

Testing Report

Customer Name: Xiaomi Communication Technology Co. LTD

Product Name: 2.4GHz WIFI/BT Module

Sample Model: MHCWB6G

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

Issue Date: 2021.10.18

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

Version

Version No.	Date	Description	Formulate	Approval
A0	2021.10.18	For the first time, formulate		

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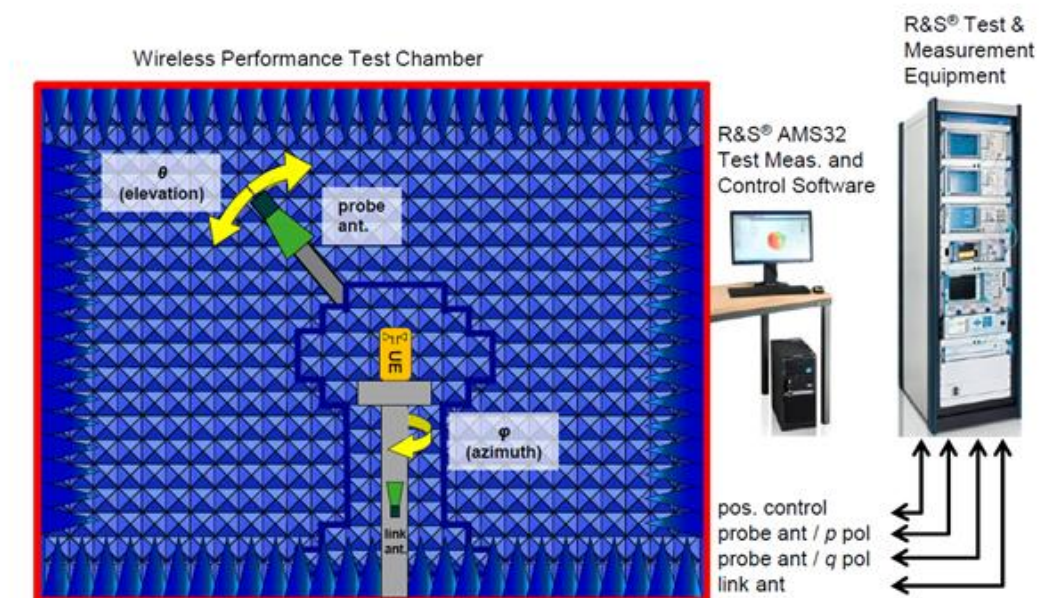
1.General Information

1.1 General information of testing institutions

Name	Xiaomi Communication Technology Co. LTD
Address	Room 1902, 19 / F, Building 1, Yongxin Times Square, Intersection of Dongbin Road and Nanguang Road, Dengliang Community, Nanshan Street, Nanshan District, Shenzhen
Tel	
E-mail	
Equipment	

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	ZND		ROHED&SCHWARZ		
Microwave Chamber	5*5*5		ROHED&SCHWARZ		

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	
Contacts	
Tel	
E-mail	

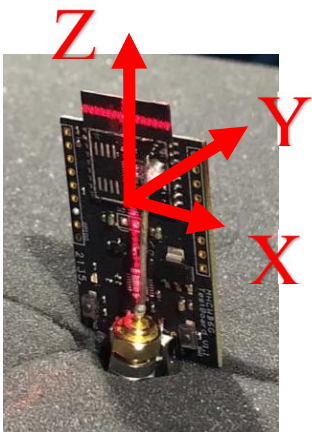
2.2 Description of EUT(S)

Product Name	2.4GHz WIFI/BT Module
Sample Modle	MHCWB6G
Serial No.	
Test Item	VSWR, Peak Gian, Radiation Efficiency, Radiation pattern
Frequency Range	2400-2480MHz
Received Date	2021.10.18
Test Date	2021.10.18
Remark	RF Cable: cable length=50mm, SMA

2.3 EUT appearance



2.4 DUT setup photo of free space OTA testing



3.Test Results

3.1 Test standard

Name	Parameter	Method	Standard no.
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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		

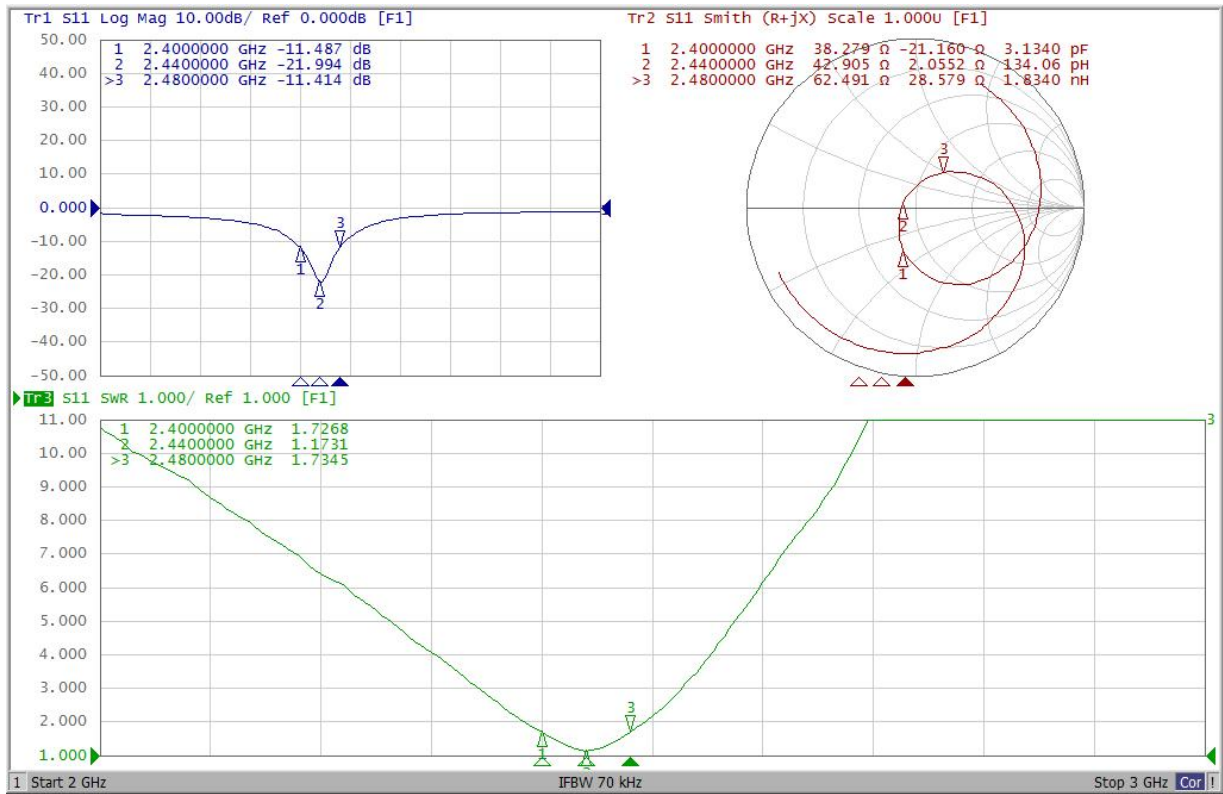
3.2 Test uncertainty

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	$\pm 1.0 \text{ dBi}$
Radiation efficiency	$\pm 10\%$

3.3 Test data

3.3.1 Network analyzer S parameter



3.3.2 S11 Data

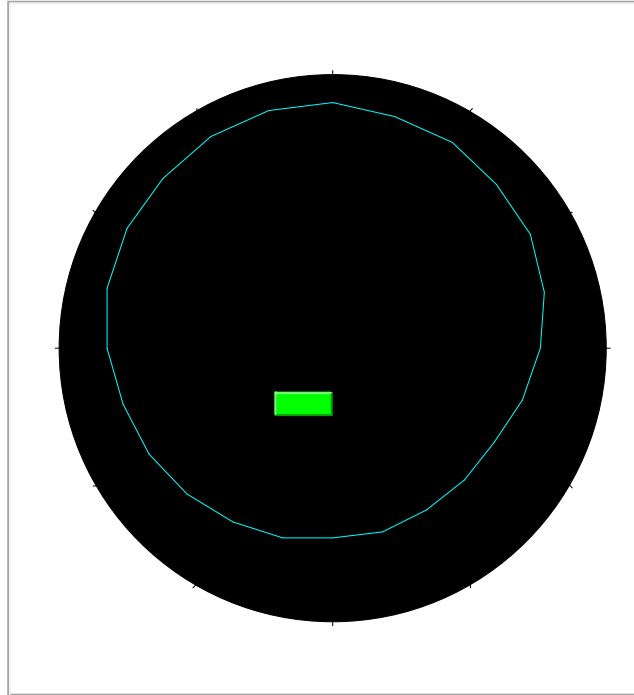
Frequency/MHz	2400	2440	2480
VSWR	1.7	1.2	1.7

3.3.3 Typical free space efficiency and gain

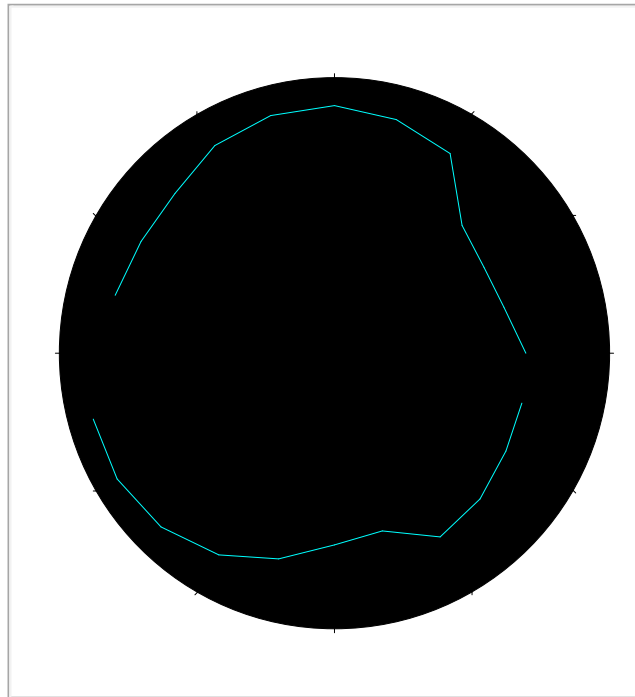
Frequency/MHz	2400	2410	2420	2430	2440	2450	2460	2470	2480
Peak Gain/dBi	1.8	1.8	2.0	2.2	2.1	2.3	2.3	2.3	2.6
Efficiency/%	55.0	55.6	57.6	59.6	58.7	57.4	57.1	58.2	59.5

3.3.4 Typical free space radiation pattern

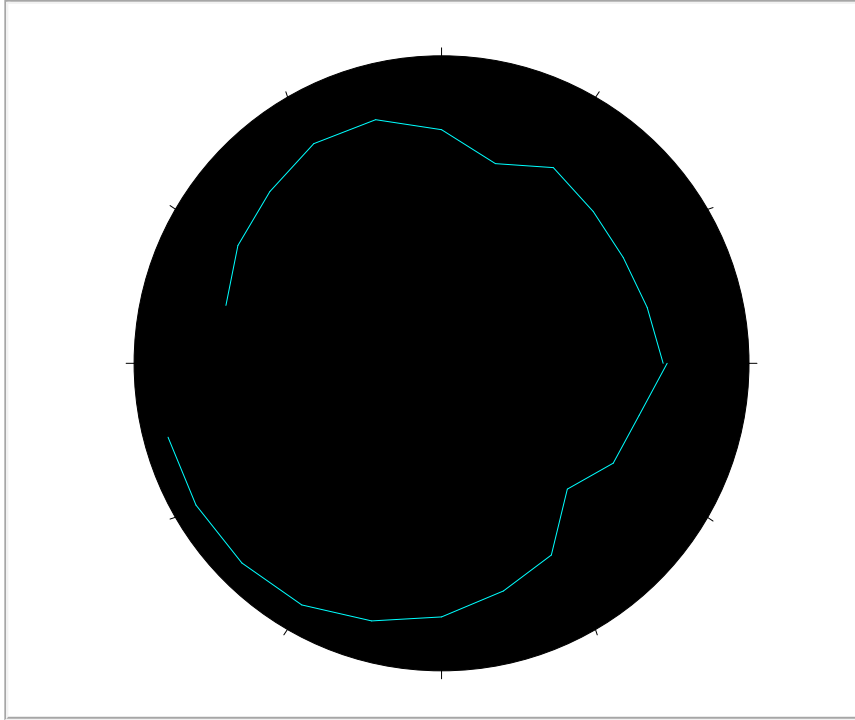
(1) X-Y Plane:



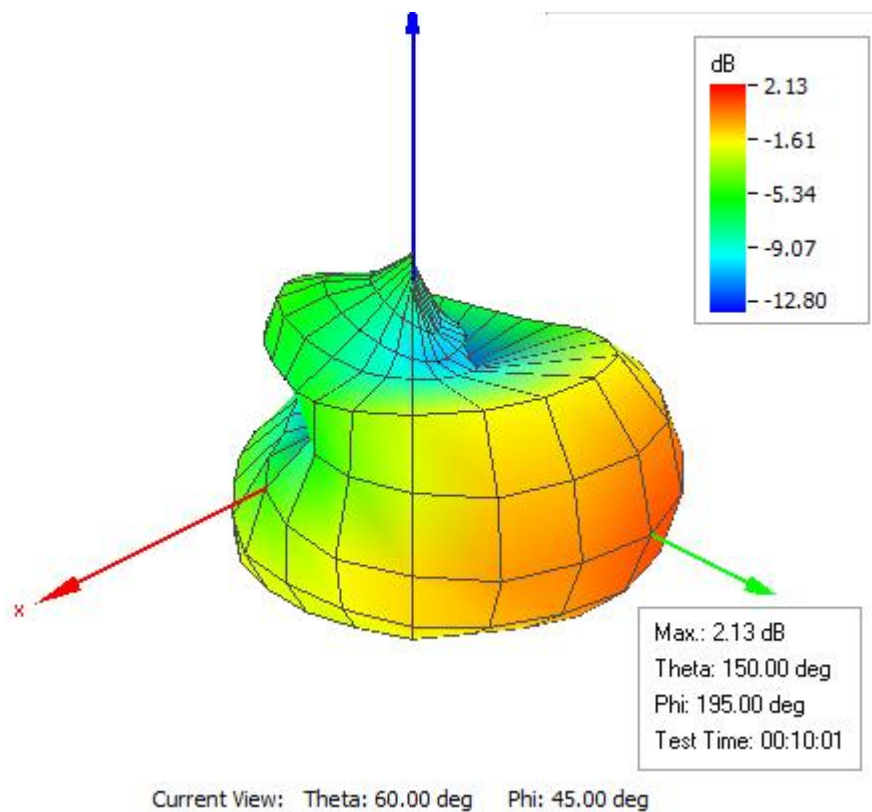
(2) Y-Z Plane:



(3) X-Z Plane:



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



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