

## Antenna Gain test report

FCC ID : 2ABZ2-OPD2403

Equipment : Tablet

Brand Name : ONEPLUS

Model Name : OPD2403

Manufacturer : OPPO Guangdong Mobile Communication  
Co., LTD

Address : Industrial Park, No. 18 Haibin Road, Chang'an Town,  
Dongguan

Issue Date : May 28, 2024

Project Engineer: jun Zhang Date:2024/5/28

Checked by: chungui Xu Date:2024/5/28

Approved by: changhong Tang Date:2024/5/28

**Antenna**

**Location&dimension:**

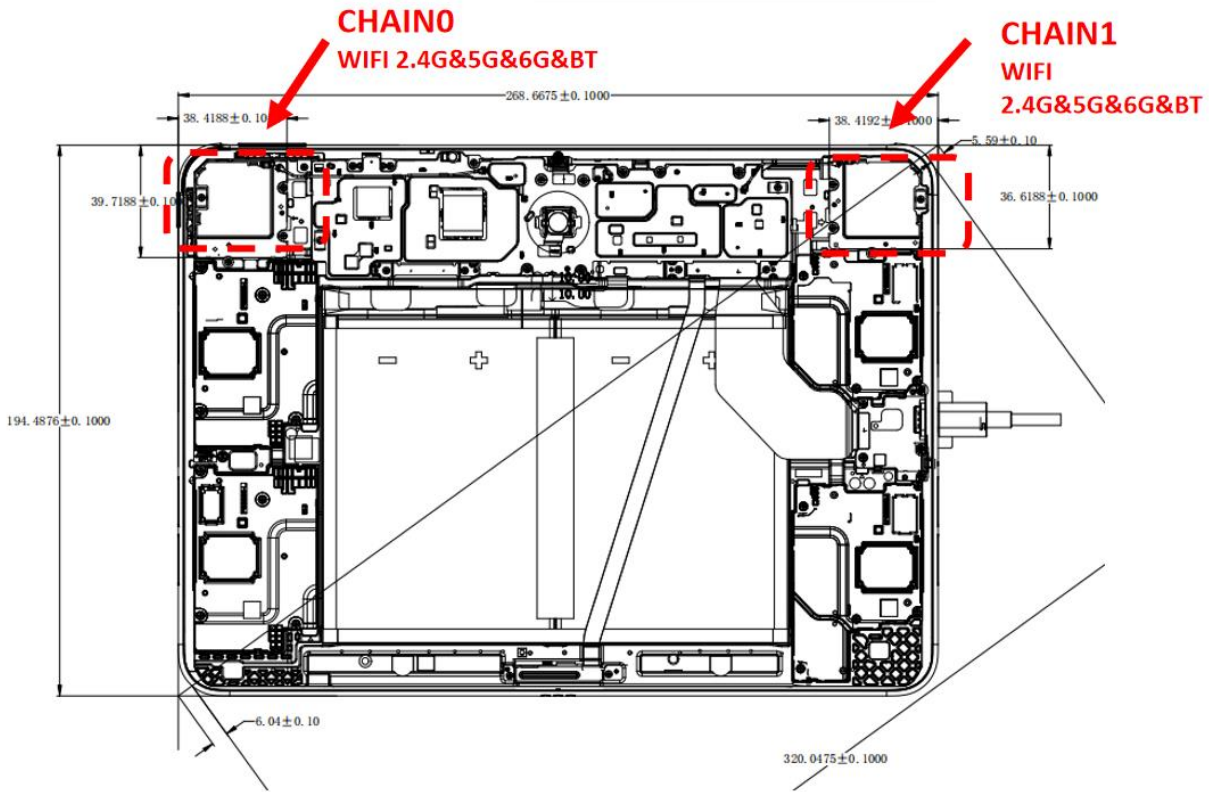


Fig 1 Antenna location&dimension

**Antenna Gain and Antenna Type specification:**

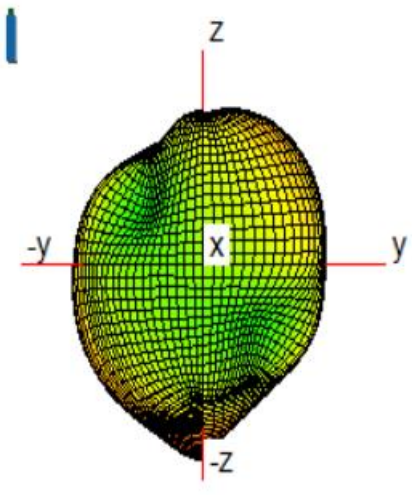
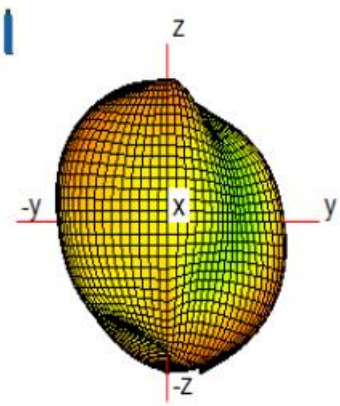
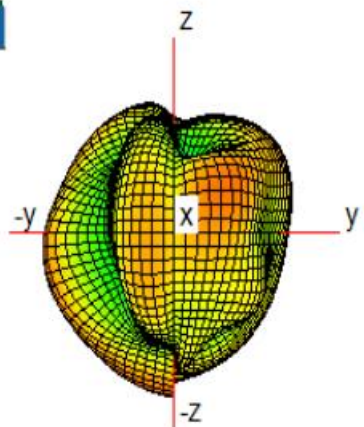
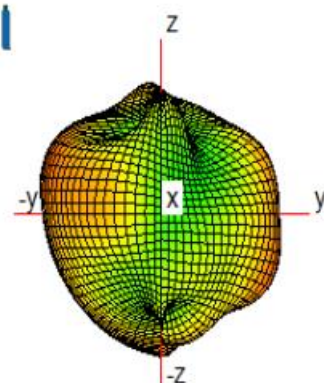
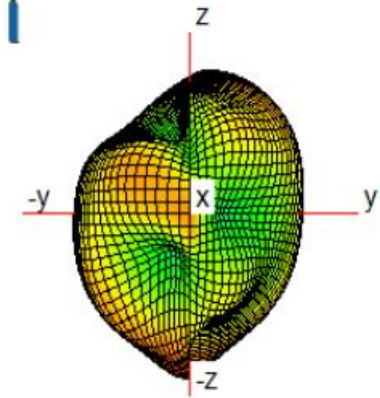
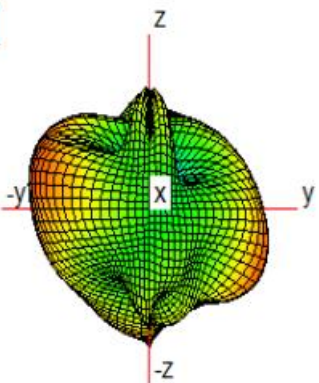
Antenna Gain (dBi)		Ant 0	Ant 1	Antenna Type	Antenna model name	Manufacturer
2.4G WiFi	2412~2462MHz	-1.4	-1.5	PIFA	P88666-ANT0-SHIELD	OPPO
BT	2402~2480MHz	-1.4	-1.5	PIFA		OPPO
Antenna Gain (dBi)		Ant 9	Ant 15	Antenna Type		OPPO
5G WiFi	5150~5250 MHz	-1.3	-0.4	PIFA		OPPO
	5250~5350 MHz	-1.1	-0.8	PIFA	OPPO	
	5470~5725 MHz	-1.4	-2.7	PIFA	OPPO	
6G WiFi	5725~5850 MHz	-1.4	-1.6	PIFA	P88666-ANT1-FCC-SHIELD	OPPO
	5925-6425 MHz	-0.7	-0.1	PIFA		OPPO
	6425-6525 MHz	-0.9	-0.6	PIFA		OPPO
	6525-6875 MHz	-1.3	0.5	PIFA		OPPO
	6875-7125 MHz	-0.2	2.4	PIFA		OPPO

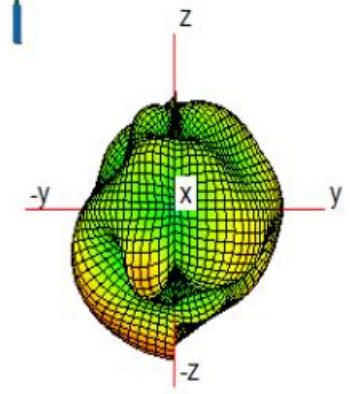
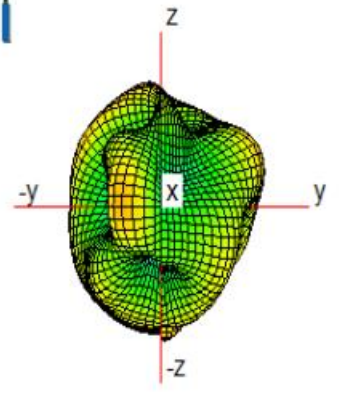
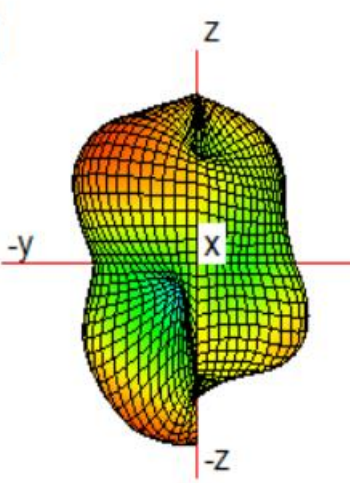
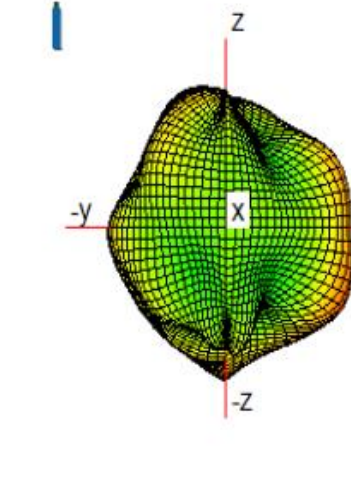
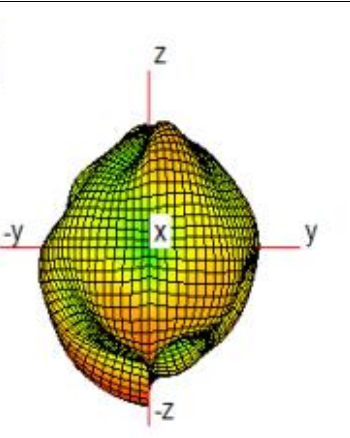
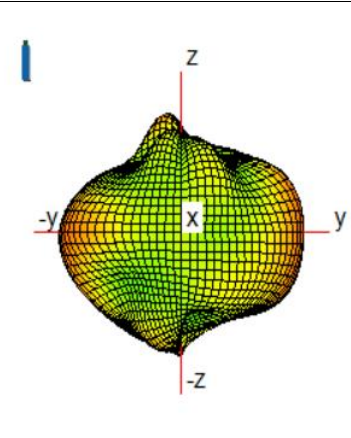
Table1 Antenna Gain and Antenna Type specification

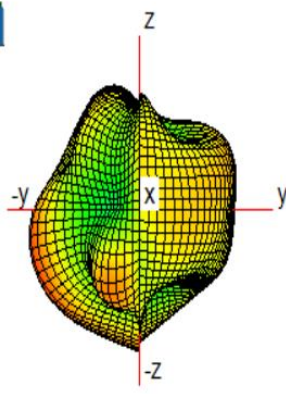
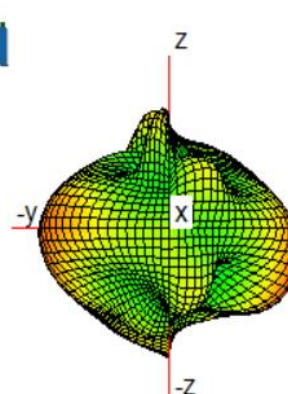
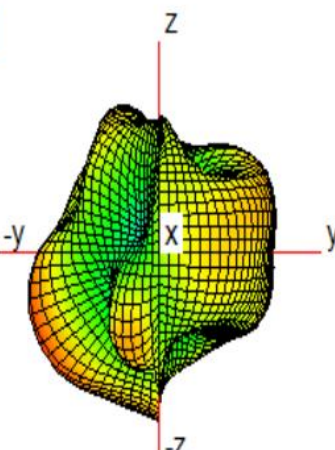
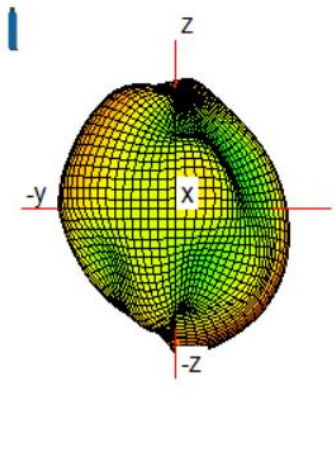
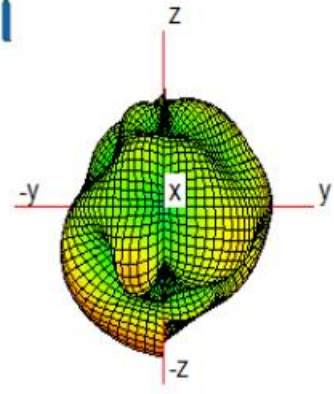
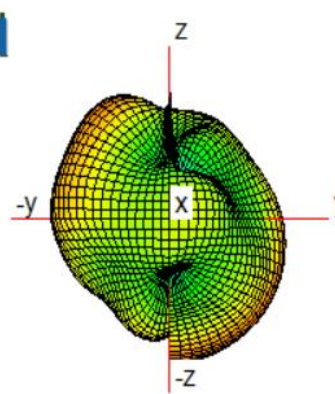
Note: Antenna gain was measured in the anechoic chamber, 3D scan was exercised, and the highest numbers are reported in this document.

Accoring toTest standard: IEEE Std 149-2021,we measure antenna gain .

**Antenna Radiation Pattern:**

	
<p>Ant0 WiFi 2.4G&amp;BT chain0 Gain: -1.4dB</p>	<p>Ant1 WiFi 2.4G&amp;BT chain1 Gain: -1.5dB</p>
	
<p>ANT0 WiFi 5G B1 chain0 Gain: -1.3dB</p>	<p>ANT1 WIFI 5G B1 Chain1 Gain: -0.4dB</p>
	
<p>ANT0 WiFi 5G B2 chain0 Gain: -1.1dB</p>	<p>ANT1WIFI 5G B2 Chain1 Gain: -0.8dB</p>

	
ANT0 WiFi 5G B3 chain0 Gain: -1.4dB	ANT1 WIFI 5G B3 Chain1 Gain: -2.7dB
	
ANT0 WiFi 5G B4 chain0 Gain:-1.4dB	ANT1 WIFI 5G B4 Chain1 Gain: -1.6dB
	
ANT0 WiFi 6G B5 chain0 Gain: -0.7dB	ANT1 WIFI 6G B5 Chain1 Gain: -0.1dB

	
<p>ANT0 WiFi 6G B6 chain0 Gain: -0.9dB</p>	<p>ANT1 WIFI 6G B6 Chain1 Gain: -0.6dB</p>
	
<p>ANT0 WiFi 6G B7 chain0 Gain: -1.3dB</p>	<p>ANT1 WIFI 6G B7 Chain1 Gain: 0.5dB</p>
	
<p>ANT0 WiFi 6G B8 chain0 Gain: -0.2dB</p>	<p>ANT1 WIFI 6G B8 Chain1 Gain: 2.4dB</p>

**List of Test and Measurement Instruments**

**TEST EQUIPMENT**

NO.	Equipment	Manufacturer	Model No.	Cal.data	Cal.due
1	GTS RayZone-2800	General Test	SN636692864	2023/06/14	2024/06/14
2	Network Analyzer 5071C	Kesight	MY4690575	2023/06/10	2024/06/10
3.	MaxSign Libra Test software	General Test	Version-1.1.16	NA	NA



Fig 1 dipole model RA-L2329DP  
frequency 2300~2900 MHz



Fig 2 dipole model RA-L4959DP  
frequency 4900~5900 MHz



Fig 3 dipole model RA-L5969DP  
frequency 5900~6900 MHz



Fig 4 dipole model RA-L6989DP  
frequency 6900~8000 MHz

## I. Measurement Setup:

### A. Reflection Coefficient Measurement:

**Instrument:** Network Analyzer (Kesight E5071C).

**Setup:**

1. Calibrate the Network Analyzer by one port calibration using Kesight 85093C Electronic calibration module .
2. Connect the antenna under test to the Network Analyzer.
3. Measure the S11(reflection coefficient),Return Loss....

### B. Pattern Measurement:

A Fully Anechoic Chamber is used to simulate free-space conditions.

A Fully Anechoic Chamber is a shielded room lined with RF/microwave absorber on all walls, ceiling, and floor.

RF/microwave absorber reduces reflections from the inner walls of the shield.

Absorber performance depends on the depth and design of the absorber and the angle of incidence of the field.

Normal incidence is best, shallower angles are worse.

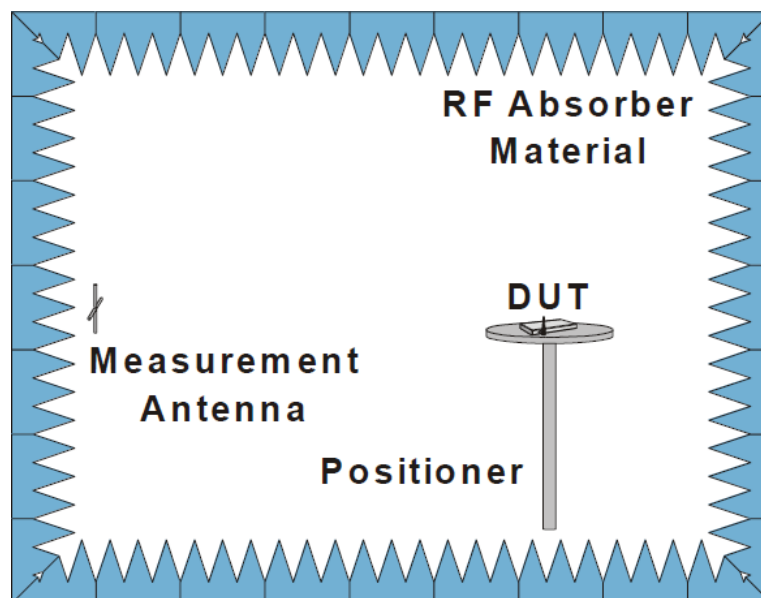




Fig. 5. The fully anechoic chamber



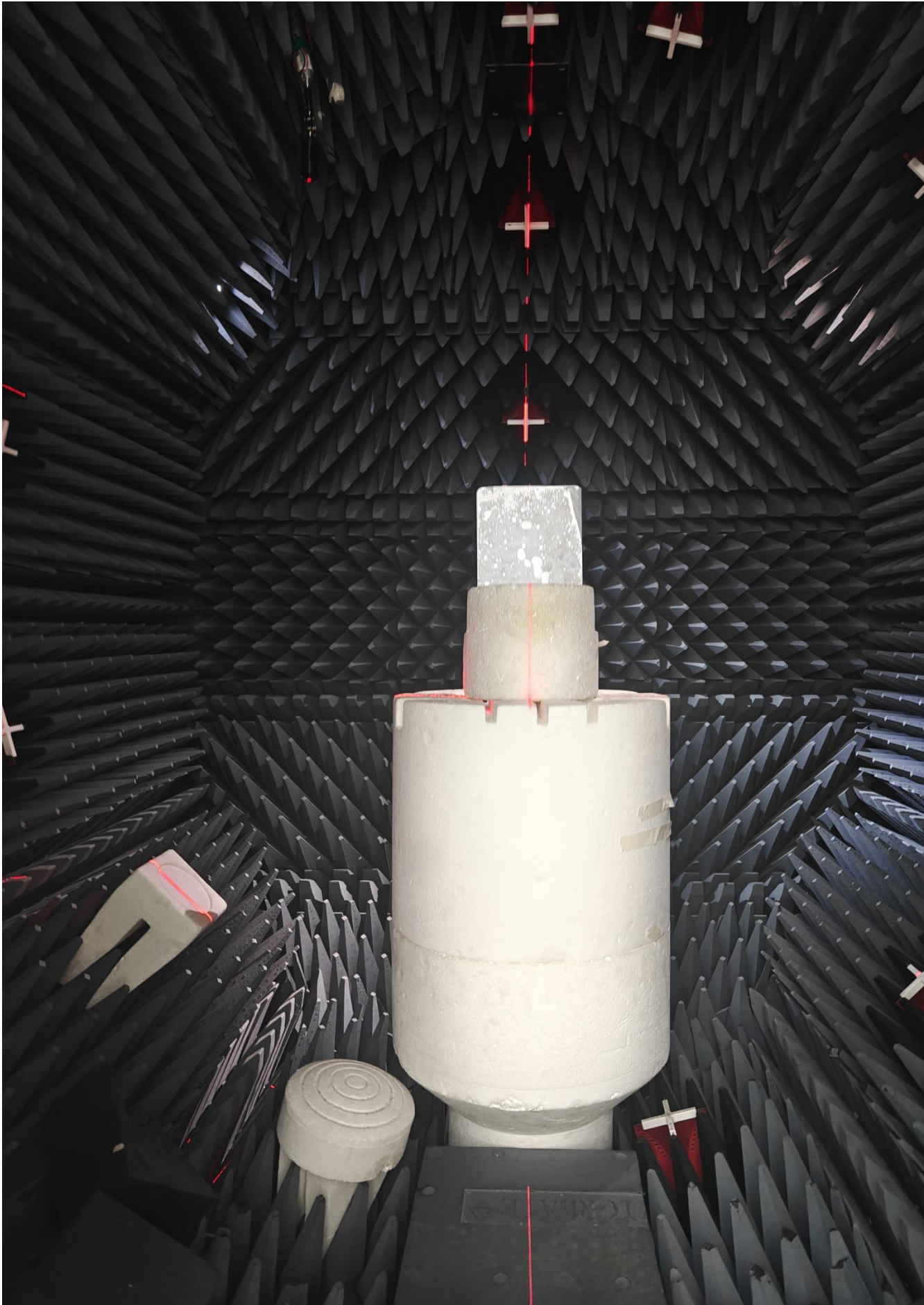


Fig.6. The DUT in the fully anechoic chamber