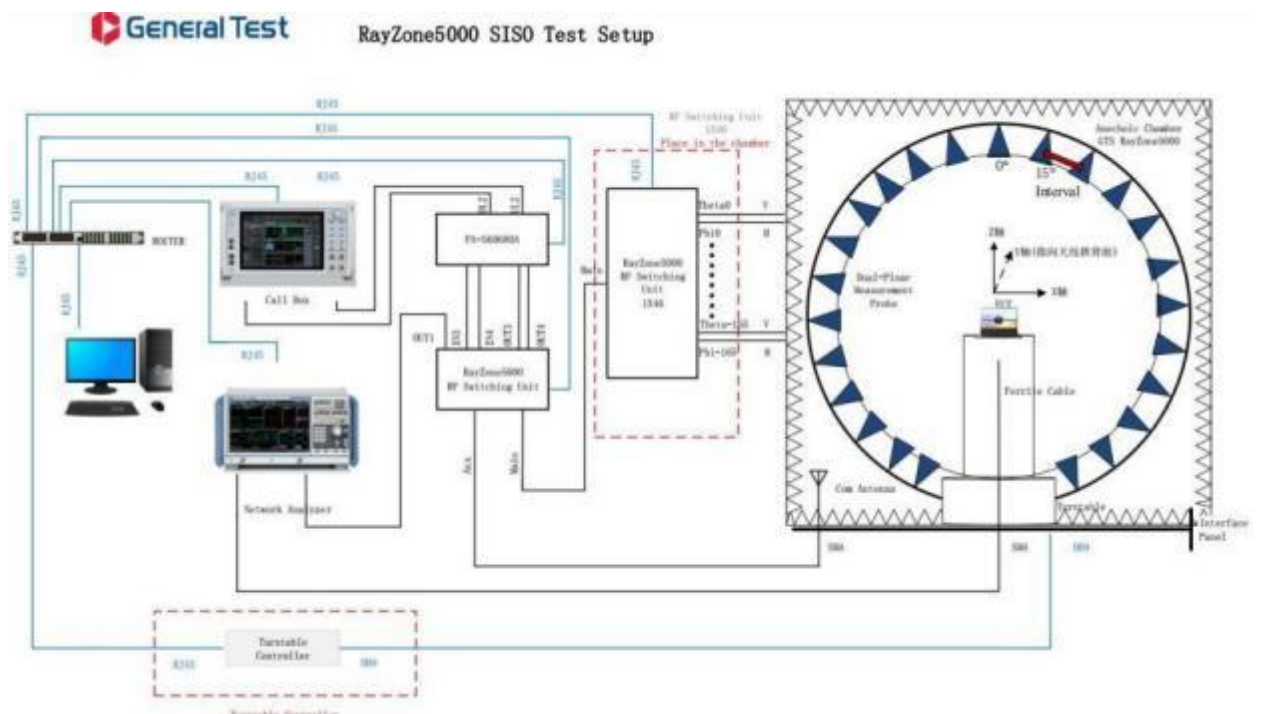


Specification

1、essential information

1.1 Test Principles



1.2 testing facility

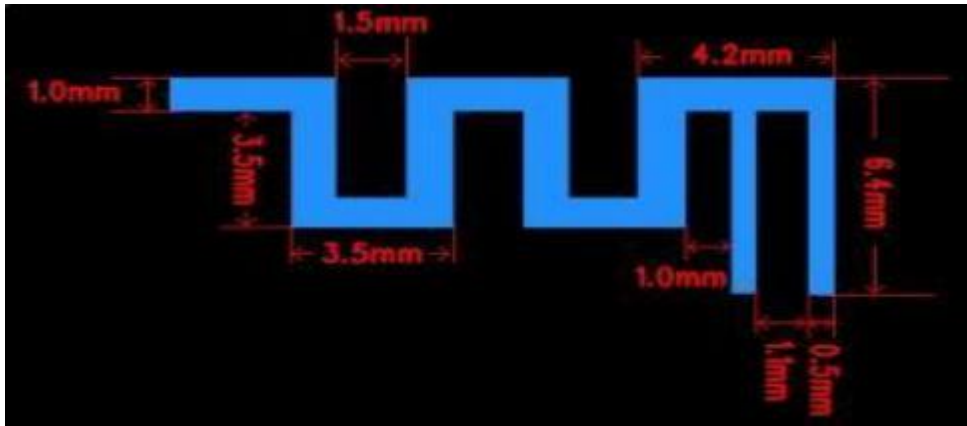
Name	Model	Equipment number	Manufacturer	Calibration Date	Next time Calibration Date
OTA Testing System	RayZone-5000	RFI-LAB-RF-D00	GTS	2021.3.22	2023.3.212
network analyzer	E5071C	RFI-LAB-RF-C02	KEYSIGHTK	2022.5.13	023.5.12
network analyzer	E5071C	RFI-LAB-RF-D01	EYSIGHT	2022.5.13	2023.5.12

1.3 Testing environment

ambient temperature	23.7℃
relative humidity	58%RH
atmospheric pressure	100.14kPa

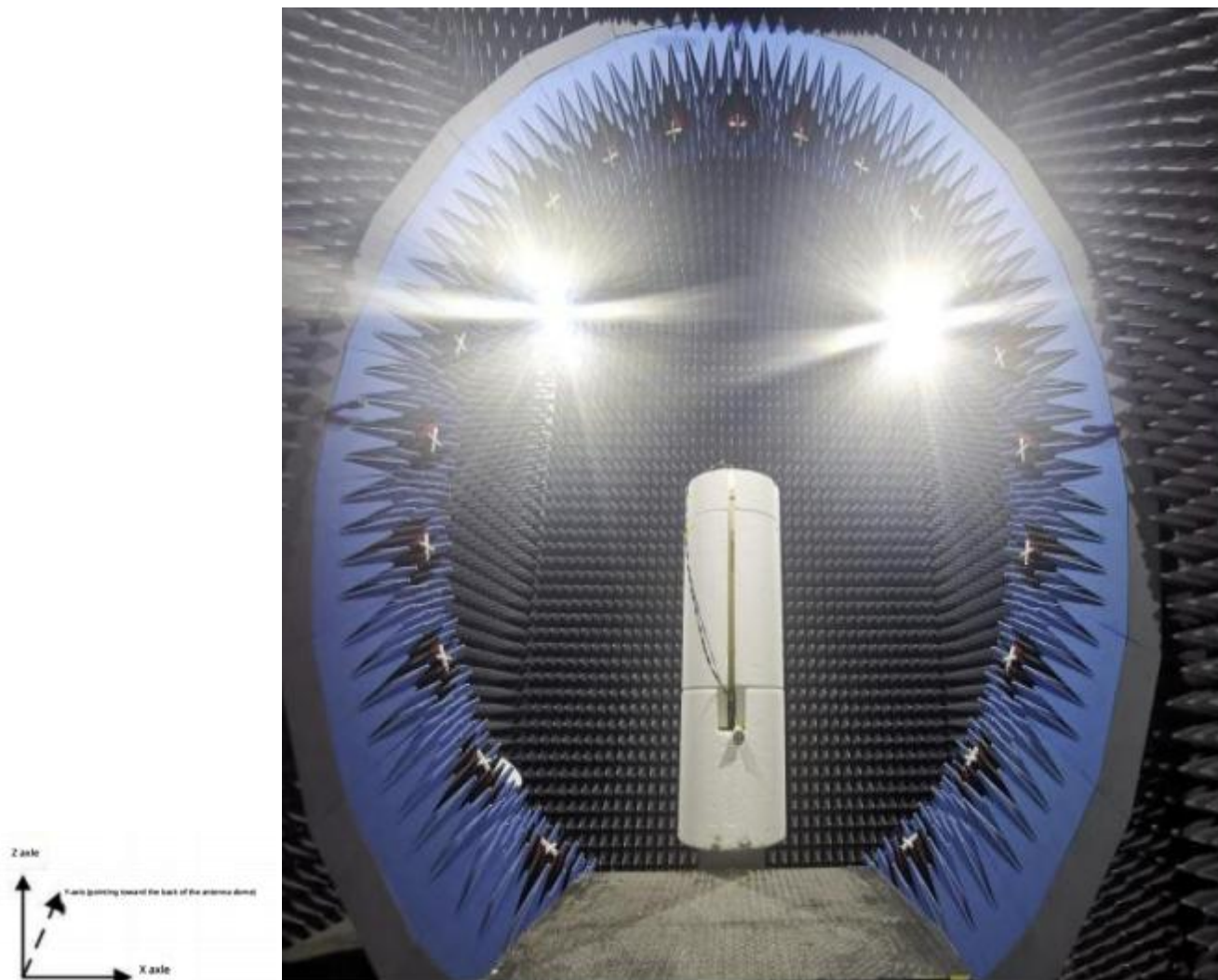
ShanWan

2. Actual sample image



3. Actual placement diagram of the sample after measurement

front view



3.Test result

3.1Detection Criteira

Object Name	Parameter Name	Method Name	According to Standard Number
Mobile Communication Antenna	antenna pattern	General Technical Specifications for Mobile Communication Antennas	GB/T 9410-2008
	antenna gain		
	voltage standing-wave ratio		
	Direction Diagram Roundness		
antenna	Gain and Directivity	IEEE Standard Procedure for Antenna Testing	ANSI/IEEE Std 149-1979
	radiation efficiency		
	impedance		

3.2 Test Uncertainty

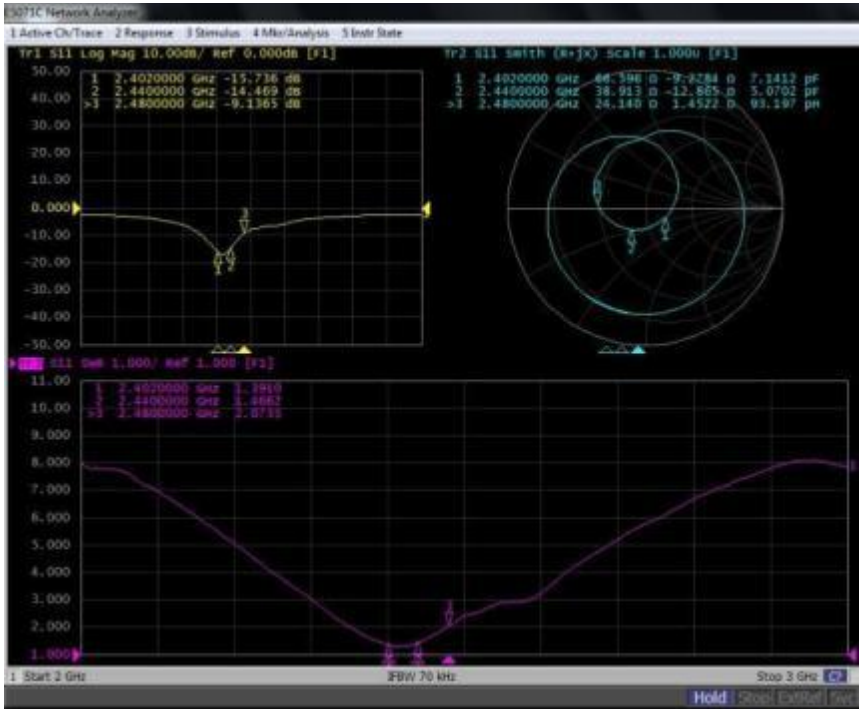
The calculation of uncertainty is based on the ISO publication " Guide to the Expression of Uncertainty in Measurement" (GUM), employing a inclusion factor of K=2 and a 95% confidence level to express the extended uncertainty

project	uncer tainty
standing-wave ratio	±0.3
Gain Efficiency	±0.72dB

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3.3test data

3.3.1Network Analyzer Test



3.3.2standing-wave ratio

Frequency/MHz	2402	2440	2480
voltage standing-wave ratio	1.3910	1.4662	2.0735

3.3.3Gain and Efficiency

Frequency/MHz	2402	2410	2420	2430	2440	2450	2460	2470	2480
maximum gain/dBi	2.85	2.88	2.79	2.77	2.69	2.52	2.46	2.41	2.03
productiveness/%	44.98	45.34	44.93	45.74	46.00	45.14	45.56	44.49	40.81

Antenna Type: PCB antenna

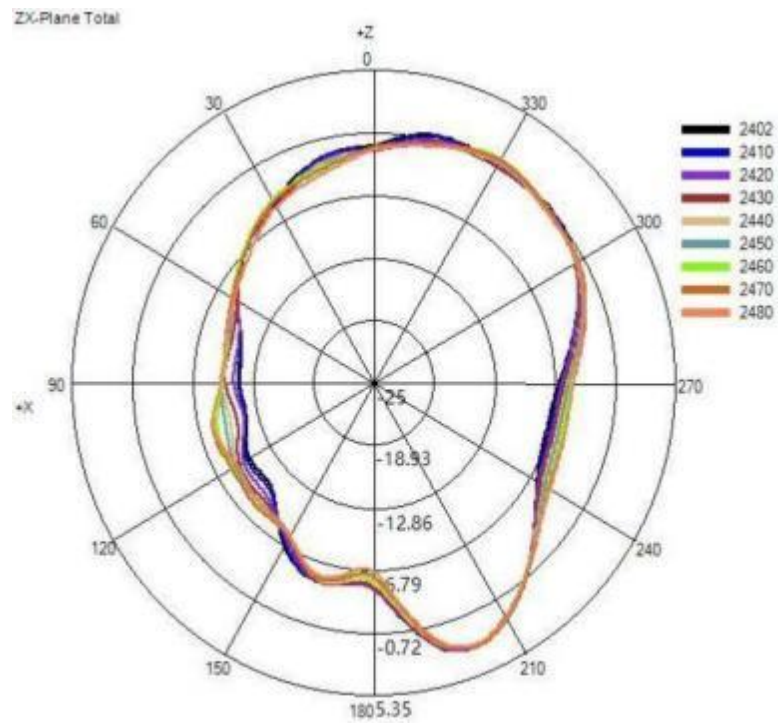
3.3.4Direction Diagram Roundness

Frequency/MHz	2402	2410	2420	2430	2440	2450	2460	2470	2480
H Theta=90/dB	14.22	14.43	14.31	13.68	13.38	13.30	13.18	13.31	13.58

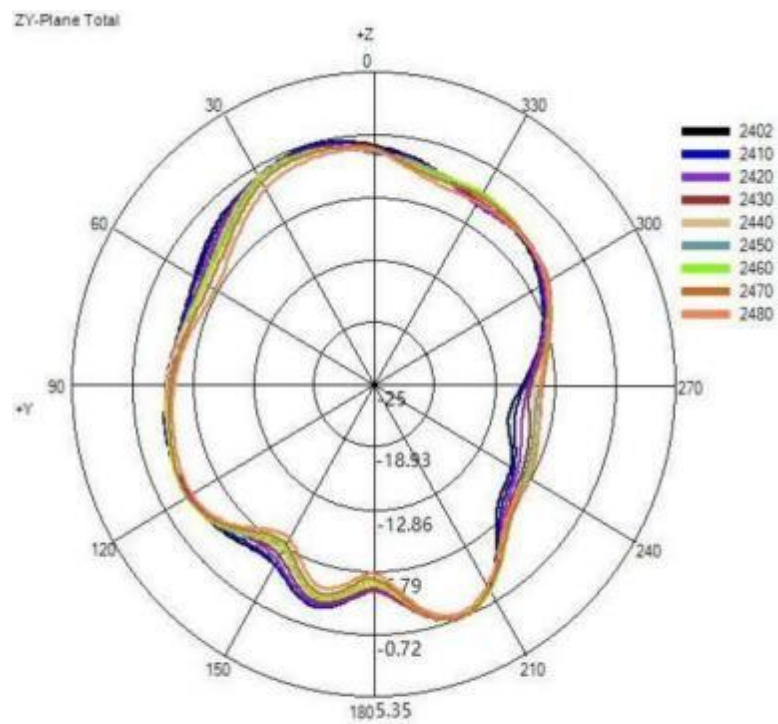
QP030-41

3.3.5 Direction Diagram

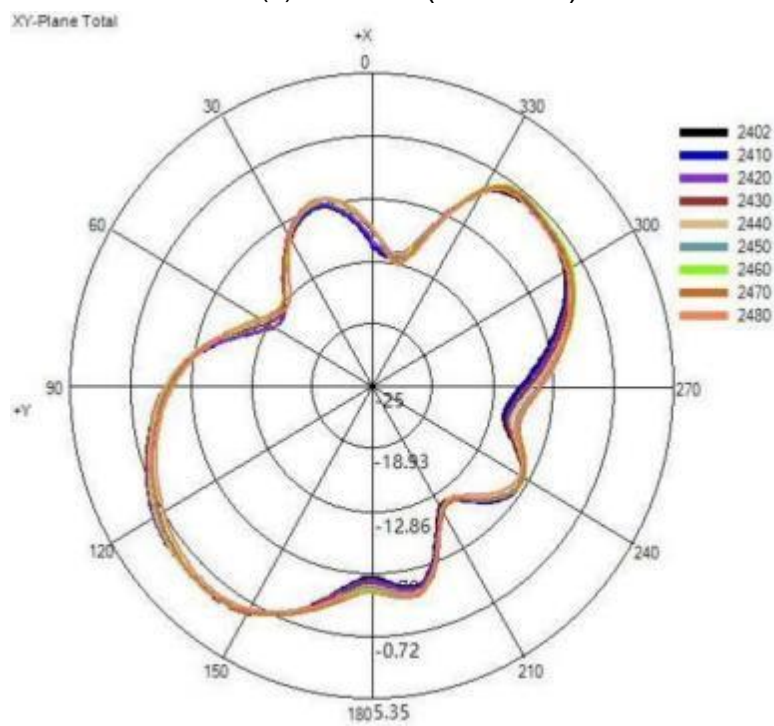
(1) X-Zplane(unit: dBi):



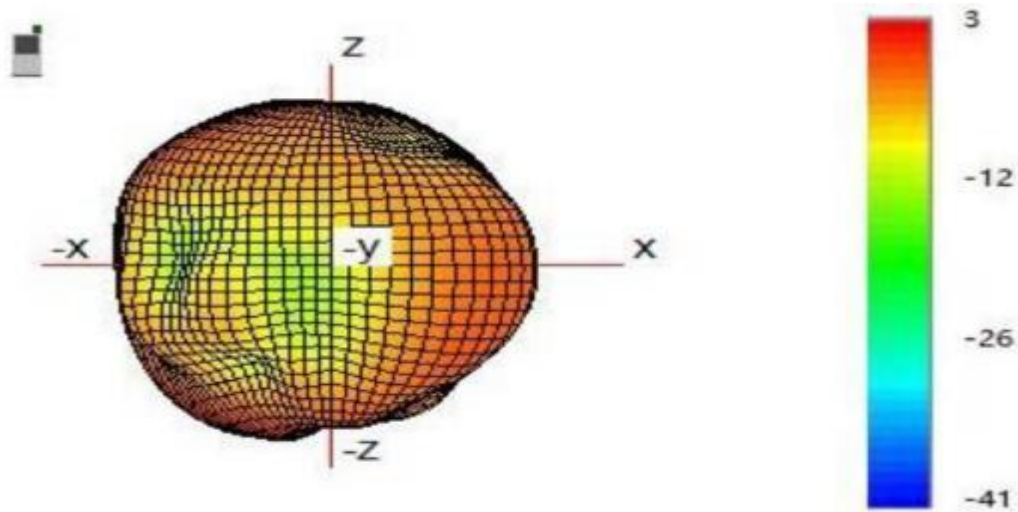
(2) Y-Zplane(unit: dBi):



(3) X-Yplane(unit: dBi):



(4) 3D direction pattern at 2410 MHz(unit: dBi):



-----end-----
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