

# Testing Report


Customer Name: Dongguan Anycon Intelligent Technology Co.,Ltd

Product Name: Bluetooth Voice Remote Control

Sample Model: AN2301C-0TL-030

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

Issue Date: 2023.4.6

Engineer: Jackson	Date: 2022.7.22	 A circular blue seal with a serrated edge. The outer ring contains the text 'Shenzhen RFI-LAB Communication Technology Co., Ltd.' and the center contains 'RFI-LAB'.
Auditor: Eason	Date: 2022.7.22	
Approver: Janson	Date: 2022.7.22	

### Version

Version No.	Date	Description	Formulate	Approval
A0	2023.4.6	For the first time, formulate	Jackson	Eason

### Contents

- 1.General Information .....3
  - 1.1 General information of testing institutions .....3
  - 1.2 Testing principle ..... 3
  - 1.3 Test equipment .....4
  - 1.4 Test environment .....4
  - 1.5 Statement ..... 4
- 2.Sample Information ..... 5
  - 2.1 Client information .....5
  - 2.2 Description of EUT(S) .....5
  - 2.3 EUT appearance .....6
  - 2.4 DUT setup photo of free space OTA testing ..... 6
- 3.Test Results ..... 7
  - 3.1 Test standard ..... 7
  - 3.2 Test uncertainty .....7
  - 3.3 Test data ..... 8
    - 3.3.1 S11 parameters .....8
    - 3.3.2 VSWR data ..... 8
    - 3.3.3 Typical free space efficiency and gain ..... 8
    - 3.3.4 Typical free space radiation pattern .....9
  - (The following is blank) ..... 10

# 1.General Information

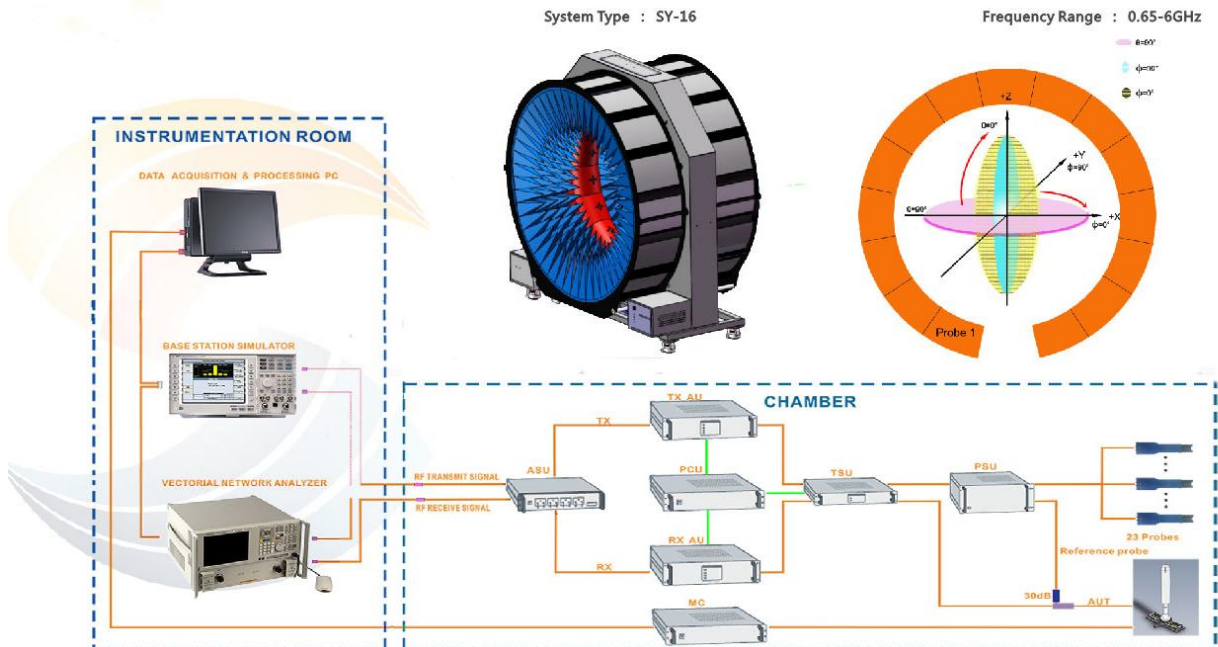
## 1.1 General information of testing institutions

<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>	13631623357
<b>E-mail</b>	liss@tech-now.com
<b>Equipment</b>	All the equipment used in the report is fixed in 10/F A, Lingyun Bld, Liufang Rd, Baoan District, SZ

## 1.2 Testing principle



# Multi-Probe OTA Measurement System



### 1.3 Test equipment

Equipment	Model No.	Serial No.	Manufacturer	Calibration date	Next calibration date
16 probe microwave chamber	3*3*2.5	RFI-LAB-RF-A00	SUNYIELD	2021.3.15	2023.3.14
Network Analyzer	E5071C	RFI-LAB-RF-A02	Agilent	2022.5.13	2023.5.12
Network Analyzer	E5071C	RFI-LAB-RF-C02	KEYSIGHT	2022.5.13	2023.5.12

### 1.4 Test environment

Temperature	24.2°C
Humidity	58%RH
Pressure	100.13kPa

### 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

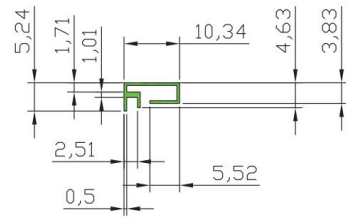
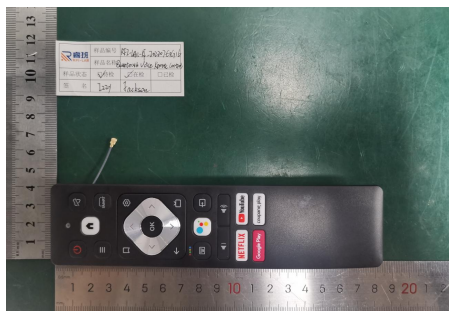
### 2.1 Client information

<b>Name</b>	Dongguan Anycon Intelligent Technology Co.,Ltd
<b>Address</b>	No12, LiminRoad, jinxiaotangIndustrialPark, Fenggang, Dongguan, Guangdong, China
<b>Contacts</b>	Daisy
<b>Tel</b>	18124683097
<b>E-mail</b>	assistant6@cblueasia.com

### 2.2 Description of EUT(S)

<b>Product Name</b>	Bluetooth Voice Remote Control
<b>Sample Model</b>	AN2301C-0TL-030
<b>Size</b>	/
<b>Serial No.</b>	/
<b>Test Item</b>	VSWR; Antenna gain; Efficiency; Radiation pattern
<b>Frequency Range</b>	2400-2500MHz
<b>Received Date</b>	2022.7.21
<b>Test Date</b>	2022.7.22
<b>Remark</b>	The length of the RF cable is 30mm

### 2.3 EUT appearance



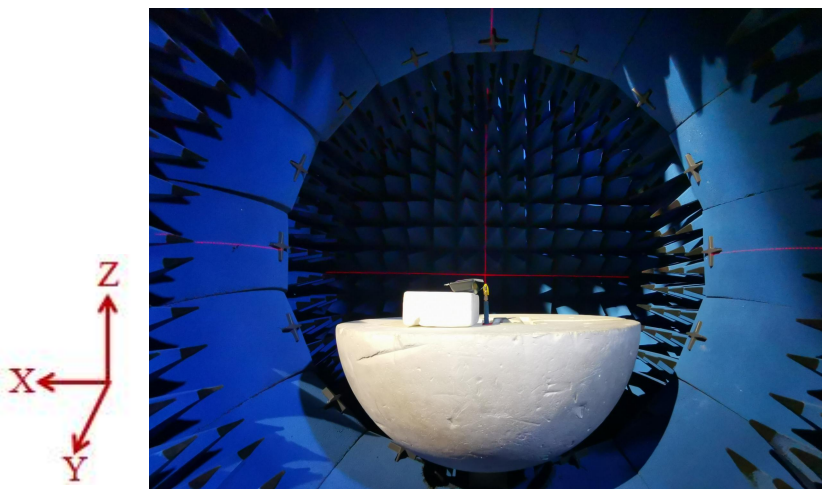
unit:mm  
tolerance:+/- 0.05

### 2.4 DUT 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		

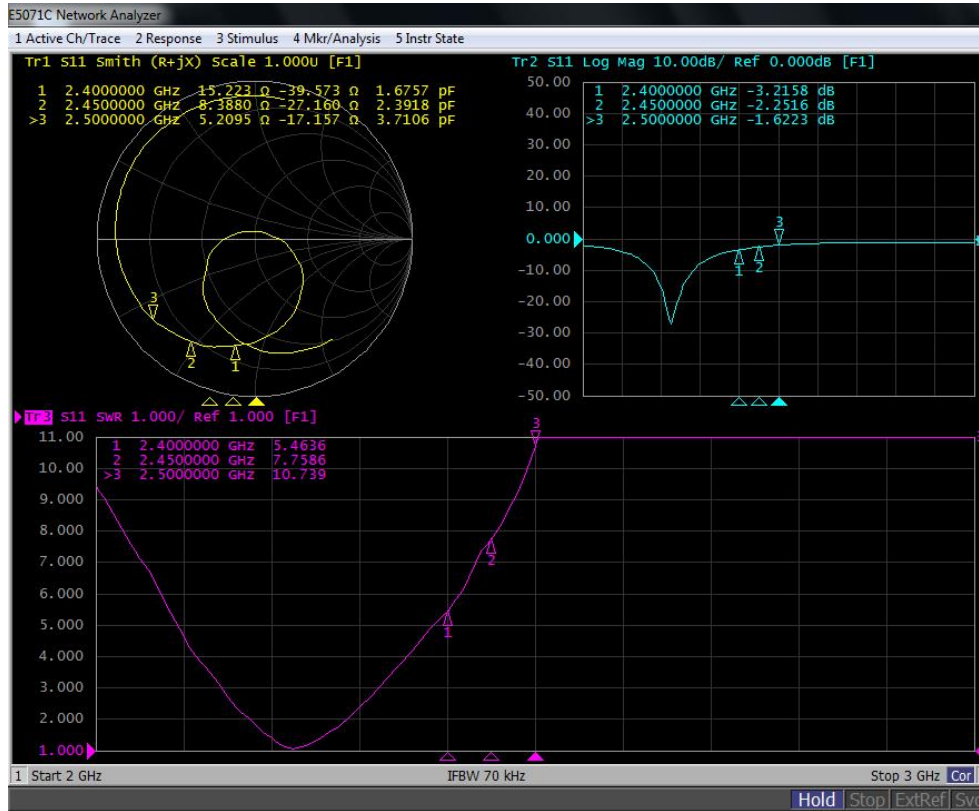
### 3.2 Test uncertainty

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	$\pm 1\text{dB}$
Radiation efficiency	$\pm 10\%$

### 3.3 Test data

#### 3.3.1 S11 parameters



#### 3.3.2 VSWR data

Frequency/MHz	2400	2450	2500
VSWR	5.4636	7.7586	10.739

#### 3.3.3 Typical free space efficiency and gain

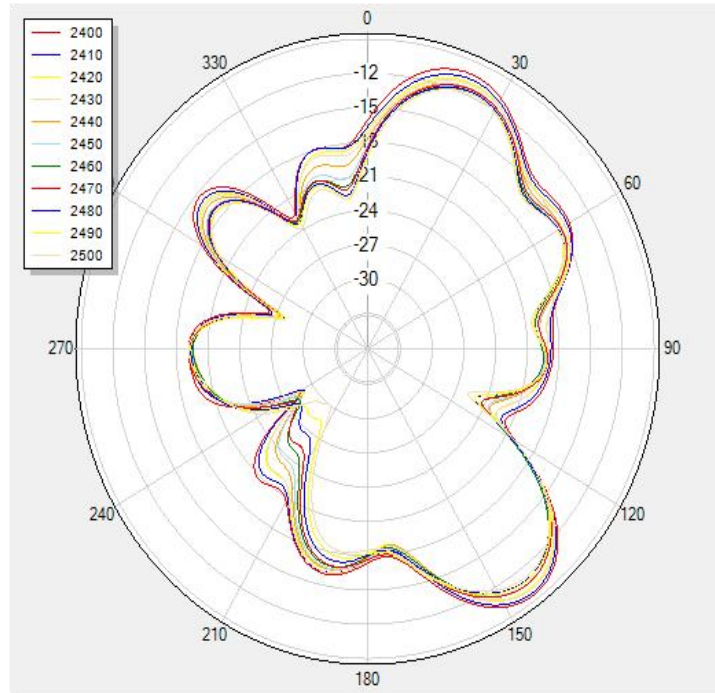
Frequency/MHz	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Peak Gain/dBi	-1.95	-2.29	-2.75	-2.76	-3.22	-3.43	-3.76	-3.55	-3.93	-3.95	-4.3
Efficiency/%	16.28	14.94	13.58	13.48	12.01	11.38	10.41	10.69	9.72	9.27	8.65



### 3.3.4 Typical free space radiation pattern

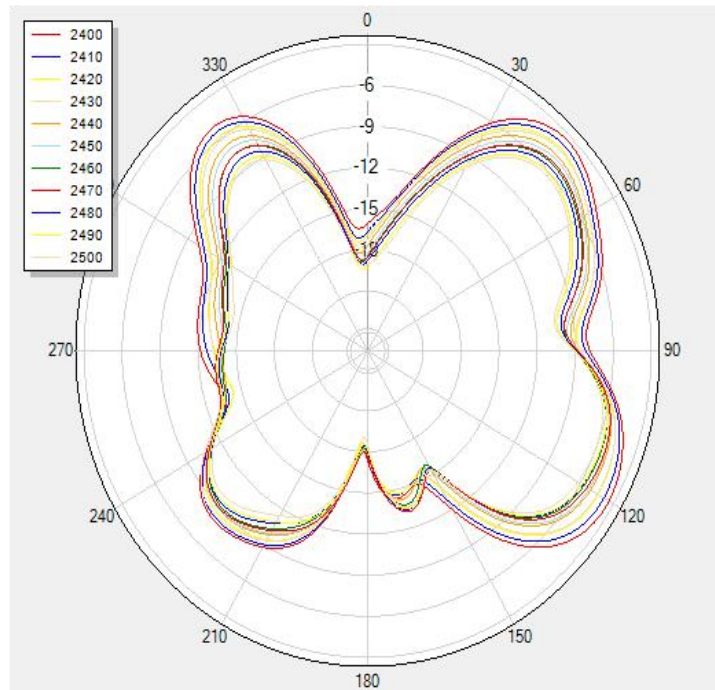
(1) X-Z Plane:

### V Phi=0



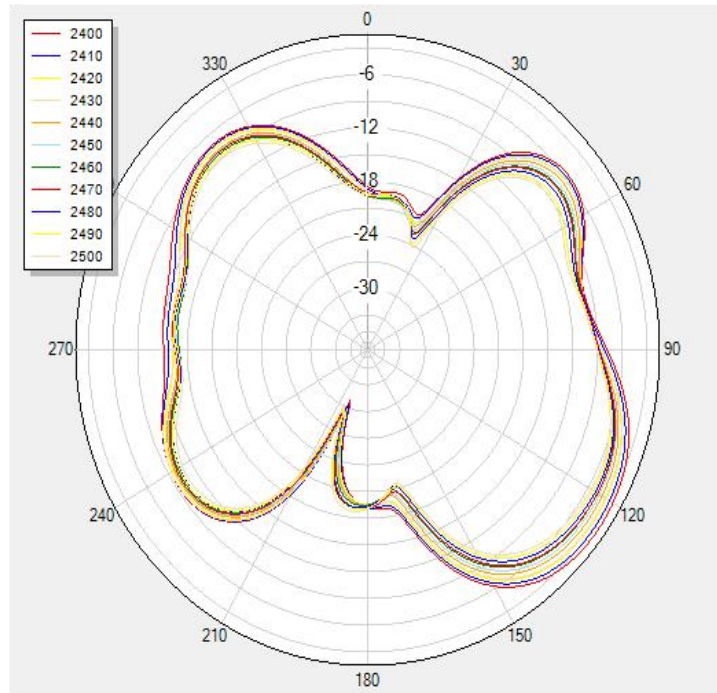
(2) Y-Z Plane:

### V Phi=90

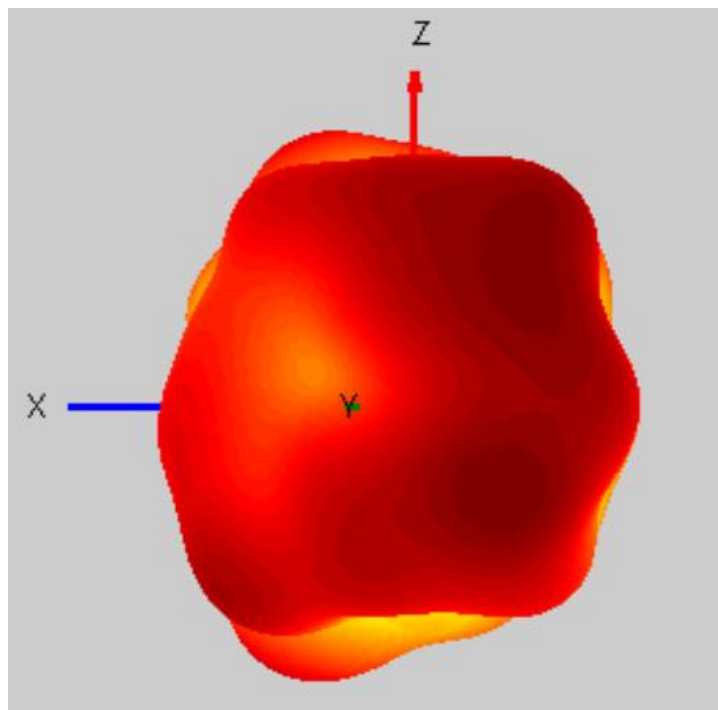


(3) X-Y Plane:

### H Theta=90



(4) Typical Free Space 3D Radiation Pattern at 2.45GHz:



-----  
End

(The following is blank)