



REPORT No.: SZ25040189E01

TEST REPORT

APPLICANT : Shanghai Zenchant Electronics Co., LTD

PRODUCT NAME : Bluetooth Eye Protection Device

MODEL NAME : M03059

TRADE NAME : Zenchant

BRAND NAME : Zenchant

STANDARD(S) : IEEE Std 149-2021

RECEIPT DATE : 2025-04-14

TEST DATE : 2025-04-14

ISSUE DATE : 2025-04-17

Edited by:

Guo Penghua(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., FL.1-3, 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 lists	5
Annex A Test Setup Photos	7
Annex B Figures	8
1. 2D Radiation Pattern	8
2. 3D Radiation Pattern	9
3. VSWR	11
4. Isolation	错误！未定义书签。
5. Return Loss	12
Annex C EUT Photos	13
Annex D General Information	16
1.1 Identification of the Responsible Testing Laboratory	16
1.2 Identification of the Responsible Testing Location	16
1.3 Test Equipments Utilized	16
1.4 Test Software Utilized	16

Change History		
Version	Date	Reason for change
1.0	2025-04-17	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Shanghai Zenchant Electronics Co., LTD
Applicant Address:	Room 1202, Building A, Noble International Center, No. 908 xiuwen Road, Minhang District, Shanghai, China
Manufacturer:	Shanghai Zenchant Electronics Co., LTD
Manufacturer Address:	Room 1202, Building A, Noble International Center, No. 908 xiuwen Road, Minhang District, Shanghai, China

1.2. Equipment Under Test (EUT) Description

Wireless Type	Bluetooth
Frequency	2400MHz-2500MHz
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(°C):	10 - 30

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.

2.4. Test Results lists

2.4.1. Gain and Efficiency

Frequency (MHz)	Efficiency (%)	Gain(dBi)
2400	68.32	3.85
2410	67.40	3.82
2420	64.21	3.56
2430	60.81	3.27
2440	58.45	2.93
2450	55.47	2.70
2460	52.51	2.20
2470	48.98	1.63
2480	46.91	1.12
2490	44.70	1.19
2500	43.37	1.23

2.4.2. VSWR

Frequency (MHz)	VSWR
2400	1.75
2440	1.71
2480	2.58



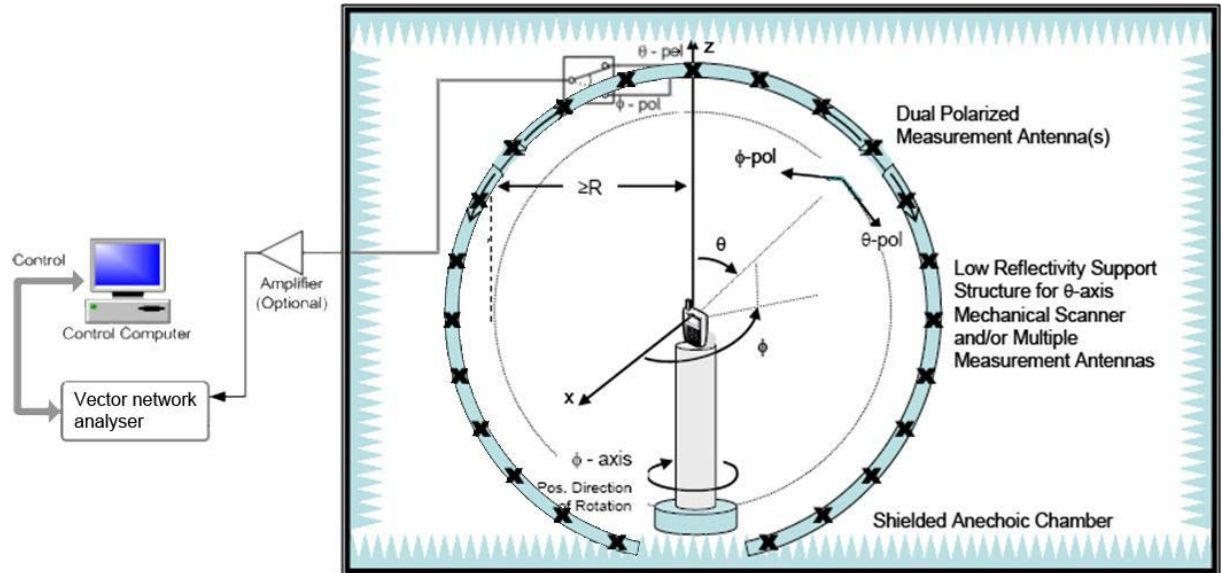
2.4.3.Impedance

Frequency (MHz)	Impedance(Ω)
2400	85.05
2440	73.80
2480	79.22

2.4.4.Return Loss

Frequency (MHz)	Return Loss (dB)
2400	-11.21
2440	-11.62
2480	-7.09

Annex A Test Setup Photos

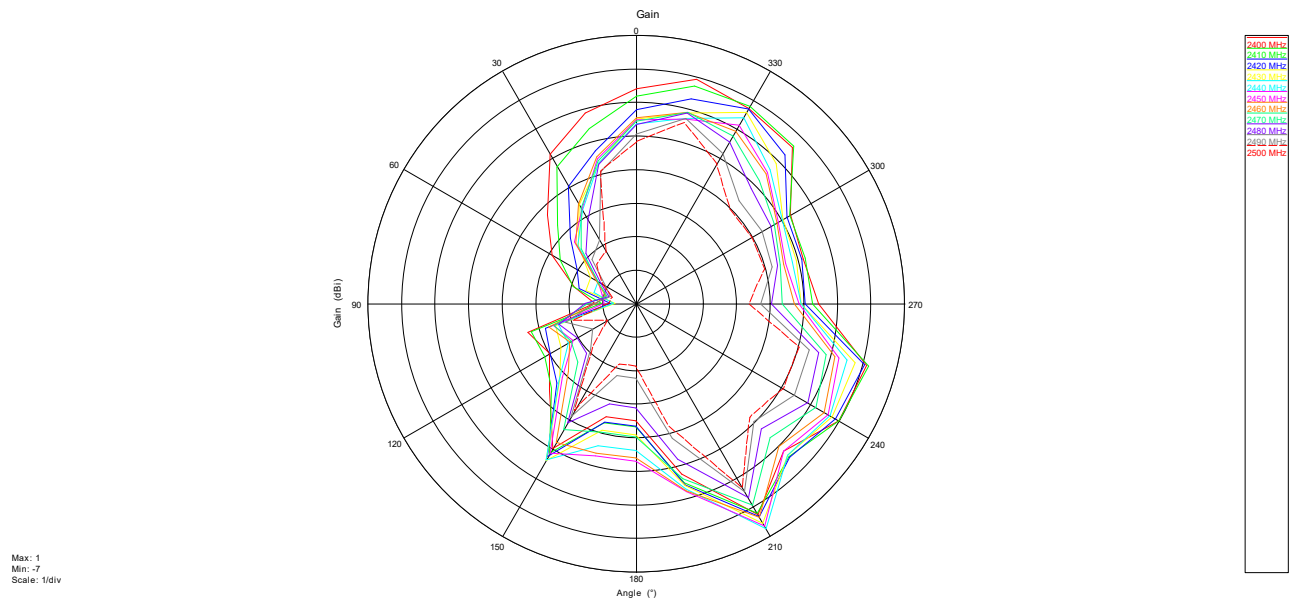




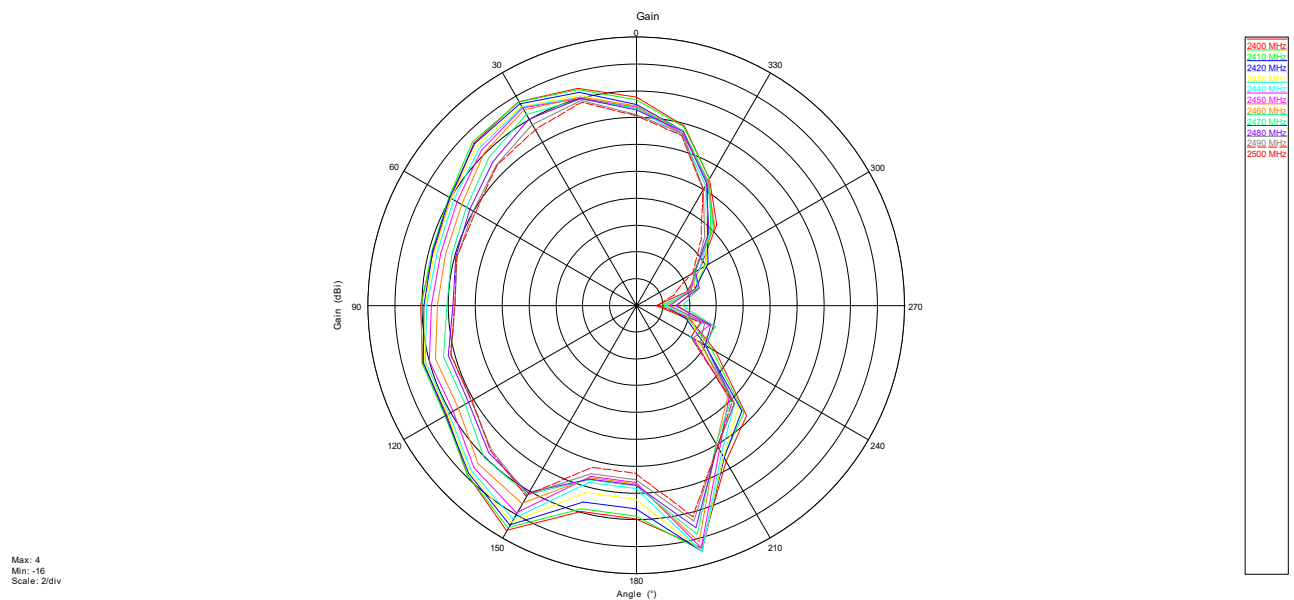
Annex B Figures

1. 2D Radiation Pattern

Phi=0°

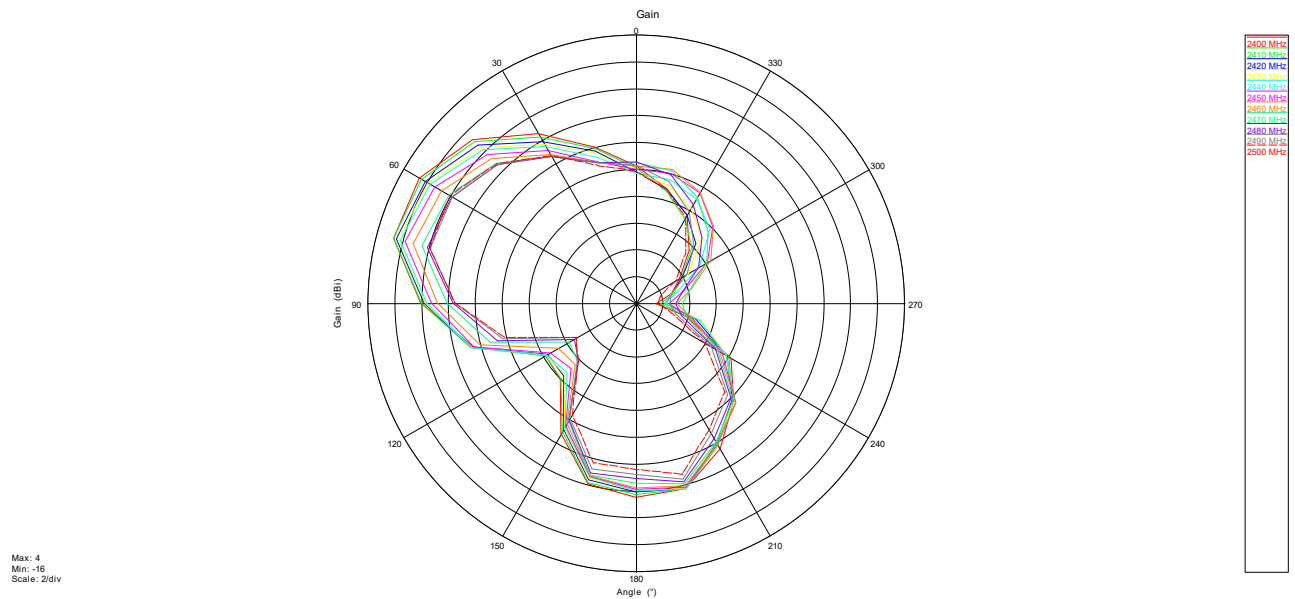


Phi=90°

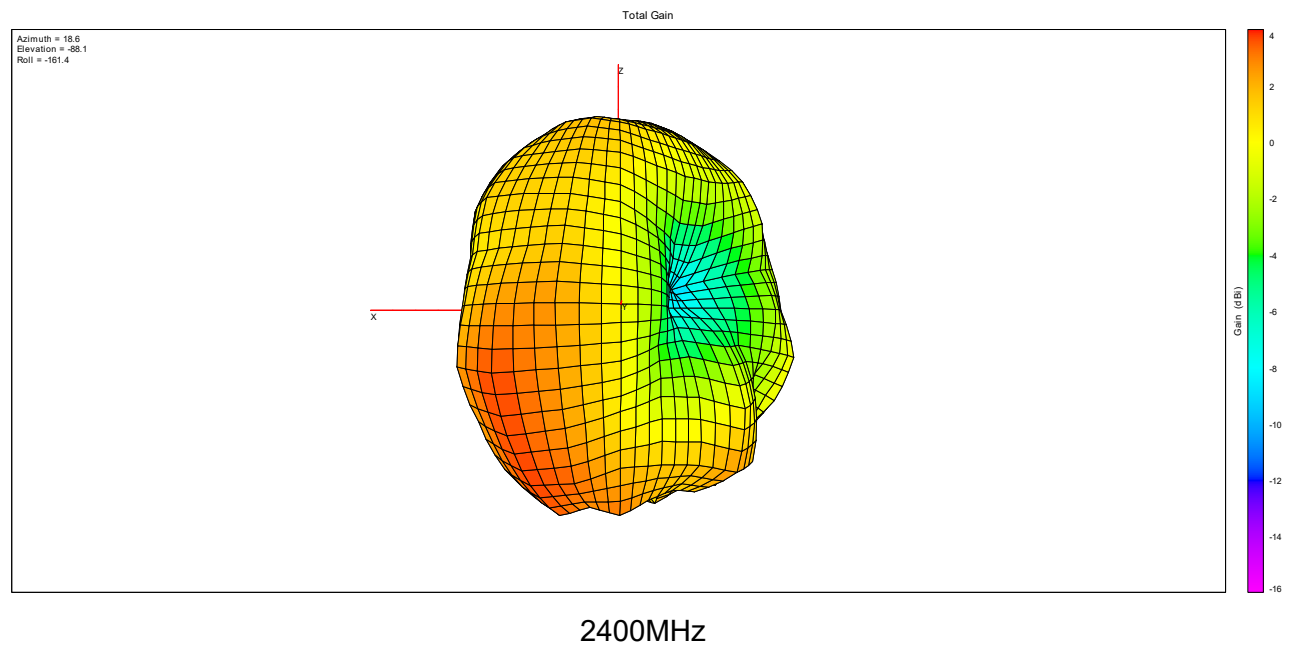


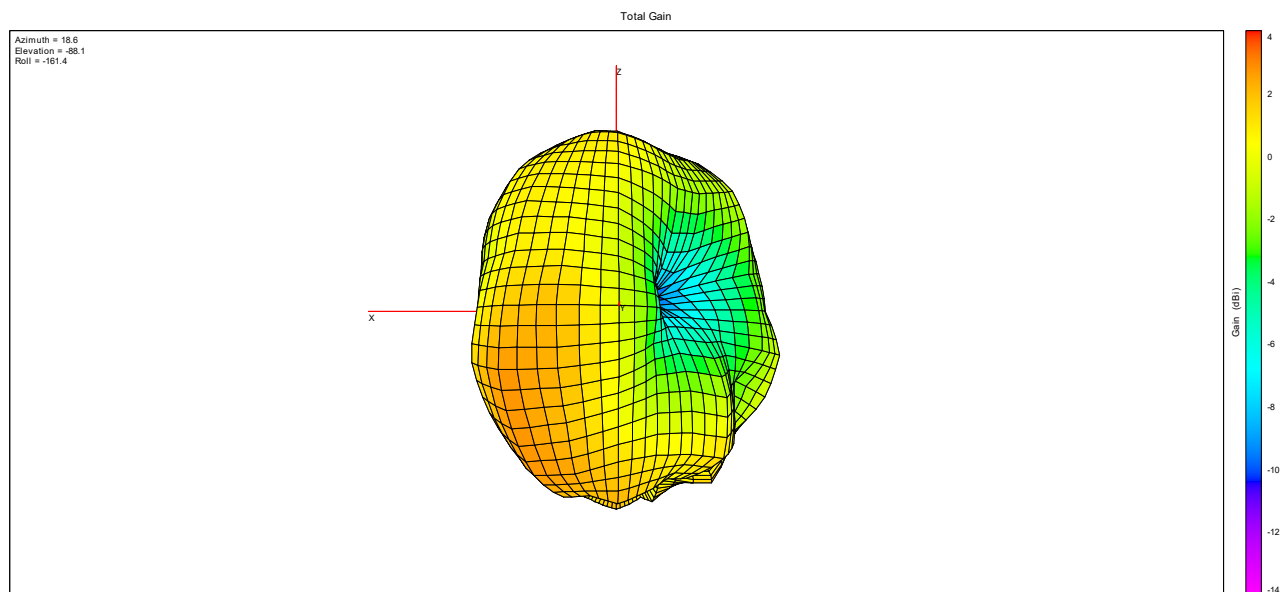


Theta=90°

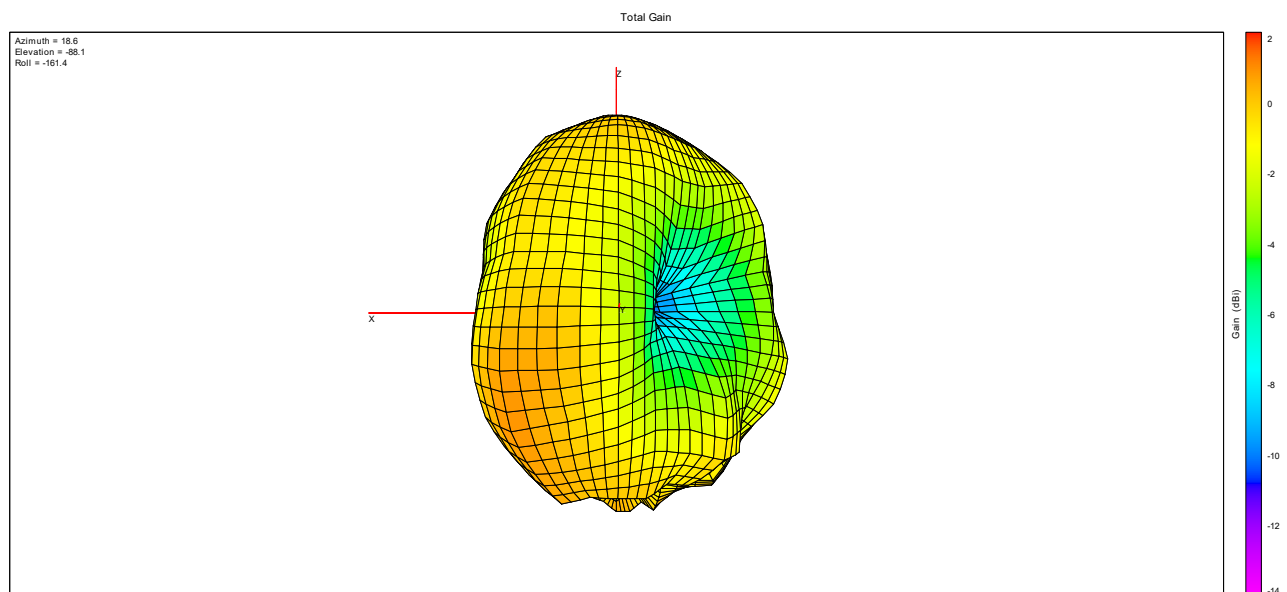


2. 3D Radiation Pattern





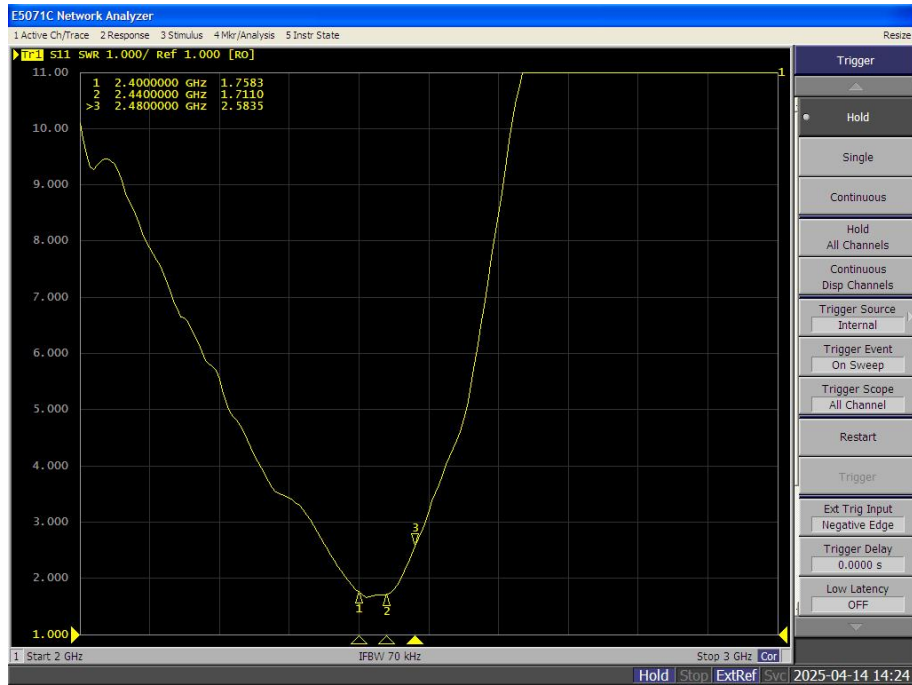
2440MHz



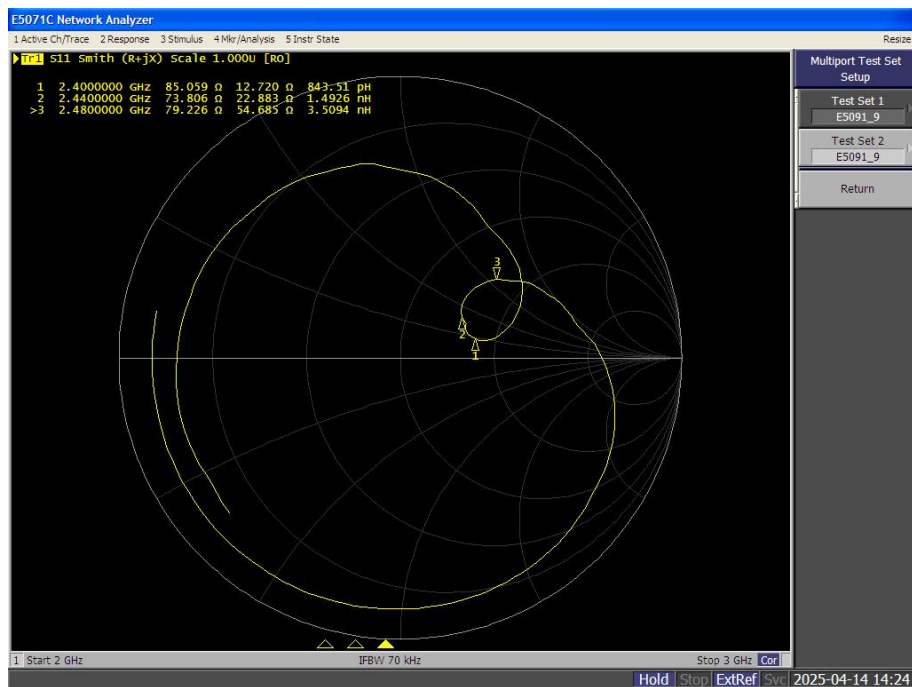
2480MHz



3. VSWR

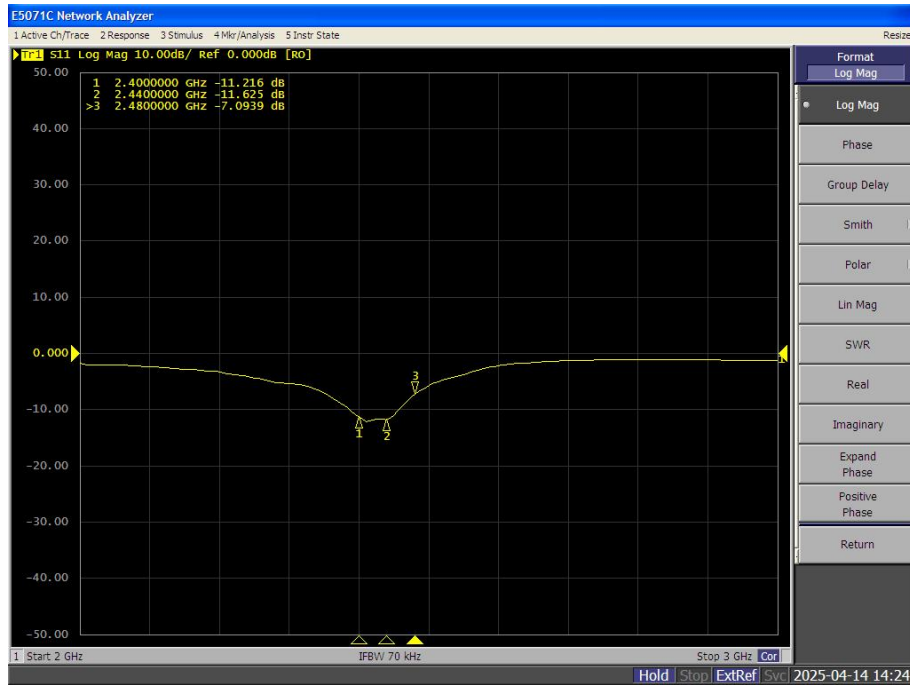


4. Impedance



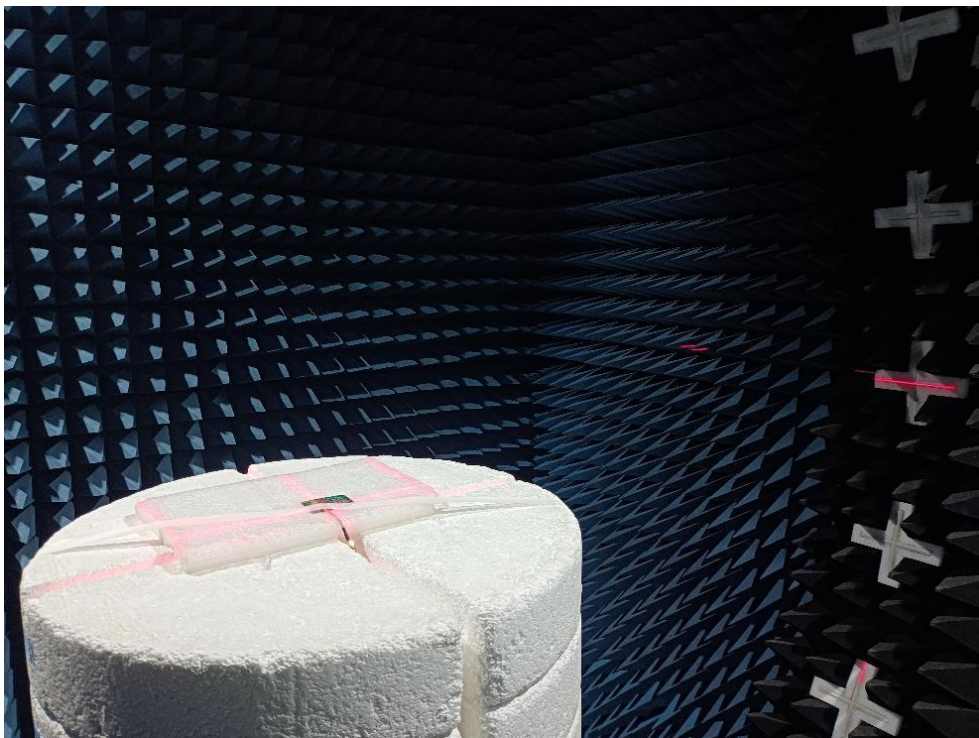
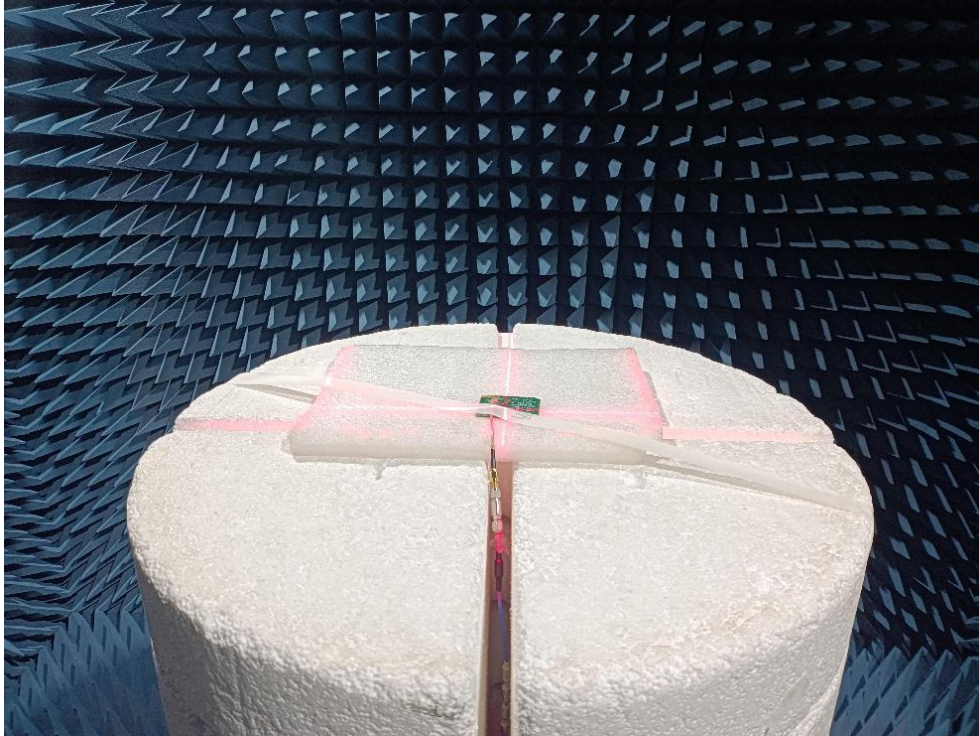


5. Return Loss

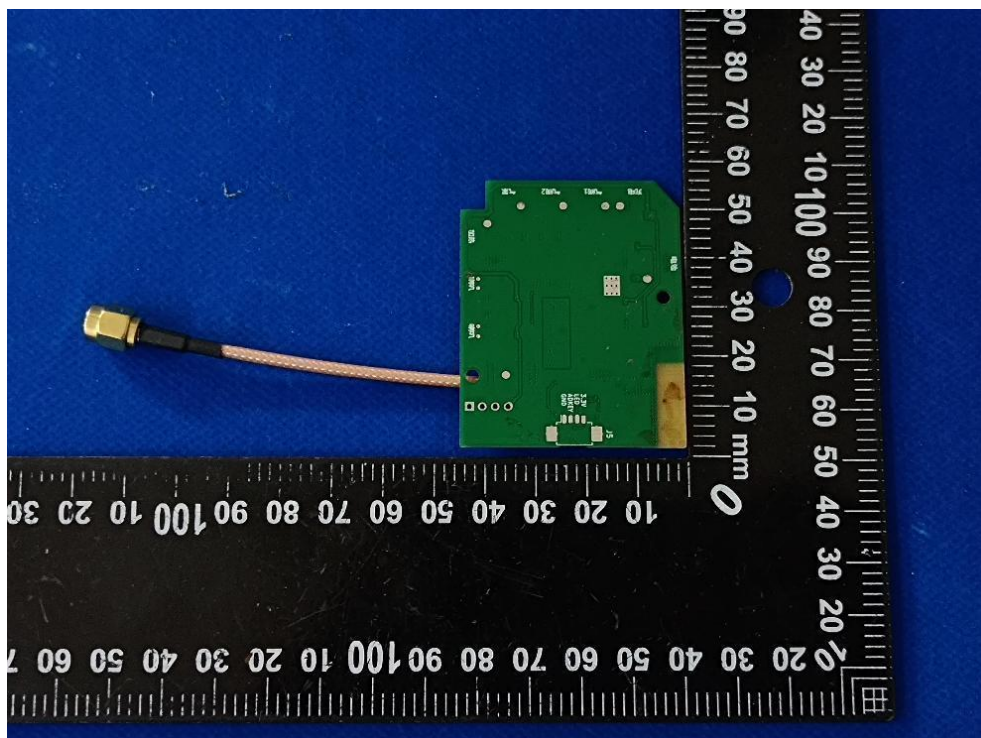
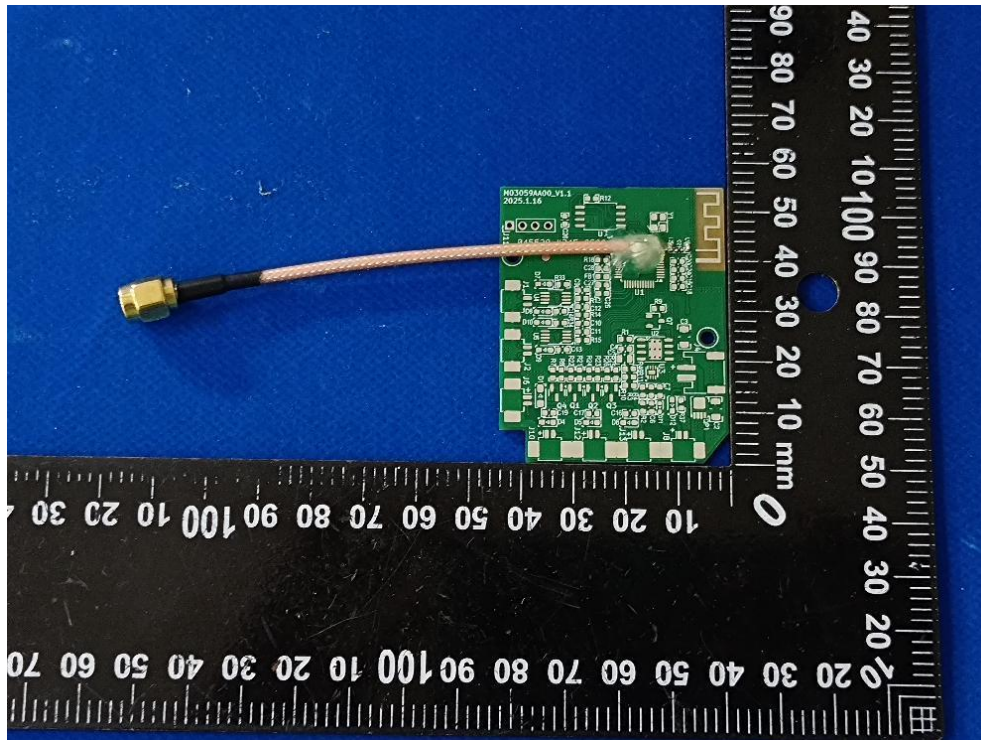


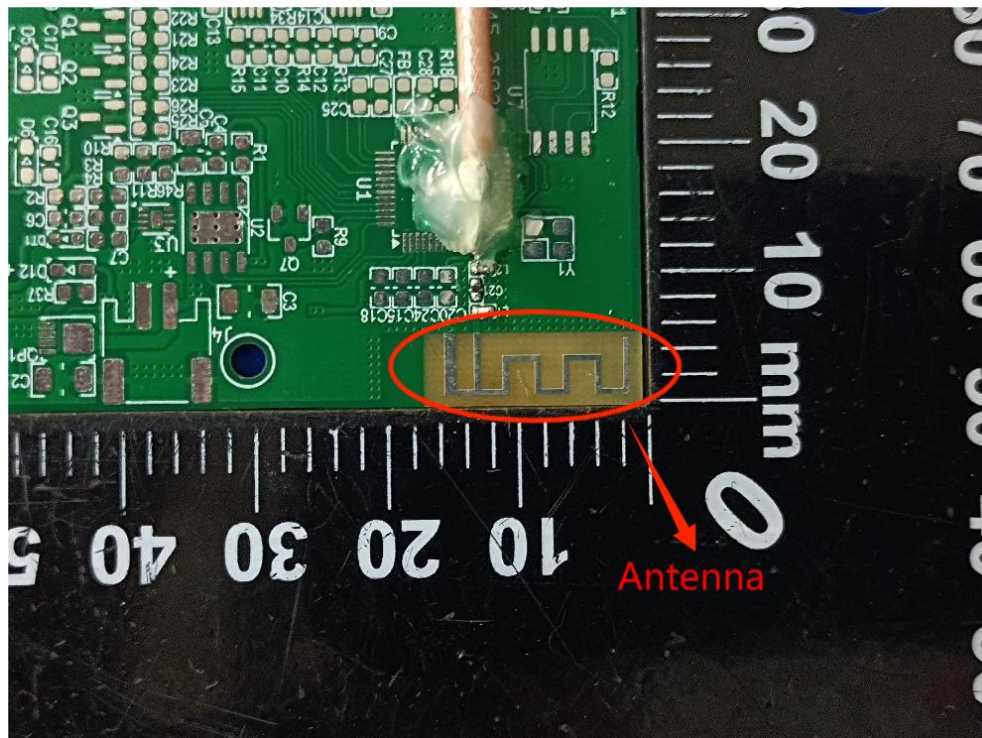
Annex C EUT Photos

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:	FL.1-3, 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:	FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , Guangdong Province, P. R. China

1.3 Test Equipments Utilized

No.	Equipment Name	Serial No.	Type	Manufacturer	Cal.Date	Cal.Due Date
1	Network Analyzer	MY46110140	E5071C	Agilent	2024.05.30	2025.05.29
2	OTA Chamber	TJ2235-Q1793	AMS-892 3-150	ETS	2022.11.30	2025.11.29

1.4 Test Software Utilized

No.	Software Name	Serial No.	Version	Manufacturer
1	Antenna Measurement System	1685	EMQuest EMQ-100 V 1.13 Build 21267	ETS

————— END OF REPORT —————