



REPORT No.: SZ22110064E01

TEST REPORT

APPLICANT : Acrox Technologies Co., Ltd

PRODUCT NAME : PCB Antenna

MODEL NAME : Ant-B2A

TRADE NAME : N/A

BRAND NAME : N/A

STANDARD(S) : IEEE Std 149-2021

RECEIPT DATE : 2022-11-04

TEST DATE : 2022-11-07

ISSUE DATE : 2022-11-17

Test Personnel:

Fang Jinshan(Rapporteur)

Approved by:

Chi Shide(Supervisor)

NOTE: This document is issued by Shenzhen Morlab Communications Technology Co., Ltd., the test report shall not be reproduced except in full without prior written permission of the company. The test results apply only to the particular sample(s) tested and to the specific tests carried out which is available on request for validation and information confirmed at our website.

MORLAB

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





DIRECTORY

1. Technical Information	3
1.1. Applicant and Manufacturer Information	3
1.2. Equipment Under Test (EUT) Description	3
2. Test Results	4
2.1. Applied Reference Documents	4
2.2. Test Conditions	4
2.3. Measurement Uncertainty	4
2.4. Test Results	5
2.4.1. Gain	5
2.4.2. VSWR	5
Annex A Photographs	6
Annex B Figures	7
1. 2D Radiation Pattern	7
2. 3D Radiation Pattern	8
3. VSWR	10
Annex C Photographs	11
Annex D General Information	13
1.1 Identification of the Responsible Testing Laboratory	13
1.2 Identification of the Responsible Testing Location	13
1.3 Test Equipments Utilized	13

Change History		
Version	Date	Reason for change
1.0	2022-11-17	First edition



1. Technical Information

Note: Provide by manufacturer.

1.1. Applicant and Manufacturer Information

Applicant:	Acrox Technologies Co., Ltd
Applicant Address:	4F., No.89, Minshan St., Neihu Dist., Taipei City 114, Taiwan, R.O.C
Manufacturer:	Acrox Technologies Co., Ltd
Manufacturer Address:	4F., No.89, Minshan St., Neihu Dist., Taipei City 114, Taiwan, R.O.C

1.2. Equipment Under Test (EUT) Description

Wireless Type	Bluetooth
Frequency	N/A
IMEI	N/A
Antenna Type	Meander PCB antenna
Sample No.	1#

2. Test Results

2.1. Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	IEEE Std 149-2021	IEEE Recommended Practice for Antenna Measurements

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

2.4.1. Gain

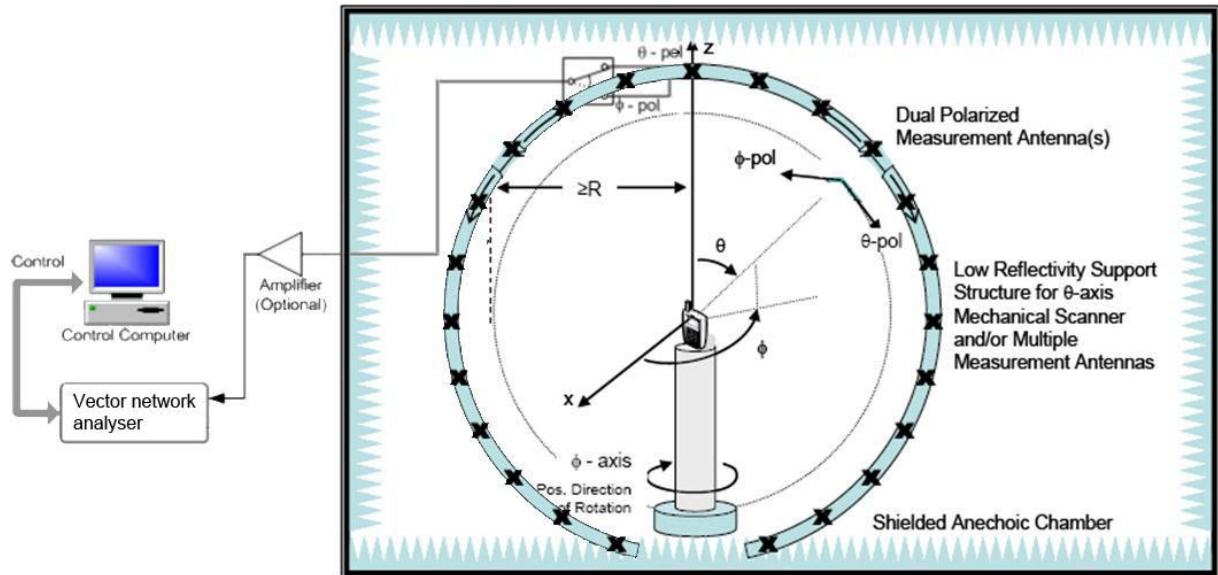
Frequency (MHz)	Gain(dBi)
2400	-0.16
2410	0.14
2420	-0.18
2430	-0.01
2440	0.02
2450	0.10
2460	0.41
2470	0.23
2480	0.41
2490	0.30
2500	0.32

2.4.2. VSWR

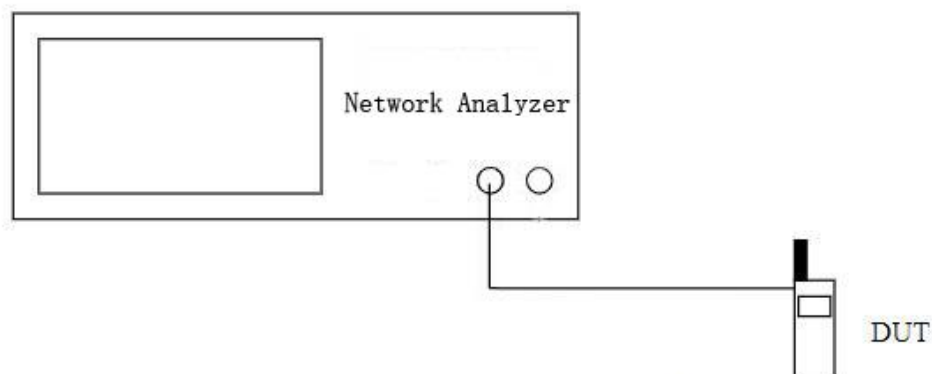
Frequency	VSWR
2400MHz	4.34
2440MHz	3.82
2480MHz	3.27

Annex A Photographs

1. Test Setup



2. S11 parameter test setup



* Other Configuration please reference the "Annex D: General Information"

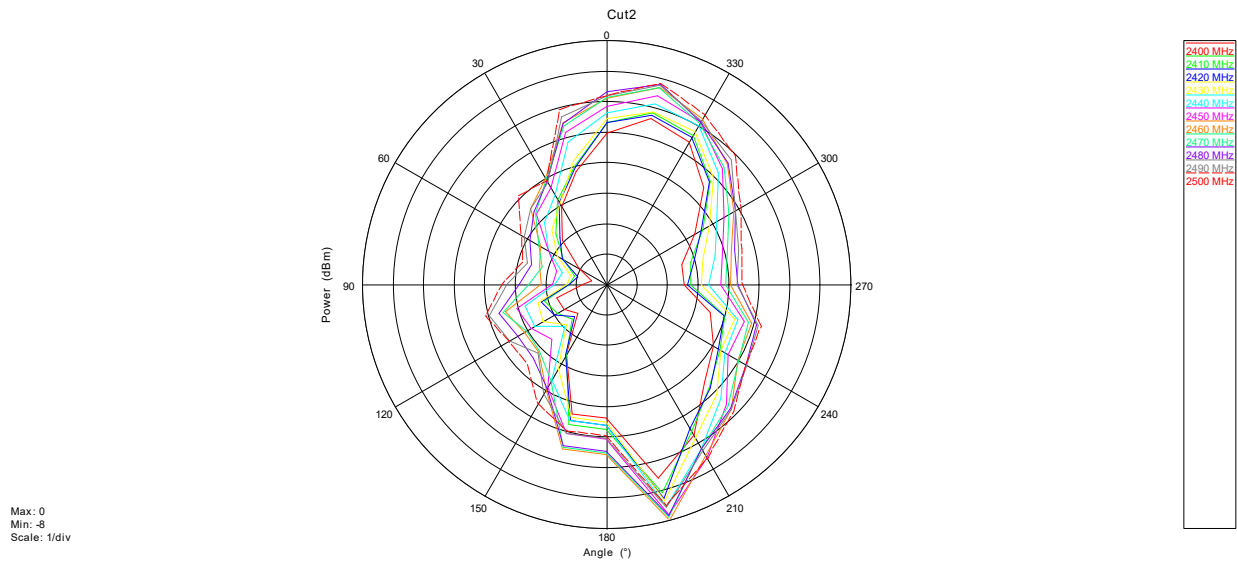
3. Setup Description:

- Step 1: Fix the DUT on the pole in the center of the anechoic chamber.
- Step 2: The whole antenna unit is connected with the coaxial line at the transmitter end of the anechoic chamber.
- Step 3: Close the anechoic chamber door to avoid the external signal interference.
- Step 4: Open the antenna measurement system and can select frequency or angle to test, and import the need frequency point to test.
- Step 5: After testing, the test system can carry on far-field data conversion

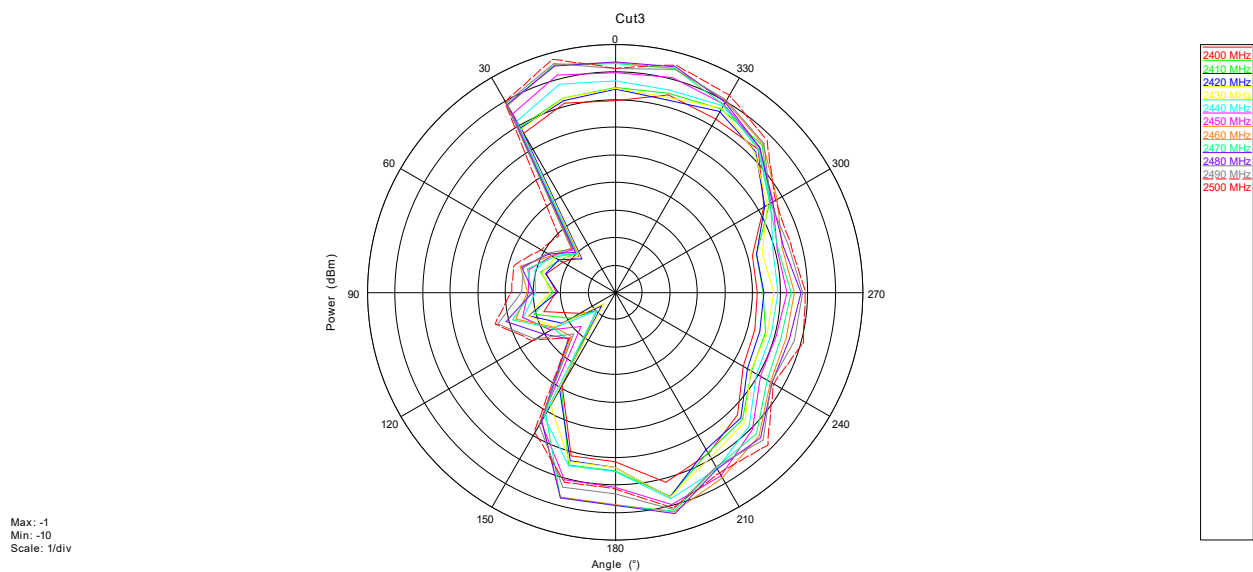
Annex B Figures

1. 2D Radiation Pattern

Phi=0°



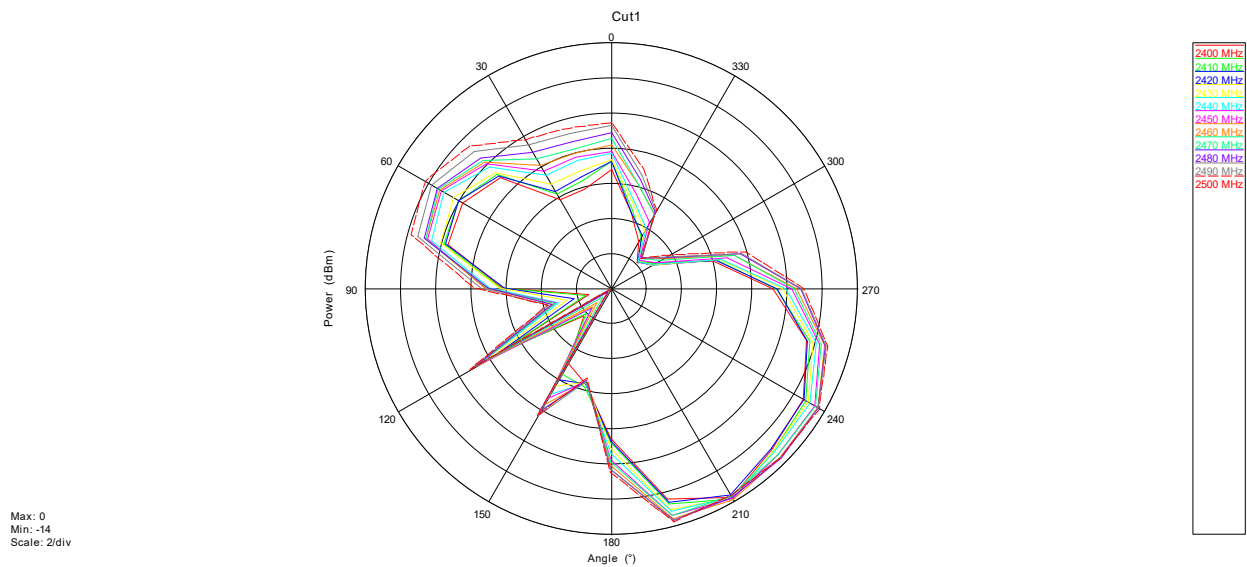
Phi=90°



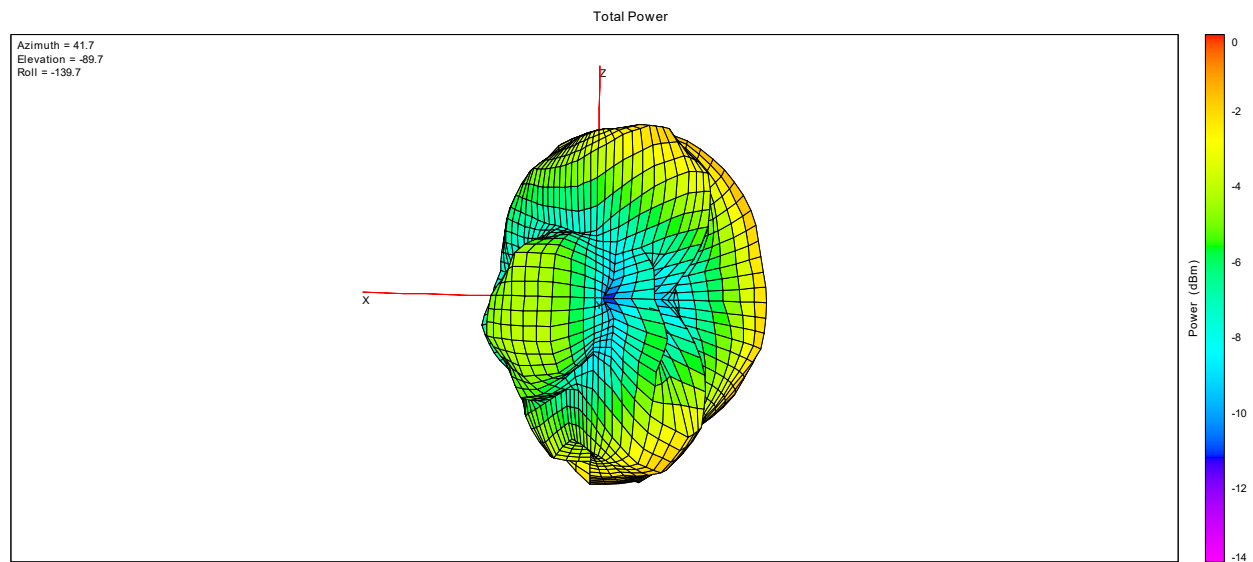


Theta=90°

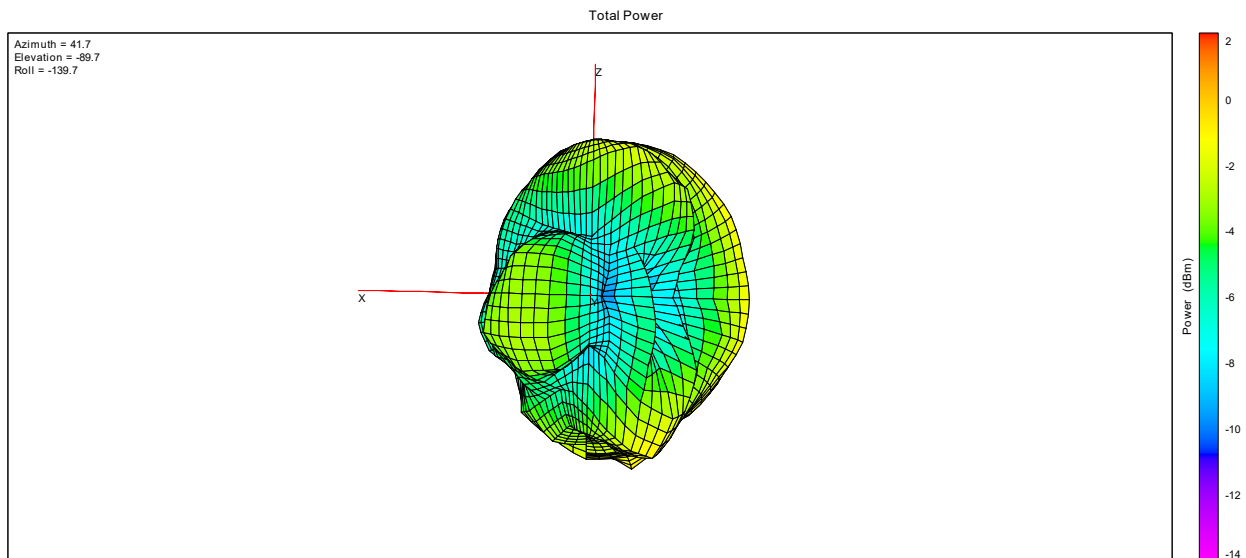
REPORT No.: SZ22110064E01



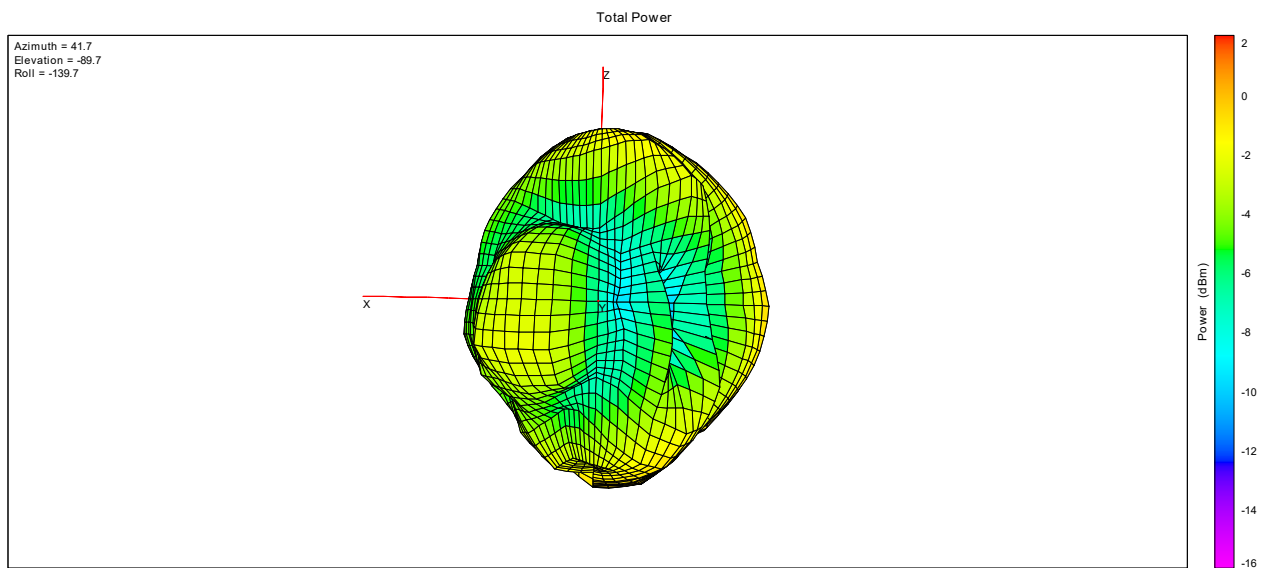
2. 3D Radiation Pattern



2400MHz



2440MHz



2480MHz

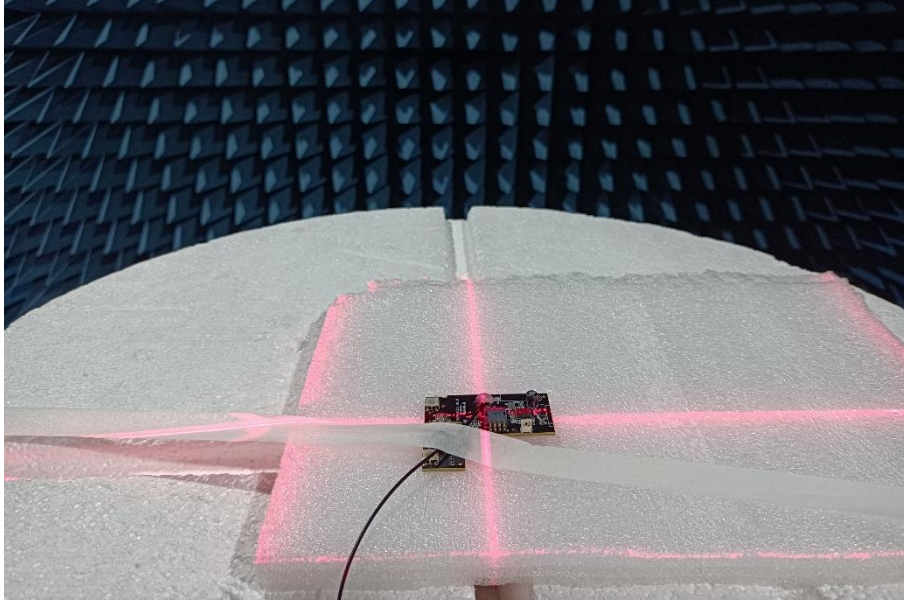


3. VSWR

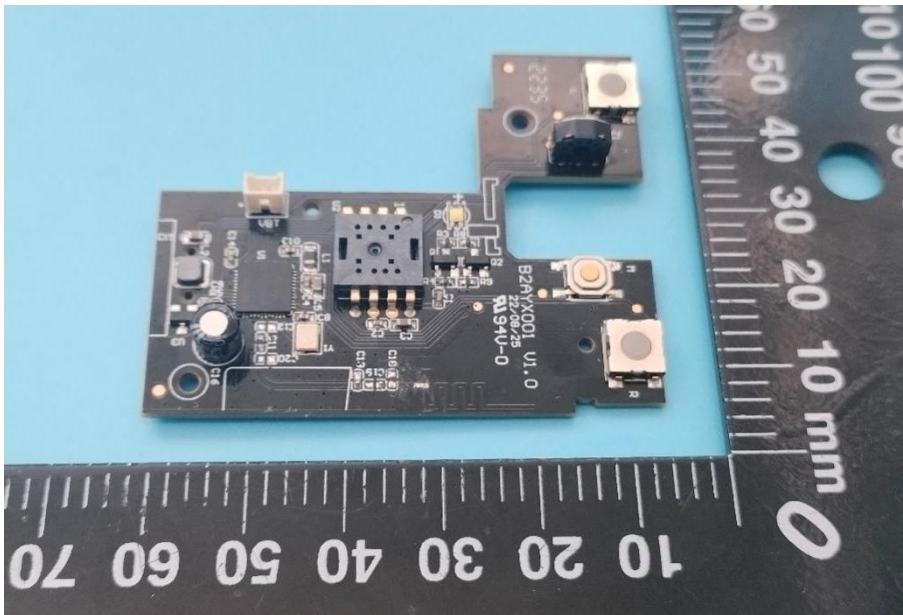


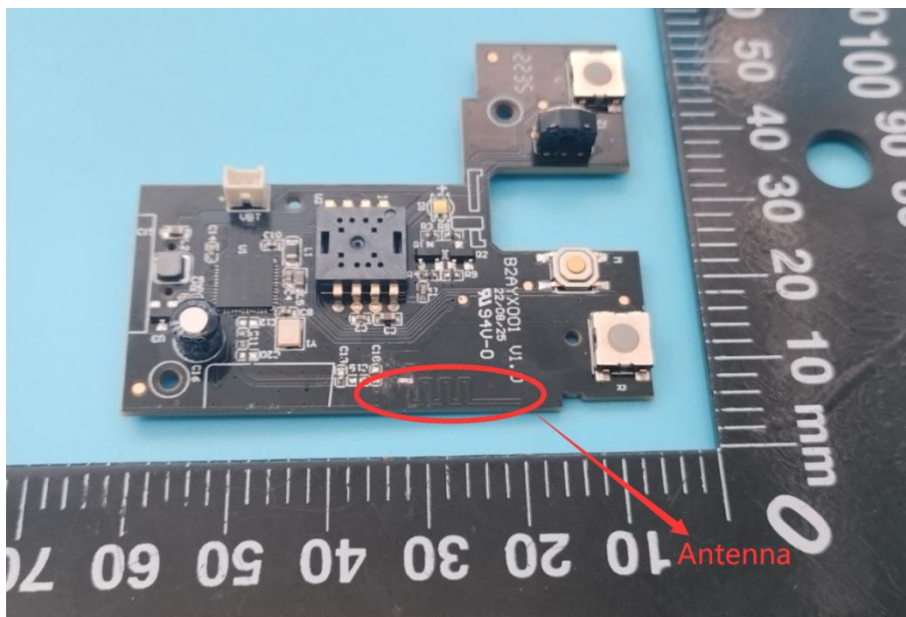
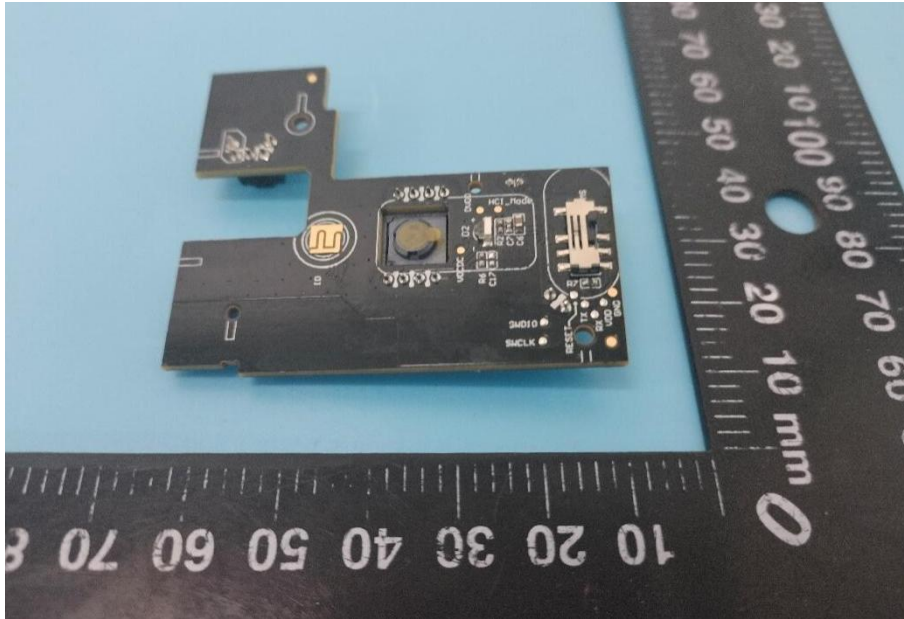
Annex C Photographs

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 LongChang Road, Block67, BaoAn District, ShenZhen, 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 LongChang Road, Block67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

1.3 Test Equipments Utilized

No.	Equipement Name	Serial No.	Type	Manufa cturer	Cal.Date	Cal.Due Date
1	Network Analyzer	MY46110140	E5071C	Agilent	2022.07.04	2023.07.03
2	OTA Chamber	TJ2235-Q17 93	AMS-8923-1 50	ETS	2020.01.06	2023.01.05
3	Antenna Measurement System	1685	EMQuest EMQ-100 V 1.13 Build 21267	ETS	N/A	N/A

1.4 Test Condition

Environment Parameter	Selected Values During Tests			
	Ambient Pressure(KPa)	Temperature(°C)	Voltage	Relative Humidity (%)
Normal Temperature, Normal Voltage (NTNV)	101	21.4	N/A	43