



1.2 Testing Equipment

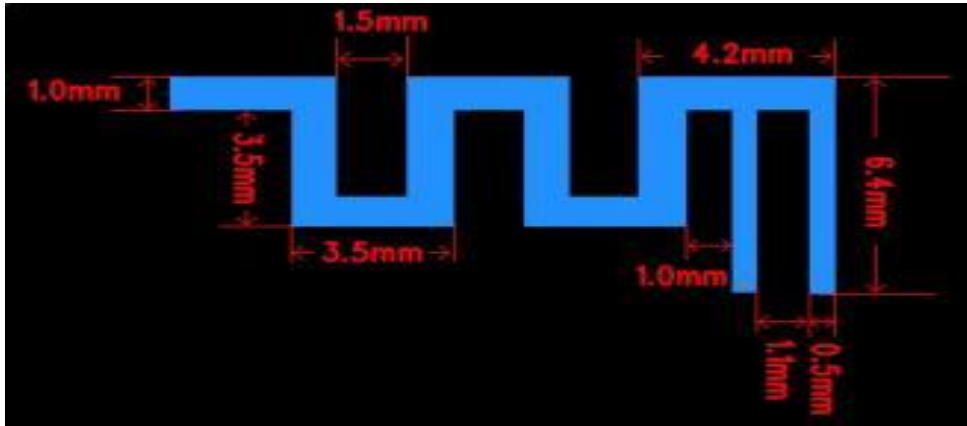
name	model	Equipment number	manufacturer	Calibration Date	Next calibration date
OTA test system	RayZone-5000	RFI-LAB-RF-D00	GTS	2021.3.22	2023.3.21
network analyzer	E5071C	RFI-LAB-RF-C02	KEYSIGHT	2022.5.13	2023.5.12
network analyzer	E5071C	RFI-LAB-RF-D01	KEYSIGHT	2022.5.13	2023.5.12

1.3 Testing environment

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

ShanWan

2.Sample physical image



3.Sample actual measurement placement diagram

front view



3.Test result

3.1Testing basis

object name	Parameter	METHOD	According to the standard number
Mobile communication antenna	radiation pattern	General Technical Specification for Mobile Communication Antennas	GB/T 9410-2008
	Antenna gain		
	vswr		
	Roundness of directional diagram		
antenna	Gain and directionality	IEEEStandard process for antenna testing	ANSI/IEEE Std 149-1979
	Radiation efficiency		
	impedance		

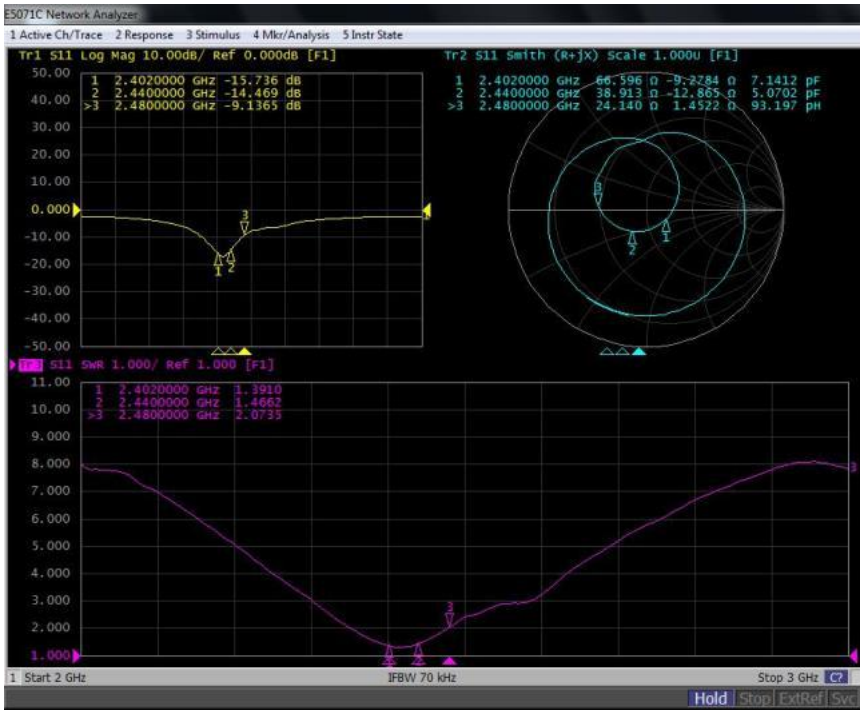
3.2Test uncertainty

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

project	Uncertainty
standing-wave ratio	± 0.3
Gain and efficiency	$\pm 0.72\text{dB}$

3.3Test data

3.3.1Network analyzer testing



3.3.2 Standing Wave Ratio

Frequency/MHz	2402	2440	2480
vswr	1.3910	1.4662	2.0735

3.3.3Gain efficiency

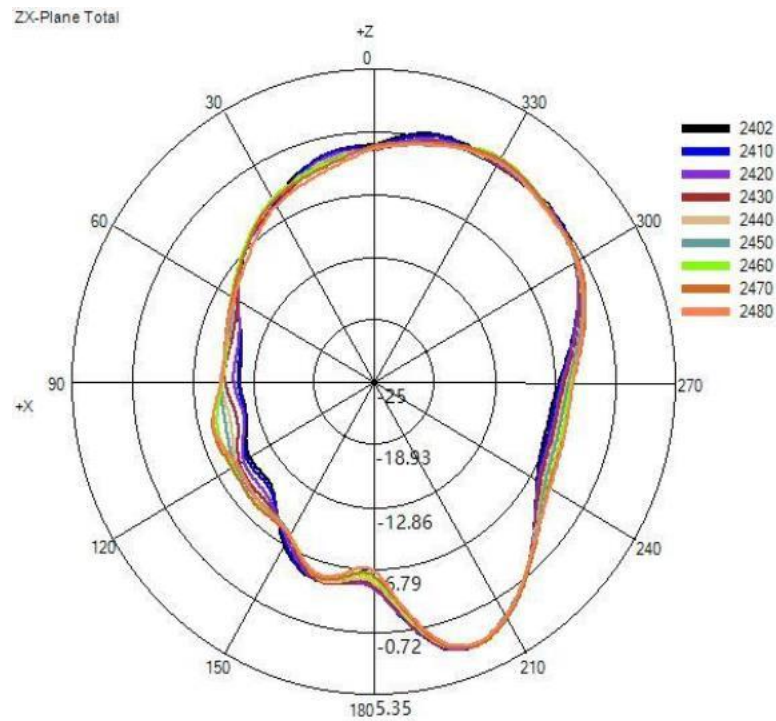
Frequency/MHz	2402	2410	2420	2430	2440	2450	2460	2470	2480
Maximum gain/dB	2.85	2.88	2.79	2.77	2.69	2.52	2.46	2.41	2.03
Efficiency/%	44.98	45.34	44.93	45.74	46.00	45.14	45.56	44.49	40.81

3.3.4Roundness of directional diagram

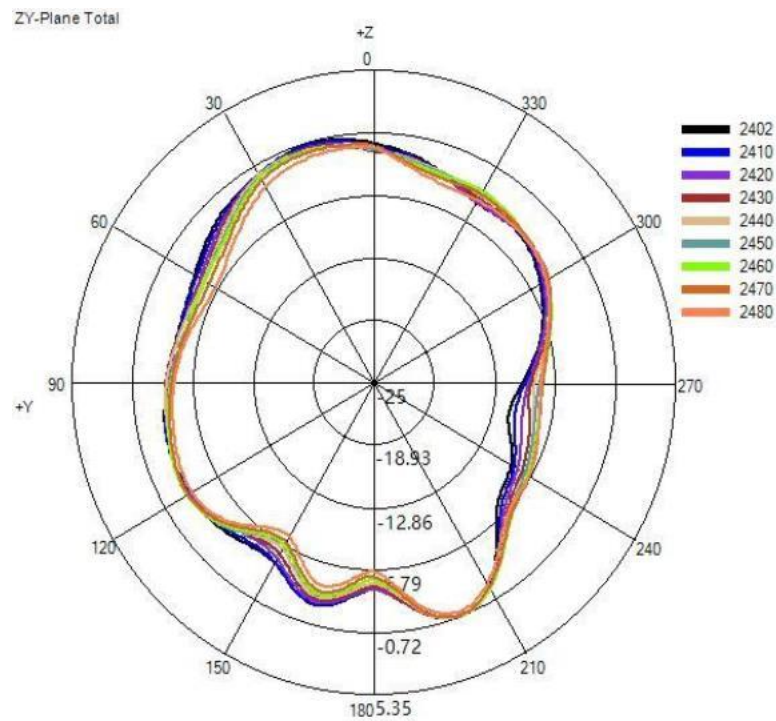
Frequency/MHz	2402	2410	2420	2430	2440	2450	2460	2470	2480
H Theta=90/dB	14.22	14.43	14.31	13.68	13.38	13.30	13.18	13.31	13.58

3.3.5 Direction diagram

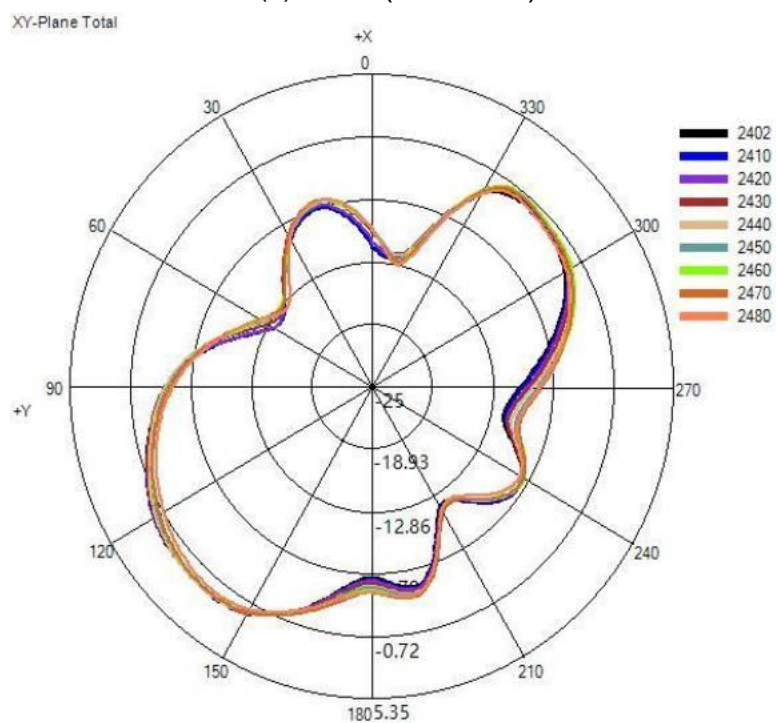
(1) X-Z面(单位: dBi):



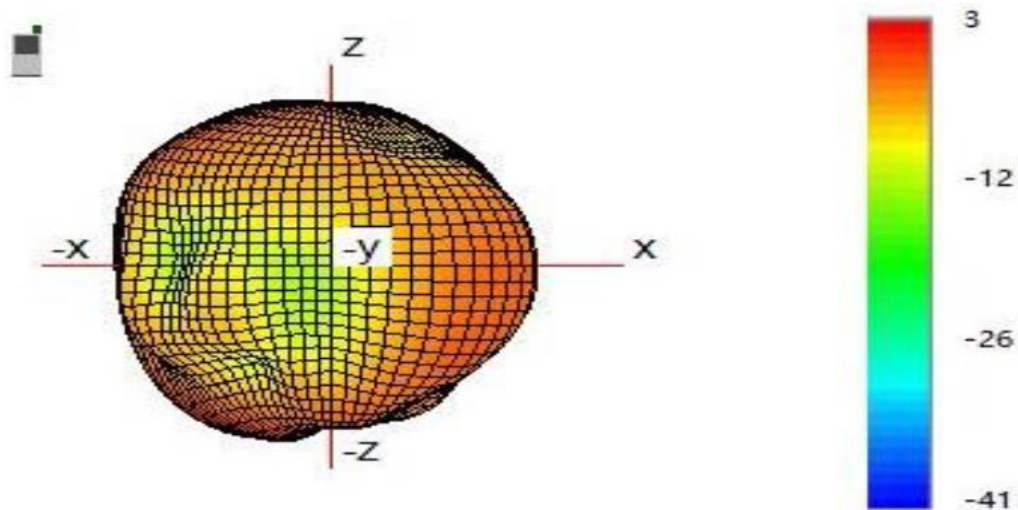
(2) Y-Z面(单位: dBi):



(3) X-Y面(单位: dBi):



(4) 2410MHz 3D direction diagram (unit: dBi):



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