



TEST REPORT

APPLICANT : Dongguan Chuan OptoElectronics Limited

PRODUCT NAME : Bluetooth Module

MODEL NAME : CH16HL-XX

TRADE NAME : N/A

BRAND NAME : N/A

STANDARD(S) : ANSI/IEEE Std 149-2008

RECEIPT DATE : 2021-07-23

TEST DATE : 2021-07-23

ISSUE DATE : 2021-07-29



Edited by:

Ke Zhiqing(Rapporteur)

Approved by:

Chi Shide(Supervisor)

NOTE: This document is issued by Shenzhen Morlab Communications Technology Co., Ltd., the test report shall not be reproduced except in full without prior written permission of the company. The test results apply only to the particular sample(s) tested and to the specific tests carried out which is available on request for validation and information confirmed at our website..

MORLAB

Shenzhen Morlab Communications Technology Co., Ltd., FL1-3, Building A,
FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District,
ShenZhen, GuangDong Province, P. R. China

Tel: 86-755-36698555
Http://www.morlab.cn

Fax: 86-755-36698525
E-mail: service@morlab.cn



DIRECTORY

1. Technical Information.....	3
1.1. Applicant and Manufacturer Information.....	3
1.2. Equipment Under Test (EUT) Description.....	3
2. Test Results.....	4
2.1. Applied Reference Documents.....	4
2.2. Test Conditions.....	4
2.3. Measurement Uncertainty.....	4
2.4. Test Results lists.....	5
Annex A Photographs.....	6
Annex B Figures.....	7
1. 2D Radiation Pattern.....	7
2. 3D Radiation Pattern.....	8
3. Return Loss.....	10
Annex C Photographs.....	11
Annex D General Information.....	13
1.1 Identification of the Responsible Testing Laboratory.....	13
1.2 Identification of the Responsible Testing Location.....	13
1.3 Test Equipments Utilized.....	13

Change History		
Version	Date	Reason for change
1.0	2021-07-29	First edition



1. Technical Information

Note: Provide by manufacturer.

1.1. Applicant and Manufacturer Information

Applicant:	Dongguan Chuan OptoElectronics Limited
Applicant Address:	NO.43 SongShui Road,SongMuShan Village,Dalang Town, DongGuan City,Guangdong,China
Manufacturer:	Dongguan Chuan OptoElectronics Limited
Manufacturer Address:	NO.43 SongShui Road,SongMuShan Village,Dalang Town, DongGuan City,Guangdong,China

1.2. Equipment Under Test (EUT) Description

Wireless Type	Bluetooth
Test frequency band	2400MHz-2500MHz
Brand name	N/A
Antenna model	CH16HL-XX
Antenna type	PCB Antenna
Hardware Version	N/A
Software Version	N/A
IMEI	N/A
Sample number	1#



2. Test Results

2.1. Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	ANSI/IEEE Std 149-2008	IEEE Standard Test Procedures for Antennas

2.2. Test Conditions

Test Environment Conditions:

Relative Humidity:	25 ... 75 %
Temperature:	+10 °C to +30 °C

2.3. Measurement Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

Item	Measurement Uncertainty(dB)
Gain	±0.5
VSWR	±0.2
Measurement Uncertainty(95% Confidence Interval) K=2	



2.4. Test Results lists

2.4.1. Gain

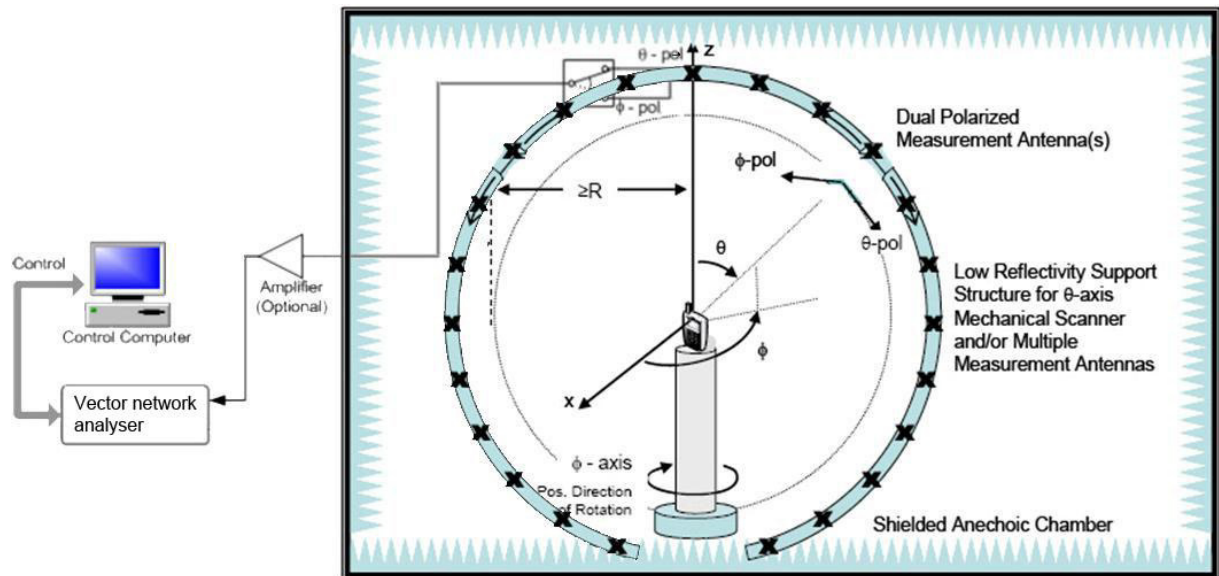
Frequency	Gain(dBi)
2402MHz	-5.47
2442MHz	-4.26
2484MHz	-4.79

2.4.2. Return Loss

Frequency	Return Loss(dB)
2402MHz	-4.69
2442MHz	-5.47
2484MHz	-6.53

Annex A Photographs

1. Test Setup

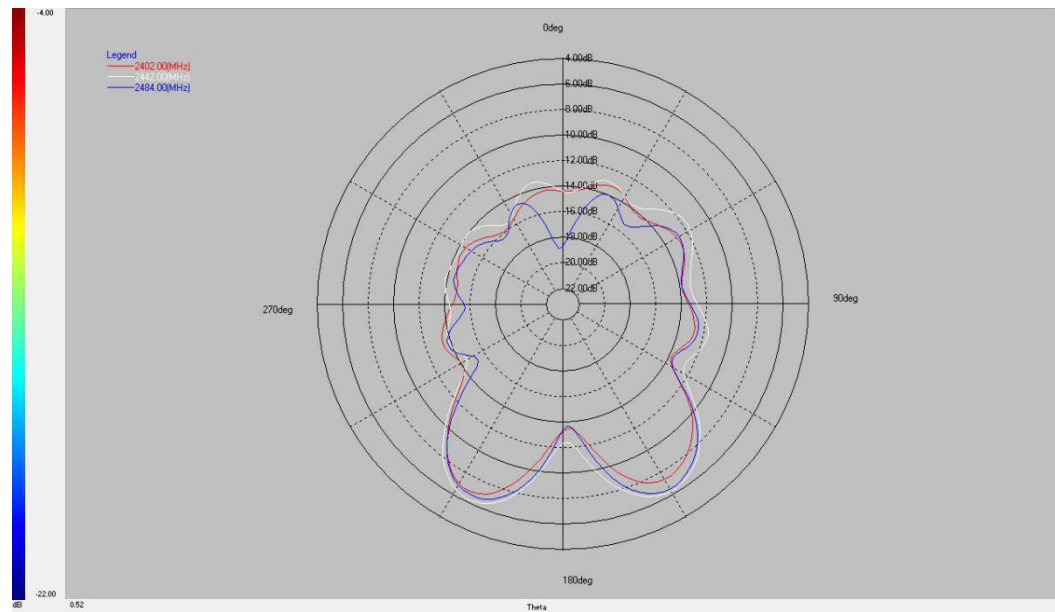




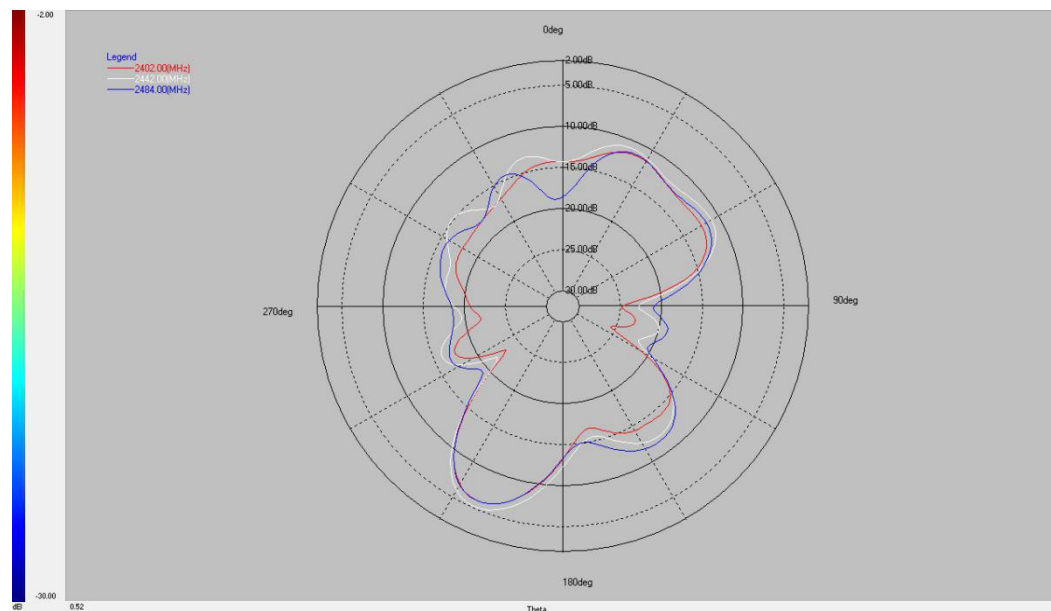
Annex B Figures

1. 2D Radiation Pattern

Phi=0°

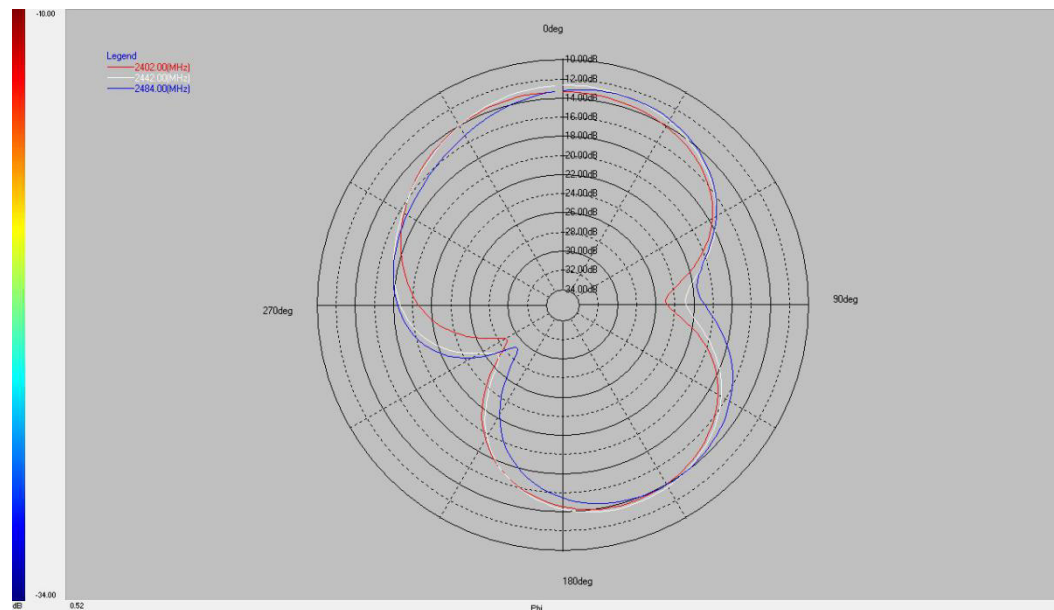


Phi=90°

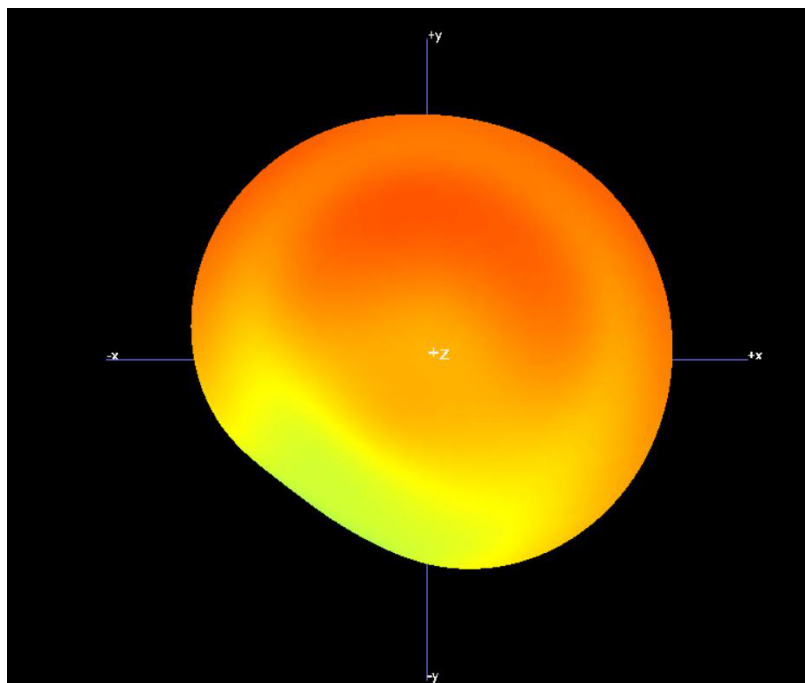




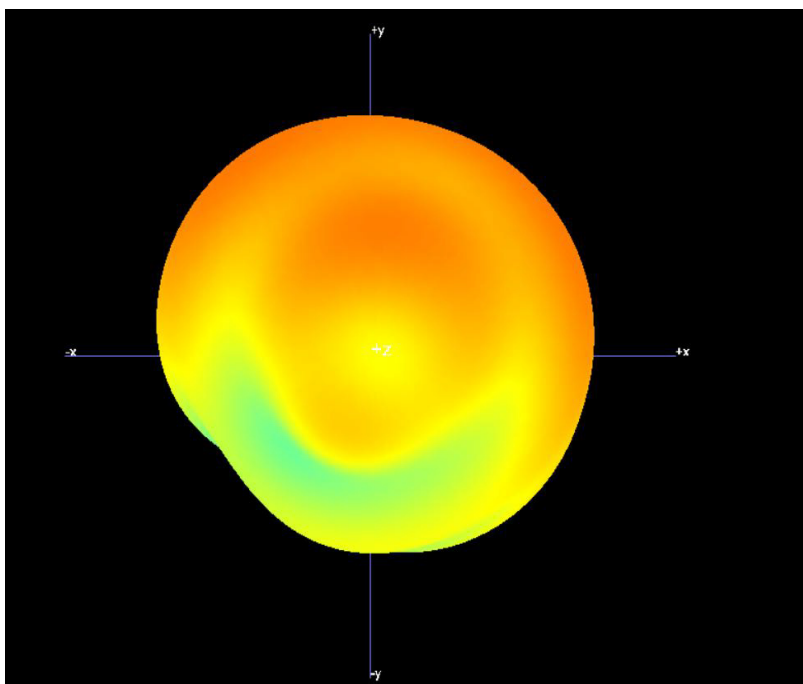
Theta=90°



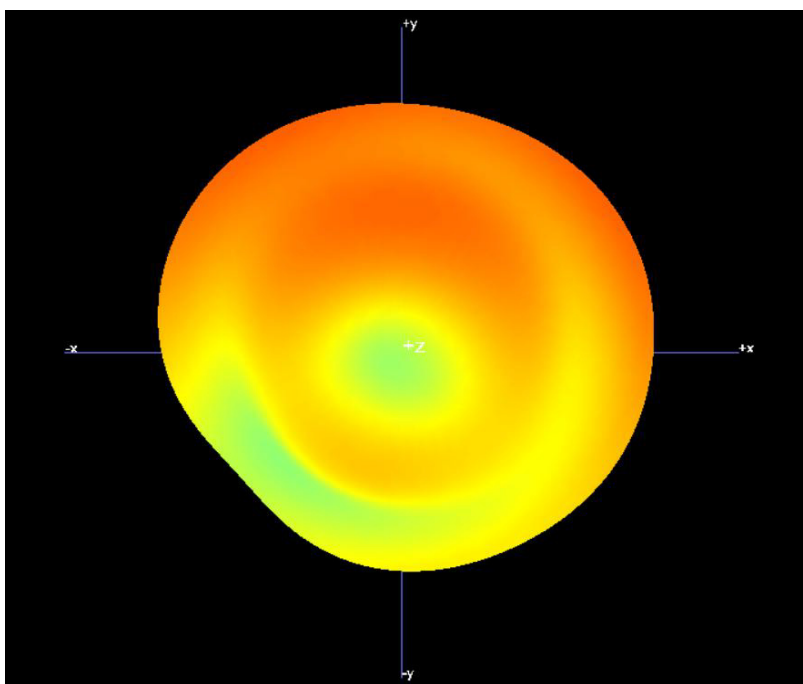
2. 3D Radiation Pattern



2402MHz



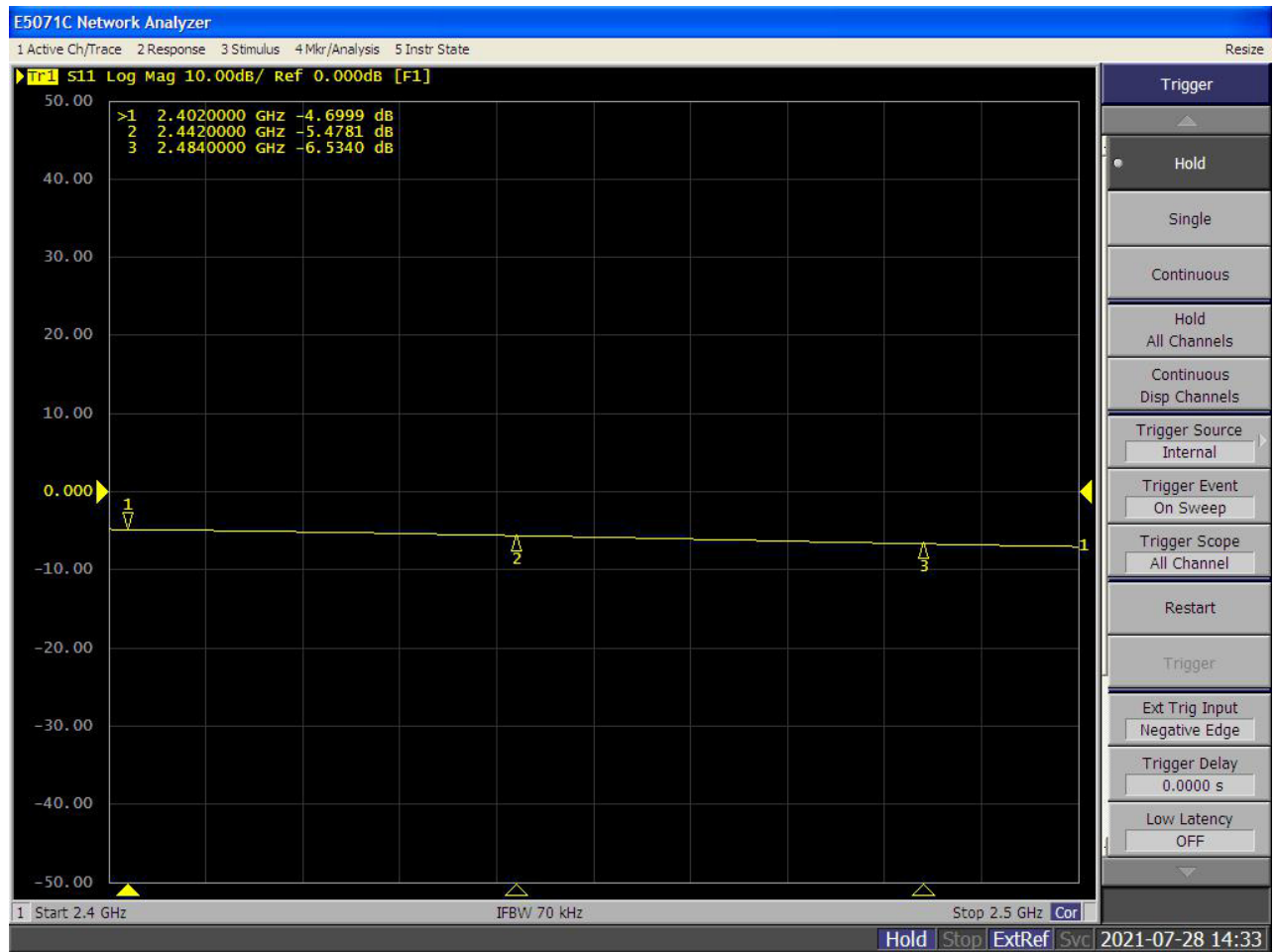
2442MHz

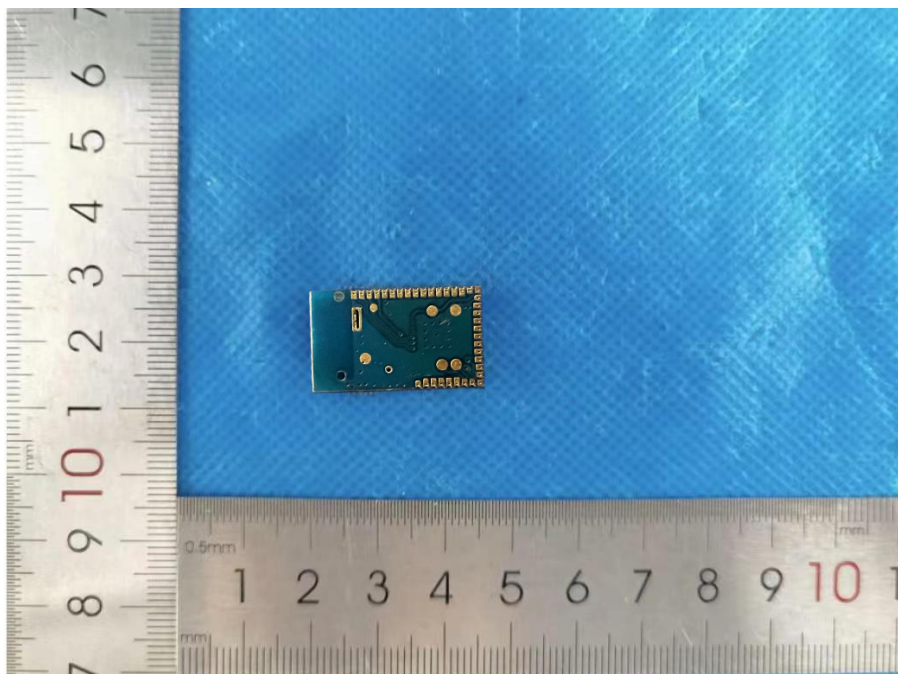


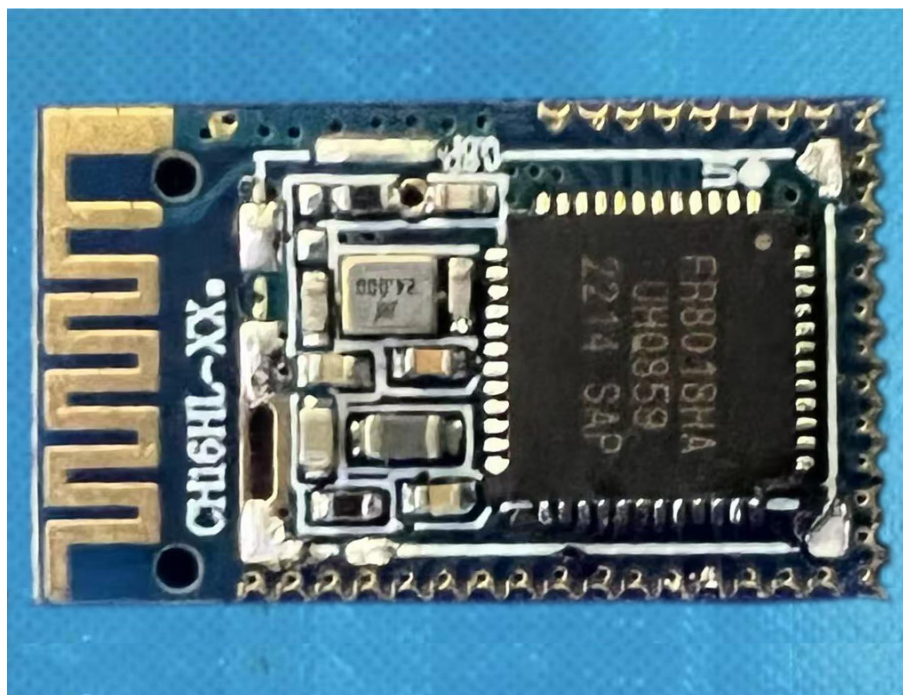
2484MHz



3. Return Loss









Annex D General Information

1.1 Identification of the Responsible Testing Laboratory

Laboratory Name:	Dongguan Chuan OptoElectronics Limited
Laboratory Address:	NO.43 SongShui Road,SongMuShan Village, Dalang Town,DongGuan City,Guangdong,China
Telephone:	+86 769-88342687
Facsimile:	+86 769-88342687

1.2 Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

1.3 Test Equipments Utilized

1.3.1 List of Test Equipment

NO.	Equipment Name	Serial NO.	Type	Manufa cturer	Cal.Date	Cal.Due Date
1	Vector Network Analyzer	MY46214666	E5071C	Agilent	2021.03.17	2022.03.16
2	OTA Chamber	N/A	SG24	Satimo	2021.01.12	2024.01.11
3	Antenna Measurement System	N/A	Satenv V1.4.1.14 build1	Satimo	N/A	N/A

————— END OF REPORT —————