

FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

TCL Communication Ltd.

Tablet PC

Model No.: 8188X

FCC ID: 2ACCJB225

Prepared for : TCL Communication Ltd.

5/F, Building 22E, 22 Science Park East Avenue, Hong Kong
Science Park, Shatin, NT, Hong Kong

Prepared By : Audix Technology (Shenzhen) Co., Ltd.

No. 6, Kefeng Road, Science & Technology Park,
Nanshan District , Shenzhen, Guangdong, China

Tel: (0755) 26639496



Report Number : ACS-F24116

Date of Test : Jun.05~Jul.01, 2024

Date of Report : Jul.17, 2024

TABLE OF CONTENTS

Description	Page
1. SUMMARY OF STANDARDS AND RESULTS.....	5
1.1. Description of Standards and Results.....	5
2. GENERAL INFORMATION.....	6
2.1. Description of Equipment Under Test	6
2.2. Feature of Equipment Under Test	7
2.3. Tested Supporting System Details	7
2.4. Block diagram of connection between the EUT and simulators	7
2.5. Test Equipments.....	8
2.6. Test Information.....	9
2.7. Test Facility.....	10
2.8. Measurement Uncertainty (95% confidence levels, k=2)	10
3. POWER LINE CONDUCTED EMISSION TEST	11
3.1. Block Diagram of Test Setup	11
3.2. Power Line Conducted Emission Test Limits	11
3.3. Configuration of EUT on Test	11
3.4. Operating Condition of EUT.....	12
3.5. Test Procedure.....	12
3.6. Power Line Conducted Emission Test Results.....	12
4. RADIATED EMISSION TEST.....	15
4.1. Block Diagram of Test Setup	15
4.2. Radiated Emission Limits	16
4.3. EUT Configuration on Test.....	16
4.4. Operating Condition of EUT.....	17
4.5. Test Procedure.....	17
4.6. Radiated Emission Test Results	17
5. CONDUCTED SPURIOUS EMISSIONS.....	94
5.1. Limit.....	94
5.2. Test Procedure.....	94
5.3. Test result	94
6. BAND EDGE COMPLIANCE TEST.....	107
6.1. Limit.....	107
6.2. Test Procedure.....	107
6.3. Test Results	107
7. 6DB BANDWIDTH TEST.....	140
7.1. Limit.....	140
7.2. Test Procedure.....	140
7.3. Test Results	140
8. OUTPUT POWER TEST	143
8.1. Limit (FCC Part 15C 15.247 b(3)).....	143
8.2. Test Procedure.....	143
8.3. Test Results	144
9. POWER SPECTRAL DENSITY TEST.....	147
9.1. Limit.....	147
9.2. Test Procedure.....	147
9.3. Test Results	148
10. ANTENNA REQUIREMENT.....	151
10.1. Standard Applicable	151

10.2. Antenna Connected Construction.....	151
11. DEVIATION TO TEST SPECIFICATIONS.....	152

Appendix A. Setup Photographs
Appendix B. Photographs of EUT

TEST REPORT

Applicant : TCL Communication Ltd.
Manufacturer : TCL Communication Ltd.
Product : Tablet PC
FCC ID : 2ACCJB225
(A) Model No. : 8188X
(B) Test Voltage : DC 3.85V
DC 5V From Adapter Input AC 120V/60Hz

Tested for comply with:
FCC CFR 47 Part 15 Subpart C

Test procedure used:
ANSI C63.10: 2020
KDB 558074 D01v05

The device described above is tested by Audix Technology (Shenzhen) Co., Ltd. to confirm comply with all the FCC Part 15 Subpart C requirements. The test results are contained in this test report and Audix Technology (Shenzhen) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these tests. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC and IC requirements. This report contains data that are not covered by the NVLAP accreditation.

This Report is made under FCC Part 2.1075. No modifications were required during testing to bring this product into compliance.

This report applies to single evaluation of one sample of above mentioned product and shall not be reproduced in part without written approval of Audix Technology (Shenzhen) Co., Ltd..

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

Date of Test : Jun.05~Jul.01, 2024 Date of Report: Jul.17, 2024

Prepared by : Crush Liu Reviewed by : Thomas Chen
Crush Liu / Assistant Thomas Chen / Assistant Manager

AUDIX[®] 信華科技(深圳)有限公司
Audix Technology (Shenzhen) Co., Ltd.
EMC 部門報告專用章

Stamp only for EMC Dept. Report

Approved & Authorized Signer : Signature: Sunny Lu
Sunny Lu / Manager

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT has been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	Standard	Results
Power Line Conducted Emission	FCC Part 15: 15.207	PASS
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.205	PASS
Band Edge Compliance	FCC Part 15: 15.247(d)	PASS
Conducted spurious emissions	FCC Part 15: 15.247(d)	PASS
6dB Bandwidth	FCC Part 15: 15.247(a)(2)	PASS
Peak Output Power	FCC Part 15: 15.247(b)(3)	PASS
Power Spectral Density	FCC Part 15: 15.247(e)	PASS
Antenna requirement	FCC Part 15: 15.203	PASS
Note: Measurement uncertainty affection to the result is not considered, the EUT is technically compliant with standard requirements.		

2. GENERAL INFORMATION

2.1. Description of Equipment Under Test

Applicant	TCL Communication Ltd.
Applicant Address	5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
Manufacturer	TCL Communication Ltd.
Manufacturer Address	5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
Factory	Huizhou TCL Mobile Communication Co., Ltd.
Factory Address	No.86, Hechang 7th West Road, Zhong Kai Hi-tech Development District, Hui Zhou, Guang Dong
Product	Tablet PC
Model No.	8188X
FCC ID	2ACCJB225
Sample Type	Prototype production
Date of Receipt	May.21, 2024
Date of Test	Jun.05~Jul.01, 2024

2.2.Feature of Equipment Under Test

Product Feature & Specification		
Product	Tablet PC	
Model No.	8188X	
Power Source	☒ Commercial Power	AC 100-240V~50/60Hz
	☒ External Power Source	DC 5.0V, 2.0A
	☒ Li-ion Battery	DC 3.85V
	☐ UM battery	DC V
2.4GHz Wi-Fi		
Support Modes	802.11b/g/n20/n40	
Frequency Range	2412-2462MHz	
Type of Modulation	802.11b(DSSS): CCK, QPSK, BPSK; 802.11g/n(OFDM): 64QAM,16QAM, QPSK, BPSK	
Data Rate	802.11b: 1/2/5.5/11 Mbps; 802.11g: 6/9/12/18/24/36/48/54 Mbps; 802.11n: up to 300Mbps	
Channel Separation	5MHz	
Antenna System		
Antenna Peak Gain & Type of Antenna	Wi-Fi 2.4GHz Antenna Antenna Type : PIFA Antenna Antenna Gain: 1.92dBi	
Remark: This report is for Wi-Fi 2.4GHz radio specification only. EUT also supports other radio specification as below listed: BDR+EDR (Test report No. ACS-F24114) BLE (Test report No. ACS-F24115) Wi-Fi 5GHz (Test report No. ACS-F24117) DFS (Test report No. ACS-F24123)		

2.3.Tested Supporting System Details

None

2.4.Block diagram of connection between the EUT and simulators

EUT

(EUT: Tablet PC)

2.5.Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	1# Shielding Room(SE)	AUDIX	N/A	N/A	Nov.09,22	3 Year
2.	3m Chamber(NSA)	AUDIX	N/A	N/A	Aug.11,22	3Year
3.	3m Chamber(SE)	AUDIX	N/A	N/A	Sep.16,22	3 Year
4.	EMI Test Receiver	Rohde & Schwarz	ESCI	100842	Mar.16,24	1 Year
5.	EMI Test Receiver	Rohde & Schwarz	ESR3	101931	Mar.17,24	1 Year
6.	L.I.S.N.#1	Rohde & Schwarz	ENV216	102160	Jun.19,24	1 Year
7.	RF Cable	Eastsheep	RG223	190424	Sep.15,23	1Year
8.	Coaxial Switch	Anritsu	MP59B	6201397223	Mar.17,24	1 Year
9.	NSA Cable	HUBER+SUHNER	CFD400NL-LW	No.3+190411	Sep.20,23	1 Year
10.	RF Cable	TIMES MICROWAVE	SFT205-NMSM-1 0.00M	689241	Aug.25,23	1 Year
11.	RF Cable	HUBER+SUHNER	SUCOFLEX-106	190423	Mar.16,24	1 Year
12.	Signal Analyzer	Rohde & Schwarz	FSV40	101608	Nov.07,23	1 Year
13.	Signal Analyzer	Rohde & Schwarz	FSV30	104050	Mar.17,24	1 Year
14.	Tri-log-Broadband Antenna	SCHWARZBECK	VULB 9168	429	Oct.10,23	1 Year
15.	Horn Antenna	ETC	MCTD 1209	DRH15F03006	Aug.23,23	1 Year
16.	Amplifier	HP	8447D	2944A11159	Mar.17,24	1 Year
17.	Amplifier	EMCI	EMC0518A45SE	980965	Aug.25,23	1 Year
18.	Amplifier	EMCI	EMC0518A45SE	980965	Aug.25,23	1 Year
19.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Mar.16,24	1 Year
20.	Power meter	HP	436A	3103U06658	Mar.16,24	1Year
21.	Power sensor	Agilent	8482B	MY41090514	Mar.16,24	1Year
22.	Test Software	AUDIX	e3	6.100913a	N/A	N/A

Note: N/A means Not applicable.

2.6.Test Information

A special test software (EngineerMode) was used to control EUT work in TX mode, and select test channel, wireless mode and data rate.

Tested mode, channel, and data rate information			
Mode	data rate (Mbps)(see Note)	Channel	Frequency (MHz)
IEEE 802.11b	1	Low :CH1	2412
	1	Middle: CH6	2437
	1	High: CH11	2462
IEEE 802.11g	6	Low :CH1	2412
	6	Middle: CH6	2437
	6	High: CH11	2462
IEEE 802.11n HT20	MCS0	Low :CH1	2412
	MCS0	Middle: CH6	2437
	MCS0	High: CH11	2462
IEEE 802.11n HT40	MCS0	Low :CH3	2422
	MCS0	Middle: CH6	2437
	MCS0	High: CH9	2452

2.7. Test Facility

Site Description

Name of Firm : Audix Technology (Shenzhen) Co., Ltd.
No. 6, Kefeng Road, Science & Technology Park,
Nanshan District , Shenzhen, Guangdong, China

EMC Lab. : Certificated by ISED, Canada
Company Number: 5183A
CAB identifier: CN0034
Valid Date: Mar.31, 2025

: Certificated by FCC, USA
Designation No.: CN5022
Valid Date: Mar.31, 2025

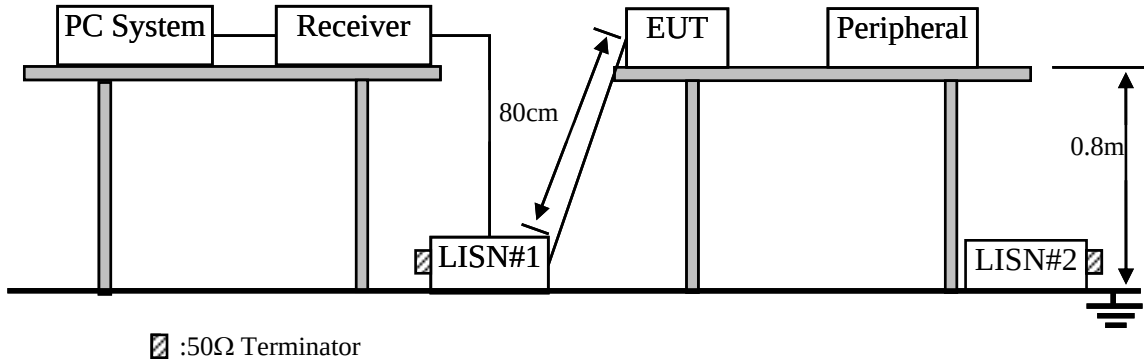
: Accredited by NVLAP, USA
NVLAP Code: 200372-0
Valid Date: Mar.31, 2025

2.8.Measurement Uncertainty (95% confidence levels, k=2)

Test Item	Uncertainty
Uncertainty for Conduction emission test in No. 1 Conduction	$\pm 2.6\text{dB}(150\text{kHz to } 30\text{MHz})$
Uncertainty for Radiation Emission test in 3m chamber	$\pm 3.8\text{dB}(30\sim 200\text{MHz, Polarization: H})$
	$\pm 3.8\text{dB}(30\sim 200\text{MHz, Polarization: V})$
	$\pm 4.0\text{dB}(200\text{M}\sim 1\text{GHz, Polarization: H})$
	$\pm 4.0\text{dB}(200\text{M}\sim 1\text{GHz, Polarization: V})$
Uncertainty for Radiation Emission test in 3m chamber(1GHz-25GHz)	$\pm 4.0\text{dB}(1\sim 6\text{GHz, Distance: } 3\text{m})$
	$\pm 4.0\text{dB}(6\sim 25\text{GHz, Distance: } 3\text{m})$
Uncertainty for Radiated Spurious Emission test in RF chamber	$\pm 3.7\text{dB}(30\text{MHz}\sim 1000\text{MHz})$
	$\pm 3.3\text{dB}(1\sim 26.5\text{GHz})$
Uncertainty for Conduction Spurious emission test	$\pm 2.0\text{dB}$
Uncertainty for Output power test	$\pm 0.8\text{dB}$
Uncertainty for Bandwidth test	$\pm 4.6\%$
Uncertainty for DC power test	$\pm 0.1\%$
Uncertainty for test site temperature and humidity	$\pm 0.6^{\circ}\text{C}$
	$\pm 3\%$

3. POWER LINE CONDUCTED EMISSION TEST

3.1. Block Diagram of Test Setup



3.2. Power Line Conducted Emission Test Limits

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

3. Emission Level (dBμV) = Factor (L.I.S.N.) (dB) + Cable Loss (dB) + Reading (Receiver) (dBμV)

3.3. Configuration of EUT on Test

The following equipment are installed on Power Line Conducted Emission Test to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

3.3.1. Tablet PC (EUT)

Model No. : 8188X

Serial No. : N/A

3.3.2. Support Equipment: As Tested Supporting System Details, in Section 2.3.

3.4. Operating Condition of EUT

- 3.4.1. Setup the EUT as shown as Section 3.1.
- 3.4.2. Turn on the power of EUT.
- 3.4.3. PC run test software to control EUT work in Tx mode.

3.5. Test Procedure

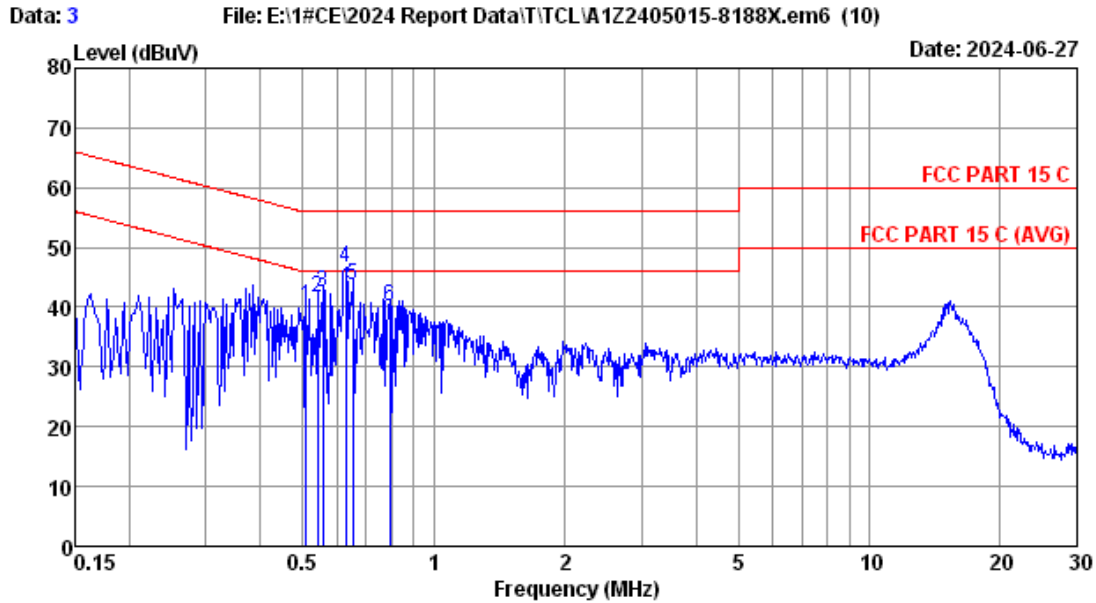
The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power Via AC unit connected to the power mains through a line impedance stabilization network (L.I.S.N. #1). This provides a 50 ohm coupling impedance for the EUT (Please refer the block diagram of the test setup and photographs). The AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10 on Conducted Emission Test.

The bandwidth of test receiver is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

3.6. Power Line Conducted Emission Test Results

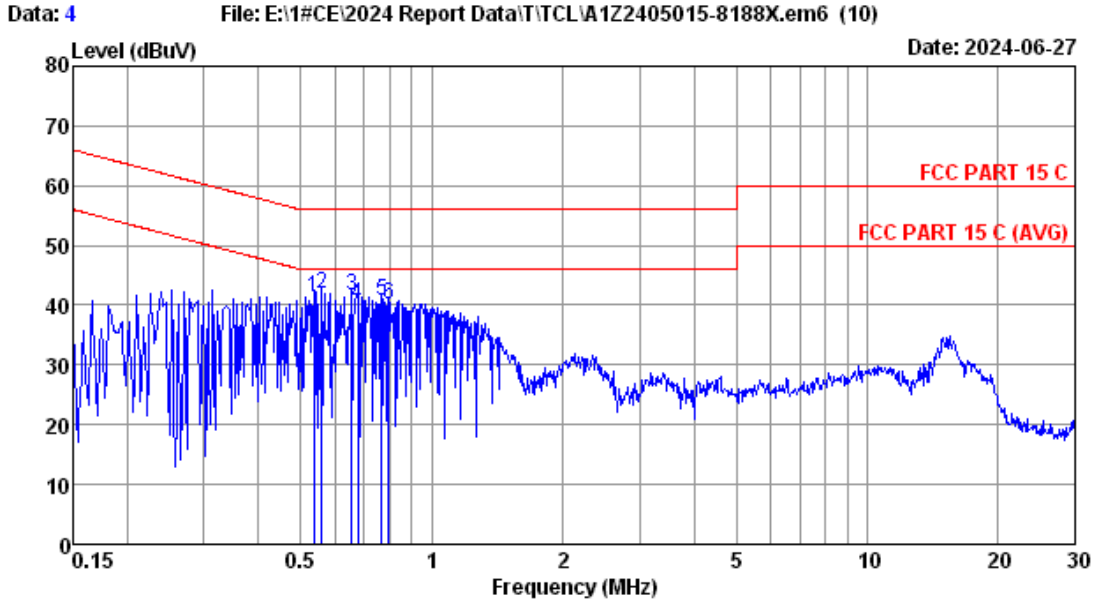
PASS. (All emissions not reported below are too low against the prescribed limits.)



Site no :1# CE Data No :3
 Dis./Lisn :2023 ENV216-N
 Limit :FCC PART 15 C
 Env./Ins. :22.9°C/52% Engineer :Hongjie
 Power Rating :AC 120V/60Hz
 Test Mode :WIFI2.4G TX Mode

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.510	9.73	0.02	30.37	40.12	56.00	15.88	QP
2	0.541	9.73	0.02	31.97	41.72	56.00	14.28	QP
3	0.555	9.73	0.02	32.71	42.46	56.00	13.54	QP
4	0.627	9.74	0.02	36.82	46.58	56.00	9.42	QP
5	0.651	9.74	0.02	33.96	43.72	56.00	12.28	QP
6	0.792	9.74	0.02	30.41	40.17	56.00	15.83	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss+Reading.
 2.If the average limit is met when using a quasi-peak detector.
 the EUT shall be deemed to meet both limits and measurement
 with average detector is unnecessary.



Site no :1# CE Data No :4
 Dis./Lisn :2023 ENV216-L
 Limit :FCC PART 15 C
 Env./Ins. :22.9°C/52% Engineer :Hongjie
 Power Rating :AC 120V/60Hz
 Test Mode :WIFI2.4G TX Mode

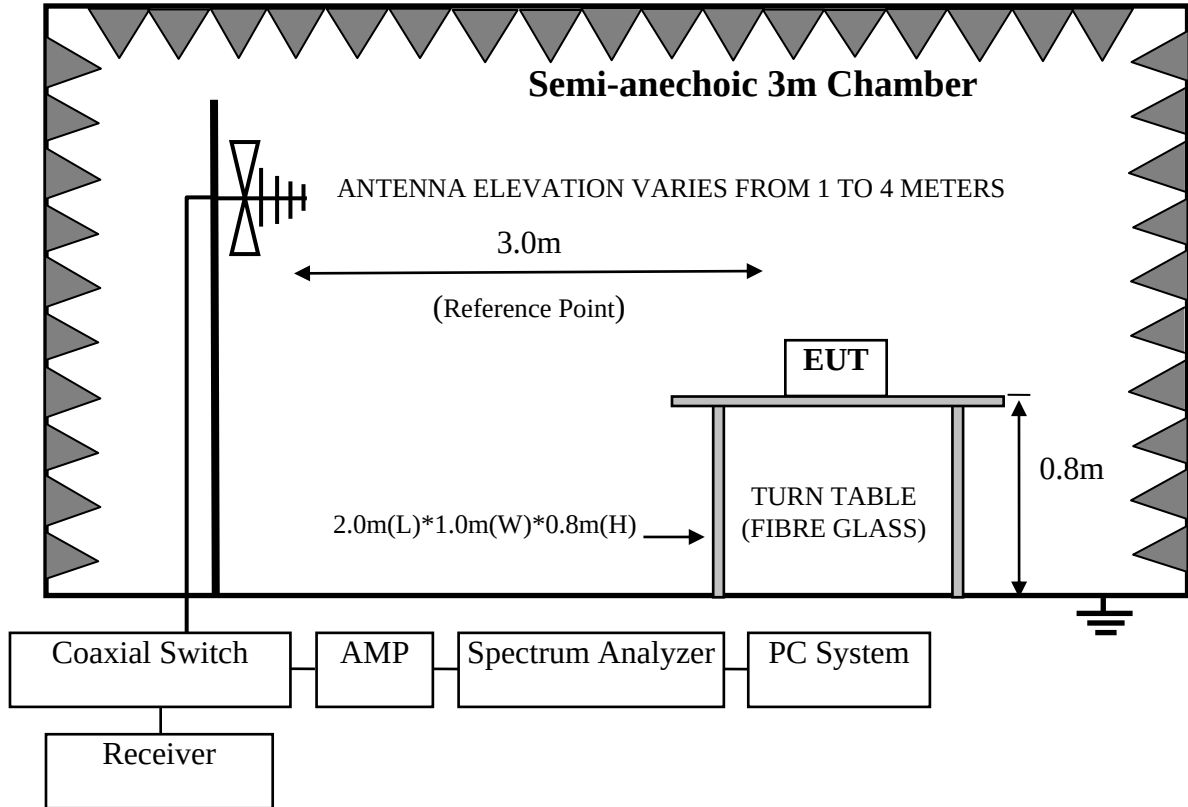
No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.535	9.58	0.02	31.82	41.42	56.00	14.58	QP
2	0.558	9.58	0.02	32.23	41.83	56.00	14.17	QP
3	0.654	9.57	0.02	32.14	41.73	56.00	14.27	QP
4	0.675	9.57	0.02	30.41	40.00	56.00	16.00	QP
5	0.767	9.57	0.02	31.27	40.86	56.00	15.14	QP
6	0.796	9.57	0.02	30.69	40.28	56.00	15.72	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss+Reading.
 2.If the average limit is met when using a quasi-peak detector.
 the EUT shall be deemed to meet both limits and measurement
 with average detector is unnecessary.

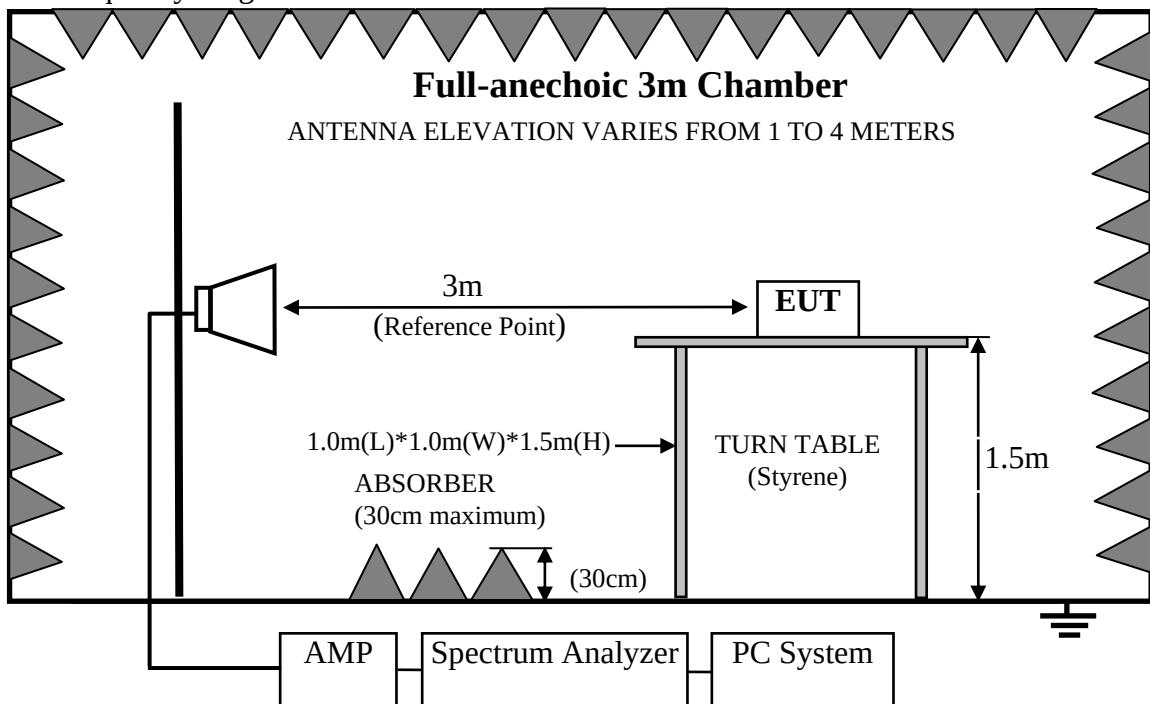
4. RADIATED EMISSION TEST

4.1. Block Diagram of Test Setup

For frequency range 30MHz-1000MHz



For frequency range 1GHz-25GHz



4.2. Radiated Emission Limits

4.2.1. 15.247&209 limits

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

Remark : (1) Emission Level ($\text{dB}\mu\text{V}/\text{m}$) = Reading (Receiver) ($\text{dB}\mu\text{V}$) + Antenna Factor (dB/m) + Cable Loss (dB)

Emission Level ($\text{dB}\mu\text{V}/\text{m}$) = Reading (Spectrum) ($\text{dB}\mu\text{V}$) + Antenna Factor (dB/m) – Amp Factor (dB) + Cable Loss (dB)(above 1000MHz)

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

4.2.2. 15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

4.3. EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

4.3.1. Tablet PC (EUT)

Model No. : 8188X

Serial No. : N/A

4.3.2. Support Equipment: As Tested Supporting System Details, in Section 2.3.

4.4.Operating Condition of EUT

- 4.4.1. Setup the EUT and simulator as shown as Section 4.1.
- 4.4.2. Turn on the power of all equipments.
- 4.4.3. Let EUT work in Tx(WiFi 2.4GHz) mode

4.5.Test Procedure

Frequency below 30MHz:

The EUT setup on the turn table which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna fixed to 1 m to find the maximum emission level. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10 regulation.

Frequency above 30MHz:

EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground for frequency 30MHz~1000MHz, 1.5 meter high above ground for frequency above 1GHz and put the absorbing with 2.4m(L)*2.4m(W)*0.3m(H) on the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna for frequency 30MHz~1000MHz, and the Horn antenna is used as receiving antenna for frequency above 1GHz. Both horizontal and vertical polarization of the antenna are set on test.

This test was performed with EUT in X, Y, Z position, and the worse case was found and reported.

The bandwidth of the EMI test receiver (R&S) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's VBW is set at 3MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz

The frequency range from 30MHz to 10th harmonic (25GHz) are checked. and no any emissions were found from 18GHz to 25GHz, So the radiated emissions from 18GHz to 25GHz were not record.

4.6.Radiated Emission Test Results

PASS.

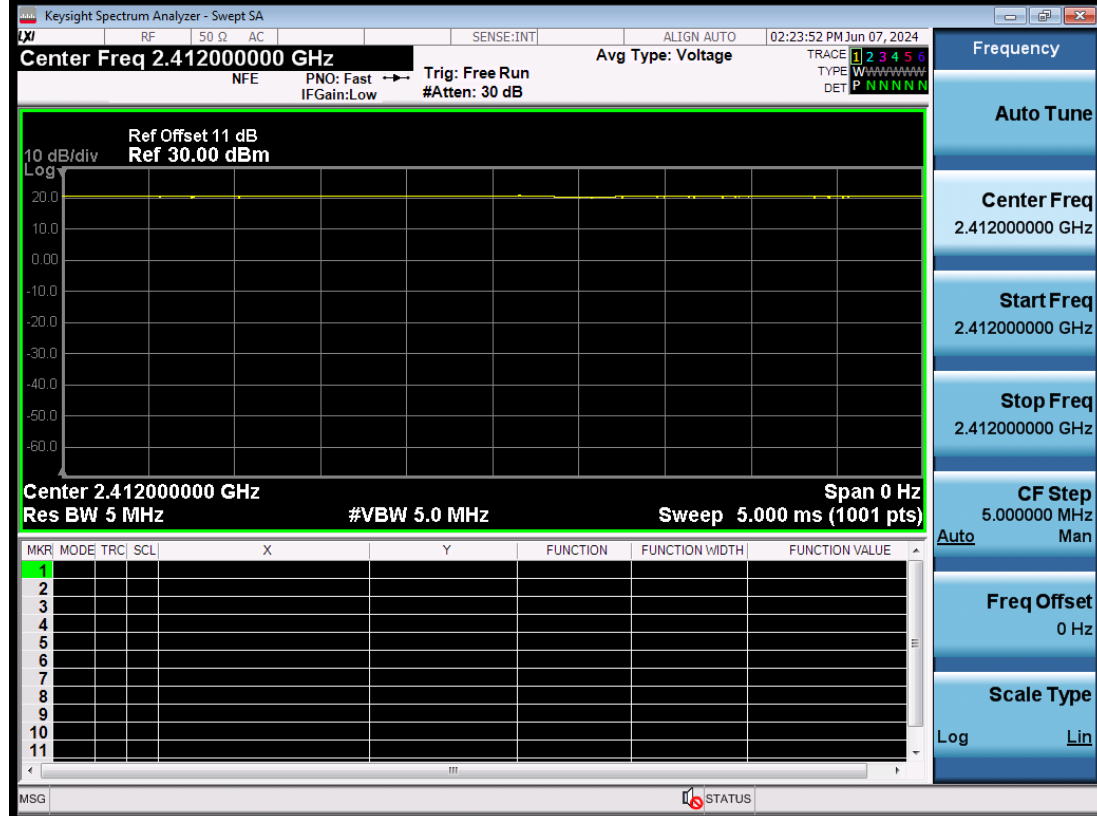
All the emissions from 30MHz to 25 GHz were comply with 15.209 limits.

Note 1: For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.

Note 2: The emissions (9kHz~30MHz) not reported for there is no emission be found.

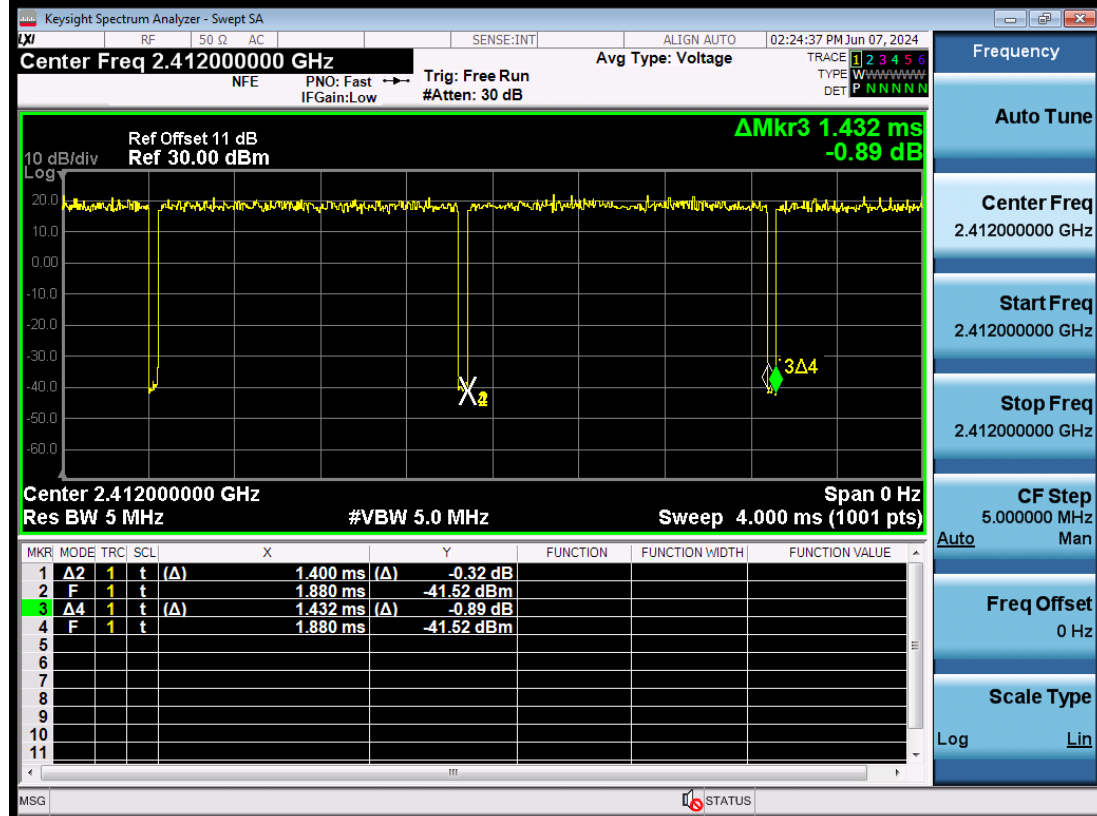
Duty cycle

11 b



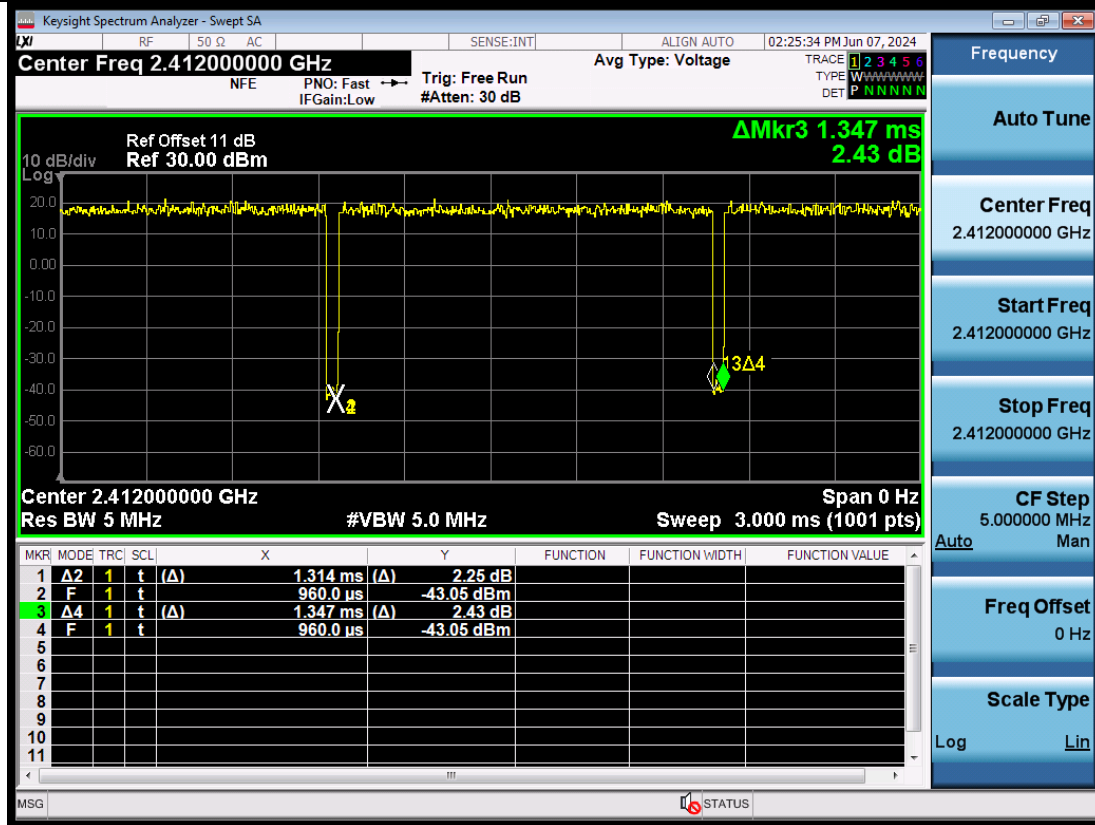
Note: The duty cycle factor is 0.

11 g



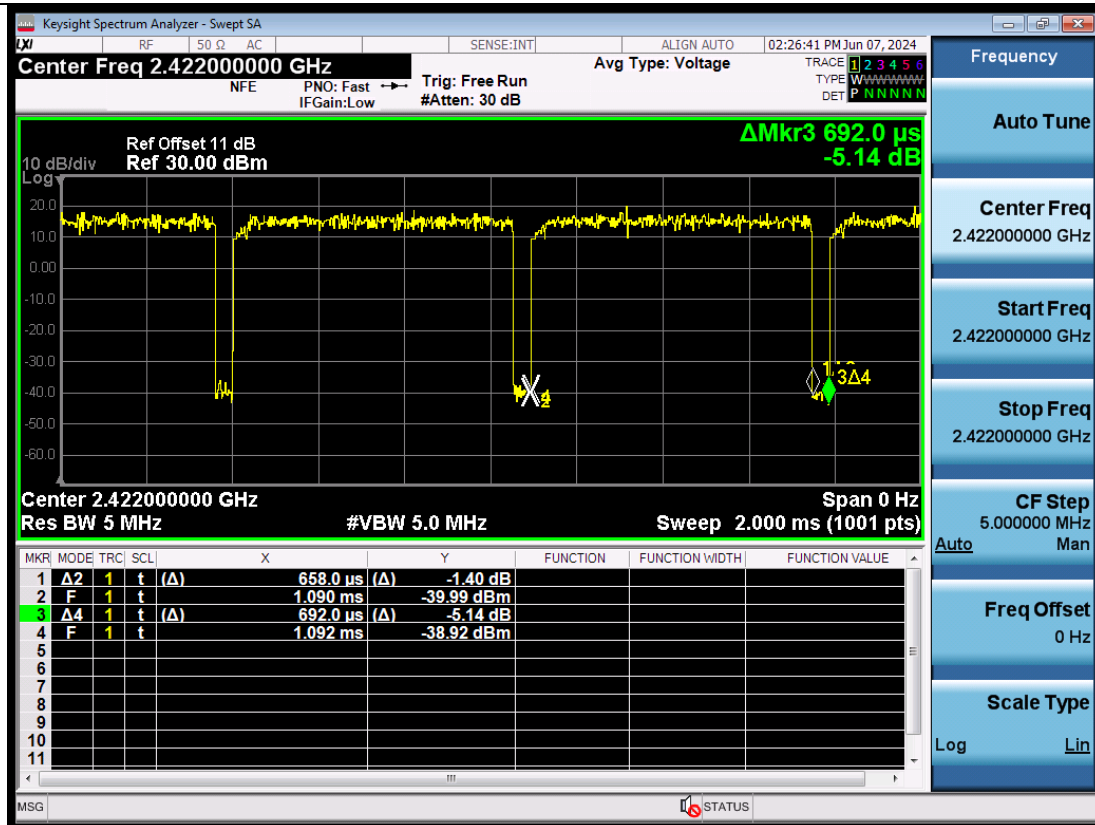
Note: The duty cycle factor is 0.98

11n HT20



Note: The duty cycle factor is 0.11

11n HT40



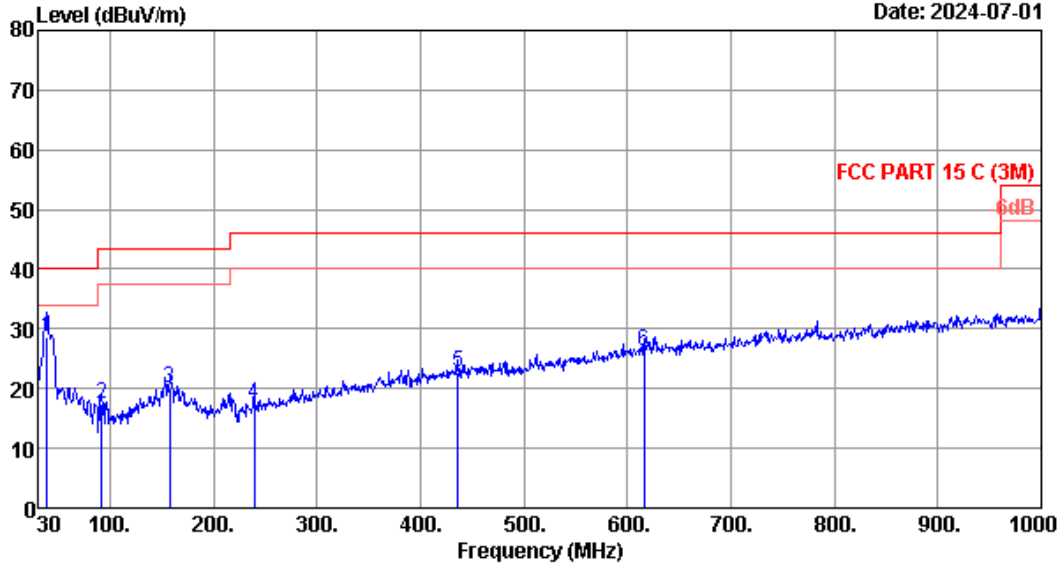
Note: The duty cycle factor is 0.22

Frequency: 30MHz~1GHz

Data: 3

File: E:\2024 Report Data\T\TCL\A122405015-8188X.EM6 (10)

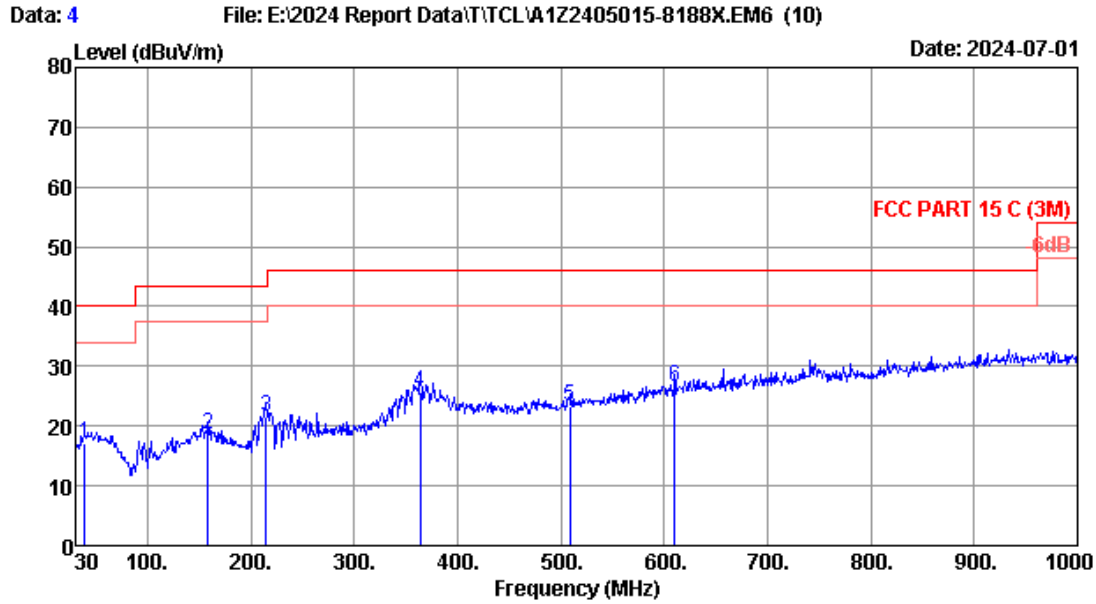
Date: 2024-07-01



Site no. : 3m Chamber Data no. : 3
 Dis. / Ant. : 3m 2023 VULB 9168-429 Ant. pol. : VERTICAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 24.0°C/57% Engineer : Abel
 EUT :
 Power rating : AC 120V/60Hz
 Test Mode : WIFI2.4G TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	38.730	19.20	0.56	39.42	28.78	40.00	11.22	QP
2	92.080	14.11	0.84	32.41	17.28	43.50	26.22	QP
3	157.070	19.30	1.04	29.26	20.01	43.50	23.49	QP
4	239.520	17.46	1.31	28.07	17.51	46.00	28.49	QP
5	436.430	22.76	1.70	27.91	22.88	46.00	23.12	QP
6	615.880	26.22	2.08	27.71	26.41	46.00	19.59	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 4
 Dis. / Ant. : 3m 2023 VULB 9168-429 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 24.0°C/57% Engineer : Abel
 EUT :
 Power rating : AC 120V/60Hz
 Test Mode : WIFI2.4G TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission		Margin (dB)	Remark
					Level (dBuV/m)	Limits (dBuV/m)		
1	38.730	19.20	0.56	27.64	17.00	40.00	23.00	QP
2	158.040	19.30	1.04	27.78	18.55	43.50	24.95	QP
3	214.300	15.60	1.22	33.80	21.48	43.50	22.02	QP
4	363.680	20.77	1.55	32.39	25.62	46.00	20.38	QP
5	508.210	23.86	1.85	27.71	23.44	46.00	22.56	QP
6	610.060	26.10	2.07	28.04	26.57	46.00	19.43	QP

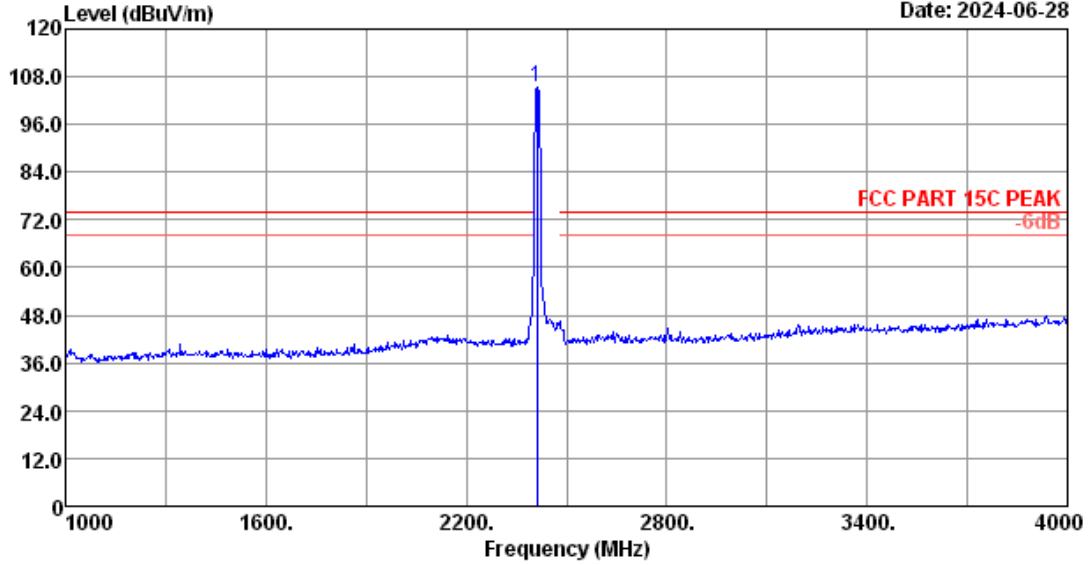
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency: 1GHz~18GHz

Data: 33

File: F:\2024 Report\JJIEKAI\A1Z2405015\FCC\8188X\WIFI2.4G.EM6 (104)

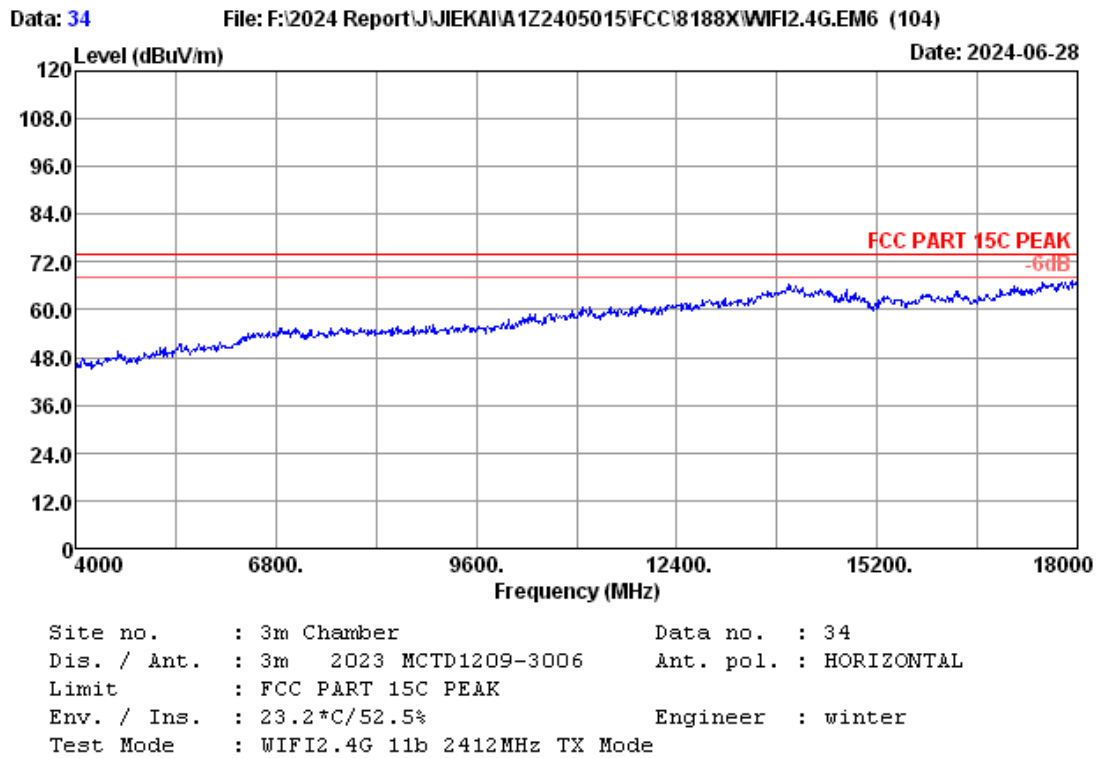
Date: 2024-06-28

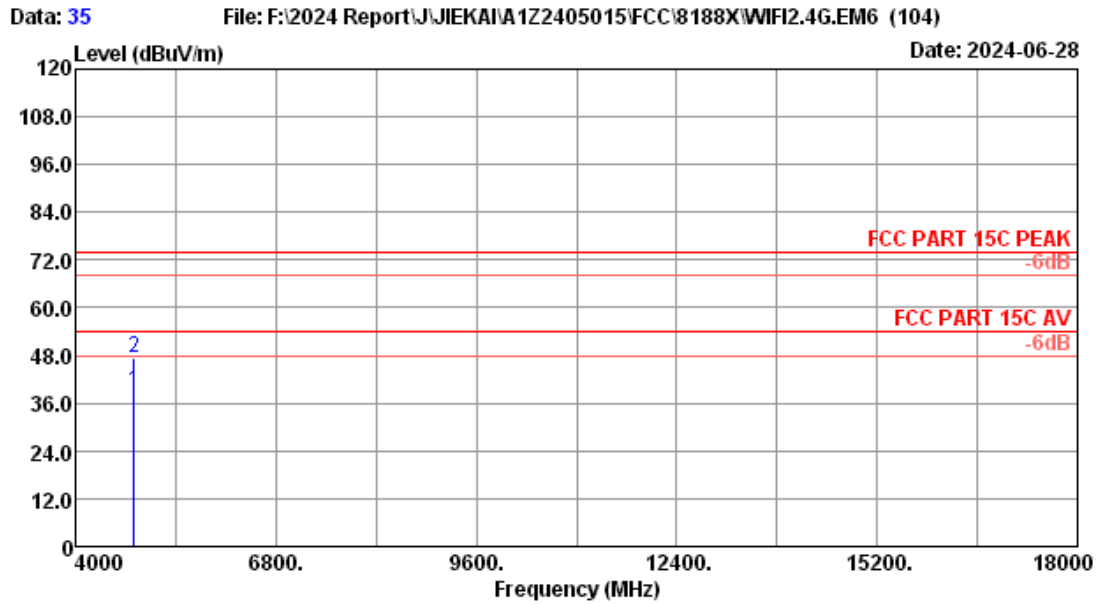


Site no. : 3m Chamber Data no. : 33
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11b 2412MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2412.00	27.65	2.84	106.56	31.69	105.36	-----	-----	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.

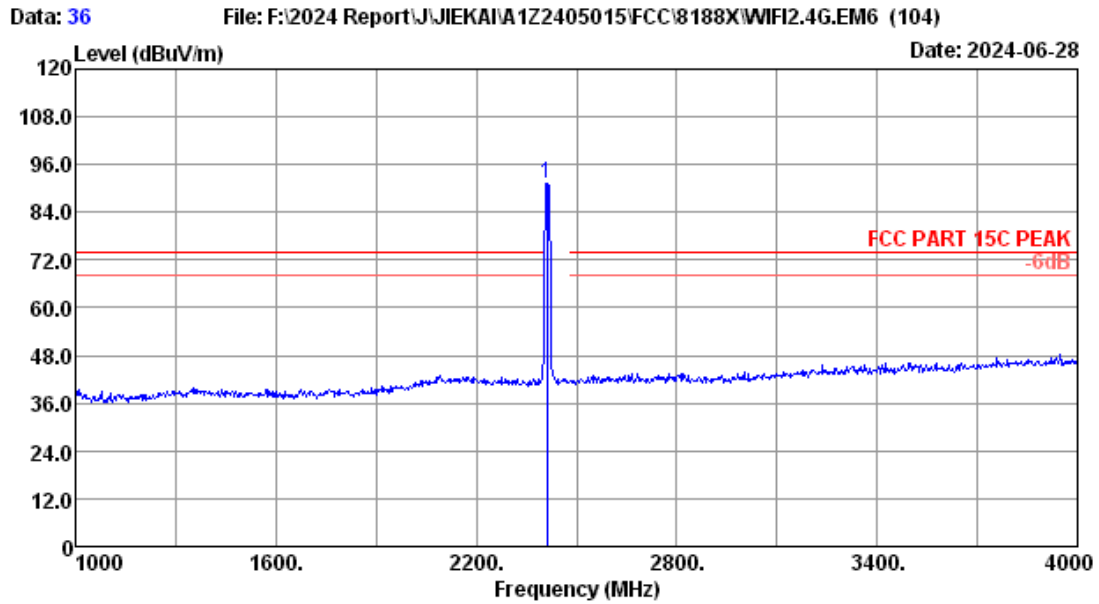




Site no. : 3m Chamber Data no. : 35
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11b 2412MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.00	31.20	3.96	34.17	30.42	38.91	54.00	15.09	Average
2	4824.00	31.20	3.96	42.62	30.42	47.36	74.00	26.64	Peak

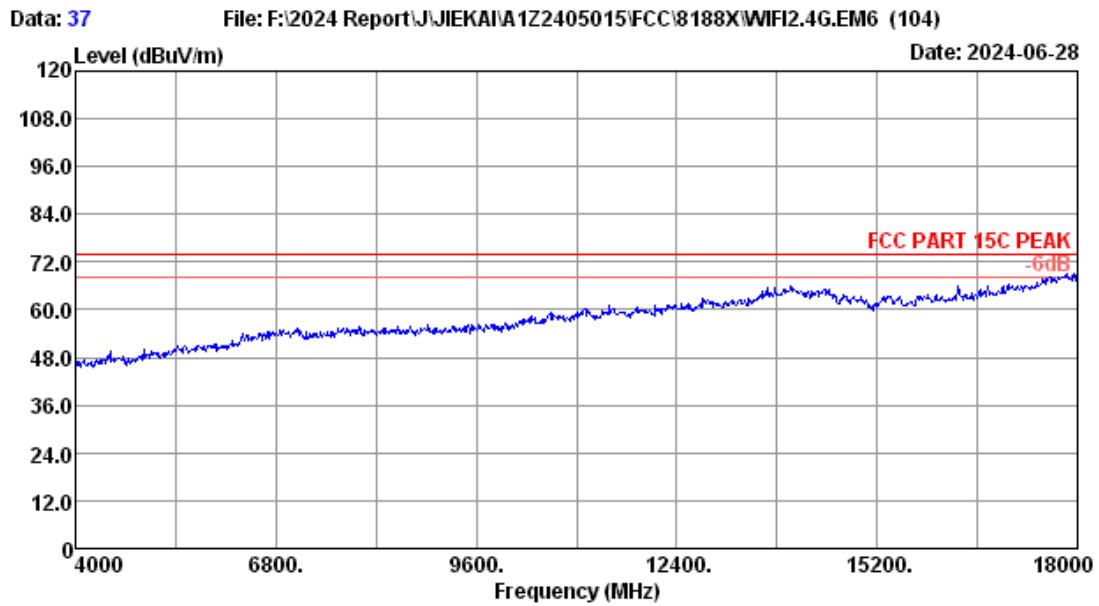
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



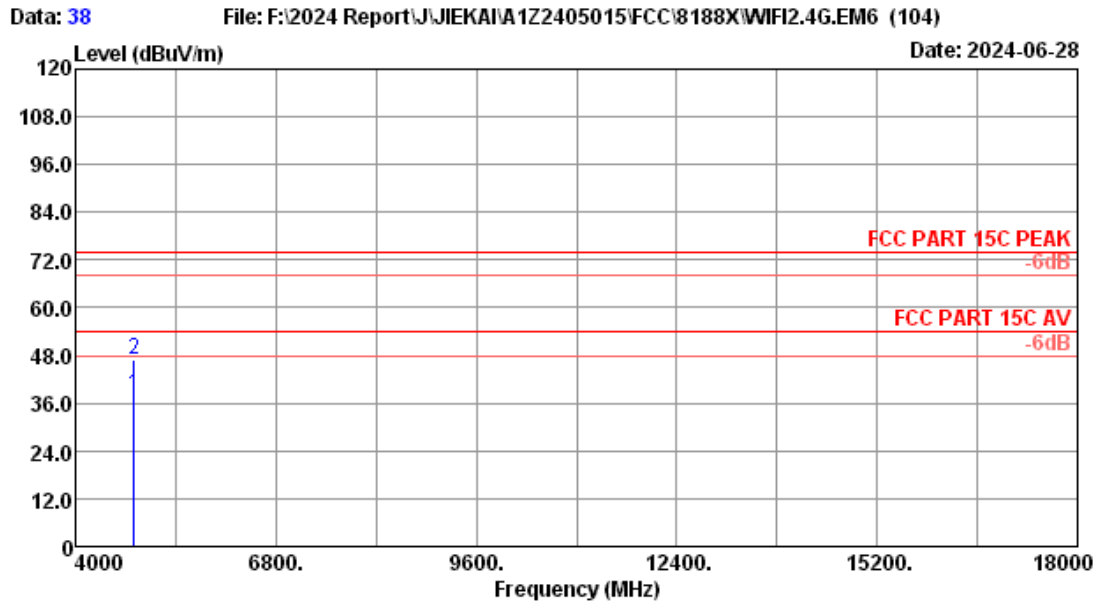
Site no. : 3m Chamber Data no. : 36
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11b 2412MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2412.00	27.65	2.84	92.60	31.69	91.40	-----	-----	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



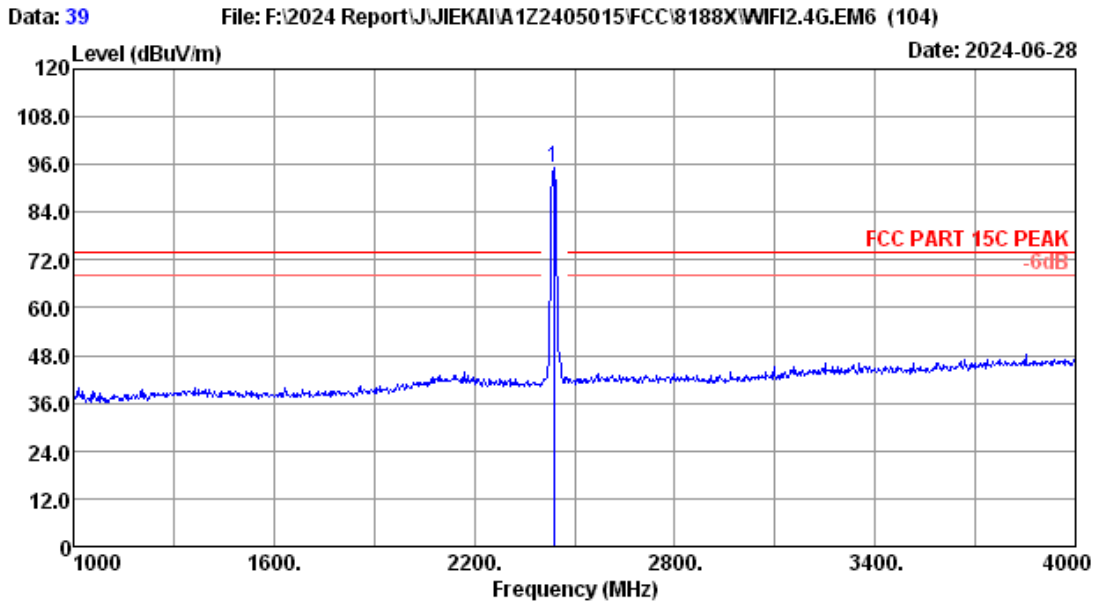
Site no.	: 3m Chamber	Data no.	: 37
Dis. / Ant.	: 3m 2023 MCTD1209-3006	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.2°C/52.5%	Engineer	: winter
Test Mode	: WIFI2.4G 11b 2412MHz TX Mode		



Site no. : 3m Chamber Data no. : 38
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11b 2412MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.00	31.20	3.96	33.26	30.42	38.00	54.00	16.00	Average
2	4824.00	31.20	3.96	42.18	30.42	46.92	74.00	27.08	Peak

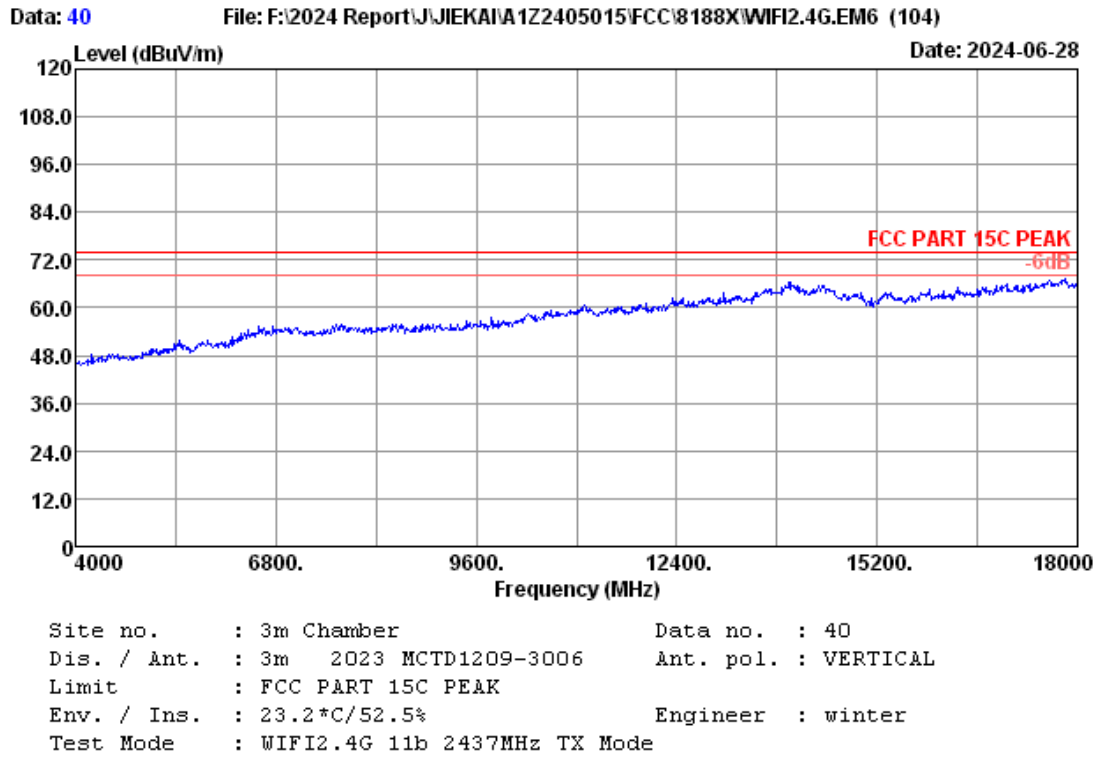
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.

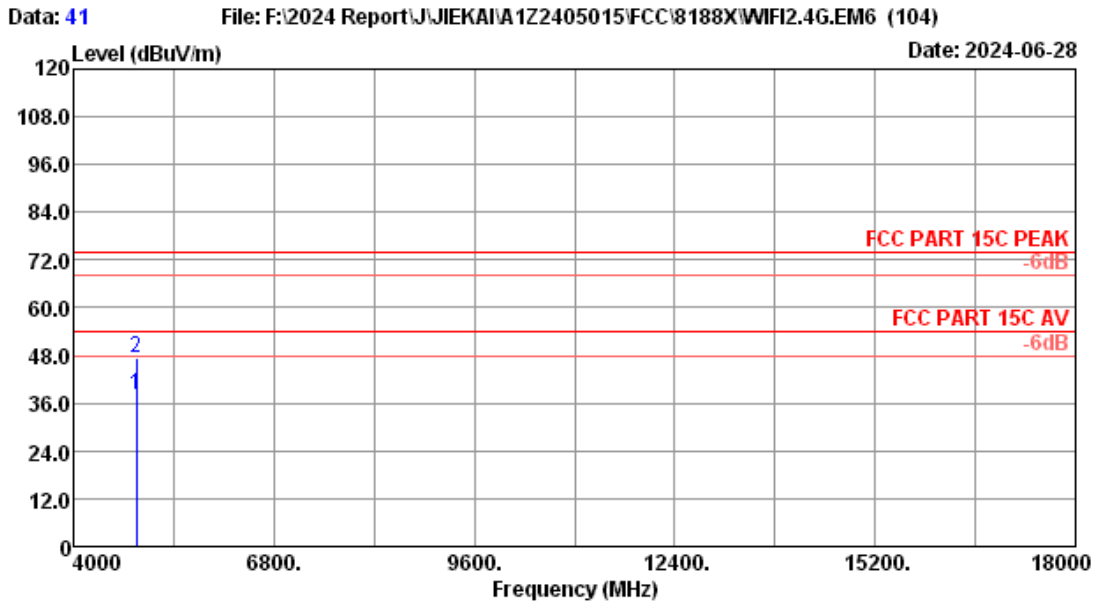


Site no. : 3m Chamber Data no. : 39
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11b 2437MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.75	2.86	96.08	31.68	95.01	-----	-----	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.

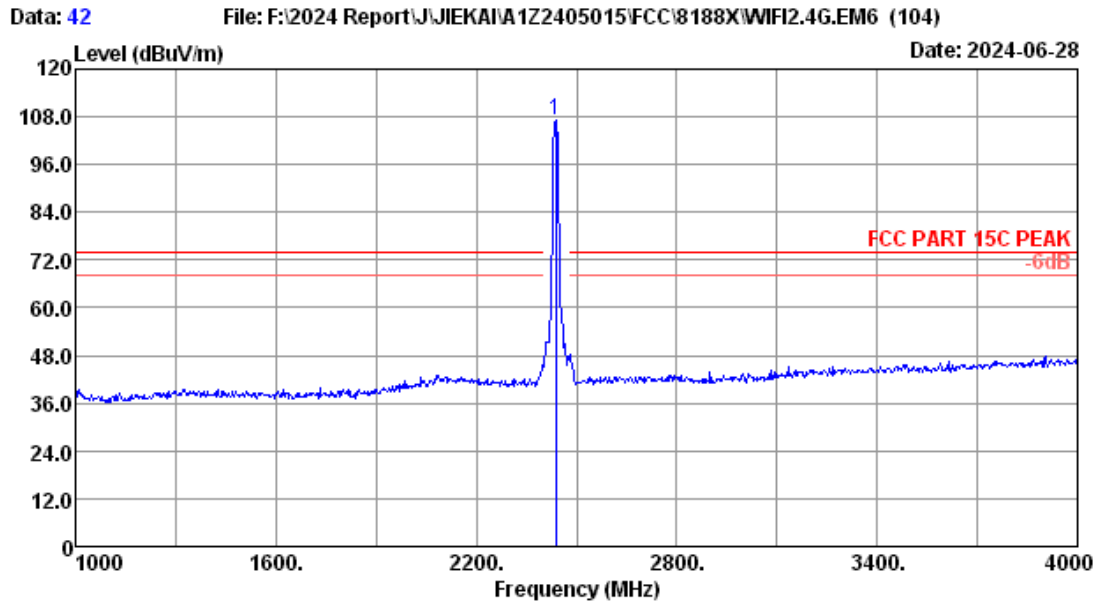




Site no. : 3m Chamber Data no. : 41
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11b 2437MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.00	31.39	3.98	33.26	30.41	38.22	54.00	15.78	Average
2	4874.00	31.39	3.98	42.58	30.41	47.54	74.00	26.46	Peak

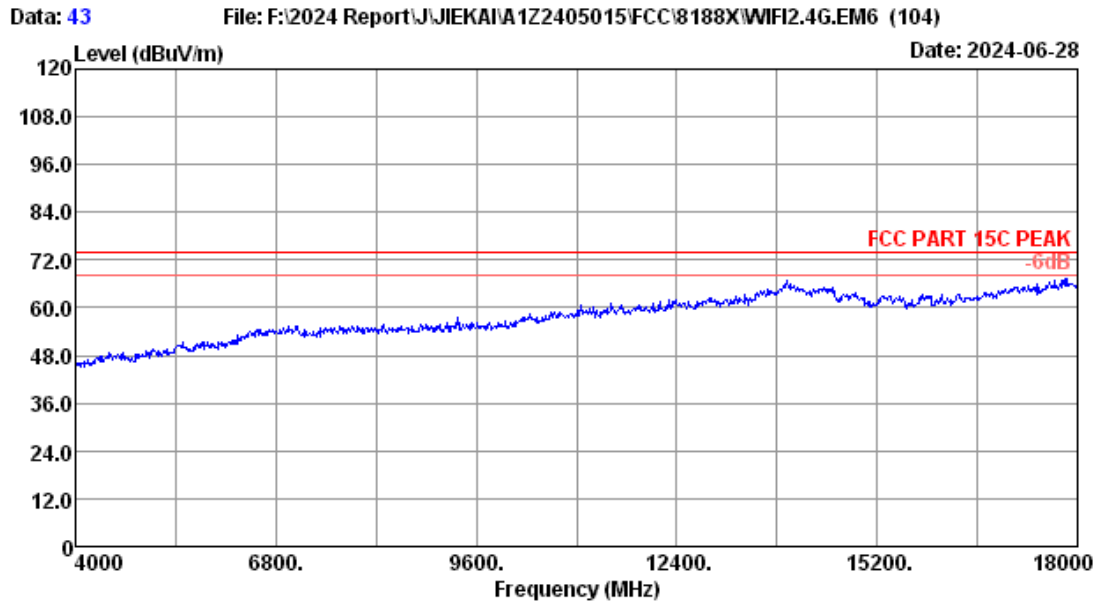
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



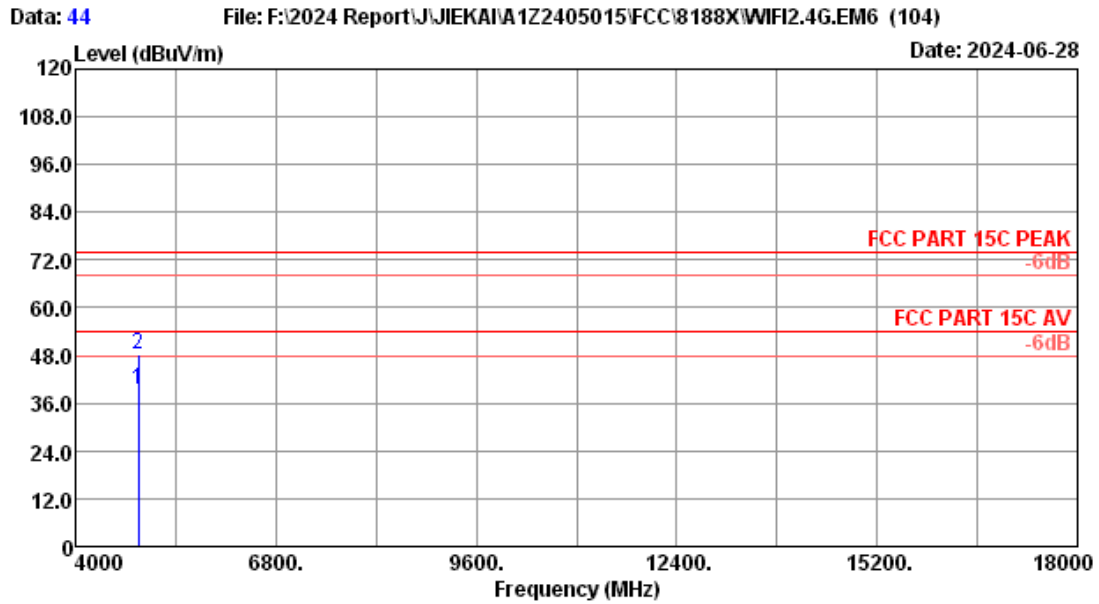
Site no. : 3m Chamber Data no. : 42
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11b 2437MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.75	2.86	108.33	31.68	107.26	-----	-----	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



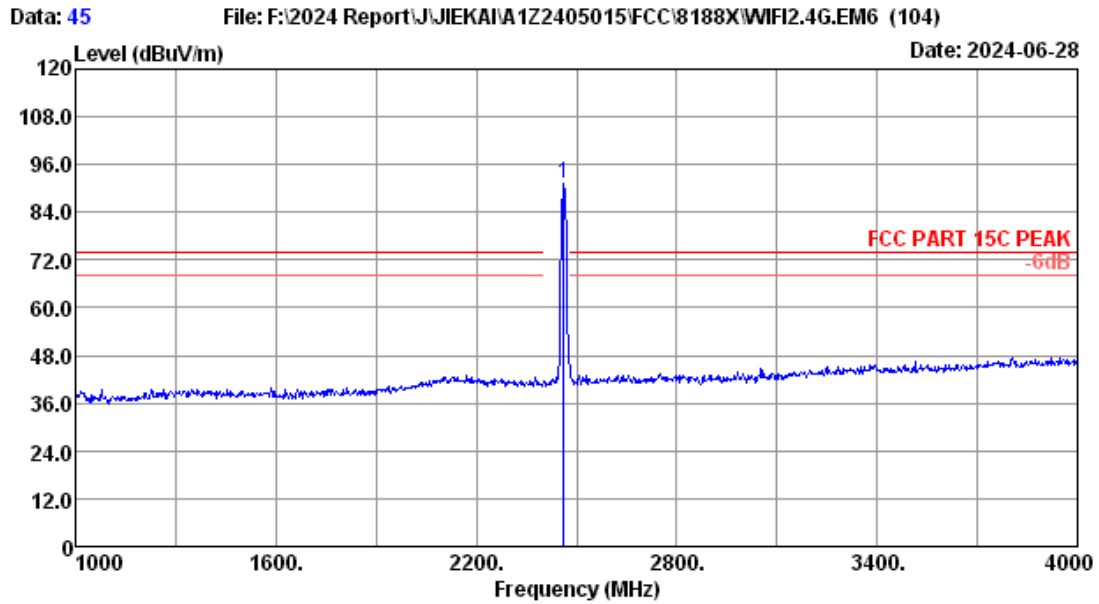
Site no.	: 3m Chamber	Data no.	: 43
Dis. / Ant.	: 3m 2023 MCTD1209-3006	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.2°C/52.5%	Engineer	: winter
Test Mode	: WIFI2.4G 11b 2437MHz TX Mode		



Site no. : 3m Chamber Data no. : 44
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11b 2437MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.00	31.39	3.98	34.51	30.41	39.47	54.00	14.53	Average
2	4874.00	31.39	3.98	43.21	30.41	48.17	74.00	25.83	Peak

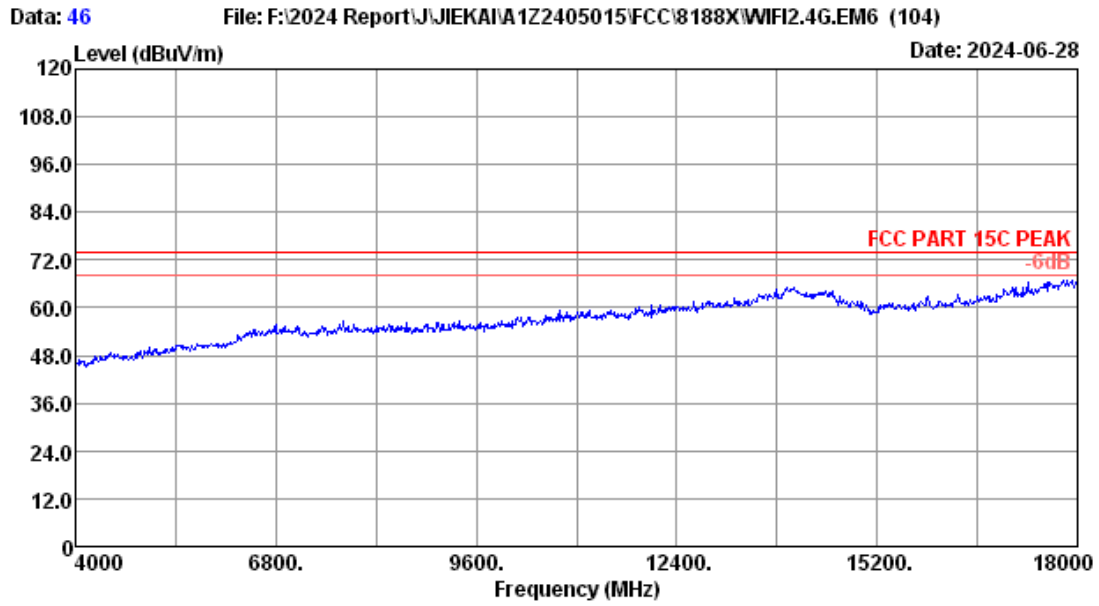
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



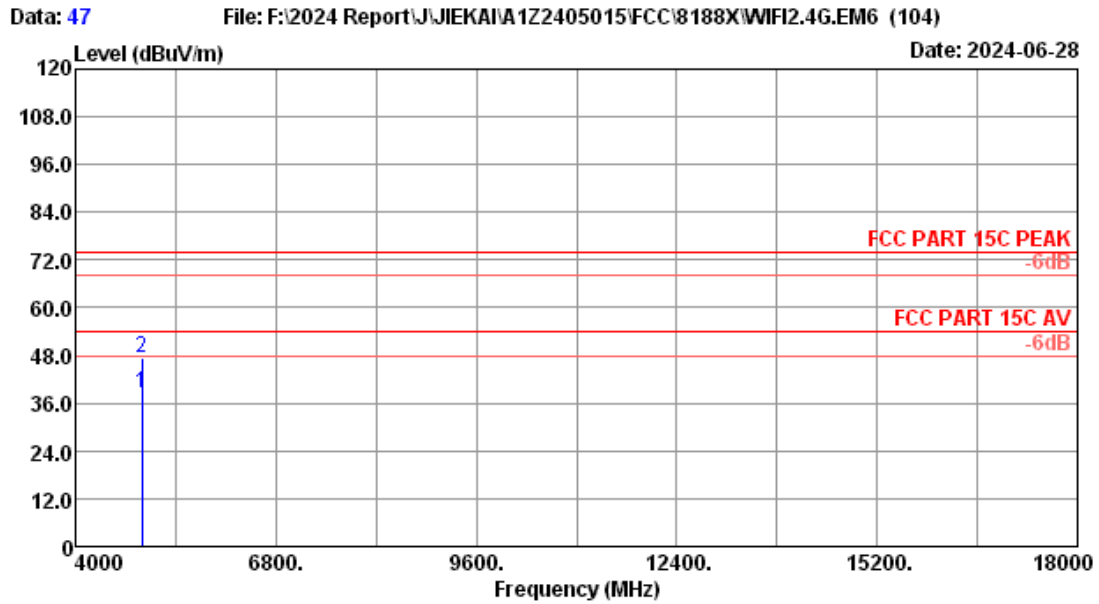
Site no. : 3m Chamber Data no. : 45
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11b 2462MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2462.00	27.80	2.87	92.10	31.67	91.10	-----	-----	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



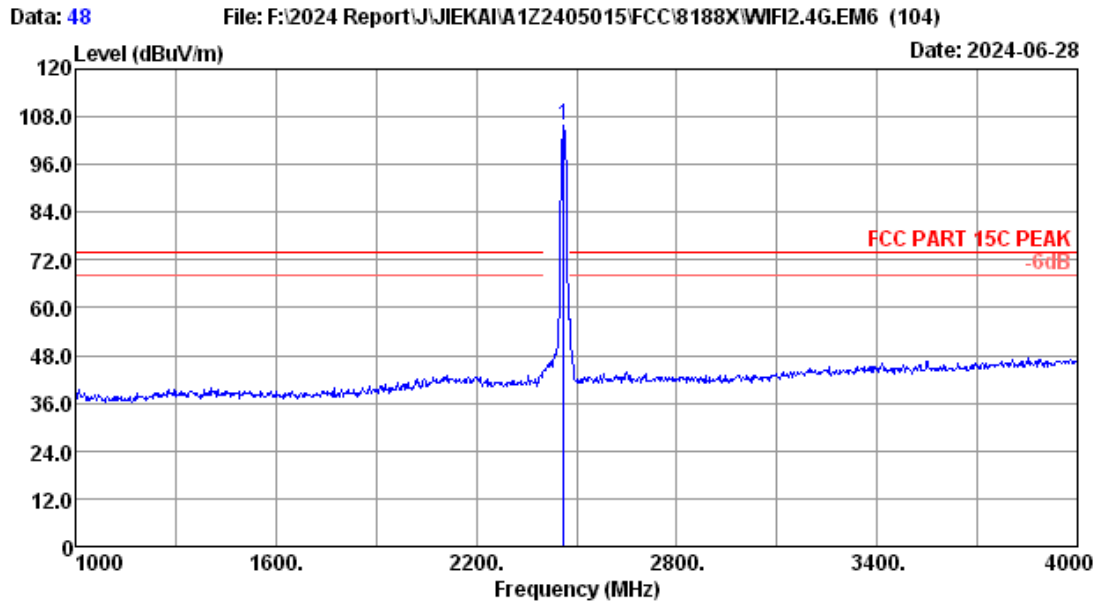
Site no.	: 3m Chamber	Data no.	: 46
Dis. / Ant.	: 3m 2023 MCTD1209-3006	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.2°C/52.5%	Engineer	: winter
Test Mode	: WIFI2.4G 11b 2462MHz TX Mode		



Site no. : 3m Chamber Data no. : 47
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11b 2462MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4924.00	31.74	4.00	33.17	30.41	38.50	54.00	15.50	Average
2	4924.00	31.74	4.00	42.22	30.41	47.55	74.00	26.45	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.

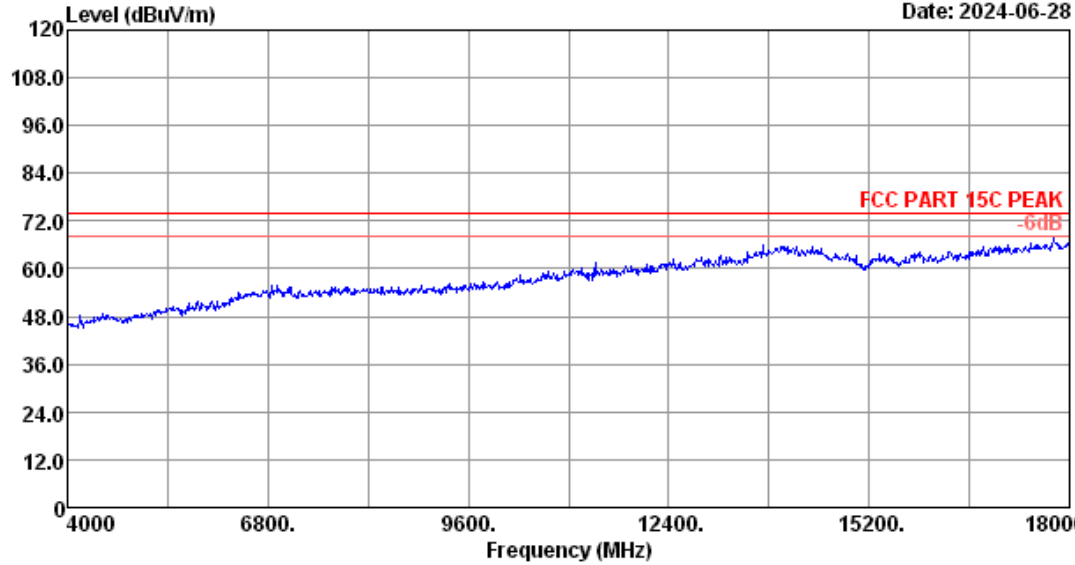


Site no. : 3m Chamber Data no. : 48
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11b 2462MHz TX Mode

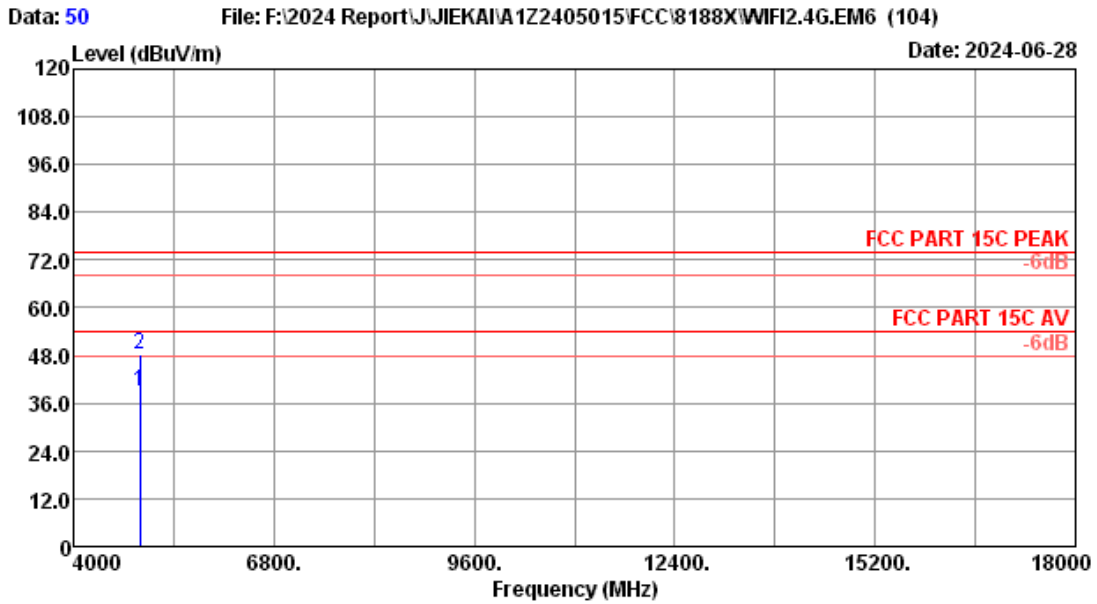
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBUV)	Amp factor (dB)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2462.00	27.80	2.87	107.04	31.67	106.04	-----	-----	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.

Data: 49 File: F:\2024 Report\JJIEKAI\A1Z2405015\FCC\8188X\WIFI2.4G.EM6 (104) Date: 2024-06-28



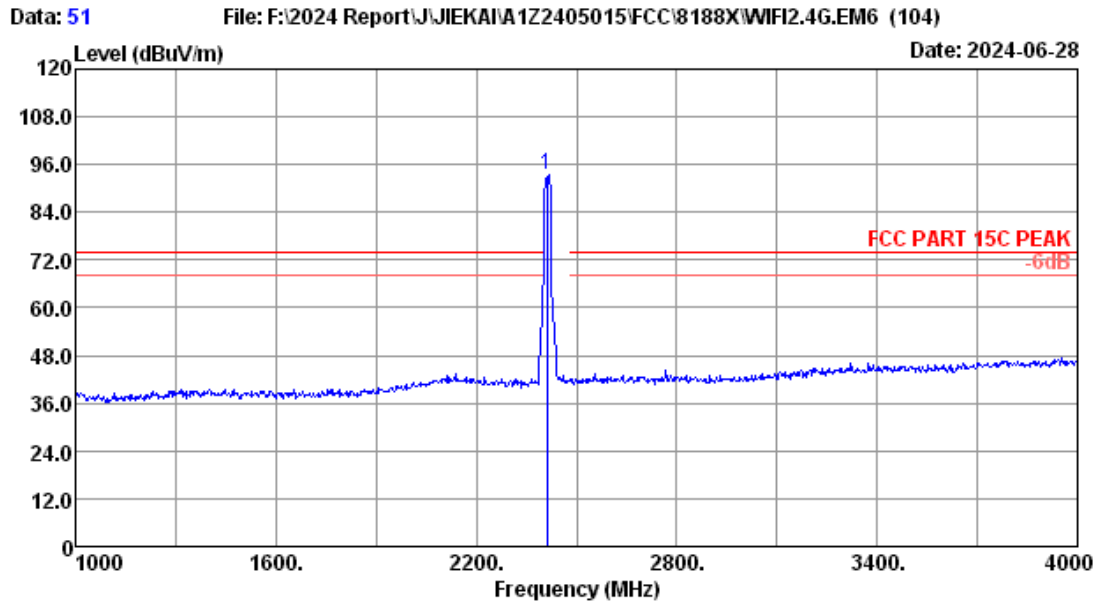
Site no.	: 3m Chamber	Data no.	: 49
Dis. / Ant.	: 3m 2023 MCTD1209-3006	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.2°C/52.5%	Engineer	: winter
Test Mode	: WIFI2.4G 11b 2462MHz TX Mode		



Site no. : 3m Chamber Data no. : 50
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11b 2462MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4924.00	31.74	4.00	33.58	30.41	38.91	54.00	15.09	Average
2	4924.00	31.74	4.00	42.98	30.41	48.31	74.00	25.69	Peak

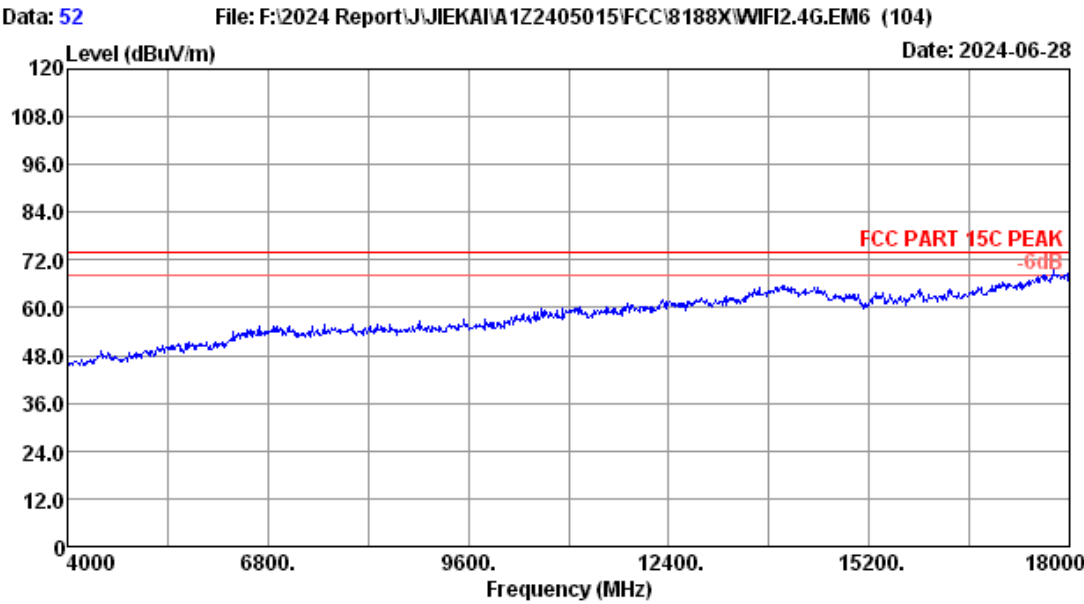
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



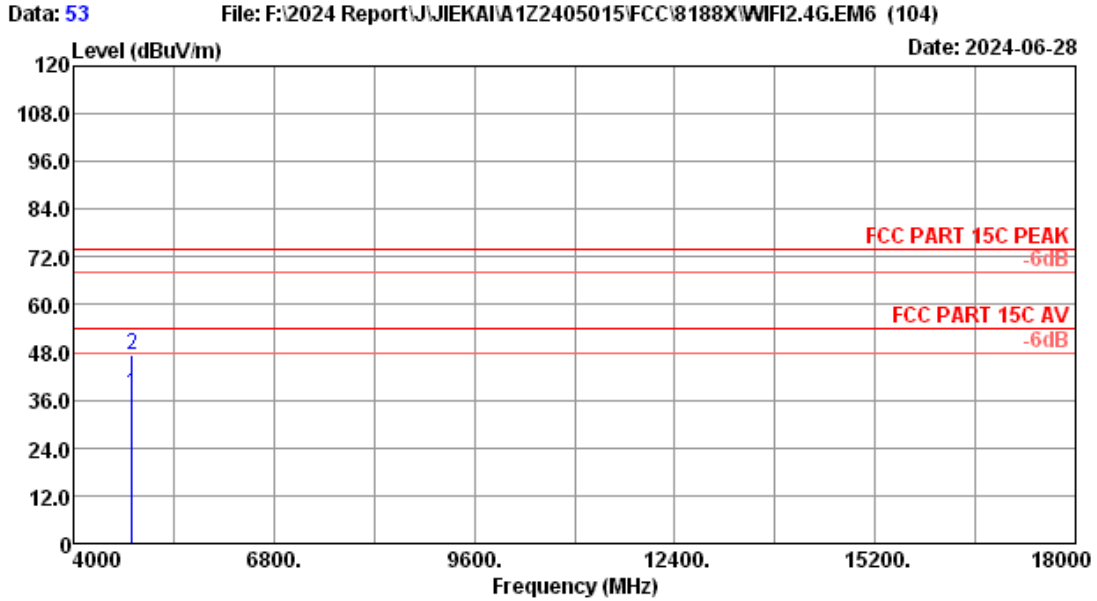
Site no. : 3m Chamber Data no. : 51
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11g 2412MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2412.00	27.65	2.84	94.77	31.69	93.57	-----	-----	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



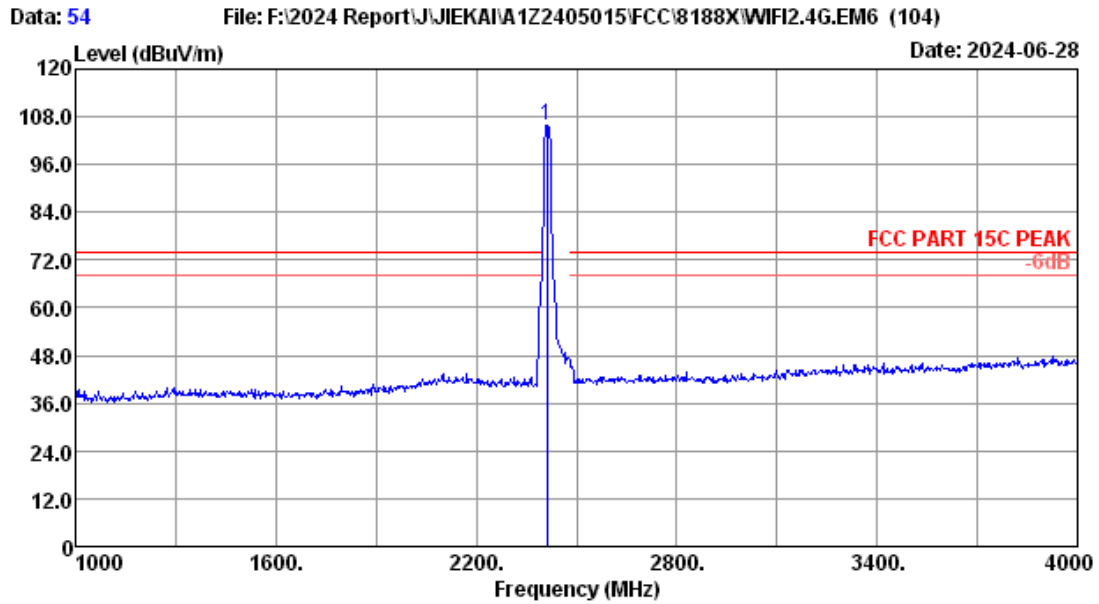
Site no.	: 3m Chamber	Data no.	: 52
Dis. / Ant.	: 3m 2023 MCTD1209-3006	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.2°C/52.5%	Engineer	: winter
Test Mode	: WIFI2.4G 11g 2412MHz TX Mode		



Site no. : 3m Chamber Data no. : 53
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11g 2412MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.00	31.20	3.96	33.03	30.42	37.77	54.00	16.23	Average
2	4824.00	31.20	3.96	42.81	30.42	47.55	74.00	26.45	Peak

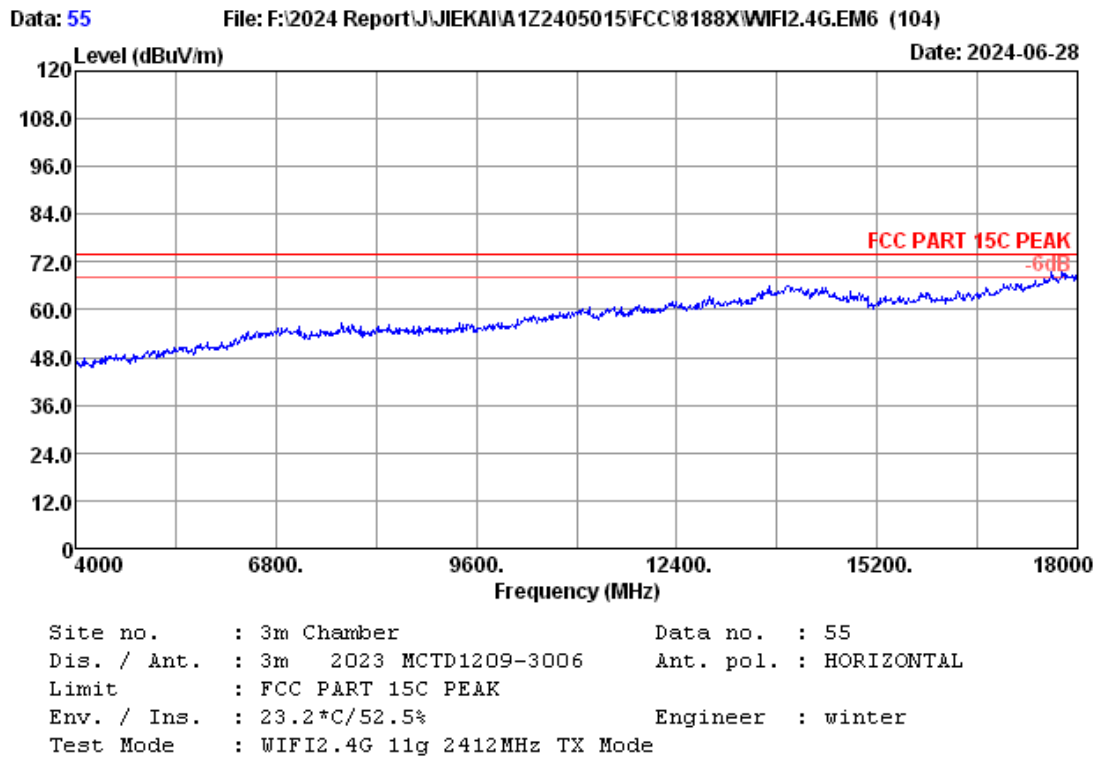
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.

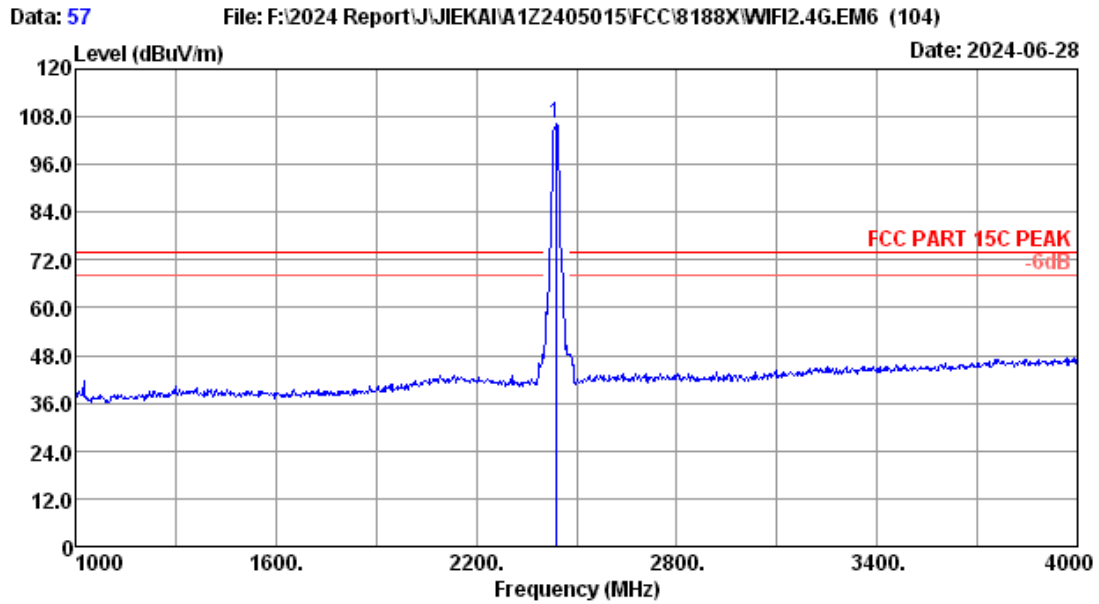


Site no. : 3m Chamber Data no. : 54
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11g 2412MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2412.00	27.65	2.84	106.93	31.69	105.73	-----	-----	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.

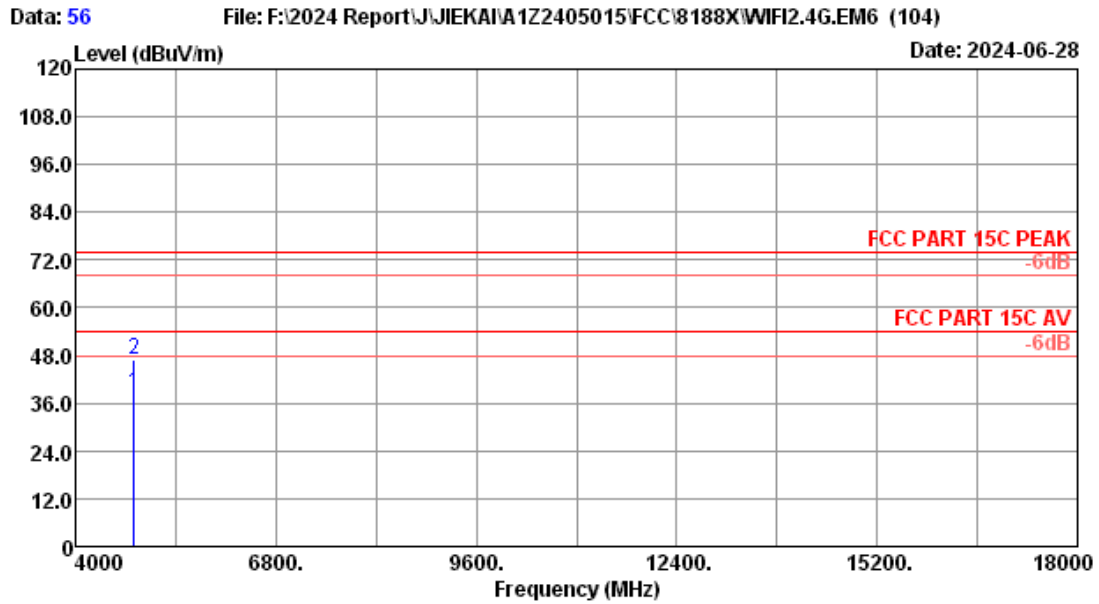




Site no. : 3m Chamber Data no. : 57
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11g 2437MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.75	2.86	107.53	31.68	106.46	-----	-----	Peak

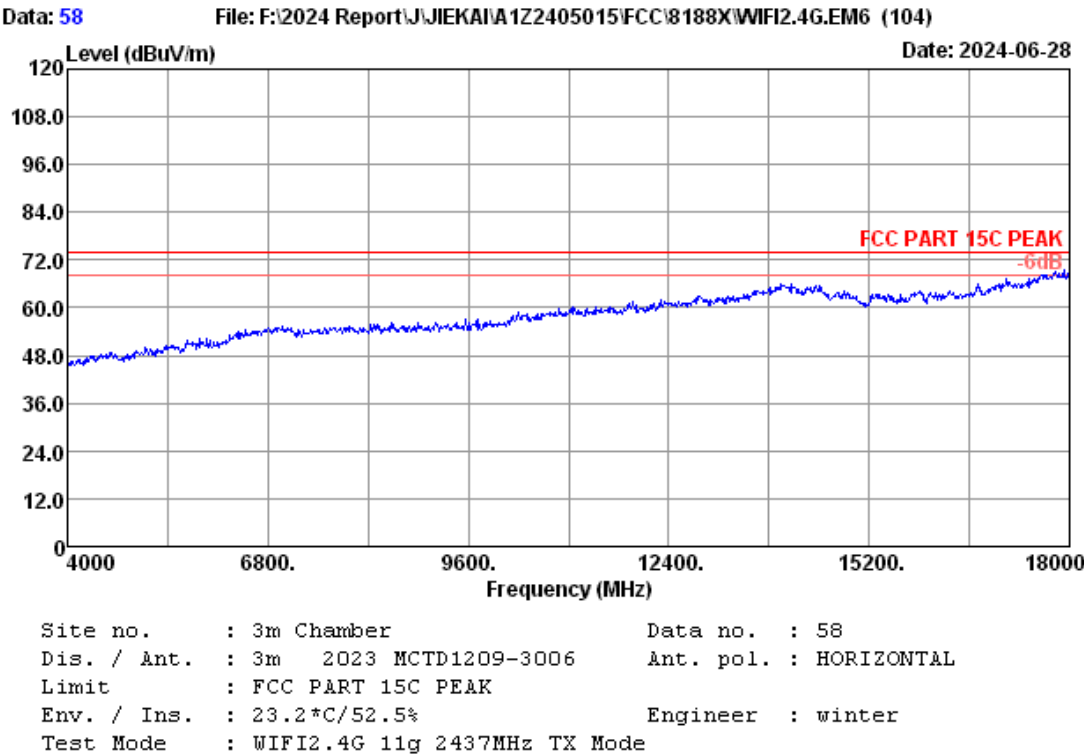
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.

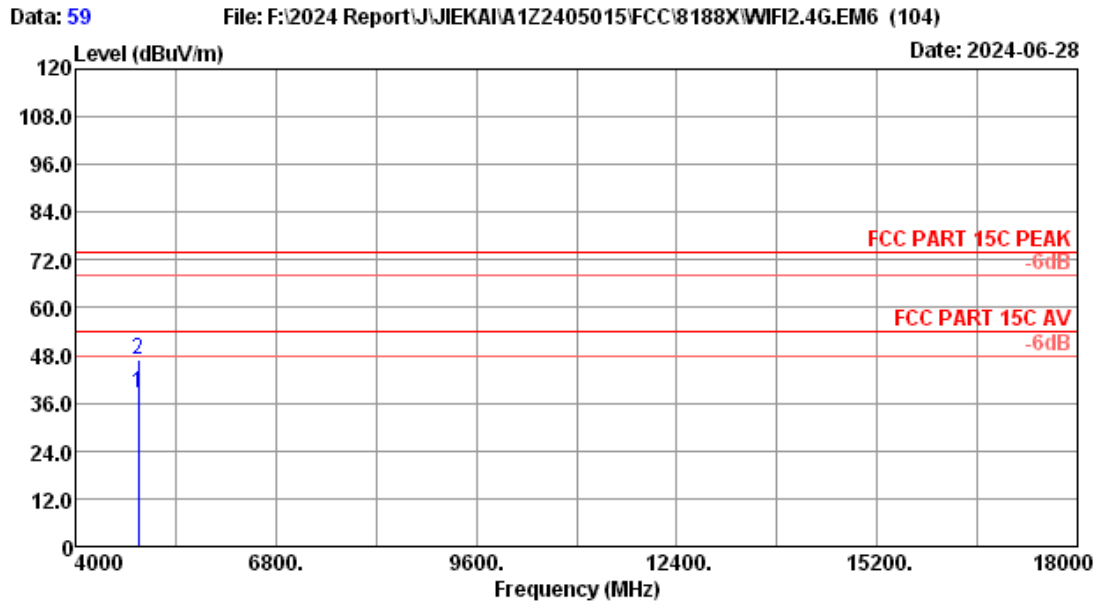


Site no. : 3m Chamber Data no. : 56
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11g 2412MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.00	31.20	3.96	33.92	30.42	38.66	54.00	15.34	Average
2	4824.00	31.20	3.96	42.25	30.42	46.99	74.00	27.01	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.

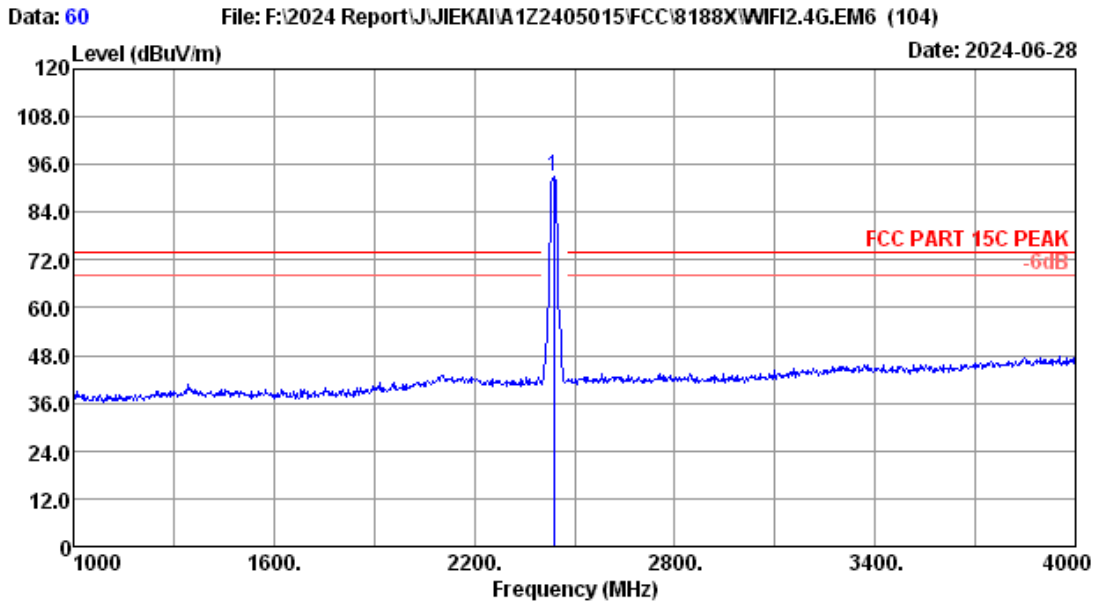




Site no. : 3m Chamber Data no. : 59
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11g 2437MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.00	31.39	3.98	33.68	30.41	38.64	54.00	15.36	Average
2	4874.00	31.39	3.98	42.05	30.41	47.01	74.00	26.99	Peak

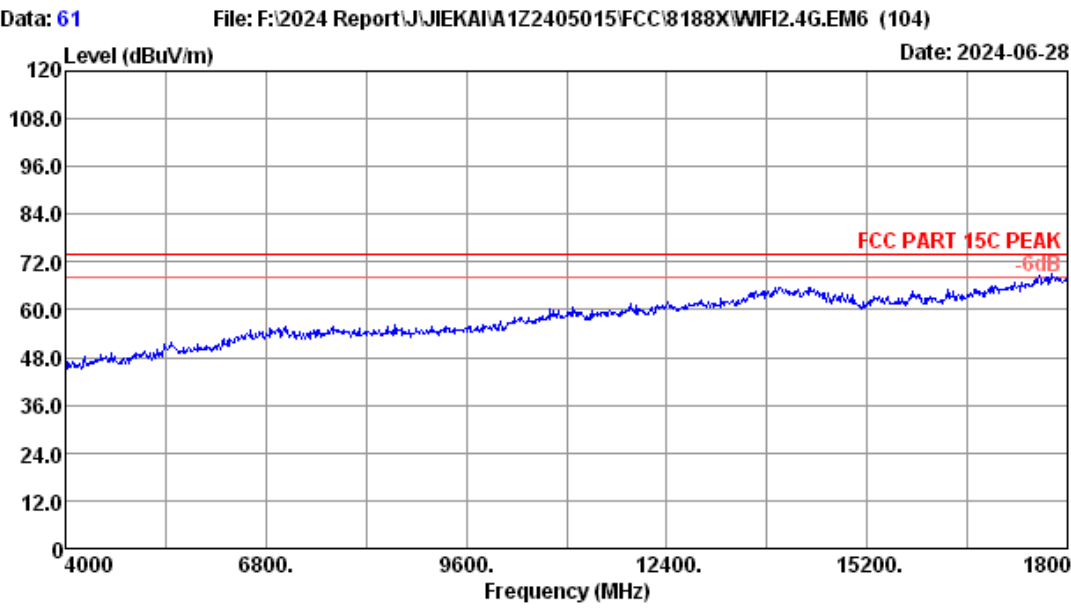
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



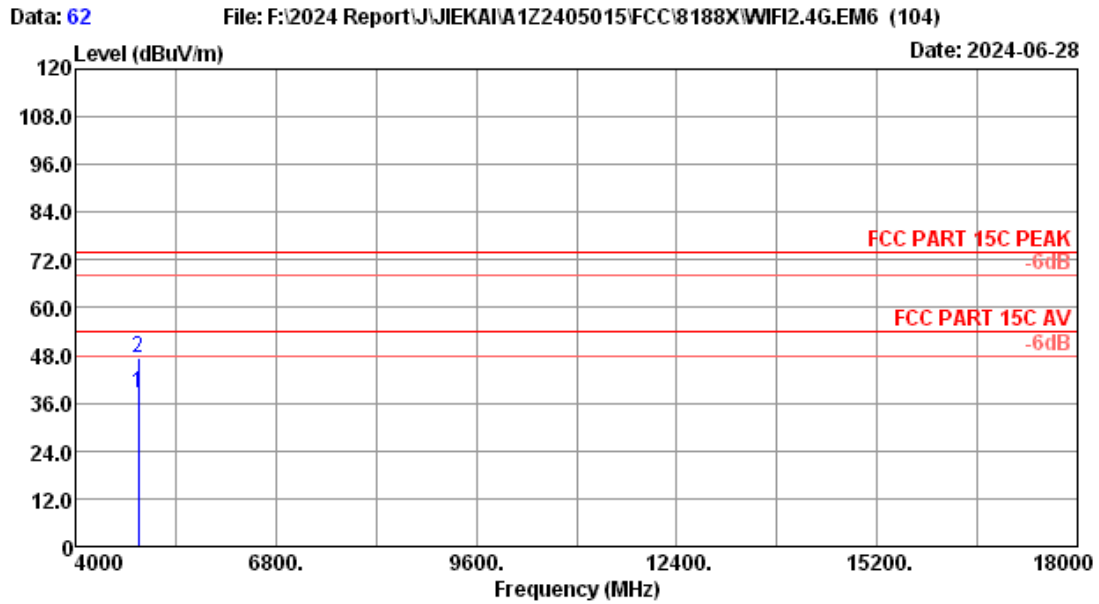
Site no. : 3m Chamber Data no. : 60
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11g 2437MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.75	2.86	94.26	31.68	93.19	-----	-----	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



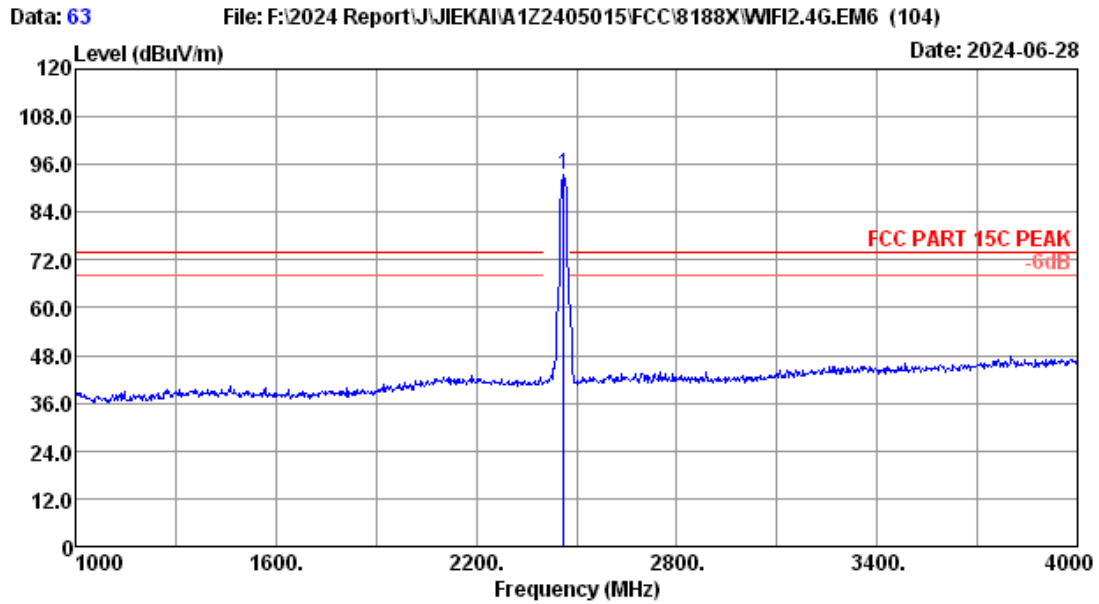
Site no.	: 3m Chamber	Data no.	: 61
Dis. / Ant.	: 3m 2023 MCTD1209-3006	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.2°C/52.5%	Engineer	: winter
Test Mode	: WIFI2.4G 11g 2437MHz TX Mode		



Site no. : 3m Chamber Data no. : 62
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11g 2437MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.00	31.39	3.98	33.53	30.41	38.49	54.00	15.51	Average
2	4874.00	31.39	3.98	42.28	30.41	47.24	74.00	26.76	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no. : 3m Chamber Data no. : 63
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.2°C/52.5% Engineer : winter
 Test Mode : WIFI2.4G 11g 2462MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBUV)	Amp factor (dB)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2462.00	27.80	2.87	94.46	31.67	93.46	-----	-----	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.