Testing Report

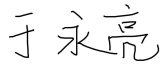
Customer Name: Xiaomi Communication Technology Co. LTD

Product Name: 2.4GHz WIFI/BT Module

Sample Model: MHCWB9B-IB

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

Test Date: 2024.12.27

Role	Name	Date
Engineer		2024.12.27
Auditor		2024.12.27
Approver		2024.12.27

Version

Version No.	Date	Description	Formulate	Approval
A0	2024.12.27	For the first time, formulate	Lin Yuzhe	Zhang He

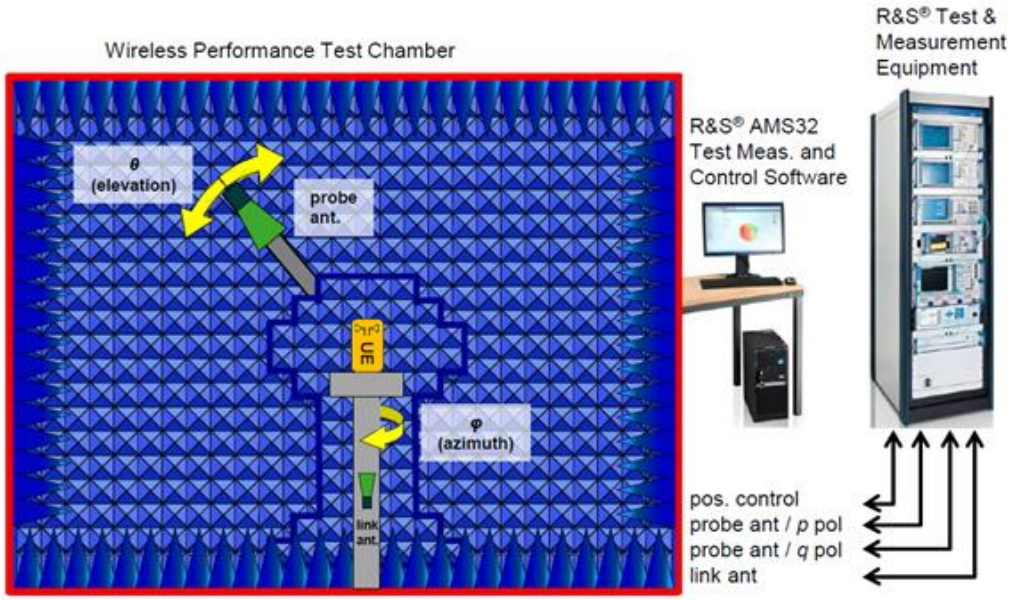
Contents

1.General Information

1.1 General information of testing institutions

Name	Xiaomi Communication Technology Co. LTD
Address	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China
Tel	010-6060666

1.2 Testing principle



Multi-Probe OTA Measurement System

1.3 Test equipment

Equipment	Model No.	Serial No.	Manufacturer	Calibration date	Next calibration date
Network Analyzer	Rohde&Schwarz	102231	ZND	20241018	20251018

1.4 Test environment

Temperature	23.9℃
Humidity	24%RH
Pressure	100.32kPa

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 Xiaomi Communication Technology Co. LTD. have the right to modify the report, and the modification information shall be annotated in the revision form.

(3) Any objection to this report shall be raised within 30 days after formal confirmation of the report.

(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

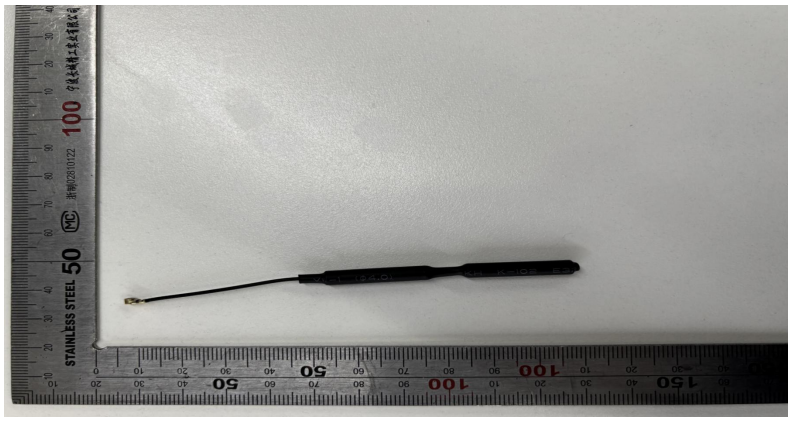
Name	Xiaomi Communication Technology Co. LTD
Address	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

2.2 Description of Sample

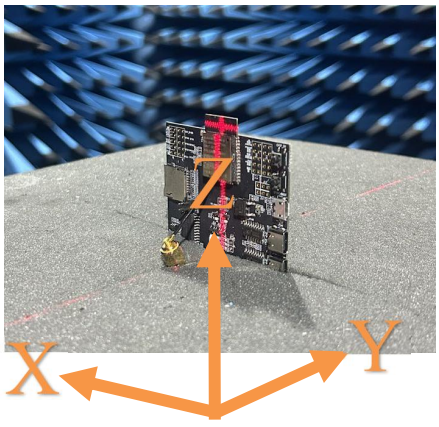
Product Name	2.4GHz WIFI/BT Module
Sample Modle	MHCWB9B-IB
Test Item	VSWR, Peak Gian, Radiation Efficiency, Radiation pattern
Frequency Range	2400-2480MHz
Received Date	2024.12.27
Test Date	2024.12.27
Remark	RF Cable: cable length=100mm, IPEX

2.3 Sample appearance

2.4 Antenna size



2.5 DUT setup photo of free space OTA testing



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/T 9410-2008
	Antenna gain		
	Radiation pattern		
Antenna	Radiation efficiency	IEEE Standard Test Procedures for Antennas	ANSI/IEEE Std 149-1979
	Gain and directivity		

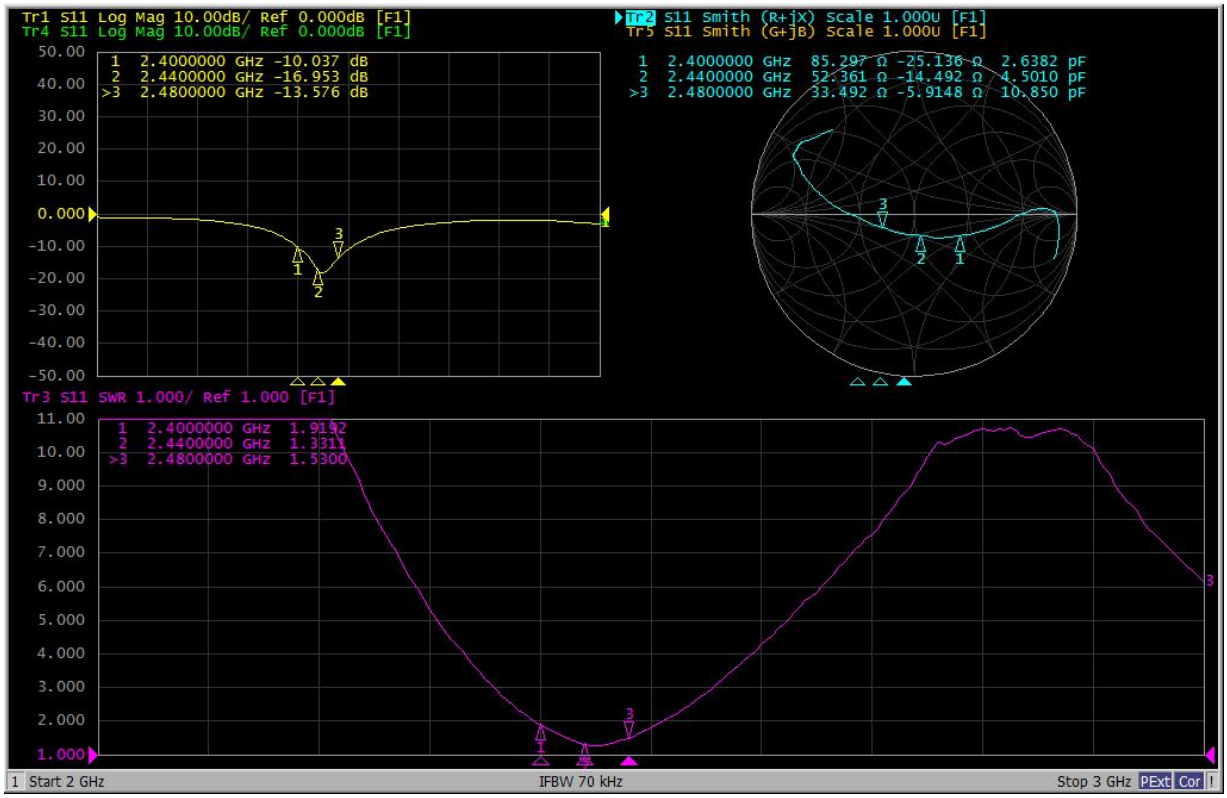
3.2 Test uncertainty

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

Item	Uncertainty
VSWR	±0.3
Antenna gain	±1.0dBi
Radiation efficiency	±10%

3.3 Test data

3.3.1 Network analyzer S parameter



3.3.2 S11 Data

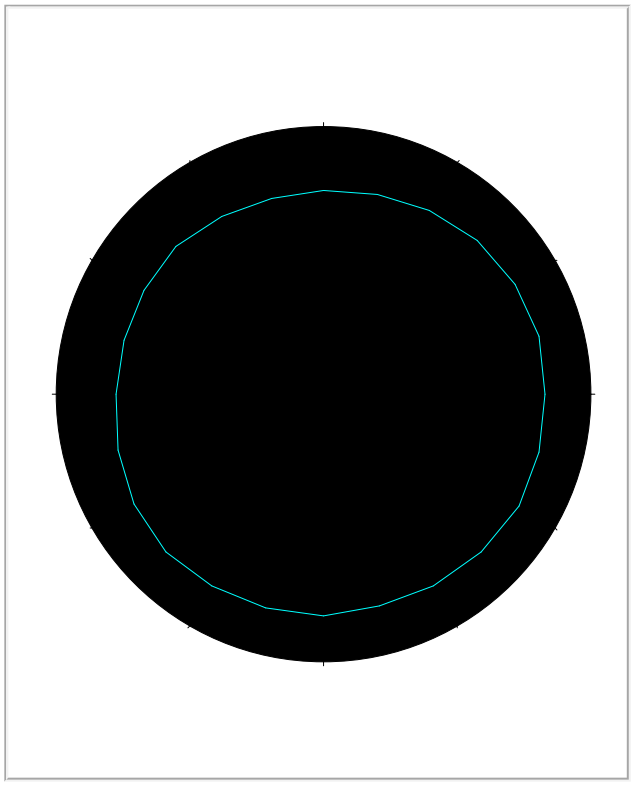
Fequency/MHz	2400	2440	2480
VSWR	1.9	1.3	1.5

3.3.3 Typical free space efficiency and gain

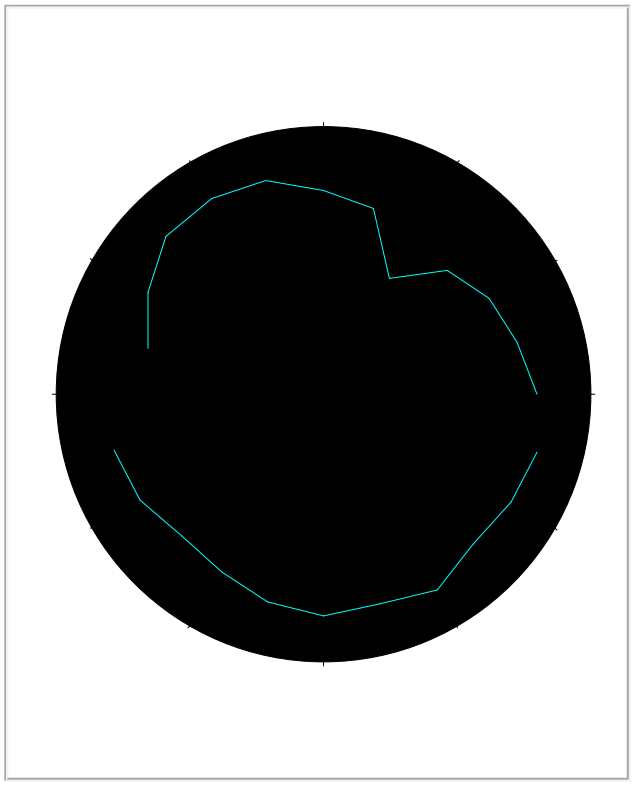
Fequency/MHz	2400	2410	2420	2430	2440	2450	2460	2470	2480
Peak Gain/dBi	-0.3	-0.1	-0.1	-0.1	0.1	0.0	0.3	0.4	0.4
Efficiency/%	45.0	46.1	48.0	48.9	51.3	50.4	52.2	53.6	53.3

3.3.4 Typical free space radiation pattern

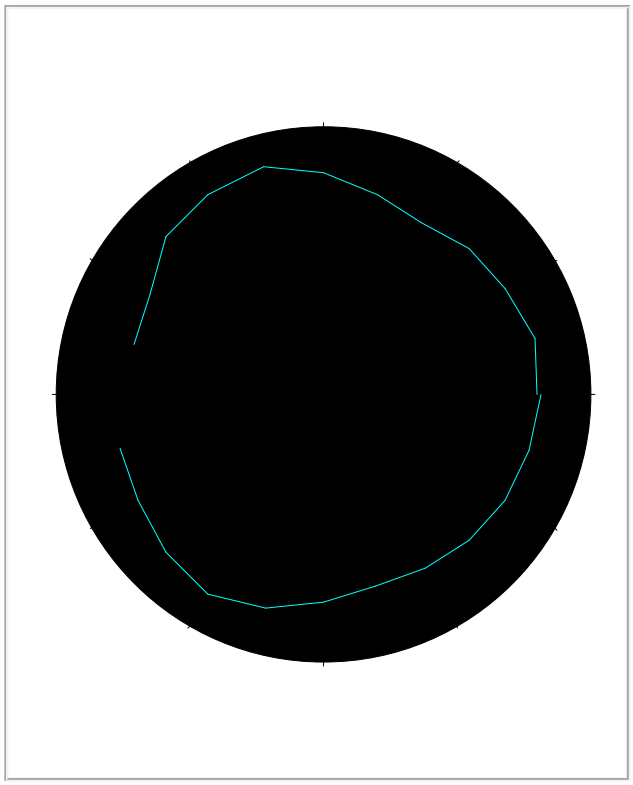
(1) X-Y Plane:



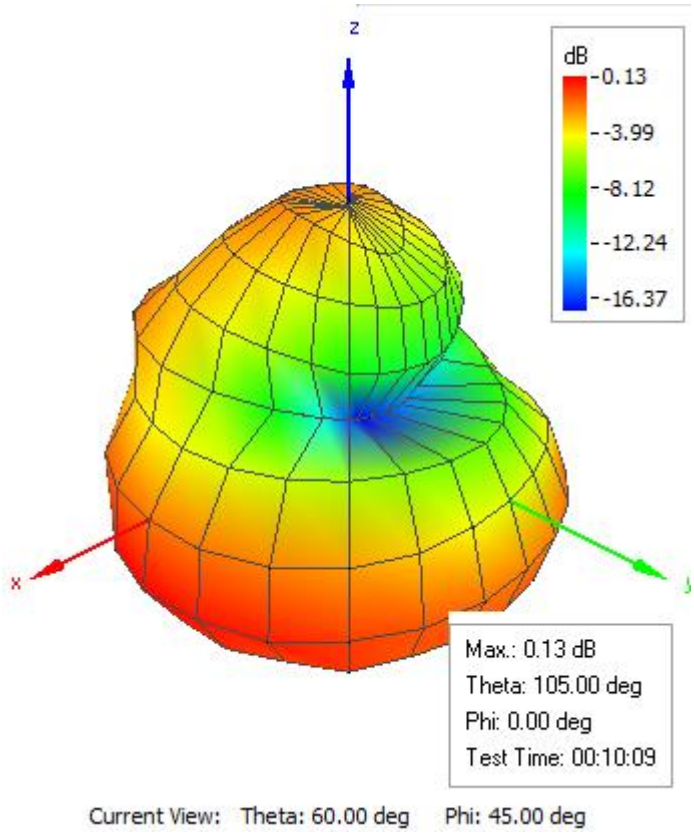
(2) Y-Z Plane:



(3) X-Z Plane:



(4) Typical Free Space 3D Radiation Pattern at 2440MHz:



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