REPORT No.: SZ22110064E03

TEST REPORT

APPLICANT	:	Acrox Technologies Co., Ltd
PRODUCT NAME	:	PCB Antenna
MODEL NAME	:	Ant-BL5
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

Edited by: Fang Jinshan

Fang Jinshan(Rapporteur)

Approved by: Chi Shide

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 Fax: 86-755-36698525
Http://www.morlab.cn 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.	3#

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

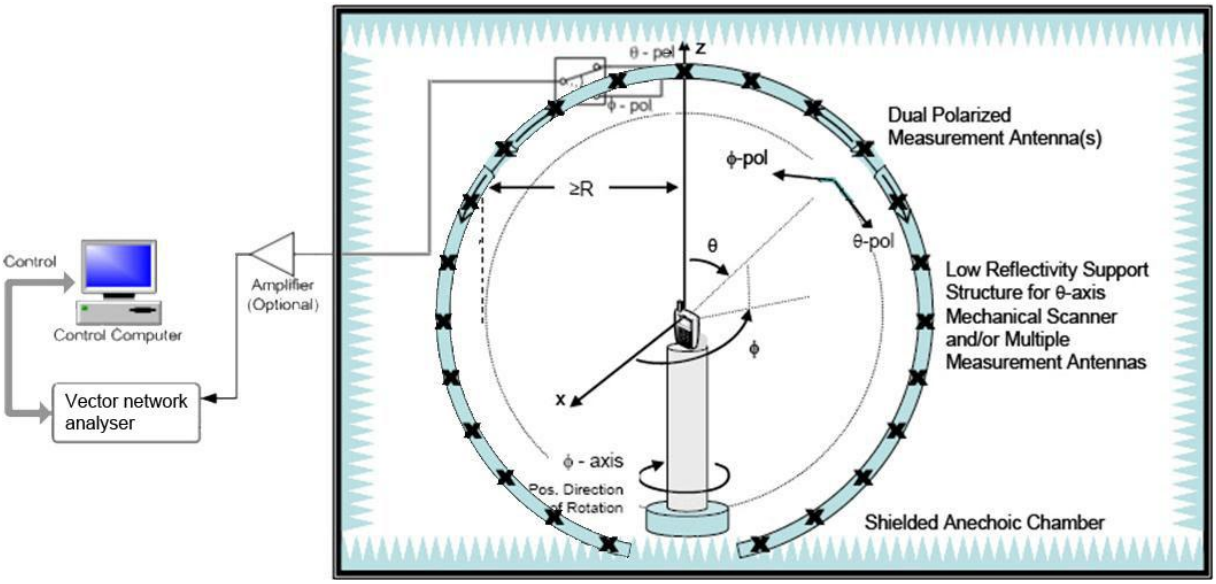
Frequency (MHz)	Gain(dBi)
2400	2.47
2410	2.54
2420	2.36
2430	2.23
2440	2.49
2450	2.46
2460	2.47
2470	2.16
2480	1.81
2490	1.59
2500	1.34

2.4.2. VSWR

Frequency	VSWR
2400MHz	2.00
2440MHz	2.58
2480MHz	4.15

Annex A Photographs

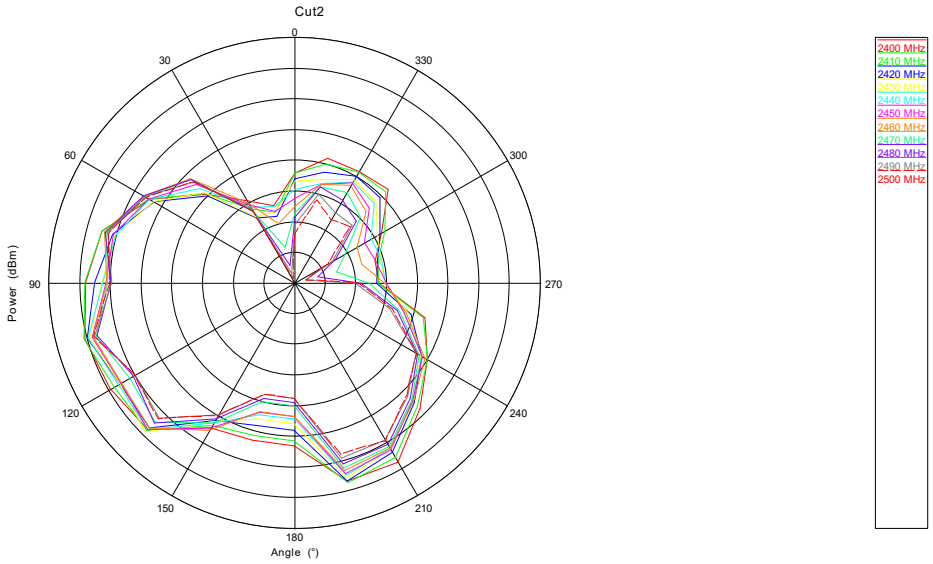
1. Test Setup



Annex B Figures

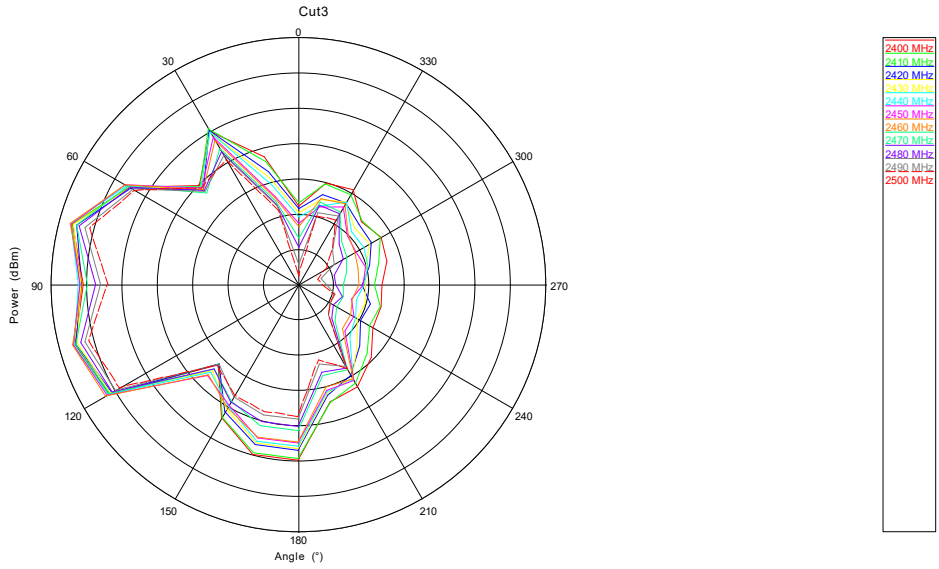
1. 2D Radiation Pattern

Phi=0°



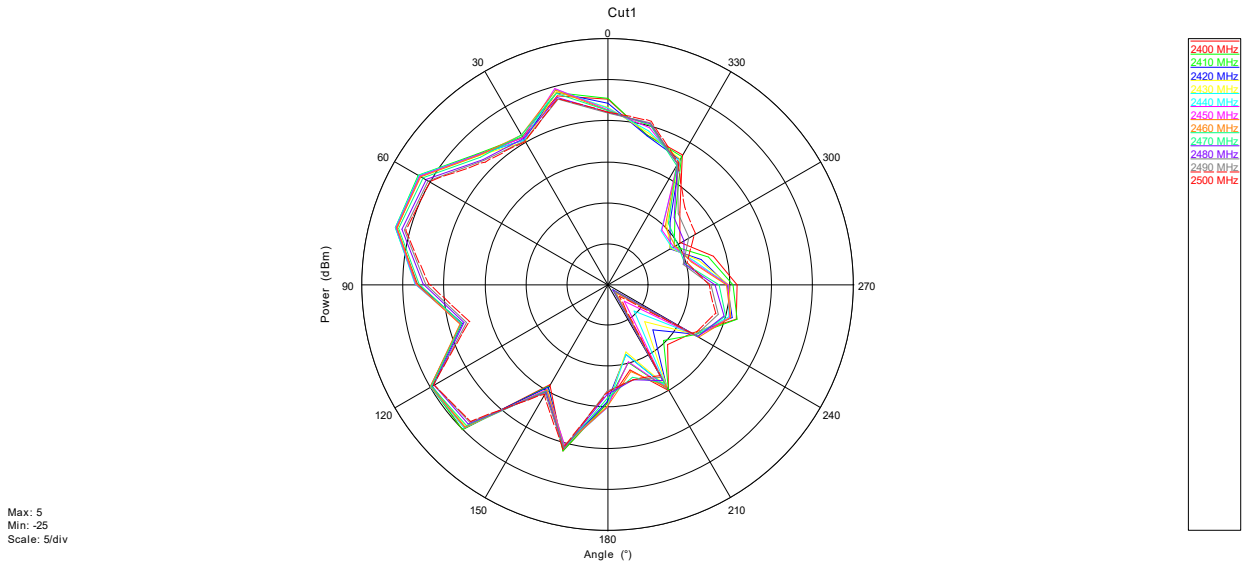
Max: 0
Min: -16
Scale: 2/div

Phi=90°

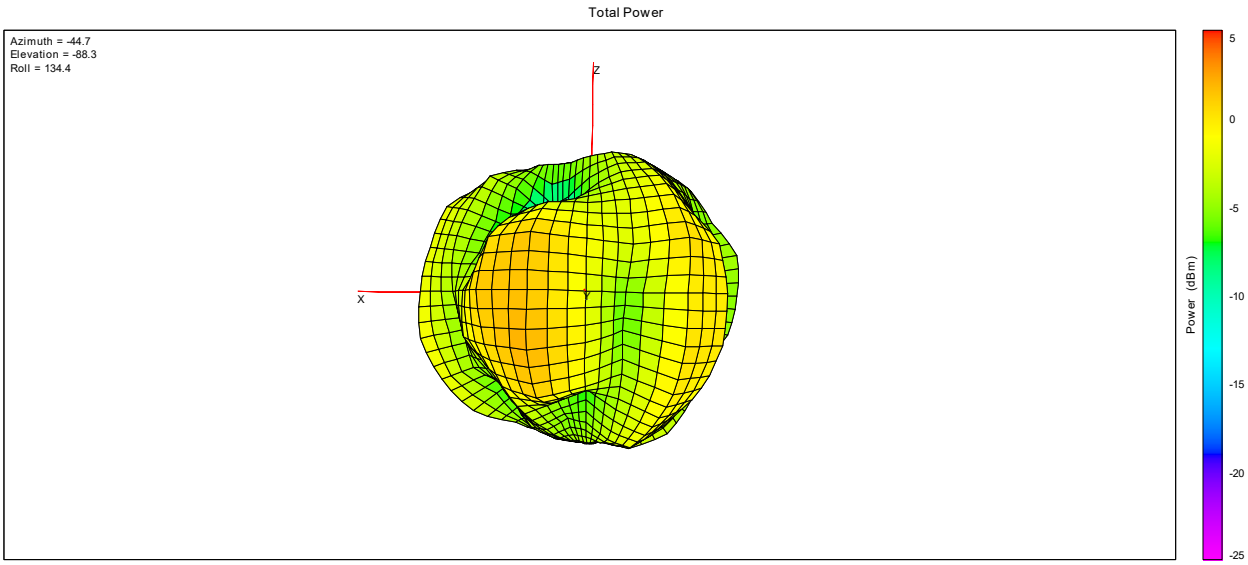


Max: 0
Min: -14
Scale: 2/div

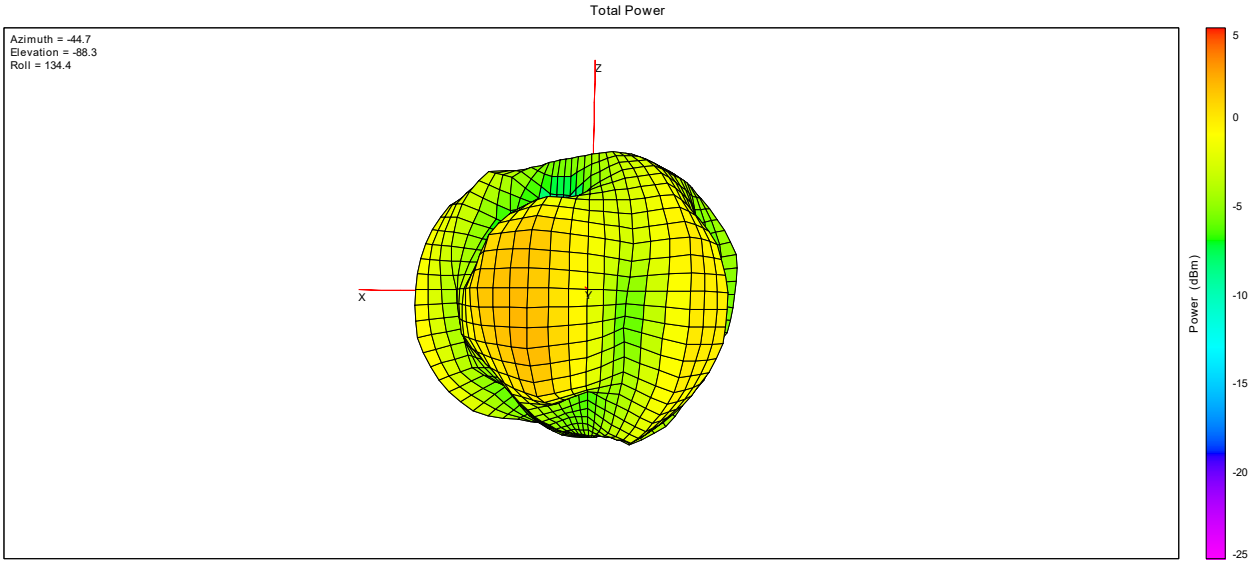
Theta=90°



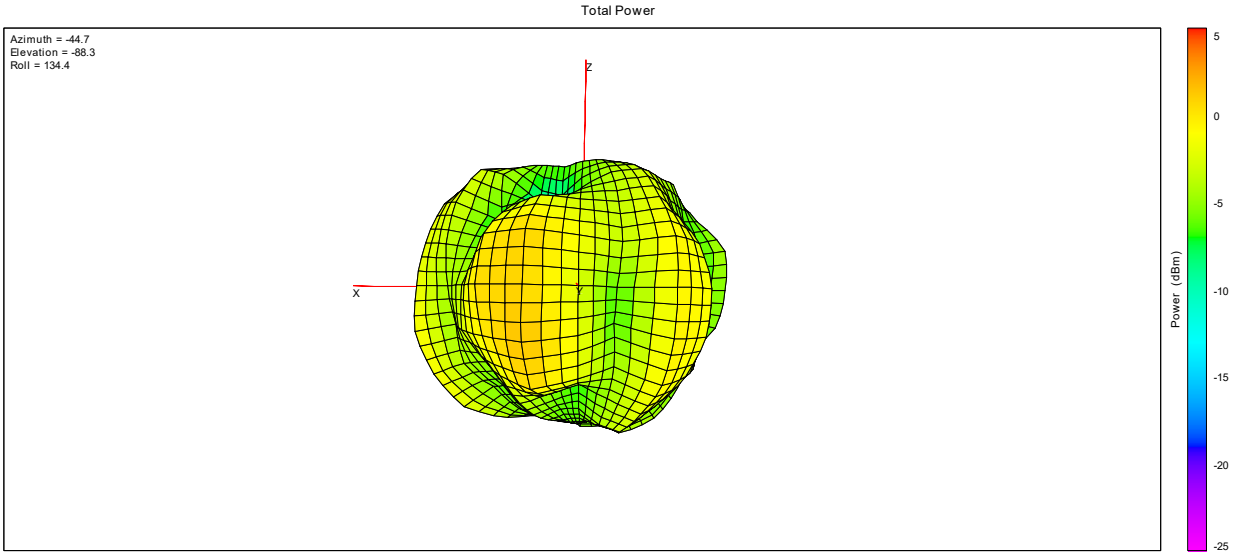
2. 3D Radiation Pattern



2400MHz

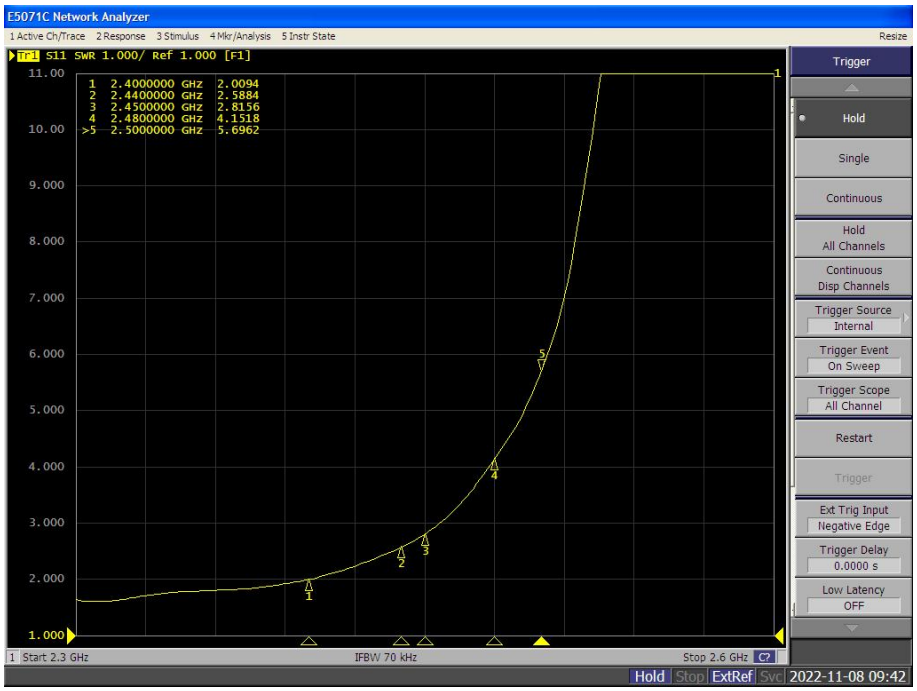


2440MHz



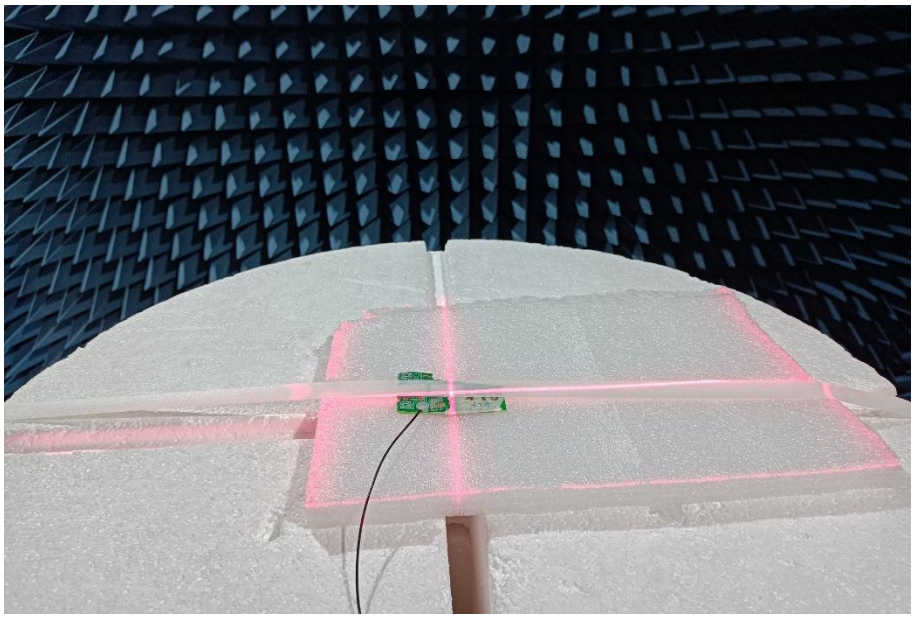
2480MHz

3. VSWR

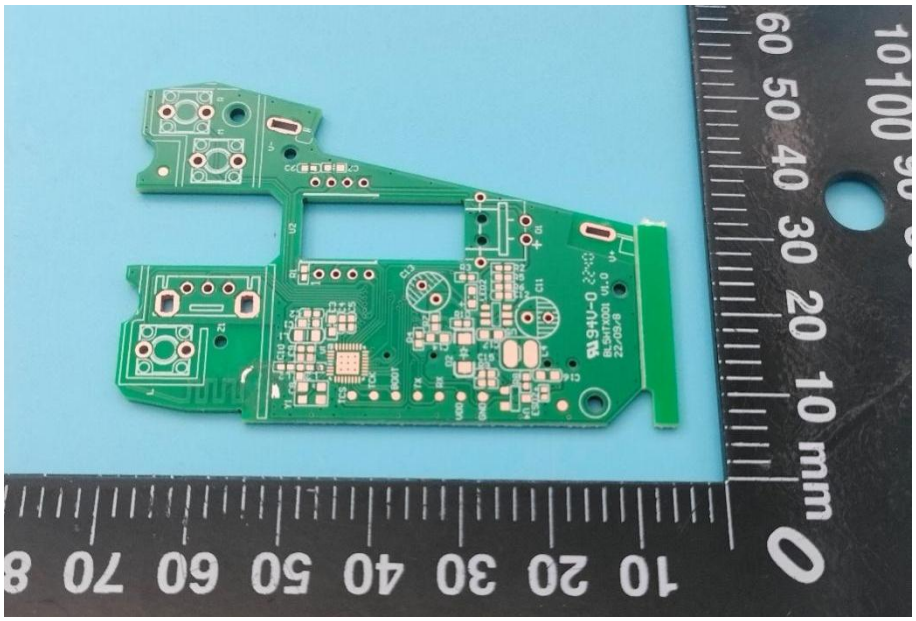

E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Resize
Tr1 S11 SWR 1.000/ Ref 1.000 [F1]
1 2.4000000 GHz 2.0094
2 2.4400000 GHz 2.5884
3 2.4500000 GHz 2.8156
4 2.4800000 GHz 4.1518
>5 2.5000000 GHz 5.6962
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Start 2.3 GHz
IFBW 70 kHz
Stop 2.6 GHz
Trigger
Hold
Single
Continuous
Hold All Channels
Continuous Disp Channels
Trigger Source Internal
Trigger Event On Sweep
Trigger Scope All Channel
Restart
Trigger
Ext Trig Input Negative Edge
Trigger Delay 0.0000 s
Low Latency OFF
Hold Stop ExtRef Svc 2022-11-08 09:42

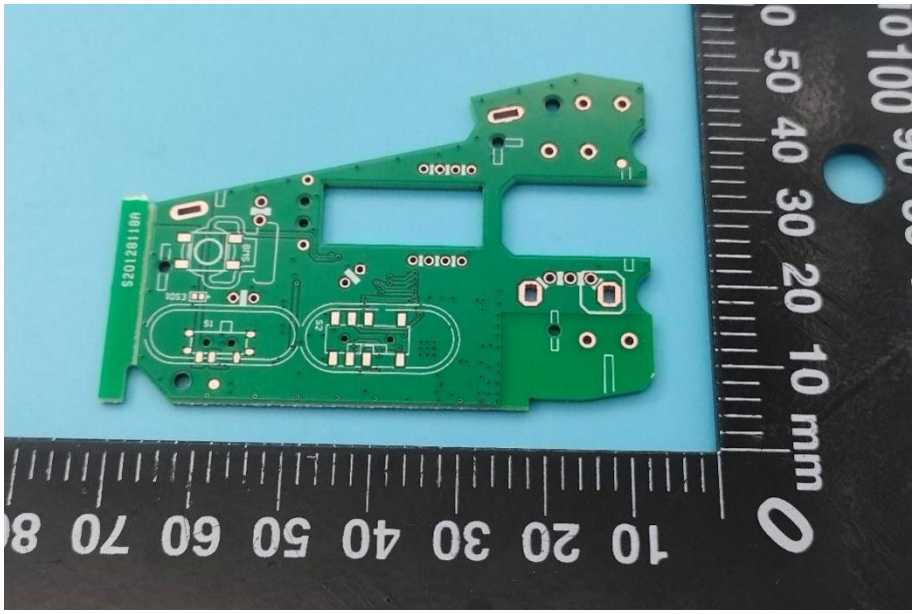
Annex C Photographs

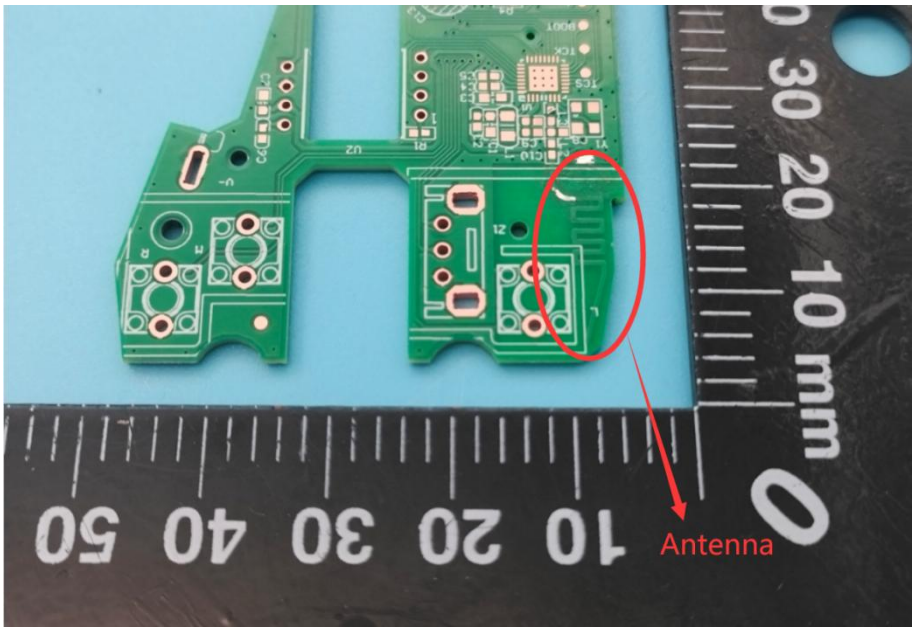
1. Test environment



2. EUT






Antenna

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	Manufacturer	Cal.Date	Cal.Due Date
1	Network Analyzer	MY46110140	E5071C	Agilent	2022.07.04	2023.07.03
2	OTA Chamber	TJ2235-Q1793	AMS-8923-150	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

END OF REPORT