



REPORT No.: SZ22110101E01

TEST REPORT

APPLICANT : Power on Tools Co., Ltd.

PRODUCT NAME : Bluetooth Antenna

MODEL NAME : 4.TP.YL200S0020

TRADE NAME : N/A

BRAND NAME : N/A

STANDARD(S) : IEEE Std 149-2021

RECEIPT DATE : 2022-11-09

TEST DATE : 2022-11-10

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MORLAB

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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 lists	5
Annex A Photographs	6
Annex B Figures	7
1. 2D Radiation Pattern	7
2. 3D Radiation Pattern	8
Annex C Photographs	10
Annex D General Information	12
1.1 Identification of the Responsible Testing Laboratory	12
1.2 Identification of the Responsible Testing Location	12
1.3 Test Equipments Utilized	12

Change History		
Version	Date	Reason for change
1.0	2022-11-16	First edition



1. Technical Information

Note: Provide by manufacturer.

1.1. Applicant and Manufacturer Information

Applicant:	Power on Tools Co., Ltd.
Applicant Address:	No.100LianTang Road,Jimei District,Xiamen,China 361021
Manufacturer:	Power on Tools Co., Ltd.
Manufacturer Address:	No.100LianTang Road,Jimei District,Xiamen,China 361021

1.2. Equipment Under Test (EUT) Description

Wireless Type	Bluetooth
Frequency	N/A
IMEI	N/A
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	



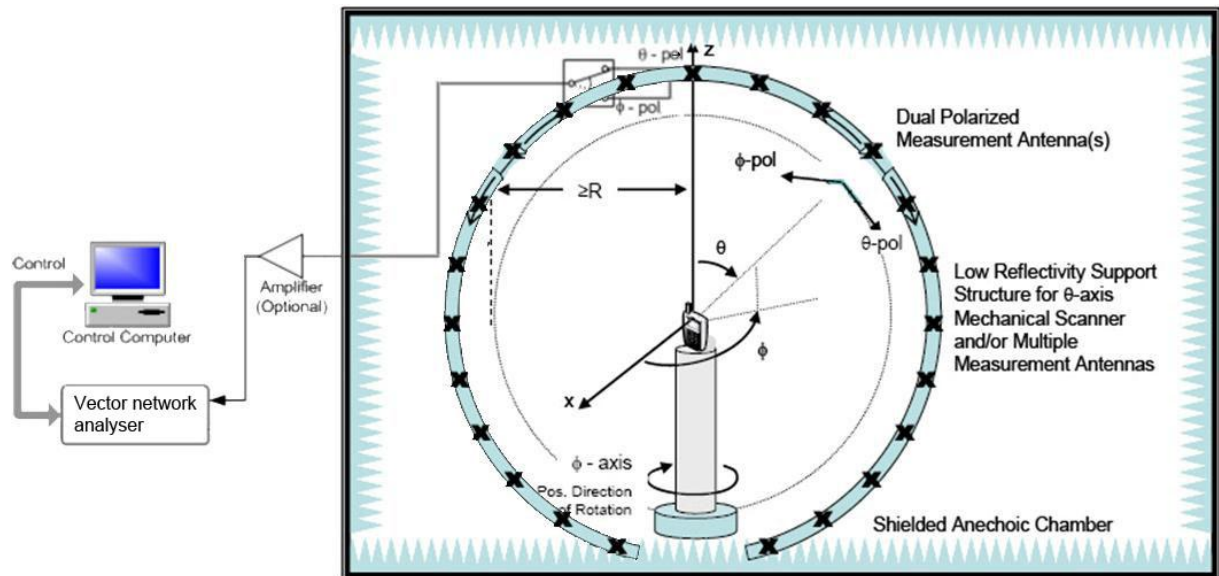
2.4. Test Results lists

2.4.1. Gain

Frequency(MHz)	Gain(dBi)
2400	-7.12
2410	-7.23
2420	-7.50
2430	-7.40
2440	-7.49
2450	-7.51
2460	-7.69
2470	-8.11
2480	-8.11
2490	-8.40
2500	-8.32

Annex A Photographs

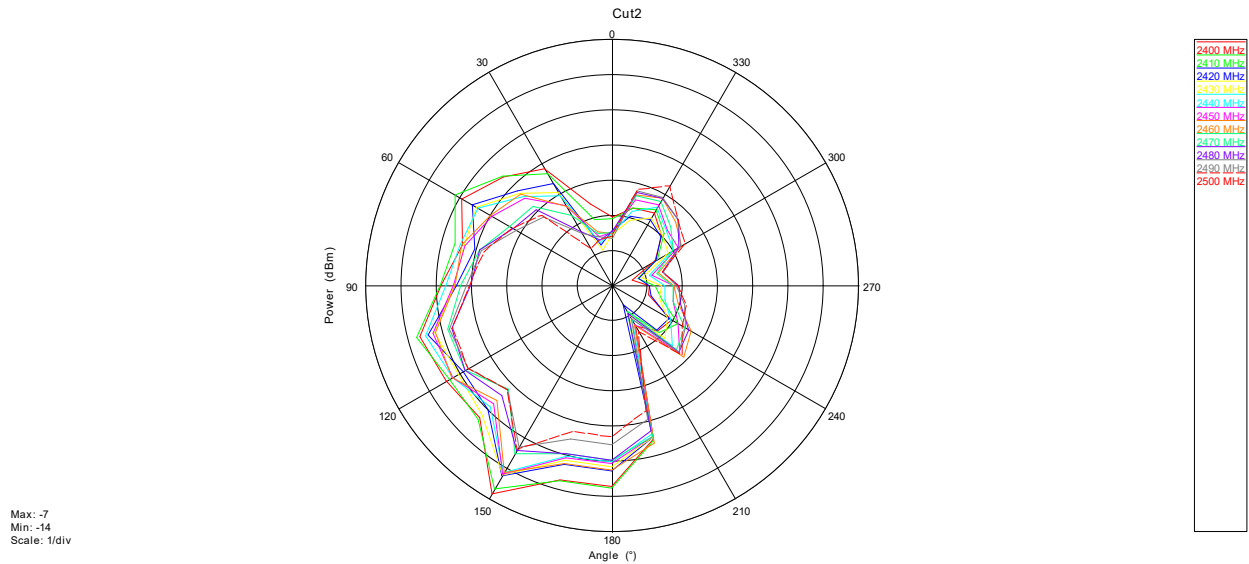
1. Test Setup



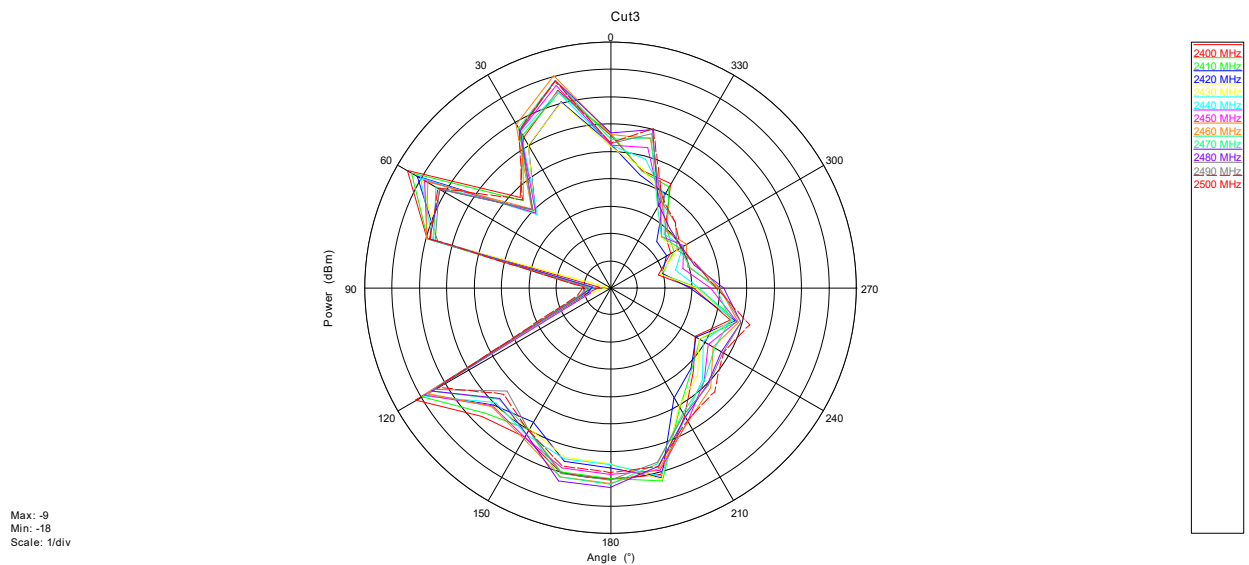


Annex B Figures

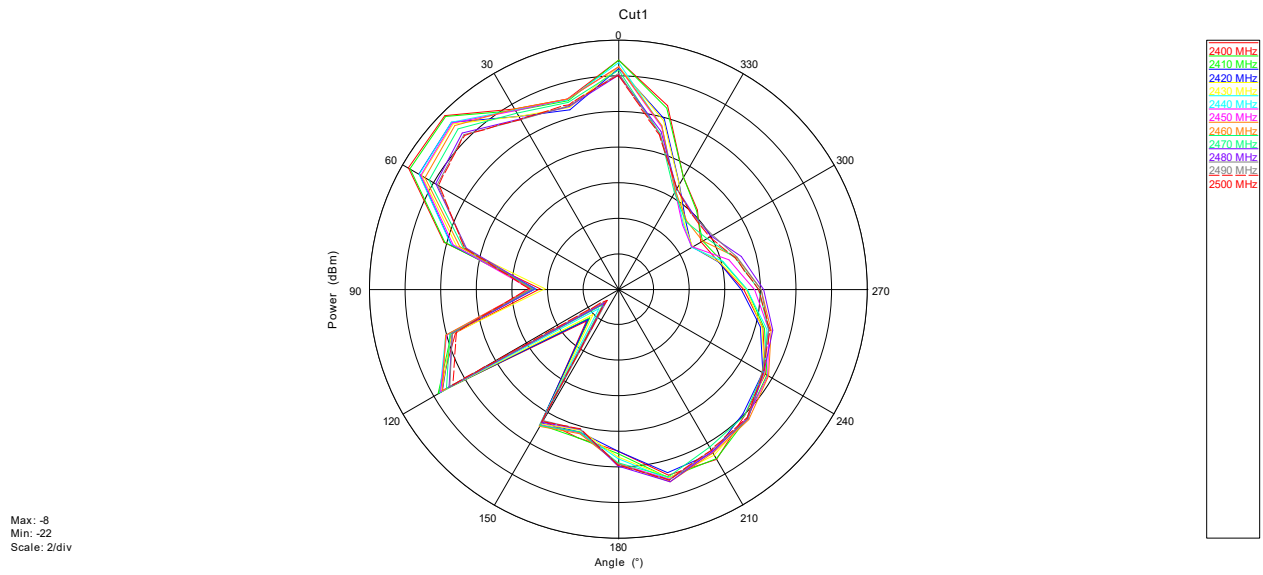
1. 2D Radiation Pattern



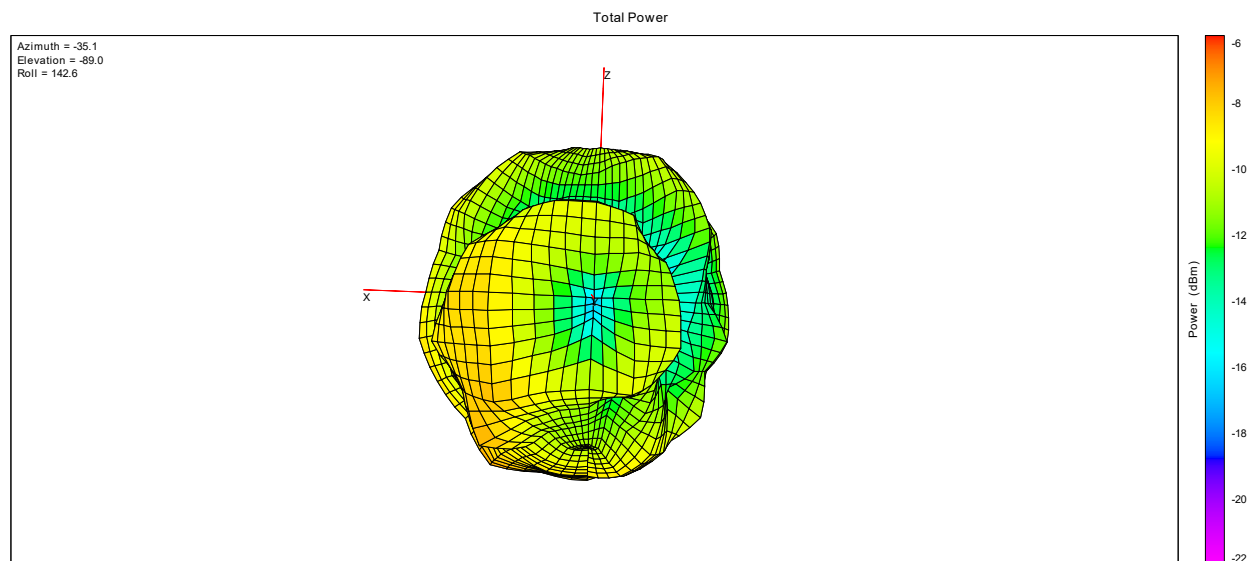
Phi=0°

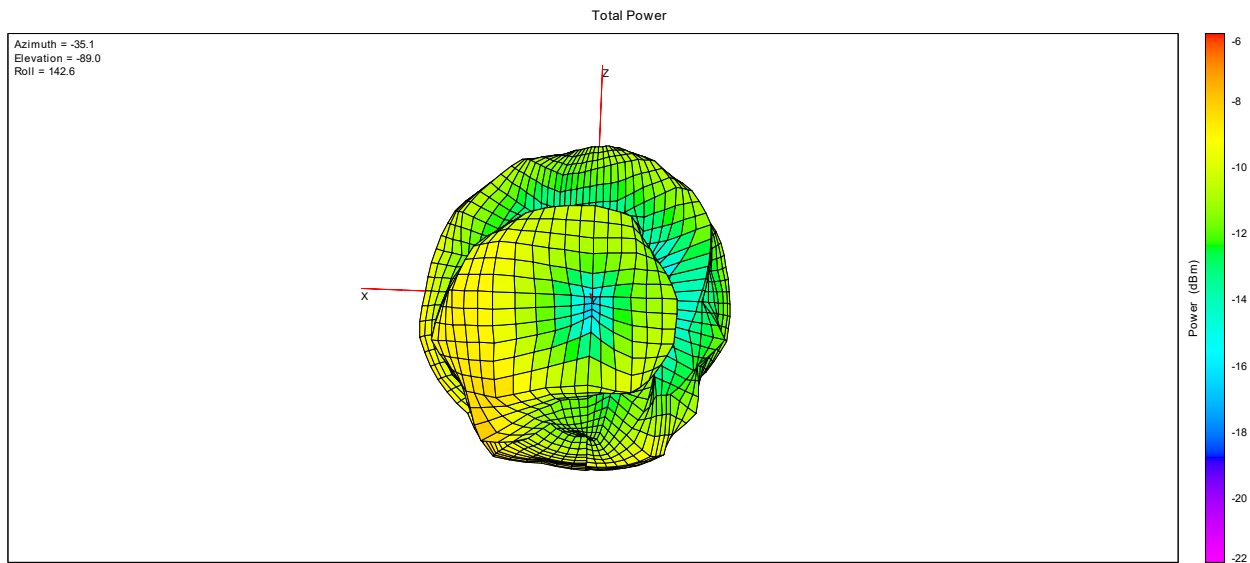


Phi=90°

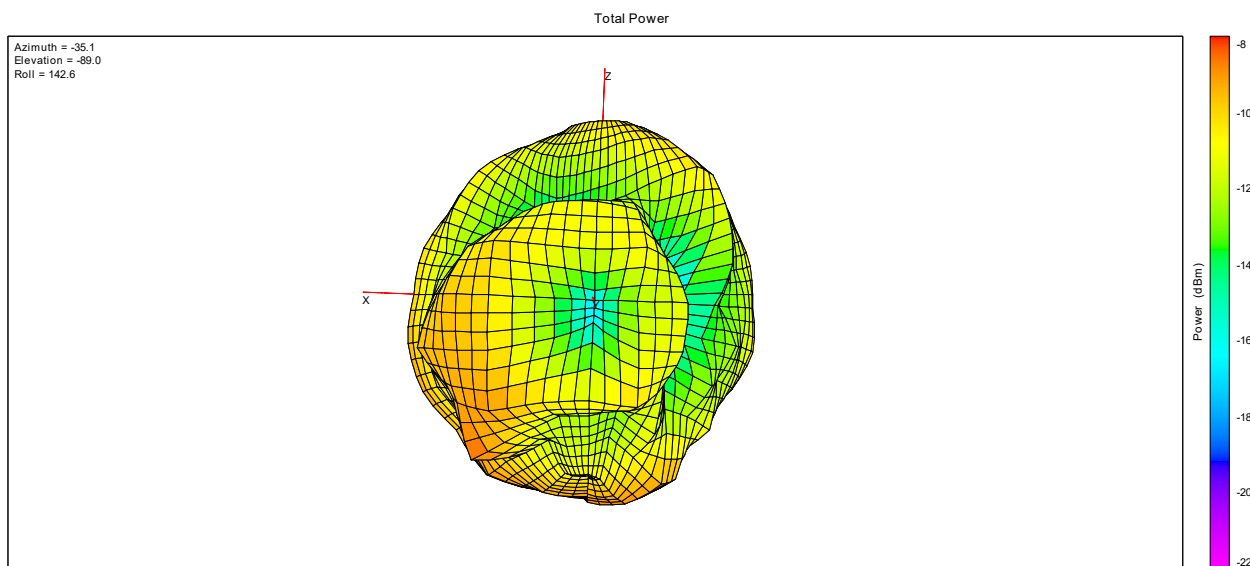


2. 3D Radiation Pattern





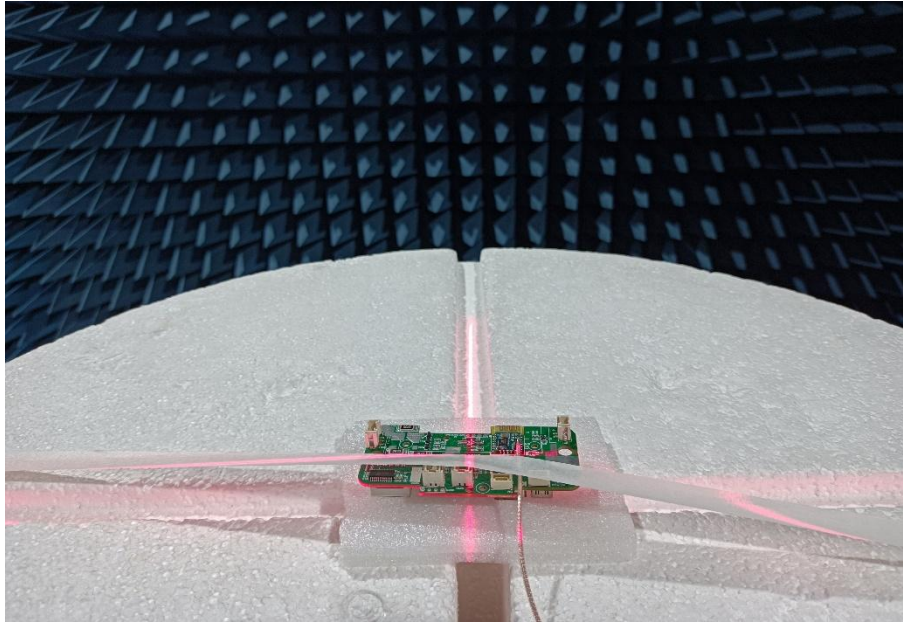
2440MHz



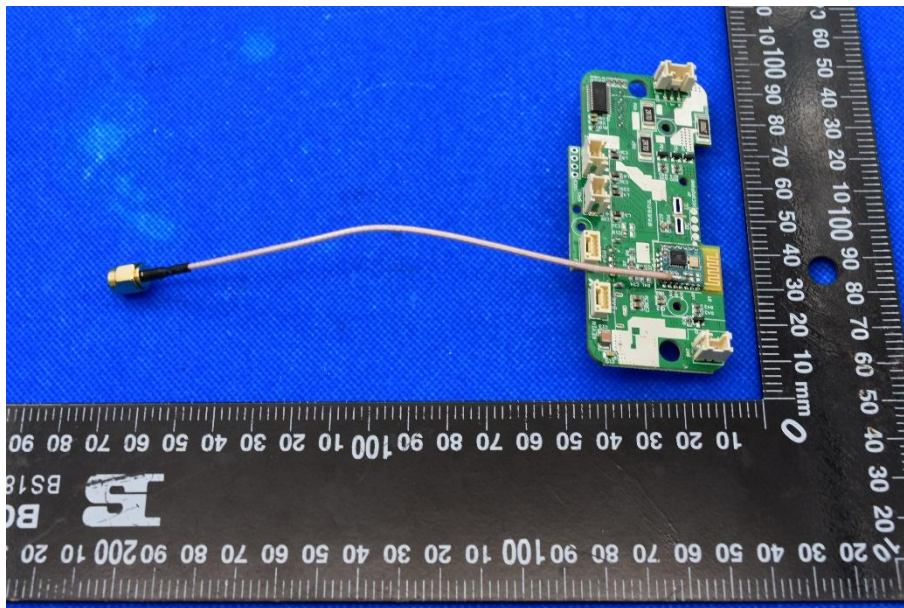
2480MHz

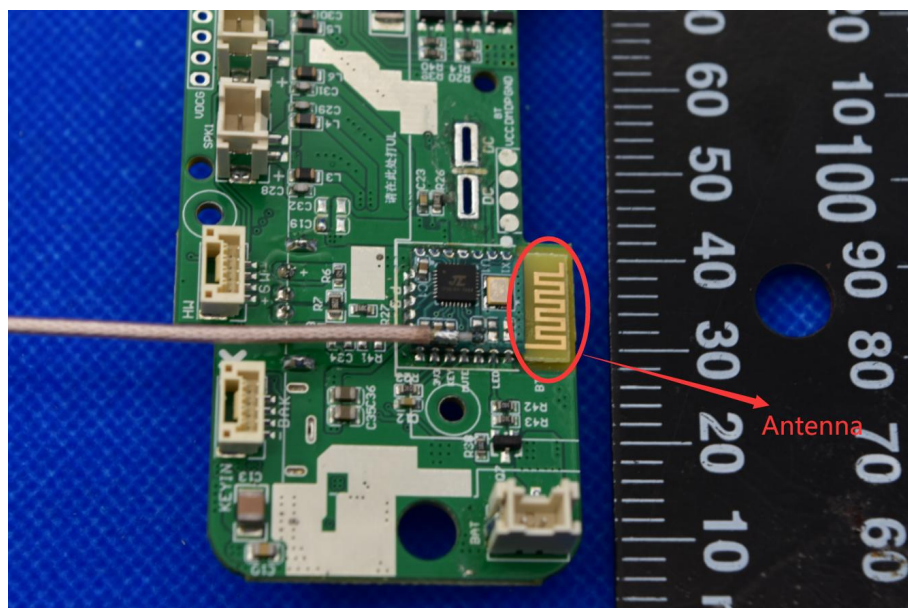
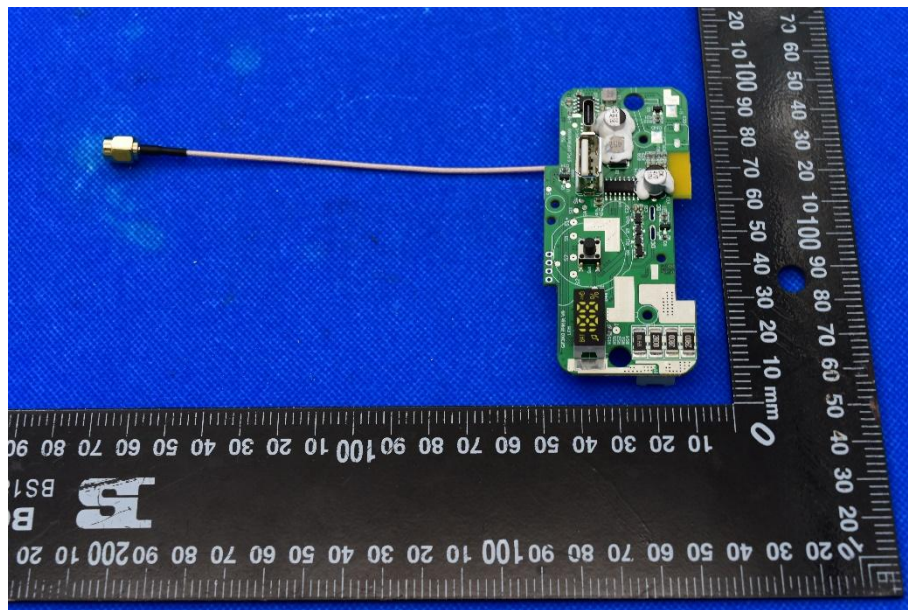
Annex C Photographs

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
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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

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