Antenna Specifications

Customer Name： Shenzhen xinhongda Technology Co., Ltd

Product Name： 2.4G-Bluetooth Antenna

Sample Model： XHD-ML1.0

Reference Standard： GB/T 9410-2008;ANSI/IEEE Std 149-1979

Issue Date： 2024.5.10

Engineer：	Date：
Auditor：	Date：
Approver：	Date：

Version

Version No.	Date	Description	Formulate	approval
A0	2024.5.10	For the first time		

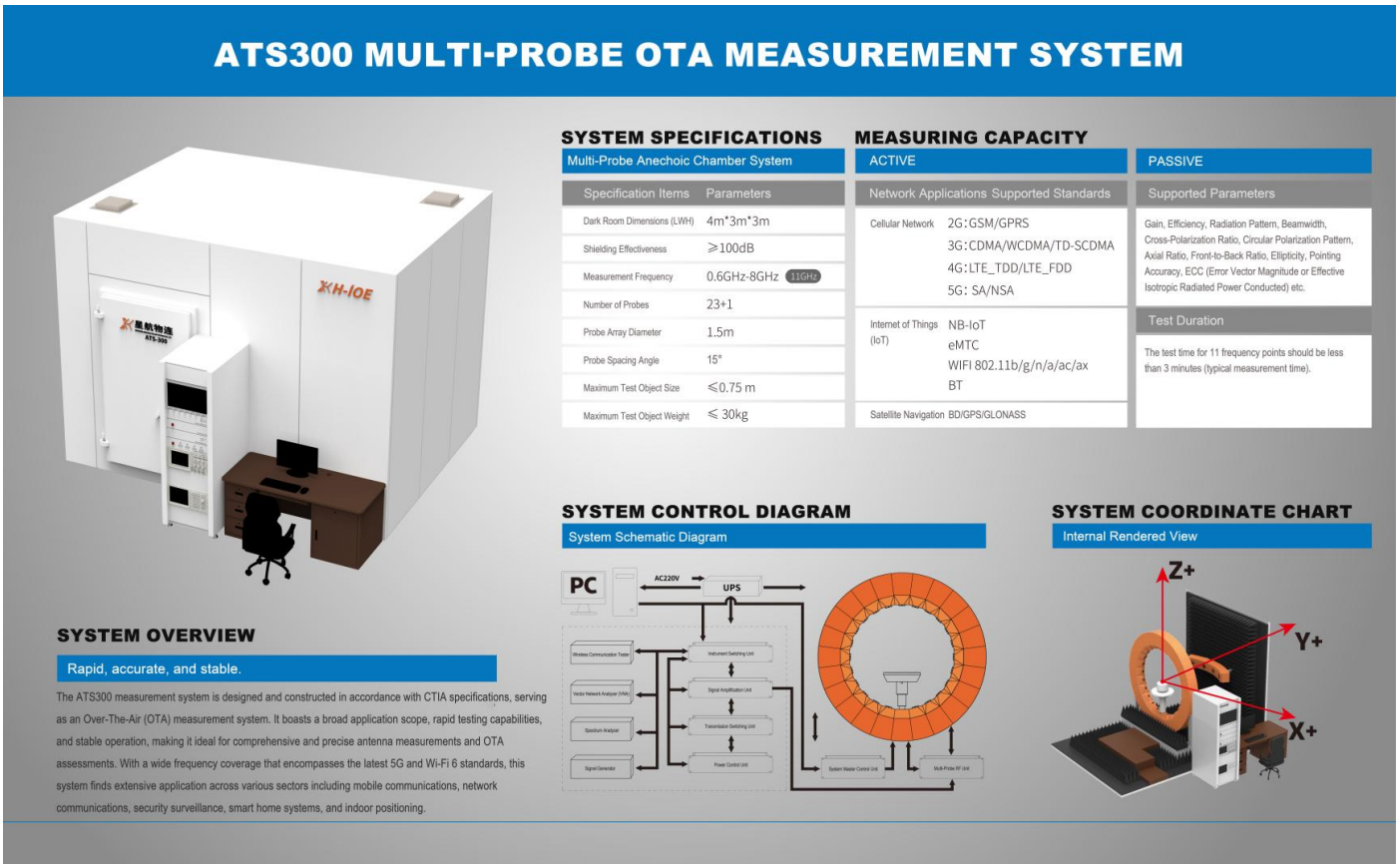
Contents

1. General Information

1.1. General information of testing institutions

Name	Shenzhen Yunding Communication Electronics Co., LTD
Address	3015, 3rd Floor, No. 1 Sanwei South Road, Bao 'an District, Shenzhen City, Guangdong Province
Tel	0755-23073599
E-mail	wht0809@163.com
Equipment	ATS300

1.2. Testing principle



1.3. Test equipment

Equipment	Model No.	Serial No.	Manufactur	calibration date	Next calibration date
ATS300 4x 3x3 m (3D) Chamber	4*3*3		Xinghang	2023.12.5	2024.12.4
Network Analyzer	E5071B		Agilent	2023.11.26	2024.11.25
Network Analyzer	8753D		HP	2023.11.13	2024.11.12

1.4. Test environment

Temperature	24.6℃
Humidity	59%RH
Pressure	100.12kPa

1.5. Statement

(1)The test results in the report are only applicable to the tested samples and the tested samples work under the environment described in the report.
(2)Only Shenzhen Yunding Communication Electronics Co., LTD have the right to modify thereport,and the modification information shall be annotated in the revision form.
(3)Any objection to this report shall be raised within 30 days afrer formal confirmation of thereport.
(4)This report is invalid if there is any evidence that the sample information provided is falsified.
(5)The report is invalid without the signature of the auditor and approver.

2. Sample Information

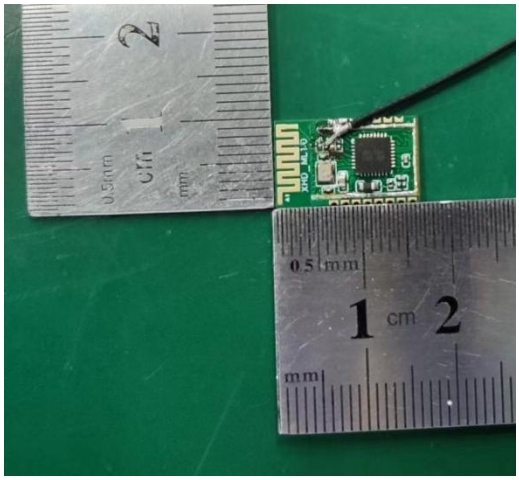
2.1. Client information

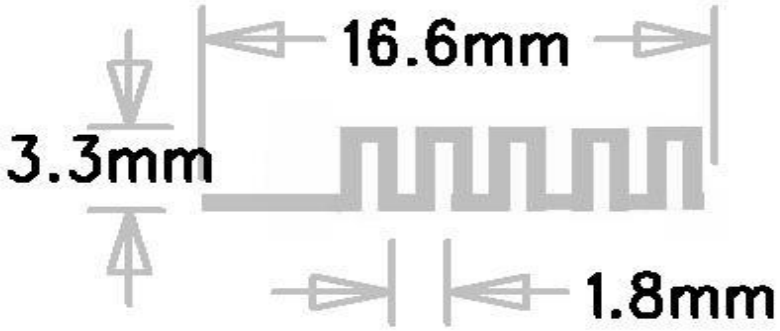
Name	Shenzhen xinhongda Technology Co., Ltd
Address	310, Block C, Hongwan Business Center, Gucheng Hongwan Second Industrial Zone, Xixiang Street, Bao'an District, Shenzhen
Contacts	Hong Tao
Tel	13113675359
E-mail	1098310537@qq.com

2.2. Description of EUT(S)

Product Name	2.4G-Bluetooth Antenna
Sample Model	XHD-ML1.0
Antenna Size	16.5*9.8MM
Antenna Type	PCB Antenna
Serial No.	/
Test Item	VSWR;Gain;Efficiency.Radiation pattern
Frequency Range	2400-2500MHz
Received Date	
Test Date	2024.5.10
Remark	/

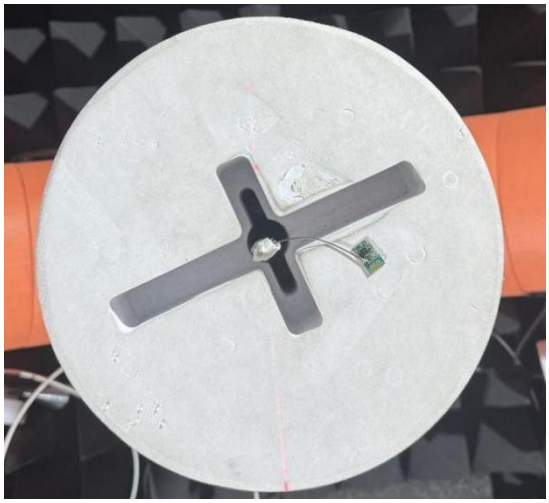
2.3. EUT appearance





2.4. DUT setup photo of free space OTA testing

Planform



Front view

3. Test Results

3.1. Test standard

Name	Parameter	Method	Standard no.
Mobile communication antenna	VSWR	Generic specification for antennas used in the mobile communications	GB/T9410-2008
	Antenna gain		
	Radiation pattern		
Antenna	Radiation efficiency	IEEE Standard Test Procedures for Antennas	ANSI/IEEE Std 149-1979

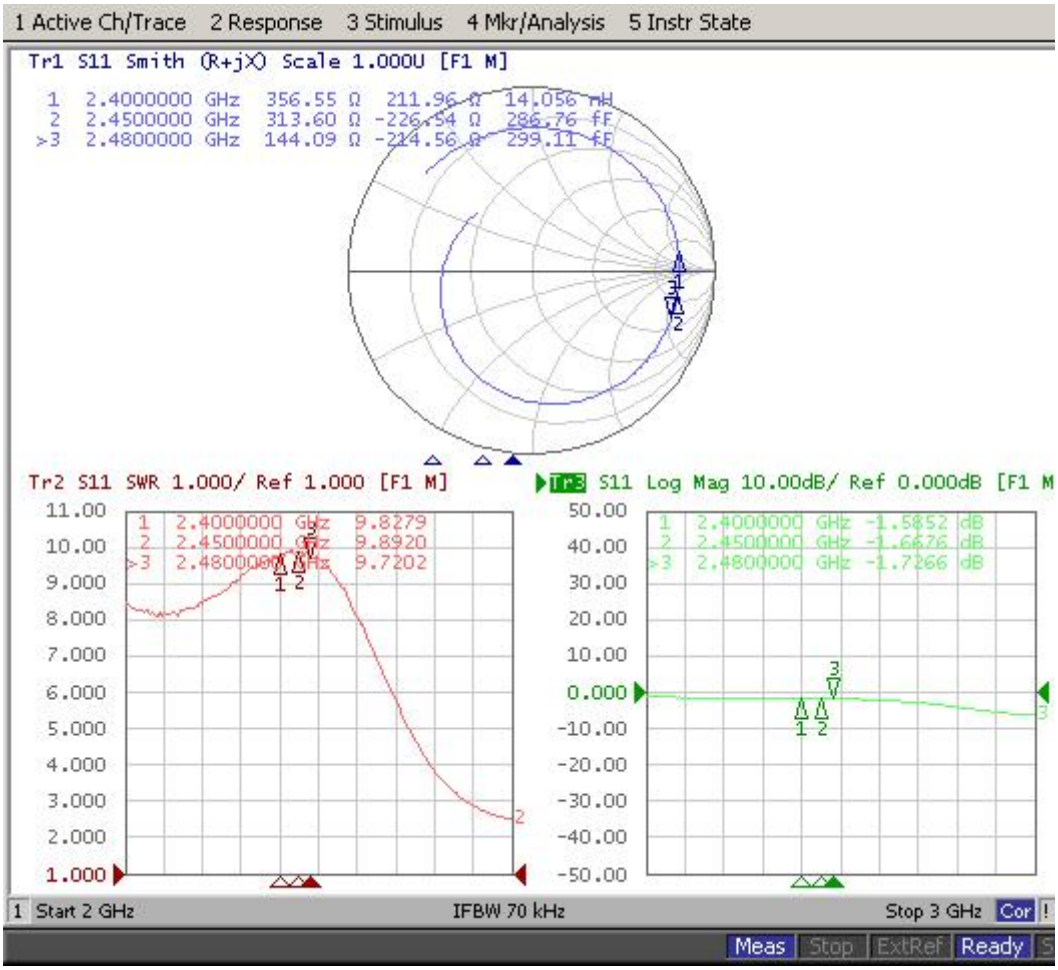
3.2. Test uncertainty

The uncertainty was calculated on the basis of the GUM published by ISO,using theinclusion factor of K=2 and the 95% confidence level to express the extended uncertainty.

Item	Uncertainty
VSWR	±0.3
Antenna gain	±1dB
Radiation efficiency	±10%

3.3. Test data

3.3.1. S11 parameters



3.3.2. VSWR

Frequency/MHz	2400	2450	2480
VSWR	9.8279	9.8920	9.7202

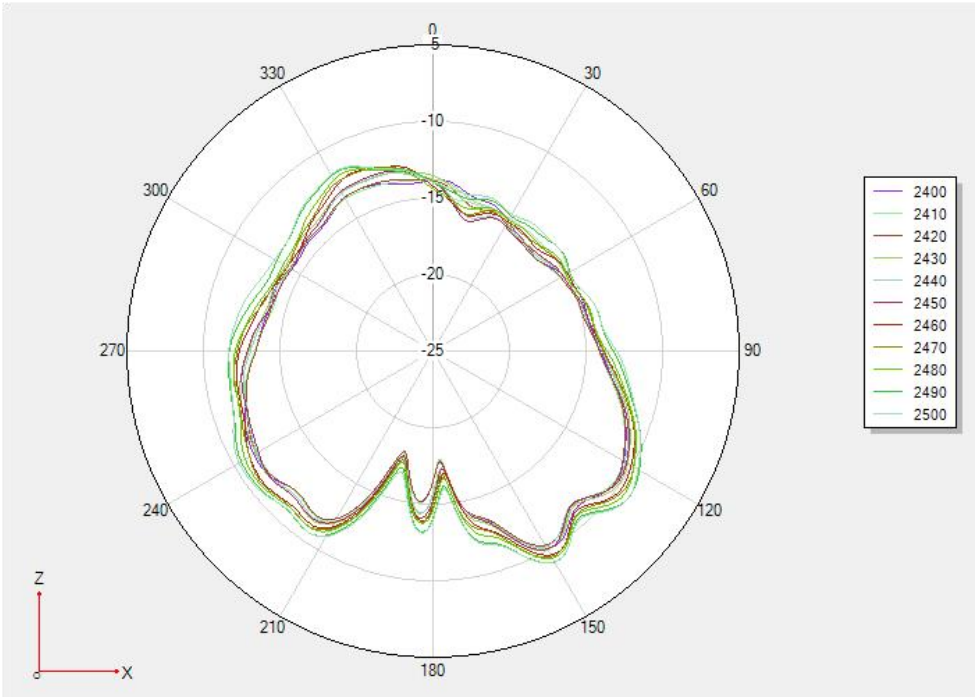
3.3.3. Typical free space efficiency and gain

Frequency/MHz	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Peak Gain/dBi	-7.53	-7.64	-7.74	-7.35	-7.48	-7.48	-7.2	-7.26	-7.04	-6.75	-6.67
Efficiency/%	5.32	5.16	5.19	5.62	5.38	5.31	5.79	5.85	5.98	6.37	6.58

3.3.4. Typical free space radiation pattern

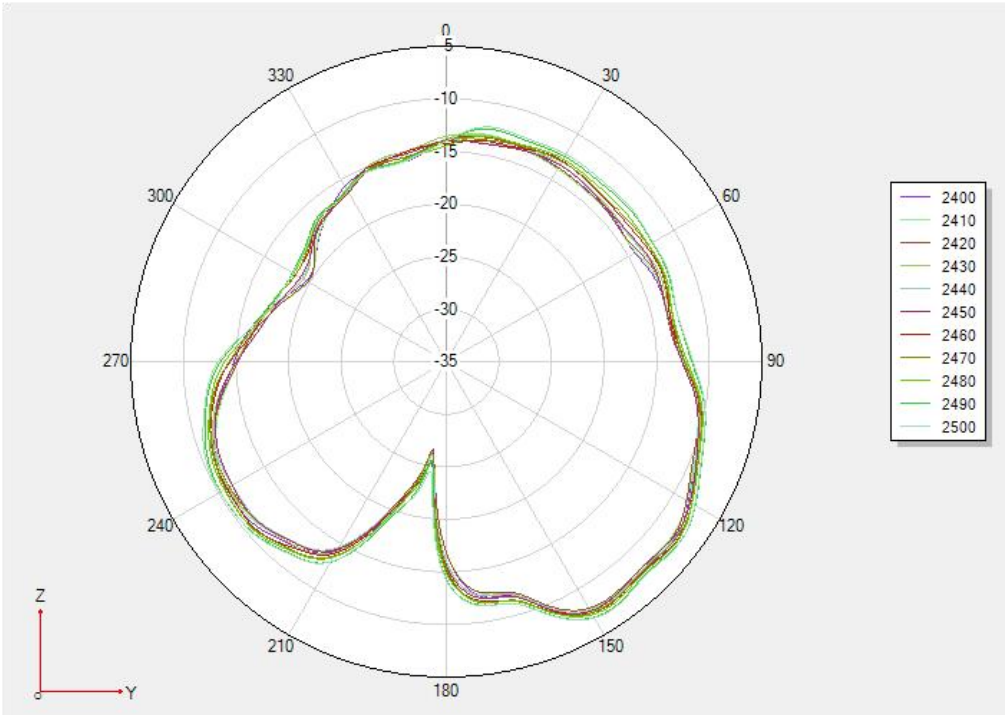
(1)2400-2500MHz X-Z Plane:

Phi 0



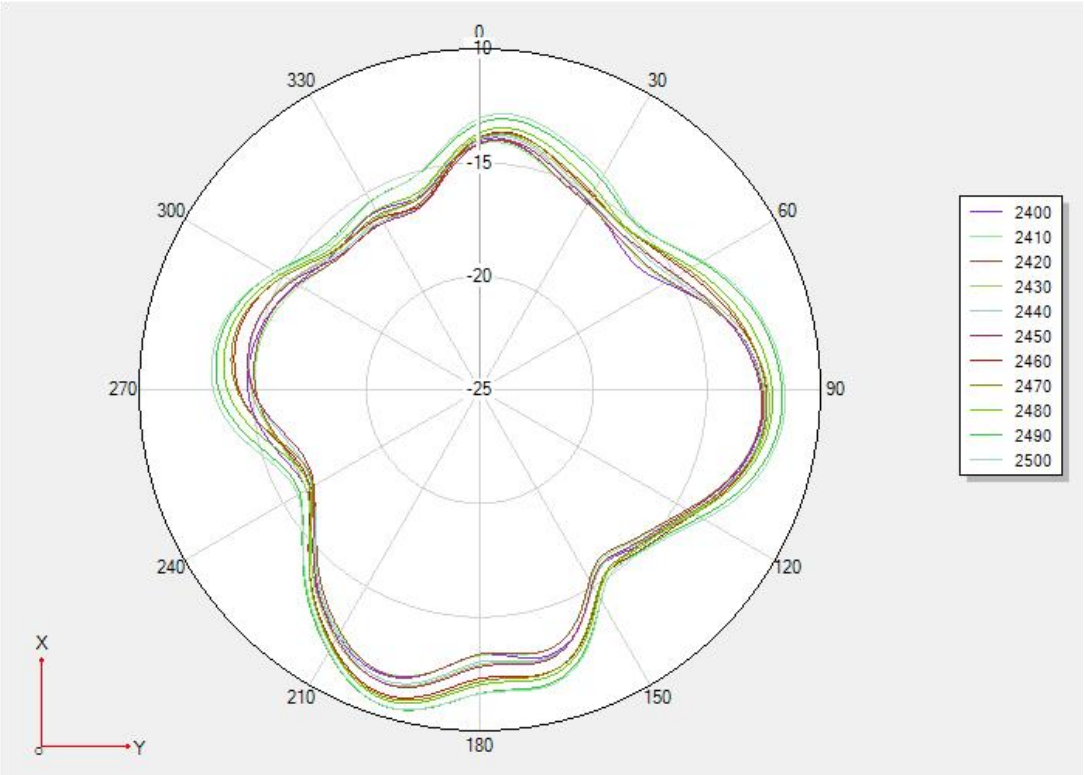
(2)2400-2500MHz Y-Z Plane:

Phi 90

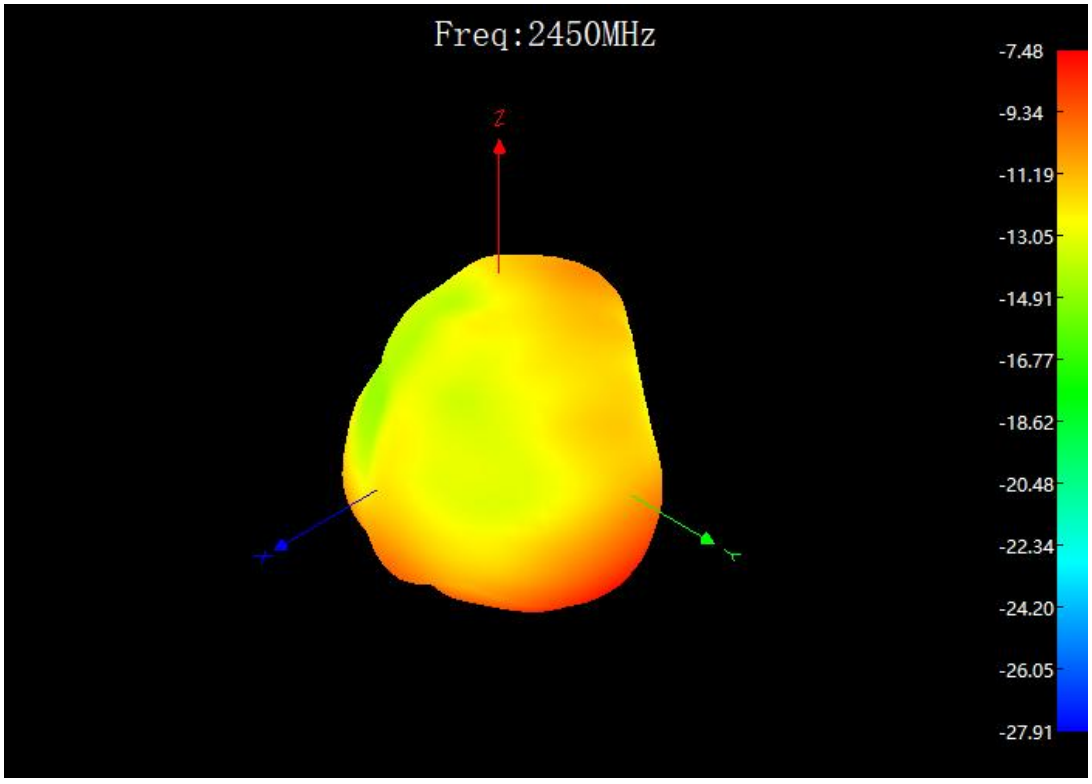


(3)2400-2500MHz X-Y Plane:

Theta 90



(4)Typical Free Space 3D Radiation Pattern at 2.45GHz:



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