

Test Report

Verified code: 280811

Report No.: E202308101229-1-G2

Customer: Taicang Zhigengniao Information Technology Co.,Ltd.

Address: No.20 JianxiongRoad TaicangCity China

Sample Name: HEXCORE W800

Sample Model: W800

Receive Sample Date: Sep.11,2023

Test Date: Sep.15,2023 ~ Sep.15,2023

Reference Document: ANSI IEEE 149-2021 Part 7, Part 8, Part 10

Test Result: Pass

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GRG METROLOGY & TEST GROUP CO., LTD.

Issued Date: 2023-12-15

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REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E202308101229-1	Original Issue	2023-09-22
2.0	E202308101229-1-G1	Update version	2023-11-24
3.0	E202308101229-1-G2	Update version	2023-12-15

Note:

1. This report E202308101229-1-G2 is a modification of E202308101229-1-G1. On the basis of the original report,, Page 10 increases calibration interval of test equipment.
2. This report replaces the E202308101229-1-G1 report, and the replaced report is invalid from the date of release of the report.

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1. TEST RESULT SUMMARY

Test Item	Test Frequency	Test Method	Test Scene	Test Result
Gain	2400MHz~2480MHz	ANSI IEEE 149-2021 Part 8	scene 1	/ ¹⁾
Efficiency	2400MHz~2480MHz	ANSI IEEE 149-2021 Part 10	scene 1	/ ¹⁾
Antenna pattern	2400MHz~2480MHz	ANSI IEEE 149-2021 Part 7	scene 1	/ ¹⁾

Note 1): Customer-defined test, test results do not make judgment.

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2. GENERAL DESCRIPTION OF EUT

2.1 APPLICANT INFORMATION

Name:	Taicang Zhigengniao Information Technology Co.,Ltd.
Address:	No.20 JianxiongRoad TaicangCity China

2.2 MANUFACTURER

Name:	Taicang Zhigengniao Information Technology Co.,Ltd.
Address:	No.20 JianxiongRoad TaicangCity China

2.3 FACTORY

Name:	Taicang Zhigengniao Information Technology Co.,Ltd.
Address:	No.20 JianxiongRoad TaicangCity China

2.4 BASIC DESCRIPTION OF EUT

Product Name:	HEXCORE W800
Product Model:	W800
Trade Name:	HEXCORE
Software Version:	/
Hardware Version:	/
Antenna Type:	/
Frequency Band:	2400MHz~2480MHz
Sample submitting way:	<input checked="" type="checkbox"/> Provided by customer <input type="checkbox"/> Sampling
Sample No.:	E202308101229-0001
Note:	/

2.5 TEST SCENE

Scene	Scene description
Test scene 1	Free space

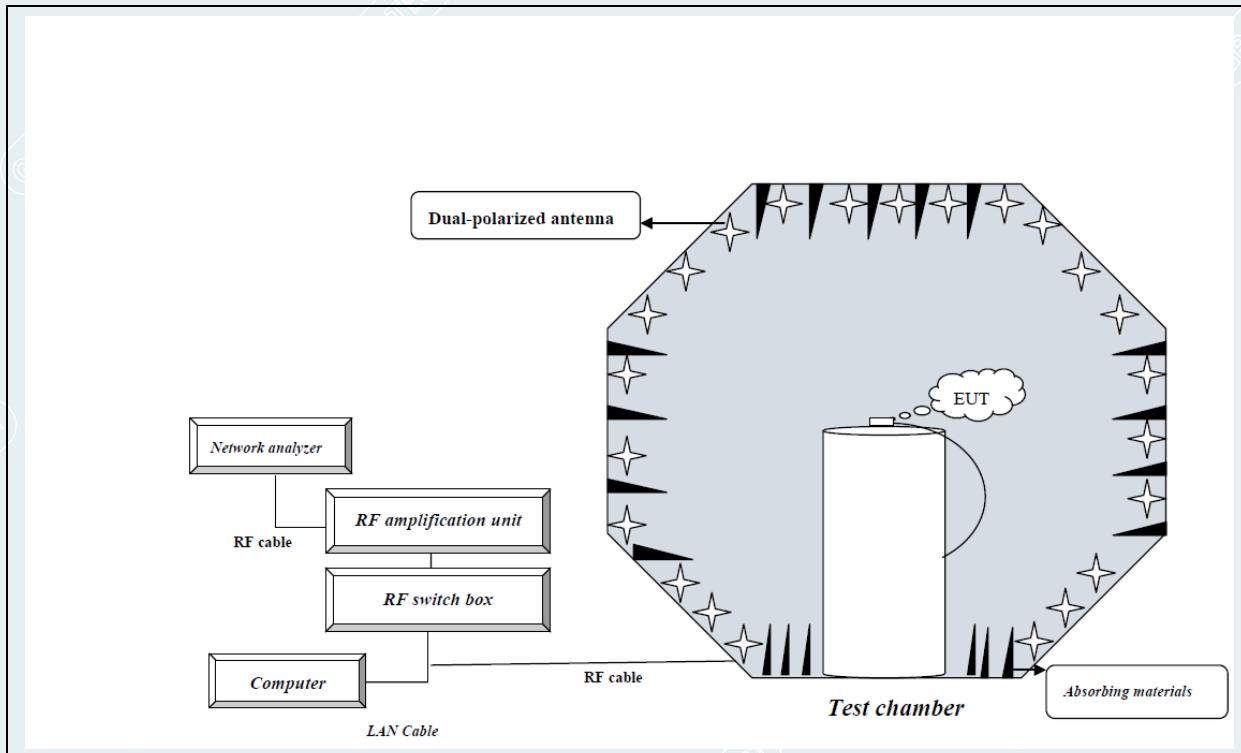
2.6 SAMPLE WORK DESCRIPTION

Serial No.	Work description
a)	The sample is erected according to the standard, so that the sample can be tested under normal operation

2.7 ASSISTIVE DEVICE INFORMATION

No.	Name of Equipment	Manufacturer	Model No.	Serial No.
1)	RF cable	Jun you radiofrequency	Amplitude stabilization and phase stabilization cable	/
2)	Calibrated parts	R&S	ZV-Z270	/

2.8 SAMPLE CONNECTION DIAGRAM



Sample connection diagram

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3. LABORATORY

The tests and measurements refer to this report were performed by ReportLabEMC Laboratory of GRG METROLOGY & TEST GROUP CO., LTD.

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4. MEASUREMENT UNCERTAINTY

Uncertainty is calculated according to ISO's "Guide to the Expression of Uncertainty in Measurement" (GUM), and the extended uncertainty is expressed using an inclusion factor of $k=2$ and a 95% confidence level.

Measurement	Uncertainty
Gain	0.6 dB

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5. EQUIPMENT AND TOOLS USED DURING TEST

Name of Equipment	Manufacturer	ModelNo.	Serial No.	Calibration Due
OTA test chamber	HWA-TECH	AC7500	OTA-SC2021030 1MSN	2025-02-23
Network analyzer	ROHDE&SCHWARZ	ZNB8	101169	2024-05-23
Automated test software system	HWA-TECH	S6100A (V1.0.0.0)	/	/

Note: The calibration interval of the above Network analyzer is 12 months, The calibration interval of the above OTA test chamber is 36 months.

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6. ANTENNA RADIATION PERFORMANCE MEASUREMENT

6.1 LIMITS

Test Item	Test Frequency	Limits
Gain	2400MHz~2480MHz	/ ¹⁾
Efficiency	2400MHz~2480MHz	/ ¹⁾
Antenna pattern	2400MHz~2480MHz	/ ¹⁾

Note 1): Customer-defined tests, unlimited definitions.

6.2 TEST PROCEDURE

a) Adjust the ambient temperature of the test system to within 20 °C-30 °C.

b) System gain calibration:

- 1) Set up the standard antenna so that the apparent phase center of the standard antenna is consistent with the geometric center of the system, rotate the turntable by 90 °, and adjust the phase center of the standard antenna again;
- 2) Start the test after setting the test frequency;
- 3) Gain calibration data is calculated and stored on the control computer.

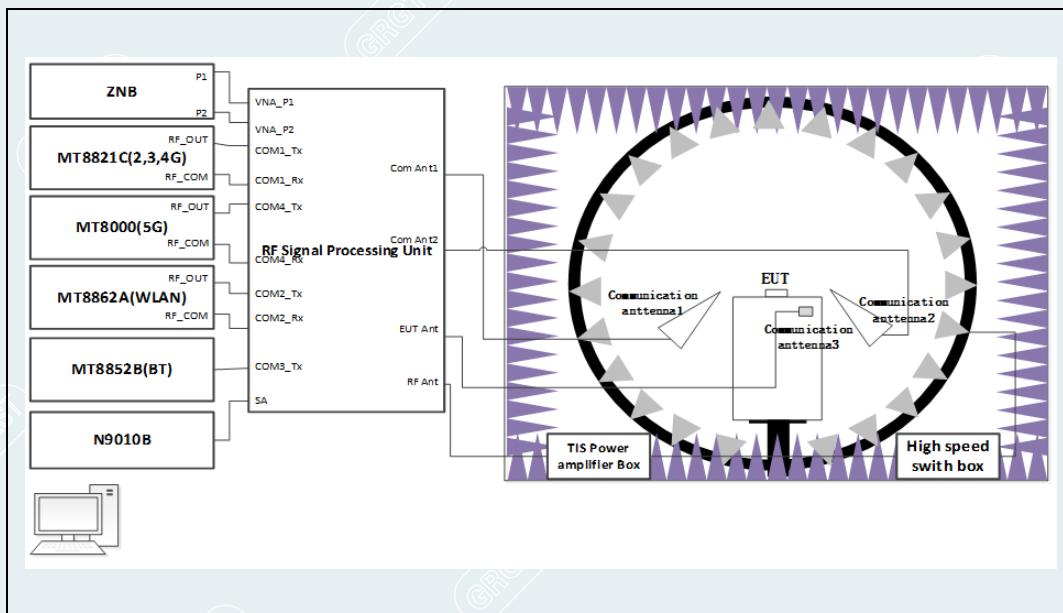
c) Antenna test:

- 1) The antenna to be measured is erected on the test fixture, and the antenna phase center coincides with the center of the probe array ring by adjusting the antenna;
- 2) Connect the test cable, set the test frequency, start the test, during the test, the system supporting software should be able to automatically complete the acquisition, storage and calculation of the antenna amplitude and phase data to be measured.

d) Data processing:

The OTA system is used to test the antenna, and all the radiation information on the spherical surface of the antenna (including the polarization mode, gain, efficiency, pattern of the antenna, etc.) can be obtained through one test. Therefore, the antenna radiation indicators described in this standard can be obtained by a single test, the difference is that the data of different indicators are extracted differently.

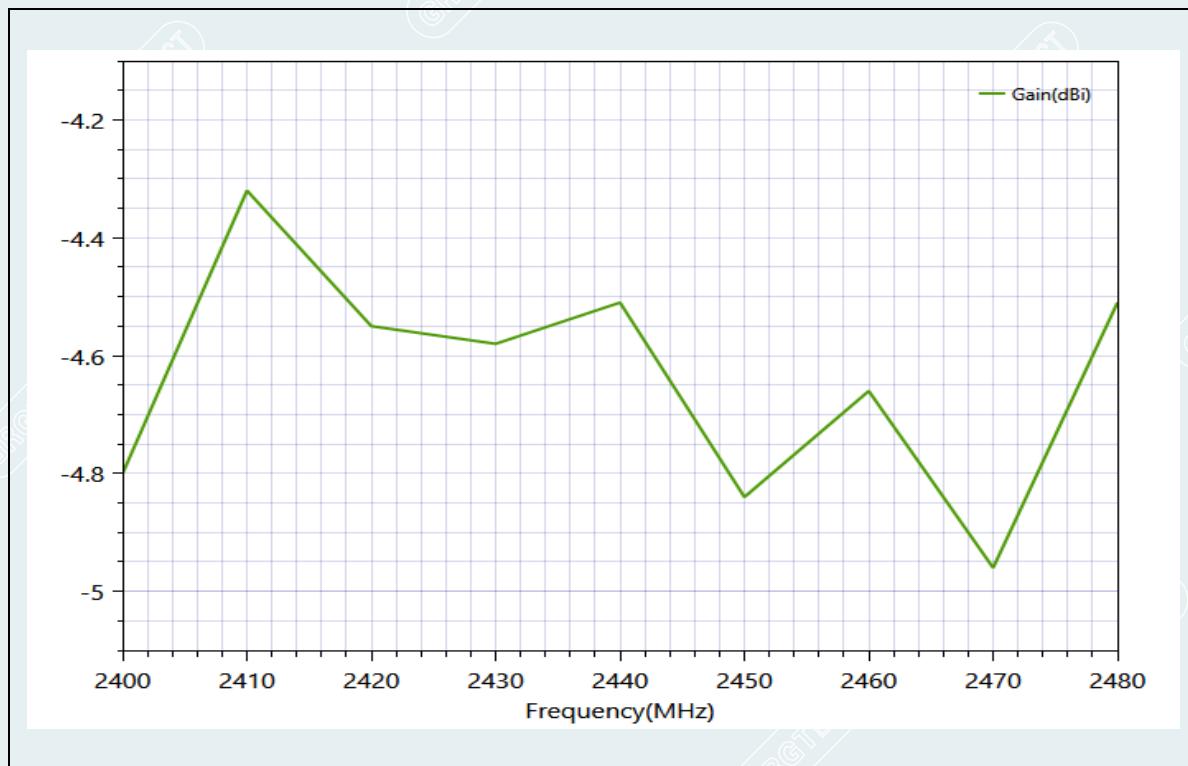
6.3 CONFIGURATION OF SYSTEM UNDER TEST



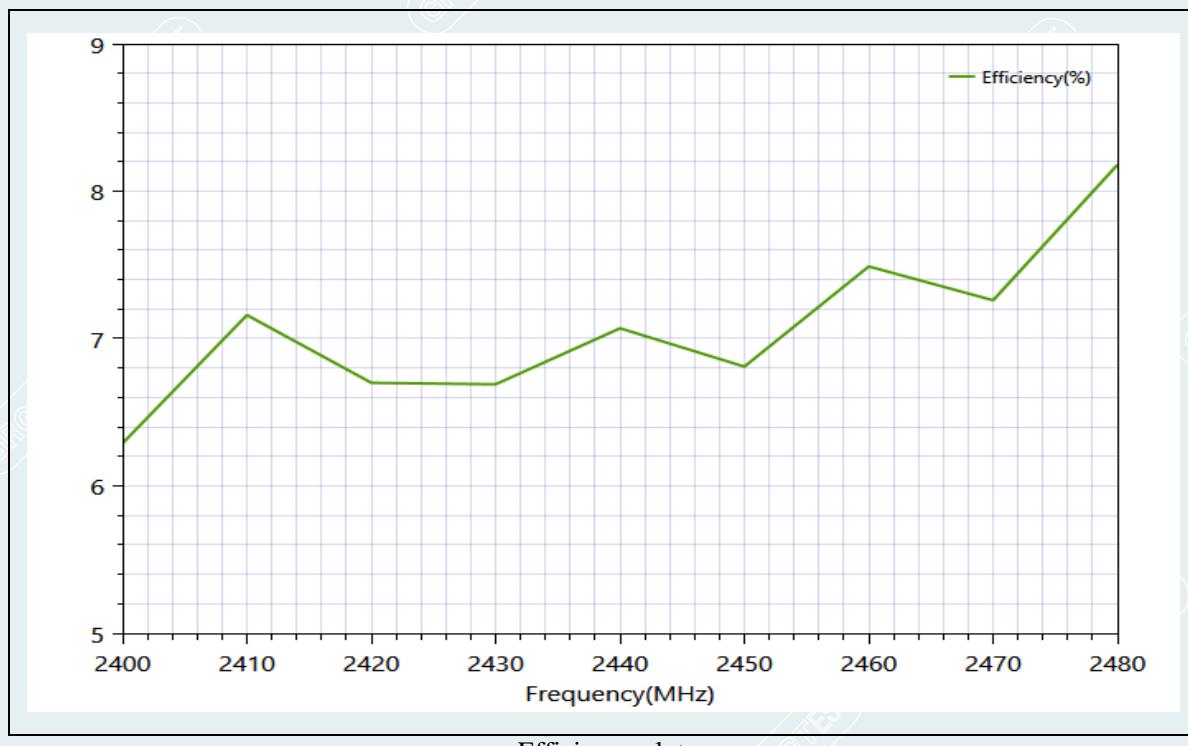
6.4 TEST RESULTS

EUT Name	HEXCORE W800	Model No.	W800
Environmental Conditions	25.7 °C / 57%RH / 101kPa	Test Scene	Scene 1
Power Supply	/	Tested By	Ma Lintao
Test Date	2023-09-15	Sample No.	E202308101229-0001
Antenna polarization	/	Impedance	50 Ω

Test Frequency (MHz)	Test item	
	Gain(dBi)	Efficiency
2400	-4.80	6.29%
2410	-4.32	7.16%
2420	-4.55	6.70%
2430	-4.58	6.69%
2440	-4.51	7.07%
2450	-4.84	6.81%
2460	-4.66	7.49%
2470	-4.96	7.26%
2480	-4.51	8.18%

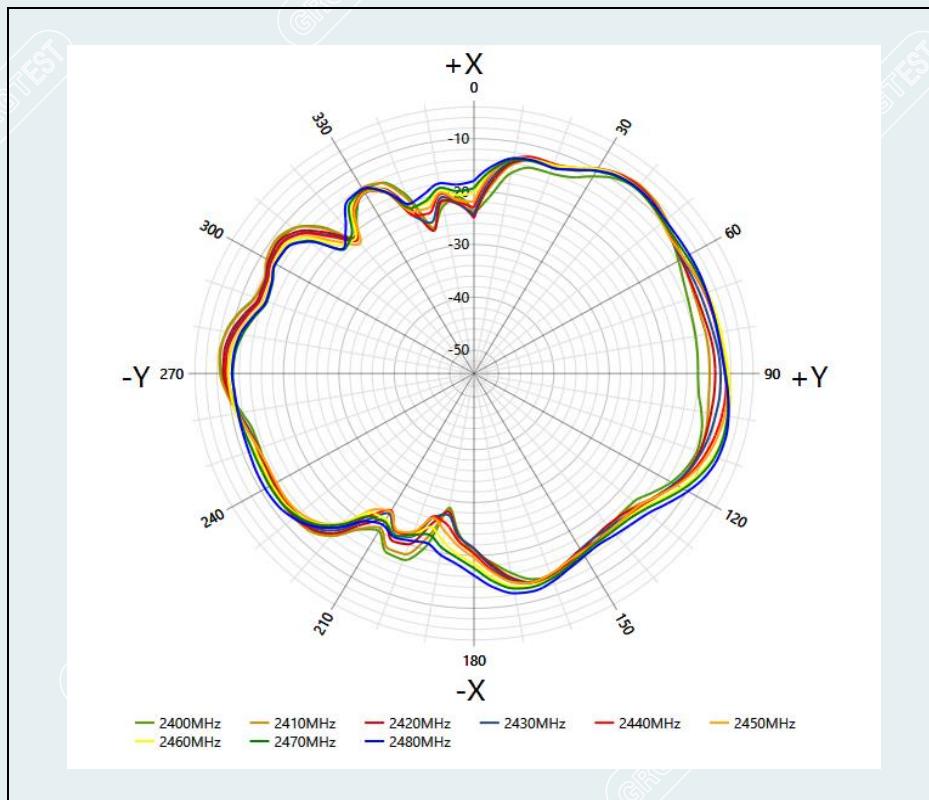
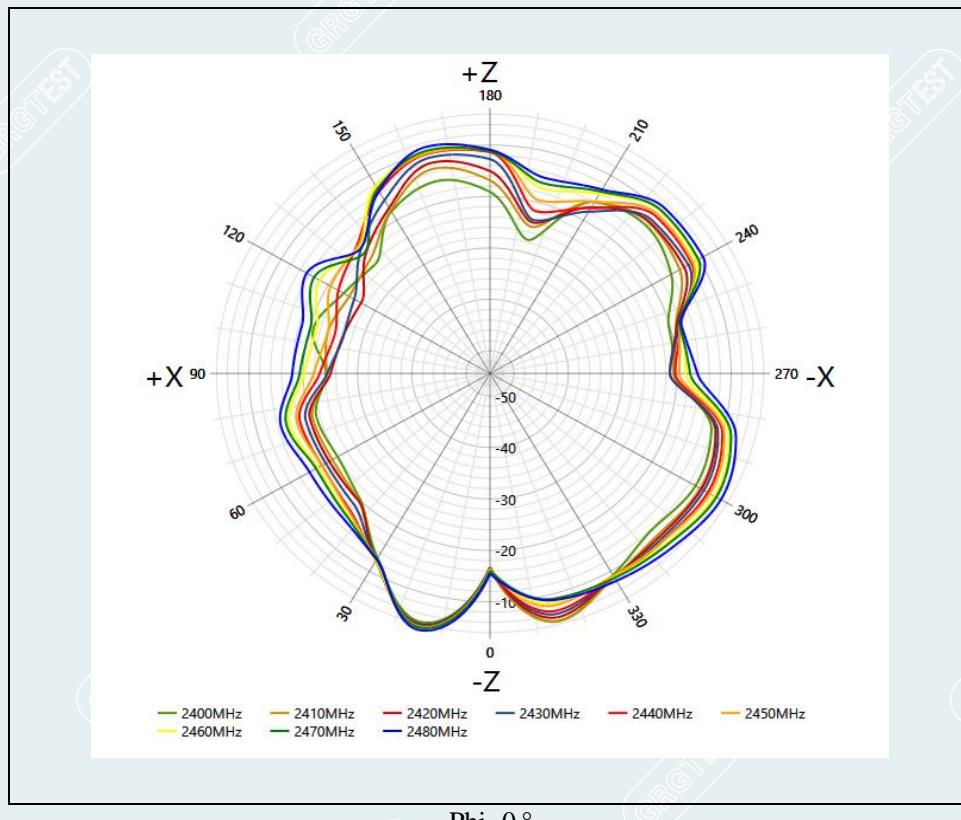
a) Gain result plot

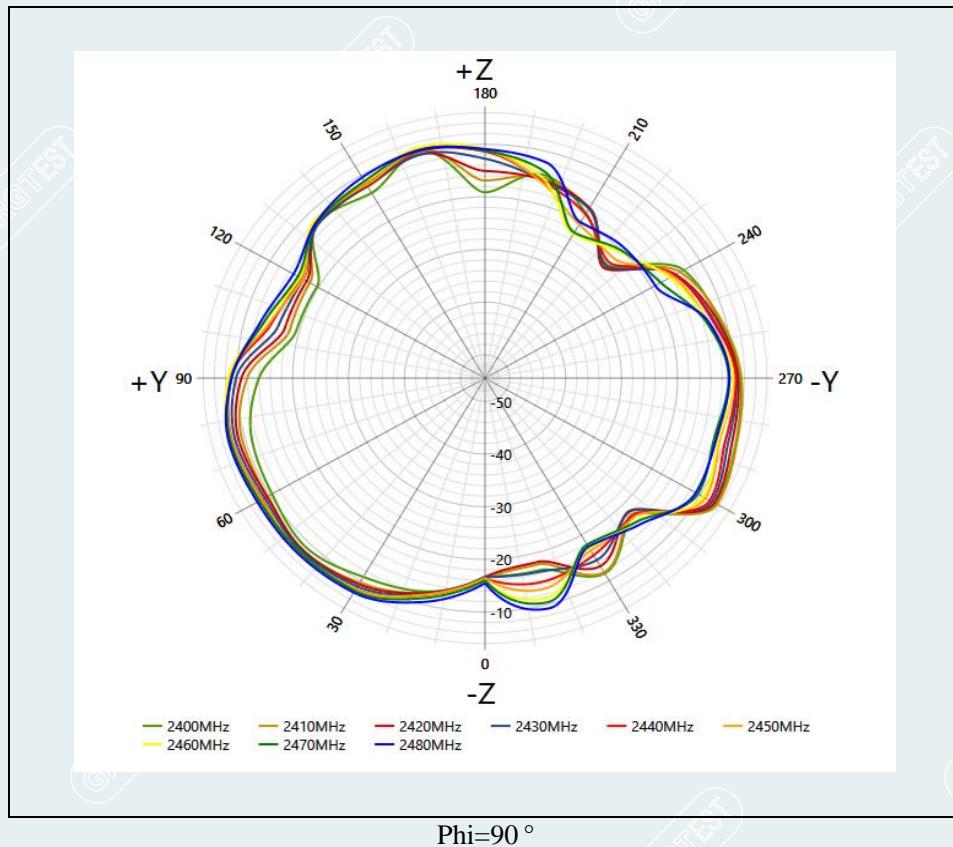
Gain plot

b) Efficiency result plot

Efficiency plot

c) 2D Radiation pattern

 $\Theta = 90^\circ$  $\Phi = 0^\circ$



Phi=90°

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APPENDIX A. TEST PHOTOS OF THE EUT

Please refer to the attached document E202308101229-1-G2-Test photo.

APPENDIX B.PHOTOGRAPH OF THE EUT

Please refer to the attached document E202308101229-1-G2-EUT Photo.

----- End of Report -----