TEST REPORT

Reference No.	:	WTX24X04091176W
Applicant	:	Xiamen Hanin Co.,Ltd.
Address	:	Room 305A, Angye Building, Pioneering Park,Torch High-tech, Zone, Xiamen, China
Manufacturer	:	The same as Applicant
Address	:	The same as Applicant
Product Name	:	BT Antenna
Model No.	:	X4
Standards	:	ANSI/ IEEE 149-2021
Date of Receipt sample	:	2024-04-22
Date of Test	:	2024-04-22 to 2024-05-14
Date of Issue	:	2024-05-14
Test Report Form No.	:	WTX_IEEE 149
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of approver.

Prepared By:

Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road,
Block 70 Bao'an District, Shenzhen, Guangdong, China

Tel.: +86-755-33663308 Fax.: +86-755-33663309 Email: sem@waltek.com.cn

Tested by:

Dashan Chen

Approved by:

Jason Su

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Report version

Version No.	Date of issue	Description
Rev.00	2024-05-14	Original
/	/	/

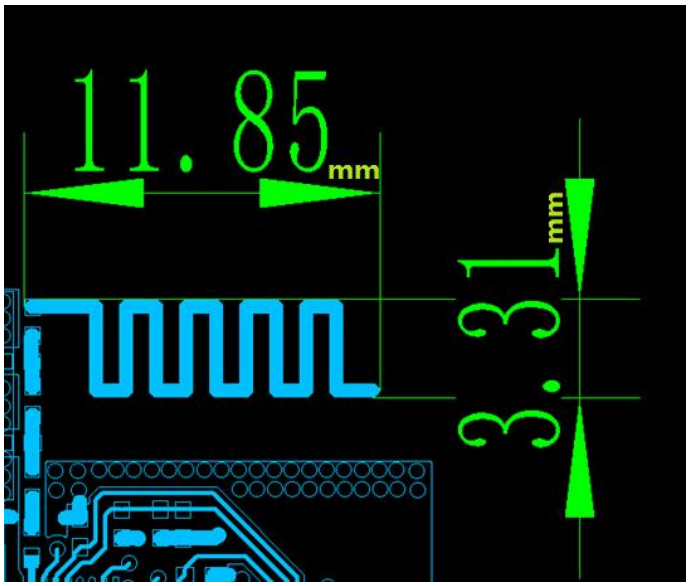
1.GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	BT Antenna
Trade Name:	/
Model No.:	X4
Adding Model(s):	/
Note: The test data is gathered from a production sample, provided by the manufacturer.	

Technical Characteristics of EUT	
Frequency Range:	2400-2500MHz
Gain of Antenna:	0.09dBi (Max.)
Type of Antenna:	PCB Antenna

Dimension:



2. SUMMARY OF TEST RESULTS

Standards	Description of Test Item	Result
ANSI/ IEEE 149-2021	IEEE Recommended Practice for Antenna Measurements	Compliant

N/A: not applicable

3. Antenna Test Configurations

3.1 Test 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

3.2 Test Environments

Environments Parameter	Temperature	Voltage	Humidit
NTNV	25° C	--	50%

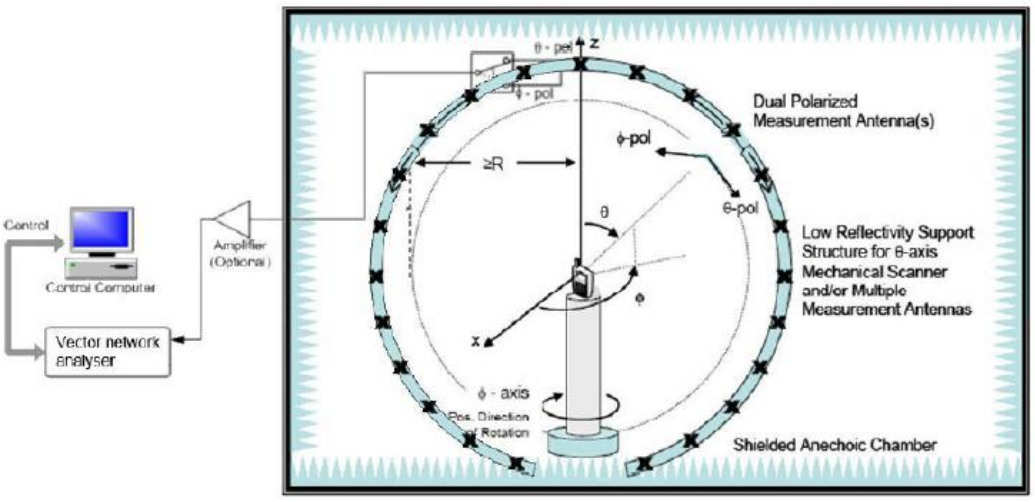
3.3 Test Equipment List

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Network Analyzer	Agilent	E5071C	MY46110140	2023-06-21	2024-06-20
OTA Chamber	ETS	AMS-8923-150	TJ2235-Q1793	2022-11-30	2025-11-29
Antenna Measurement System	ETS	EMQuest EMQ-100 V1.13 Build 21267	1685	N/A	N/A

3.4 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.

3.5 Test Setup



4. Antenna Test Result

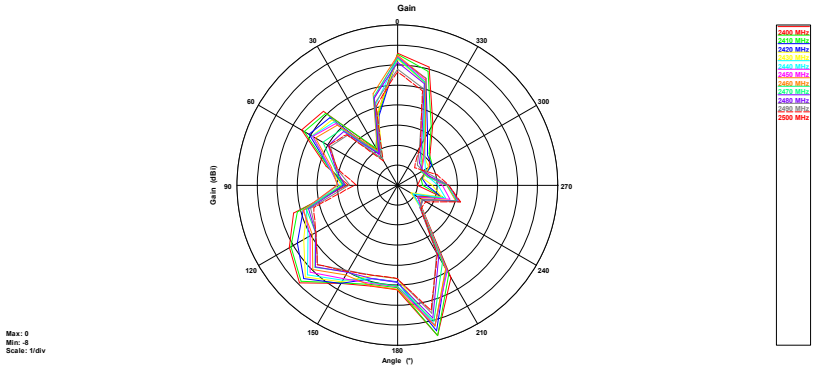
4.1 Gain and Efficiency

Frequency(MHz)	Gain(dBi)	Efficiency (%)
2400	0.04	37.43
2410	0.09	36.51
2420	-0.03	34.64
2430	-0.09	33.43
2440	-0.11	33.25
2450	-0.13	33.24
2460	-0.09	32.86
2470	-0.24	31.33
2480	-0.49	30.67
2490	-0.82	29.72
2500	-1.02	29.57

4.2 Radiation Pattern 2D View

EUT #1:

PHI=0



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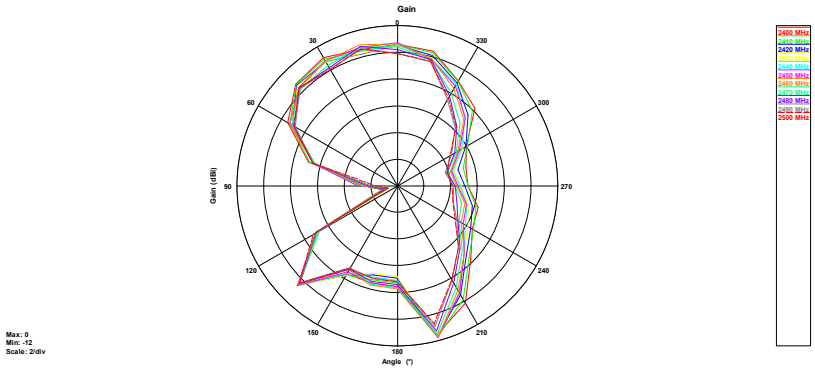

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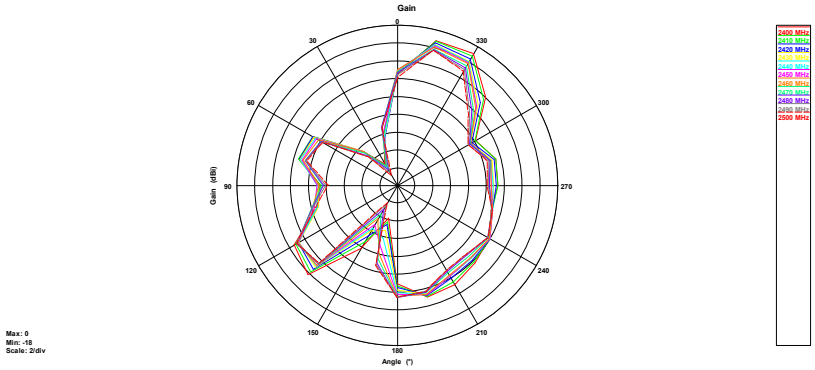
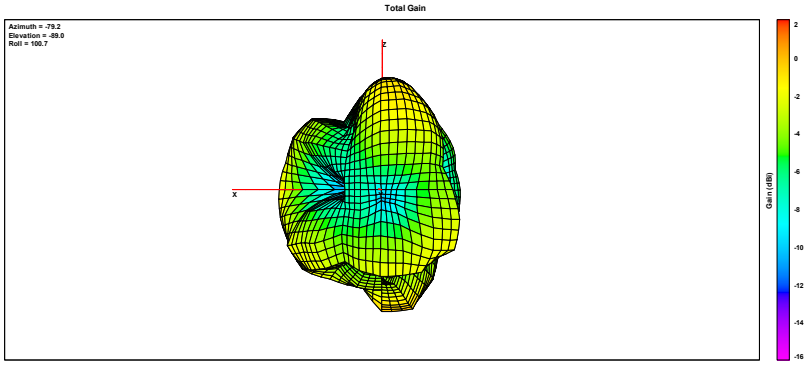


4.3 Radiation Pattern 3D View

2400MHz



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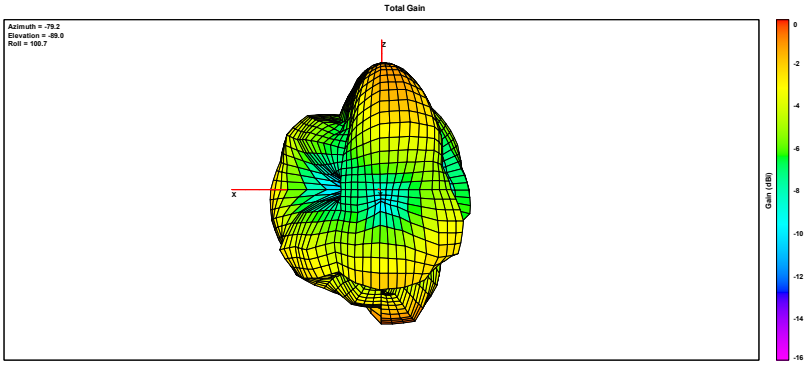
2450MHz



2500MHz

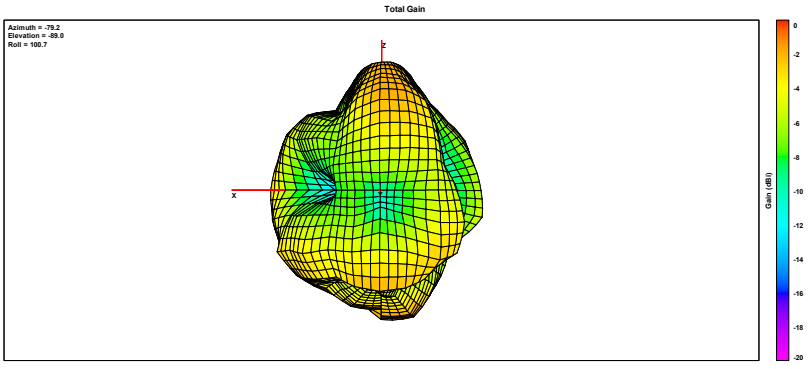


EXHIBIT 1 - EUT PHOTOGRAPHS

EUT View 1

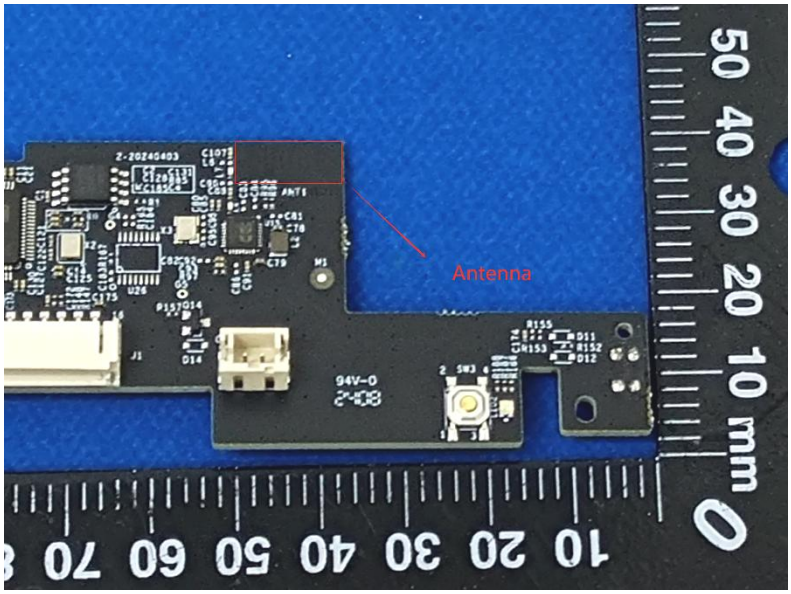
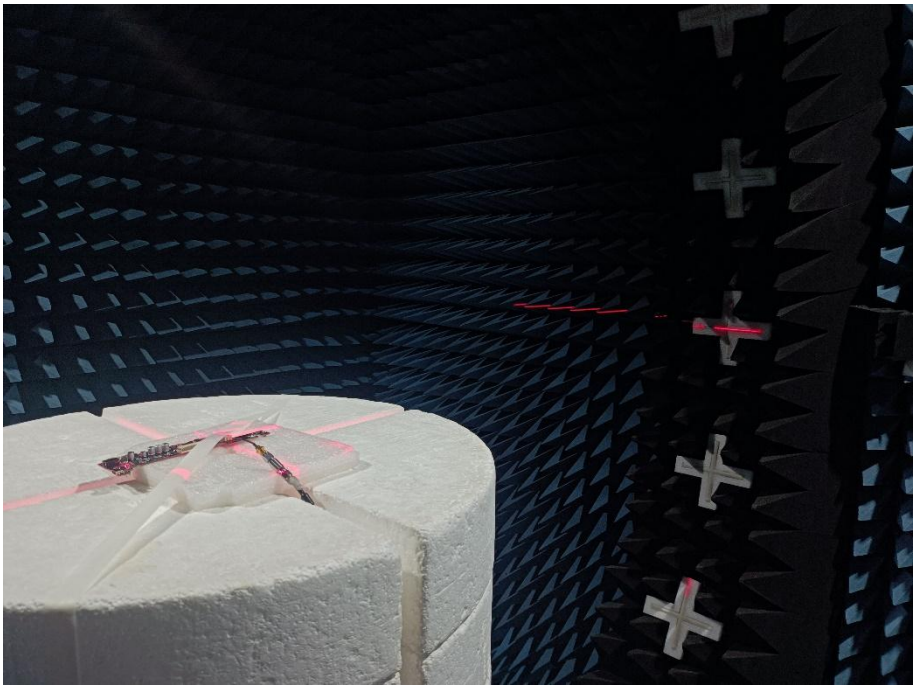
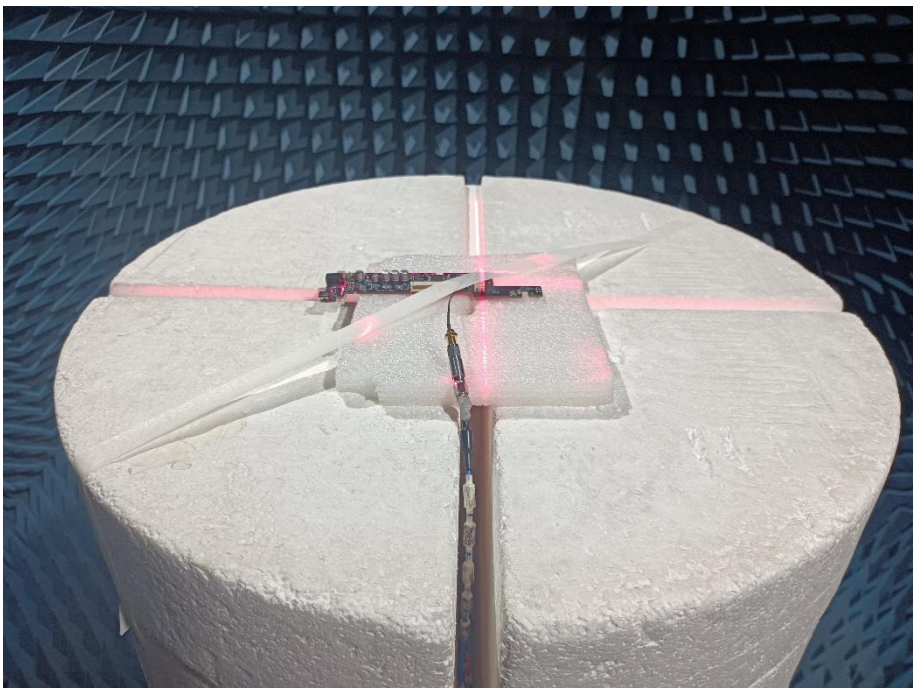


EXHIBIT 2 - TEST SETUP PHOTOGRAPHS

OTA Test View 1:



OTA Test View 2:



******* END OF REPORT *******