Antenna Gain test report

Equipment：Mobile Phone

Brand Name：OPPO

Model Name：CPH2781

Manufacturer：

Guangdong OPPO Mobile Telecommunications Corp., Ltd.

NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City, Guangdong, China

Issue Date：June 24, 2025

Checked by: Sen Gao Date:2025/6/24

Approved by: Ryan Jing Date: 2025/6/24

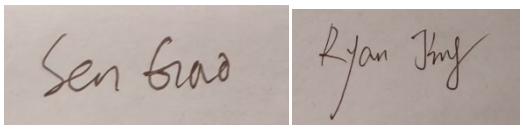


Fig 1 Antenna location&dimension

Antenna Gain and Antenna Type specification:

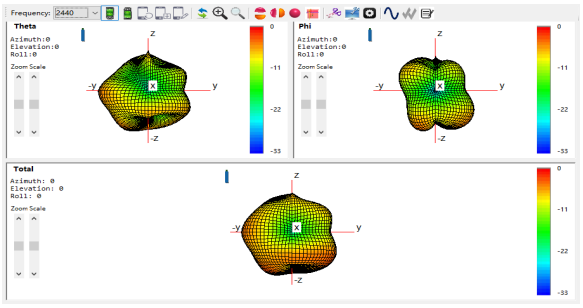
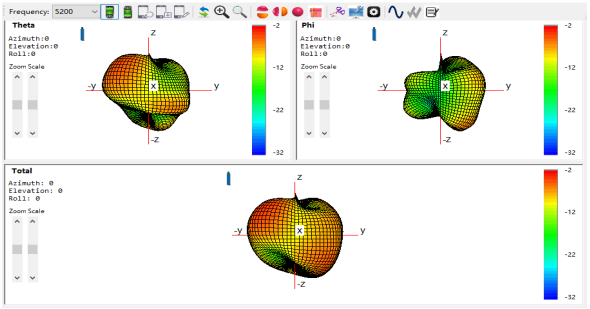
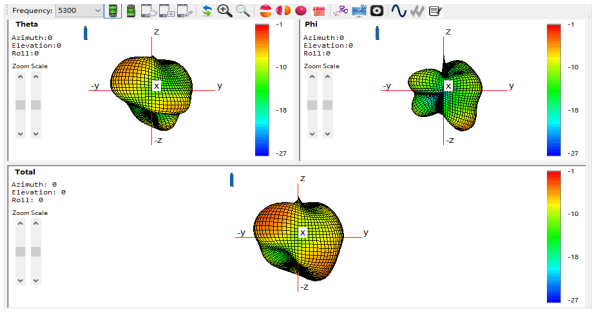
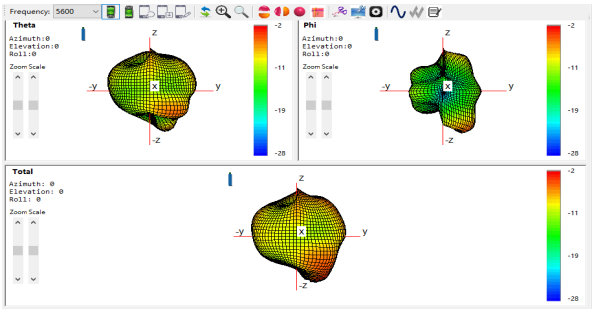
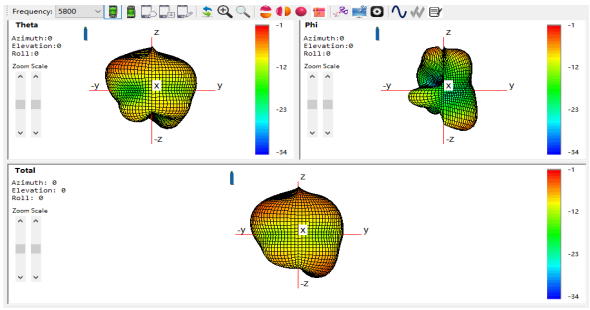
Antenna Gain (dBi)		Chain0	Antenna Type	Antenna model	Manufacturer
2.4G WiFi	2400~2483.5MHz	-1	Metal Dielectric Antenna	AC309-TOP-COVER	OPPO
5G Wifi	5150~5250 MHz	-3.2	Metal Dielectric Antenna	AC309-TOP-COVER	OPPO
	5250~5350 MHz	-1.9	Metal Dielectric Antenna	AC309-TOP-COVER	OPPO
	5470~5725 MHz	-2	Metal Dielectric Antenna	AC309-TOP-COVER	OPPO
	5725~5850 MHz	-1.6	Metal Dielectric Antenna	AC309-TOP-COVER	OPPO
BT	2400~2483.5MHz	-1	Metal Dielectric Antenna	AC309-TOP-COVER	OPPO
NFC	13.56MHz	/	FPC Antenna	AC309	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.

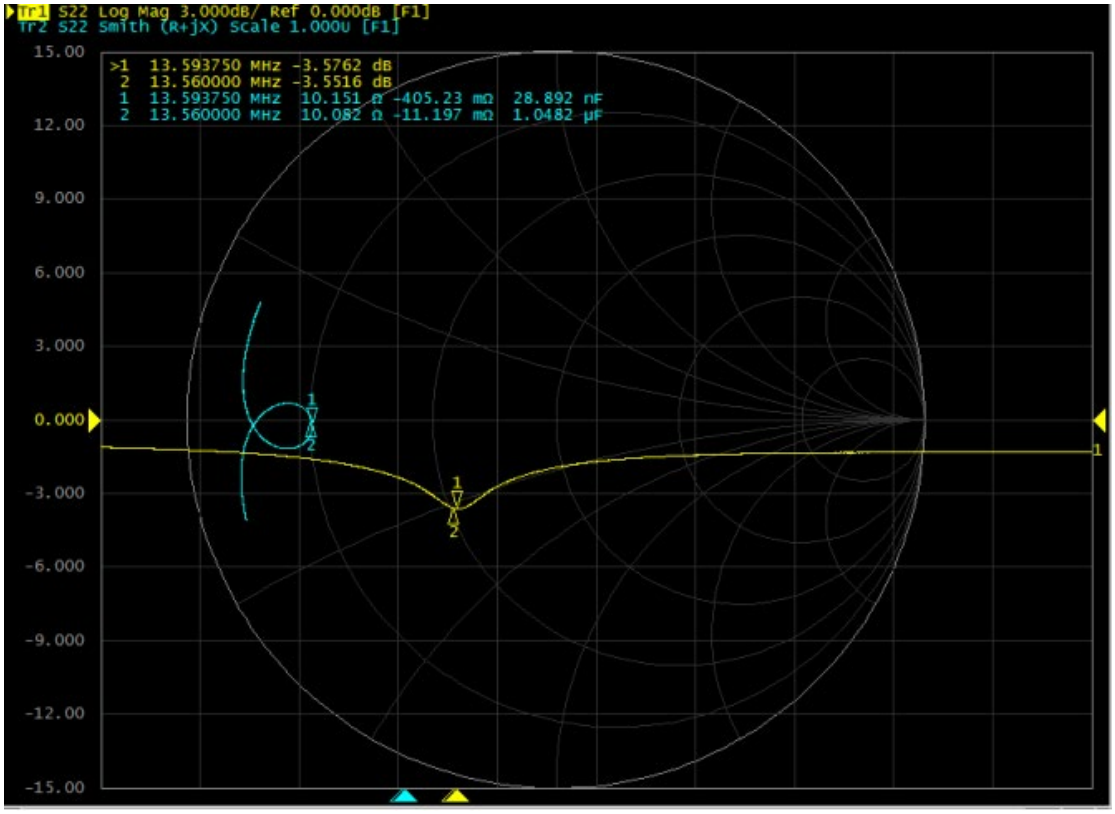
Accoring toTest standard: IEEE Std 149-2021,we measure antenna gain .

Antenna Radiation Pattern:

	ANT8
WIFI2.4G/BT	
WIFI5G b1 (5150~5250 MHz)	
WIFI5G b2 (5250~5350 MHz)	
WIFI5G b3 (5470~5725 MHz)	
WIFI5G b4 (5725~5850 MHz)	

NFC passive impedance on phone

Zload@13.56MHz		BW(-3dB)
10.08Ω-11.19mΩ		0.52MHz



List of Test and Measurement Instruments

TEST EQUIPMENT

NO.	Equipment	Manufacturer	Model No.	Cal.date	Cal.due
1	GTS RayZone-2800	General Test	SN5082	2025/3/20	2026/3/20
2	Network Analyzer E5071C	Keysight	MY470002855	2025/3/20	2026/3/20
3	MaxSign Libra Test softwave	General Test	Version-1.3.3	NA	NA

I. Measurement Setup:

A. Reflection Coefficient Measurement:

Instrument: Network Analyzer (Keysight E5071C).
Setup:
1. Calibrate the Network Analyzer by one port calibration using Keysight 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.

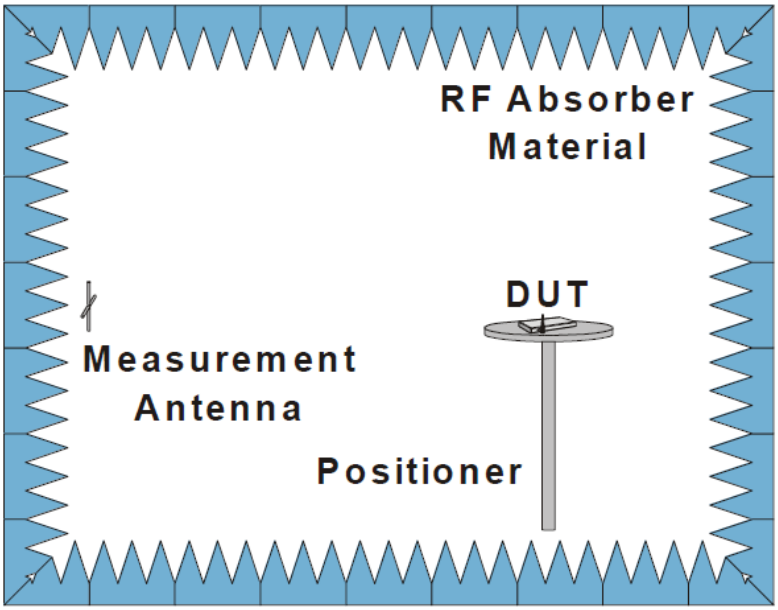


Fig. 4. The fully anechoic chamber