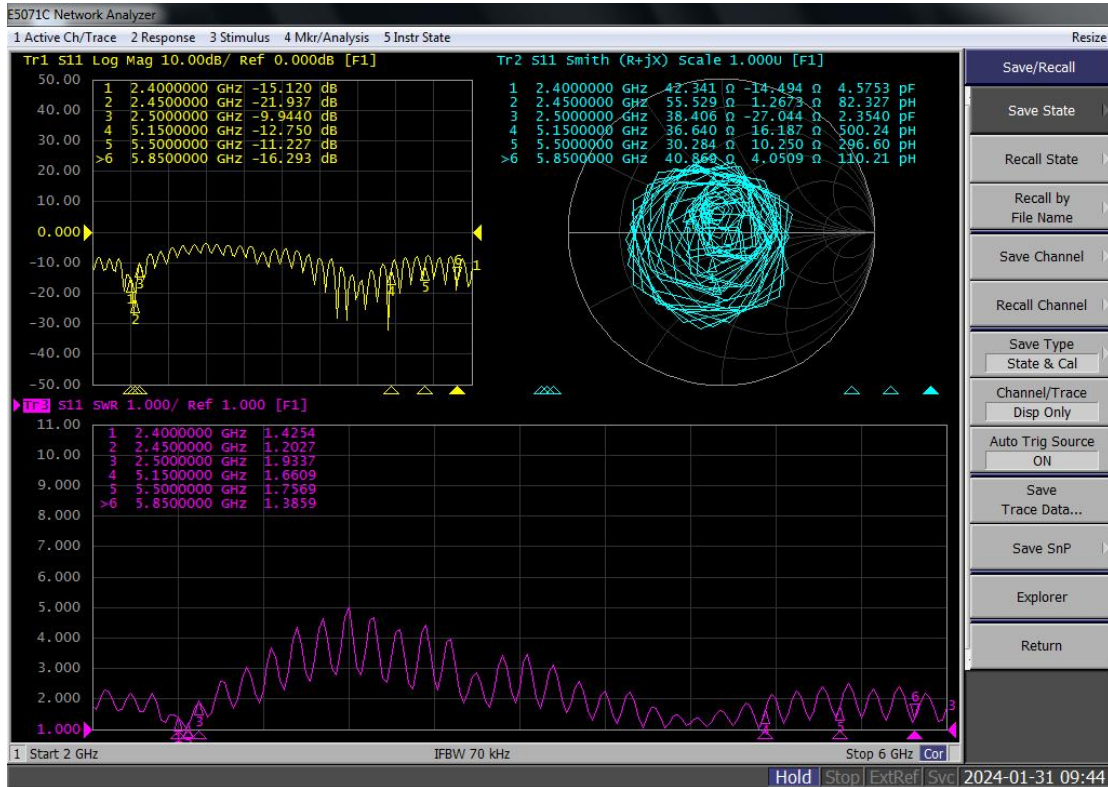
### 3.2 Test uncertainty

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
VSWR	$\pm 0.3$
Antenna gain	$\pm 0.72\text{dB}$
Radiation efficiency	$\pm 0.72\text{dB}$

### 3.3 Test data

#### 3.3.1 VSWR parameters



#### 3.3.2 VSWR data

Frequency/MHz	2400	2450	2500	5150	5500	5850
VSWR	1.4254	1.2027	1.9337	1.6609	1.7569	1.3859

#### 3.3.3 Typical free space efficiency and gain

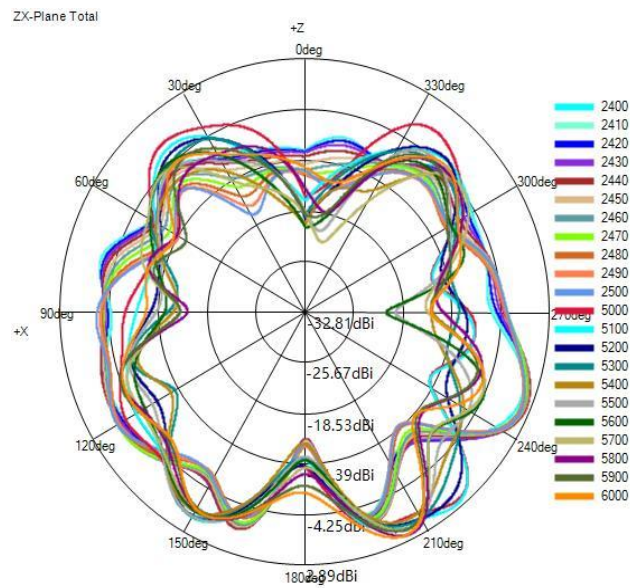
Frequency/MHz	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Peak Gain/dBi	0.58	0.63	0.84	1.19	1.44	1.49	1.43	1.23	0.85	0.79	0.82
Efficiency/%	41.40	41.87	43.36	44.19	44.15	41.48	38.98	36.84	33.24	32.65	33.33



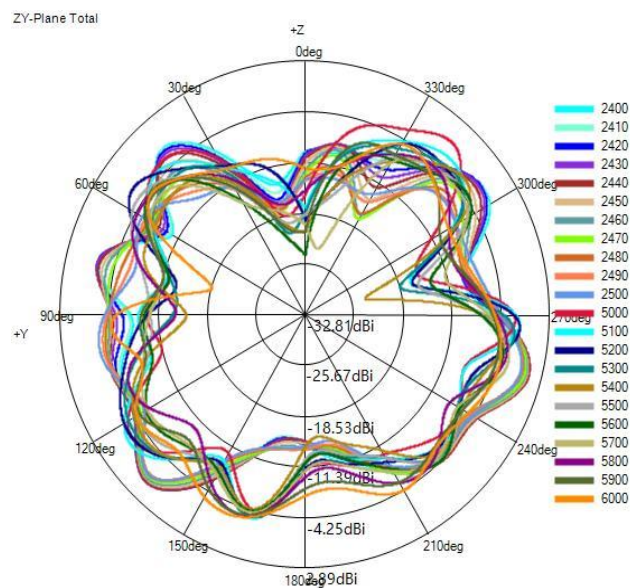
Frequency/MHz	5000	5100	5200	5300	5400	5500	5600	5700	5800	5900	6000
Peak Gain/dBi	2.07	2.77	2.46	1.80	0.77	0.91	0.88	1.02	1.51	1.57	2.12
Efficiency/%	35.17	34.37	30.92	26.99	23.28	25.69	24.33	24.10	23.33	23.15	27.23

### 3.3.4 Typical free space radiation pattern

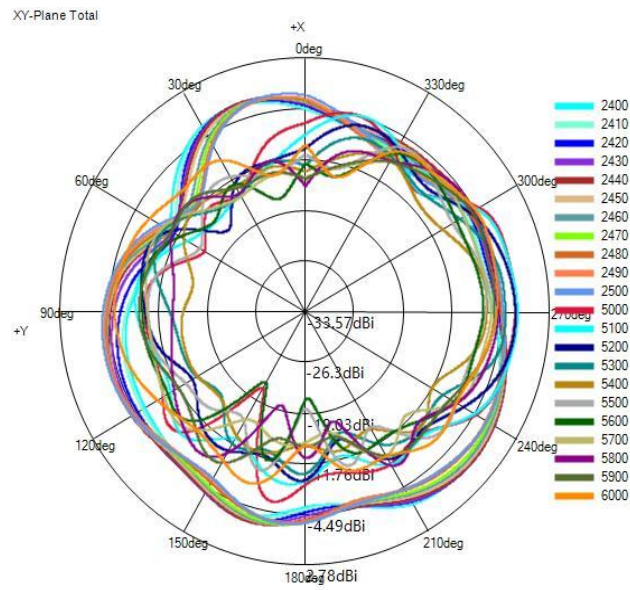
(1) X-Z Plane(unit:dBi):



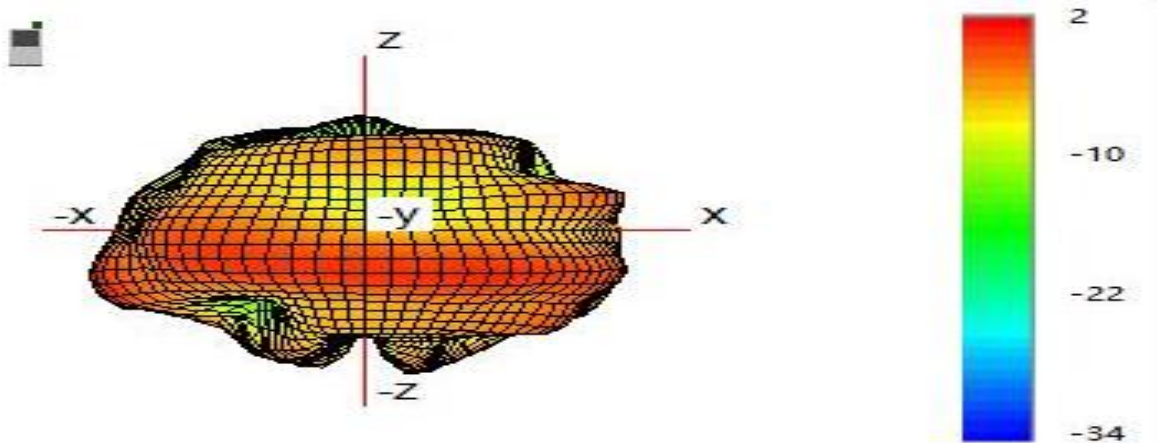
(2) Y-Z Plane(unit:dBi):



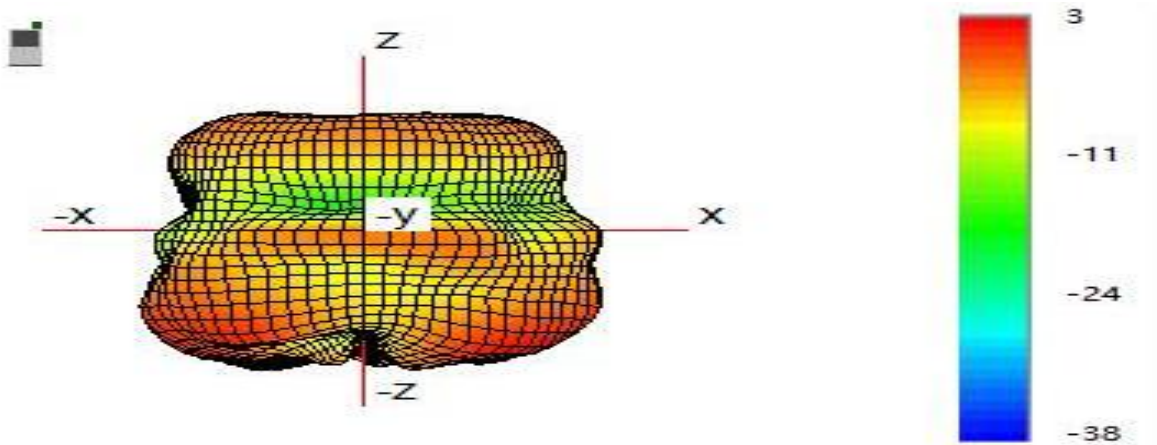
(3) X-Y Plane(unit:dBi):



(4) Typical Free Space 3D Radiation Pattern at 2450MHz(unit:dBi):



(5) Typical Free Space 3D Radiation Pattern at 5100MHz(unit:dBi):



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**End**

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