TEST REPORT

APPLICANT	:	Horizon Hobby, LLC
PRODUCT NAME	:	Monopole Antenna
MODEL NAME	:	N/A
TRADE NAME	:	N/A
BRAND NAME	:	N/A
STANDARD(S)	:	IEEE Std 149-2021
RECEIPT DATE	:	2025-04-11
TEST DATE	:	2025-04-14
ISSUE DATE	:	2025-04-17

Edited by: MaoRuJie

Mao Rujie(Rapporteur)

Approved by: Chi Shide

Chi Shide(Supervisor)

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MORLAB

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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:	Horizon Hobby, LLC
Applicant Address:	2904 Research Rd., Champaign, IL 61822 United States
Manufacturer:	Horizon Hobby, LLC
Manufacturer Address:	2904 Research Rd., Champaign, IL 61822 United States

1.2. Equipment Under Test (EUT) Description

Wireless Type	N/A
Frequency	2400MHz-2500MHz
Antenna Type	N/A
Product HW Version	N/A
Product SW Version	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(°C):	10 - 30

2.3. Measurement Uncertainty

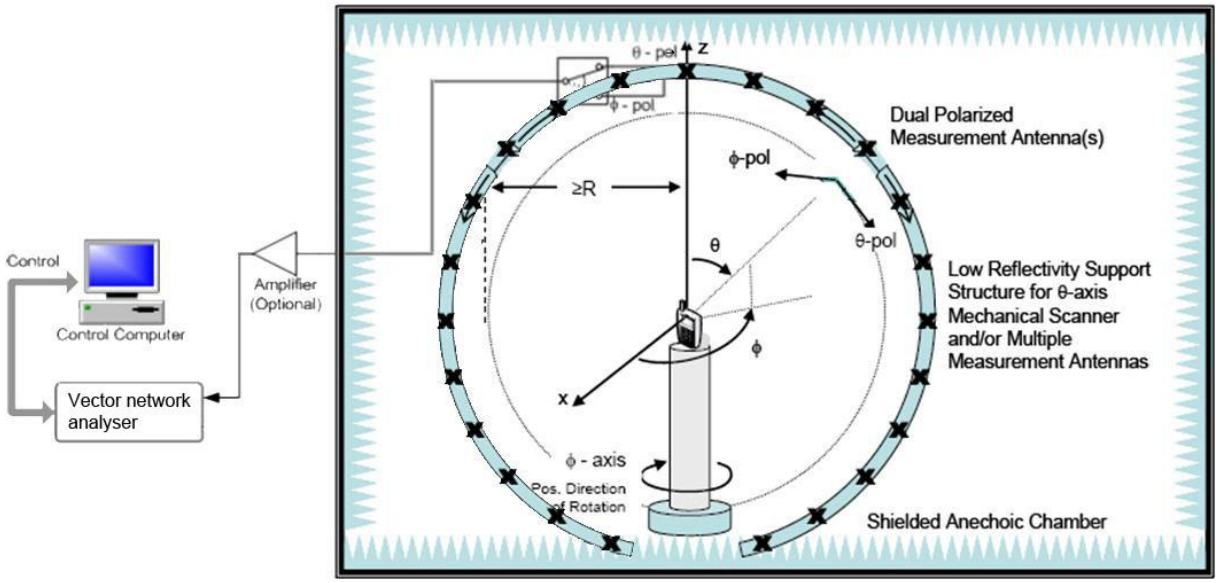
The uncertainty is calculated using the methods suggested in the “Guide to the Expression of Uncertainty in Measurement” (GUM) published by ISO. When the test result is a critical value,we will use the measurement uncertainty give the judgment result based on the 95% Confidence intervals.

2.4. Test Results lists

2.4.1. Gain

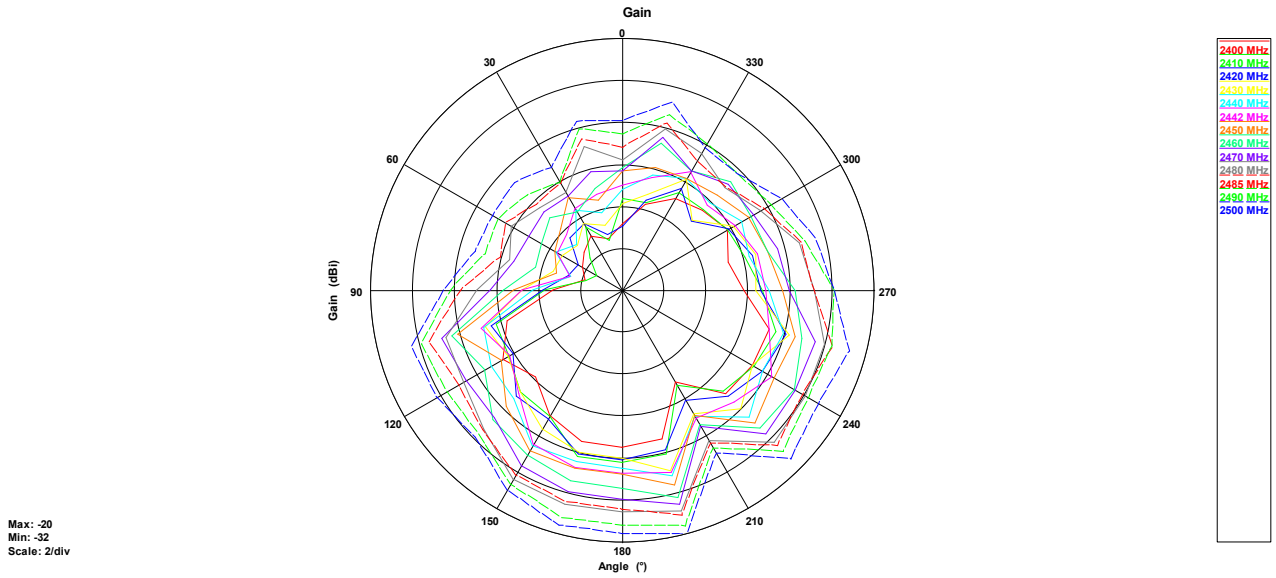
Frequency (MHz)	Gain(dBi)
2400	-19.96
2410	-19.77
2420	-19.41
2430	-19.19
2440	-18.97
2450	-18.97
2460	-18.55
2470	-18.13
2480	-17.82
2490	-17.51
2500	-17.20

Annex A Test Setup Photos

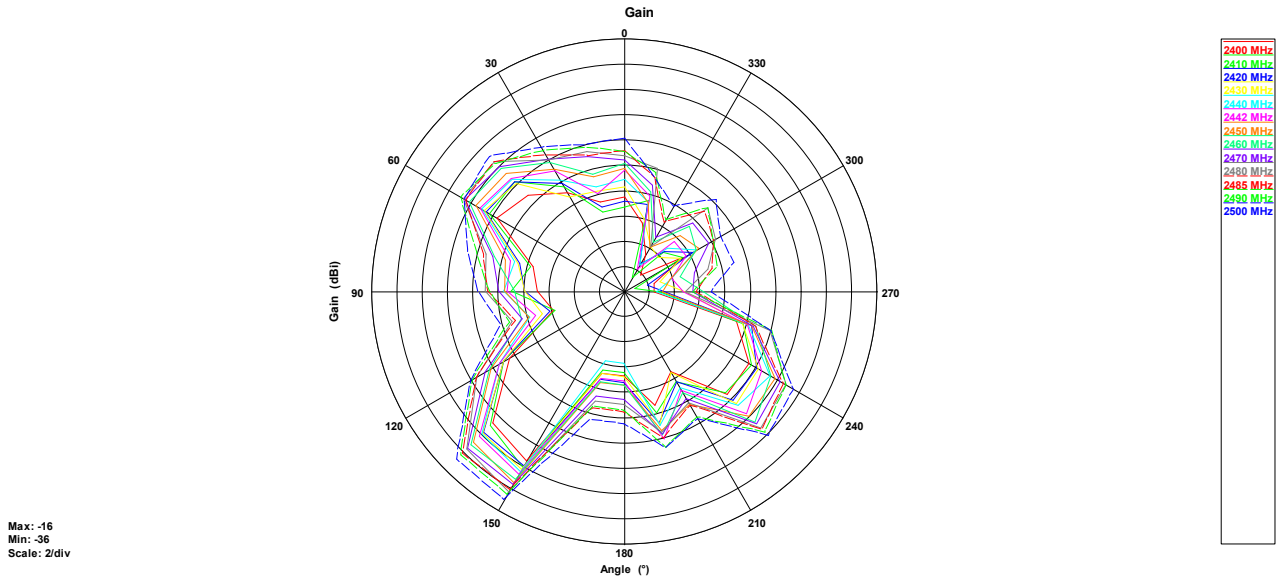


Annex B Figures

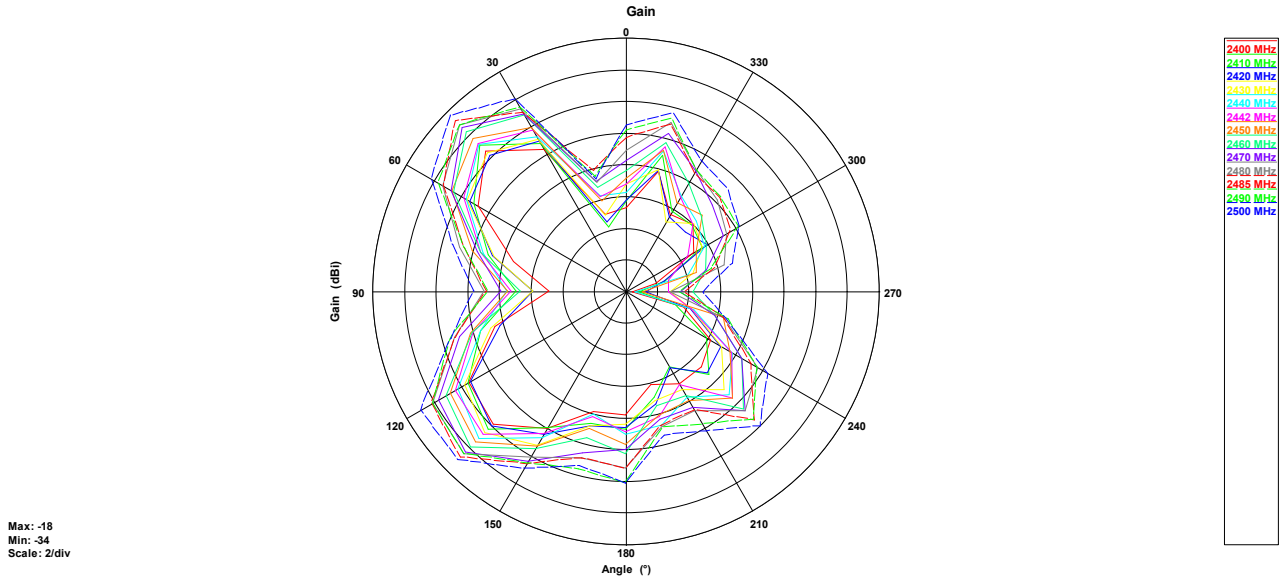
1. 2D Radiation Pattern



Phi=0°

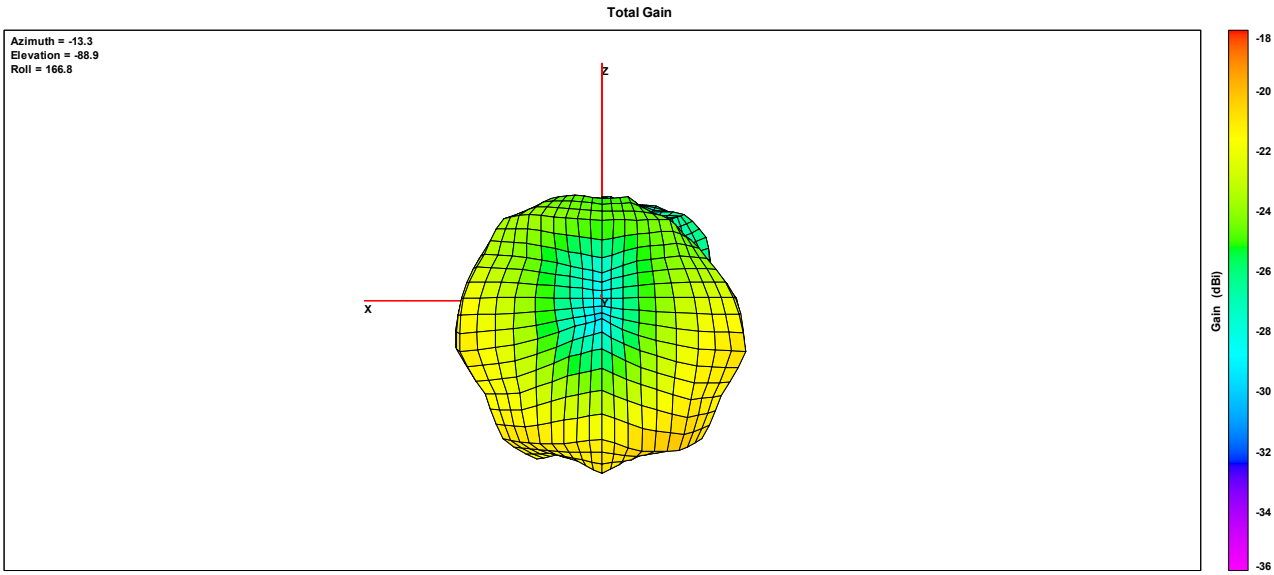


Phi=90°

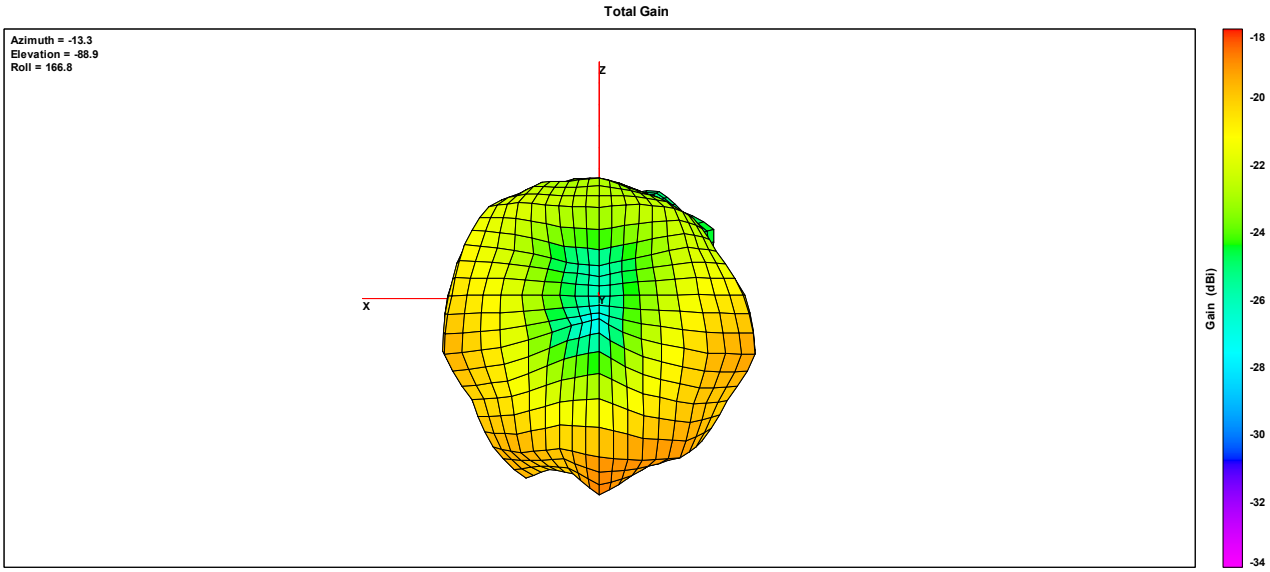


Theta=90°

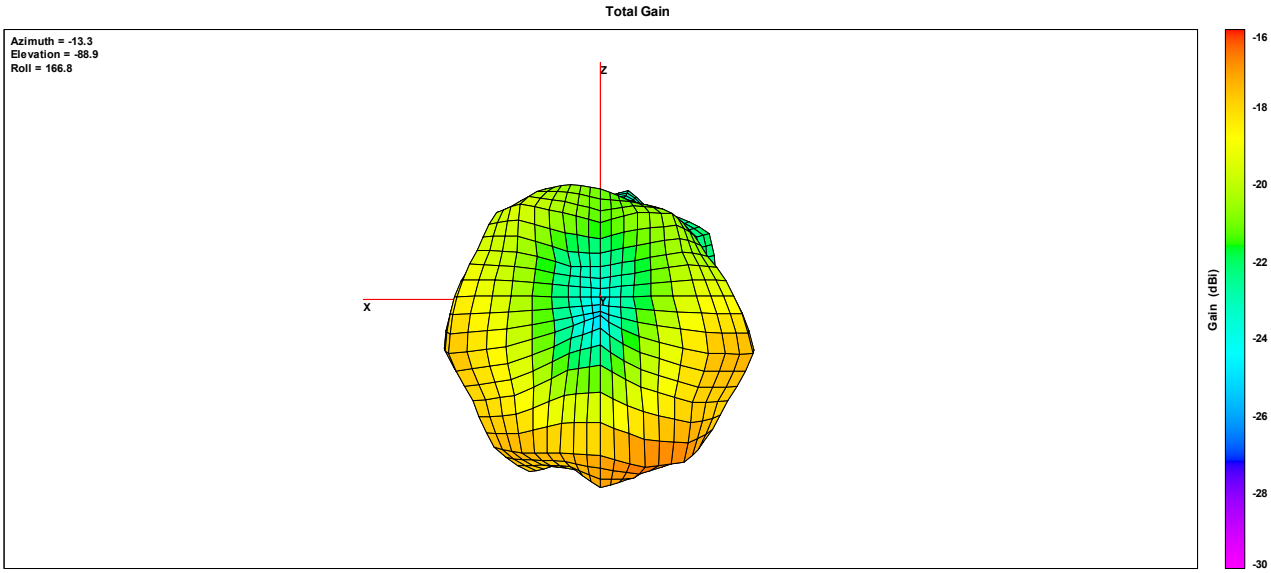
2. 3D Radiation Pattern



2400MHz



2450MHz



2500MHz

Annex C 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.	Equipement 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-8923 -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

Note: The Main report is end here and the other Annex D will be submitted separately.

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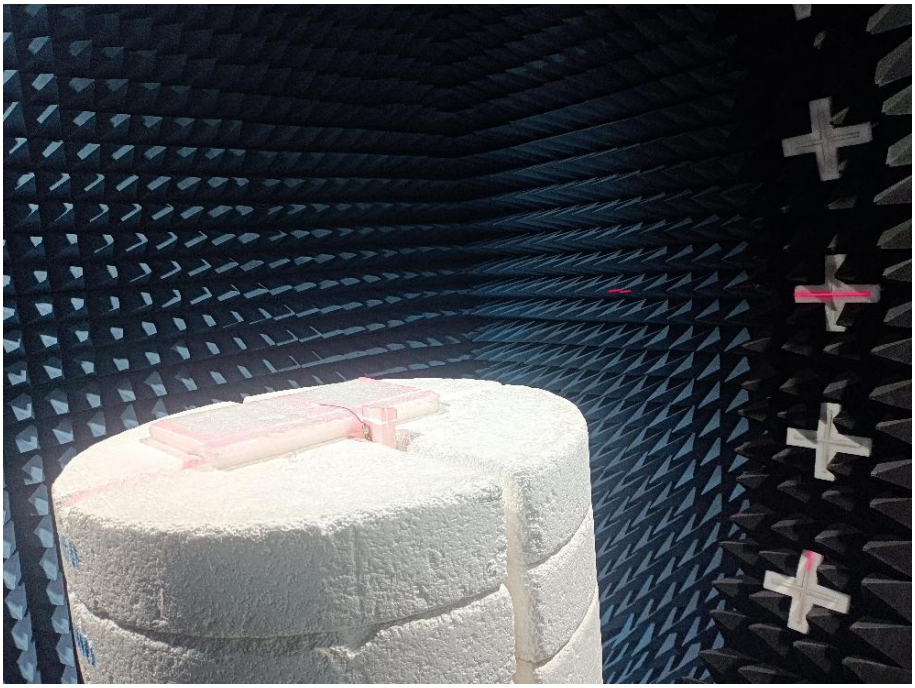
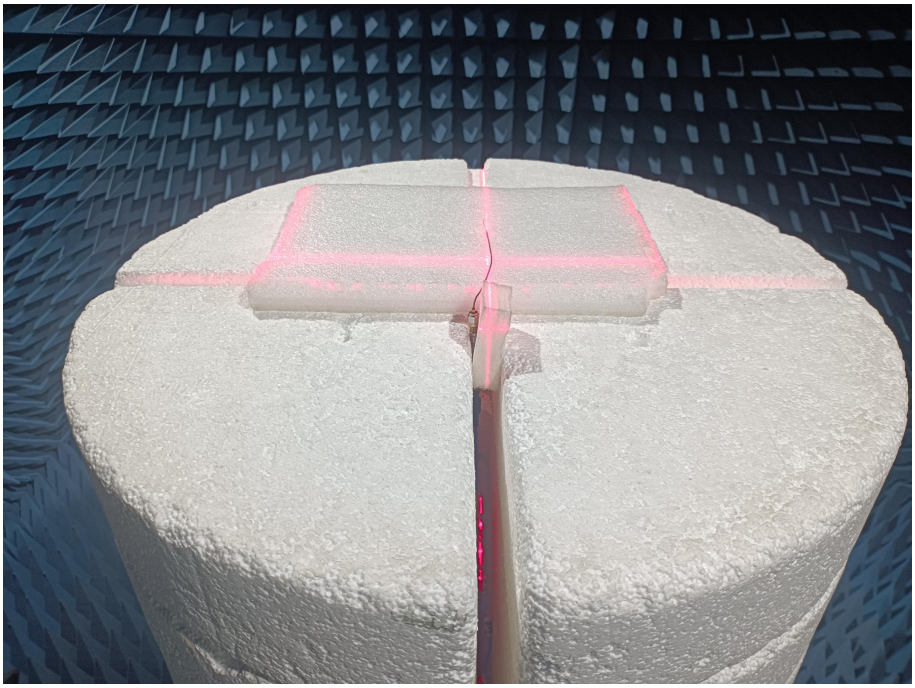
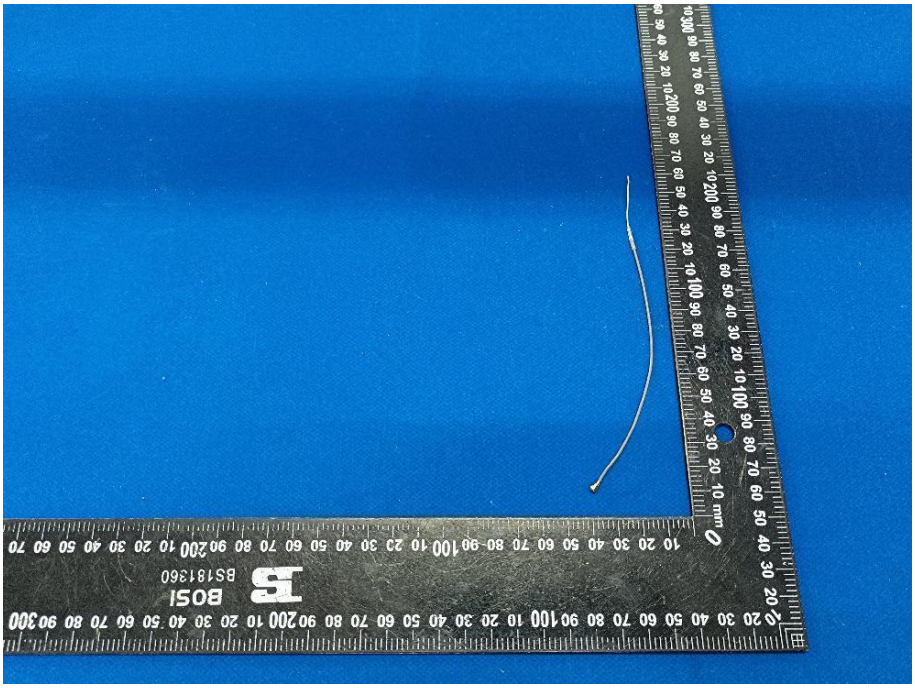
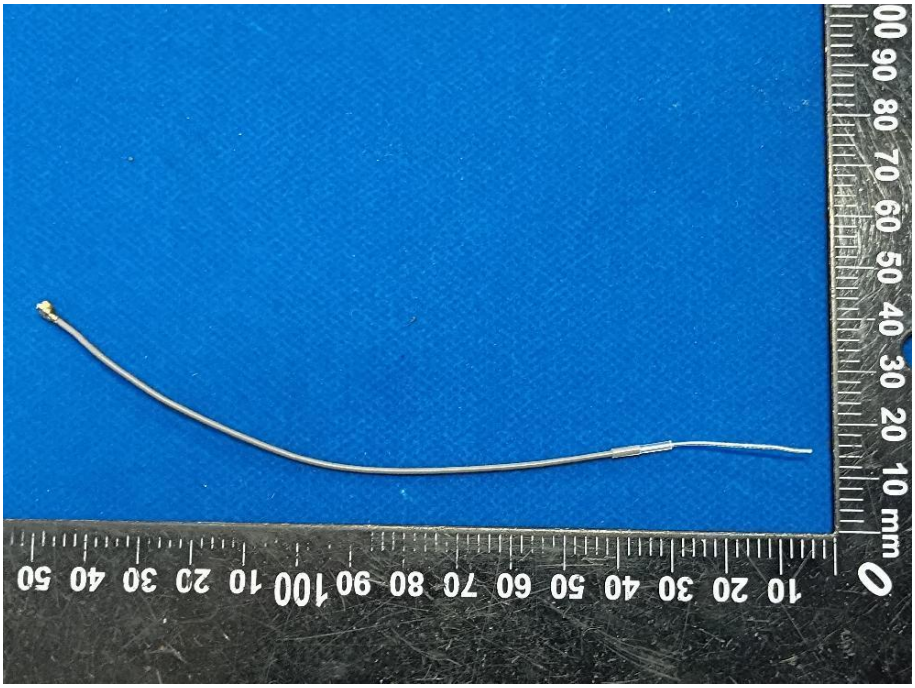
Annex D EUT Photos

1. Test environment





2. EUT