TEST REPORT

APPLICANT	:	Shanghai Zenchant Electornics Co.,LTD
PRODUCT NAME	:	Dual Bluetooth Module
MODEL NAME	:	ZEN-BDM12/ZEN-BDM12-A
TRADE NAME	:	Zenchant
BRAND NAME	:	Zenchant
STANDARD(S)	:	ANSI/IEEE Std 149-2008
RECEIPT DATE	:	2022-08-19
TEST DATE	:	2022-08-22
ISSUE DATE	:	2022-08-24

Edited by: Fang Jinshan(Rapporteur)

Approved by: Chi Shide(Supervisor)

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Change History		
Version	Date	Reason for change
1.0	2022-08-24	First edition

1.Technical Information

Note: Provide by manufacturer.

1.1. Applicant and Manufacturer Information

Applicant:	Shanghai Zenchant Electornics Co.,LTD
Applicant Address:	Room 1202, building a, Noble international, 908 Xiuwen Road, Minhang District, ShangHai
Manufacturer:	Shanghai Zenchant Electornics Co.,LTD
Manufacturer Address:	Room 1202, building a, Noble international, 908 Xiuwen Road, Minhang District, ShangHai

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	ANSI/IEEE Std 149-2008	IEEE Standard Test Procedures for Antennas

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 and Efficiency

Frequency	Gain(dBi)	Efficiency(%)
2400MHz	1.60	29.44
2410MHz	1.43	28.49
2420MHz	1.10	27.16
2430MHz	0.75	25.73
2440MHz	0.60	25.51
2450MHz	0.51	24.75
2460MHz	0.35	23.65
2470MHz	0.00	21.94
2480MHz	-0.36	20.32
2490MHz	-0.63	19.24
2500MHz	-0.80	18.62

2.4.2. VSWR and Impedance

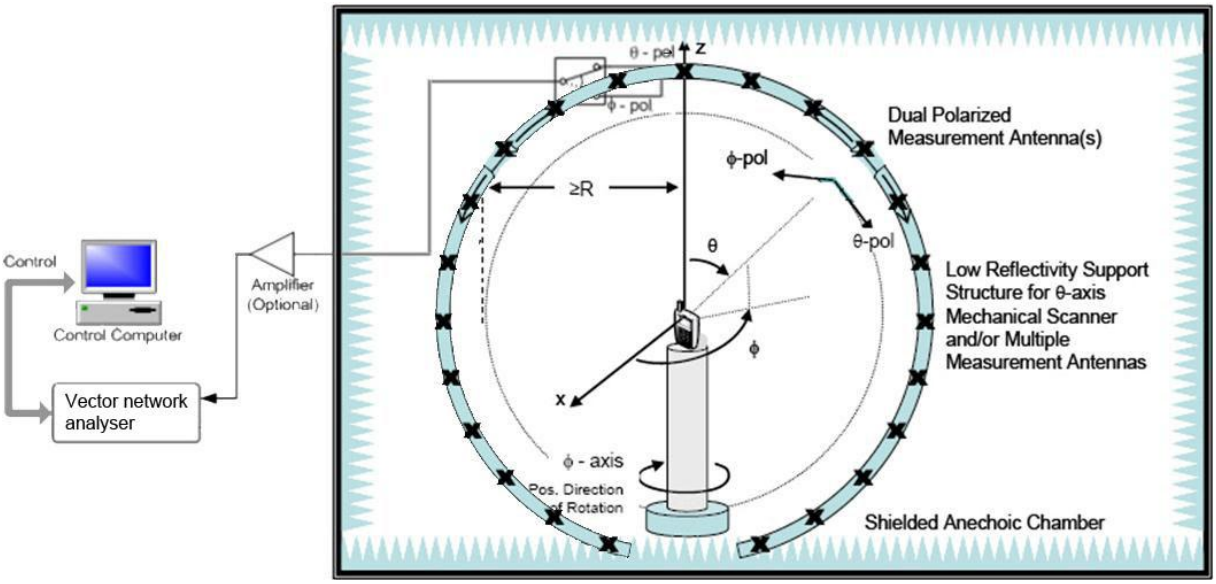
Frequency	VSWR	Impedance (Ω)
2400MHz	1.44	39.16
2440MHz	1.27	40.47
2480MHz	1.62	30.90

2.4.3.Return Loss

Frequency	Return Loss (dB)
2400MHz	-14.77
2440MHz	-18.48
2480MHz	-12.51

Annex A Photographs

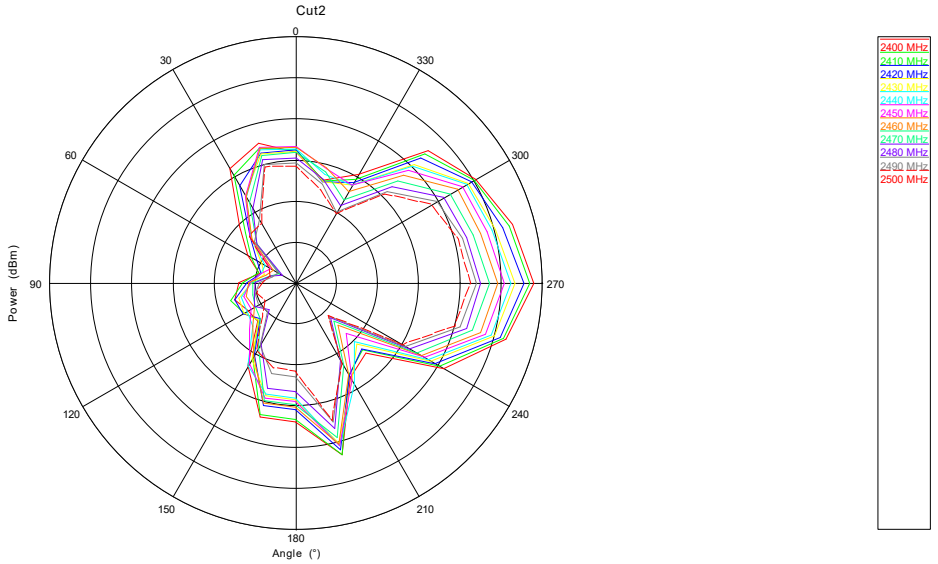
1. Test Setup



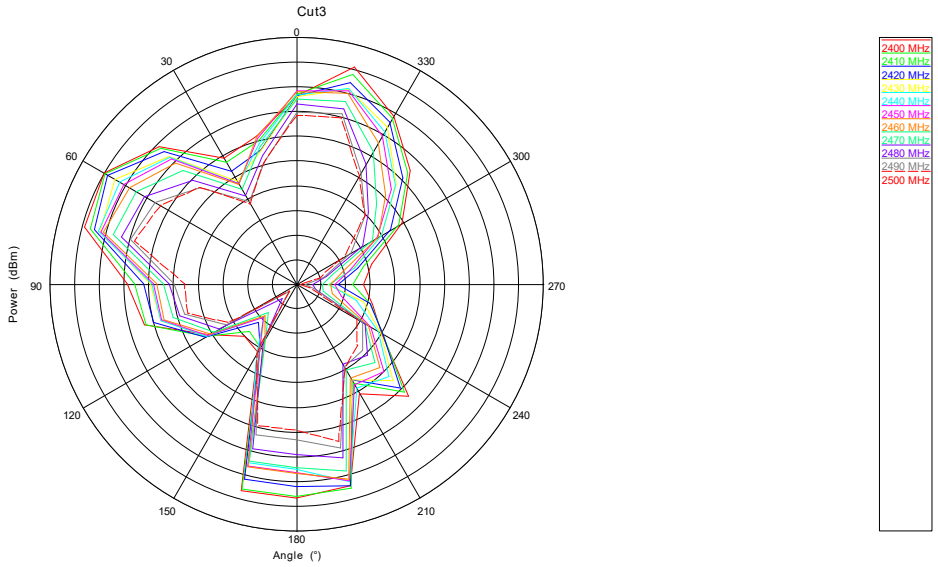
Annex B Figures

1. 2D Radiation Pattern

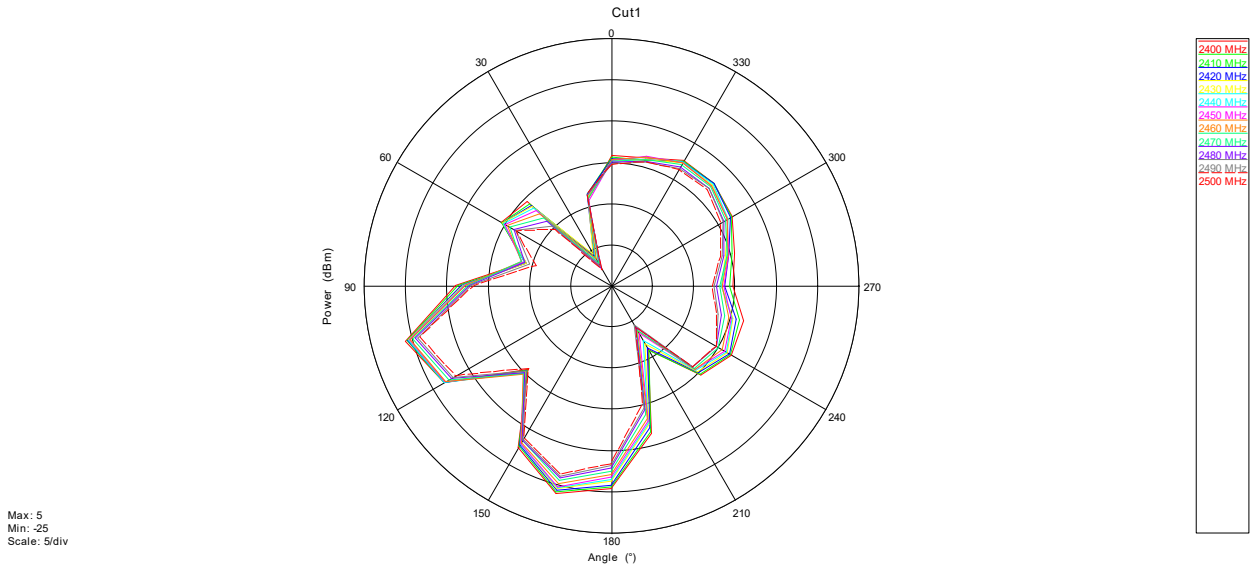
Phi=0°



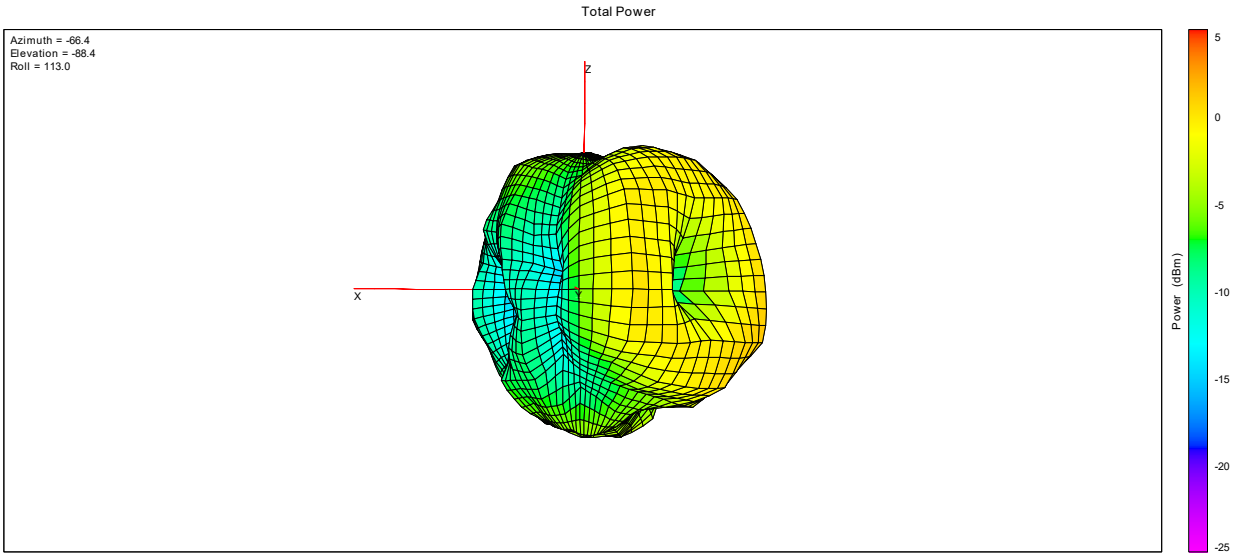
Phi=90°



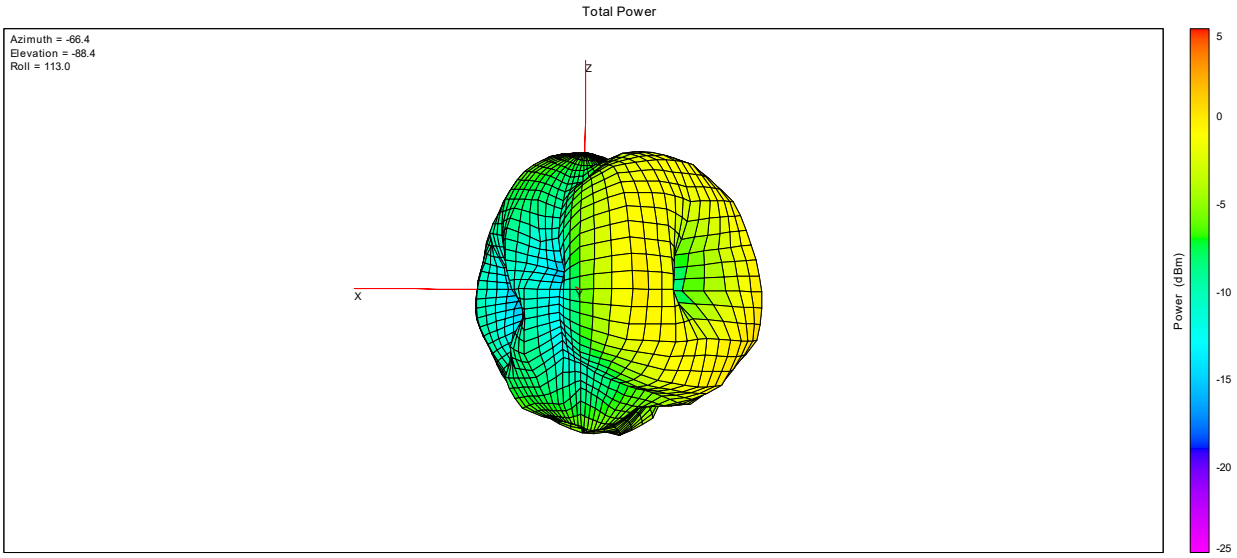
Theta=90°



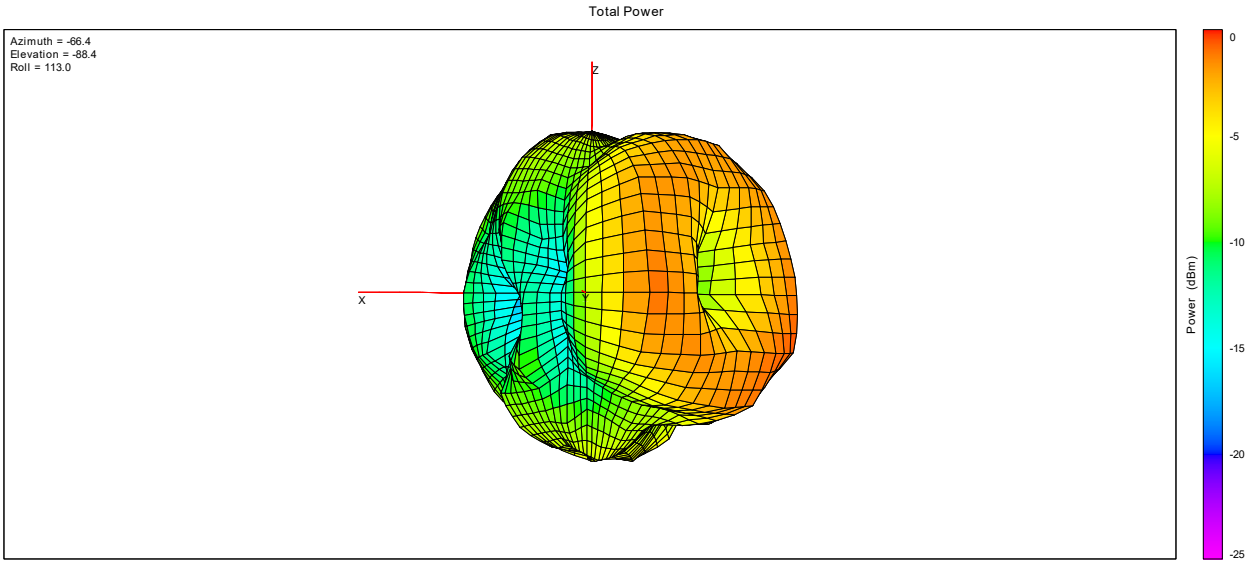
2. 3D Radiation Pattern



2400MHz

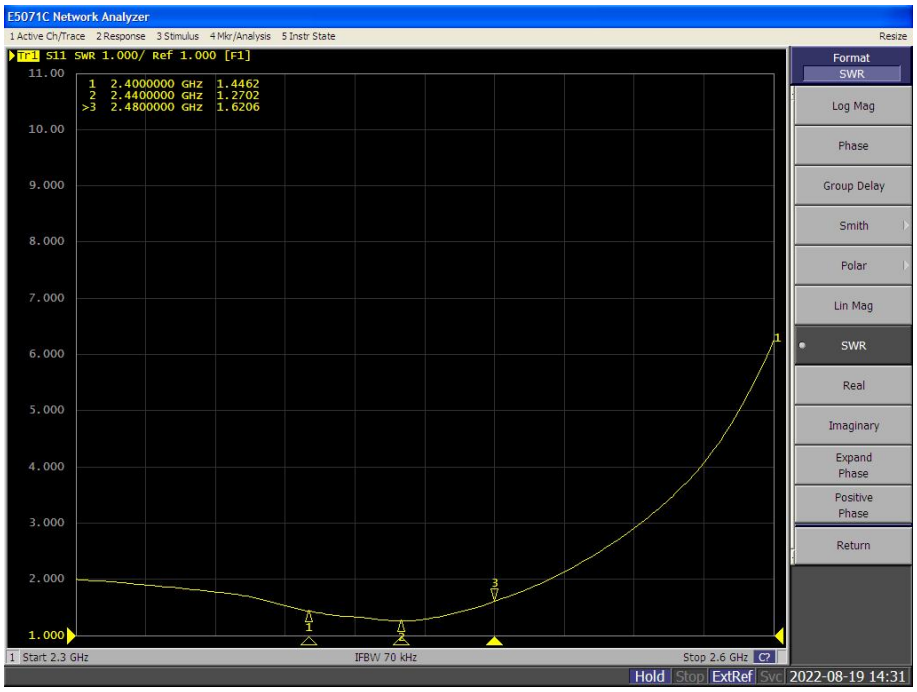


2440MHz

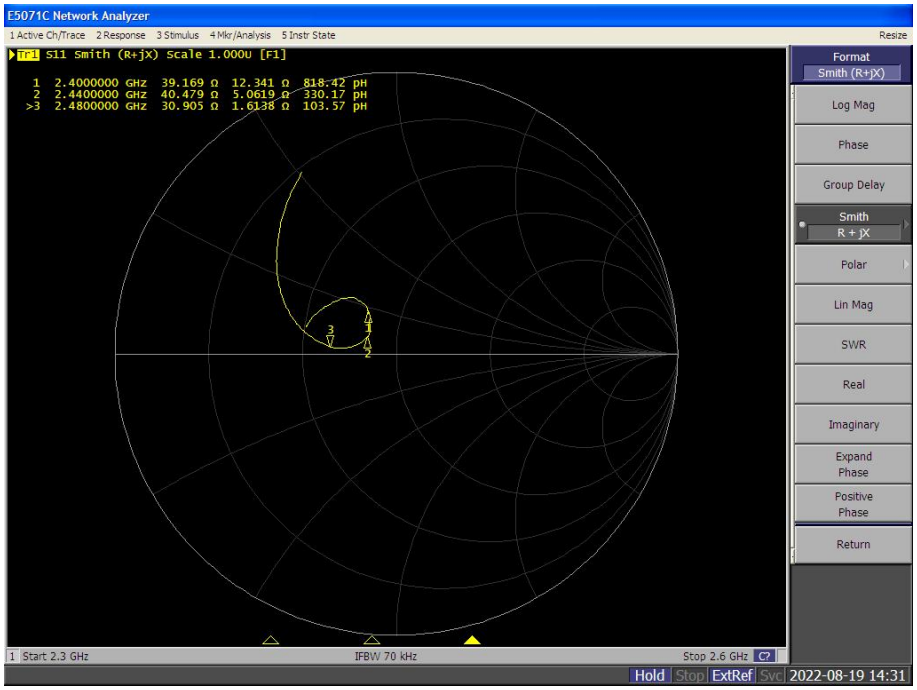


2480MHz

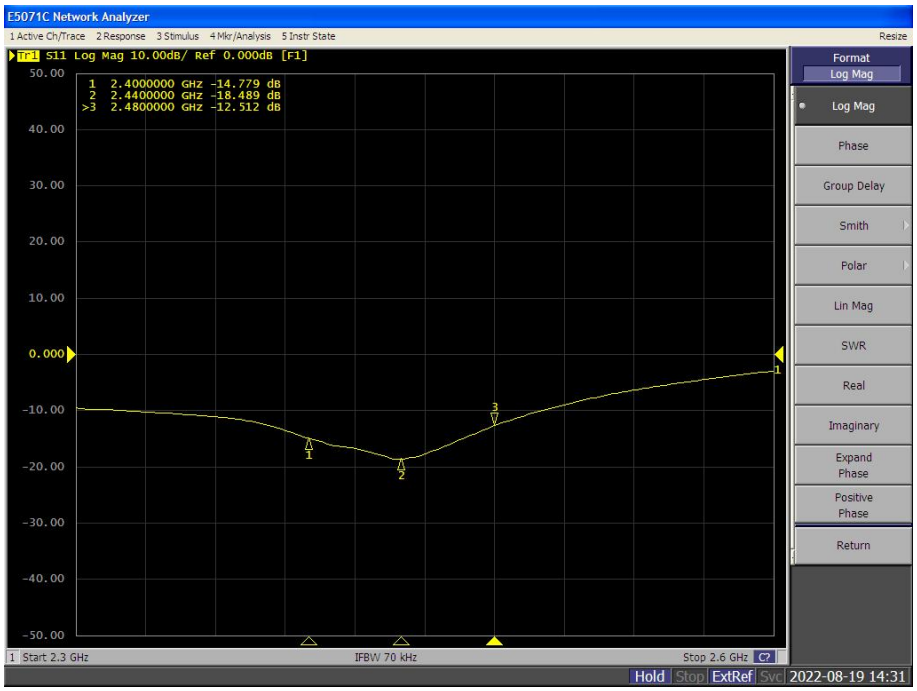
3. VSWR



4. Impedance

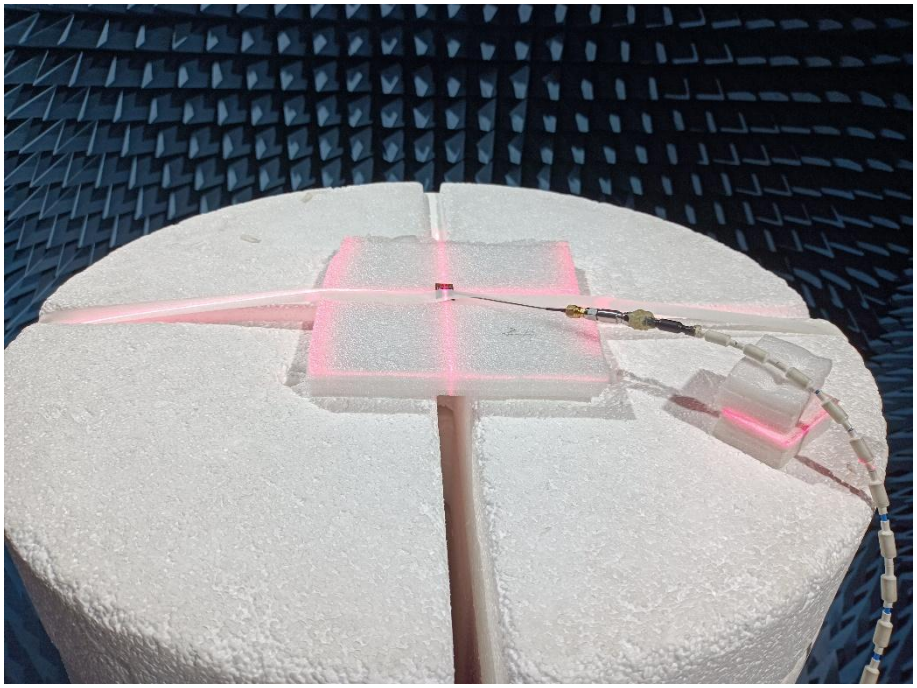


5. Return Loss

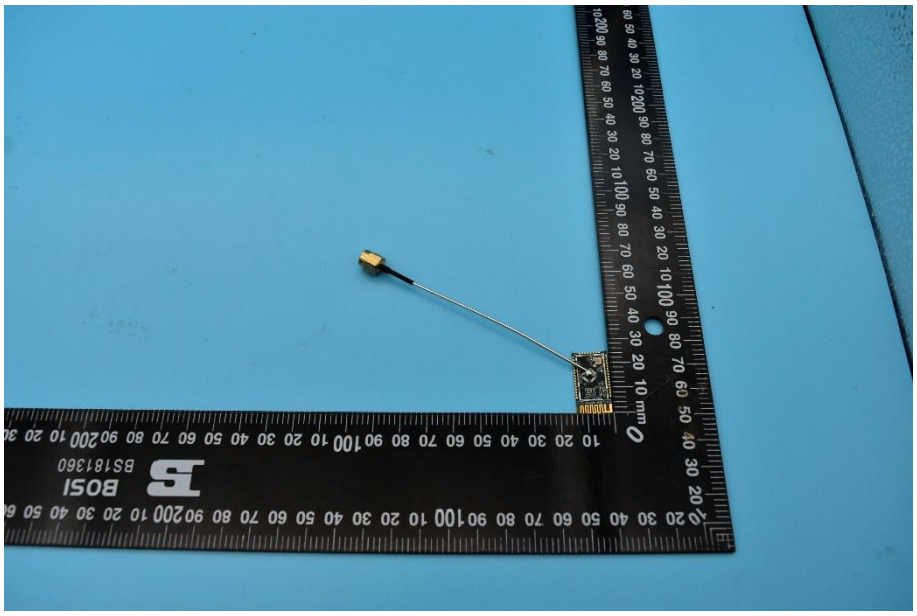


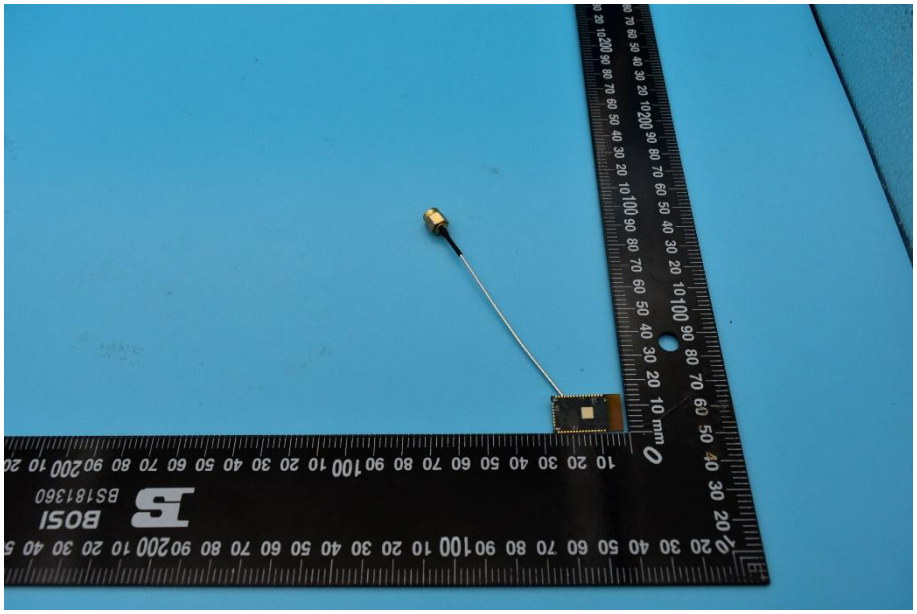
Annex C Photographs

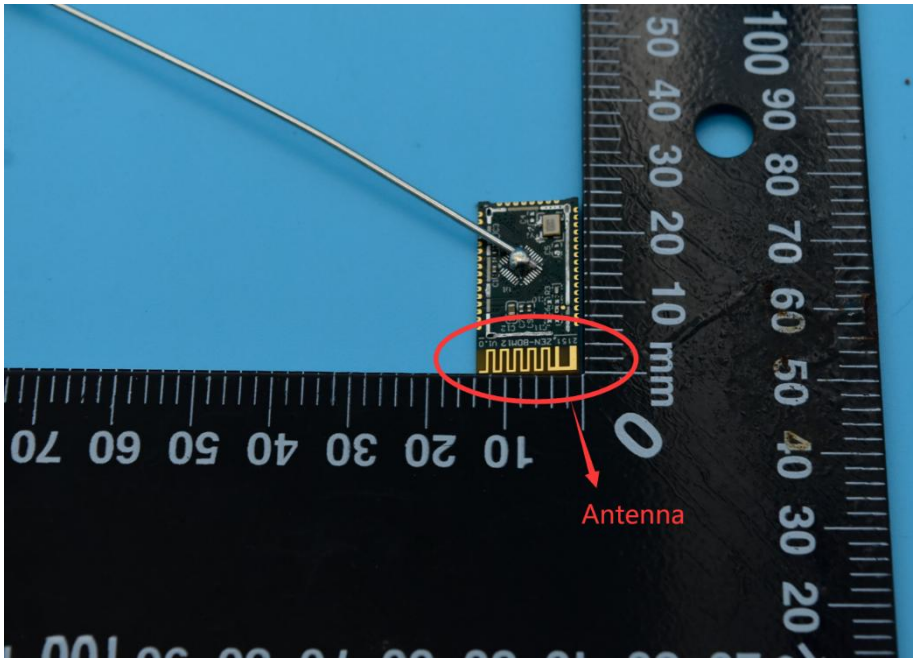
1. Test environment



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