



REPORT No.: SZ21110127E01

# TEST REPORT

**APPLICANT** : Dongguan Kingsheng Electronics & Technology Co.,Ltd

**PRODUCT NAME** : PCB Antenna

**MODEL NAME** : SL-9113

**TRADE NAME** : N/A

**BRAND NAME** : N/A

**STANDARD(S)** : ANSI/IEEE Std 149-2008

**RECEIPT DATE** : 2021-11-10

**TEST DATE** : 2021-11-11

**ISSUE DATE** : 2021-11-12

Edited by: Ke Zhiqing  
Ke Zhiqing(Rapporteur)

Approved by: Chi Shide  
Chi Shide(Supervisor)

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Shenzhen Morlab Communications Technology Co., Ltd., FL1-3, Building A,  
FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District,  
ShenZhen , GuangDong Province, P. R. China

Tel: 86-755-36698555

Http://www.morlab.cn

Fax: 86-755-36698525

E-mail: service@morlab.cn





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| Change History |            |                   |
|----------------|------------|-------------------|
| Version        | Date       | Reason for change |
| 1.0            | 2021-11-12 | First edition     |
|                |            |                   |



# 1. Technical Information

**Note:** Provide by manufacturer.

## 1.1. Applicant and Manufacturer Information

|                              |                                                                                                |
|------------------------------|------------------------------------------------------------------------------------------------|
| <b>Applicant:</b>            | Dongguan Kingsheng Electronics & Technology Co.,Ltd                                            |
| <b>Applicant Address:</b>    | Build 39,Arising Sun Industrial City, Lincun Village, Tangxia Town, Dongguan, Guangdong, China |
| <b>Manufacturer:</b>         | Dongguan Kingsheng Electronics & Technology Co.,Ltd                                            |
| <b>Manufacturer Address:</b> | Build 39,Arising Sun Industrial City, Lincun Village, Tangxia Town, Dongguan, Guangdong, China |

## 1.2. Equipment Under Test (EUT) Description

|                     |                 |
|---------------------|-----------------|
| Wireless Type       | Bluetooth       |
| Test frequency band | 2400MHz-2500MHz |
| Brand name          | N/A             |
| Antenna model       | SL-9113         |
| Hardware Version    | N/A             |
| Software Version    | N/A             |
| IMEI                | N/A             |
| Sample number       | 1#              |

## 2. Test Results

### 2.1. Applied Reference Documents

Leading reference documents for testing:

| No. | Identity               | Document Title                             |
|-----|------------------------|--------------------------------------------|
| 1   | ANSI/IEEE Std 149-2008 | IEEE Standard Test Procedures for Antennas |
|     |                        |                                            |

### 2.2. Test Conditions

Test Environment Conditions:

|                    |                  |
|--------------------|------------------|
| Relative Humidity: | 25 ... 75 %      |
| Temperature:       | +10 °C to +30 °C |

### 2.3. Measurement Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO. When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% Confidence intervals.

| Item                                                 | Measurement Uncertainty(dB) |
|------------------------------------------------------|-----------------------------|
| Gain                                                 | ±0.5                        |
| VSWR                                                 | ±0.2                        |
| Measurement Uncertainty(95% Confidence Interval) K=2 |                             |

## 2.4. Test Results lists

### 2.4.1. Gain

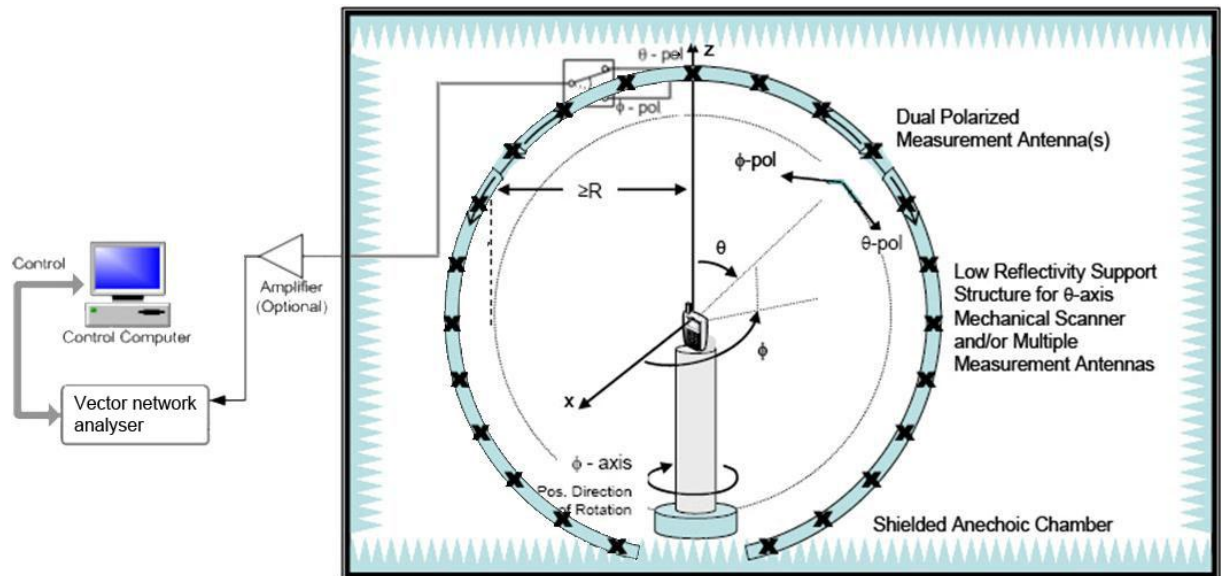
| Frequency | Gain(dBi) |
|-----------|-----------|
| 2402MHz   | 1.28      |
| 2410MHz   | 1.15      |
| 2420MHz   | 1.33      |
| 2430MHz   | 0.52      |
| 2440MHz   | 0.59      |
| 2441MHz   | 0.63      |
| 2450MHz   | 0.48      |
| 2460MHz   | 0.49      |
| 2470MHz   | 0.35      |
| 2480MHz   | 0.95      |

### 2.4.2. VSWR

| Frequency | VSWR |
|-----------|------|
| 2402MHz   | 2.57 |
| 2441MHz   | 2.58 |
| 2480MHz   | 2.81 |

## Annex A Photographs

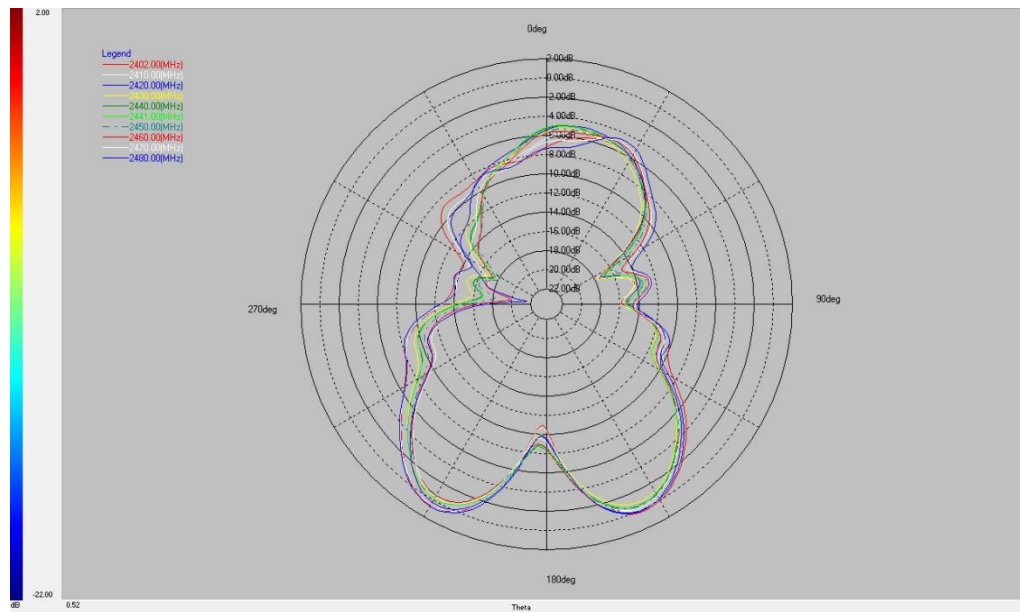
### 1. Test Setup



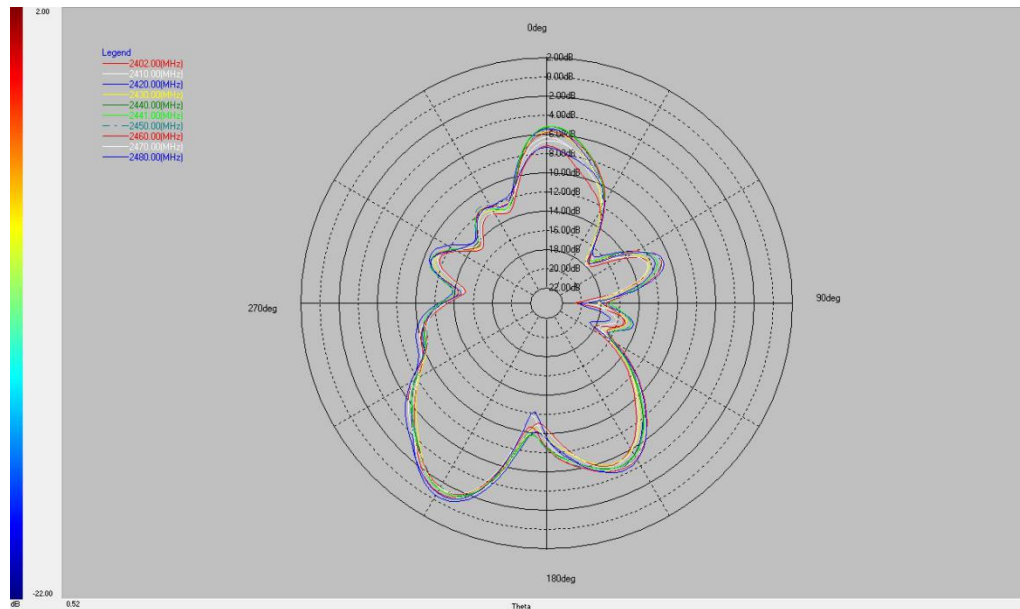
## Annex B Figures

### 1. 2D Radiation Pattern

Phi=0°

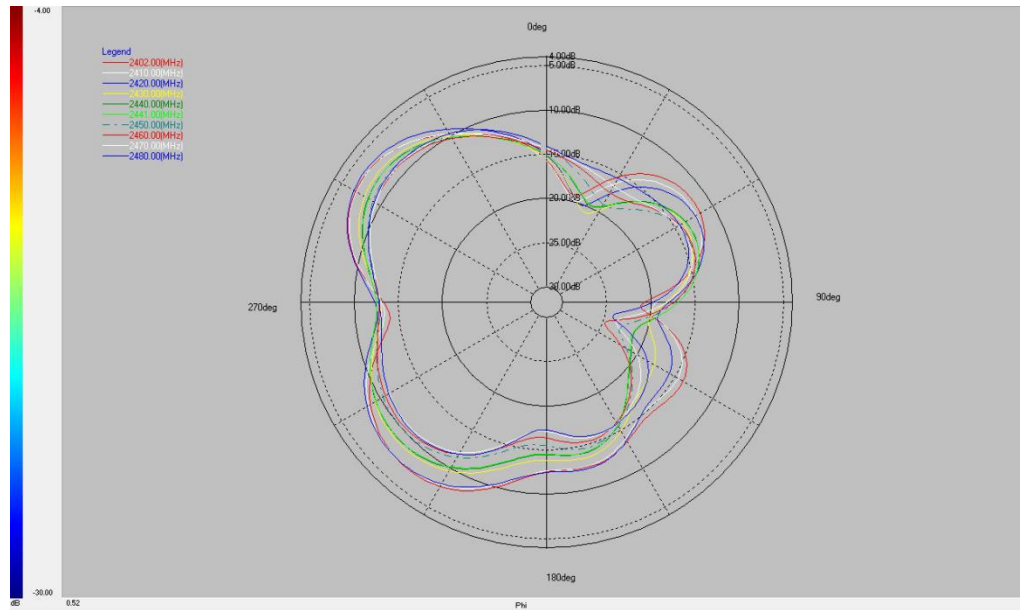


Phi=90°

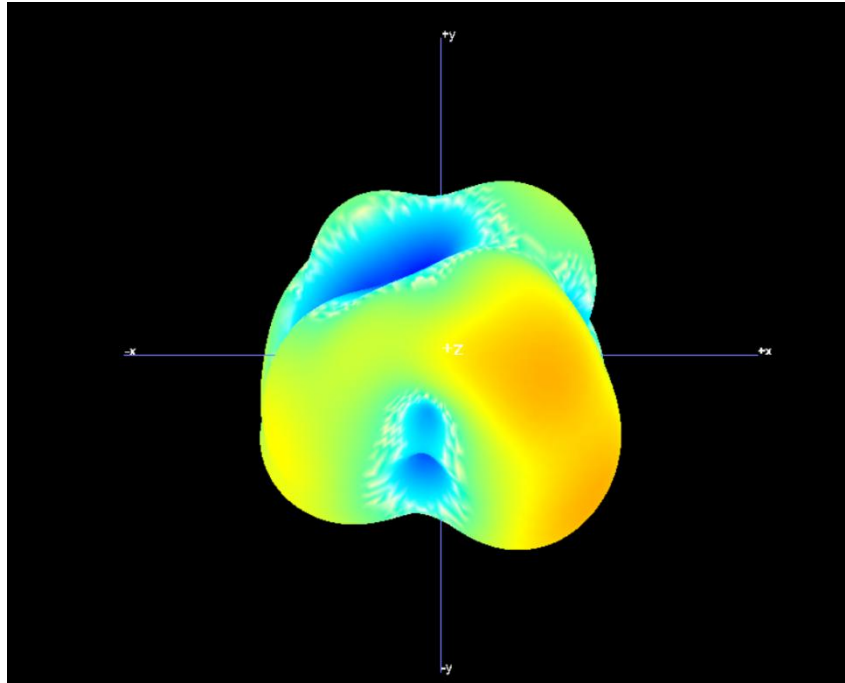




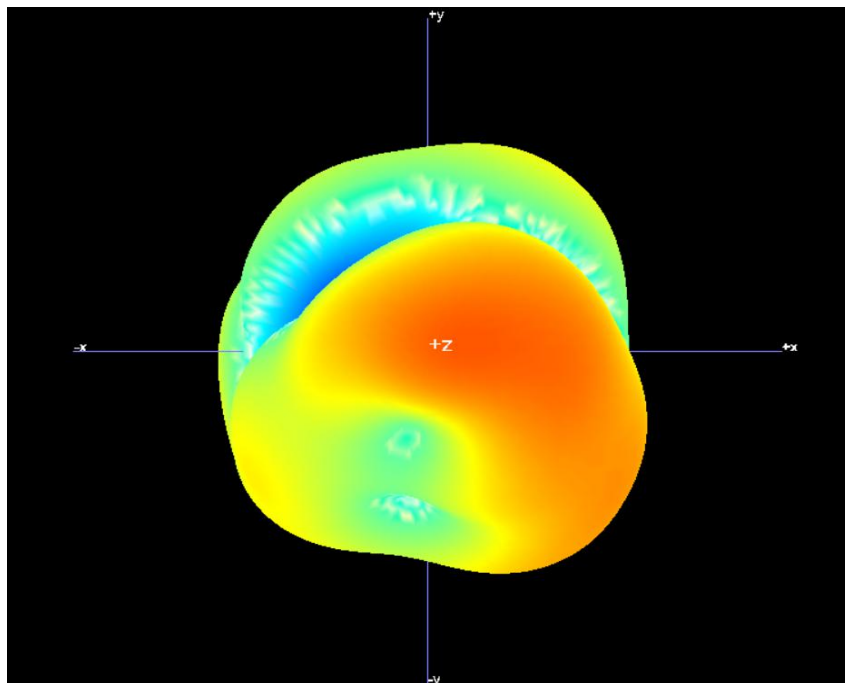
Theta=90°



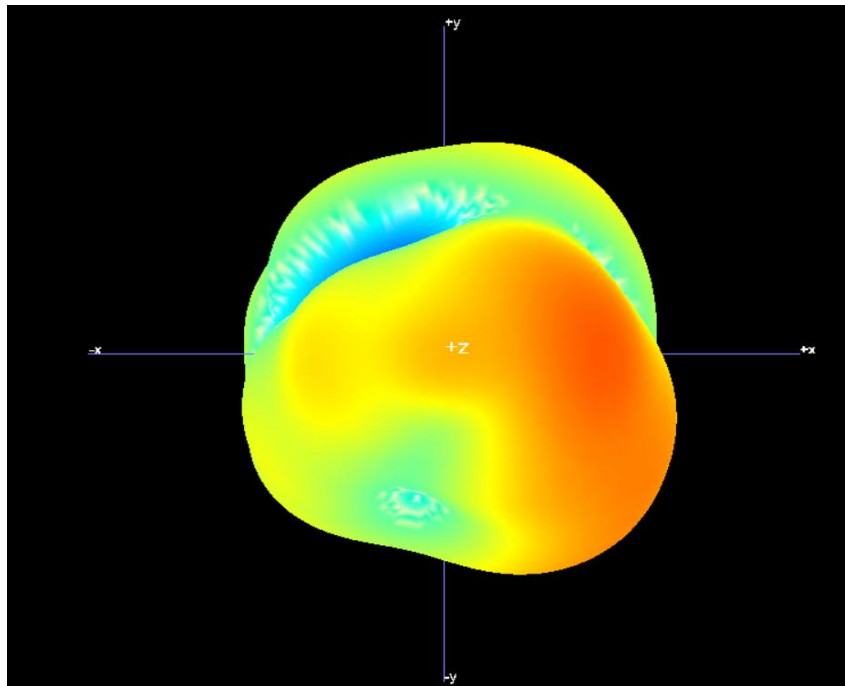
## 2. 3D Radiation Pattern



2402MHz



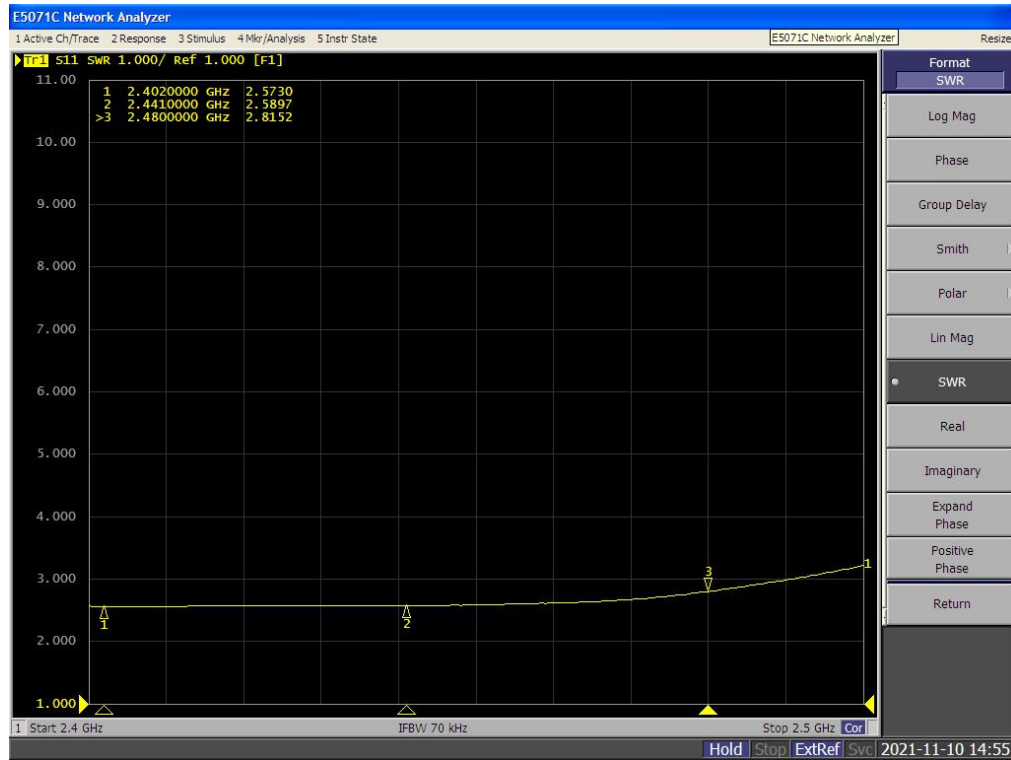
2441MHz



2480MHz

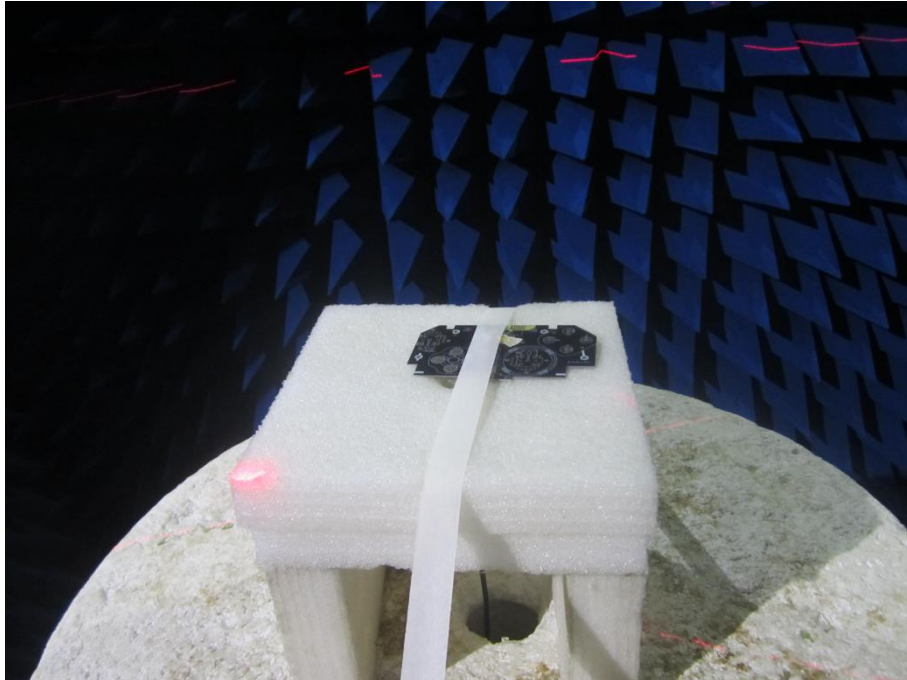


## 3. VSWR

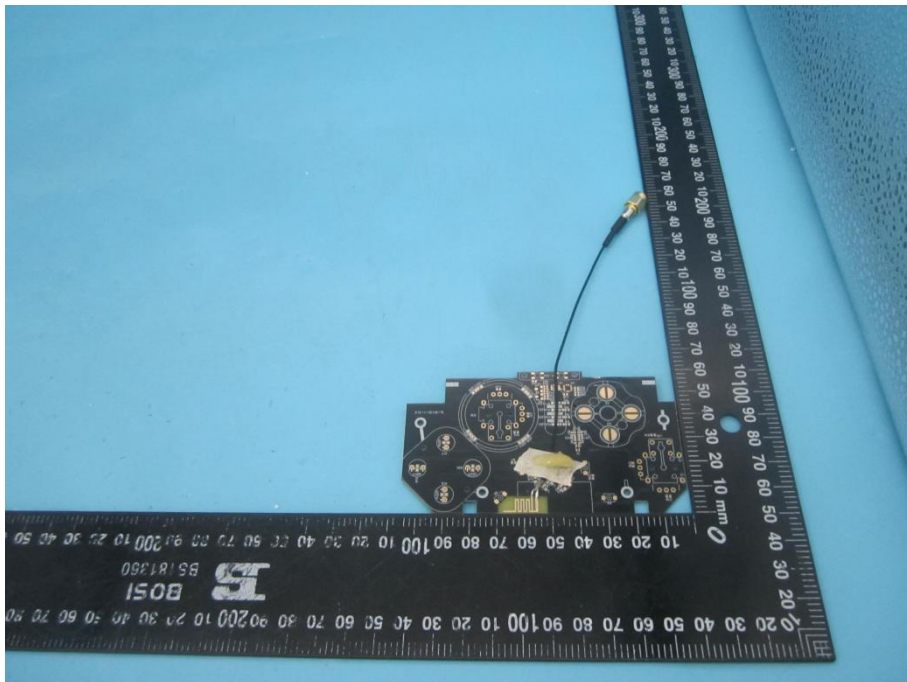


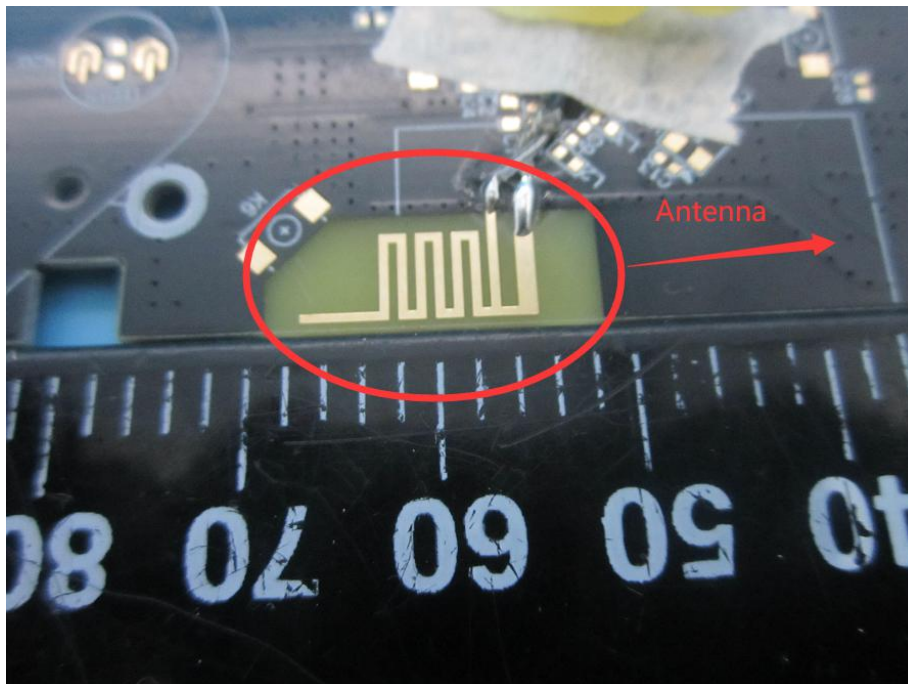
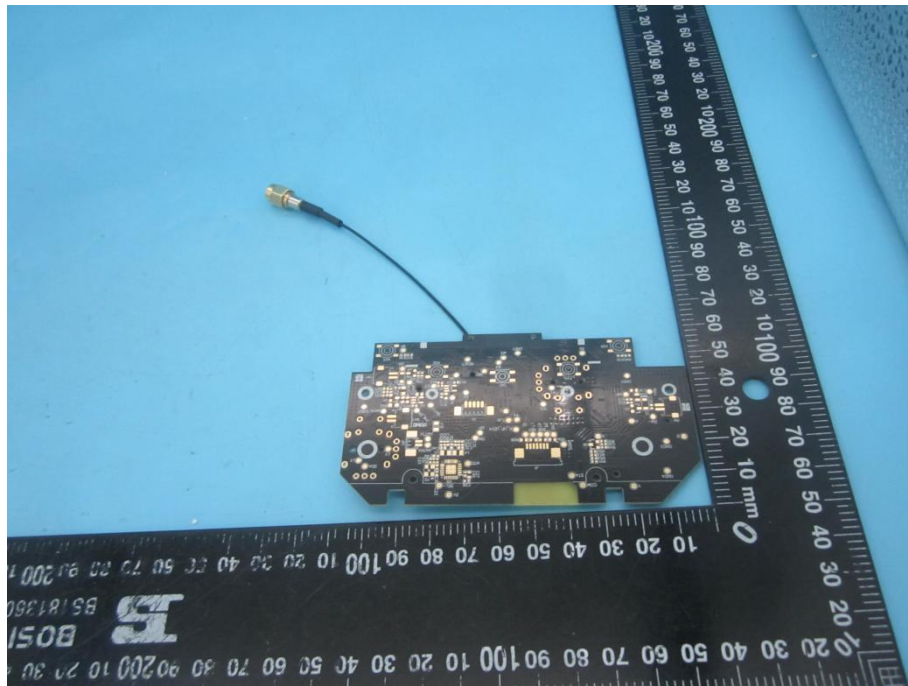
## Annex C Photographs

### 1. Test environment



### 2. EUT







## Annex D General Information

### 1.1 Identification of the Responsible Testing Laboratory

|                     |                                                                                                                                         |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Laboratory Name:    | Shenzhen Morlab Communications Technology Co., Ltd.                                                                                     |
| Laboratory Address: | FL1-3, Building A, FeiYang Science Park, No.8<br>LongChang Road, Block67, BaoAn District, ShenZhen ,<br>GuangDong Province, P. R. China |
| Telephone:          | +86 755 36698555                                                                                                                        |
| Facsimile:          | +86 755 36698525                                                                                                                        |

### 1.2 Identification of the Responsible Testing Location

|          |                                                                                                                                         |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Name:    | Shenzhen Morlab Communications Technology Co., Ltd.                                                                                     |
| Address: | FL1-3, Building A, FeiYang Science Park, No.8<br>LongChang Road, Block67, BaoAn District, ShenZhen ,<br>GuangDong Province, P. R. China |

### 1.3 Test Equipments Utilized

#### 1.3.1 List of Test Equipment

| NO. | Equipment Name                   | Serial NO. | Type                          | Manufa<br>cturer | Cal.Date   | Cal.Due<br>Date |
|-----|----------------------------------|------------|-------------------------------|------------------|------------|-----------------|
| 1   | Vector<br>Network Analyzer       | MY46214666 | E5071C                        | Agilent          | 2021.03.17 | 2022.03.16      |
| 2   | OTA Chamber                      | N/A        | SG24                          | Satimo           | 2021.01.12 | 2024.01.11      |
| 3   | Antenna<br>Measurement<br>System | N/A        | Satenv<br>V1.4.1.14<br>build1 | Satimo           | N/A        | N/A             |

————— END OF REPORT —————