



TEST REPORT

APPLICANT : Orchid Electronics Limited

PRODUCT NAME : Bluetooth Module Antenna

MODEL NAME : OEL_ANT_002

TRADE NAME : N/A


BRAND NAME : N/A


STANDARD(S) : IEEE Std 149-2021

RECEIPT DATE : 2022-10-24

TEST DATE : 2022-10-25

ISSUE DATE : 2022-12-26

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Change History		
Version	Date	Reason for change
1.0	2022-12-26	First edition

1. Technical Information

Note: Provide by manufacturer.

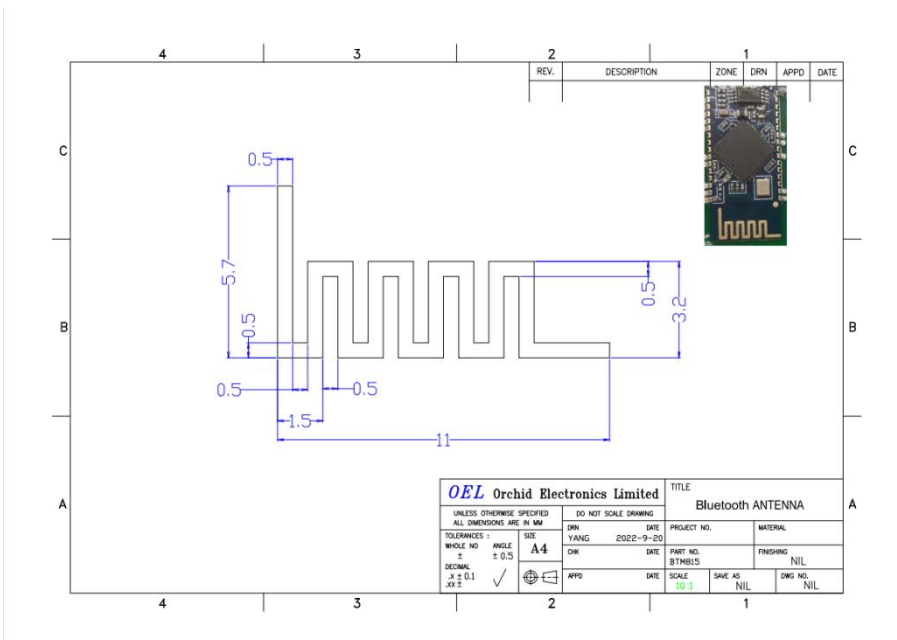
1.1. Applicant and Manufacturer Information

Applicant:	Orchid Electronics Limited
Applicant Address:	Unit 702, 7/FI., One Hung To Road, Kwun Tong, Hong Kong
Manufacturer:	Oi Nan Technology Limited
Manufacturer Address:	4 Yin Sha Lu 2 Jie, Xia Bin, Cheung On, Dong Guan, Guangdong, China

1.2. Equipment Under Test (EUT) Description

Wireless Type	Bluetooth
Frequency	N/A
IMEI	N/A
Sample No.	2#

Dimensions:



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.

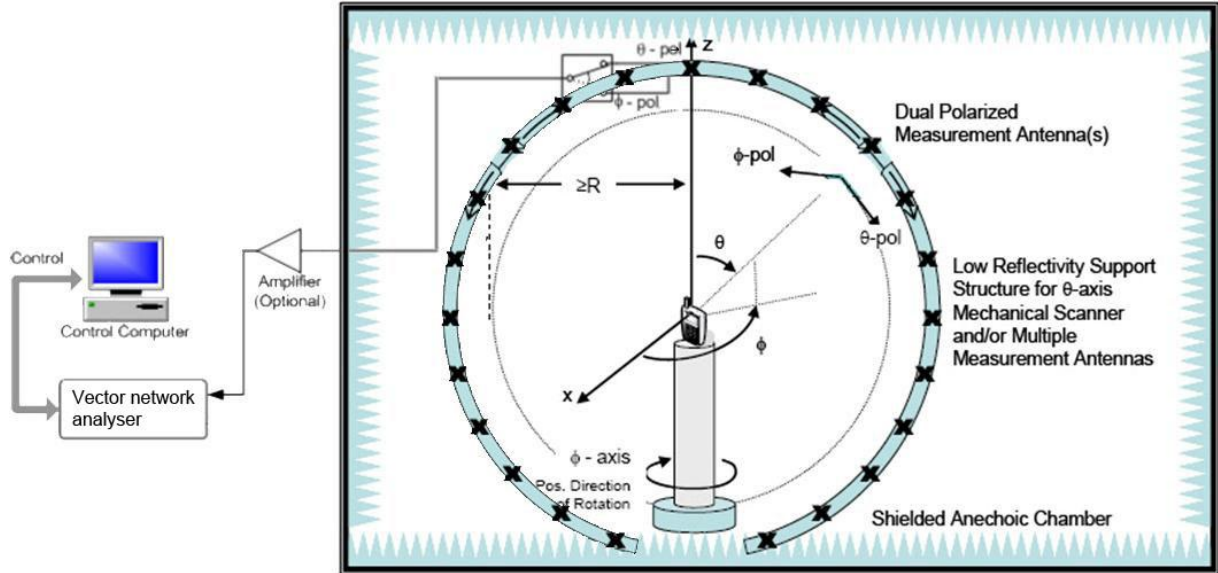
Item	Measurement Uncertainty(dB)
Gain	±0.5
VSWR	±0.2
Measurement Uncertainty(95% Confidence Interval) K=2	



2.4. Test Results

Frequency (MHz)	Gain(dBi)
2400	-3.39
2410	-2.94
2420	-2.79
2430	-2.73
2440	-2.45
2450	-2.27
2460	-2.18
2470	-2.20
2480	-2.45
2490	-2.67
2500	-2.76

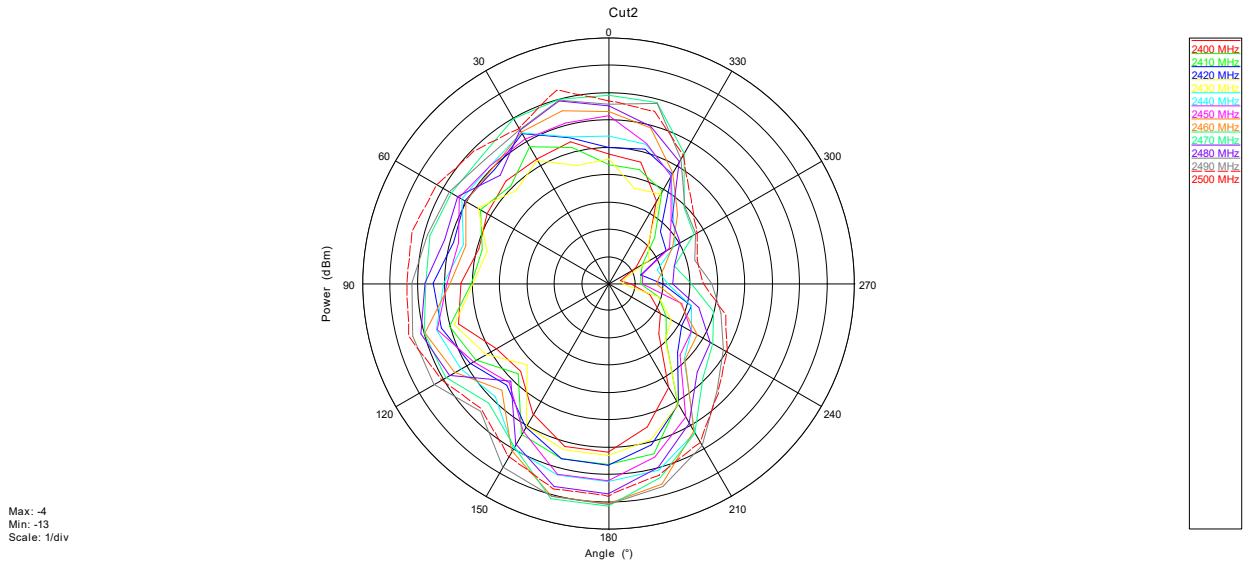
Annex A Test Setup Photos



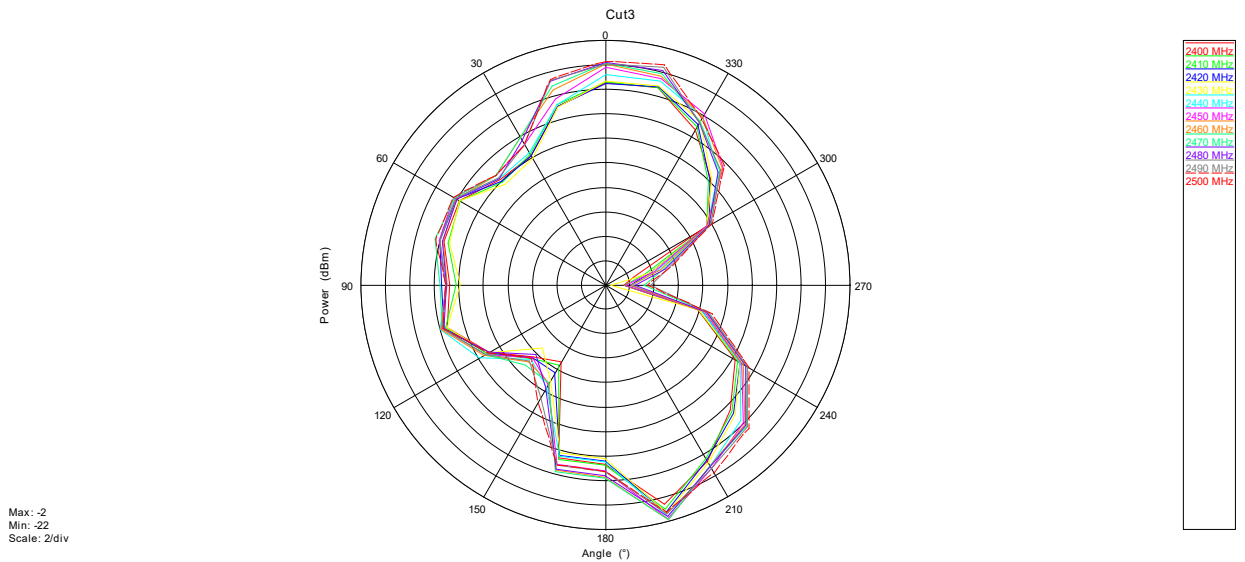
Annex B Figures

1. 2D Radiation Pattern

Phi=0°

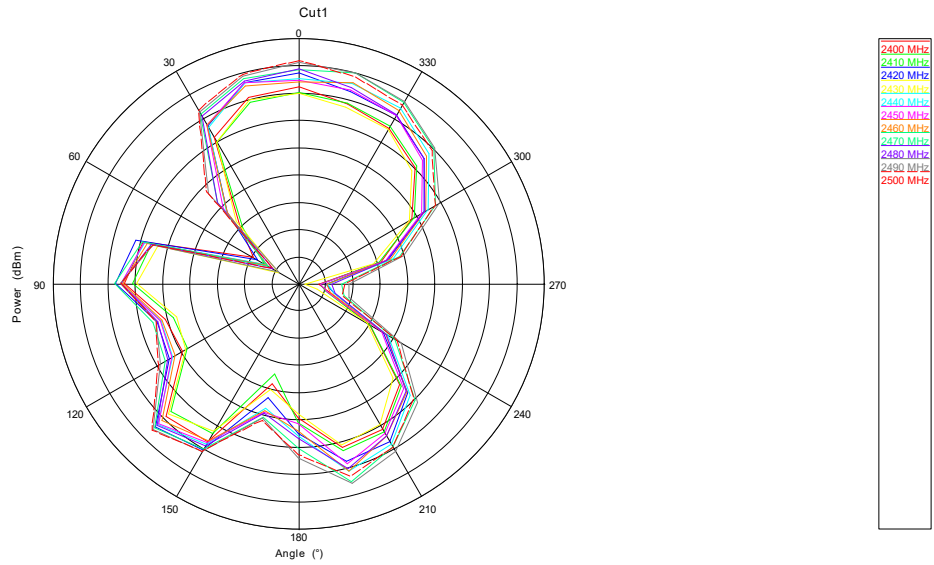


Phi=90°

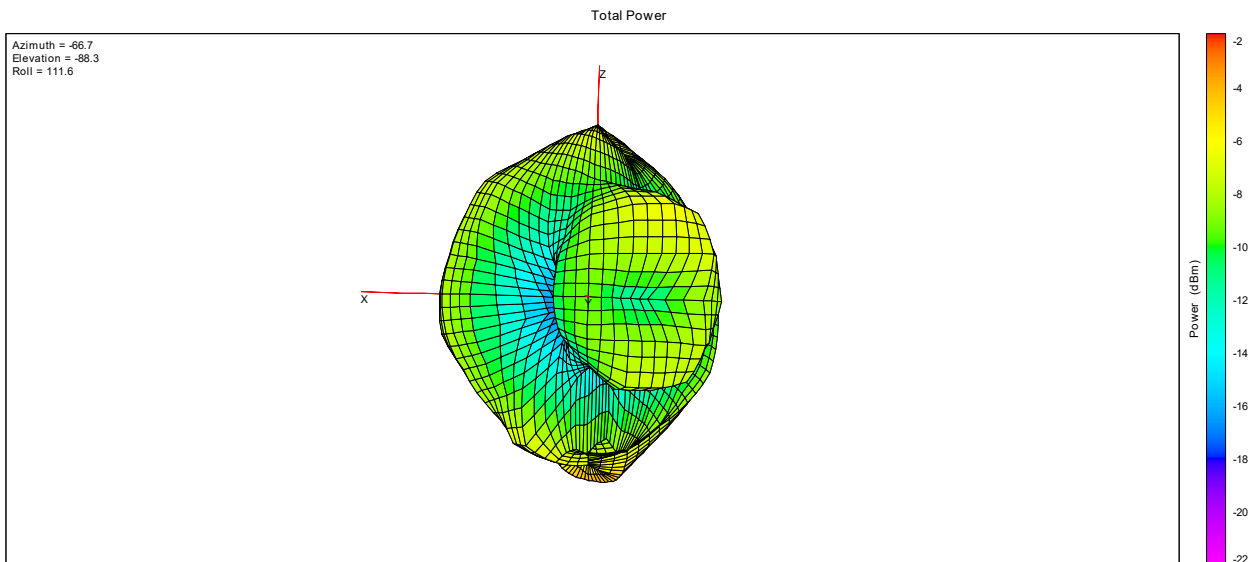




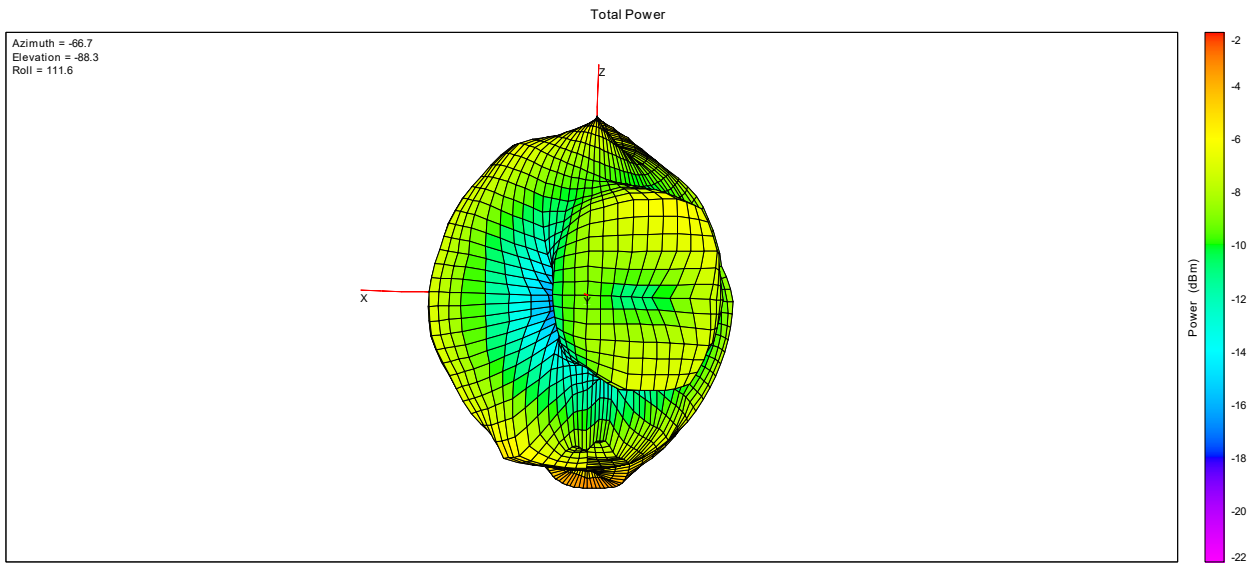
Theta=90°



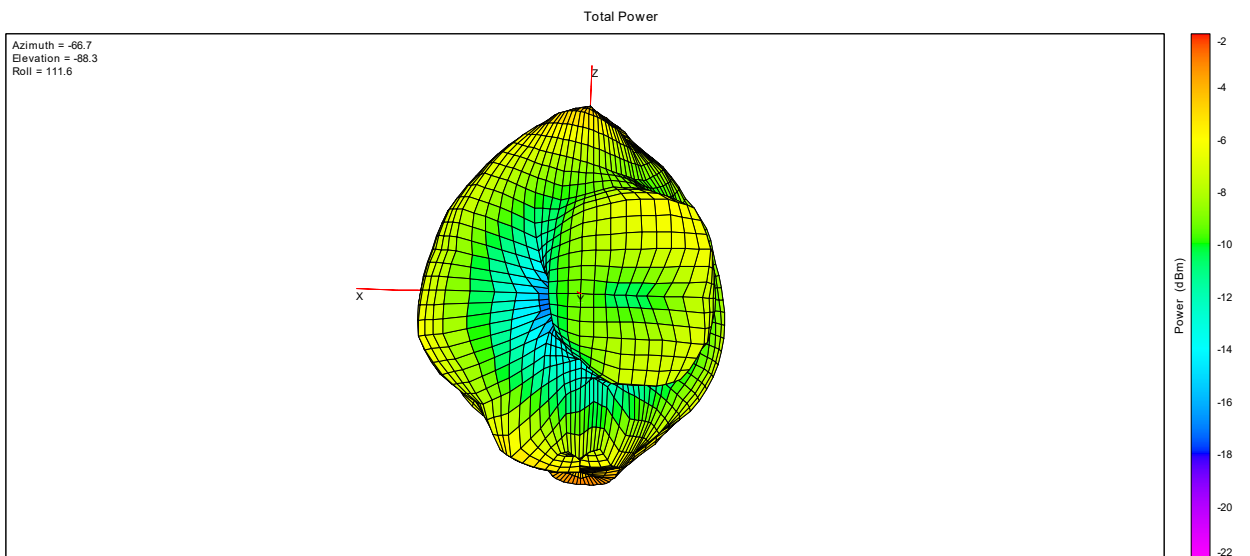
2. 3D Radiation Pattern



2400MHz



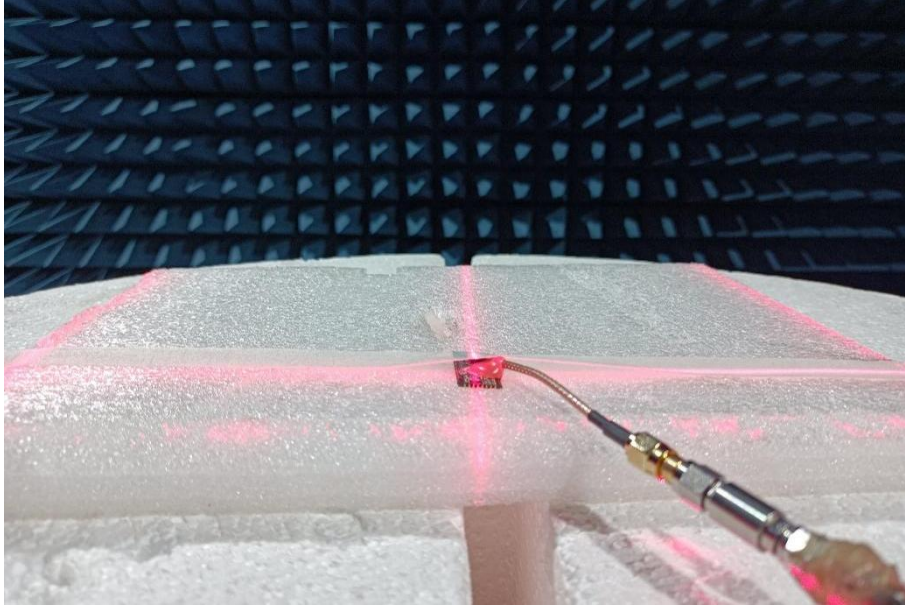
2440MHz



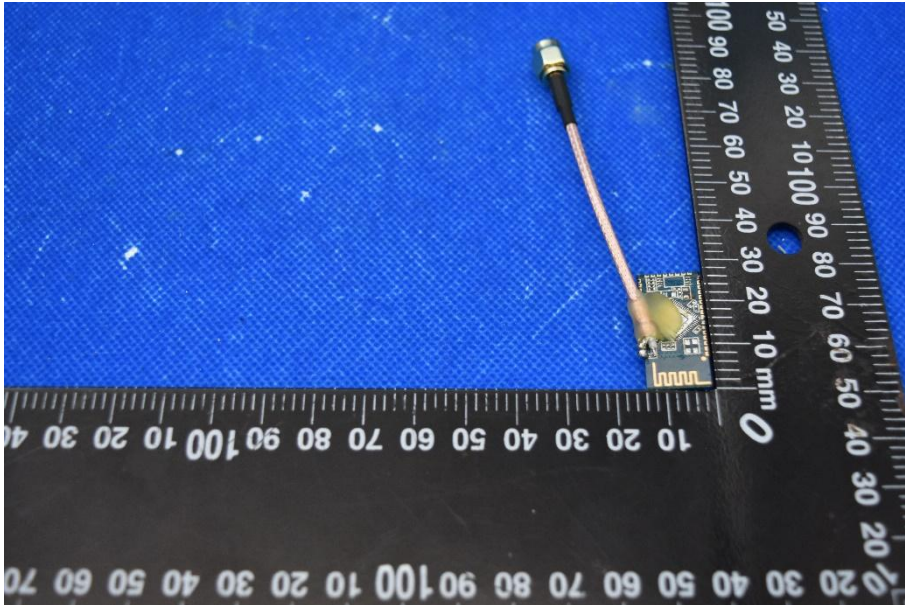
2480MHz

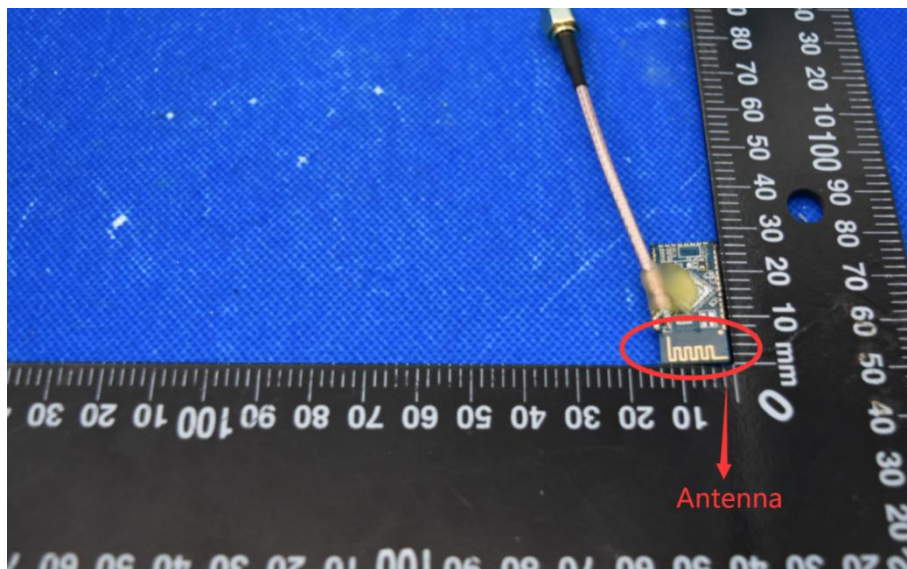
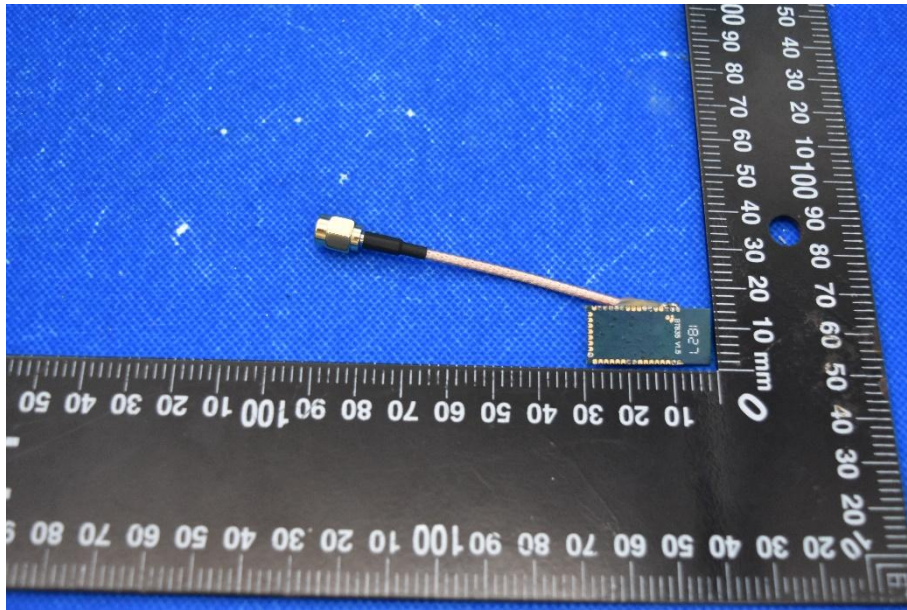
Annex C EUT Photos

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:	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	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

————— END OF REPORT —————