

Test Report

Verified code: 521779

Report No.: E202209286466-1

Customer: Kabelwerk Eupen AG

Address: Malmedyer Str. 9, B-4700 EUPEN, Belgium

Sample Name: Radiating cable, 1 meter length

Sample Model: CMC 12-NF-HLFR

Receive Sample Date: Oct.10,2022

Test Date: Oct.11,2022 ~ Oct.11,2022

Reference Document: ANSI IEEE 149-2021 Section 8

Test Result: Refer to the following report

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GUANGZHOU GRG METROLOGY & TEST CO., LTD

Issued Date: 2022-10-27

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REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E202209286466-1	Original Issue	2022-10-13

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1. TEST RESULT SUMMARY

Test Item	Test frequency	Test Requirement	Test Method	Test scene	Test Result
Gain	400MHz~2500MHz	ANSI IEEE 149-2021 Section 8	ANSI IEEE 149-2021 Section 8	Scene1	/1)

Note: ¹⁾ Test results do not judge.

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2. GENERAL DESCRIPTION OF DUT

2.1 APPLICANT INFORMATION

Name: Kabelwerk Eupen AG
Address: Malmedyer Str. 9, B-4700 EUPEN, Belgium

2.2 MANUFACTURER

Name: Kabelwerk Eupen AG
Address: Malmedyer Str. 9, B-4700 EUPEN, Belgium

2.3 FACTORY

Name: Kabelwerk Eupen AG
Address: Malmedyer Str. 9, B-4700 EUPEN, Belgium

2.4 BASIC DESCRIPTION OF EUT

Product Name: Radiating cable, 1 meter length
Product Model: CMC 12-NF-HLFR
Trade Name: EUCARAY®
Frequency Band: 400MHz ~2500MHz
Power Supply: /
I/O port: /
Sample submitting way: Provided by customer Sampling
Sample No: E202209286466-0001
Note: /

2.5 TEST SCENE

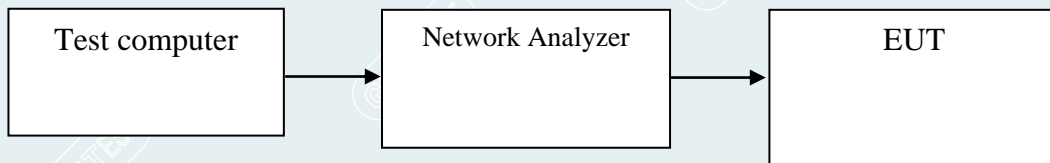
Test scene:1	FS:Free Space
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2.6 OPERATE DESCRIPTION OF EUT

Sequence	Operation description
a)	The EUT was placed in the positioning center of the anechoic chamber to test the passive performance of the antenna

2.7 AUXILIARY EQUIPMENT INFORMATION

Number	Name of Equipment	Manufacturer	Model	Serial Number
1	Reference antenna (horn antenna)	RFLIGHT	400MHz-6GHz	MET400-11-2
2	Rf cables	Amplitude and phase stabilizing cable	/	/

2.8 CONFIGURATION OF SYSTEM UNDER TEST

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3. LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of Guangzhou GRG Metrology & Test Co., Ltd.

Add.: No.1301 Guanguang Road Xinlan Community, Guanlan Street, Longhua District
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4. MEASUREMENTS UNCERTAINTY

Measurement	Uncertainty (dB)
Gain	0.6

Note: 1) The uncertainty is the extended uncertainty, with approximately 95% confidence probability, including the factor $k=2$.
2) The test system has been proved to meet the requirements of the standard with a confidence level of not less than 95%.

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5. EQUIPMENT AND TOOLS USED DURING TEST

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spherical near-field test system full - wave anechoic chamber	RFLIGHT	EMT-GD001	EP128-20210710-01	2023-03-27
Vector network analyzer	Keysight	E5071C	MY46901661	2023-04-13

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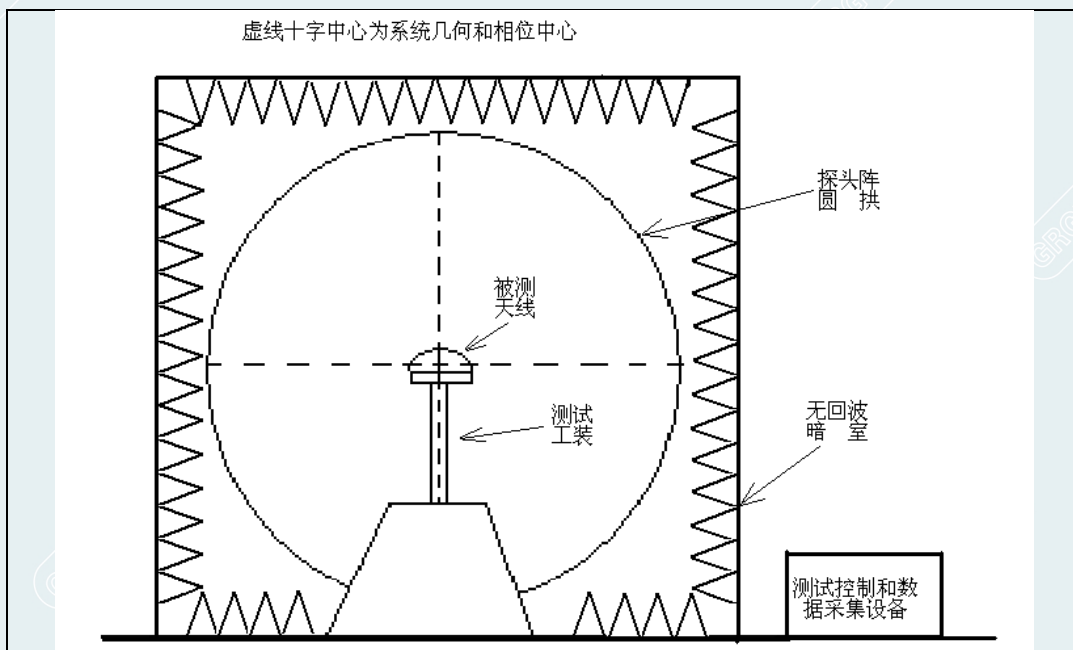
6. GAIN TEST

6.1 LIMIT

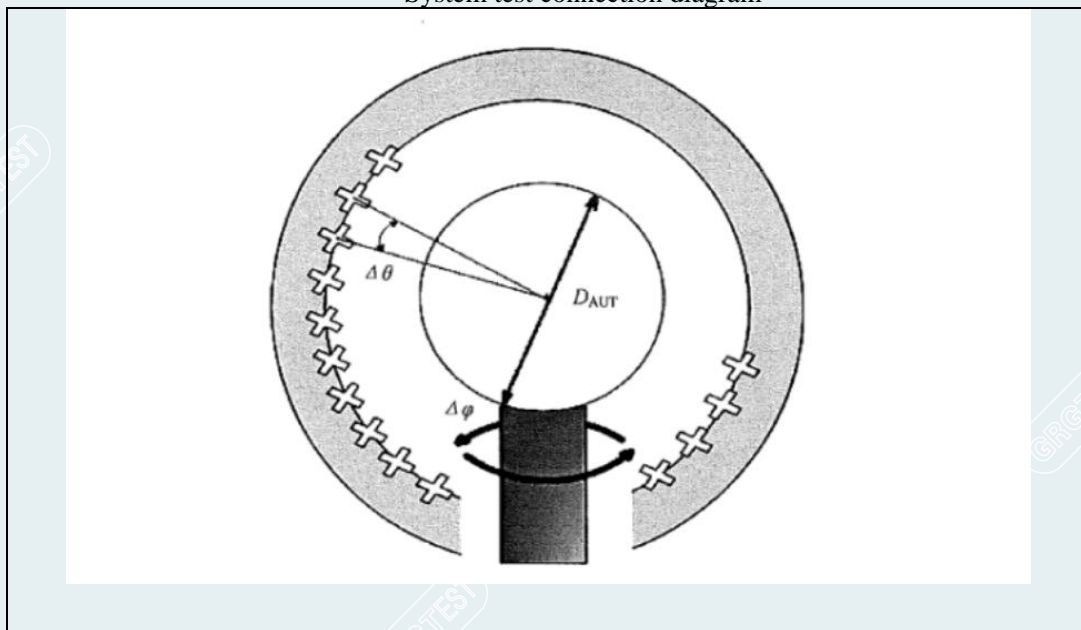
Test Item	Frequency	Test scene	Limit(dBm)
Gain	400MHz~2500MHz	Scene 1	$\gamma^{1)}$

Note: ¹⁾Indicates that there is no limit level requirement;

6.2 TESTCONFIGURATION



System test connection diagram



Polar coordinates of system diagram

6.3 TEST PROCEDURES

- 1) Maintain the test ambient temperature of $23 \pm 2^{\circ}\text{C}$, the instrument is powered on and preheated for more than 30 minutes;
- 2) To start the measurement, mark the "cross reference line" at the center of the standard gain antenna interface;
- 3) The standard gain antenna was mounted on the pole, and the antenna pitch and position were adjusted to ensure that the antenna was installed strictly vertically, and the "cross reference line" of the antenna mouth surface coincided with the laser positioning cross of the multi-probe test system.;
- 4) Set the gain and frequency of the standard gain antenna, and use the standard gain antenna to complete the gain calibration test;
- 5) Install the antenna under test, configure the port, dip Angle and test frequency;
- 6) Use test software to automatically test and maintain test data of electromagnetic field distribution;
- 7) Change the port, dip Angle, or test frequency (if necessary) and repeat Step 6, until all state data to be measured is collected;
- 8) The test data of the standard gain antenna and the antenna under test are imported into the data processing software. According to the near-field and far-field transformation algorithm, the gain and three-dimensional pattern are calculated. The horizontal plane pattern index and vertical plane pattern index are calculated by the software.

6.4 TEST PRINCIPLE

The test principle can be seen in accordance with the standard ANSI IEEE 149-2021 section8.

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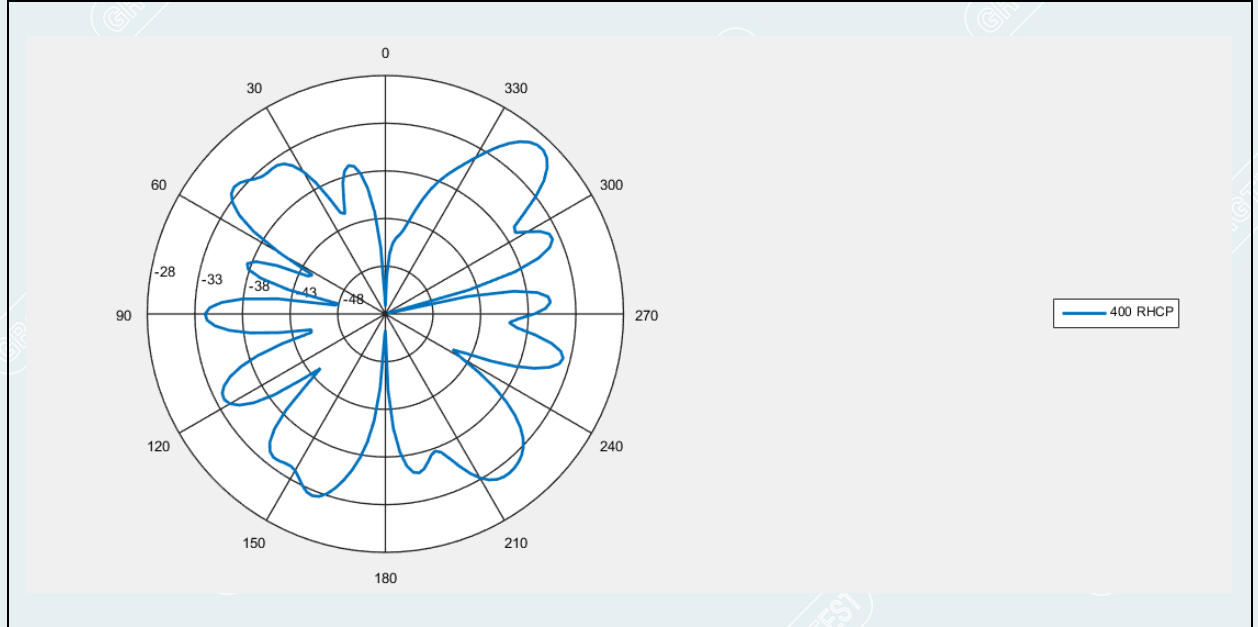
6.5 TEST RESULTS

Sample Name:	Radiating cable, 1 meter length	Sample Model:	CMC 12-NF-HLFR
Ambient temperature:	22.8°C/41%RH/101kPa	Test Status:	Free space
Test Voltage	/	Tested by:	Ma lintao
Test Date:	2022-10-11	Sample No:	E202209286466-0001
The antenna polarization:	/	Test range	/

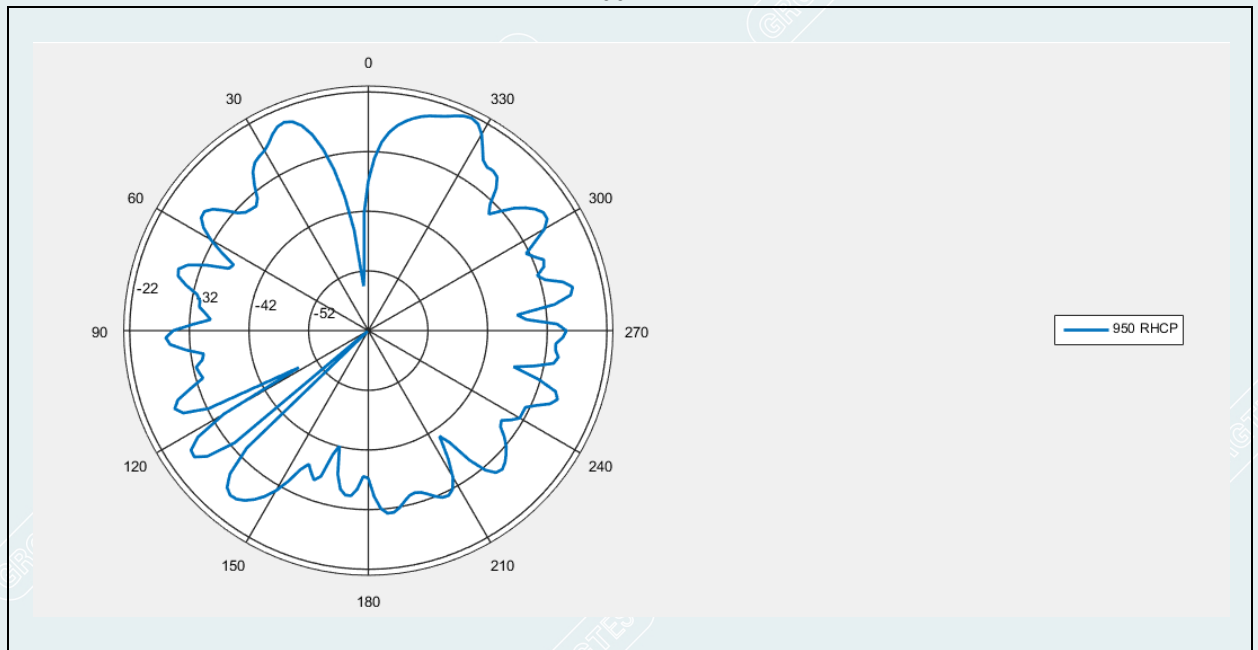
Test Item	Test frequency(MHz)	Test data
		The port number: 1
Gain(dBi)	400	-26.99
	450	-31.84
	500	-26.55
	550	-27.93
	600	-28.17
	650	-24.20
	700	-25.66
	750	-24.91
	800	-22.05
	850	-24.83
	900	-22.27
	950	-20.17
	1000	-23.25
	1050	-18.60
	1100	-20.27
	1150	-20.01
	1200	-17.39
	1250	-19.60
	1300	-17.68
	1350	-19.86
	1400	-21.34
	1450	-23.02
	1500	-21.88
	1550	-21.96
	1600	-22.80
	1650	-20.41
	1700	-21.50
	1750	-22.06
	1800	-20.83
	1850	-21.05
1900	-21.65	
1950	-20.47	
2000	-22.14	
2050	-21.55	
2100	-20.15	
2150	-22.11	
2200	-20.46	
2250	-20.98	
2300	-21.56	
2350	-20.46	
2400	-21.44	
2450	-20.90	
2500	-20.68	

6.6 RESULT GRAPH

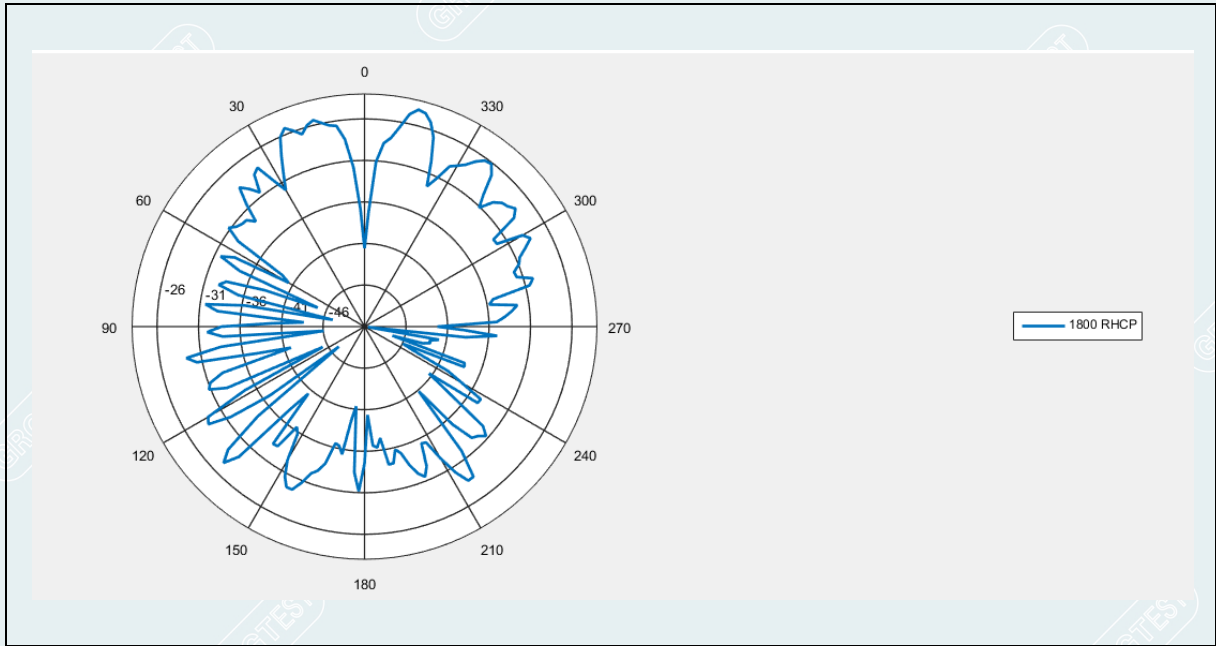
1) 2D RESULT PICTURE



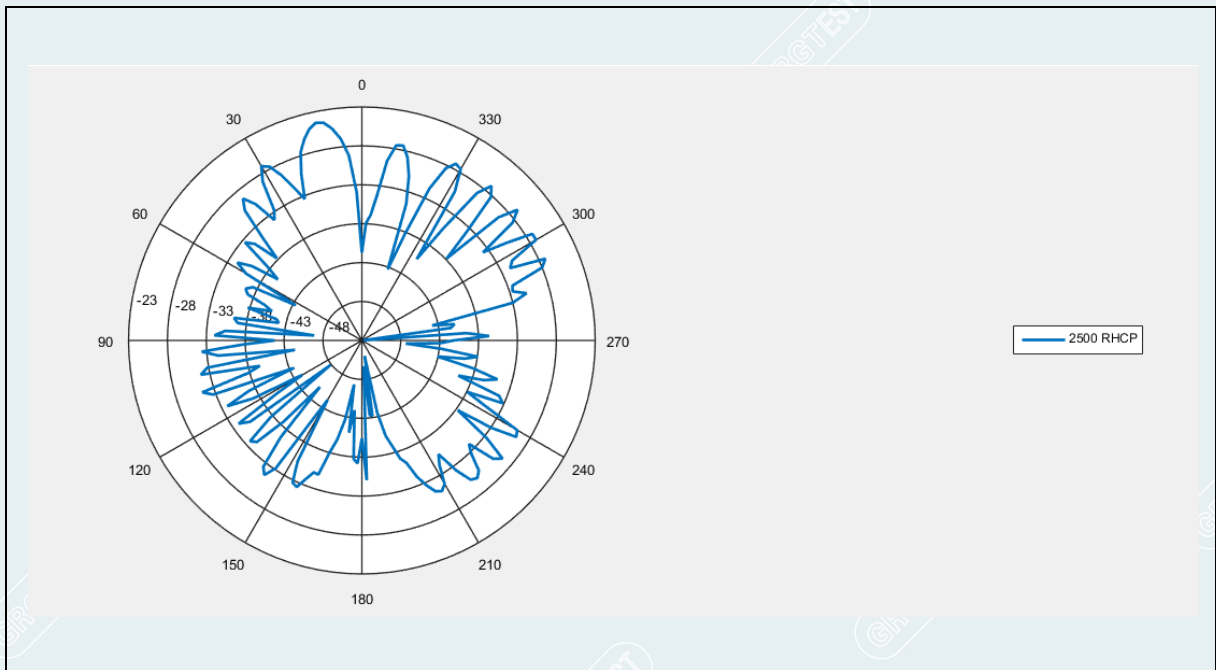
400MHz



950MHz

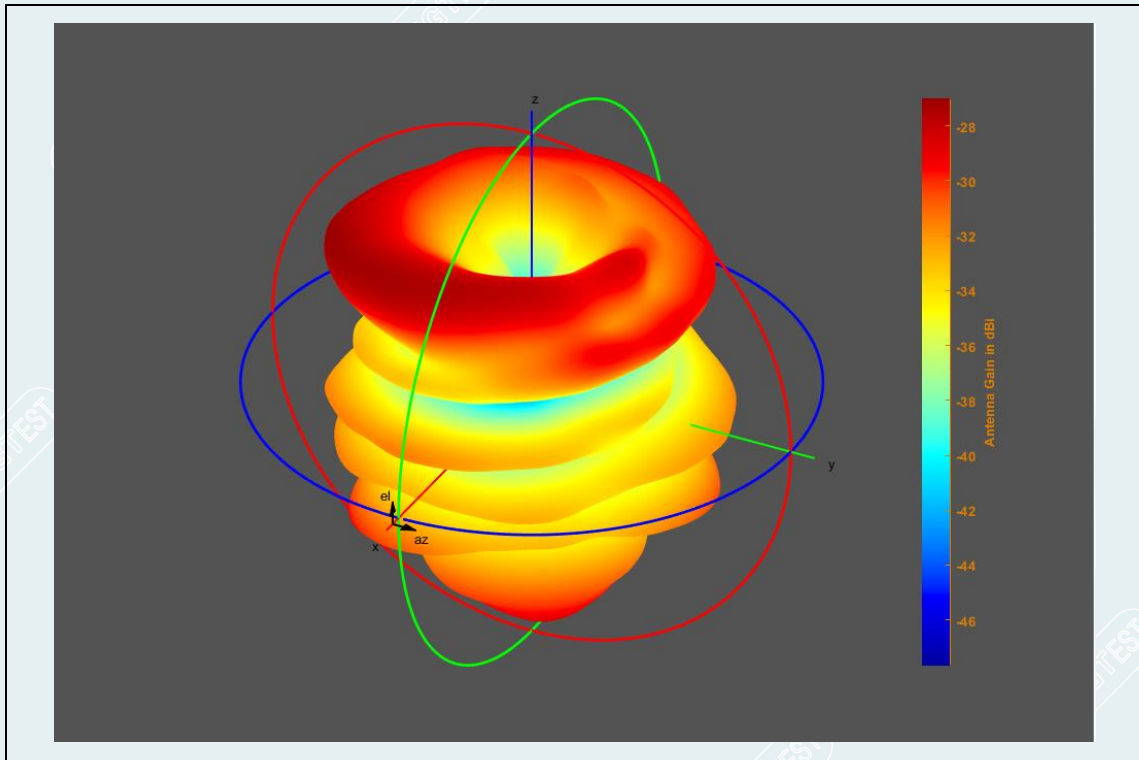


1800MHz

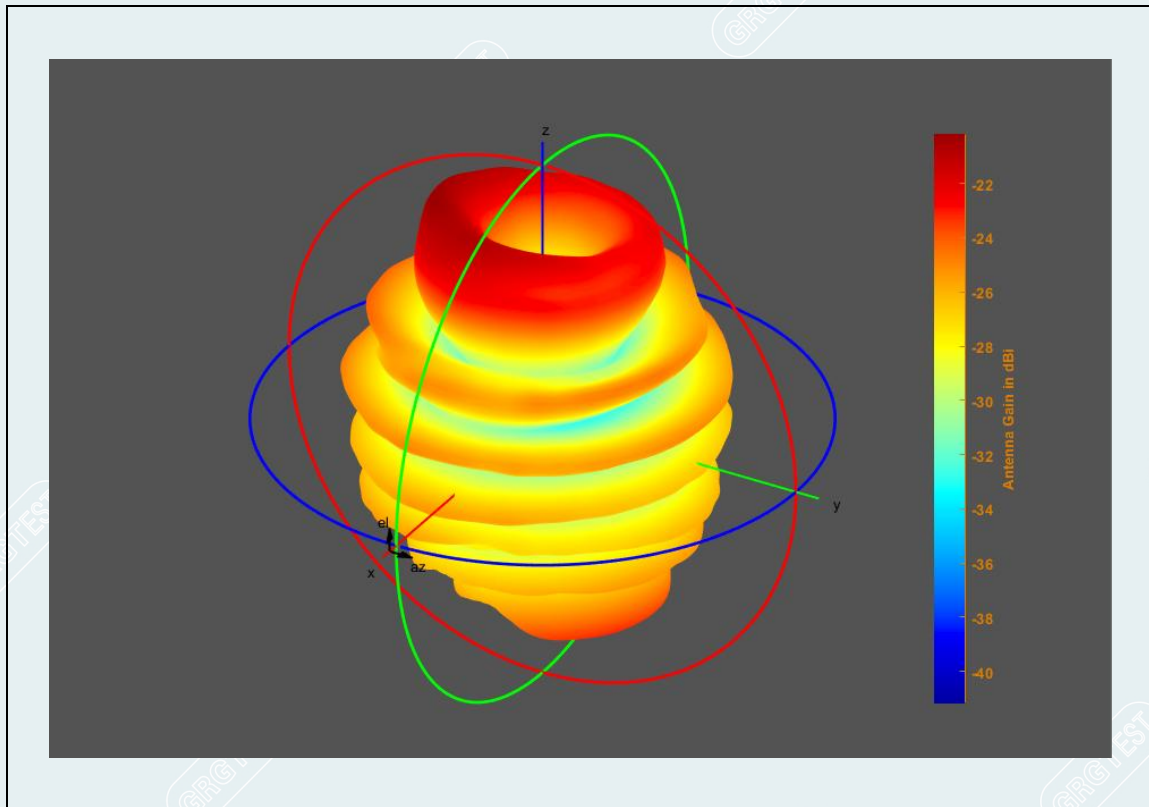


2500MHz

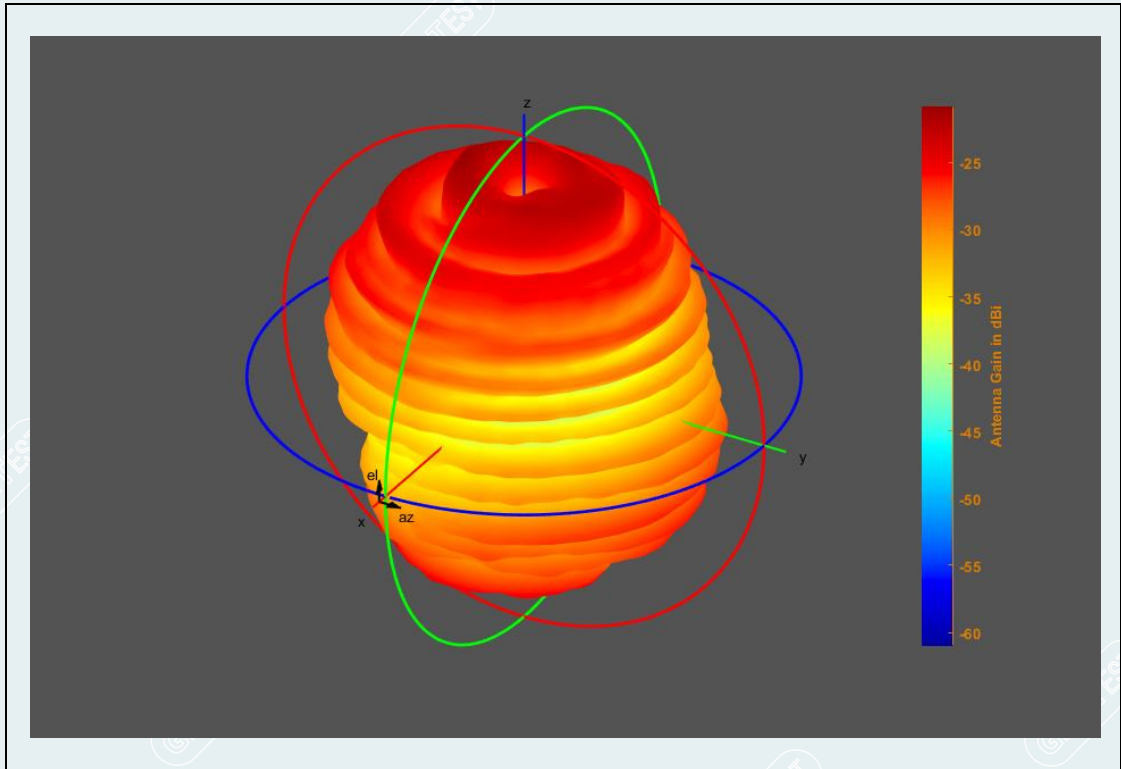
2) 3D RESULT PICTURE



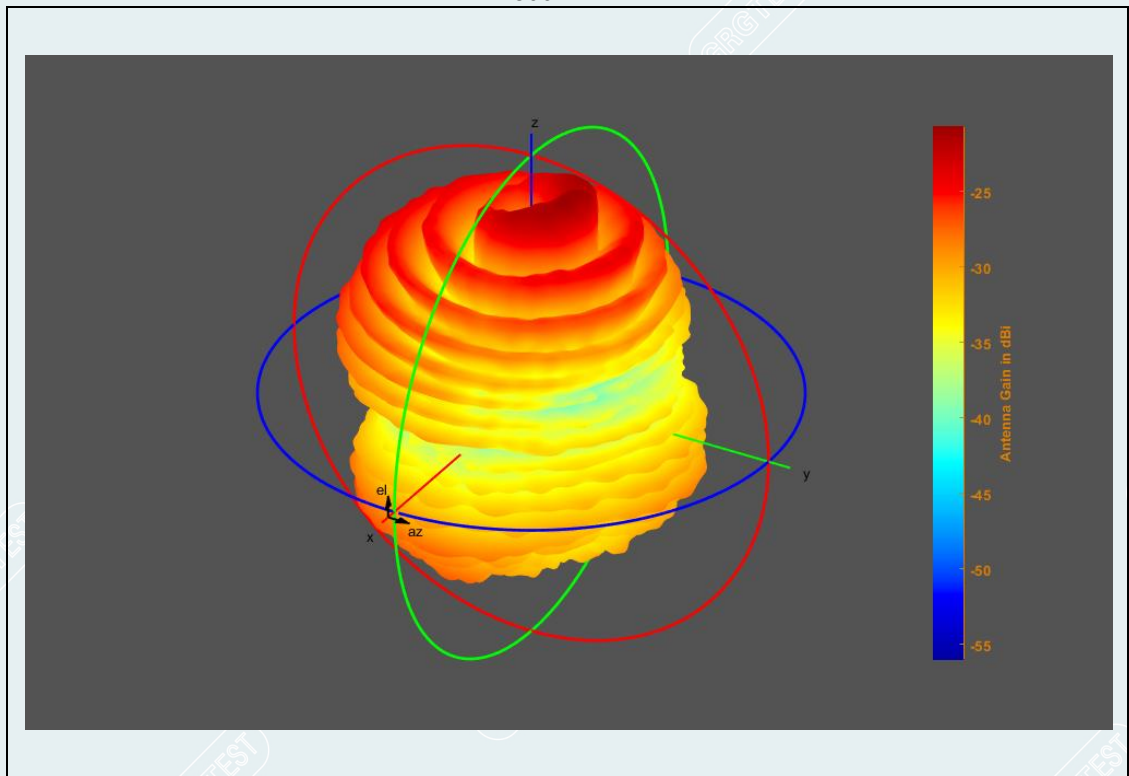
400MHz



950MHz



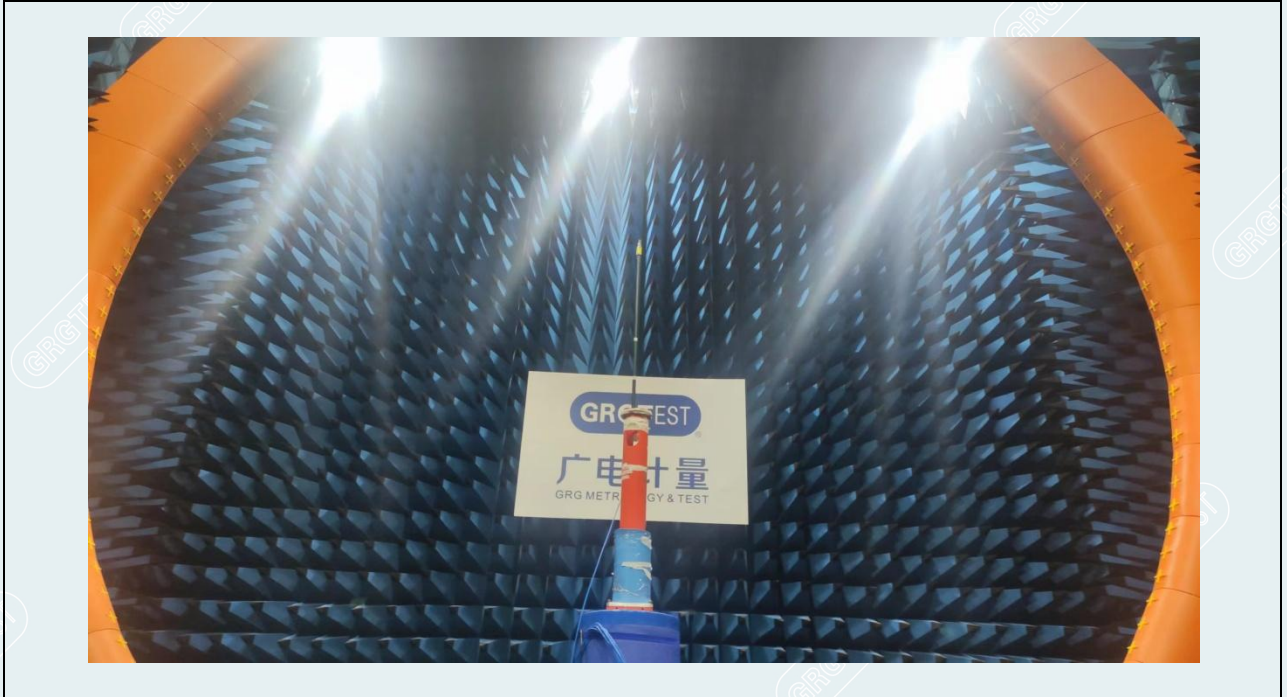
1800MHz



2500MHz

7. PHOTOGRAPHS

7.1 PHOTOGRAPH OF THE TEST CONNECTION DIAGRAM



Test environment photo

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7.2 PHOTOGRAPH OF THE EUT

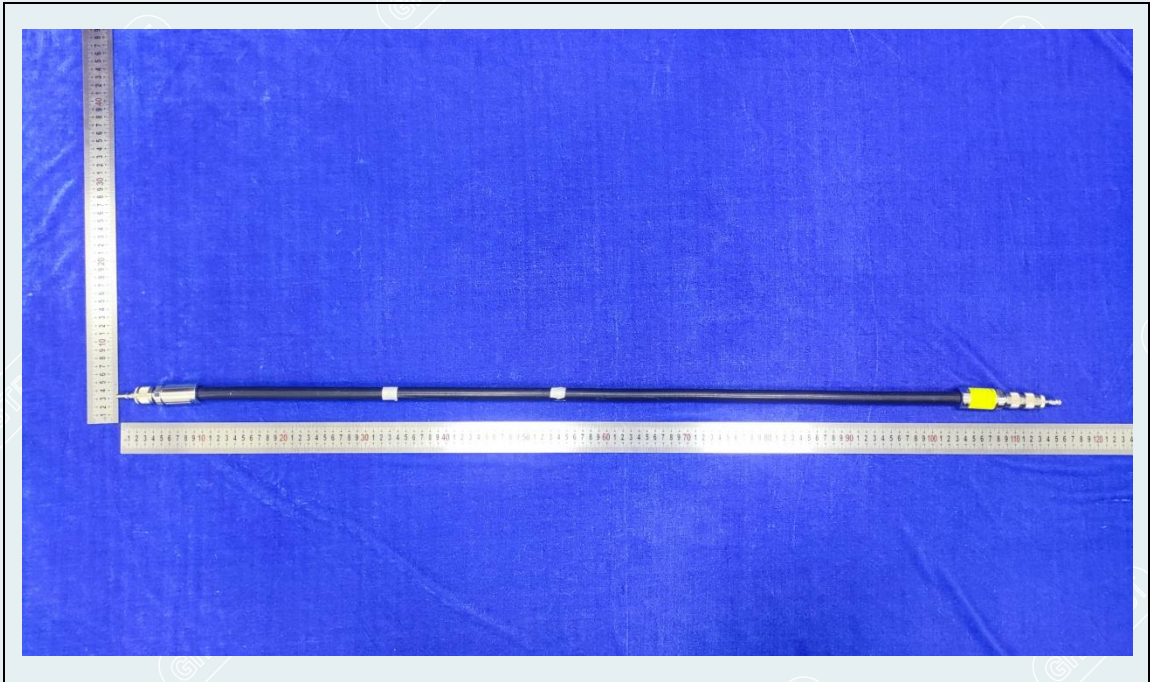


Photo 1

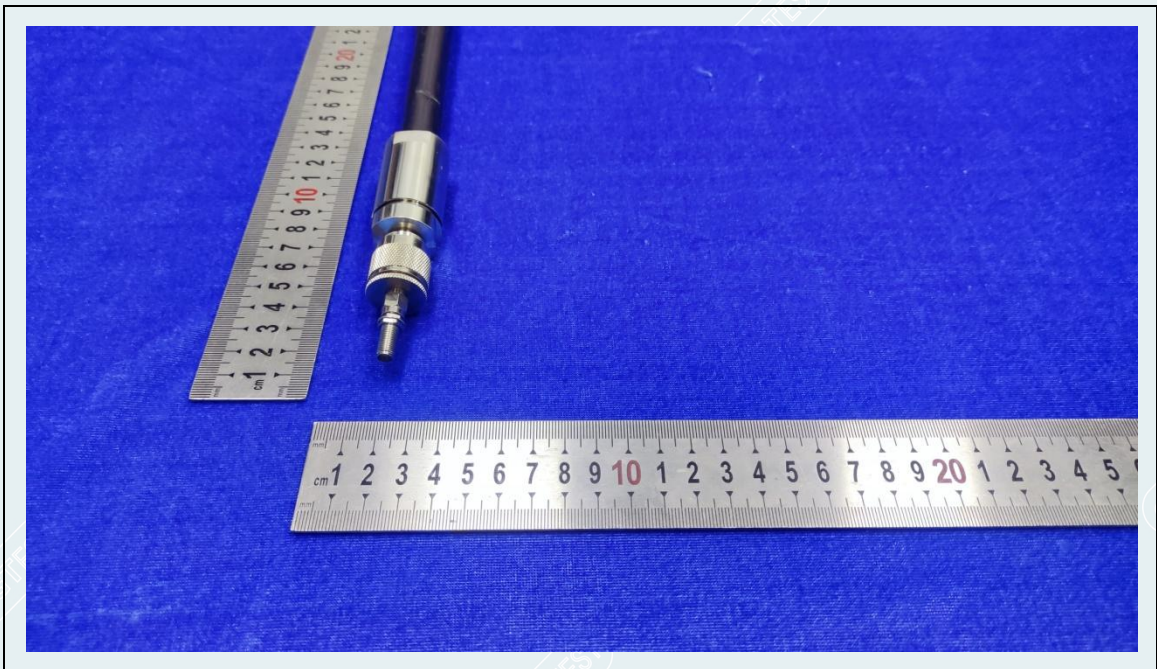


Photo 2

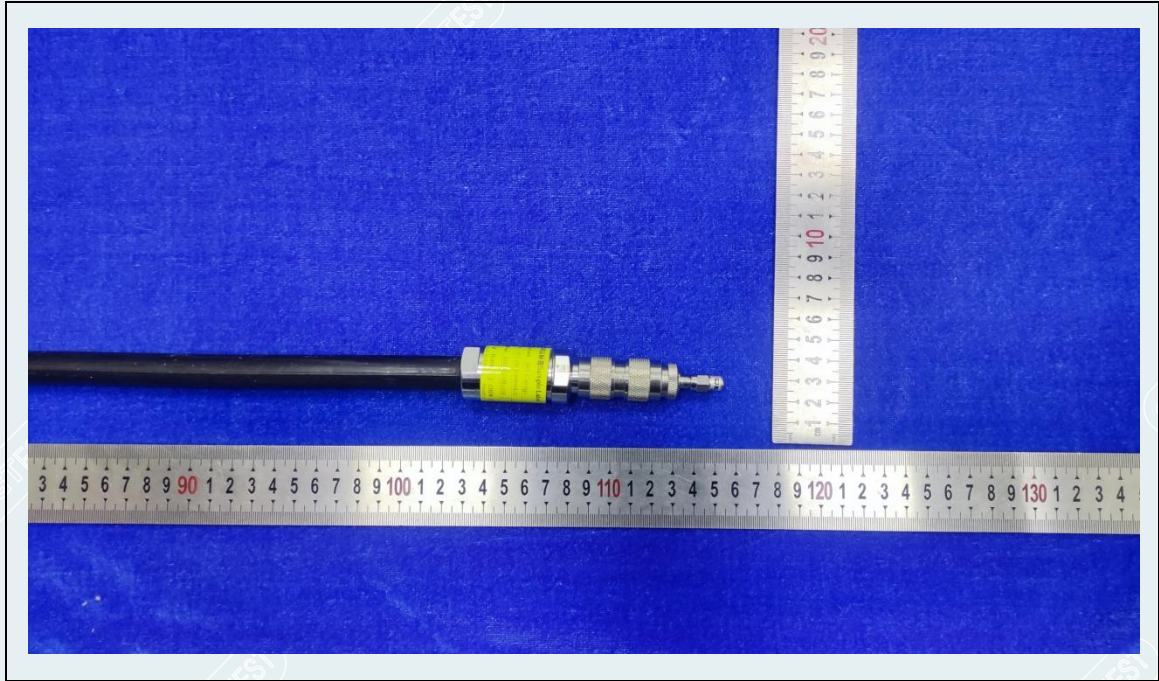


Photo 3

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