



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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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	



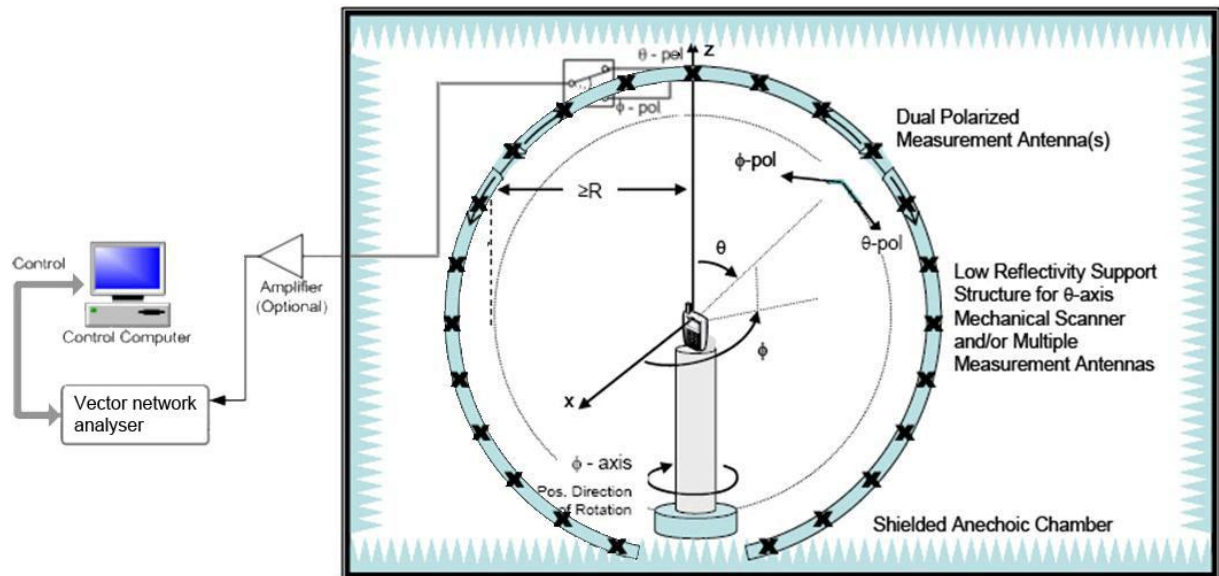
2.4. Test Results lists

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

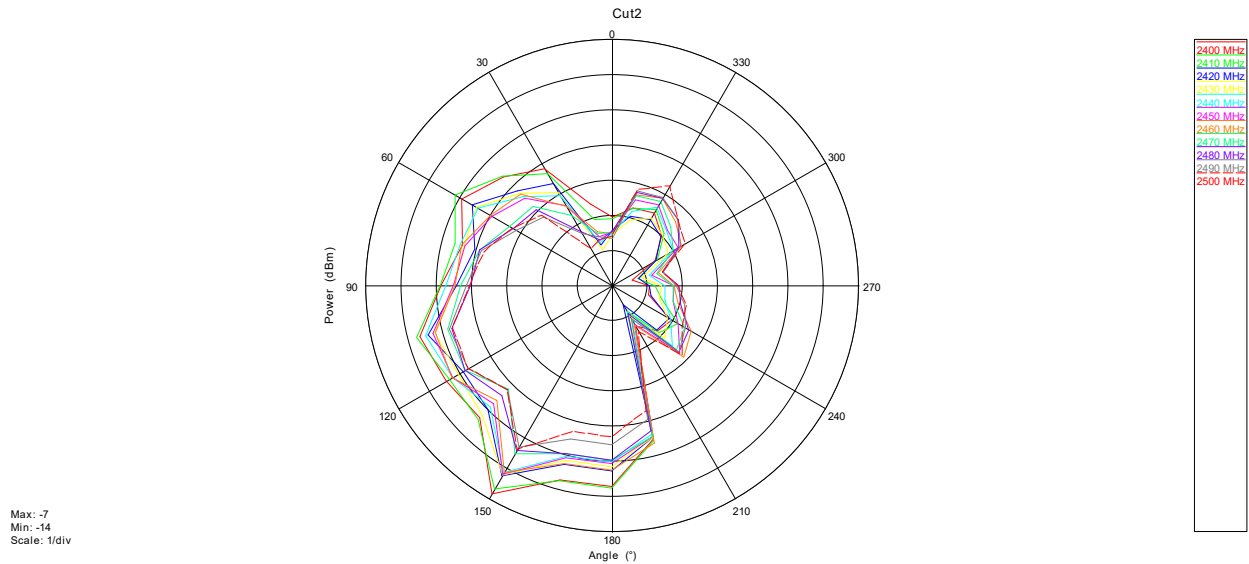
1. Test Setup



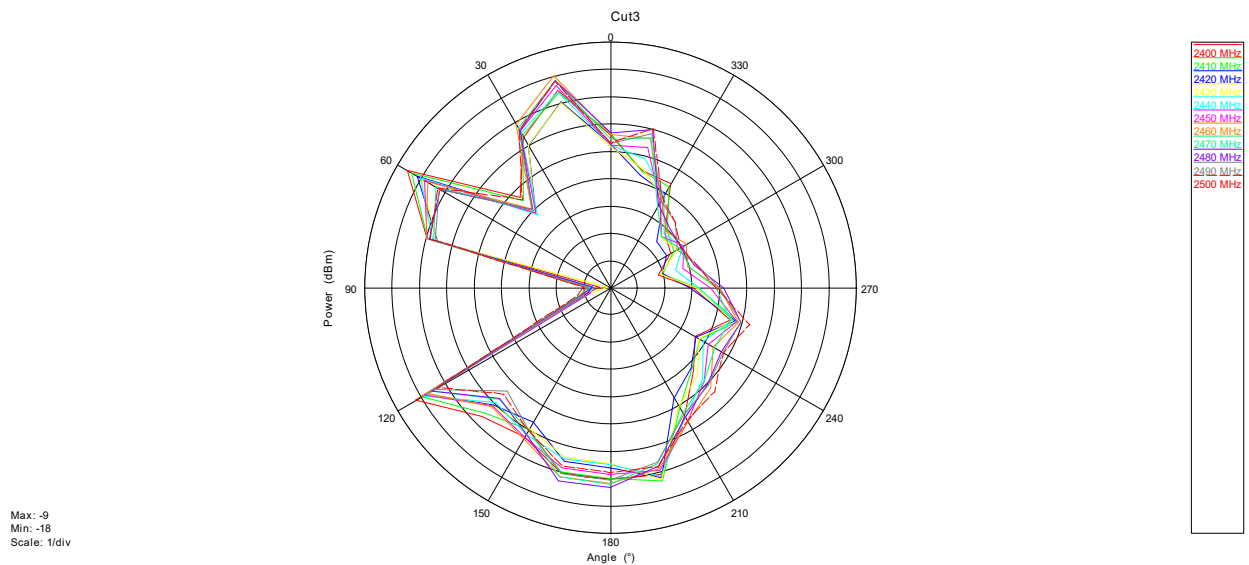


Annex B Figures

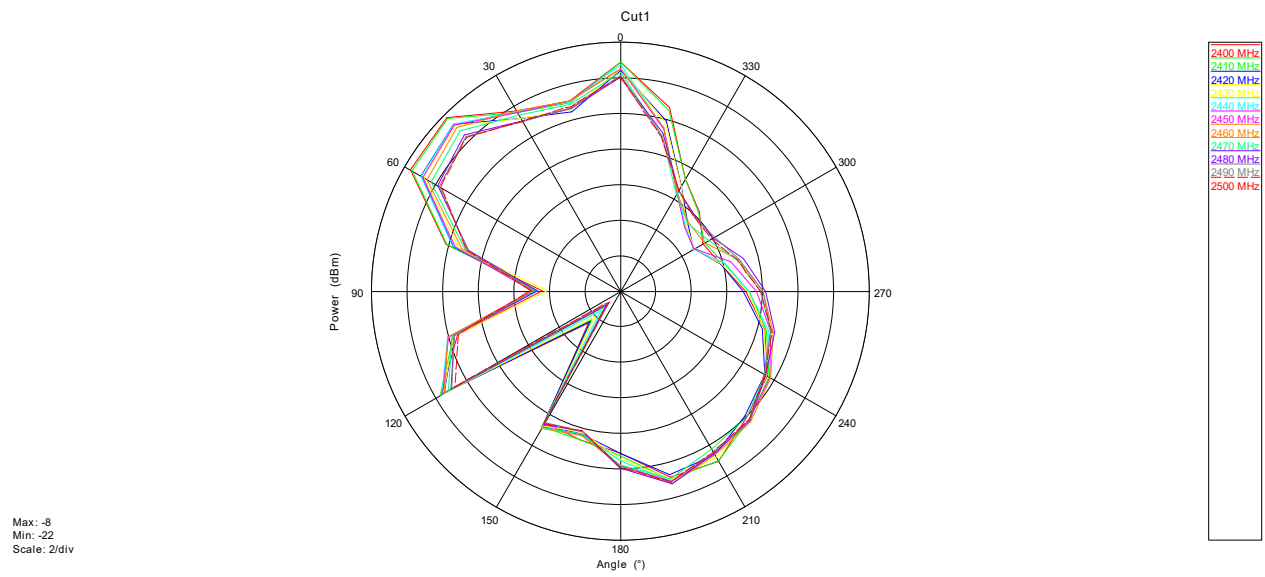
1. 2D Radiation Pattern



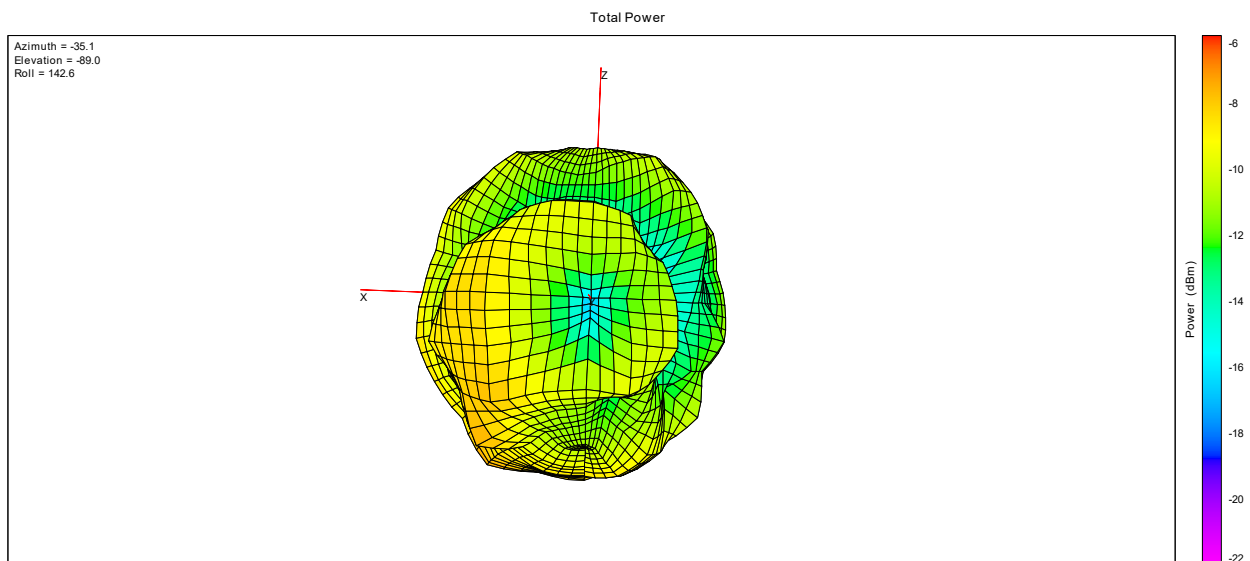
Phi=0°

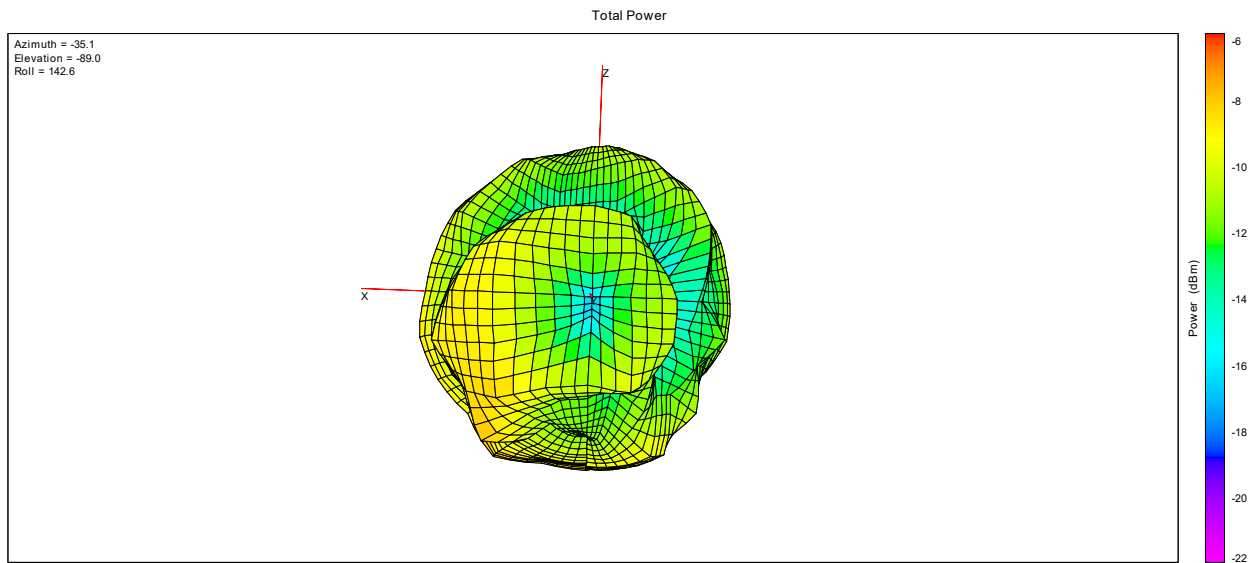


Phi=90°

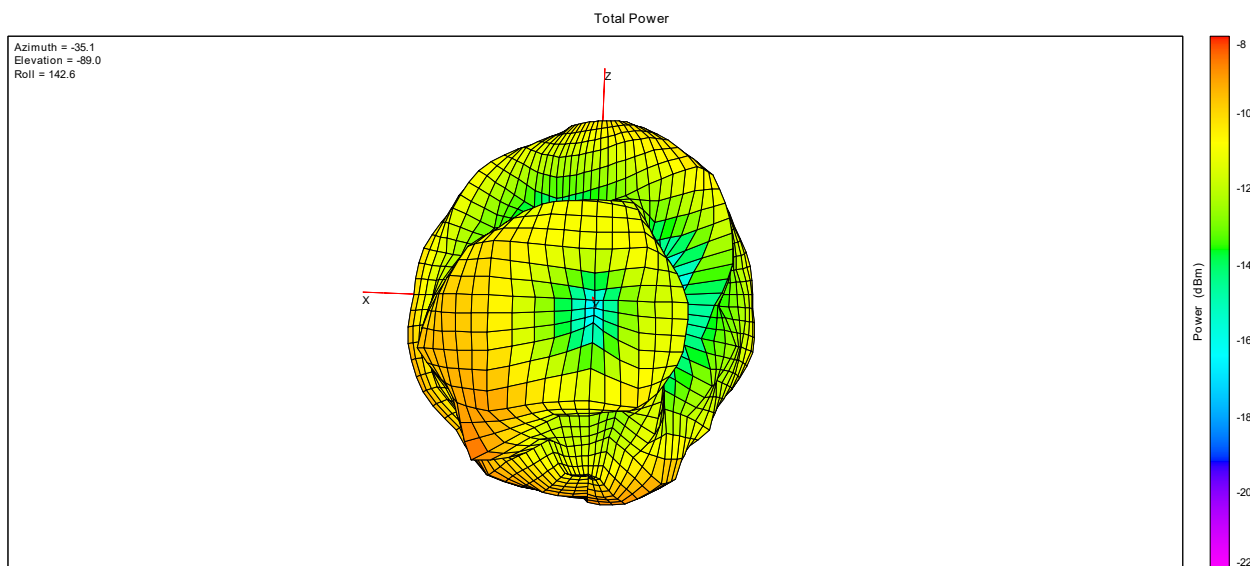


2. 3D Radiation Pattern





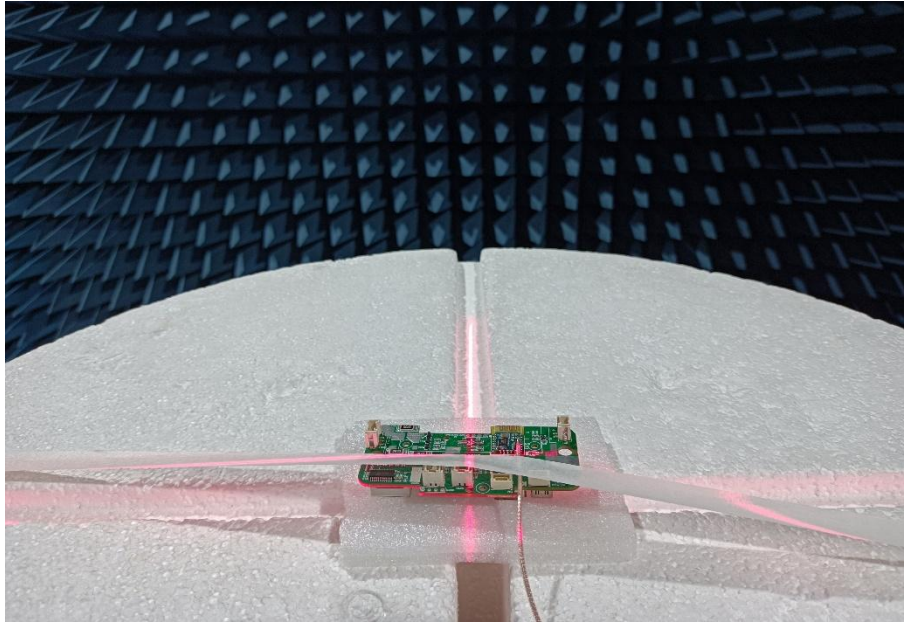
2440MHz



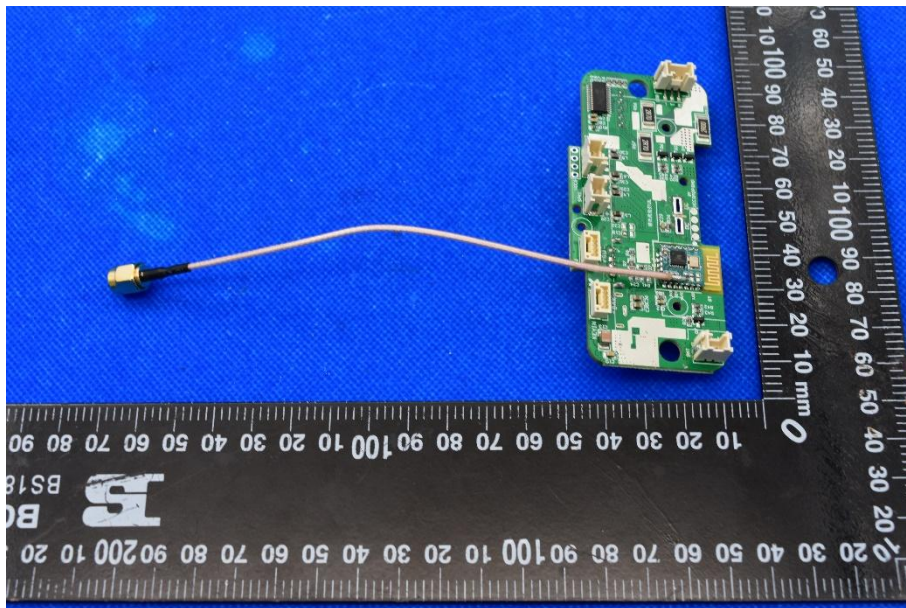
2480MHz

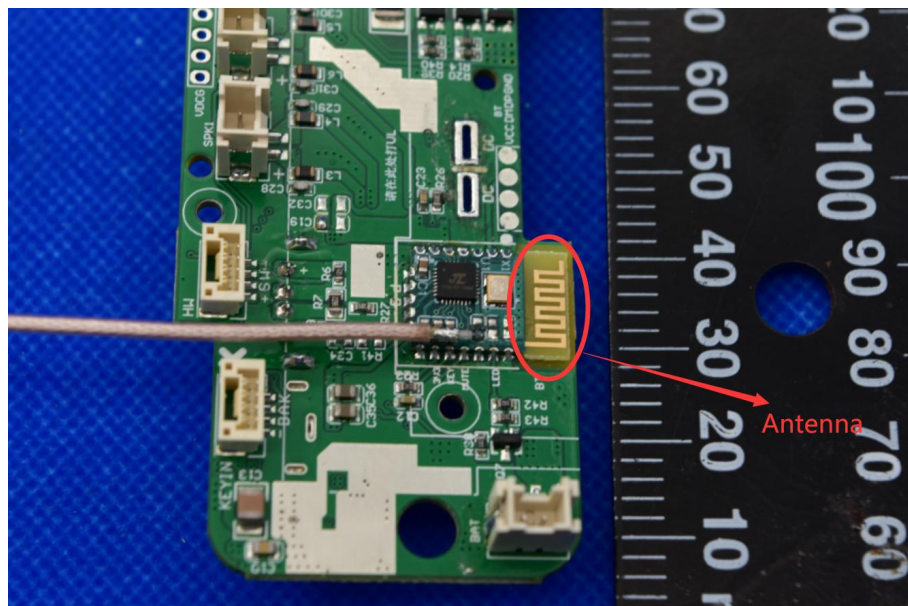
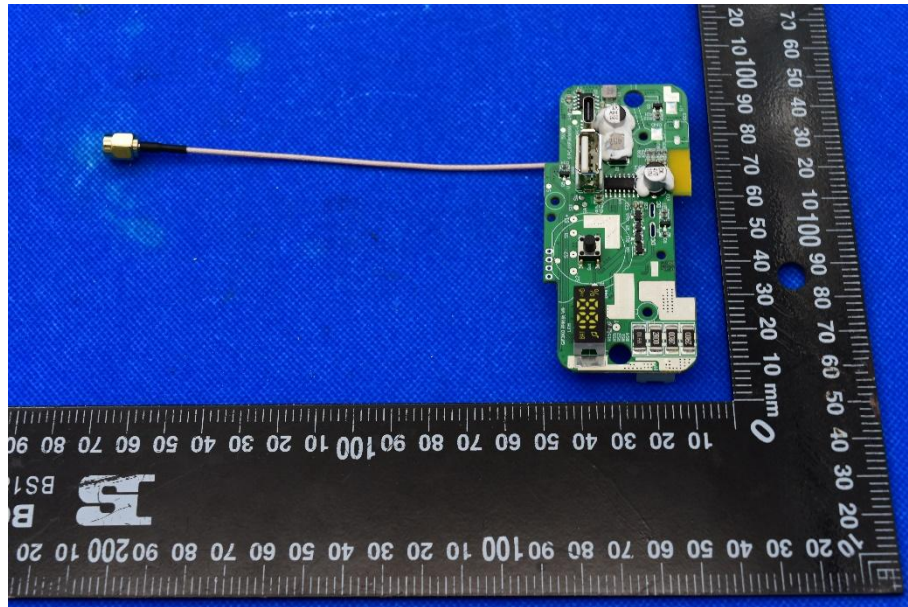
Annex C Photographs

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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