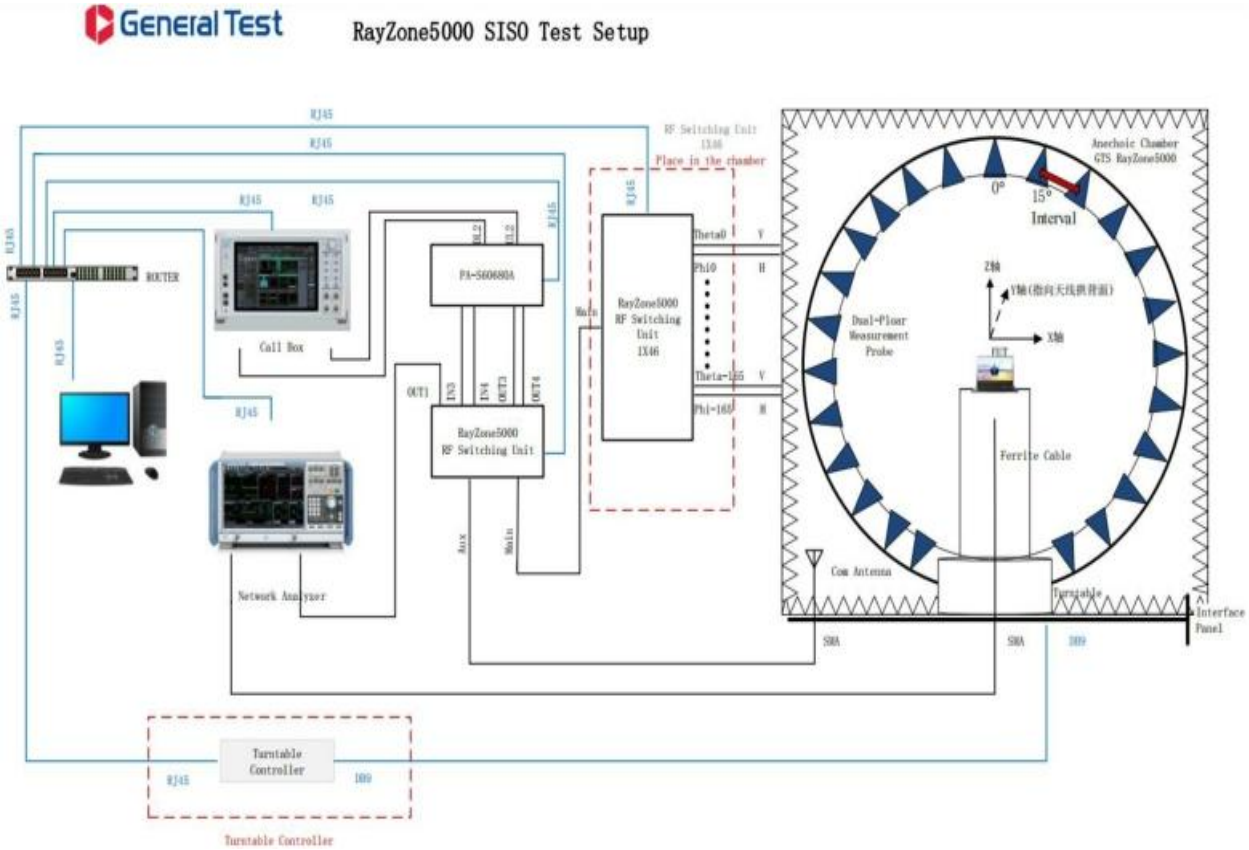
Antenna Report

1. Test Principle



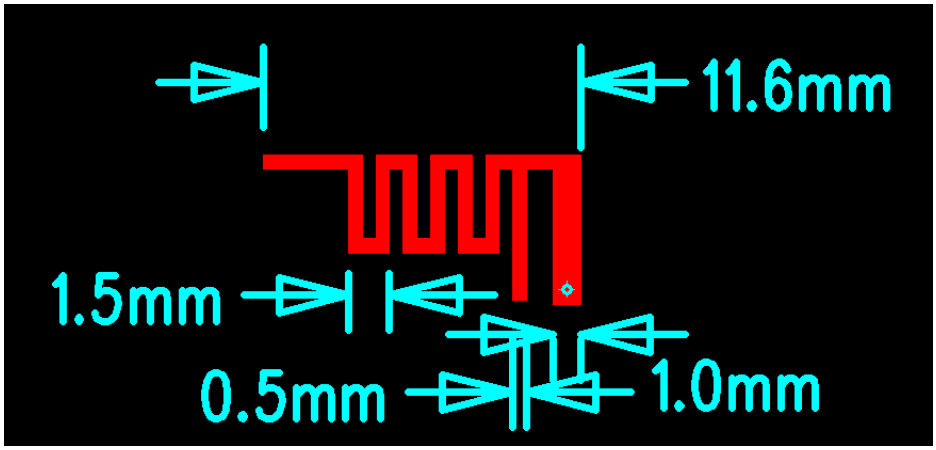
2. Test Equipment

Name	Model	Equipment No.	Manufacturer	Calibration date	Date of next calibration
OTA Test system	RayZone-5000	RFI-LAB-RF-D00	GTS	2021.3.22	2023.3.21
Network analyzer	E5071C	RFI-LAB-RF-C02	KEYSIGHT	2022.5.13	2023.5.12
Network analyzer	E5071C	RFI-LAB-RF-D01	KEYSIGHT	2022.5.13	2023.5.12

3. Test Environment

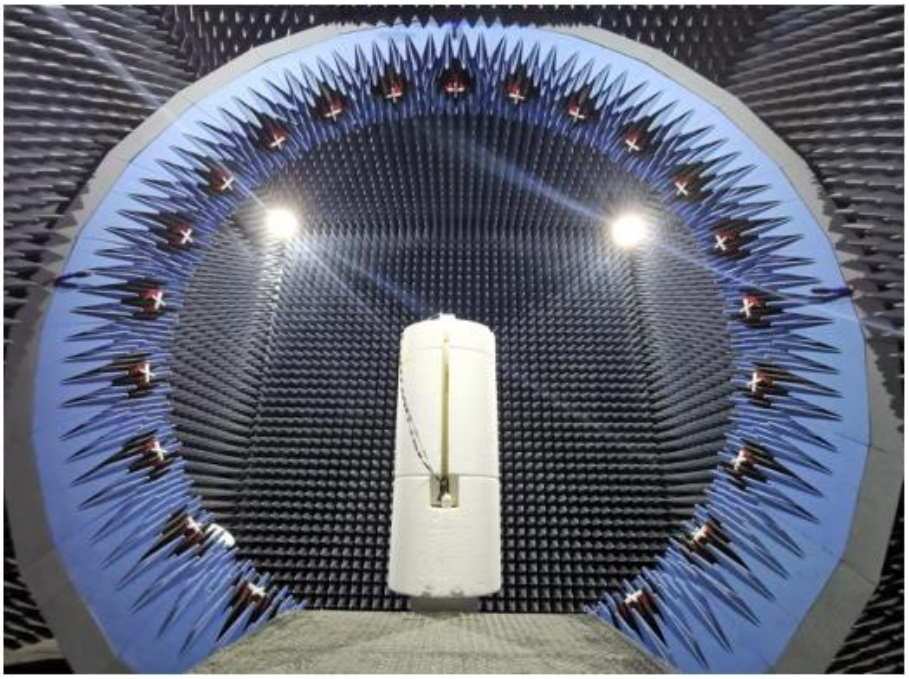
Ambient temperature	23.6℃
Relative humidity	58%RH
Atmospheric pressure	100.14kPa

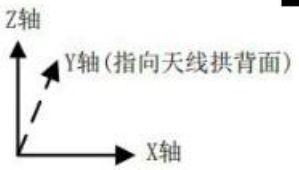
4. Sample size



5. Sample test layout diagram

Main view





6.Test result

6.1 Detection basis

Object name	Parameter name	Method name	By standard number
Mobile communication antenna	Radiation pattern	General technical specification for mobile communication antennas	GB/T 9410-2008
	Antenna gain		
	Voltage standing wave ratio		
	Roundness of the directional graph		
Antenna	Gain and directivity	IEEE Standard procedure for antenna testing	ANSI/IEEE Std 149-1979
	Radiation efficiency		
	impedance		

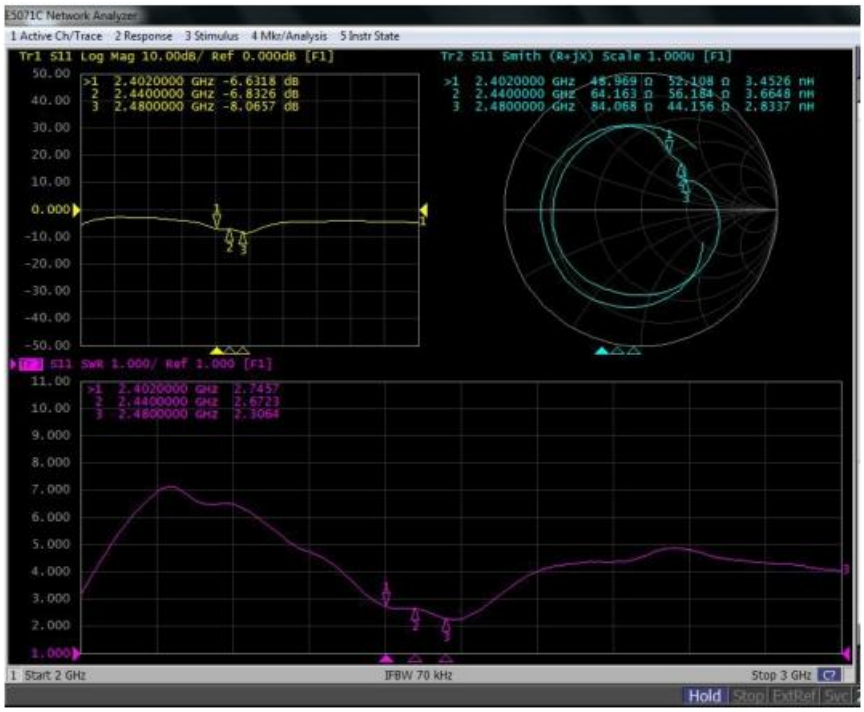
6.2 Test uncertainty

The calculation of Uncertainty is based on the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO, which uses K=2 inclusion factor and 95% confidence level to represent extended uncertainty.

Item	Uncertainty
Standing-wave ratio	±0.3
Gain, Efficiency	±0.72dB

7. Test data

7.1 Network analyzer test



7.2 Standing-wave ratio

Frequency/MHz	2402	2440	2480
Voltage standing wave ratio	2.7457	2.6723	2.3064

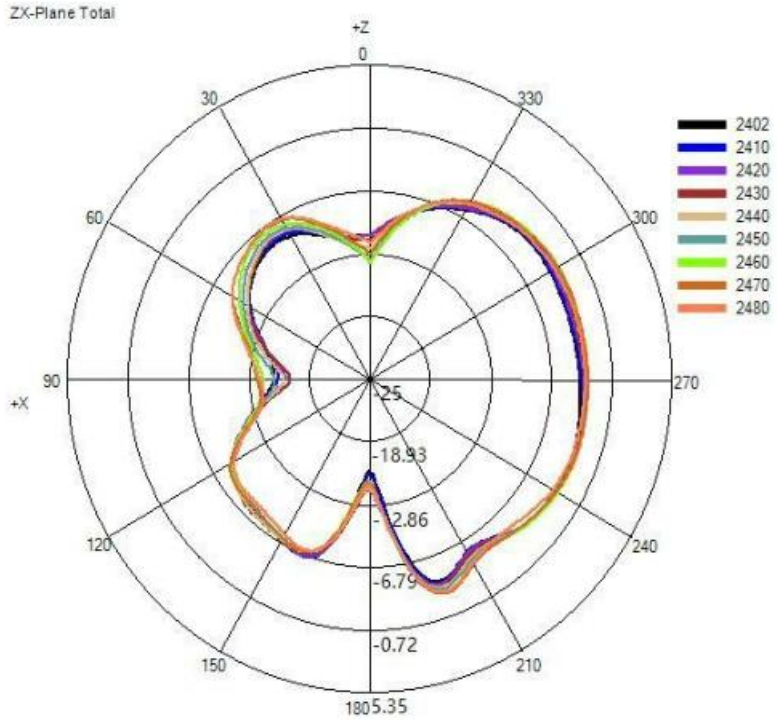
7.3 Gain and efficiency

Frequency/MHz	2402	2410	2420	2430	2440	2450	2460	2470	2480
Maximum gain/dBi	-1.97	-1.95	-1.63	-1.49	-1.27	-1.06	-0.89	-0.71	-0.95
Efficiency/%	17.88	18.34	19.20	19.89	20.58	20.86	21.78	22.18	21.03

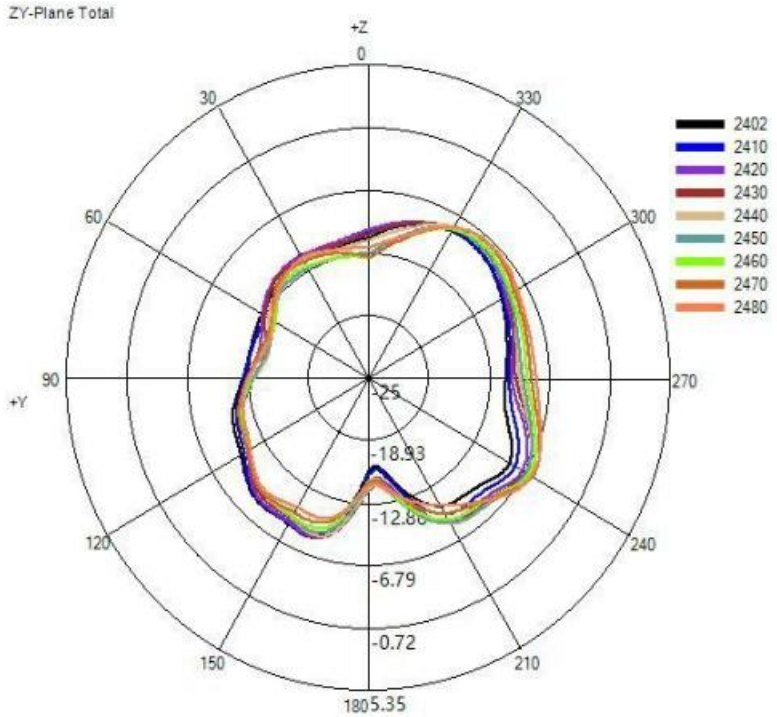
7.4 Roundness of the directional graph

Frequency//MHz	2402	2410	2420	2430	2440	2450	2460	2470	2480
H Theta=90/dB	20.55	20.57	20.15	19.12	18.93	20.11	20.49	19.26	16.51

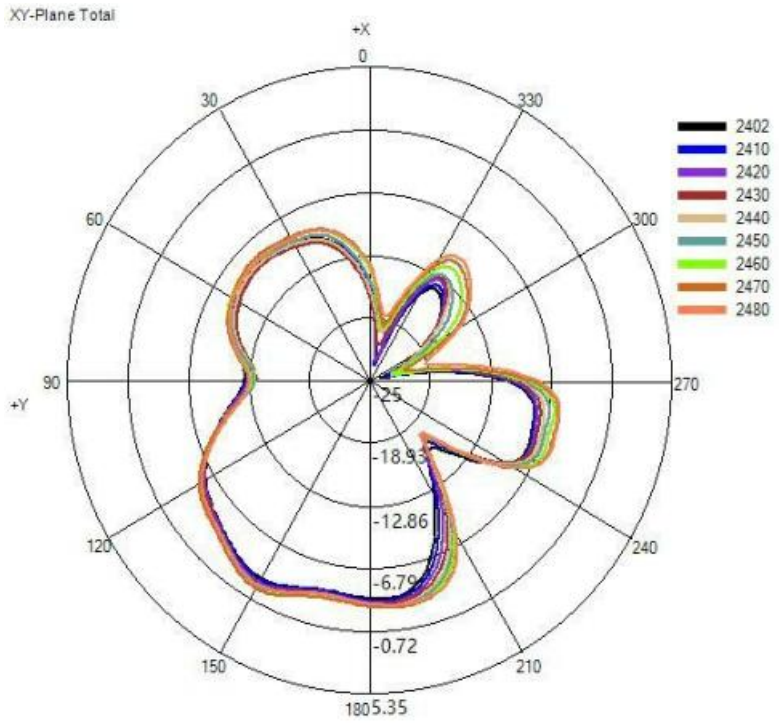
7.5 Directional diagram



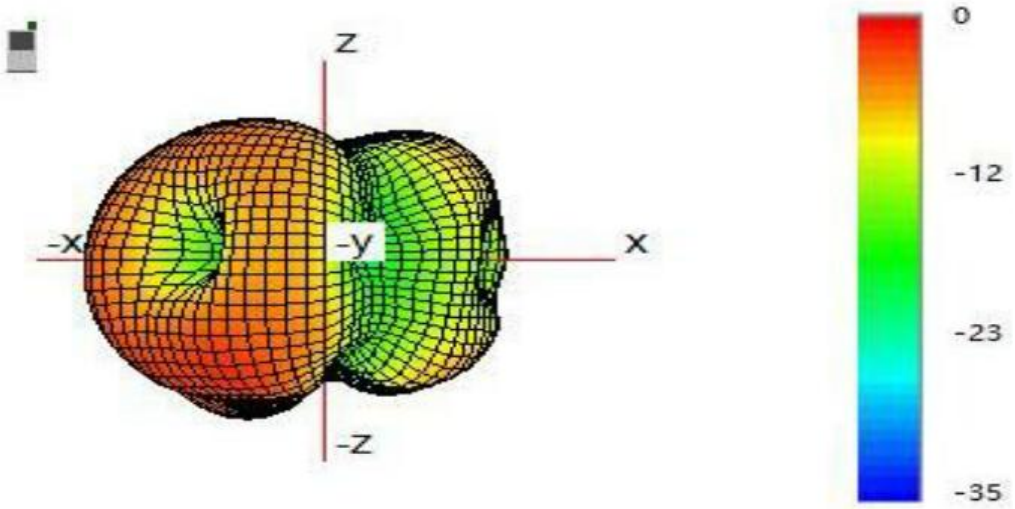
(2) Y-Z plane(unit：dBi)：



(3) X-Y plane(unit：dBi)：



(4) 2470MHz 3D orientation diagram (unit: dBi) :



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