FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

Q.E.D.ADVANCED SYSTEMS LIMITED

Room Booking Panel

Model No.: Aura-X (ver. A)

Brand: ResourceXpress

FCC ID: 2AB38-AURAXA

Prepared for : Q.E.D.ADVANCED SYSTEMS LIMITED
19 Brigwater Court Oldmixon Crescent, Weston-super-Mare,
United Kingdom, BS24 9AY

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
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Report Number	:	ACS-F21134
Date of Test	:	Dec.04~19, 2020
Date of Report	:	May.28, 2021

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TEST REPORT CERTIFICATION

Applicant	:	Q.E.D.ADVANCED SYSTEMS LIMITED
Product	:	Room Booking Panel
FCC ID	:	2AB38-AURAXA
Brand	:	ResourceXpress
(A) Model No.	:	Aura-X (ver. A)
(B) Test Voltage	:	AC 120V/60Hz

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

Test procedure used:
ANSI C63.10: 2013
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 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. This report shall not be reproduced in part without written approval of Audix Technology (Shenzhen) Co., Ltd.

Date of Test : Dec.04~19, 2020 Report of date: May.28, 2021

Prepared by : Kayli He
Kayli He / Assistant

Reviewed by : Sunny Lu
Sunny Lu / Deputy 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: David Jin
David Jin / Deputy General 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

2. GENERAL INFORMATION

2.1.Description of Equipment Under Test

Applicant	Q.E.D.ADVANCED SYSTEMS LIMITED
Applicant Address	19 Brigwater Court Oldmixon Crescent, Weston-super-Mare, United Kingdom, BS24 9AY
Manufacturer	Q.E.D.ADVANCED SYSTEMS LIMITED
Manufacturer Address	19 Brigwater Court Oldmixon Crescent, Weston-super-Mare, United Kingdom, BS24 9AY
Brand	ResourceXpress
Product	Room Booking Panel
Model No.	Aura-X (ver. A)
FCC ID	2AB38-AURAXA
AC Adapter	Manufacturer: Asian Power Devices Inc. Model No.: WB-24J12R Input: 100-240V~50-60Hz, 0.7A Max Output: DC 12V, 2.0A, 24W DC Cable: Unshielded, Undetachable, 1.8m.
Sample Type	Prototype production
Date of Receipt	Nov.23, 2020
Date of Test	Dec.04~19, 2020
Remark: This report only for WIFI 2.4GHz.	

2.2.Feature of Equipment Under Test

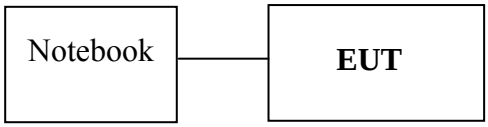
Product Feature & Specification		
Product	Room Booking Panel	
Model No.	Aura-X (ver. A)	
Radio	IEEE802.11 a/b/g/n/ac	
Power Source	☒ Commercial Power	AC 100 ~ 240V, 50/60Hz, 0.7A
	☒ External Power Source	DC 12V, 2.0A, 24W
	☐ Lithium battery	DC V, mAh
	☐ UM battery	DC V
2.4GHz Wi-Fi		
Support Modes	802.11b/g/n20	
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 150Mbps	
Channel Separation	5MHz	
5GHz Wi-Fi		
Support Modes	802.11a/n20/n40/ac20/ac40/ac80	
Frequency Range	5180-5240MHz, 5745-5825MHz	
Type of Modulation	802.11a/n (OFDM): QPSK, BPSK, 16QAM, 64QAM 802.11ac (OFDM): QPSK, BPSK, 16QAM, 64QAM,256QAM	
Data Rate	802.11a: 6/9/12/18/24/36/48/54 Mbps; 802.11n/ac: up to 433Mbps	
Channel Separation	5MHz	

Antenna System	
Type of Antenna	FPC Antenna
Antenna Peak Gain	DTS Band (2400-2483.5MHz) Peak Gain: 2.3dBi. U-NII-1 Band (5150-5250MHz) Peak Gain: 3.5dBi. U-NII-3 Band (5725-5850MHz) Peak Gain: 5.1dBi.

2.3.Tested Supporting System Details

No.	Description	ACS No.	Manufacturer	Model	Serial Number
1.	Notebook	N/A	acer	ZOW	NVX7C
		USB Cable: Shielded, Detachable, 1.0m			

2.4.Block diagram of connection between the EUT and simulators



(EUT: Room Booking Panel)

2.5.Test Information

A special test software (Ampak RFTestTool) was used to control EUT work in Continuous TX mode(The duty cycle of the test signal is 100%), and select tested mode, channel, power setting and data rate information as below:

---	Channel	Frequency (MHz)	Power setting	Channel	Frequency (MHz)	Power setting
Mode	IEEE 802.11b			IEEE 802.11g		
Info.	CH1	2412	60	CH1	2412	55
	CH2	2417	60	CH2	2417	55
	CH3	2422	60	CH3	2422	55
	CH4	2427	60	CH4	2427	55
	CH5	2432	60	CH5	2432	55
	CH6	2437	60	CH6	2437	55
	CH7	2442	60	CH7	2442	55
	CH8	2447	60	CH8	2447	55
	CH9	2452	60	CH9	2452	55
	CH10	2457	60	CH10	2457	55
	CH11	2462	60	CH11	2462	55
Data Rate (Mbps) (see Note)	1			6		
Mode	IEEE 802.11n HT20			IEEE 802.11n HT40		
Info.	CH1	2412	50	---	---	---
	CH2	2417	50	---	---	---
	CH3	2422	50	---	---	---
	CH4	2427	50	---	---	---
	CH5	2432	50	---	---	---
	CH6	2437	50	---	---	---
	CH7	2442	50	---	---	---
	CH8	2447	50	---	---	---
	CH9	2452	50	---	---	---
	CH10	2457	50	---	---	---
	CH11	2462	50	---	---	---
Data Rate (Mbps) (see Note)	MCS0			MCS0		
Note: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.						

2.6. 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.	:	Accredited by Industry Canada Registration Number: IC 5183A-1 Valid Date: Mar.31, 2022
	:	Accredited by NVLAP, USA NVLAP Code: 200372-0 Valid Date: Mar.31, 2022
	:	Certificated by FCC USA. Designation No.: CN5022 Valid Date: Mar.31, 2022

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

Test Item	Uncertainty
Uncertainty for Conduction emission test in No. 1 Conduction	2.6dB(150KHz to 30MHz)
Uncertainty for Radiation Emission test in 3m chamber	3.6dB(30~200MHz, Polarization: H)
	4.0dB(30~200MHz, Polarization: V)
	3.6dB(200M~1GHz, Polarization: H)
	3.8dB(200M~1GHz, Polarization: V)
Uncertainty for Radiation Emission test in 3m chamber(1GHz-25GHz)	4.6dB(1~6GHz, Distance: 3m)
	4.6dB(6~25GHz, Distance: 3m)
Uncertainty for Radiated Spurious Emission test in RF chamber	3.7dB(30MHz~1000MHz)
	3.3dB(1~26.5GHz)
Uncertainty for Conduction Spurious emission test	2.0dB
Uncertainty for Output power test	0.8dB
Uncertainty for Bandwidth test	83kHz
Uncertainty for DC power test	1.9%
Uncertainty for test site temperature and humidity	0.6℃
	3%

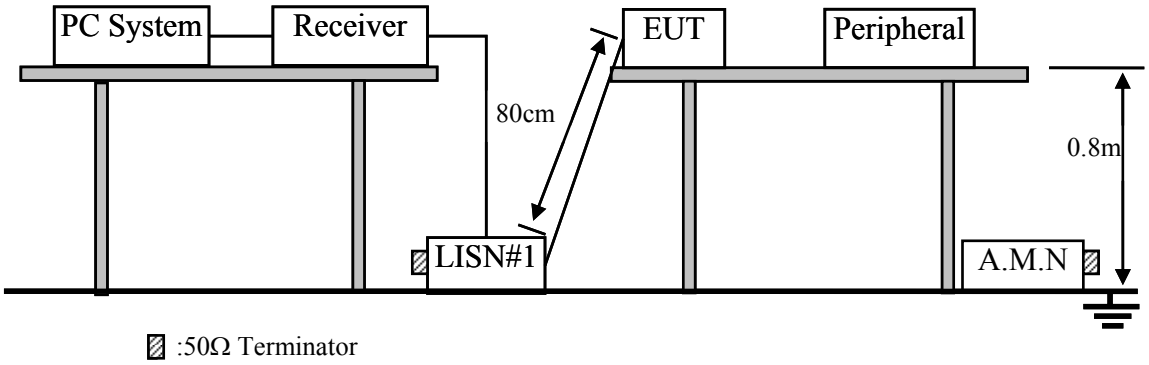
Note: EMI uncertainty is evaluated by CISPR16-4-2.
The value of measurement uncertainty of EMI is less than U_{CISPR}.
The value is not calculated in the test results.

3. POWER LINE CONDUCTED EMISSION TEST

3.1.Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	1# Shielding Room	AUDIX	N/A	N/A	May.17,18	3 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100842	Apr.12,20	1 Year
3.	L.I.S.N.#1	Rohde & Schwarz	ENV216	102160	Oct.11,20	1 Year
4.	A.M.N	Kyoritsu	KNW-403D	8-1750-2	Apr.12,20	1 Year
5.	Terminator	Hubersuhner	50Ω	No.1	Apr.12,20	1 Year
6.	Terminator	Hubersuhner	50Ω	No.2	Apr.12,20	1 Year
7.	RF Cable	EMCI	EMCCFD300-BM-NM-2000	190422	Apr.12,20	1 Year
8.	Test Software	AUDIX	e3	6.100913a	N/A	N/A
Note: N/A means Not applicable.						

3.2.Block Diagram of Test Setup



3.3.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.

3.4.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.

3.4.1. Room Booking Panel (EUT)

Model No. : Aura-X (ver. A)
Serial No. : N/A

3.4.2. Support Equipment: As Tested Supporting System Details, in Section 2.2.

3.5.Operating Condition of EUT

3.5.1. Setup the EUT as shown as Section 3.2.

3.5.2. Turn on the power of EUT.

3.5.3. PC run test software to control EUT work in Tx mode.

3.6.Test Procedure

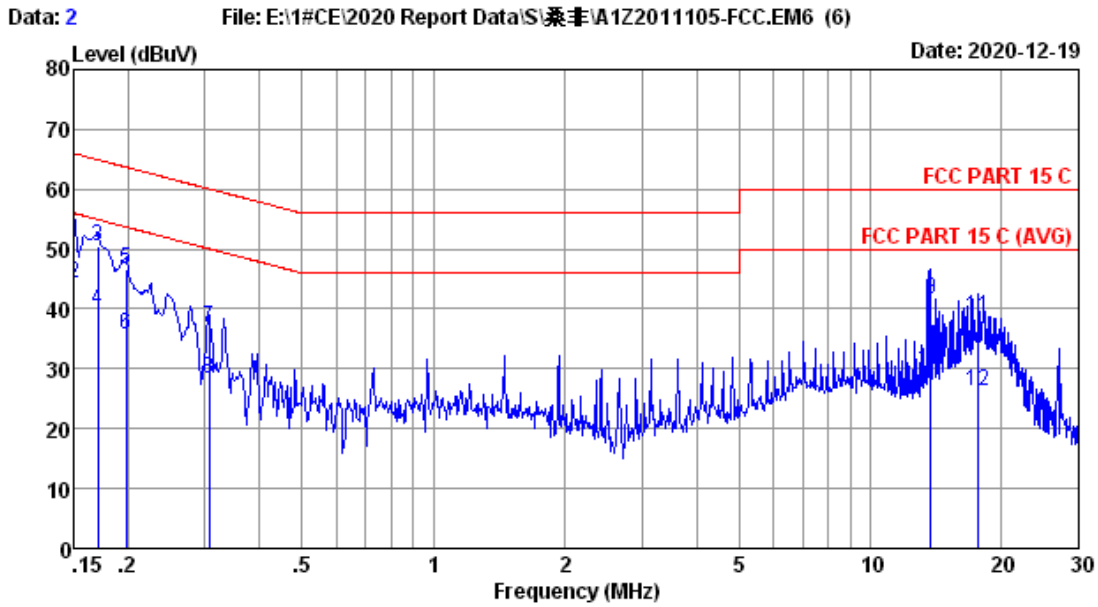
The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power Via AC unit connected to the power mains through a line impedance stabilization network (L.I.S.N. #1). This provides a 50 ohm coupling impedance for the EUT (Please refer the block diagram of the test setup and photographs). 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: 2013 on Conducted Emission Test.

The bandwidth of test receiver (R & S ESCI) is set at 9kHz.

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

3.7.Power Line Conducted Emission Test Results

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



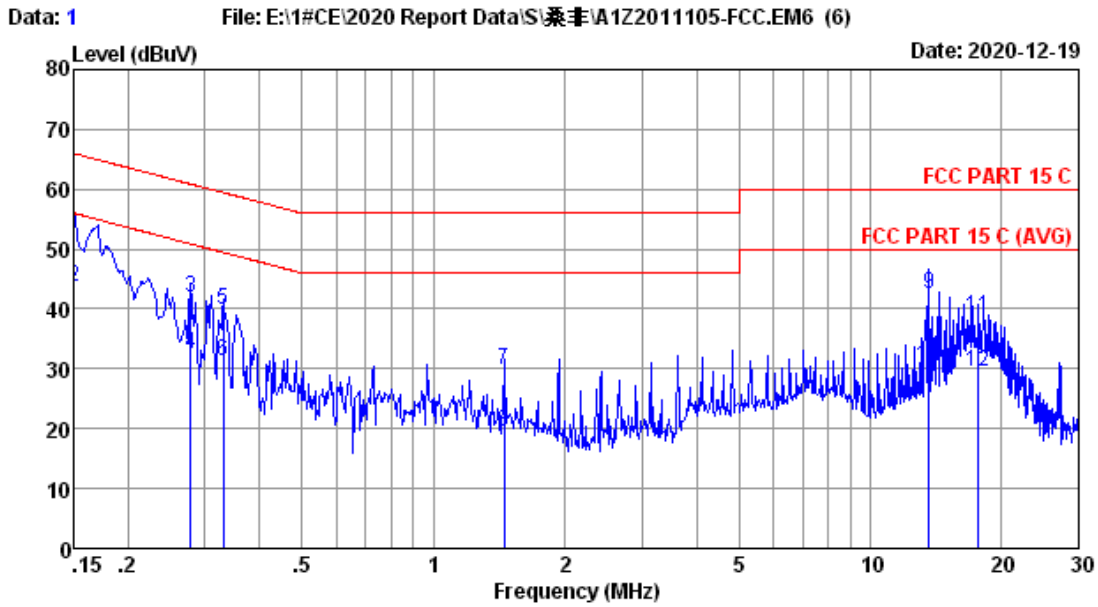
Site no :1# Conduction
Dis./Lisn :2020 ENV216-L
Limit :FCC PART 15 C
Env./Ins. :23.8*C/51%
Power Rating : AC 120V/60Hz
Test Mode :WIFI 2.4G TX

Data No :2
LISN phase:

Engineer :Allen

No	Freq (MHz)	LISN Factor (dB)	Cable loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.150	9.70	0.01	44.01	53.72	66.00	12.28	QP
2	0.150	9.70	0.01	34.50	44.21	56.00	11.79	Average
3	0.170	9.70	0.01	40.87	50.58	64.94	14.36	QP
4	0.170	9.70	0.01	30.20	39.91	54.94	15.03	Average
5	0.198	9.70	0.01	37.05	46.76	63.71	16.95	QP
6	0.198	9.70	0.01	25.90	35.61	53.71	18.10	Average
7	0.307	9.70	0.01	27.33	37.04	60.06	23.02	QP
8	0.307	9.70	0.01	18.50	28.21	50.06	21.85	Average
9	13.768	9.80	0.08	31.85	41.73	60.00	18.27	QP
10	13.768	9.80	0.08	19.90	29.78	50.00	20.22	Average
11	17.661	9.85	0.09	28.62	38.56	60.00	21.44	QP
12	17.661	9.85	0.09	16.40	26.34	50.00	23.66	Average

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# Conduction
Dis./Lisn :2020 ENV216-N
Limit :FCC PART 15 C
Env./Ins. :23.8*C/51%
Power Rating : AC 120V/60Hz
Test Mode :WIFI 2.4G TX

Data No :1
LISN phase:

Engineer :Allen

No	Freq (MHz)	LISN Factor (dB)	Cable loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.150	9.70	0.01	43.61	53.32	66.00	12.68	QP
2	0.150	9.70	0.01	33.90	43.61	56.00	12.39	Average
3	0.277	9.70	0.01	32.16	41.87	60.90	19.03	QP
4	0.277	9.70	0.01	22.80	32.51	50.90	18.39	Average
5	0.330	9.70	0.01	30.04	39.75	59.44	19.69	QP
6	0.330	9.70	0.01	21.50	31.21	49.44	18.23	Average
7	1.449	9.70	0.02	19.97	29.69	56.00	26.31	QP
8	1.449	9.70	0.02	9.80	19.52	46.00	26.48	Average
9	13.623	9.80	0.07	32.76	42.63	60.00	17.37	QP
10	13.623	9.80	0.07	20.50	30.37	50.00	19.63	Average
11	17.661	9.85	0.09	28.81	38.75	60.00	21.25	QP
12	17.661	9.85	0.09	19.50	29.44	50.00	20.56	Average

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. Test Equipment

4.1.1. For frequency range 30MHz~1000MHz (In 3m Anechoic Chamber)

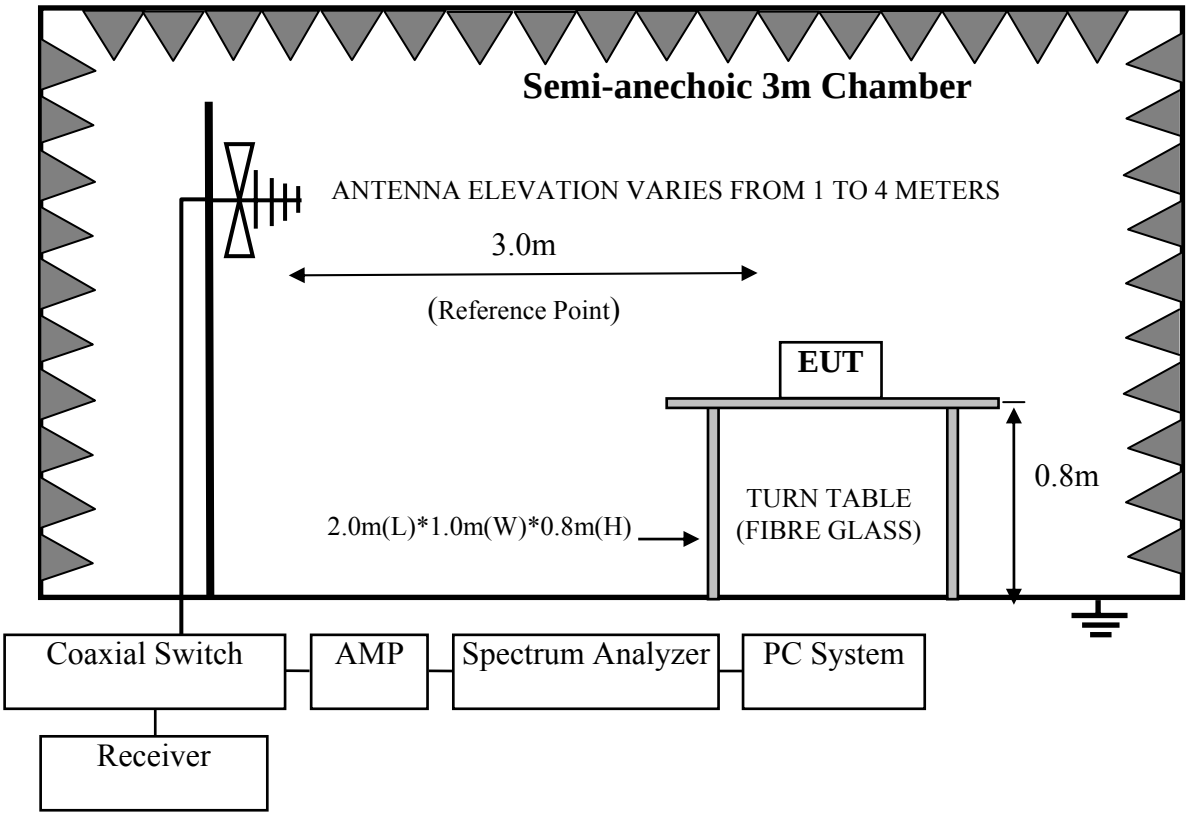
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3#Chamber(NSA)	AUDIX	N/A	N/A	May.03,20	1 Year
2.	3#Chamber(SE)	AUDIX	N/A	N/A	May.17,18	3 Year
3.	Signal Analyzer	Rohde & Schwarz	FSV30	104050	Apr.11,20	1 Year
4.	EMI Test Receiver	Rohde & Schwarz	ESR7	101547	Apr.12,20	1 Year
5.	Amplifier	HP	8447D	2648A04738	Apr.11,20	1 Year
6.	Bi log Antenna	TESEQ	CBL6112D	25237	Dec.22,20	1 Year
7.	NSA Cable	HUBER+SUHNER	CFD400NL-LW	No.3	Oct.11,20	1 Year
8.	Coaxial Switch	Anritsu	MP59B	6201397222	Apr.11,20	1 Year
9.	Test Software	AUDIX	e3	6.2009-5-21a(n)	N/A	N/A
Note: N/A means Not applicable.						

4.1.2. For frequency range 1GHz~25GHz (In 3m Anechoic Chamber)

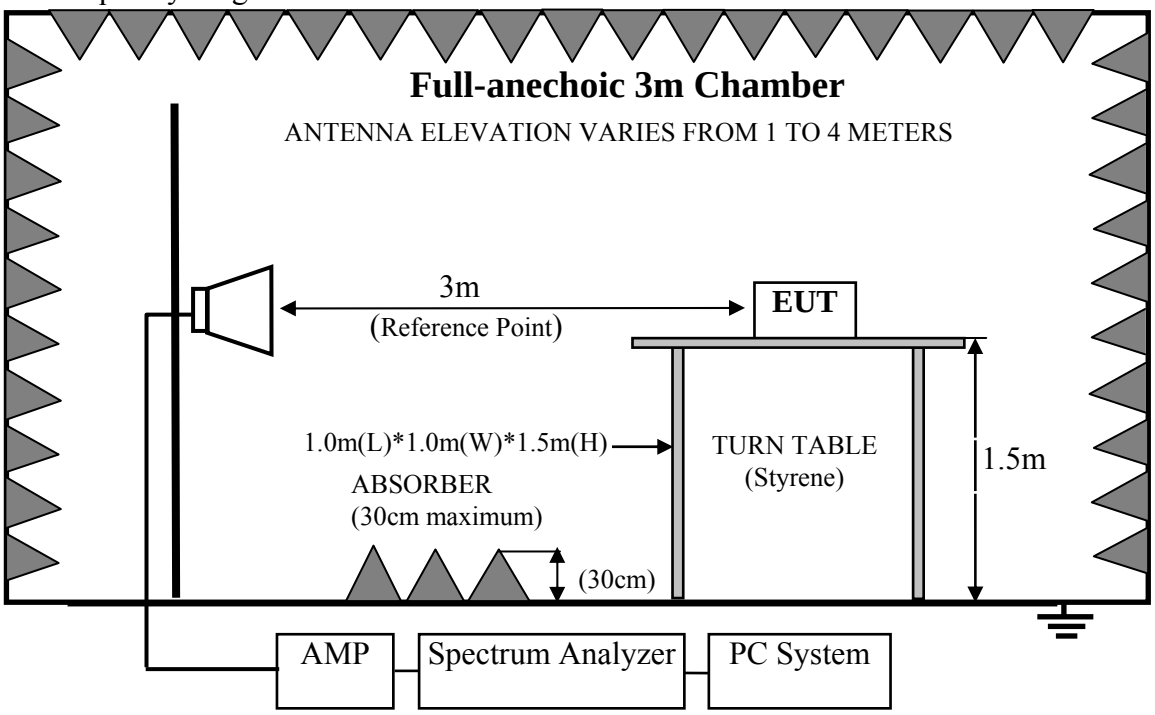
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3#Chamber(Svswr)	AUDIX	N/A	N/A	Apr.15,20	1 Year
2.	3#Chamber(SE)	AUDIX	N/A	N/A	May.17,18	3 Year
3.	Signal Analyzer	Rohde & Schwarz	FSV30	104050	Apr.11,20	1 Year
4.	Horn Antenna	ETC	MCTD 1209	DRH15F03007	Jul.30,20	1 Year
5.	Horn Antenna	ETS	3116	00060089	Dec.09,20	1 Year
6.	Amplifier	Agilent	83017A	MY53270084	Oct.11,20	1 Year
7.	RF Cable	Hubersuhner	SUCOFLEX-106	505238/6	Apr.11,20	1 Year
8.	Test Software	AUDIX	e3	6.2009-5-21a(n)	N/A	N/A
Note: N/A means Not applicable.						

4.2.Block Diagram of Test Setup

For frequency range 30MHz-1000MHz



For frequency range 1GHz-25GHz



4.3.Radiated Emission Limit

4.3.1. 15.247&209 limits

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/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 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

Remark： (1) Emission level dBμV = 20 log Emission level μV/m

(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.

4.3.2. 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.

4.4.EUT Configuration 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.

4.4.1. Room Booking Panel (EUT)

Model No. : Aura-X (ver. A)
Serial No. : N/A

4.4.2. Support Equipment: As Tested Supporting System Details, in Section 2.2.

4.5.Operating Condition of EUT

4.5.1. Setup the EUT and simulator as shown as Section 4.2.

4.5.2. Turn on the power of all equipments.

4.5.3. Let EUT work in Tx(WiFi 2.4GHz) mode

4.6.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 C63.10-2013 regulation.

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 Horm 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 when EUT in X position as test photo indicated.

The bandwidth of the EMI test receiver (R&S ESR7) 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 10^{th} 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.

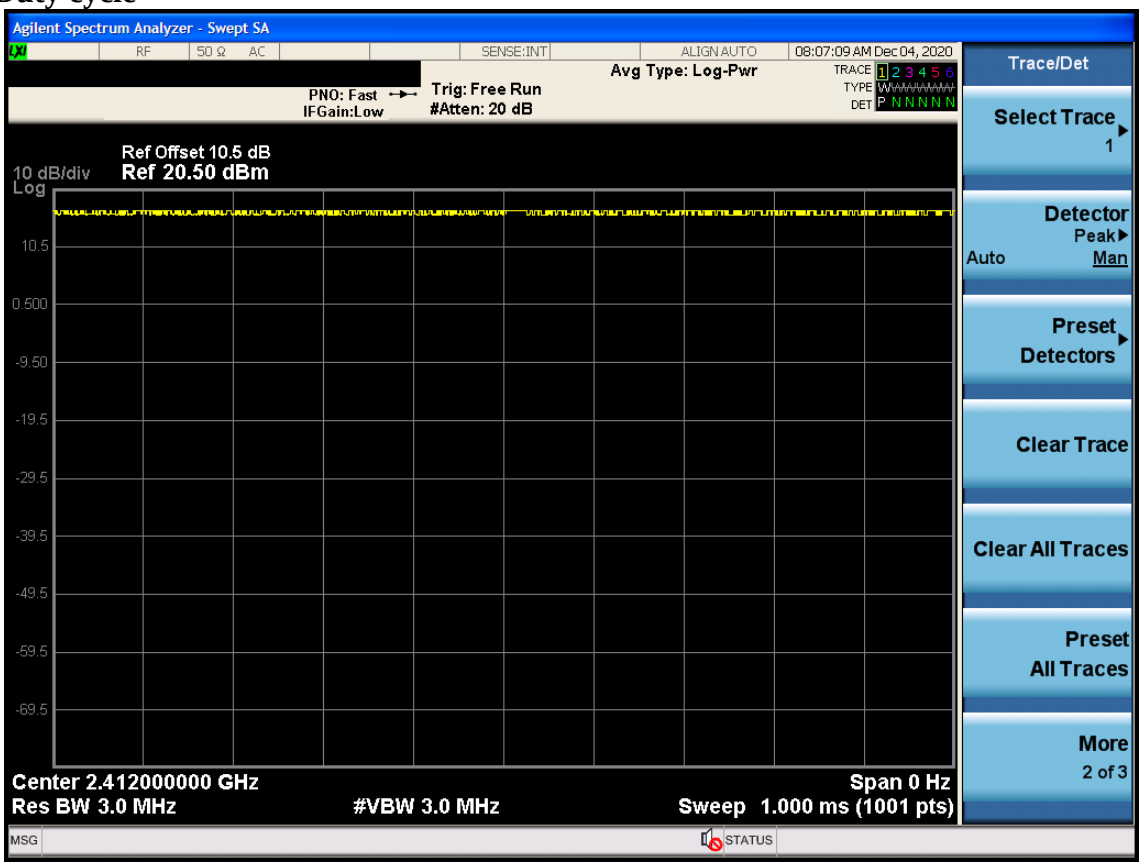
4.7.Radiated Emission Test Results

PASS.

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

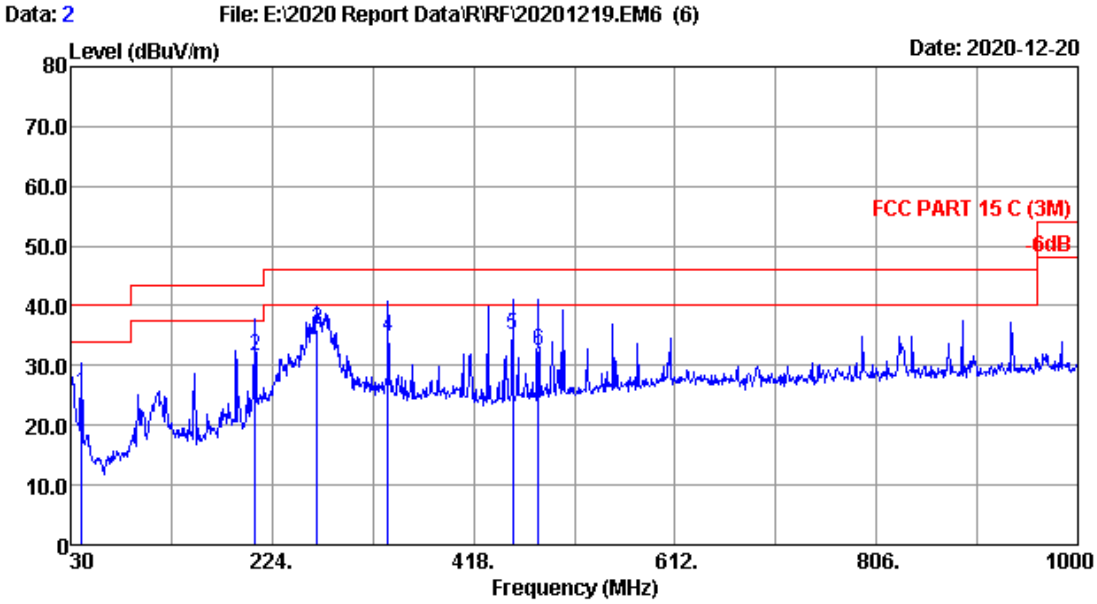
Note 1: For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.
Note 2: The emissions (9kHz~30MHz) not reported for there is no emission be found.

Duty cycle



Note: The duty cycle of the test signal is 100%.

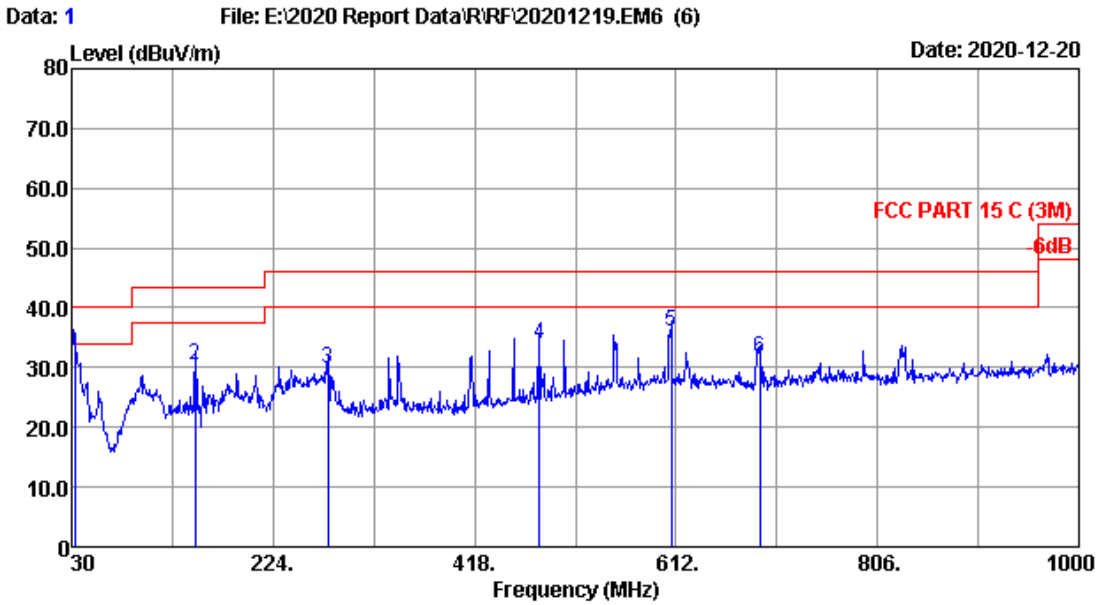
Frequency: 30MHz~1GHz



Site no. : 3m Chamber
Data no. : 2
Dis. / Ant. : 3m 2019 CBL6112D-25237
Ant. pol. : HORIZONTAL
Limit : FCC PART 15 C (3M)
Env. / Ins. : 23.4*C/54%
Engineer : Cote
Power rating : AC 120V/60Hz
Test Mode : WIFI 2.4G TX

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	40.670	18.65	0.70	6.00	25.35	40.00	14.65	QP
2	207.510	14.94	1.50	15.28	31.72	43.50	11.78	QP
3	267.650	19.10	1.63	15.23	35.96	46.00	10.04	QP
4	335.550	19.70	1.84	13.34	34.88	46.00	11.12	QP
5	455.830	22.53	2.20	10.39	35.12	46.00	10.88	QP
6	480.080	23.06	2.28	6.99	32.33	46.00	13.67	QP

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

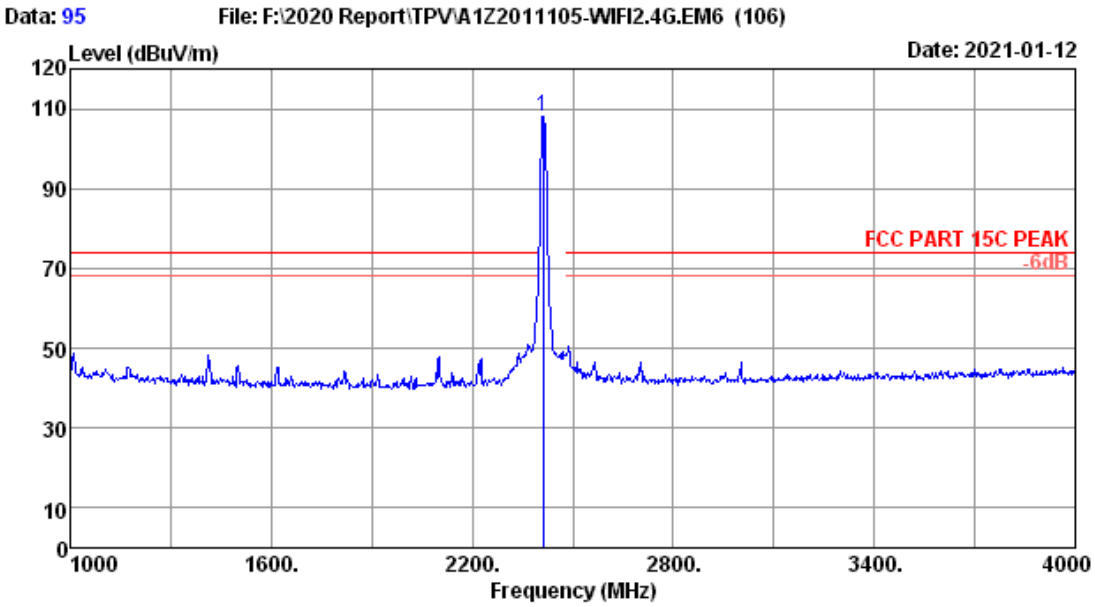


Site no. : 3m Chamber Data no. : 1
Dis. / Ant. : 3m 2019 CBL6112D-25237 Ant. pol. : VERTICAL
Limit : FCC PART 15 C (3M)
Env. / Ins. : 23.4*C/54% Engineer : Cote
Power rating : AC 120V/60Hz
Test Mode : WIFI 2.4G TX

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	32.910	22.67	0.65	9.50	32.82	40.00	7.18	QP
2	149.310	16.39	1.23	12.92	30.54	43.50	12.96	QP
3	276.380	18.75	1.66	9.45	29.86	46.00	16.14	QP
4	480.080	23.06	2.28	8.49	33.83	46.00	12.17	QP
5	607.150	24.91	2.59	8.39	35.89	46.00	10.11	QP
6	692.510	24.99	2.78	3.77	31.54	46.00	14.46	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

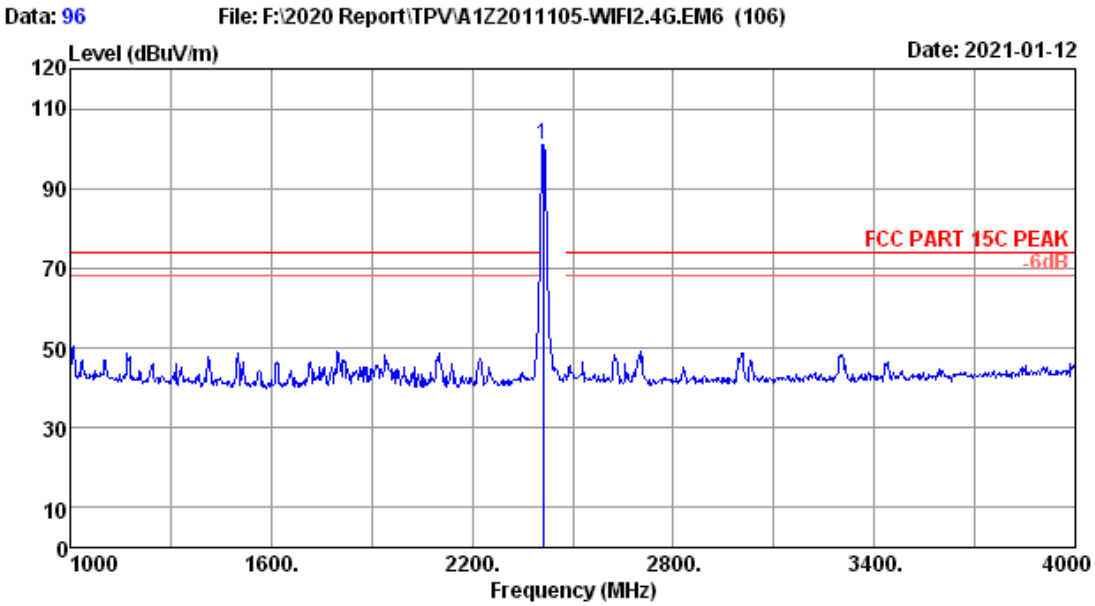


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11b 2412MHz Tx Mode

Data no. : 95
Ant. pol. : HORIZONTAL
Engineer : Allen

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	27.83	0.92	112.93	33.48	108.20	------	------	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.

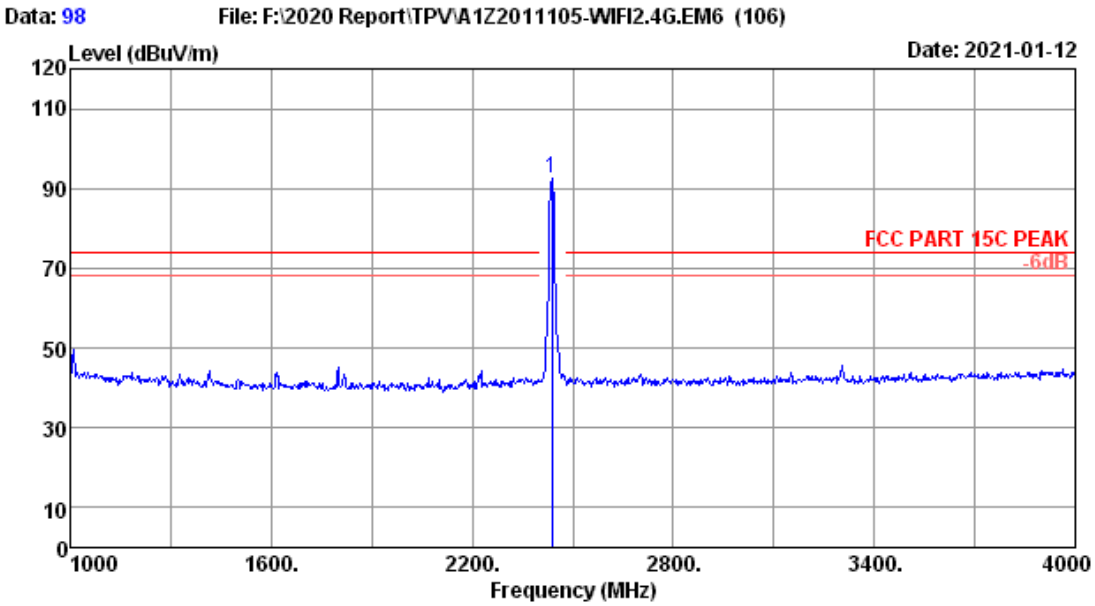


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11b 2412MHz Tx Mode

Data no. : 96
Ant. pol. : VERTICAL
Engineer : Allen

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	27.83	0.92	105.70	33.48	100.97	------	------	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.

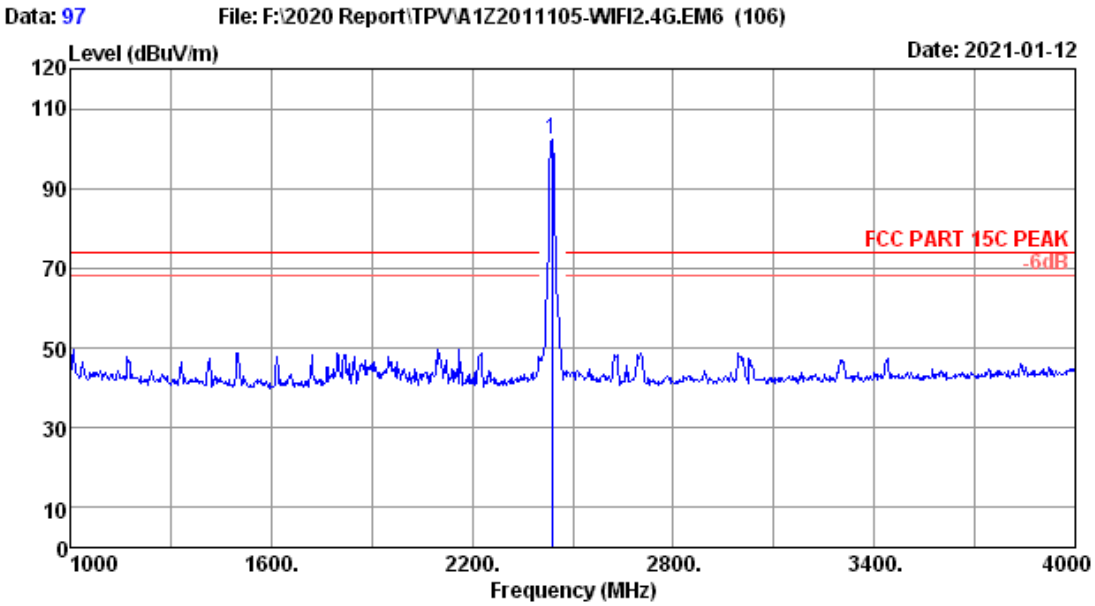


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11b 2437MHz Tx Mode

Data no. : 98
Ant. pol. : HORIZONTAL
Engineer : Allen

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	27.90	0.93	97.13	33.47	92.49	------	------	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.

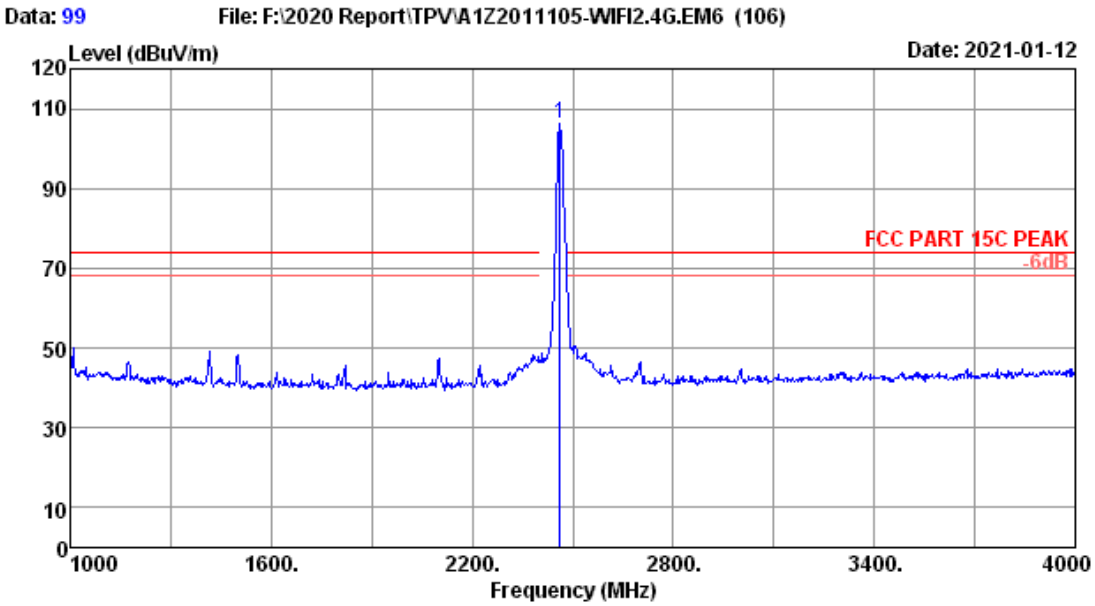


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11b 2437MHz Tx Mode

Data no. : 97
Ant. pol. : VERTICAL
Engineer : Allen

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	27.90	0.93	106.88	33.47	102.24	------	------	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.

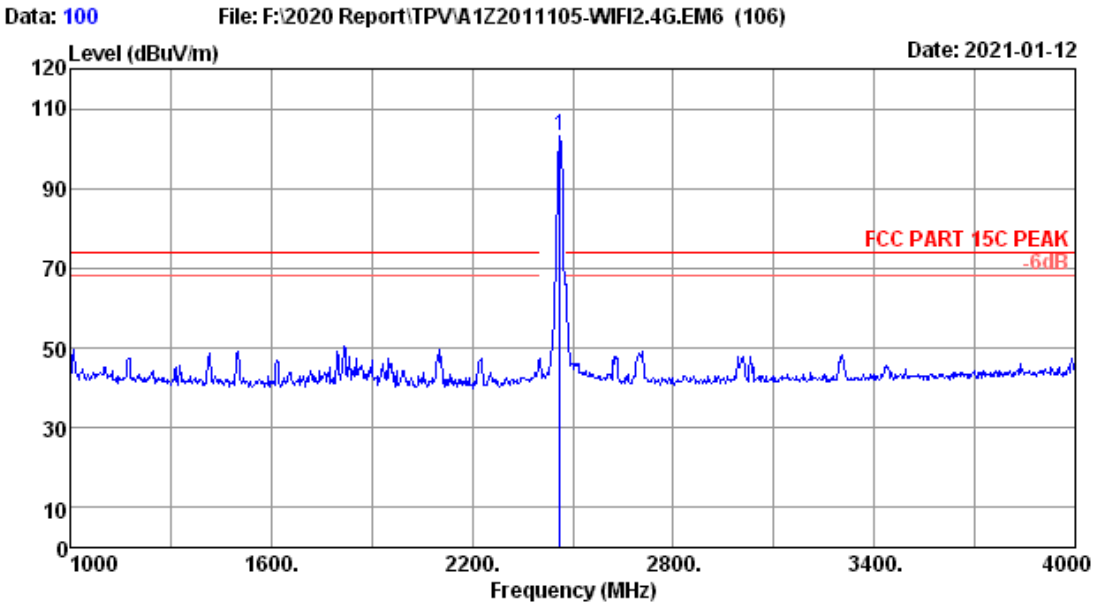


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11b 2462MHz Tx Mode

Data no. : 99
Ant. pol. : HORIZONTAL
Engineer : Allen

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	27.93	0.94	110.77	33.46	106.18	------	------	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.

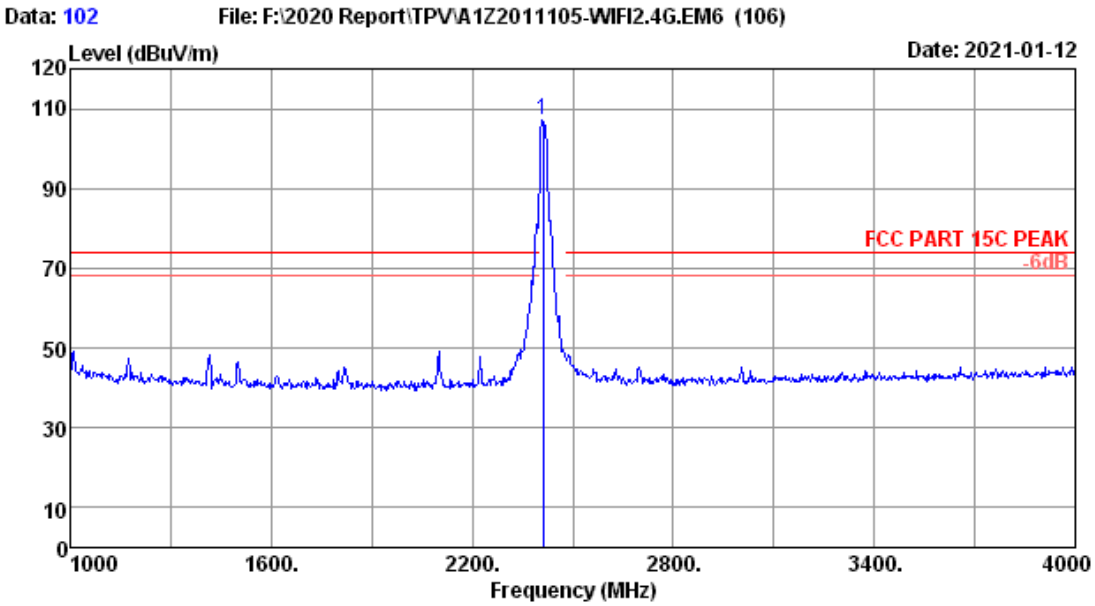


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11b 2462MHz Tx Mode

Data no. : 100
Ant. pol. : VERTICAL
Engineer : Allen

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	27.93	0.94	107.85	33.46	103.26	------	------	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.

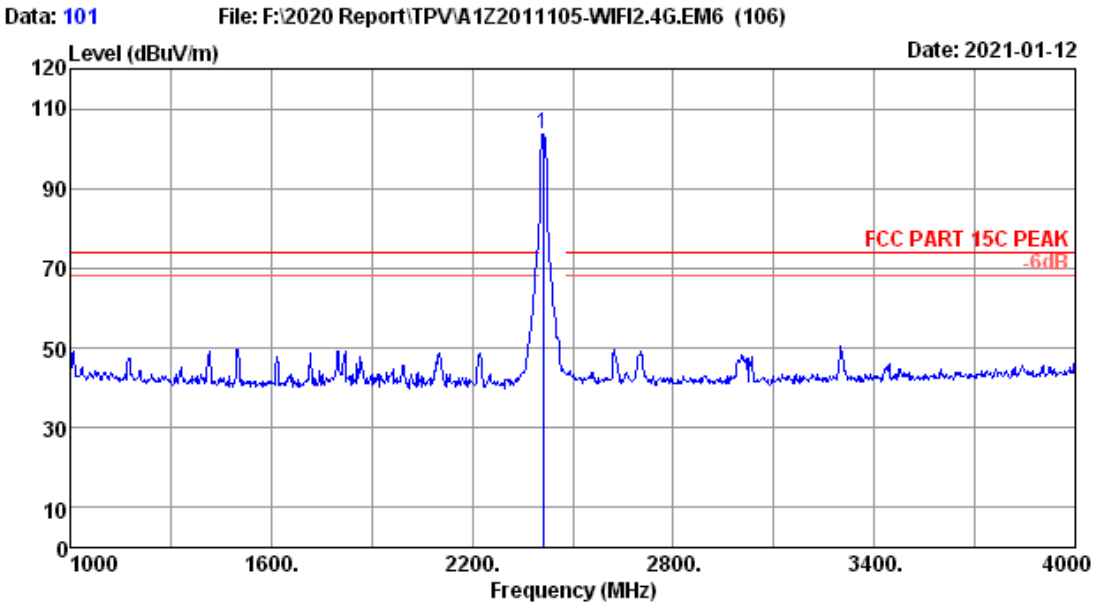


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11g 2412MHz Tx Mode

Data no. : 102
Ant. pol. : HORIZONTAL
Engineer : Allen

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	27.83	0.92	111.76	33.48	107.03	------	------	Peak

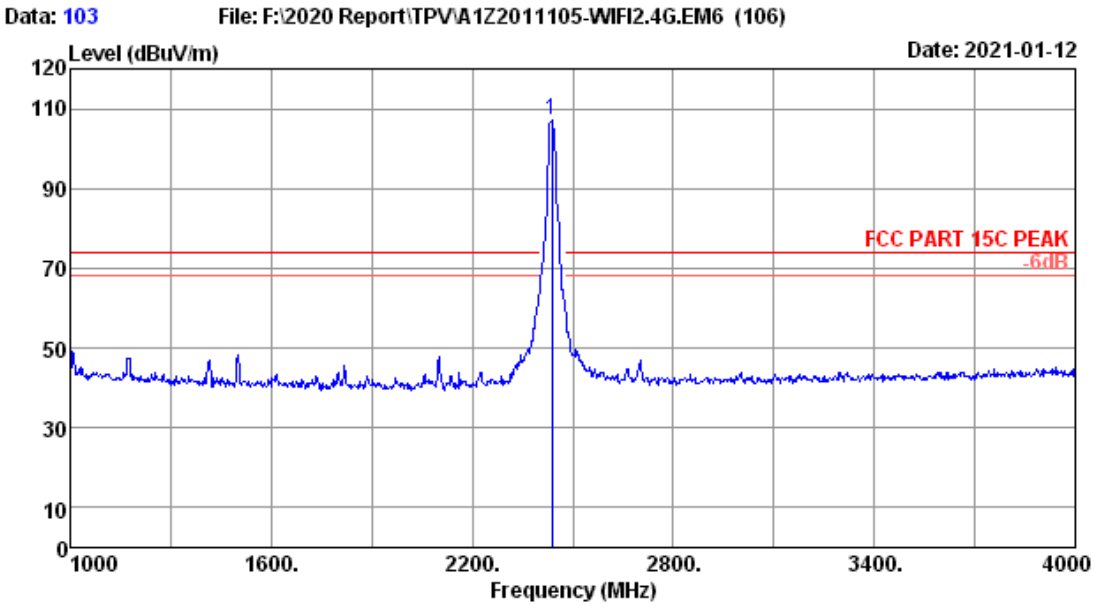
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp factor.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 101
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 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	27.83	0.92	108.45	33.48	103.72	------	------	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.

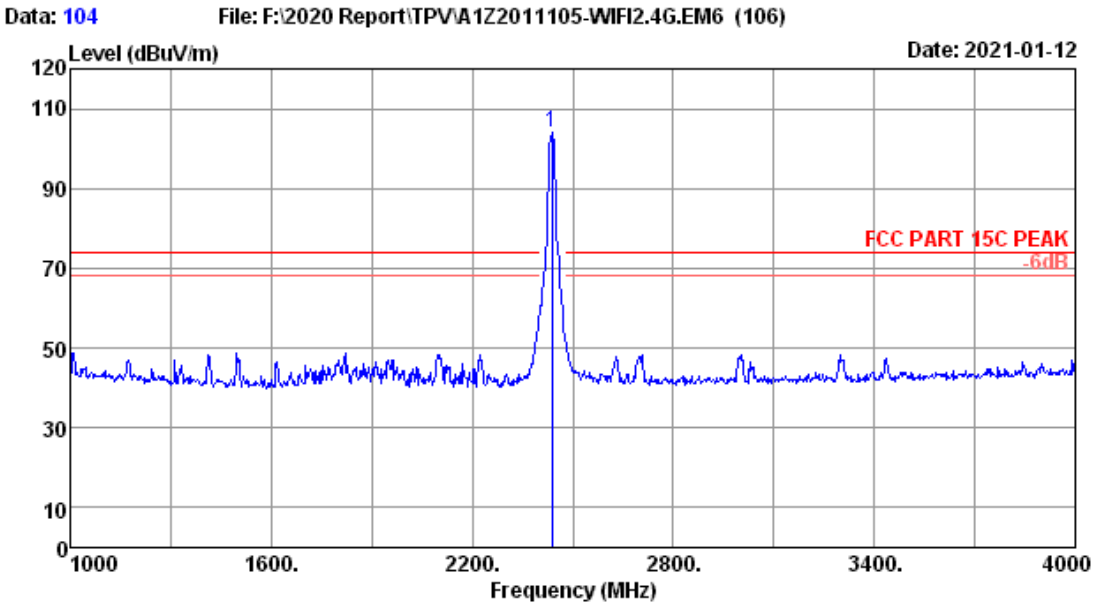


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11g 2437MHz Tx Mode

Data no. : 103
Ant. pol. : HORIZONTAL
Engineer : Allen

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	27.90	0.93	111.66	33.47	107.02	------	------	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.

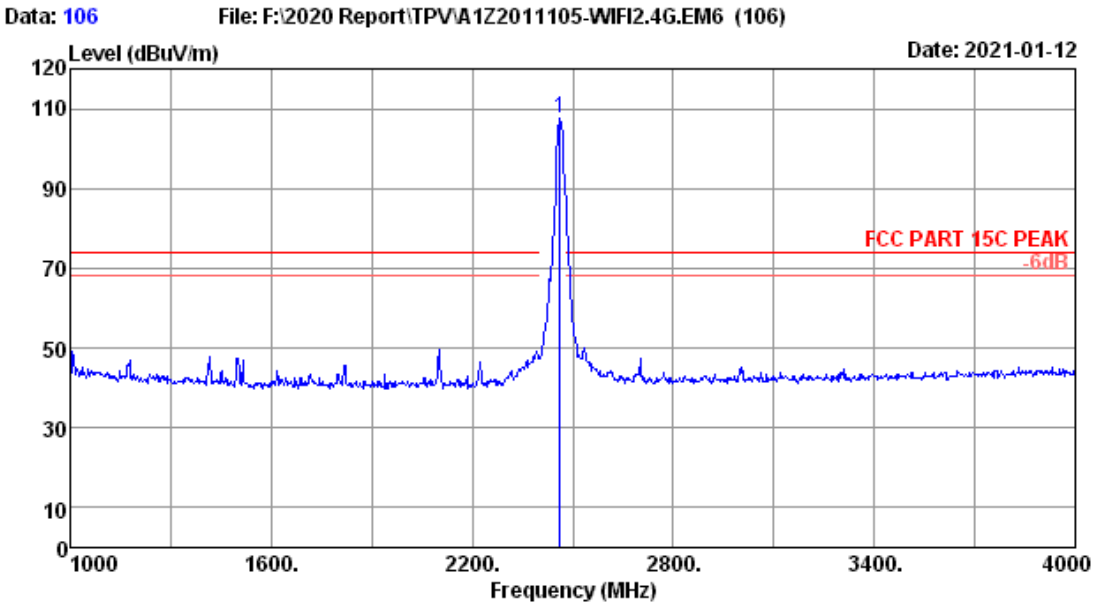


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11g 2437MHz Tx Mode

Data no. : 104
Ant. pol. : VERTICAL
Engineer : Allen

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	27.90	0.93	108.73	33.47	104.09	------	------	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.

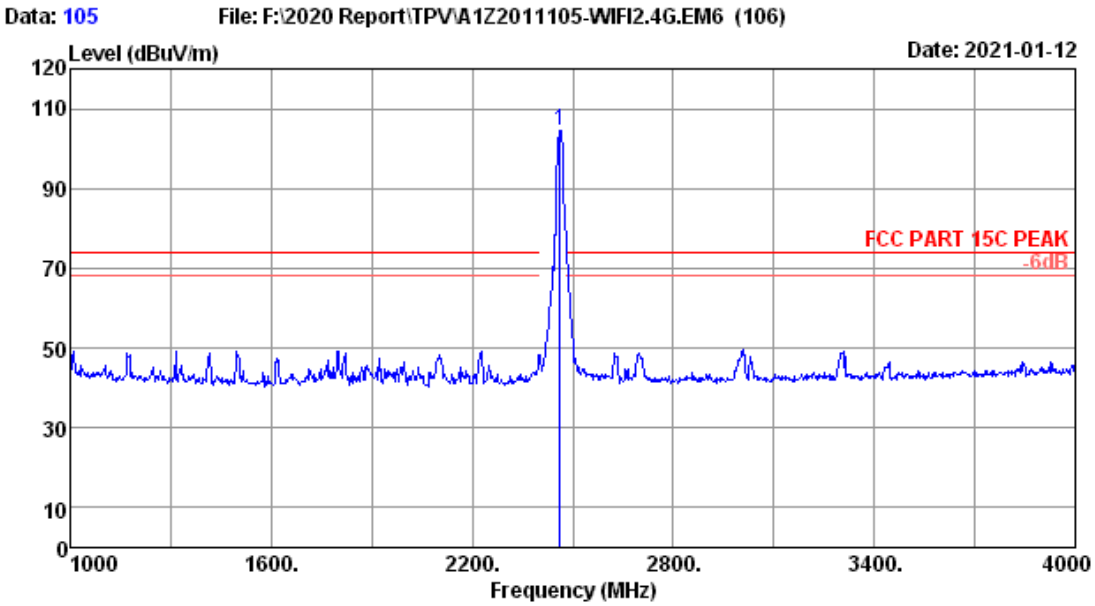


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11g 2462MHz Tx Mode

Data no. : 106
Ant. pol. : HORIZONTAL
Engineer : Allen

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	27.93	0.94	111.98	33.46	107.39	------	------	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.

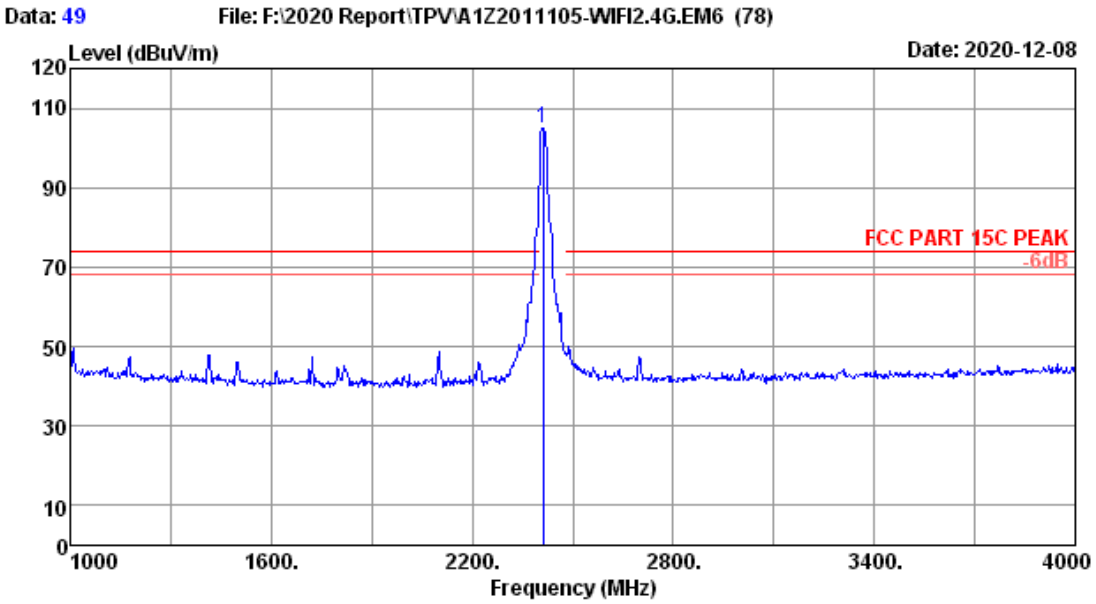


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11g 2462MHz Tx Mode

Data no. : 105
Ant. pol. : VERTICAL
Engineer : Allen

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	27.93	0.94	109.22	33.46	104.63	------	------	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.

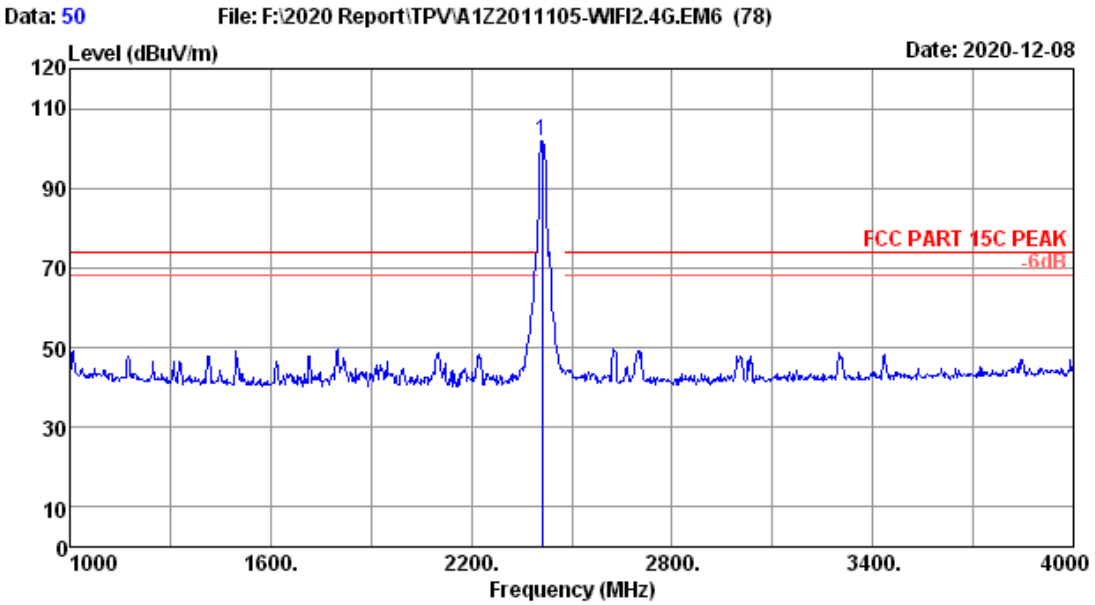


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 2412MHz Tx Mode

Data no. : 49
Ant. pol. : HORIZONTAL
Engineer : Allen

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	27.83	0.92	109.78	33.48	105.05	------	------	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.

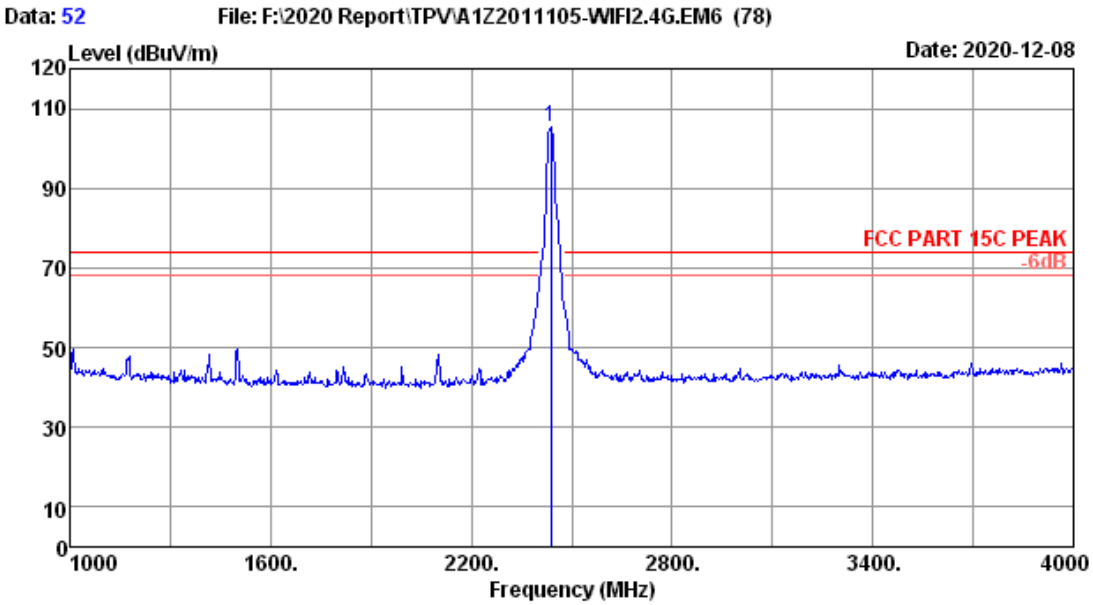


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 2412MHz Tx Mode

Data no. : 50
Ant. pol. : VERTICAL
Engineer : Allen

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	27.83	0.92	106.56	33.48	101.83	------	------	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.

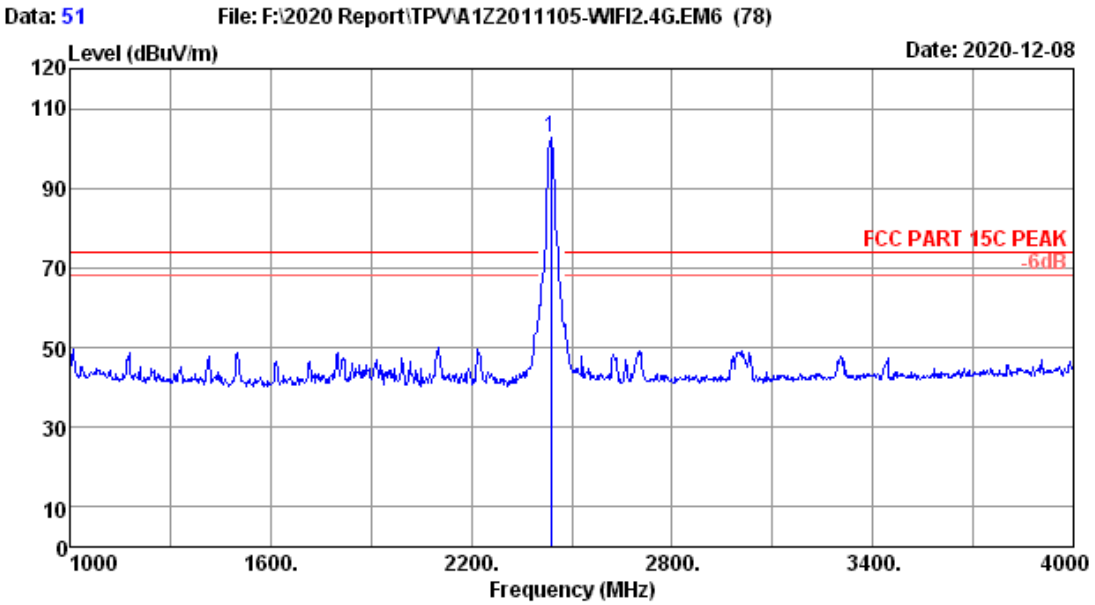


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 2437MHz Tx Mode

Data no. : 52
Ant. pol. : HORIZONTAL
Engineer : Allen

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	27.90	0.93	109.83	33.47	105.19	------	------	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.

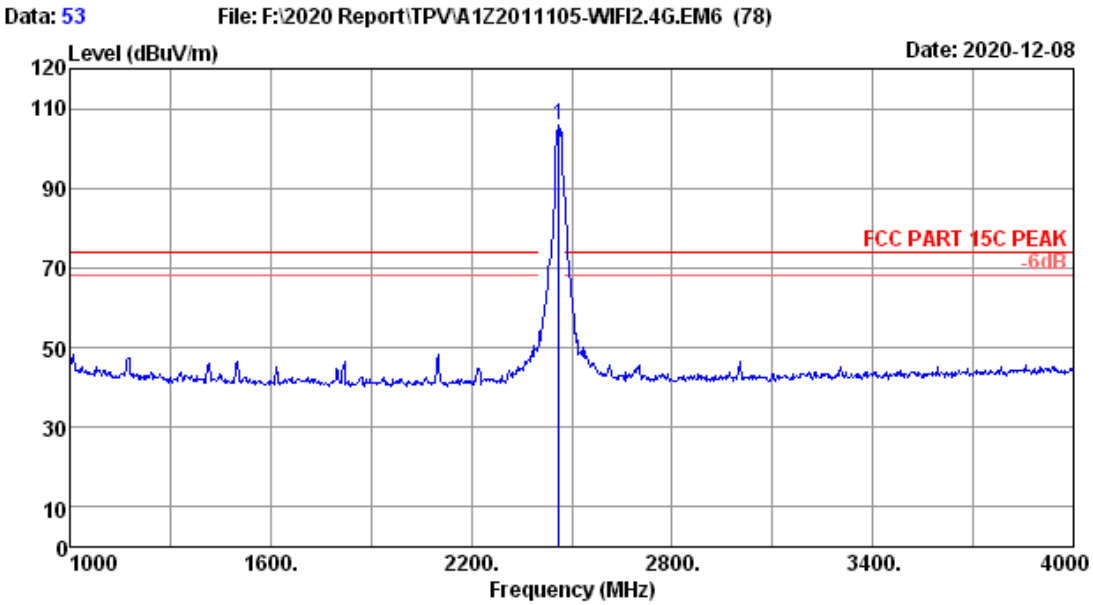


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 2437MHz Tx Mode

Data no. : 51
Ant. pol. : VERTICAL
Engineer : Allen

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	27.90	0.93	107.56	33.47	102.92	------	------	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.

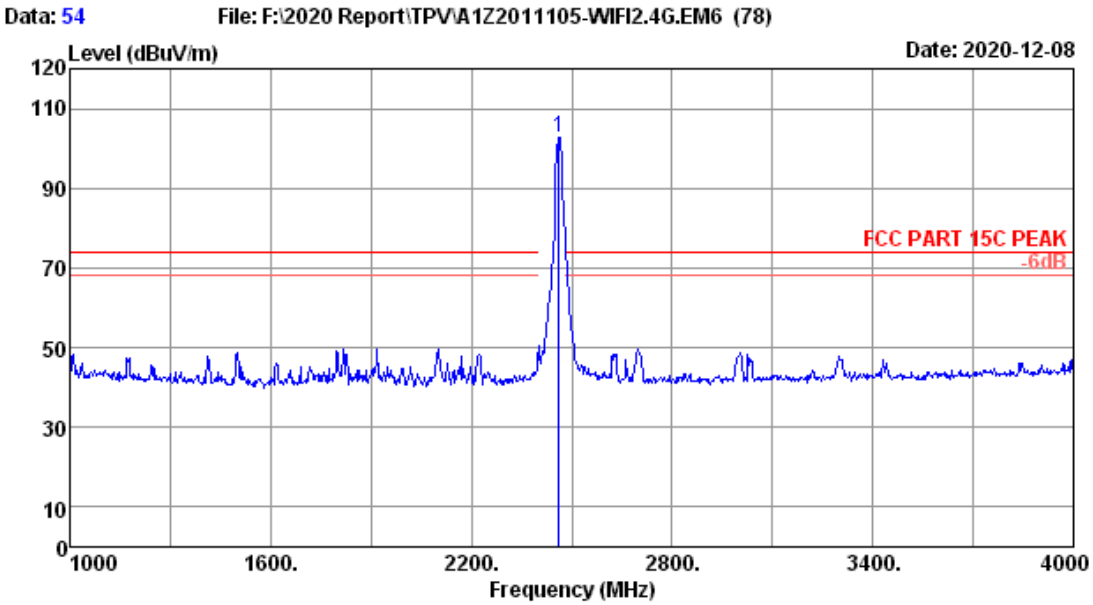


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 2462MHz Tx Mode

Data no. : 53
Ant. pol. : HORIZONTAL
Engineer : Allen

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	27.93	0.94	110.24	33.46	105.65	------	------	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.

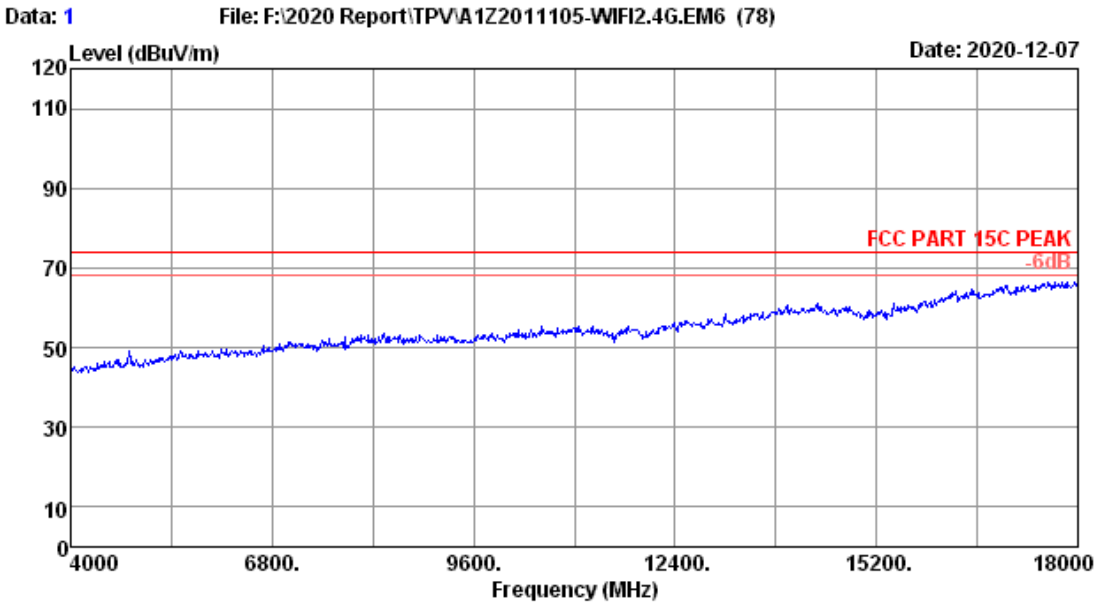


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 2462MHz Tx Mode

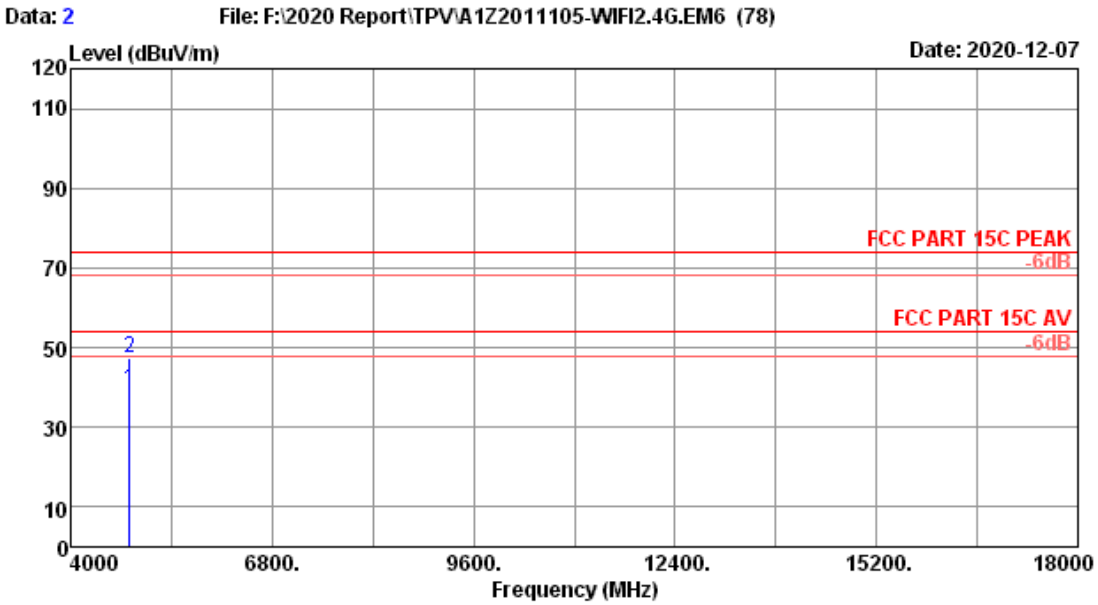
Data no. : 54
Ant. pol. : VERTICAL
Engineer : Allen

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	27.93	0.94	107.35	33.46	102.76	------	------	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.



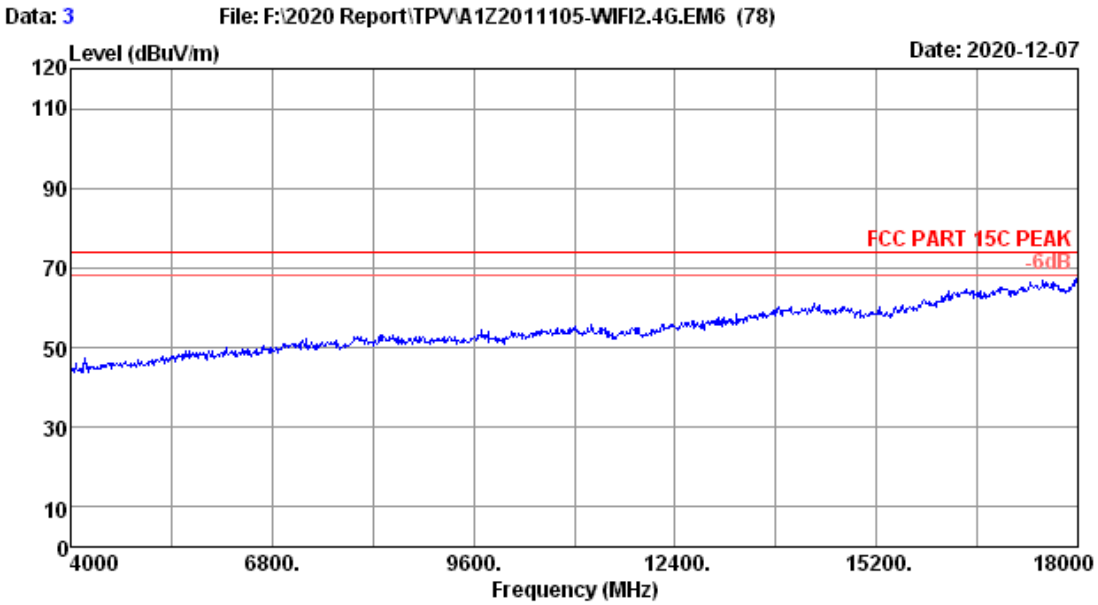

```
Site no.      : 3m Chamber                  Data no.   : 1
Dis. / Ant.   : 3m   2020 MCTD1209-3007     Ant. pol.  : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 23.4*C/52.9%                Engineer   : Allen
Power rating  : AC 120V/60Hz
Test Mode     : 11b 2412MHz Tx Mode
```



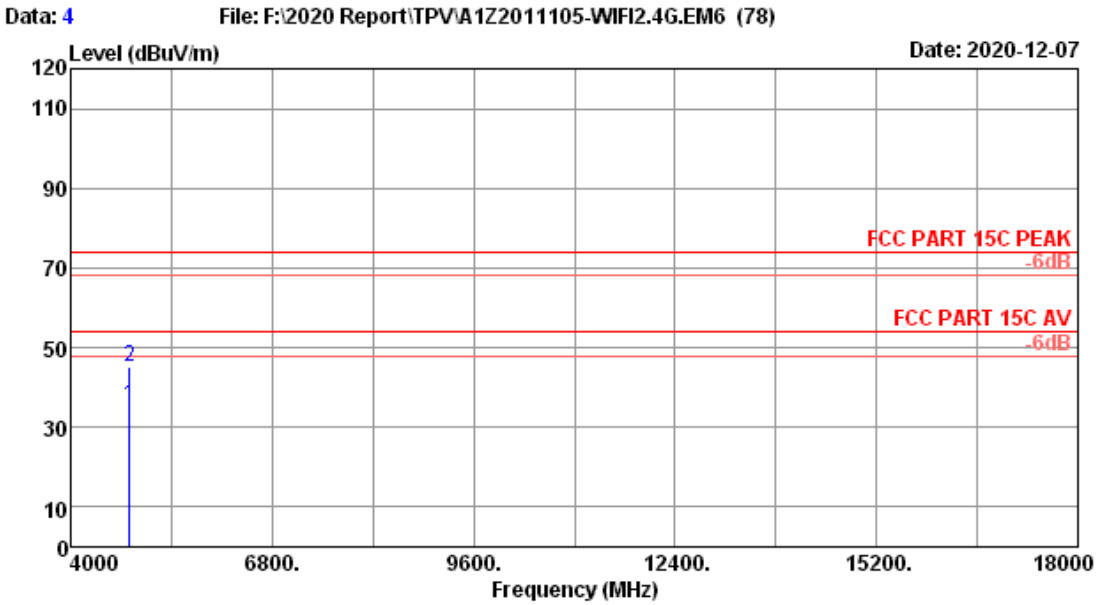
Site no. : 3m Chamber Data no. : 2
Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9% Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11b 2412MHz Tx Mode

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	32.53	1.38	38.50	33.18	39.23	54.00	14.77	Average
2	4824.00	32.53	1.38	46.50	33.18	47.23	74.00	26.77	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.



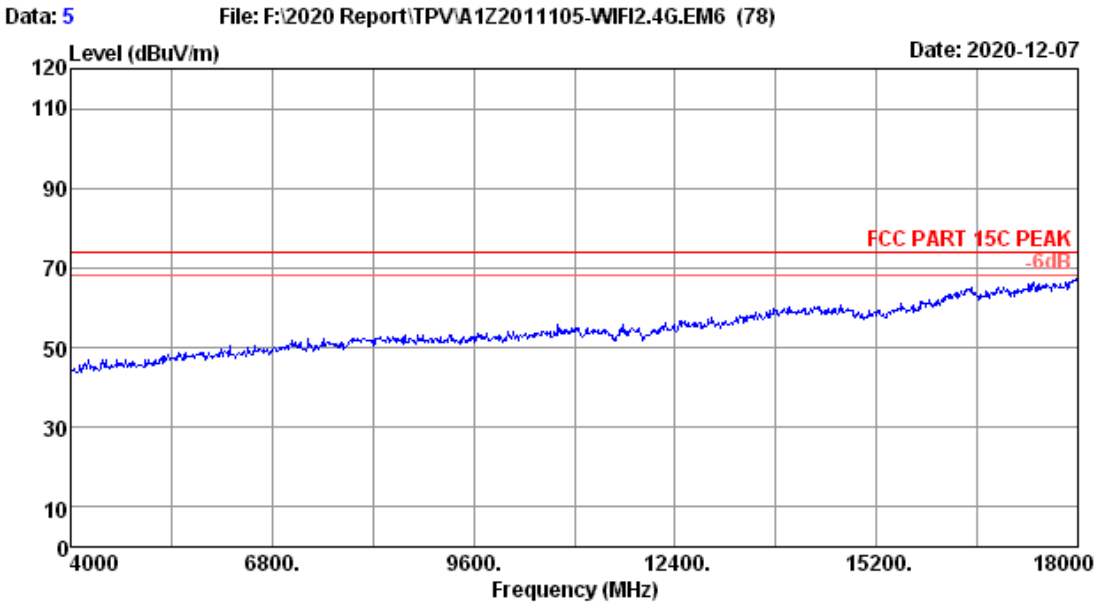
Site no. : 3m Chamber
Data no. : 3
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11b 2412MHz Tx Mode



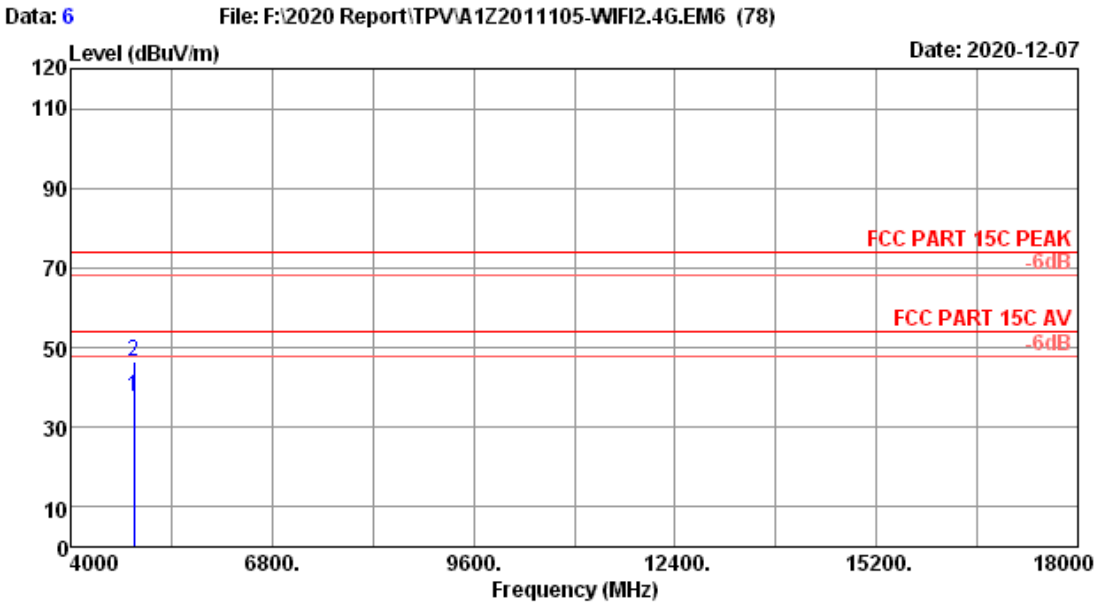
Site no. : 3m Chamber Data no. : 4
Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9% Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11b 2412MHz Tx Mode

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	32.53	1.38	34.90	33.18	35.63	54.00	18.37	Average
2	4824.00	32.53	1.38	44.59	33.18	45.32	74.00	28.68	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.



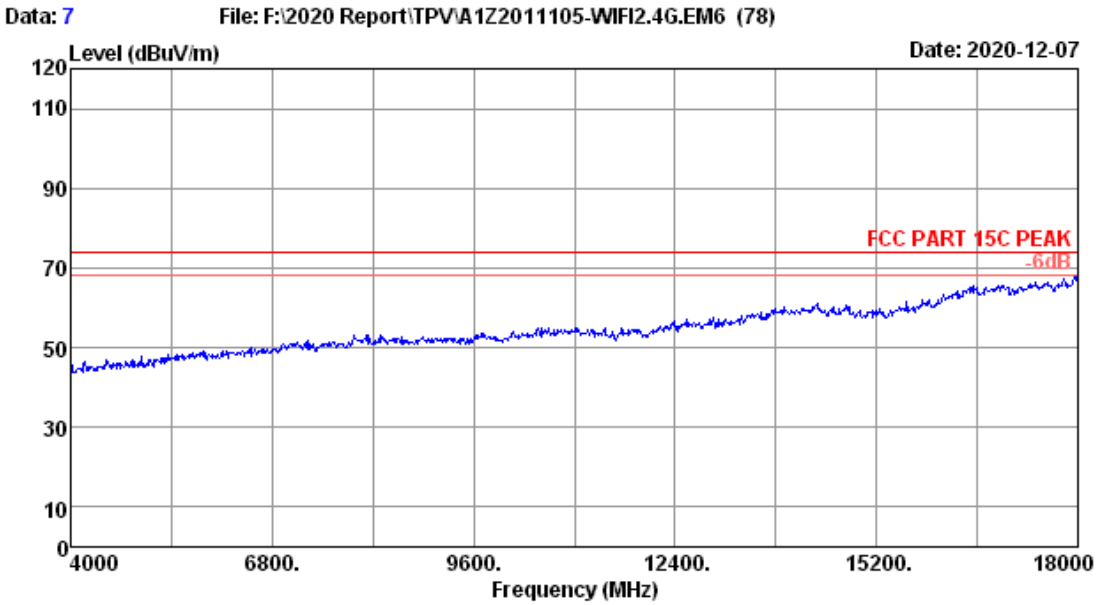

```
Site no.      : 3m Chamber                  Data no.   : 5
Dis. / Ant.   : 3m   2020 MCTD1209-3007     Ant. pol.  : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 23.4*C/52.9%                Engineer   : Allen
Power rating  : AC 120V/60Hz
Test Mode     : 11b 2437MHz Tx Mode
```



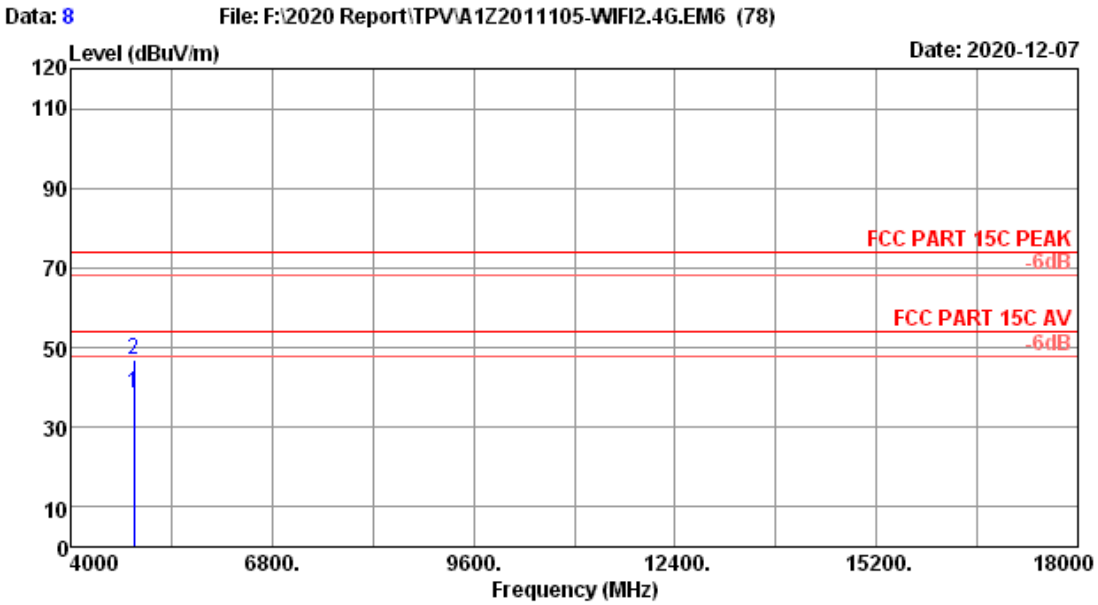
Site no. : 3m Chamber
Data no. : 6
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11b 2437MHz Tx Mode

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	32.55	1.39	36.90	33.19	37.65	54.00	16.35	Average
2	4874.00	32.55	1.39	45.65	33.19	46.40	74.00	27.60	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.



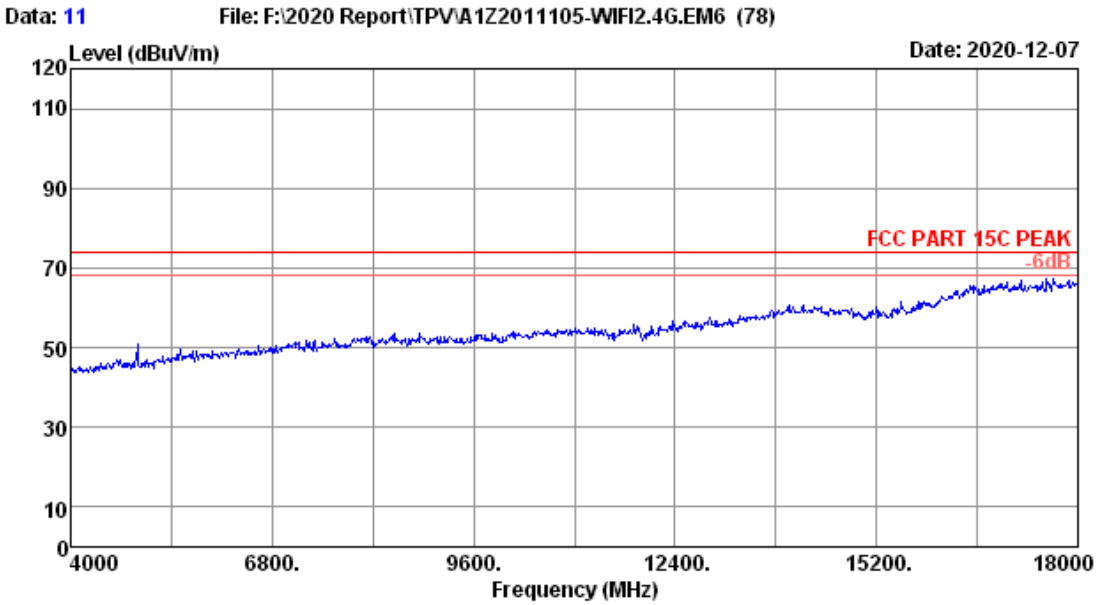

```
Site no.      : 3m Chamber                  Data no.   : 7
Dis. / Ant.   : 3m   2020 MCTD1209-3007     Ant. pol.  : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 23.4*C/52.9%                Engineer   : Allen
Power rating  : AC 120V/60Hz
Test Mode     : 11b 2437MHz Tx Mode
```



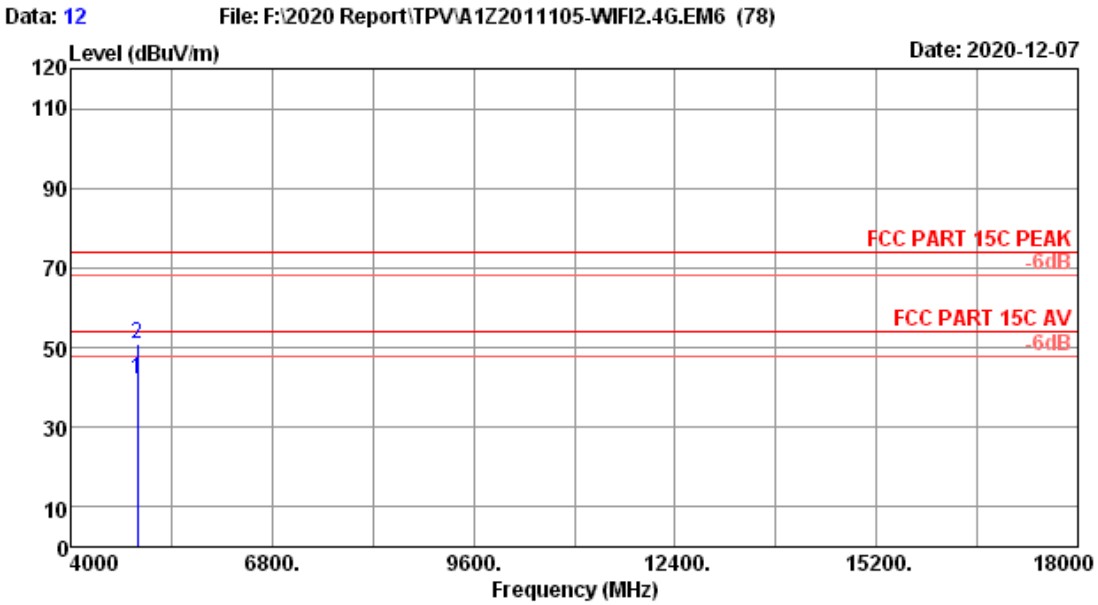
Site no. : 3m Chamber Data no. : 8
Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9% Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11b 2437MHz Tx Mode

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	32.55	1.39	37.90	33.19	38.65	54.00	15.35	Average
2	4874.00	32.55	1.39	46.25	33.19	47.00	74.00	27.00	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.



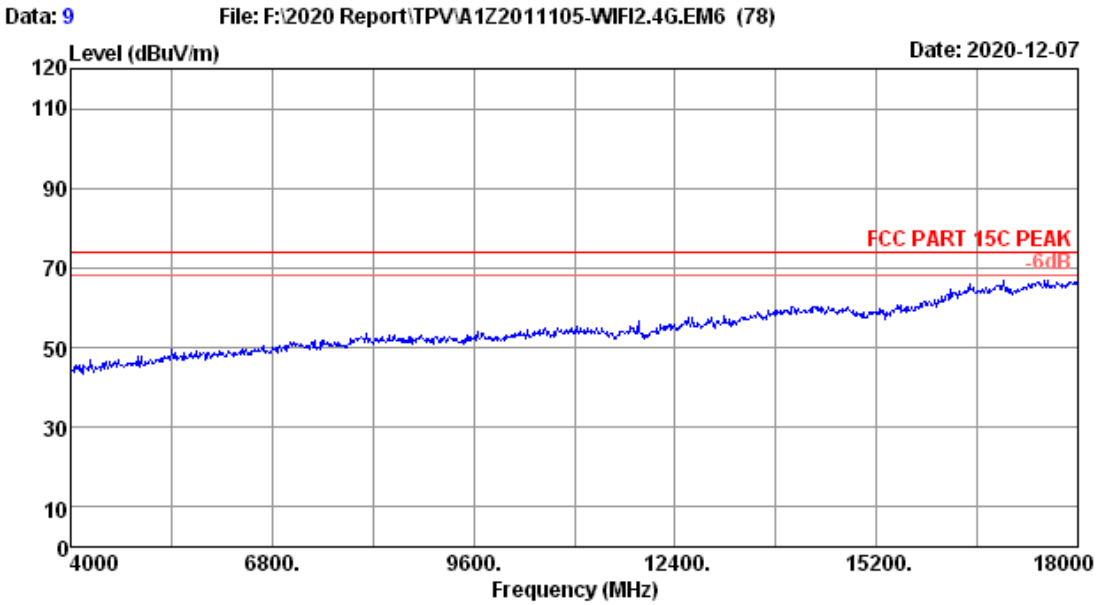

```
Site no.      : 3m Chamber                  Data no.   : 11
Dis. / Ant.   : 3m   2020 MCTD1209-3007     Ant. pol.  : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 23.4*C/52.9%                Engineer   : Allen
Power rating  : AC 120V/60Hz
Test Mode     : 11b 2462MHz Tx Mode
```



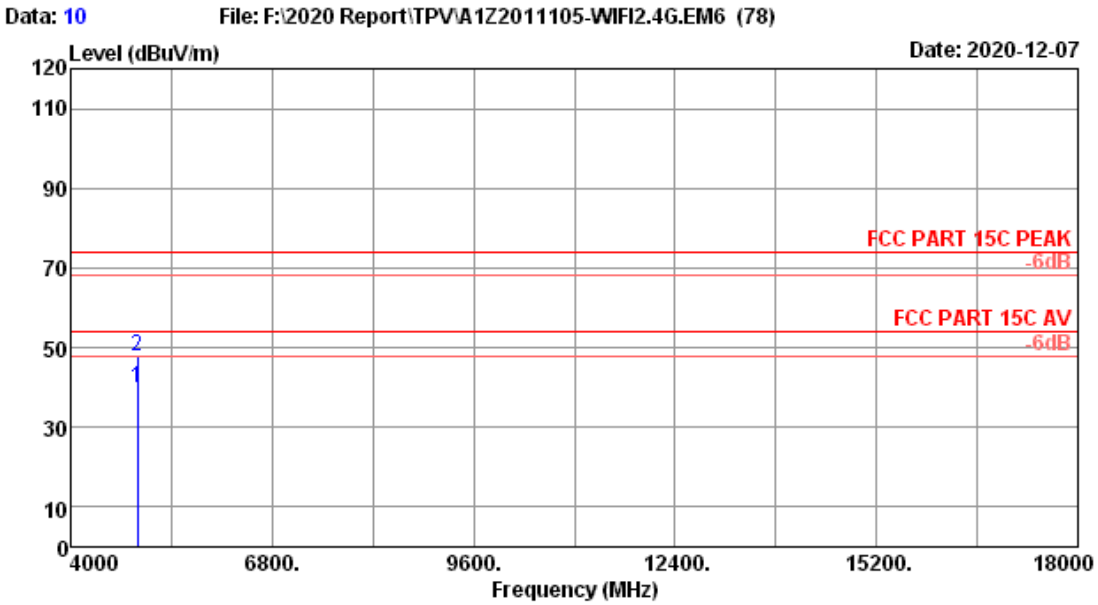
Site no. : 3m Chamber
Data no. : 12
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11b 2462MHz Tx Mode

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	32.57	1.39	41.10	33.19	41.87	54.00	12.13	Average
2	4924.00	32.57	1.39	50.03	33.19	50.80	74.00	23.20	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.



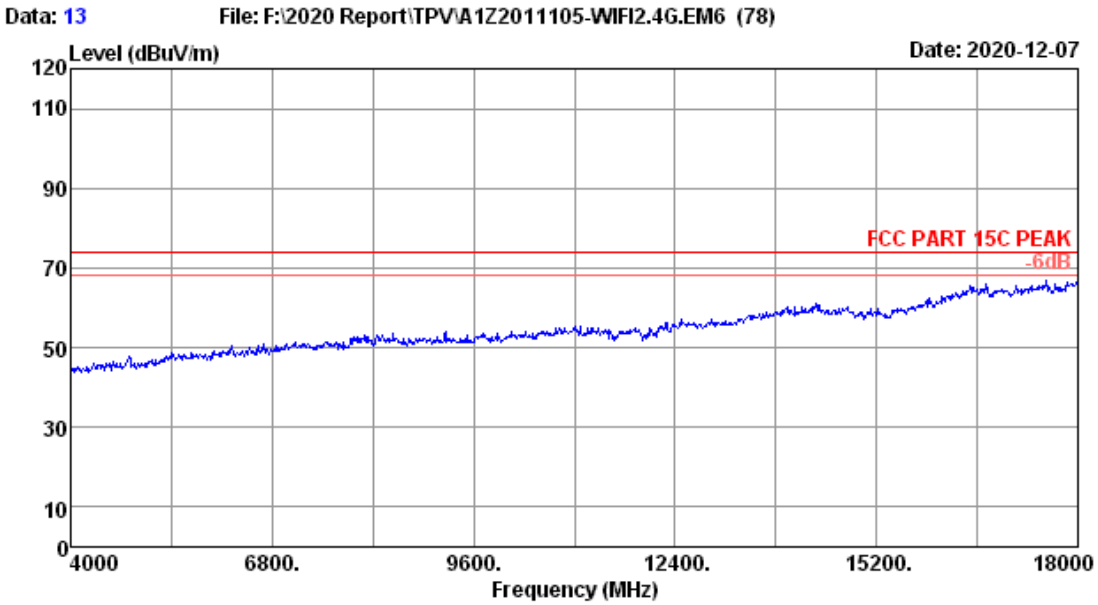

```
Site no.      : 3m Chamber                  Data no.   : 9
Dis. / Ant.   : 3m   2020 MCTD1209-3007     Ant. pol.  : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 23.4*C/52.9%                Engineer   : Allen
Power rating  : AC 120V/60Hz
Test Mode     : 11b 2462MHz Tx Mode
```



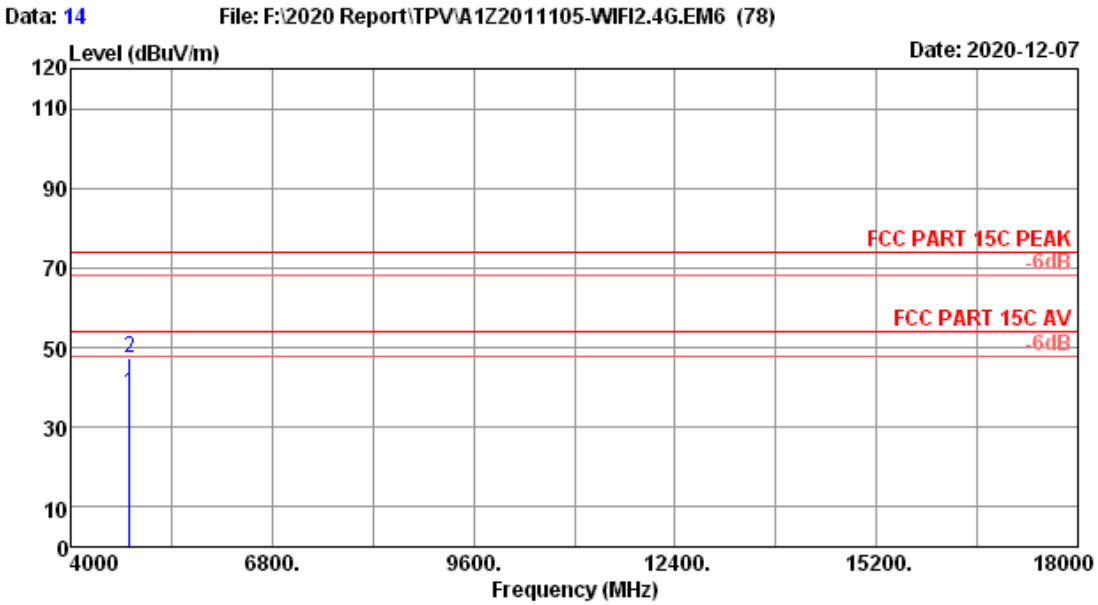
Site no. : 3m Chamber
Data no. : 10
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11b 2462MHz Tx Mode

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	32.57	1.39	38.90	33.19	39.67	54.00	14.33	Average
2	4924.00	32.57	1.39	47.17	33.19	47.94	74.00	26.06	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.



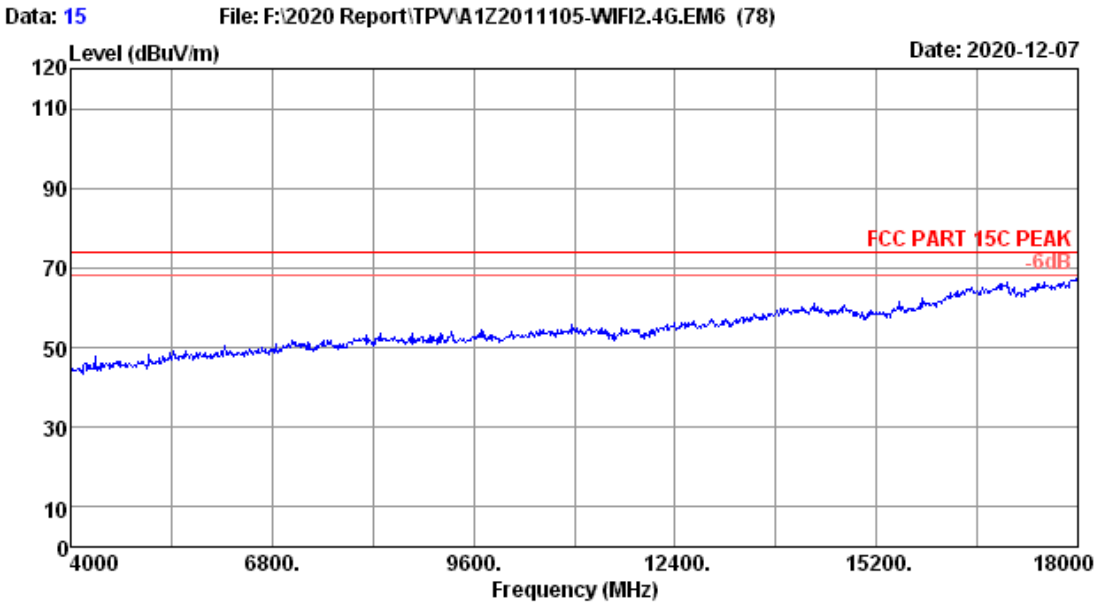
Site no.	: 3m Chamber	Data no.	: 13
Dis. / Ant.	: 3m 2020 MCTD1209-3007	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.4*C/52.9%	Engineer	: Allen
Power rating	: AC 120V/60Hz		
Test Mode	: 11g 2412MHz Tx Mode		



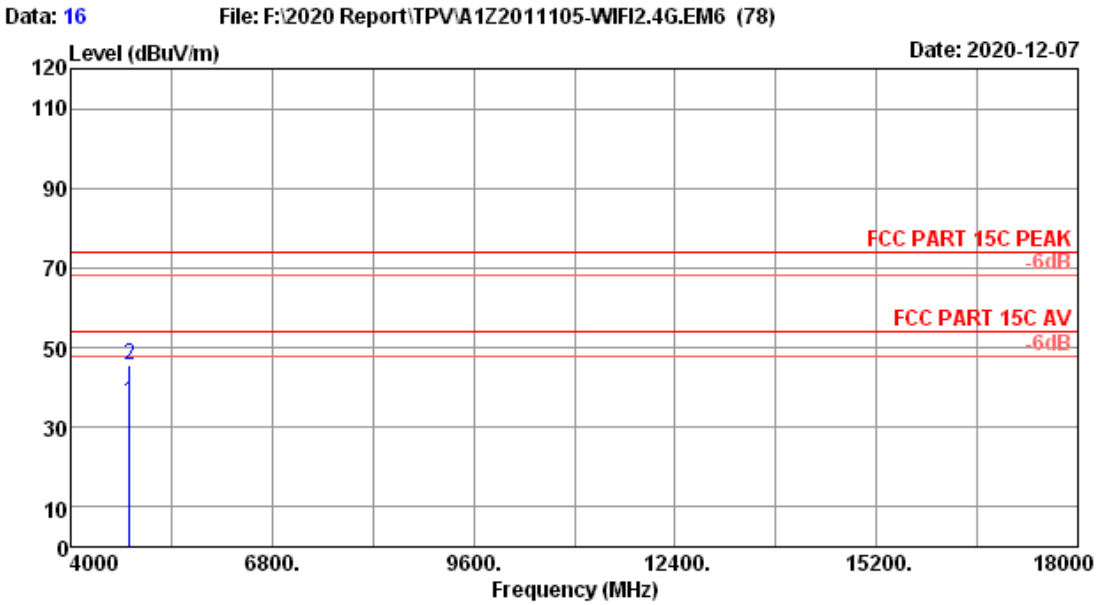
Site no. : 3m Chamber
Data no. : 14
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11g 2412MHz Tx Mode

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	32.53	1.38	37.70	33.18	38.43	54.00	15.57	Average
2	4824.00	32.53	1.38	46.48	33.18	47.21	74.00	26.79	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.



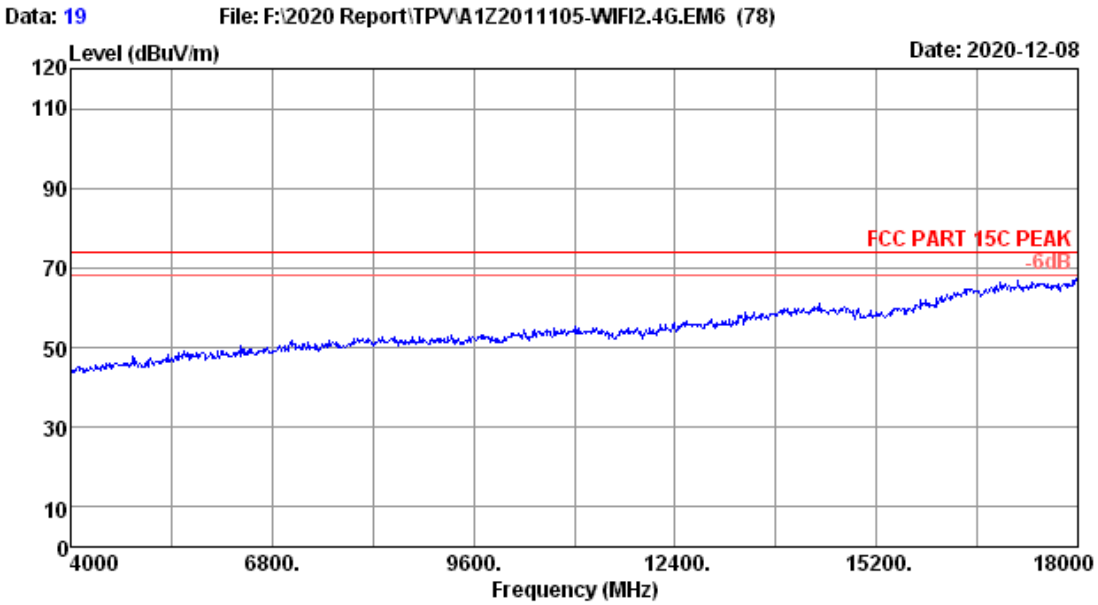

```
Site no.      : 3m Chamber                  Data no.   : 15
Dis. / Ant.   : 3m   2020 MCTD1209-3007     Ant. pol.  : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 23.4*C/52.9%                Engineer   : Allen
Power rating  : AC 120V/60Hz
Test Mode     : 11g 2412MHz Tx Mode
```



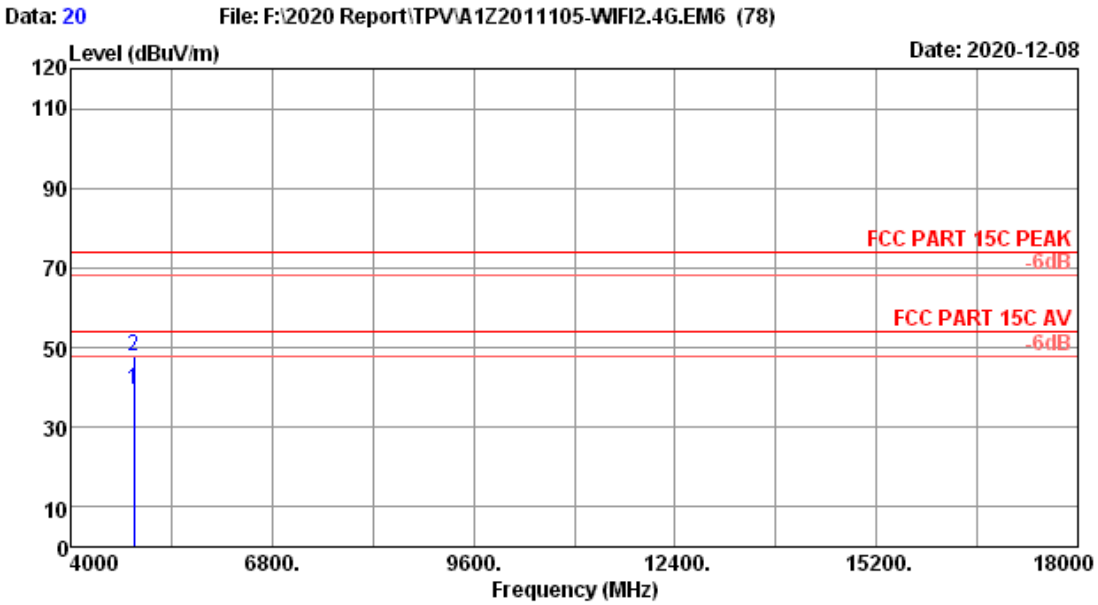
Site no. : 3m Chamber
Data no. : 16
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11g 2412MHz Tx Mode

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	32.53	1.38	35.80	33.18	36.53	54.00	17.47	Average
2	4824.00	32.53	1.38	44.82	33.18	45.55	74.00	28.45	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.



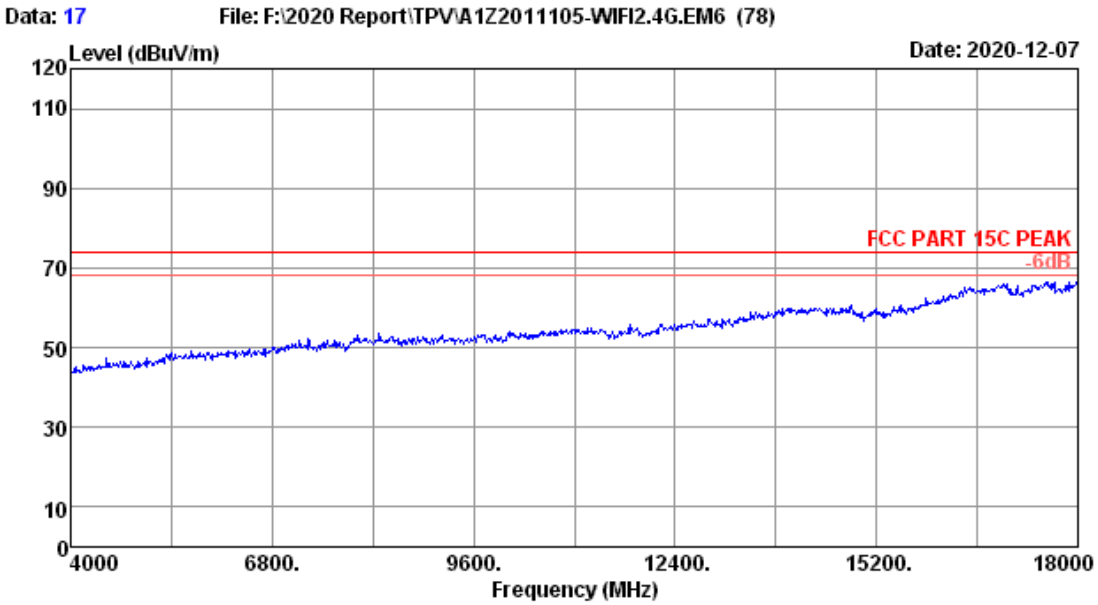

```
Site no.      : 3m Chamber                  Data no.   : 19
Dis. / Ant.   : 3m   2020 MCTD1209-3007     Ant. pol.  : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 23.4*C/52.9%                Engineer   : Allen
Power rating  : AC 120V/60Hz
Test Mode     : 11g 2437MHz Tx Mode
```



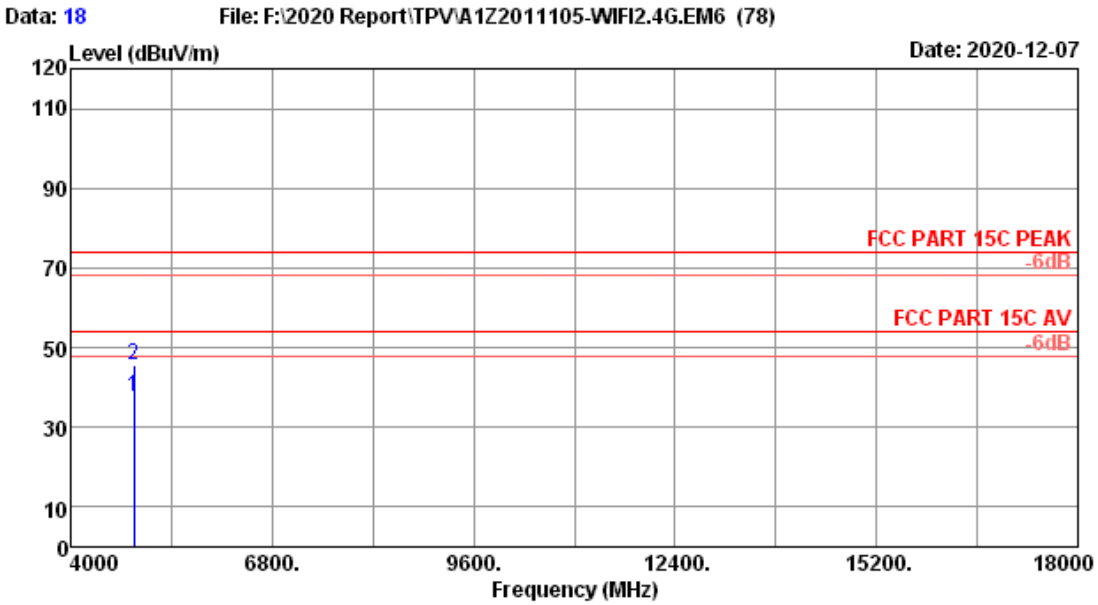
Site no. : 3m Chamber
Data no. : 20
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11g 2437MHz Tx Mode

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	32.55	1.39	38.50	33.19	39.25	54.00	14.75	Average
2	4874.00	32.55	1.39	47.10	33.19	47.85	74.00	26.15	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.



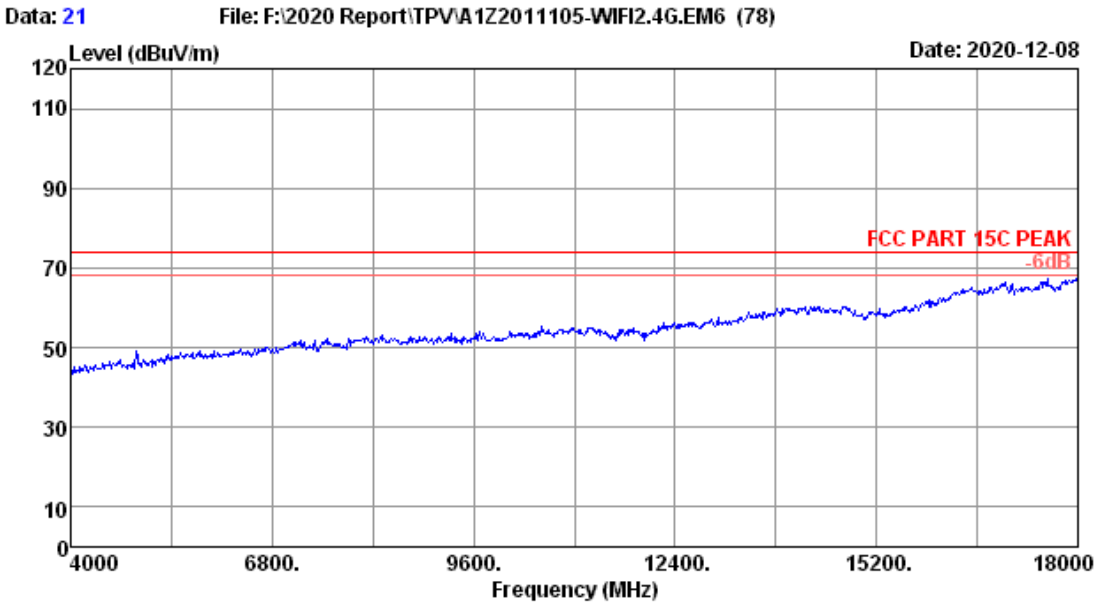
Site no.	: 3m Chamber	Data no.	: 17
Dis. / Ant.	: 3m 2020 MCTD1209-3007	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.4*C/52.9%	Engineer	: Allen
Power rating	: AC 120V/60Hz		
Test Mode	: 11g 2437MHz Tx Mode		



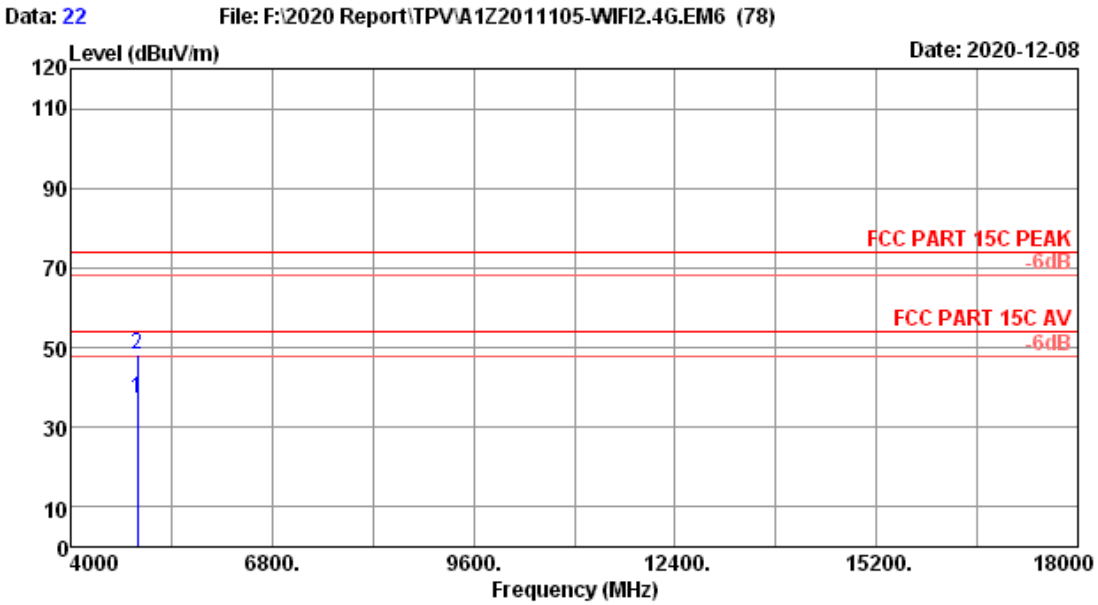
Site no. : 3m Chamber Data no. : 18
Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9% Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11g 2437MHz Tx Mode

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	32.55	1.39	36.90	33.19	37.65	54.00	16.35	Average
2	4874.00	32.55	1.39	45.02	33.19	45.77	74.00	28.23	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.



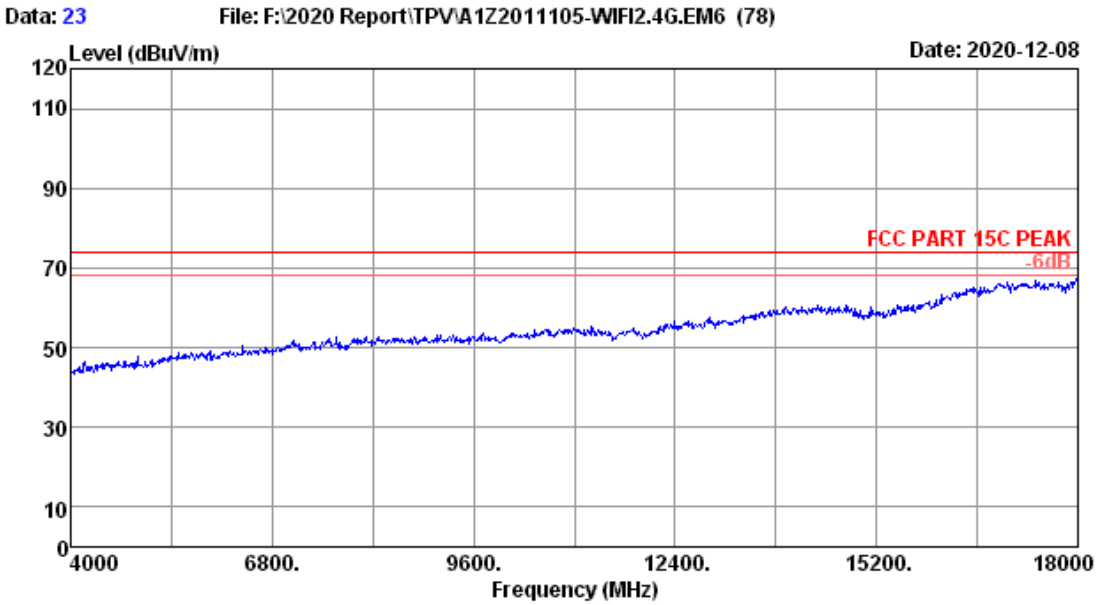

```
Site no.      : 3m Chamber                  Data no.   : 21
Dis. / Ant.   : 3m   2020 MCTD1209-3007     Ant. pol.  : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 23.4*C/52.9%                Engineer   : Allen
Power rating  : AC 120V/60Hz
Test Mode     : 11g 2462MHz Tx Mode
```



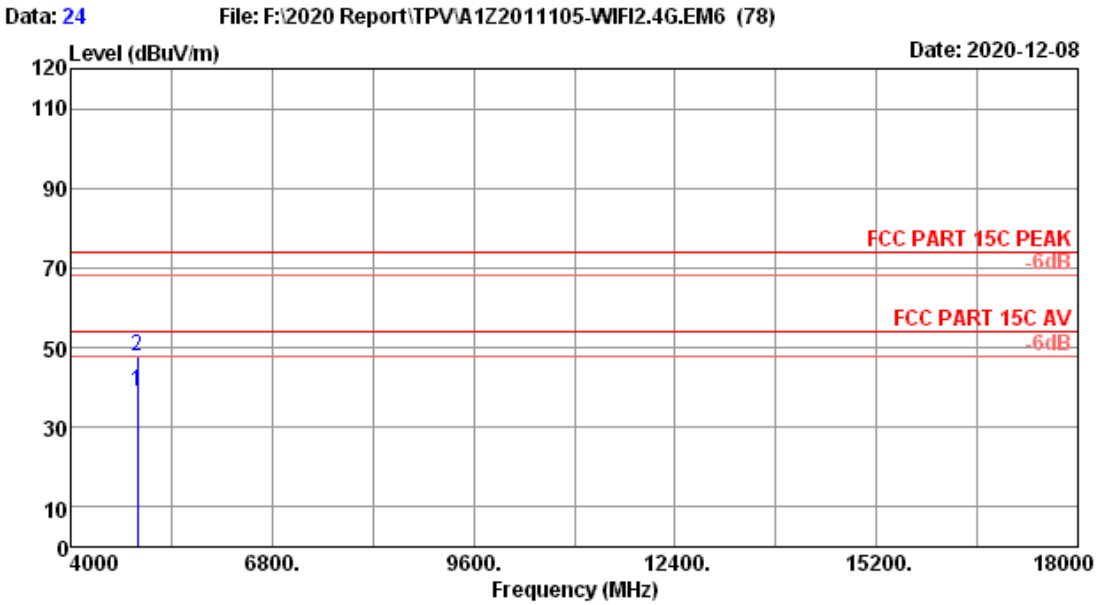
Site no. : 3m Chamber Data no. : 22
Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9% Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11g 2462MHz Tx Mode

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	4924.00	32.57	1.39	36.60	33.19	37.37	54.00	16.63	Average
2	4924.00	32.57	1.39	47.63	33.19	48.40	74.00	25.60	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.



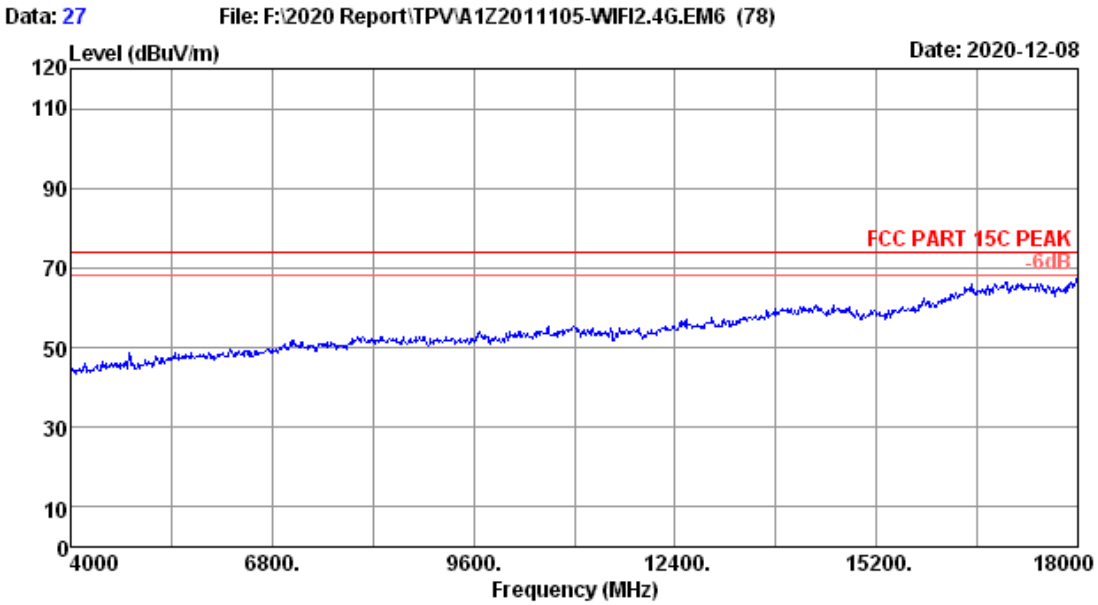

```
Site no.      : 3m Chamber                  Data no.   : 23
Dis. / Ant.   : 3m   2020 MCTD1209-3007     Ant. pol.  : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 23.4*C/52.9%                Engineer   : Allen
Power rating  : AC 120V/60Hz
Test Mode     : 11g 2462MHz Tx Mode
```



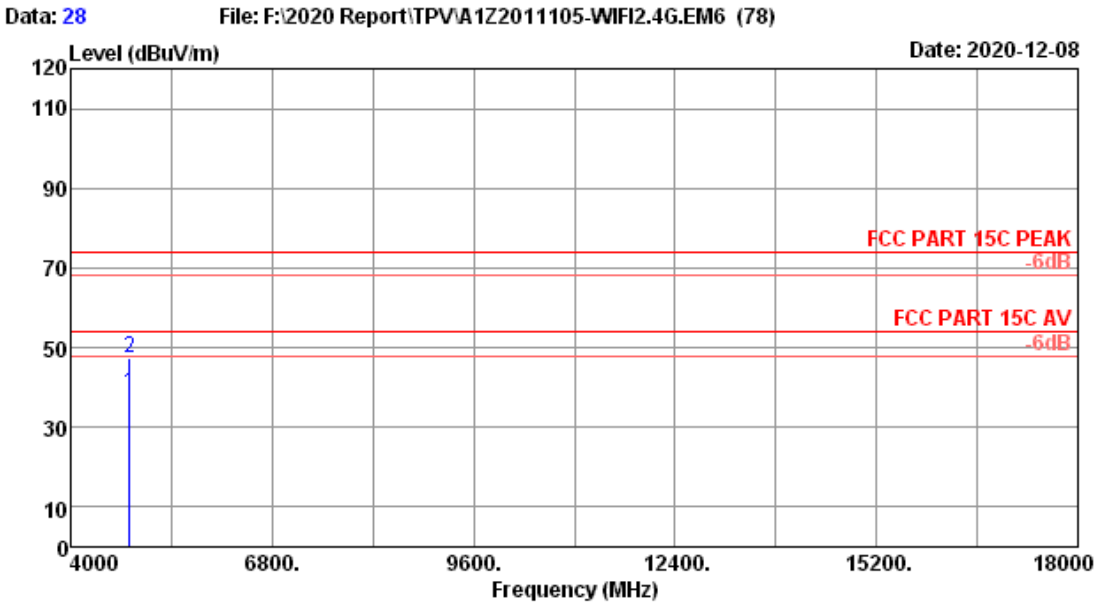
Site no. : 3m Chamber
Data no. : 24
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11g 2462MHz Tx Mode

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	4924.00	32.57	1.39	38.20	33.19	38.97	54.00	15.03	Average
2	4924.00	32.57	1.39	47.07	33.19	47.84	74.00	26.16	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.



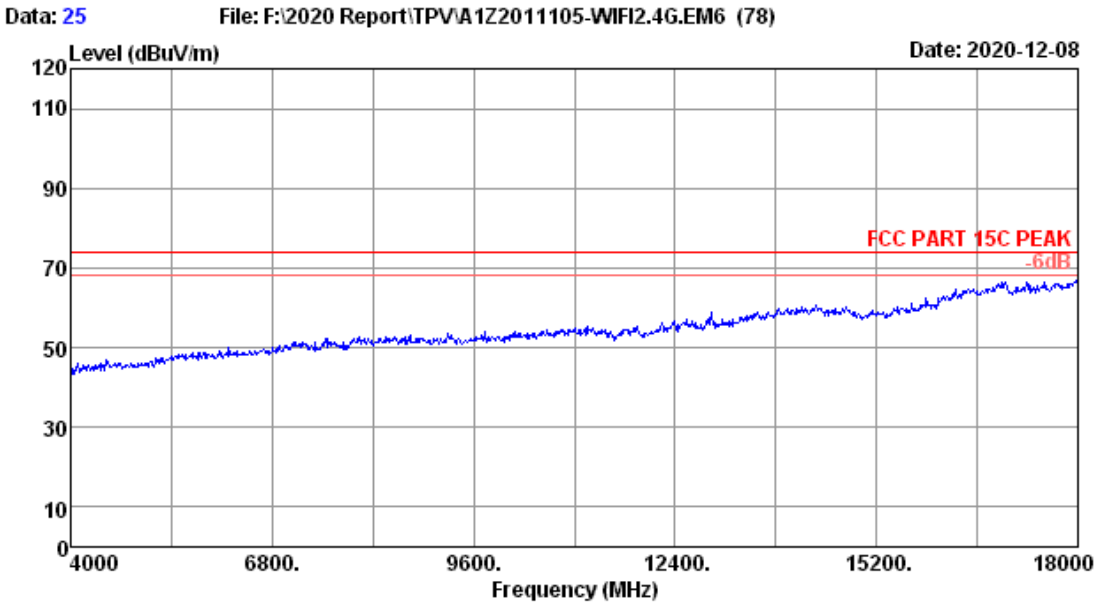

```
Site no.      : 3m Chamber                  Data no.   : 27
Dis. / Ant.   : 3m   2020 MCTD1209-3007     Ant. pol.  : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 23.4*C/52.9%                Engineer   : Allen
Power rating  : AC 120V/60Hz
Test Mode     : 11nHT20 2412MHz Tx Mode
```



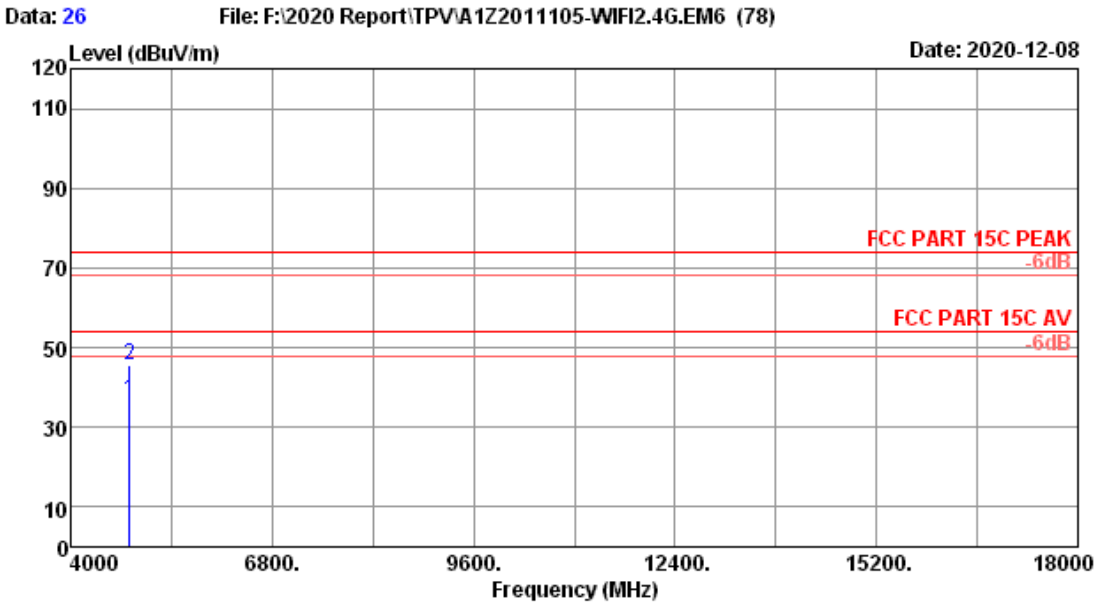
Site no. : 3m Chamber Data no. : 28
Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9% Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 2412MHz Tx Mode

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	32.53	1.38	37.80	33.18	38.53	54.00	15.47	Average
2	4824.00	32.53	1.38	46.54	33.18	47.27	74.00	26.73	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.



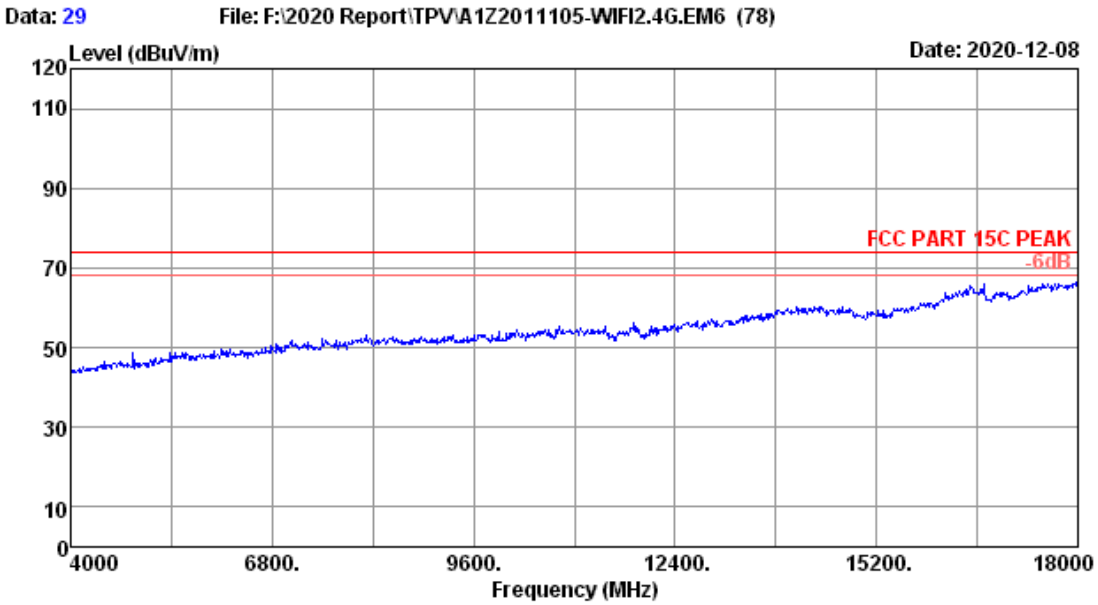

```
Site no.      : 3m Chamber                  Data no.   : 25
Dis. / Ant.   : 3m   2020 MCTD1209-3007     Ant. pol.  : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 23.4*C/52.9%                Engineer   : Allen
Power rating  : AC 120V/60Hz
Test Mode     : 11nHT20 2412MHz Tx Mode
```



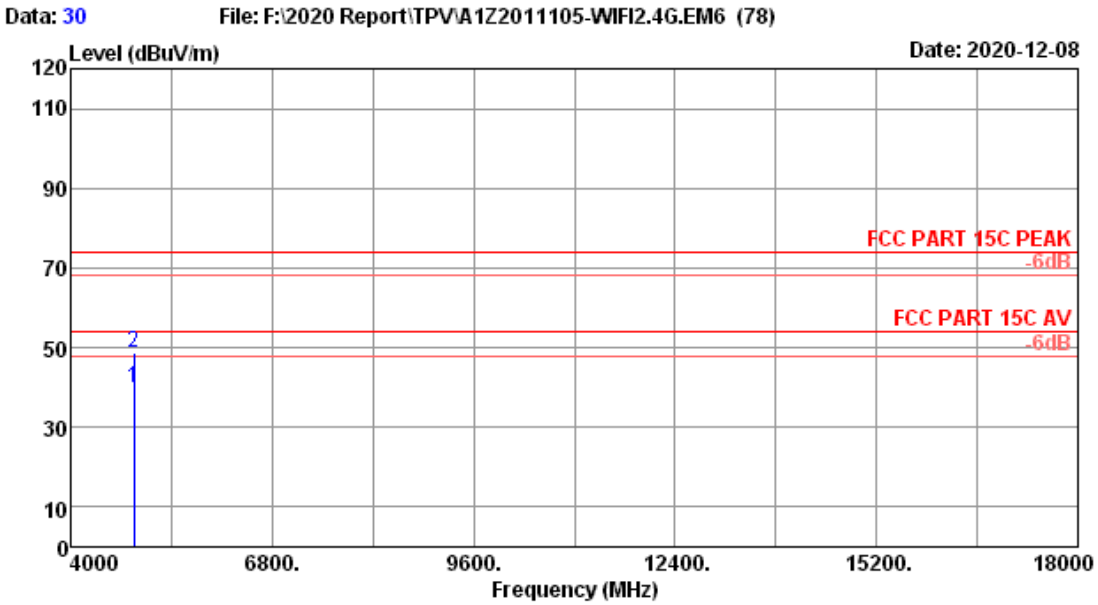
Site no. : 3m Chamber Data no. : 26
Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9% Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 2412MHz Tx Mode

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	32.53	1.38	35.90	33.18	36.63	54.00	17.37	Average
2	4824.00	32.53	1.38	44.99	33.18	45.72	74.00	28.28	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.



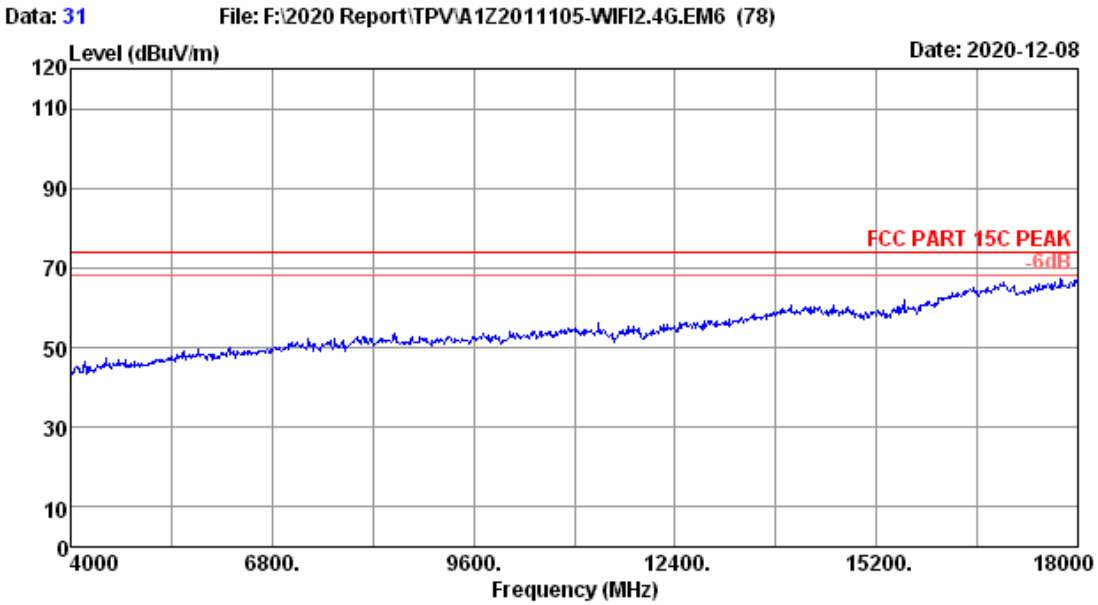

```
Site no.      : 3m Chamber                  Data no.   : 29
Dis. / Ant.   : 3m   2020 MCTD1209-3007     Ant. pol.  : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 23.4*C/52.9%                Engineer   : Allen
Power rating  : AC 120V/60Hz
Test Mode     : 11nHT20 2437MHz Tx Mode
```



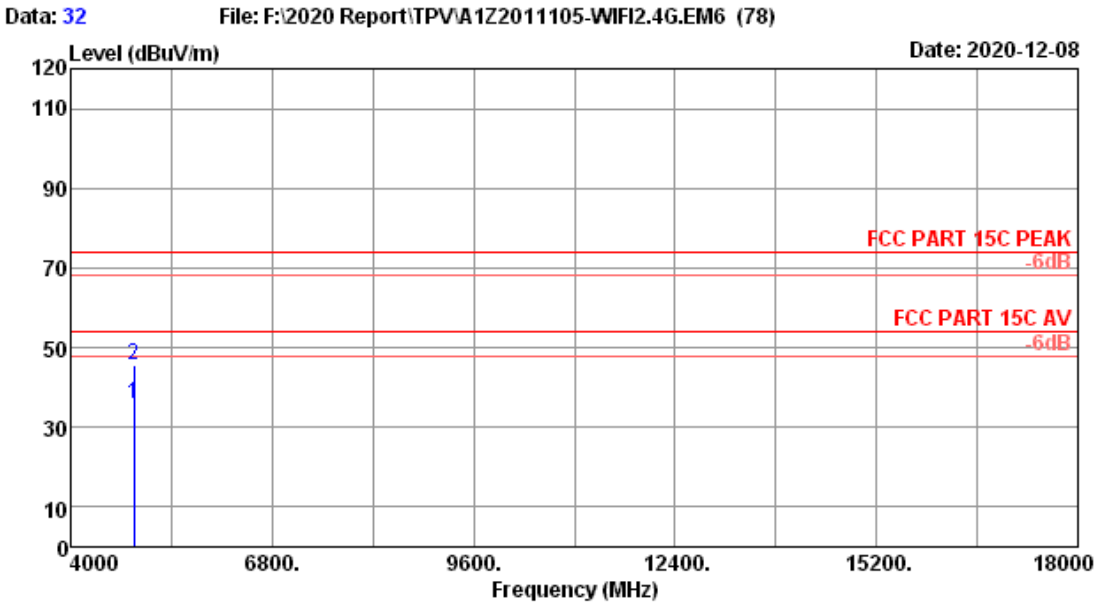
Site no. : 3m Chamber Data no. : 30
Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9% Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 2437MHz Tx Mode

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	32.55	1.39	39.20	33.19	39.95	54.00	14.05	Average
2	4874.00	32.55	1.39	48.14	33.19	48.89	74.00	25.11	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.



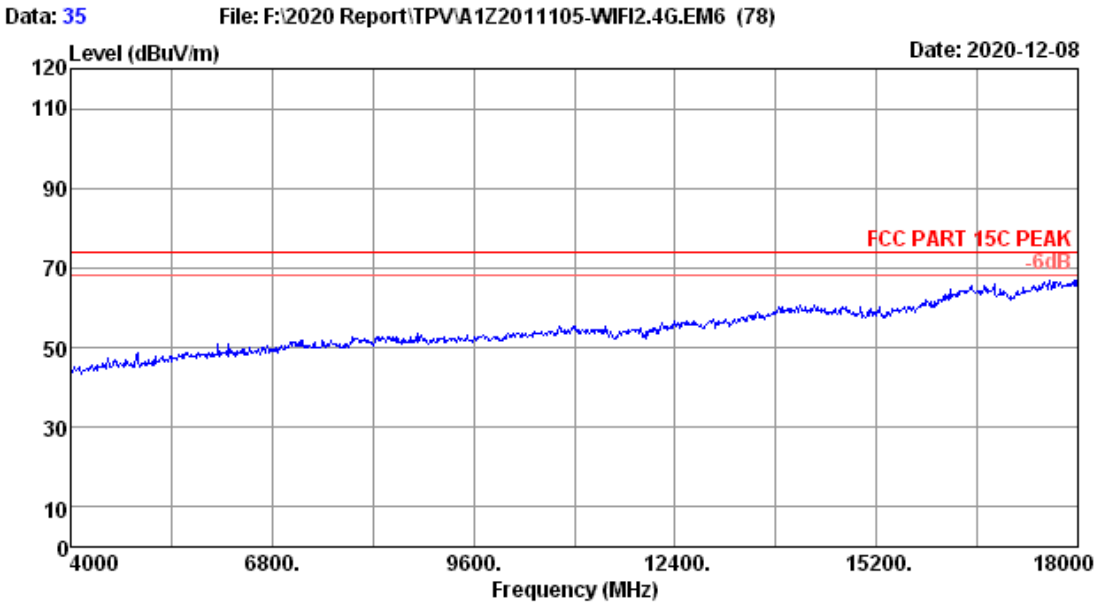

```
Site no.      : 3m Chamber                  Data no.   : 31
Dis. / Ant.   : 3m   2020 MCTD1209-3007     Ant. pol.  : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 23.4*C/52.9%                Engineer   : Allen
Power rating  : AC 120V/60Hz
Test Mode     : 11nHT20 2437MHz Tx Mode
```



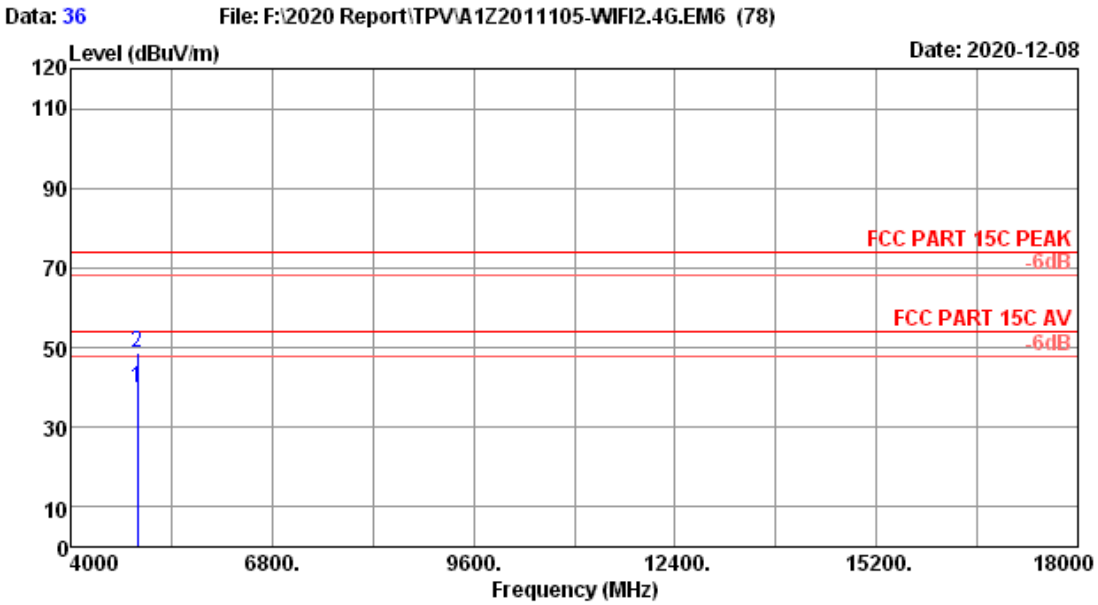
Site no. : 3m Chamber Data no. : 32
Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9% Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 2437MHz Tx Mode

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	32.55	1.39	35.20	33.19	35.95	54.00	18.05	Average
2	4874.00	32.55	1.39	44.74	33.19	45.49	74.00	28.51	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.



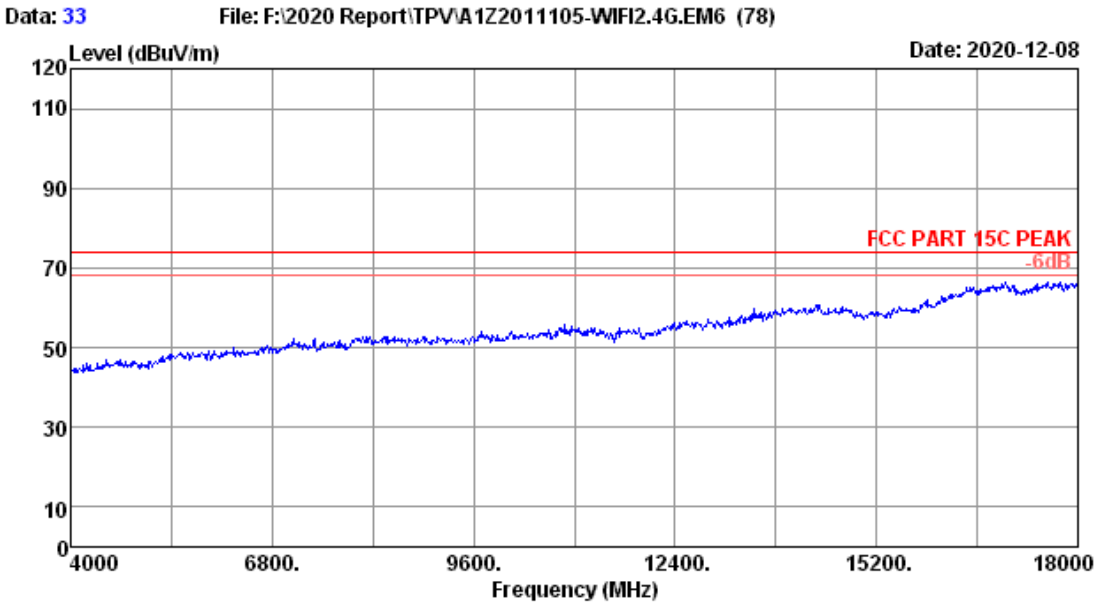

```
Site no.      : 3m Chamber                  Data no.   : 35
Dis. / Ant.   : 3m   2020 MCTD1209-3007     Ant. pol.  : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 23.4*C/52.9%                Engineer   : Allen
Power rating  : AC 120V/60Hz
Test Mode     : 11nHT20 2462MHz Tx Mode
```



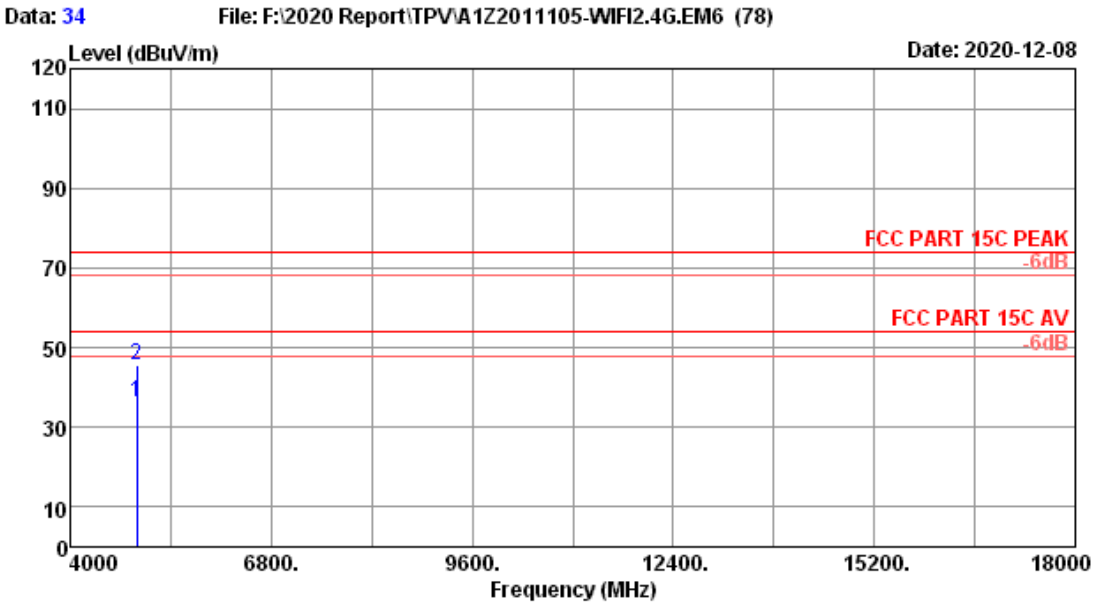
Site no. : 3m Chamber Data no. : 36
Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9% Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 2462MHz Tx Mode

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	32.57	1.39	38.90	33.19	39.67	54.00	14.33	Average
2	4924.00	32.57	1.39	47.84	33.19	48.61	74.00	25.39	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.   : 33
Dis. / Ant.   : 3m   2020 MCTD1209-3007     Ant. pol.  : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 23.4*C/52.9%                Engineer   : Allen
Power rating  : AC 120V/60Hz
Test Mode     : 11nHT20 2462MHz Tx Mode
```



Site no. : 3m Chamber Data no. : 34
Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9% Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 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	32.57	1.39	35.50	33.19	36.27	54.00	17.73	Average
2	4924.00	32.57	1.39	44.77	33.19	45.54	74.00	28.46	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.

5. CONDUCTED SPURIOUS EMISSIONS

5.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Apr.12,20	1 Year
2.	Attenuator	Agilent	8491B	MY39269201	Oct.12,20	1 Year
3.	RF Cable	EMCI	EMC102-KM-KM 3500	170702	Apr.12,20	1 Year

5.2.Limit

In any 100kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 30dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.

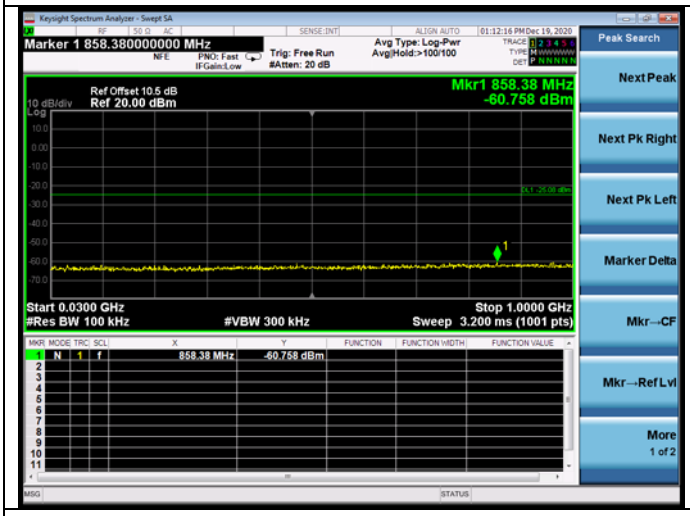
5.3.Test Procedure

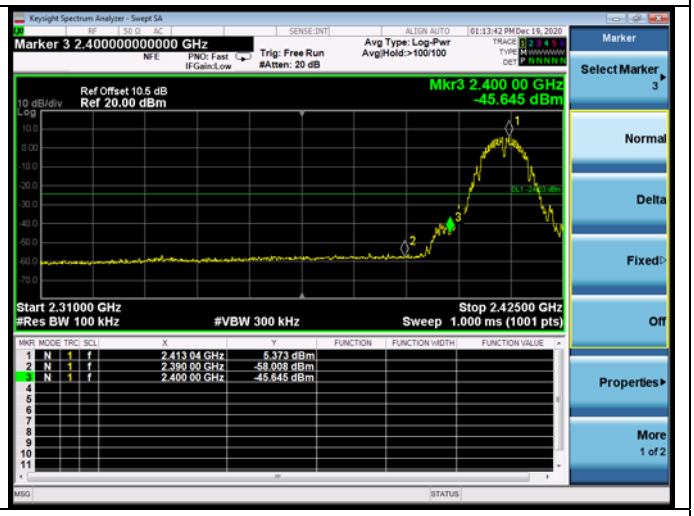
The transmitter output was connected to a spectrum analyzer, The resolution bandwidth is set to 100 kHz, The video bandwidth is set to 300 kHz and measure all the emissions with peak detector.

5.4.Test result

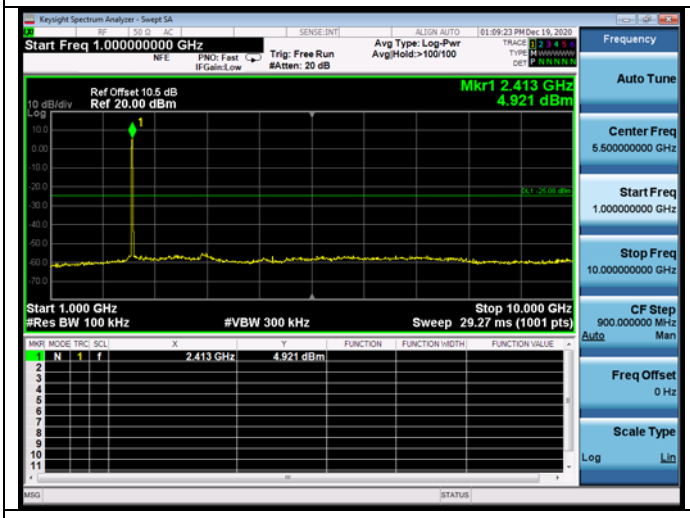
PASS (The testing data was attached in the next pages.)

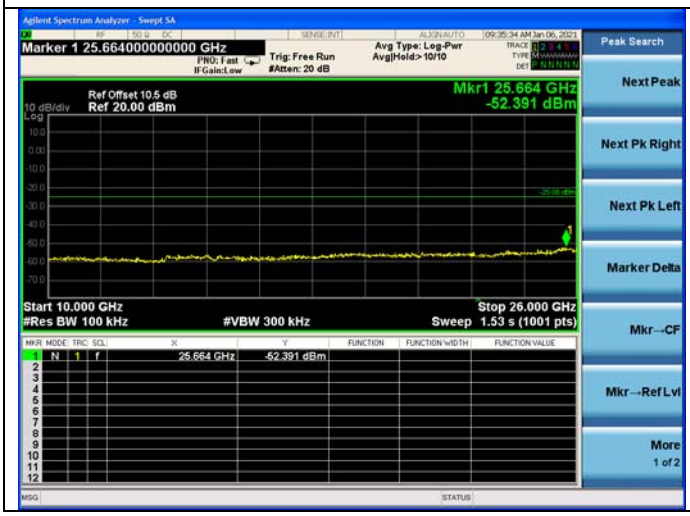
Test Mode: IEEE 802.11b
Test CH1: 2412MHz

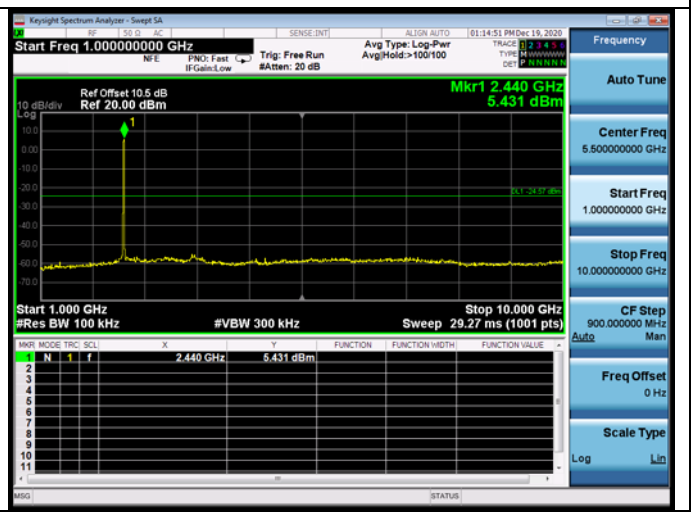


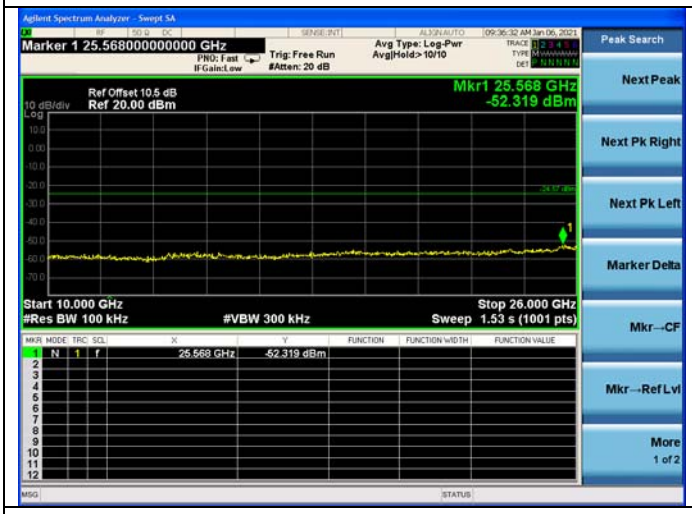


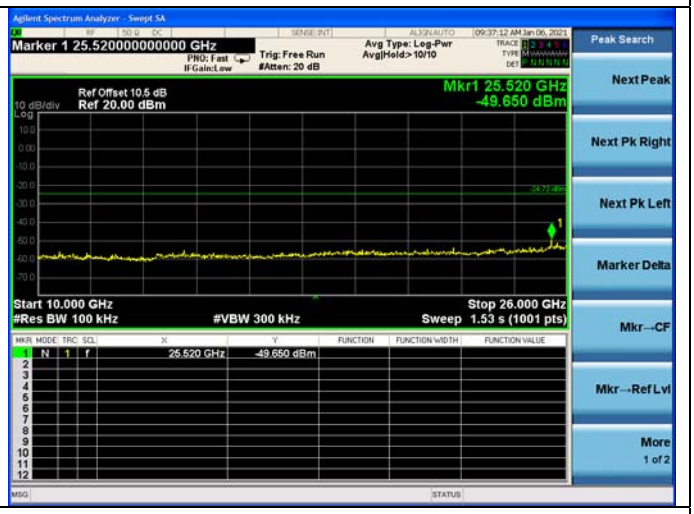
Test CH6: 2437MHz



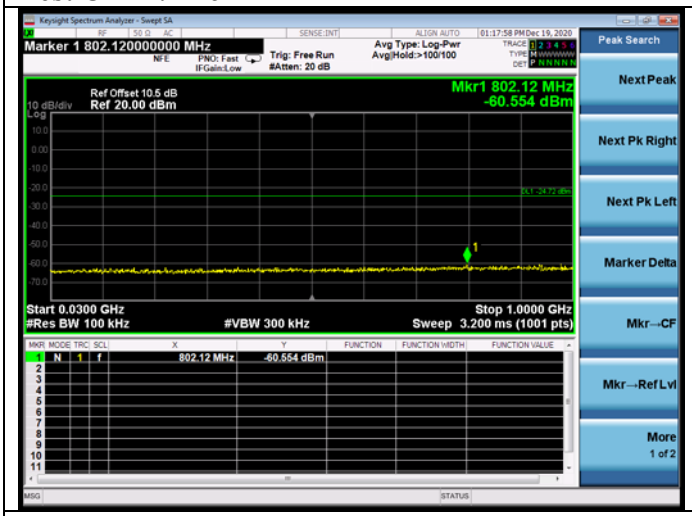




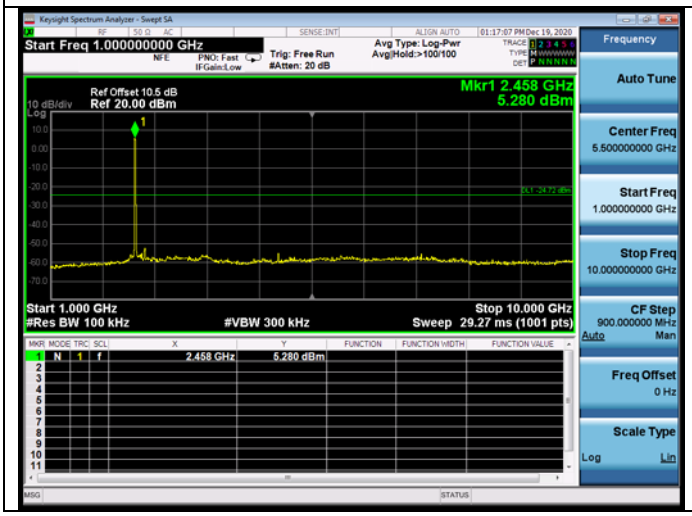


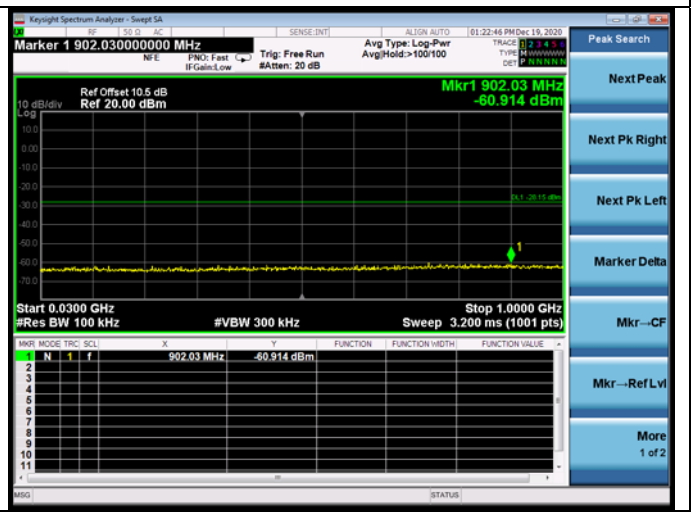


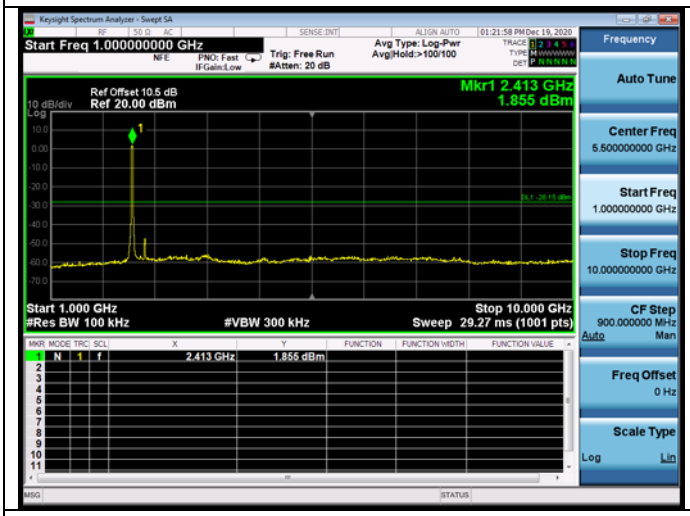
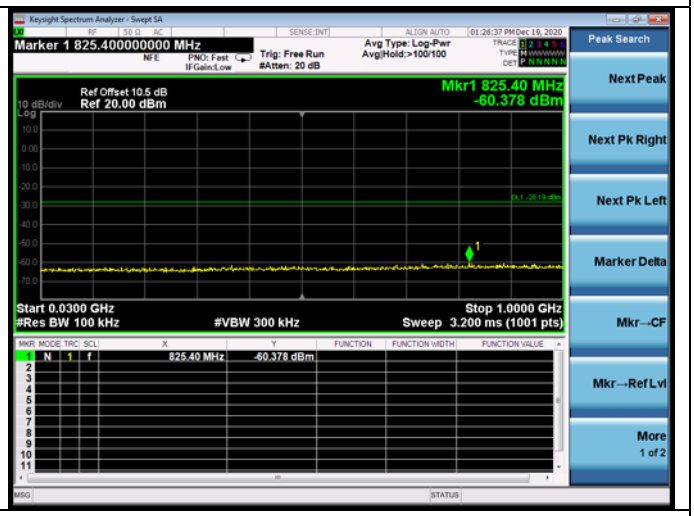
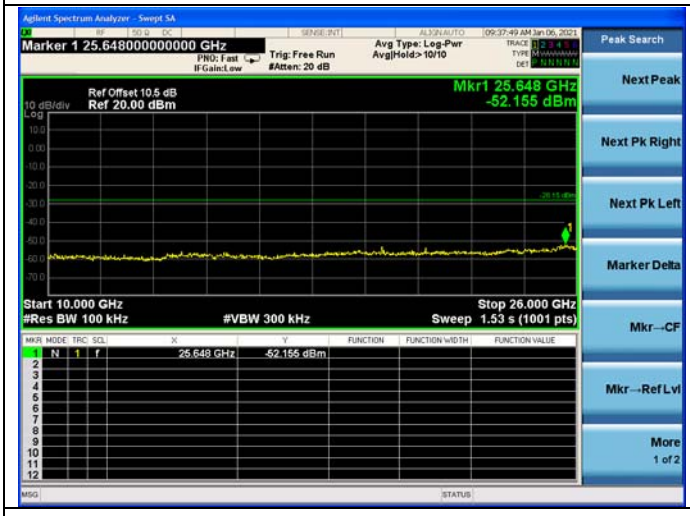
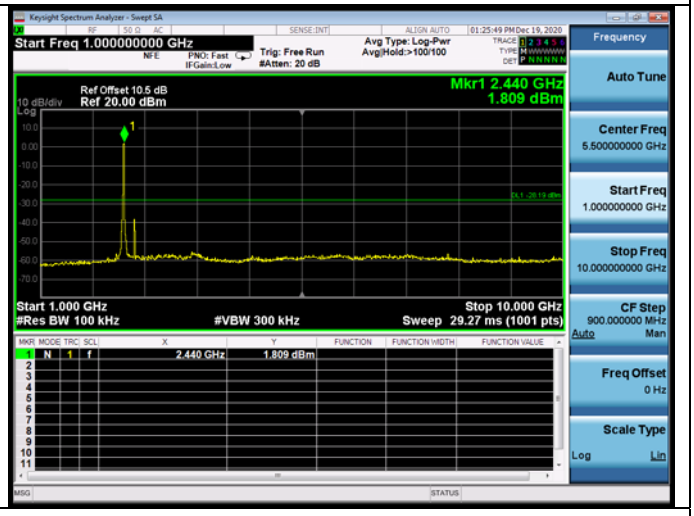
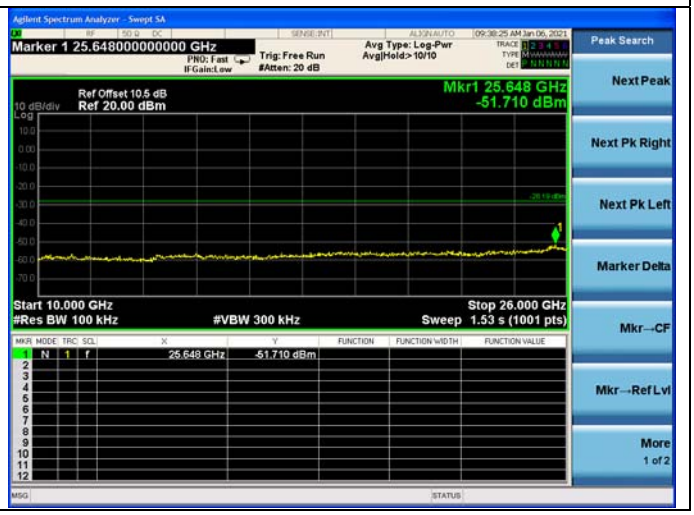
Test CH11: 2462MHz



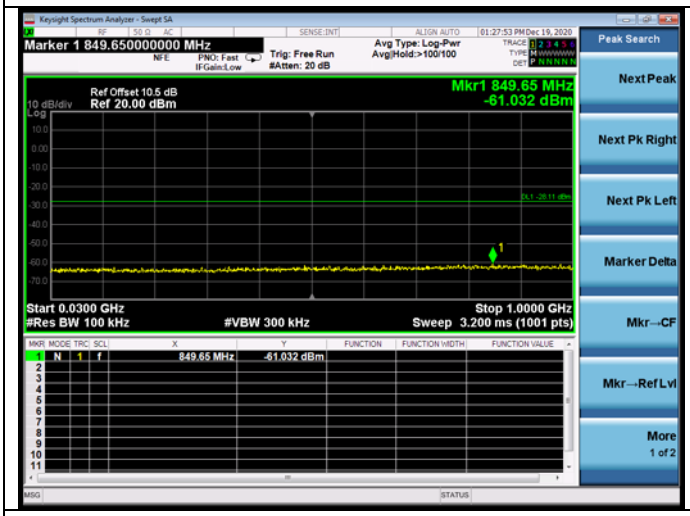
Test Mode: IEEE 802.11g
Test CH1: 2412MHz



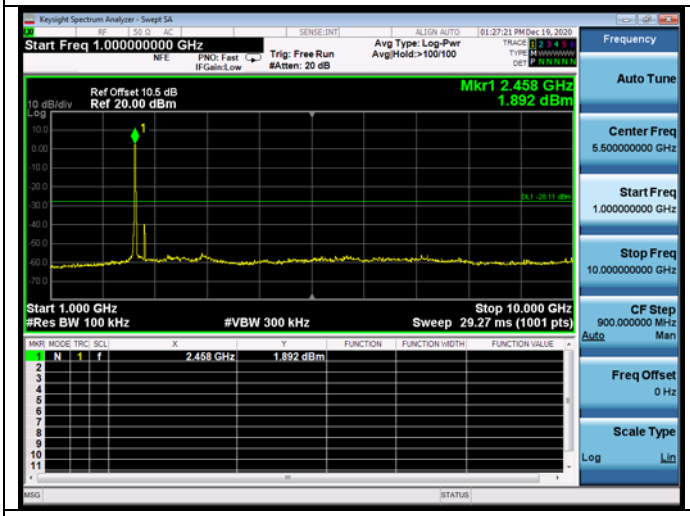


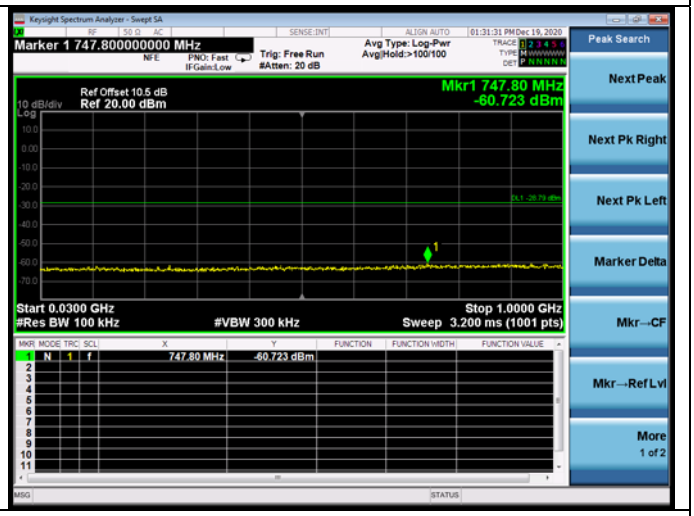
	Test CH6: 2437MHz
	
	
	

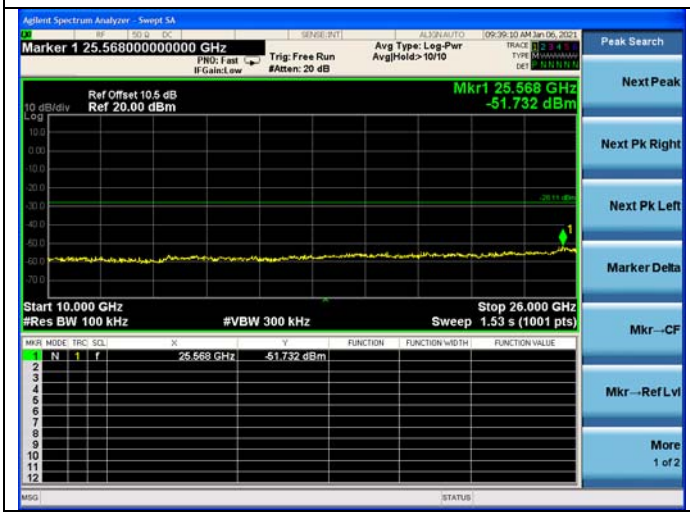
Test CH11: 2462MHz

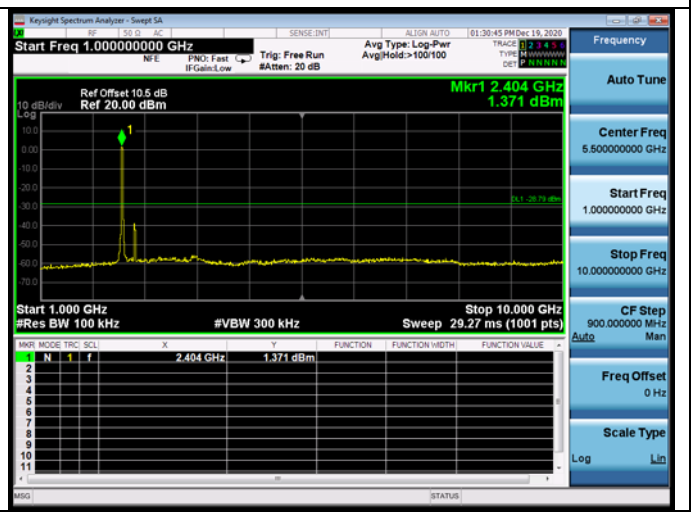


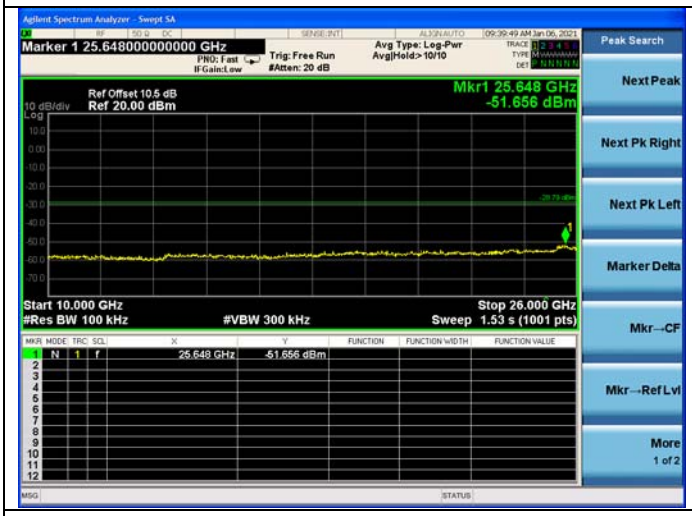
Test Mode: IEEE 802.11n HT20
Test CH1: 2412MHz

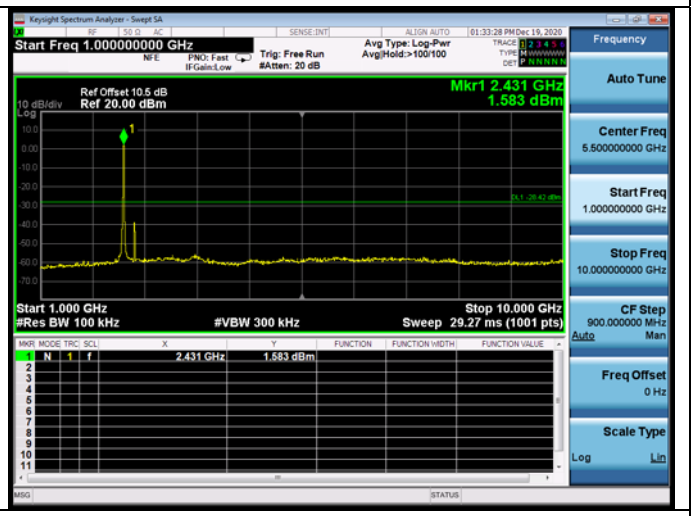


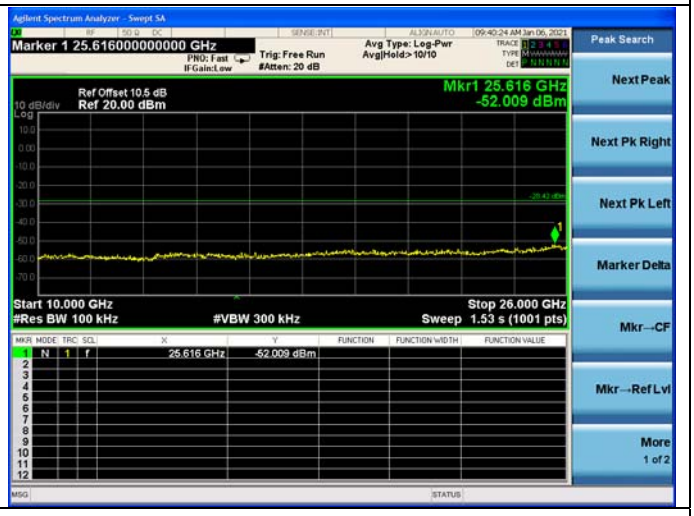






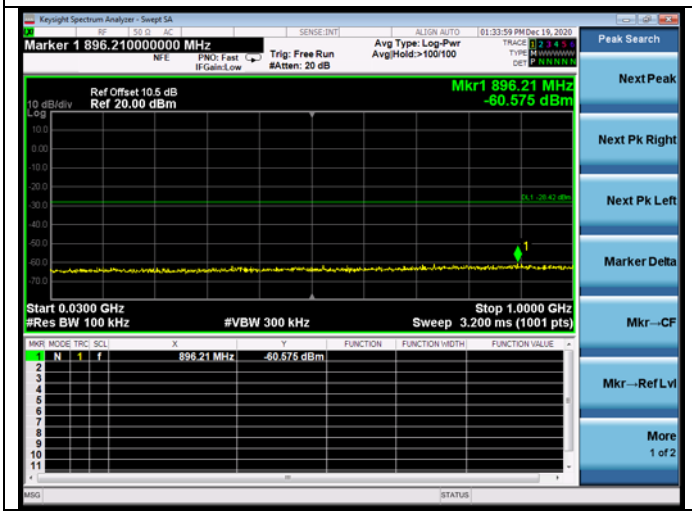


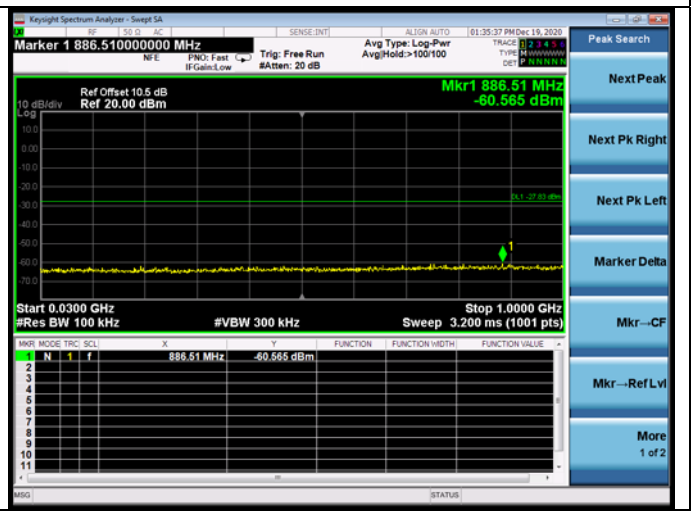


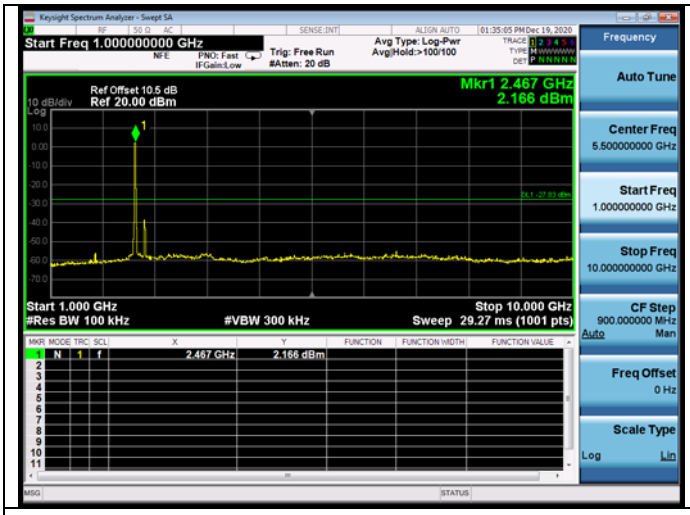


Test CH6: 2437MHz

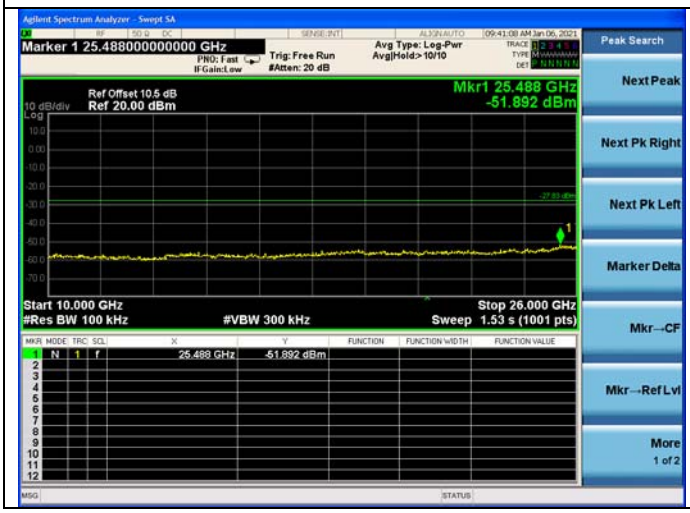
Test CH11: 2462MHz






Start Freq 1.000000000 GHz
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ref Offset 10.5 dB
10 dB/div
Ref 20.00 dBm
Mkr1 2.467 GHz
2.166 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 29.27 ms (1001 pts)
1 N 1 f 2.467 GHz 2.166 dBm
Frequency
Auto Tune
Center Freq
5.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
10.000000000 GHz
CF Step
900.000000 MHz
Auto Man
Freq Offset
0 Hz
Scale Type
Log Lin


Start Freq 2.450000000 GHz
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ref Offset 10.5 dB
10 dB/div
Ref 20.00 dBm
Mkr3 2.500 00 GHz
-57.543 dBm
Start 2.45000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.51000 GHz
Sweep 1.000 ms (1001 pts)
1 N 1 f 2.464 52 GHz 1.986 dBm
2 N 1 f 2.483 50 GHz -44.229 dBm
3 N 1 f 2.500 00 GHz -57.543 dBm
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.450000000 GHz
Stop Freq
2.510000000 GHz
CF Step
6.000000 MHz
Auto Man
Freq Offset
0 Hz
Scale Type
Log Lin


Marker 1 25.488000000000 GHz
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:> 10/10
Ref Offset 10.5 dB
10 dB/div
Ref 20.00 dBm
Mkr1 25.488 GHz
-51.892 dBm
Start 10.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 26.000 GHz
Sweep 1.53 s (1001 pts)
1 N 1 f 25.488 GHz -51.892 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

6. BAND EDGE COMPLIANCE TEST

6.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Apr.12,20	1 Year
2.	Amplifier	Agilent	8449B	3008A02495	Apr.11,20	1 Year
3.	Horn Antenna	ETC	MCTD 1209	DRH15F03007	Jul.30,20	1 Year
4.	RF Cable	EMCI	EMC102-KM-KM 3500	170702	Apr.12,20	1 Year

6.2.Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

6.3.Test Procedure

1. The EUT is placed on a turntable, which is 1.5m above the ground plane and worked at highest radiated power.

2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.

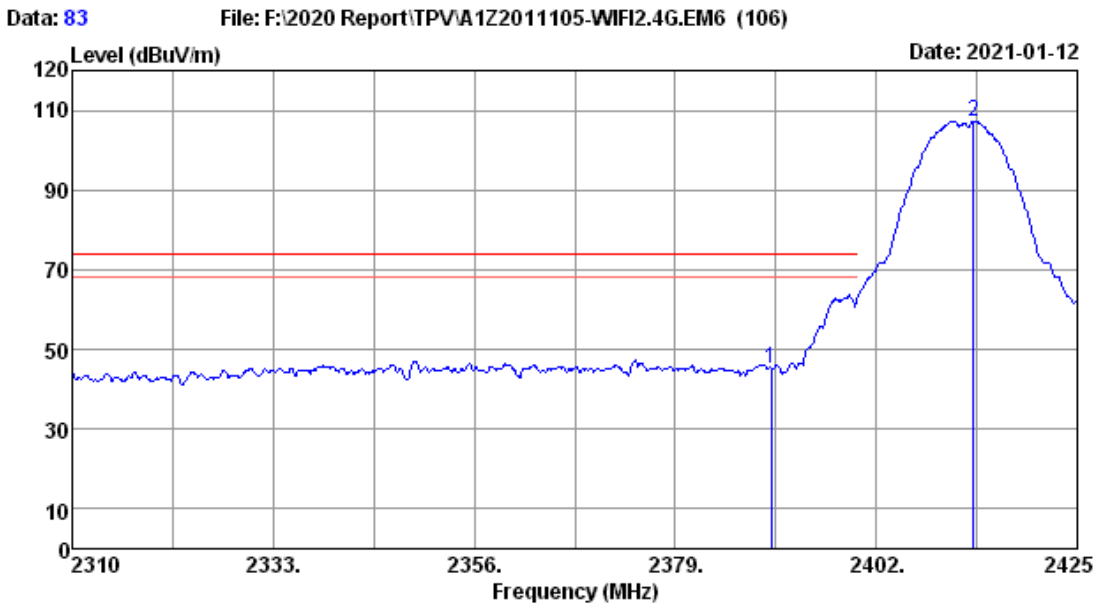
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

(a) PEAK: RBW=1MHz; VBW=3MHz; Sweep=AUTO
(b) AVERAGE: RBW=1MHz; VBW=10Hz; Sweep=AUTO

6.4.Test Results

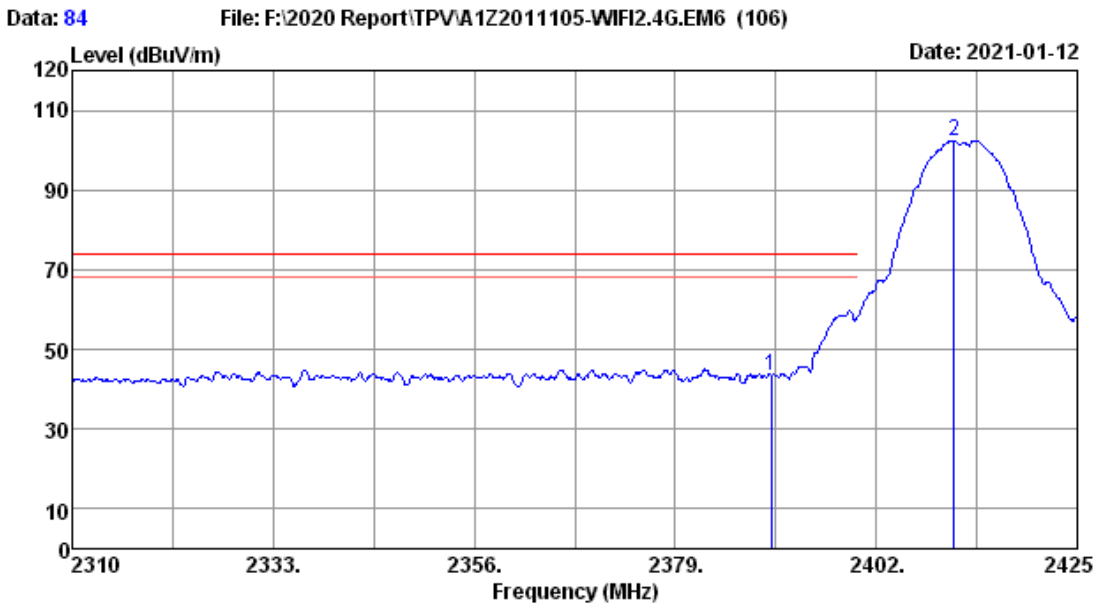
Pass (The testing data was attached in the next pages.)



Site no. : 3m Chamber
Data no. : 83
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 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	2390.00	27.79	0.92	50.08	33.48	45.31	74.00	28.69	Peak
2	2413.16	27.83	0.92	111.98	33.48	107.25	------	------	Peak

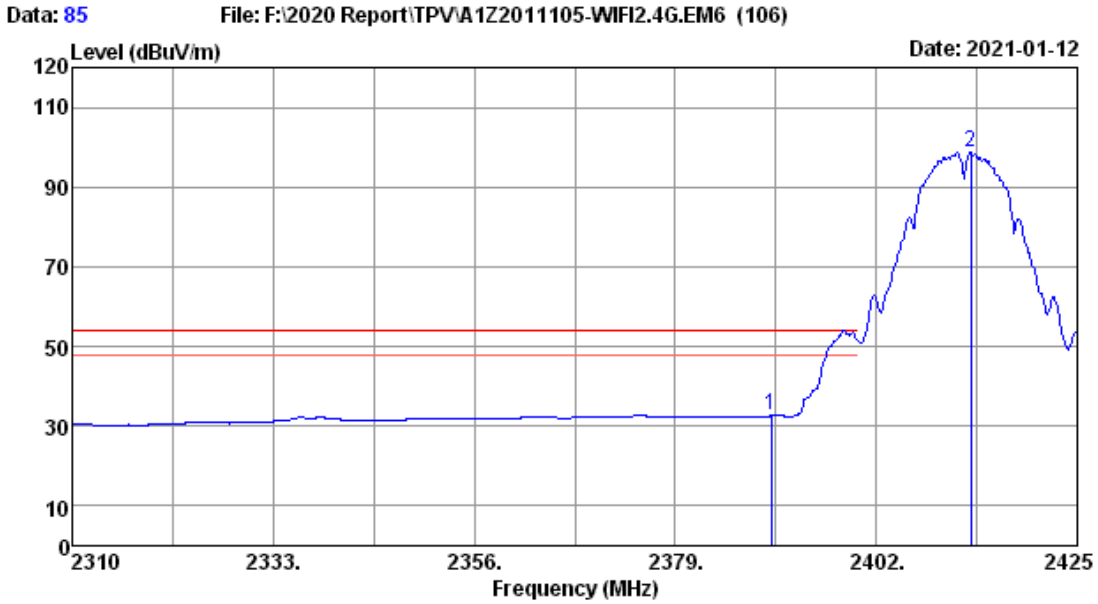
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp factor.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 84
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 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	2390.00	27.79	0.92	48.38	33.48	43.61	74.00	30.39	Peak
2	2410.86	27.83	0.92	107.24	33.48	102.51	------	------	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.

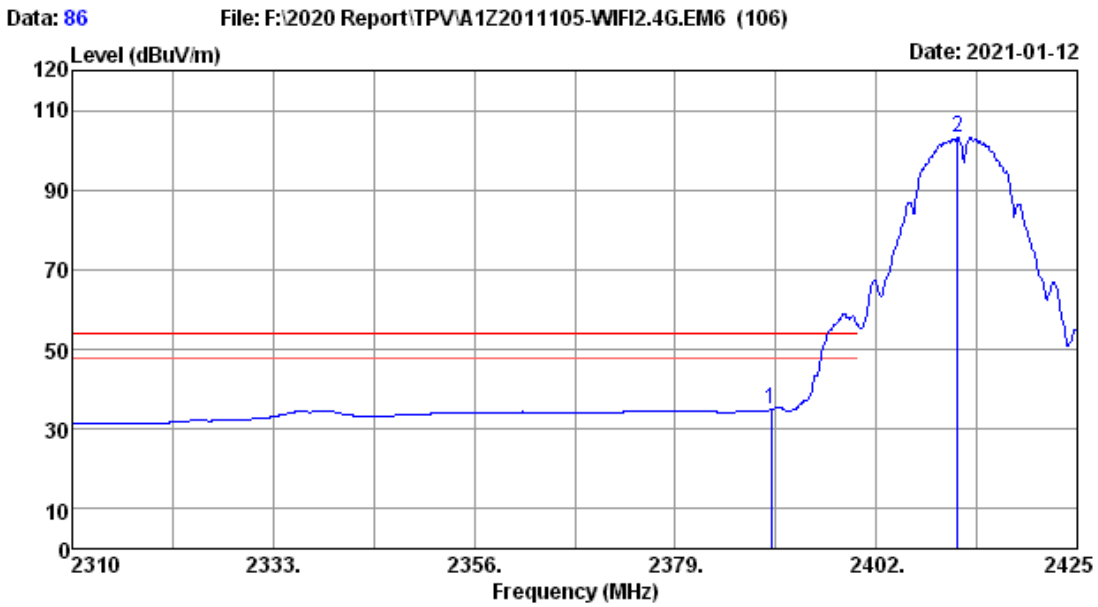


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C AV
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11b 2412MHz Tx Mode

Data no. : 85
Ant. pol. : VERTICAL
Engineer : Allen

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	2390.00	27.79	0.92	37.41	33.48	32.64	54.00	21.36	Average
2	2412.81	27.83	0.92	103.44	33.48	98.71	------	------	Average

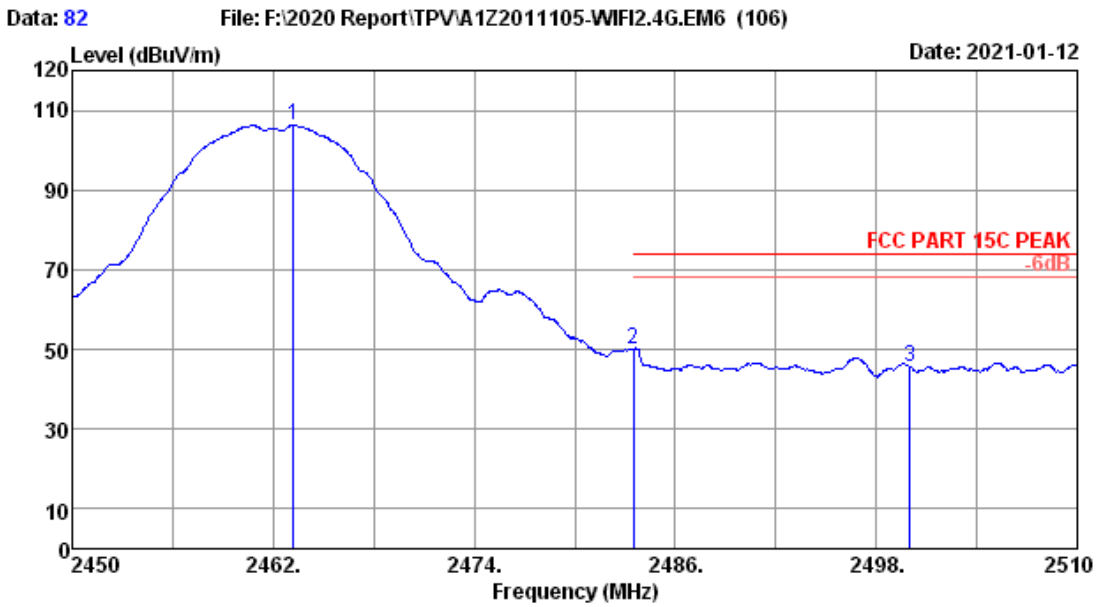
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp factor.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 86
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : HORIZONTAL
Limit : FCC PART 15C AV
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 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	2390.00	27.79	0.92	39.68	33.48	34.91	54.00	19.09	Average
2	2411.32	27.83	0.92	108.09	33.48	103.36	------	------	Average

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.

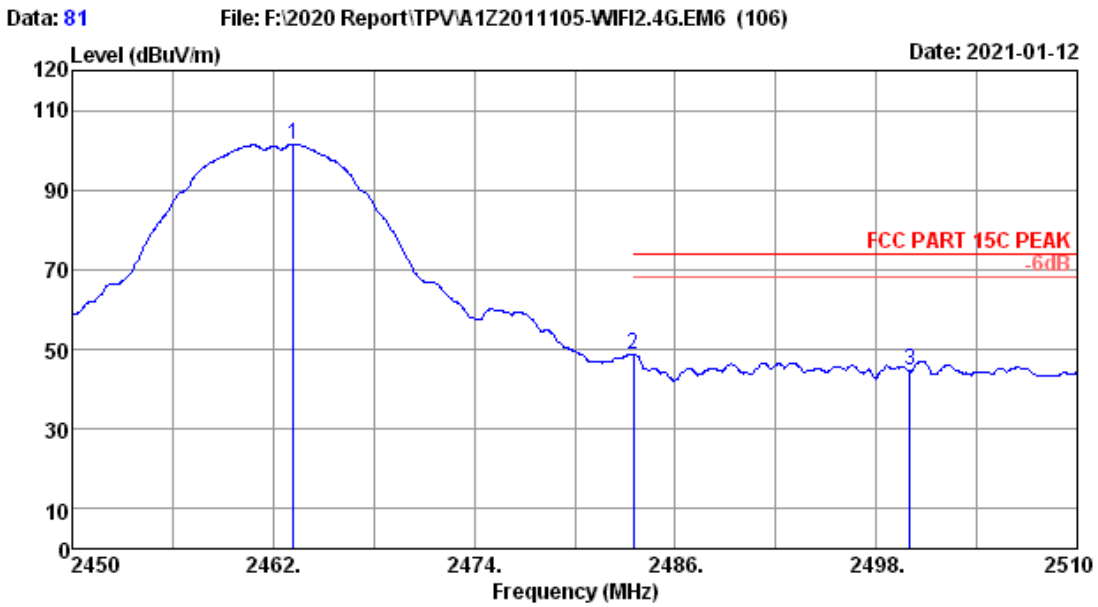


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11b 2462MHz Tx Mode

Data no. : 82
Ant. pol. : HORIZONTAL
Engineer : Allen

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	2463.20	27.93	0.94	110.81	33.46	106.22	------	------	Peak
2	2483.50	27.97	0.94	54.69	33.46	50.14	74.00	23.86	Peak
3	2500.00	28.00	0.95	50.30	33.45	45.80	74.00	28.20	Peak

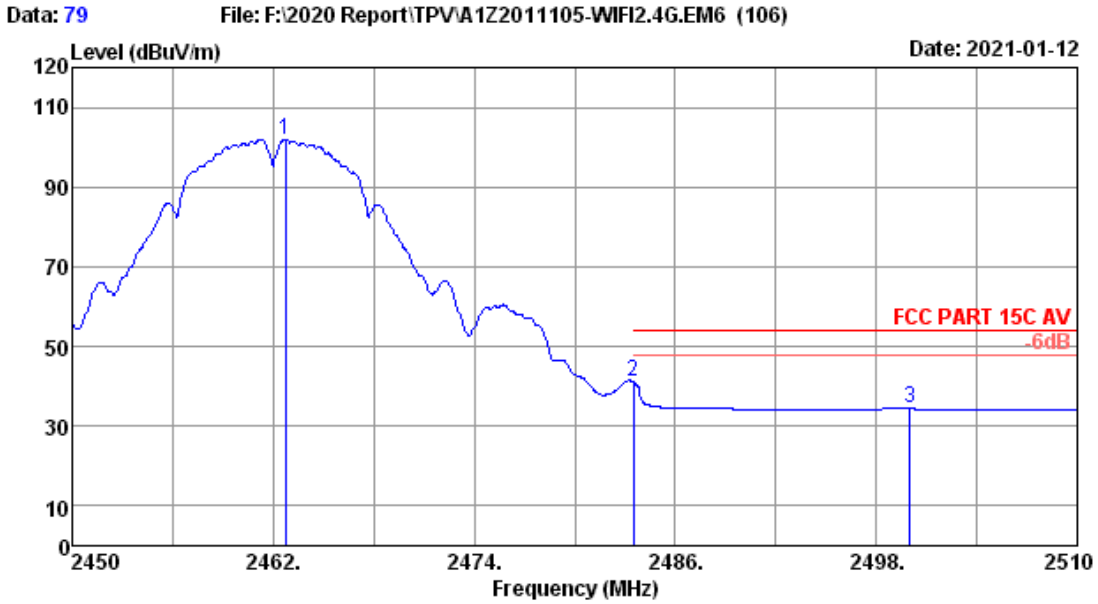
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp factor.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 81
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 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	2463.20	27.93	0.94	106.10	33.46	101.51	------	------	Peak
2	2483.50	27.97	0.94	53.38	33.46	48.83	74.00	25.17	Peak
3	2500.00	28.00	0.95	49.16	33.45	44.66	74.00	29.34	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.

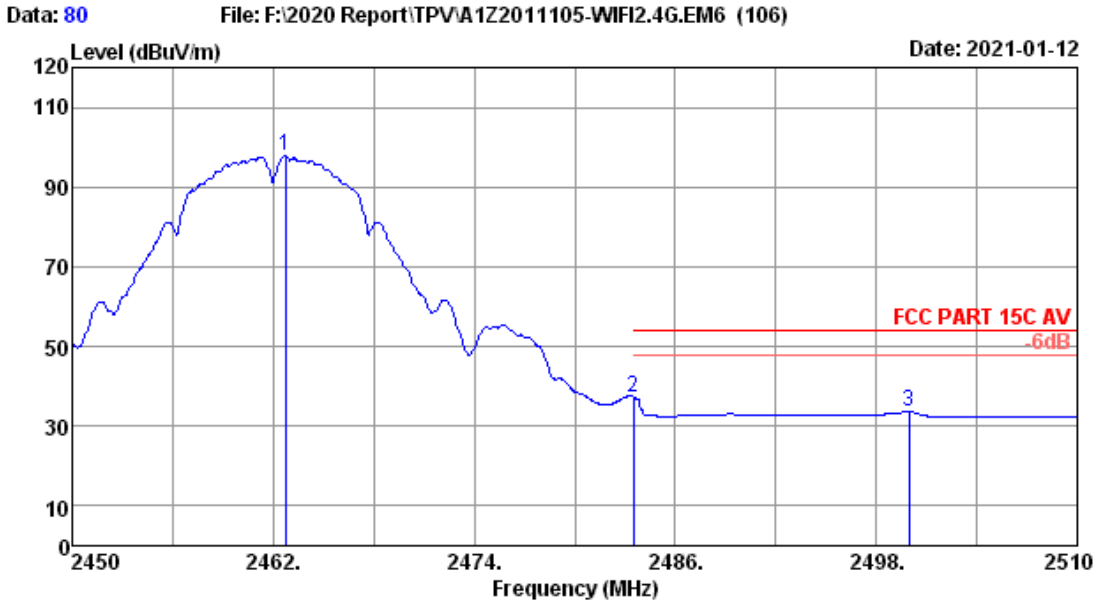


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C AV
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11b 2462MHz Tx Mode

Data no. : 79
Ant. pol. : HORIZONTAL
Engineer : Allen

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	2462.72	27.93	0.94	106.61	33.46	102.02	------	------	Average
2	2483.50	27.97	0.94	45.63	33.46	41.08	54.00	12.92	Average
3	2500.00	28.00	0.95	38.88	33.45	34.38	54.00	19.62	Average

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.

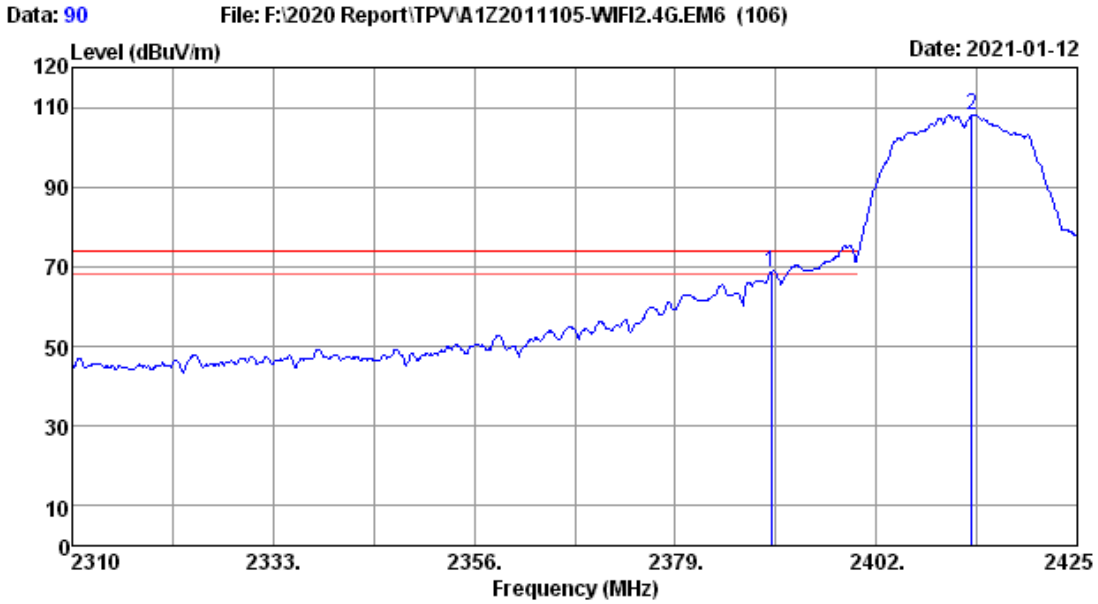


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C AV
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11b 2462MHz Tx Mode

Data no. : 80
Ant. pol. : VERTICAL
Engineer : Allen

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	2462.72	27.93	0.94	102.37	33.46	97.78	------	------	Average
2	2483.48	27.97	0.94	41.91	33.46	37.36	------	------	Average
3	2499.98	28.00	0.95	38.08	33.45	33.58	54.00	20.42	Average

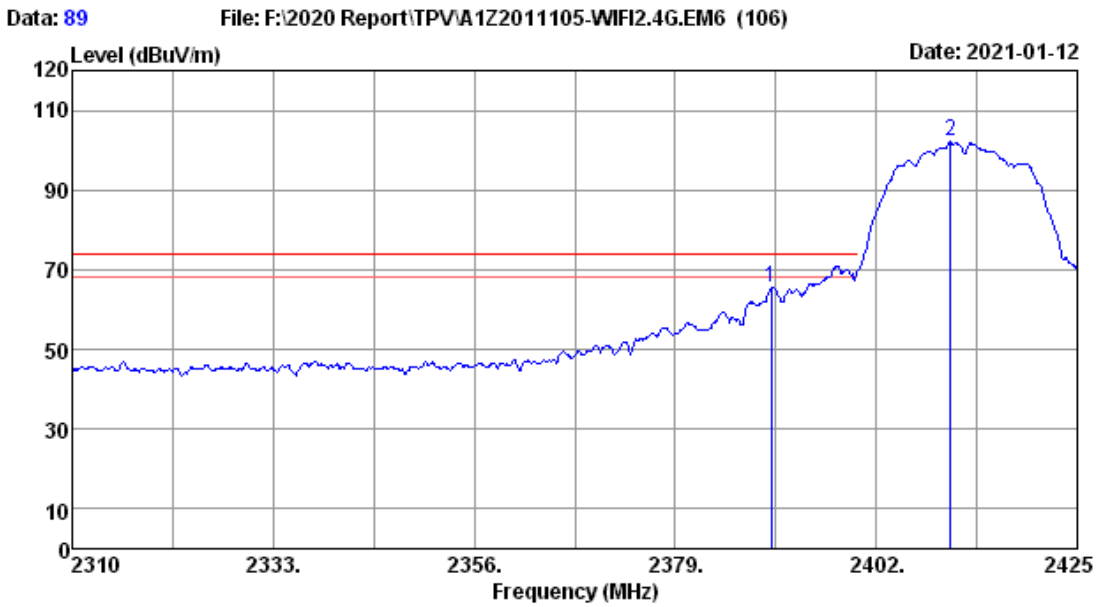
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp factor.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 90
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 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	2390.00	27.79	0.92	73.58	33.48	68.81	74.00	5.19	Peak
2	2412.93	27.83	0.92	112.92	33.48	108.19	------	------	Peak

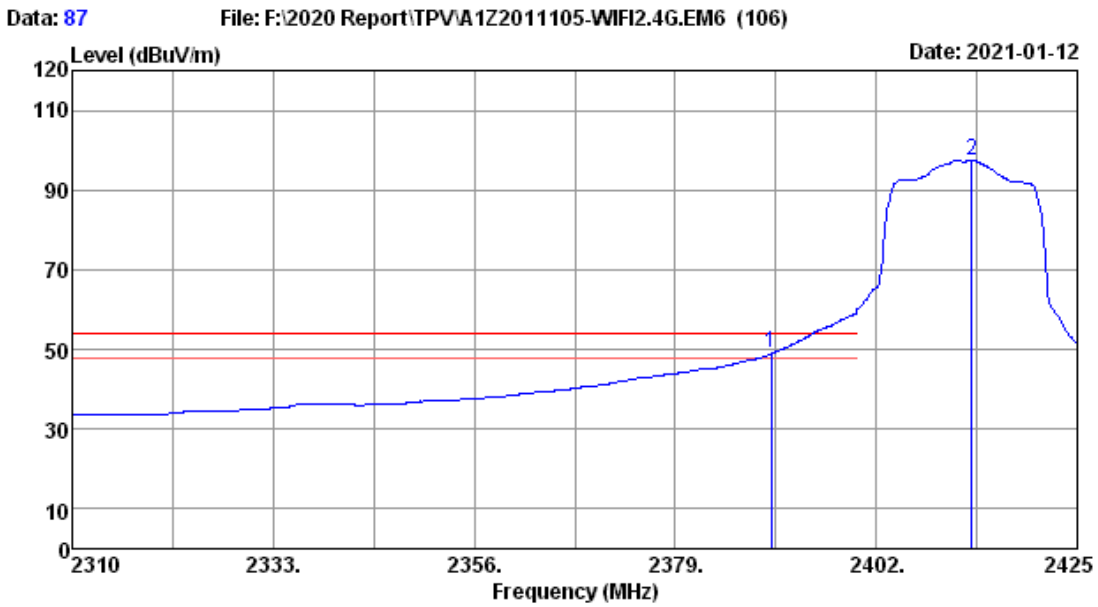
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp factor.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 89
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 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	2390.00	27.79	0.92	70.09	33.48	65.32	74.00	8.68	Peak
2	2410.51	27.83	0.92	106.87	33.48	102.14	------	------	Peak

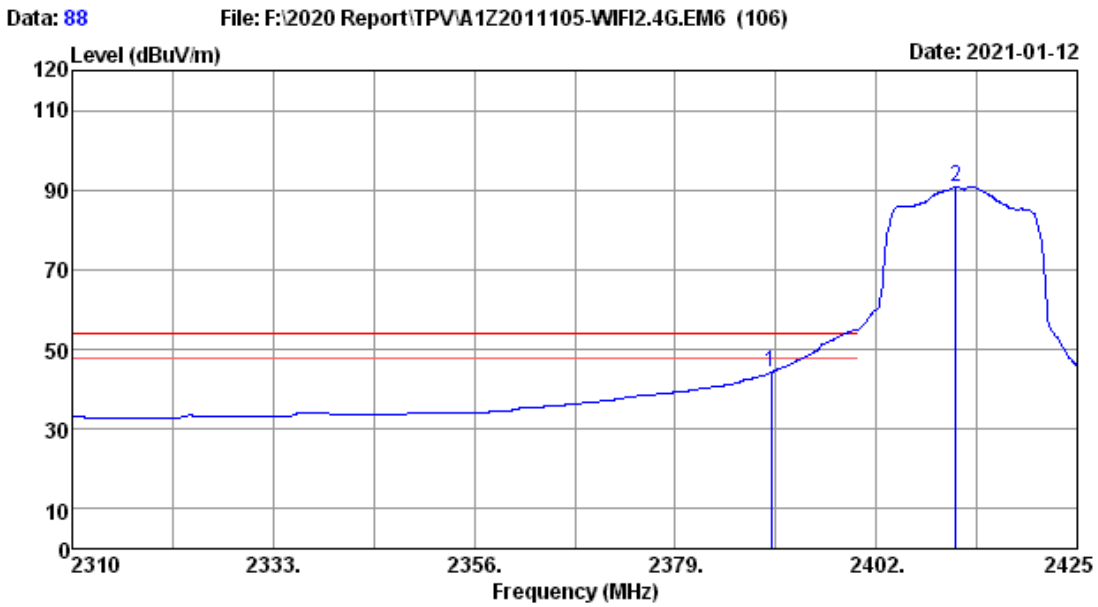
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp factor.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 87
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : HORIZONTAL
Limit : FCC PART 15C AV
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 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	2390.00	27.79	0.92	53.72	33.48	48.95	54.00	5.05	Average
2	2412.93	27.83	0.92	102.29	33.48	97.56	------	------	Average

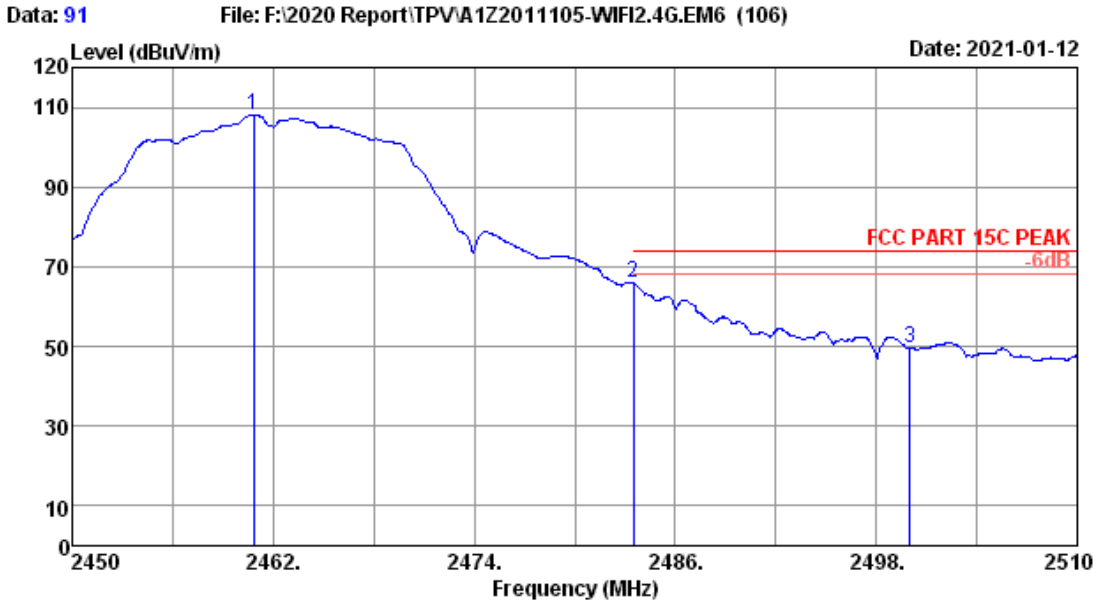
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp factor.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 88
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : VERTICAL
Limit : FCC PART 15C AV
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 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	2390.00	27.79	0.92	49.09	33.48	44.32	54.00	9.68	Average
2	2411.09	27.83	0.92	95.64	33.48	90.91	------	------	Average

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.

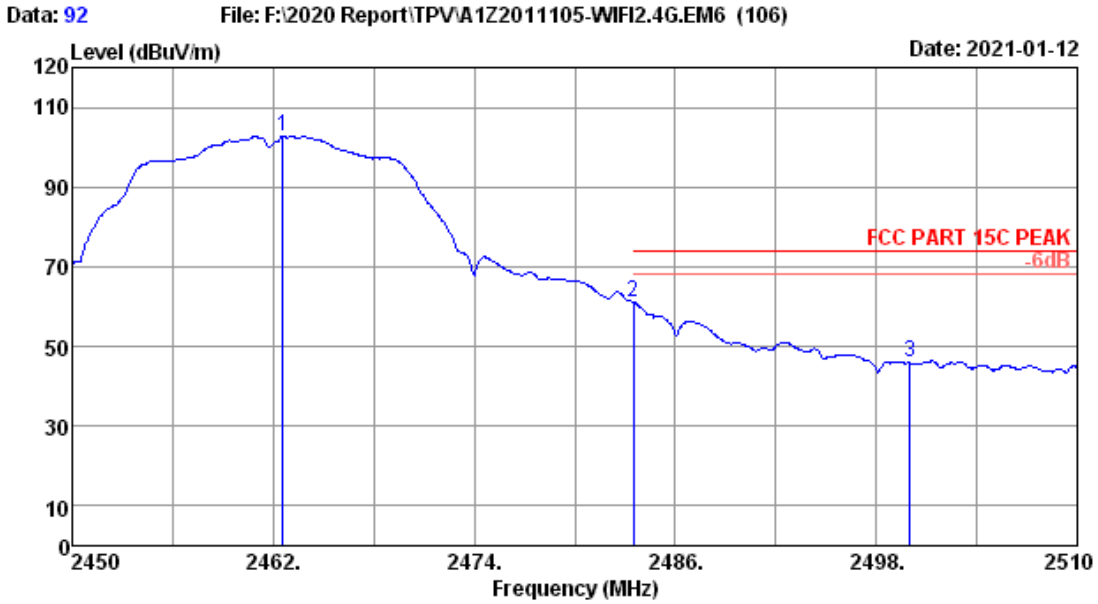


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11g 2462MHz Tx Mode

Data no. : 91
Ant. pol. : HORIZONTAL
Engineer : Allen

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	2460.86	27.93	0.94	112.78	33.46	108.19	------	------	Peak
2	2483.50	27.97	0.94	70.44	33.46	65.89	74.00	8.11	Peak
3	2500.00	28.00	0.95	54.25	33.45	49.75	74.00	24.25	Peak

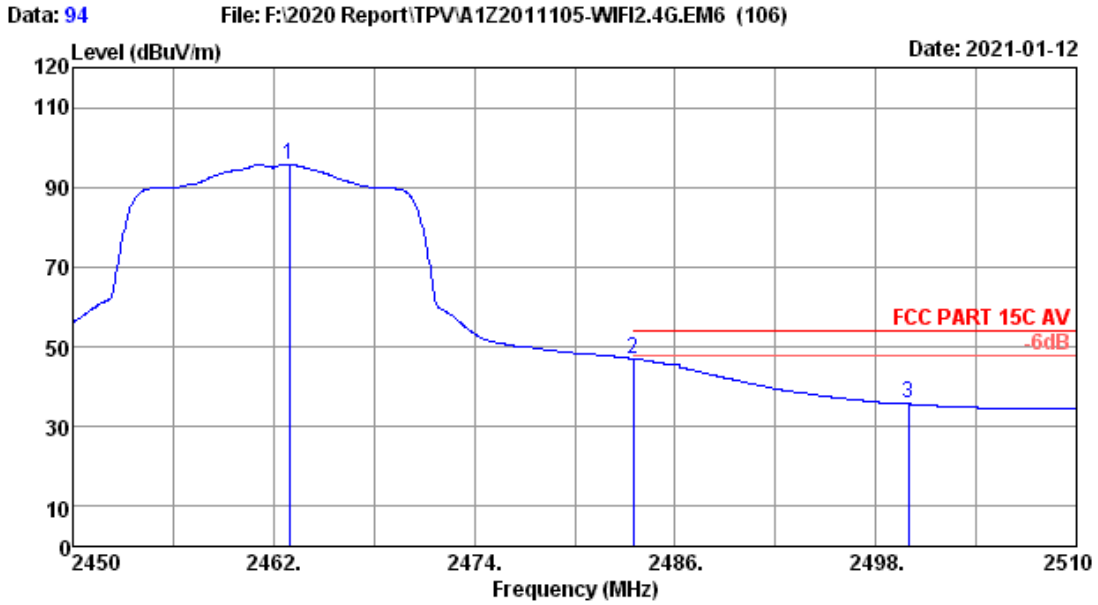
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp factor.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 92
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 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	2462.60	27.93	0.94	107.44	33.46	102.85	------	------	Peak
2	2483.50	27.97	0.94	65.73	33.46	61.18	74.00	12.82	Peak
3	2500.00	28.00	0.95	50.41	33.45	45.91	74.00	28.09	Peak

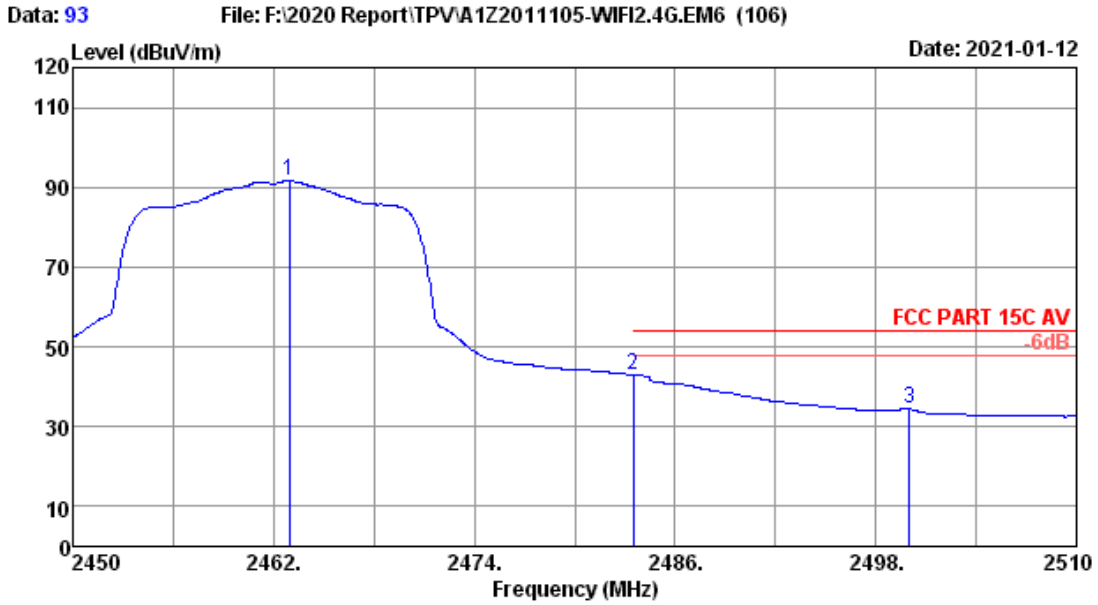
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp factor.
2. The emission levels that are 20dB below the official limit are not reported.




```
Site no.      : 3m Chamber                  Data no.   : 94
Dis. / Ant.   : 3m   2020 MCTD1209-3007     Ant. pol.  : HORIZONTAL
Limit         : FCC PART 15C AV
Env. / Ins.   : 23.4*C/52.9%                Engineer   : Allen
Power rating  : AC 120V/60Hz
Test Mode     : 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	2462.96	27.93	0.94	100.35	33.46	95.76	------	------	Average
2	2483.48	27.97	0.94	51.54	33.46	46.99	------	------	Average
3	2499.98	28.00	0.95	40.19	33.45	35.69	54.00	18.31	Average

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.

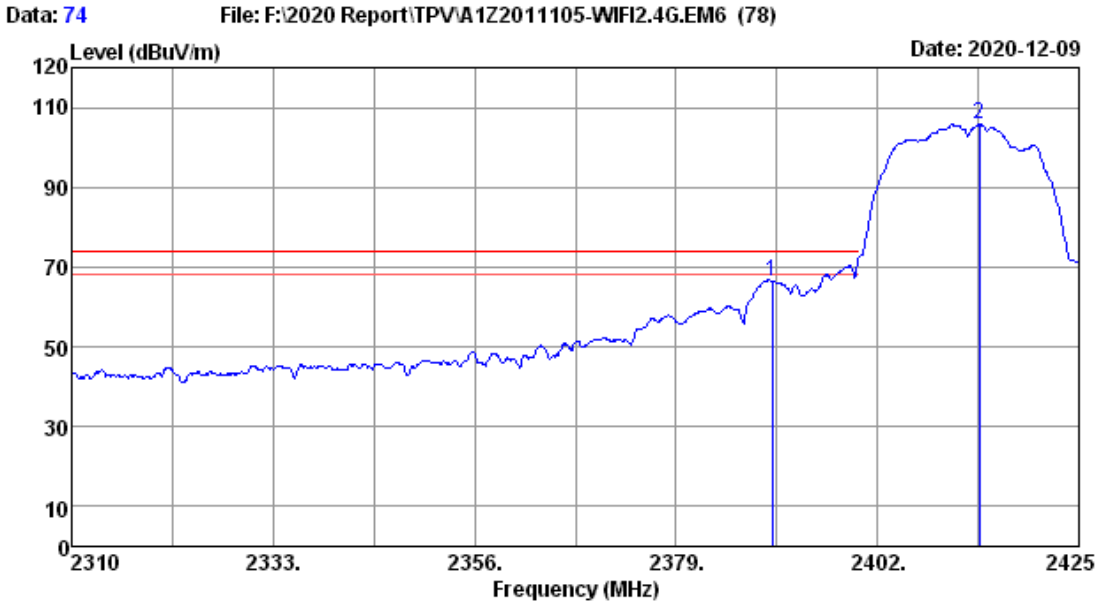


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C AV
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11g 2462MHz Tx Mode

Data no. : 93
Ant. pol. : VERTICAL
Engineer : Allen

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	2462.96	27.93	0.94	96.18	33.46	91.59	------	------	Average
2	2483.50	27.97	0.94	47.51	33.46	42.96	54.00	11.04	Average
3	2500.00	28.00	0.95	38.89	33.45	34.39	54.00	19.61	Average

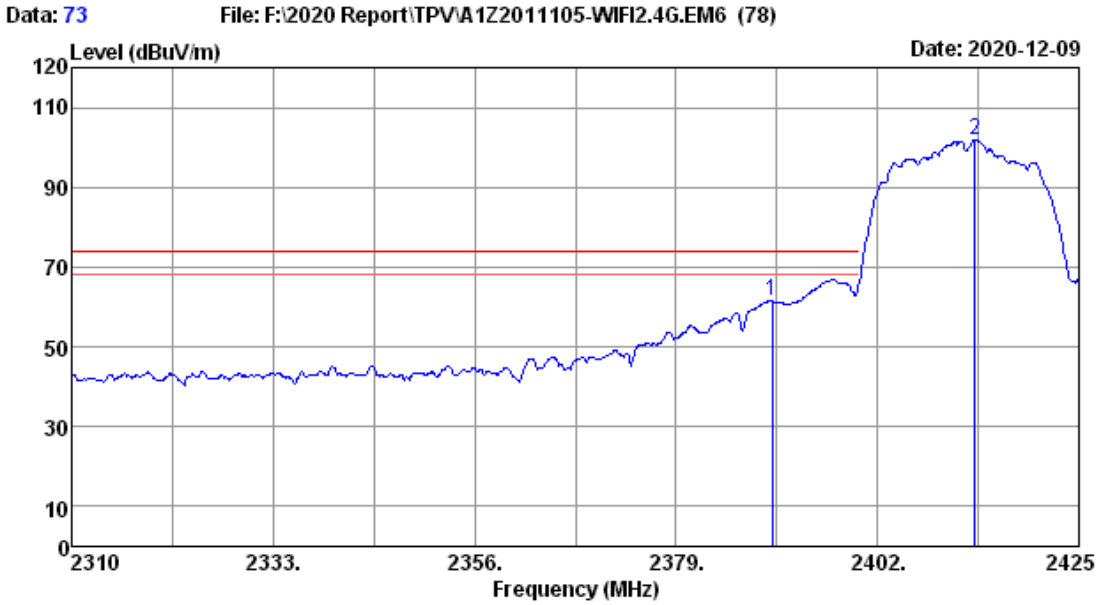
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp factor.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 74
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 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	2390.00	27.79	0.92	71.21	33.48	66.44	74.00	7.56	Peak
2	2413.62	27.83	0.92	110.66	33.48	105.93	------	------	Peak

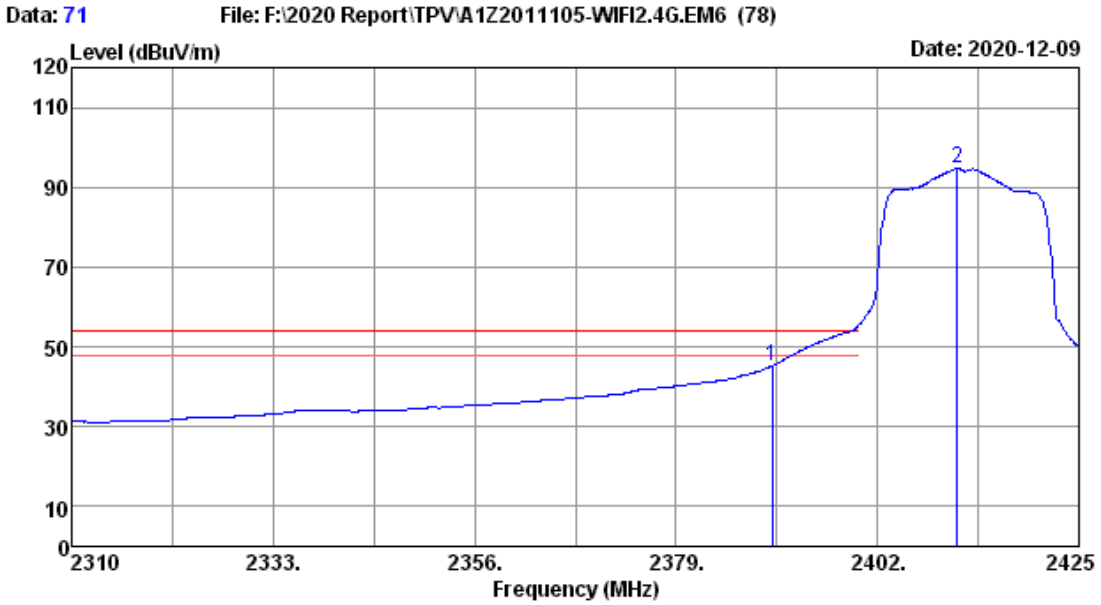
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp factor.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 73
Dis. / Ant. : 3m 2020 MCTD1209-3007
Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Engineer : Allen
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 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	2390.00	27.79	0.92	66.12	33.48	61.35	74.00	12.65	Peak
2	2413.16	27.83	0.92	106.57	33.48	101.84	------	------	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.

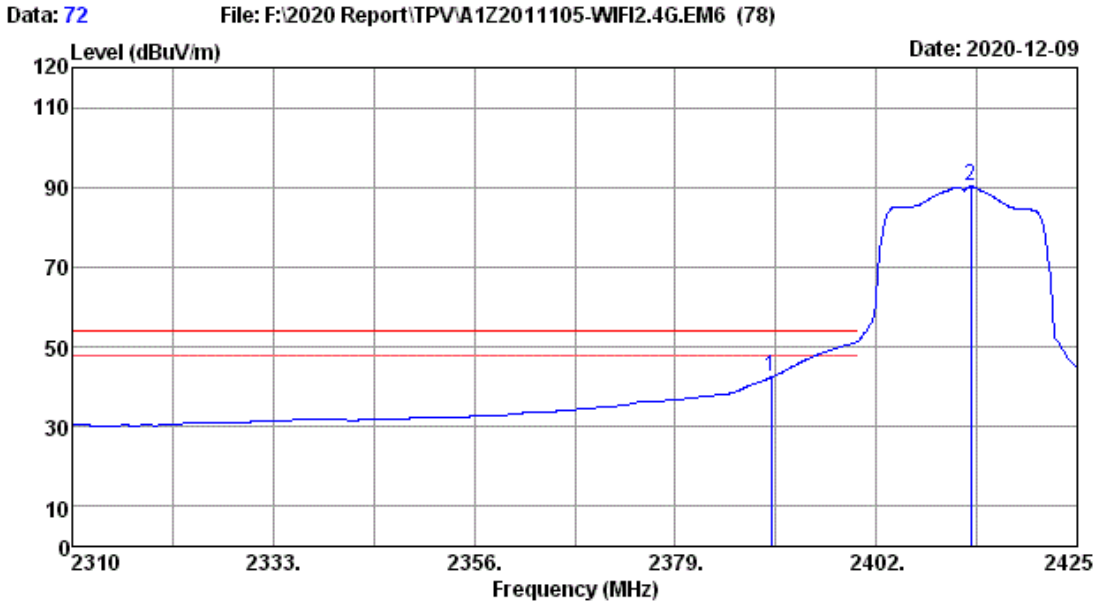


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C AV
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 2412MHz Tx Mode

Data no. : 71
Ant. pol. : HORIZONTAL
Engineer : Allen

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	2390.00	27.79	0.92	50.10	33.48	45.33	54.00	8.67	Average
2	2411.09	27.83	0.92	99.39	33.48	94.66	------	------	Average

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.

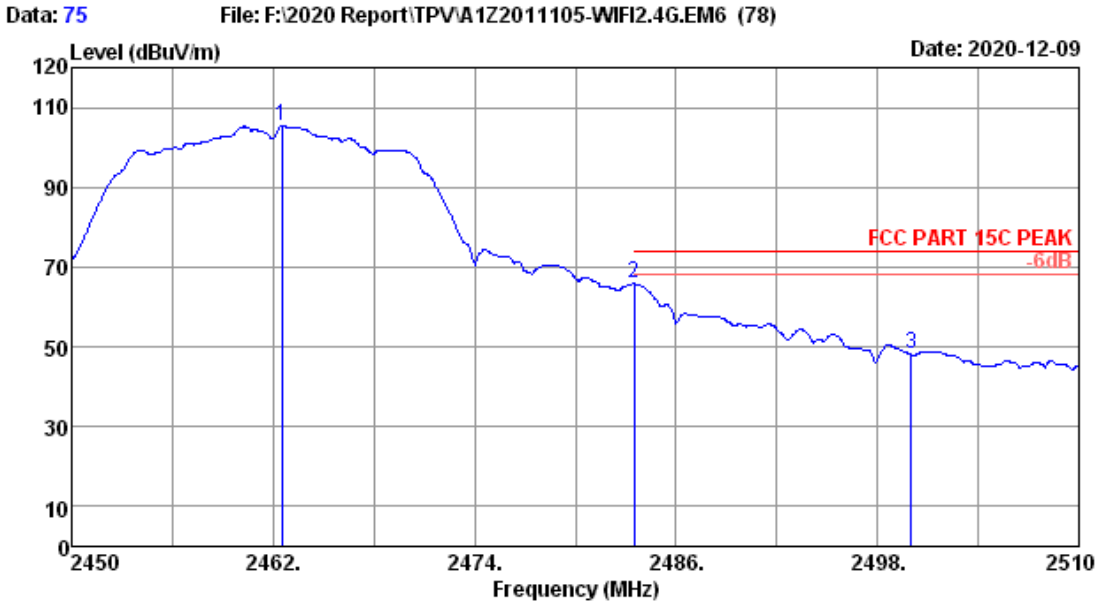


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C AV
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 2412MHz Tx Mode

Data no. : 72
Ant. pol. : VERTICAL
Engineer : Allen

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	2390.00	27.79	0.92	47.19	33.48	42.42	54.00	11.58	Average
2	2412.81	27.83	0.92	94.94	33.48	90.21	------	------	Average

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.

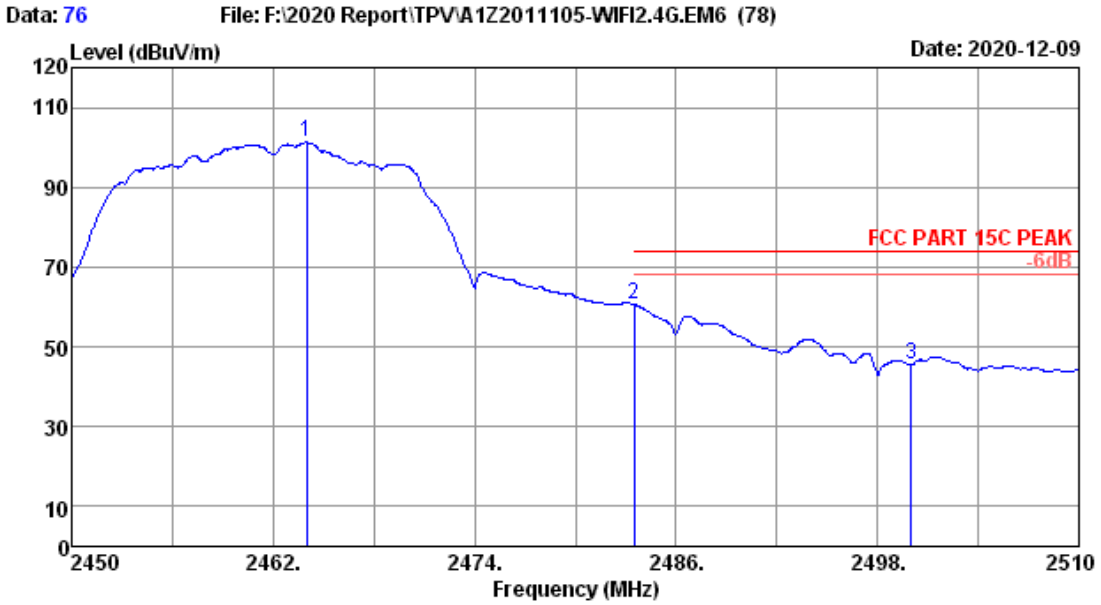


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 2462MHz Tx Mode

Data no. : 75
Ant. pol. : HORIZONTAL
Engineer : Allen

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	2462.54	27.93	0.94	110.13	33.46	105.54	------	------	Peak
2	2483.50	27.97	0.94	70.33	33.46	65.78	74.00	8.22	Peak
3	2500.00	28.00	0.95	52.61	33.45	48.11	74.00	25.89	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.

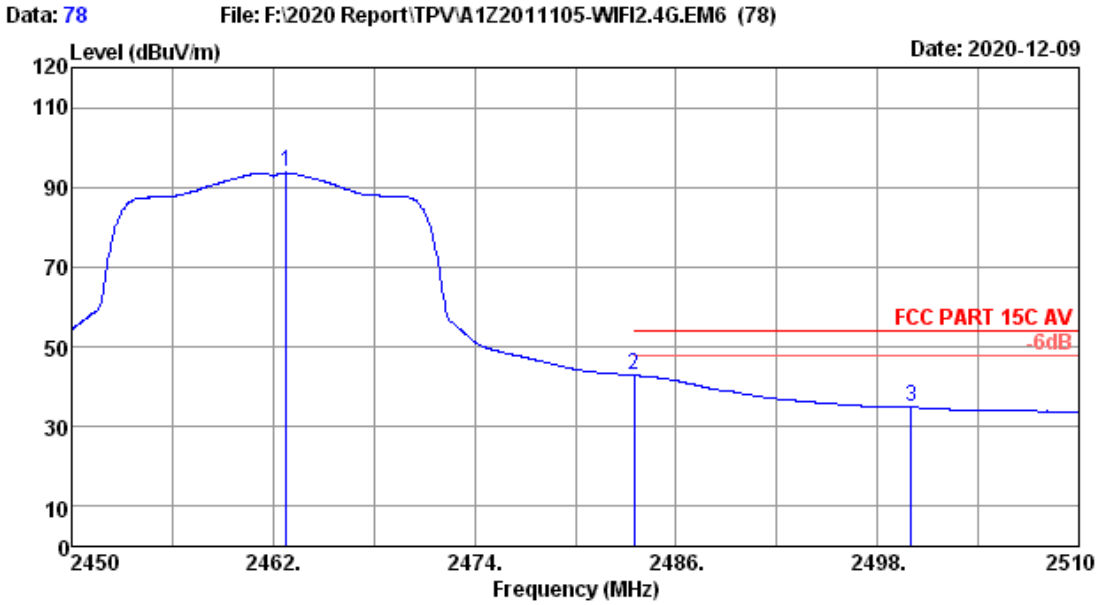


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 2462MHz Tx Mode

Data no. : 76
Ant. pol. : VERTICAL
Engineer : Allen

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	2463.98	27.93	0.94	105.80	33.46	101.21	------	------	Peak
2	2483.50	27.97	0.94	65.24	33.46	60.69	74.00	13.31	Peak
3	2500.00	28.00	0.95	50.20	33.45	45.70	74.00	28.30	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.

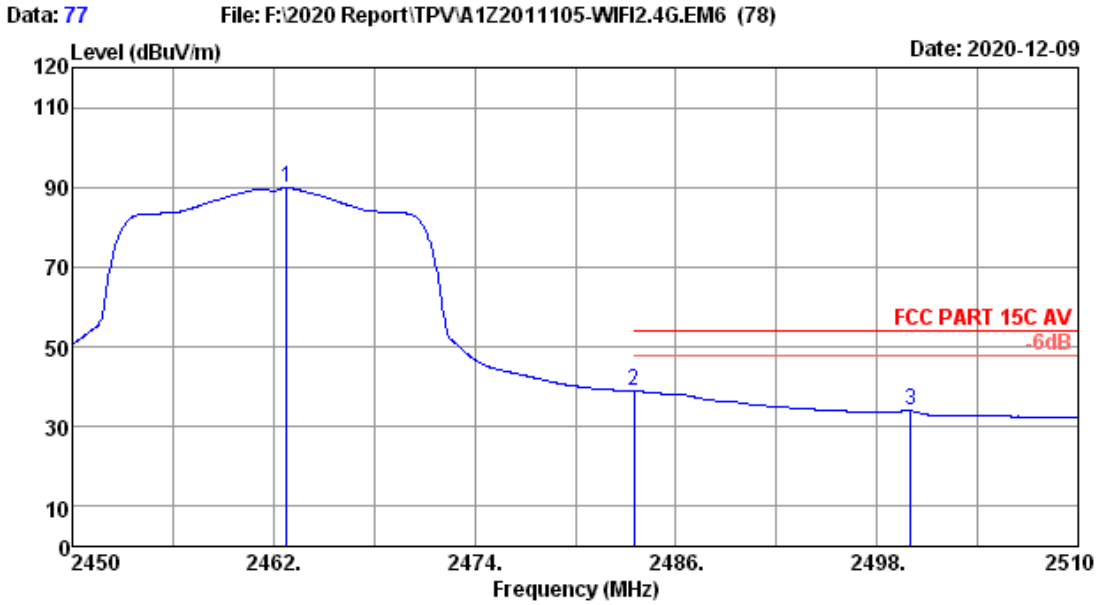


Site no. : 3m Chamber
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C AV
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 2462MHz Tx Mode

Data no. : 78
Ant. pol. : HORIZONTAL
Engineer : Allen

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	2462.78	27.93	0.94	98.25	33.46	93.66	------	------	Average
2	2483.50	27.97	0.94	47.42	33.46	42.87	54.00	11.13	Average
3	2500.00	28.00	0.95	39.42	33.45	34.92	54.00	19.08	Average

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
Dis. / Ant. : 3m 2020 MCTD1209-3007
Limit : FCC PART 15C AV
Env. / Ins. : 23.4*C/52.9%
Power rating : AC 120V/60Hz
Test Mode : 11nHT20 2462MHz Tx Mode

Data no. : 77
Ant. pol. : VERTICAL
Engineer : Allen

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	2462.78	27.93	0.94	94.41	33.46	89.82	------	------	Average
2	2483.50	27.97	0.94	43.44	33.46	38.89	54.00	15.11	Average
3	2500.00	28.00	0.95	38.46	33.45	33.96	54.00	20.04	Average

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.

7. 6dB Bandwidth Test

7.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Apr.12,20	1 Year
2.	Attenuator	Agilent	8491B	MY39269201	Oct.12,20	1 Year
3.	RF Cable	EMCI	EMC102-KM-KM 3500	170702	Apr.12,20	1 Year

7.2. Limit

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz

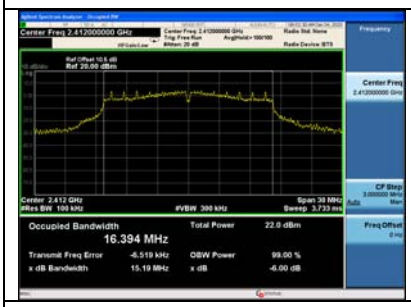
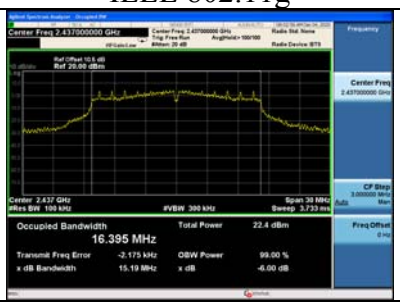
7.3. Test Procedure

The transmitter output was connected to a spectrum analyzer, The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 300kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

7.4. Test Results

EUT: Room Booking Panel		
M/N: Aura-X (ver. A)		
Test date: 2020-12-04	Pressure: 102.3±1.0 kpa	Humidity: 53.6±3.0%
Tested by: Allen	Test site: RF site	Temperature:25.5±0.6 ℃

Test Mode	CH	6dB bandwidth (MHz)	Limit (kHz)
11b	CH1	8.034	≧ 500
	CH6	8.031	≧ 500
	CH11	8.046	≧ 500
11g	CH1	15.19	≧ 500
	CH6	15.19	≧ 500
	CH11	15.17	≧ 500
11n HT20	CH1	15.18	≧ 500
	CH6	15.19	≧ 500
	CH11	15.17	≧ 500
Conclusion：PASS			

Low Channel	Middle Channel	High Channel
IEEE 802.11b		
		
IEEE 802.11g		
		
IEEE 802.11n HT20		
		

8. OUTPUT POWER TEST

8.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Apr.12,20	1 Year
2.	Power meter	HP	436A	2016A07891	Apr 11,20	1 Year
3.	Power Sensor	Agilent	8482B	MY41090514	Apr.11,20	1 Year
4.	Attenuator	Agilent	8491B	MY39269201	Oct.12,20	1 Year
5.	RF Cable	EMCI	EMC102-KM-KM 3500	170702	Apr.12,20	1 Year

8.2.Limit (FCC Part 15C 15.247 b(3))

For systems using digital modulation in the 2400—2483.5MHz, The Peak output Power shall not exceed 1W(30dBm), As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level.

8.3.Test Procedure

1, Connected the EUT's antenna port to measure device by 20dB attenuator.

2, Use the test method descried in ANSI C63.10-2013 clause 11.9.2.2.2 Method AVGSA-1.

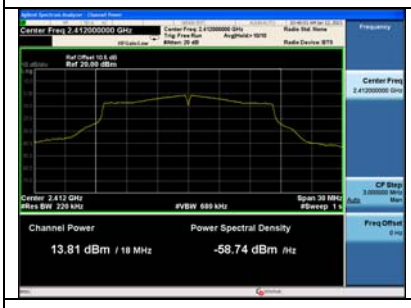
1) Set span to at least 1.5 times the OBW.
2) Set RBW = 1% to 5% of the OBW, not to exceed 1 MHz.
3) Set VBW ≥ [3 × RBW].
4) Number of points in sweep ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
5) Sweep time = auto.
6) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
7) If transmit duty cycle < 98%, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at the maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no OFF intervals) or at duty cycle ≥ 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run."
8) Trace average at least 100 traces in power averaging (rms) mode.
9) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

8.4.Test Results

EUT: Room Booking Panel		
M/N: Aura-X (ver. A)		
Test date: 2020-12-19~2021-1-12	Pressure: 102.1±1.0 kpa	Humidity: 51.1±3.0%
Tested by: Allen	Test site: RF site	Temperature:22.8±0.6 ℃

Test Mode	CH	output Power (dBm)	Limit (dBm)
11b	CH1	15.10	30
	CH6	15.45	
	CH11	15.76	
11g	CH1	13.81	30
	CH6	14.22	
	CH11	14.61	
11n HT20	CH1	12.23	30
	CH6	12.68	
	CH11	12.80	
Conclusion: PASS			

Low Channel	Middle Channel	High Channel
IEEE 802.11b		
		
IEEE 802.11g		
		
IEEE 802.11n HT20		
		

9. POWER SPECTRAL DENSITY TEST

9.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Apr.12,20	1 Year
2.	Attenuator	Agilent	8491B	MY39269201	Oct.12,20	1 Year
3.	RF Cable	EMCI	EMC102-KM-KM 3500	170702	Apr.12,20	1 Year

9.2. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

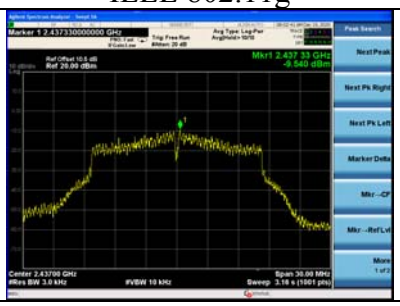
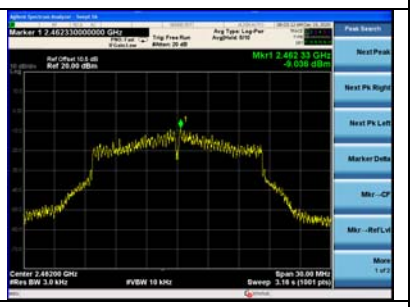
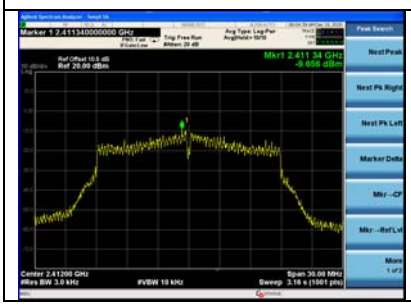
9.3. Test Procedure

a) Set analyzer center frequency to DTS channel center frequency.
b) Set the span to 1.5 DTS bandwidth.
c) Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
d) Set the VBW ≥ [3 × RBW].
e) Detector = peak.
f) Sweep time = auto couple.
g) Trace mode = max hold.
h) Allow trace to fully stabilize.
i) Use the peak marker function to determine the maximum amplitude level within the RBW.

9.4.Test Results

EUT: Room Booking Panel		
M/N: Aura-X (ver. A)		
Test date: 2020-12-19	Pressure: 102.3±1.0 kpa	Humidity: 53.6±3.0%
Tested by: Allen	Test site: RF site	Temperature: 25.5±0.6℃

Test Mode	CH	Power Density (dBm/3kHz)	Limit (dBm/3kHz)
11b	CH1	-8.100	8
	CH6	-7.950	
	CH11	-8.344	
11g	CH1	-9.713	8
	CH6	-9.540	
	CH11	-9.036	
11n HT20	CH1	-9.656	8
	CH6	-10.168	
	CH11	-9.439	
Conclusion: PASS			

Low Channel	Middle Channel	High Channel
IEEE 802.11b		
		
IEEE 802.11g		
		
IEEE 802.11n HT20		
		

10. ANTENNA REQUIREMENT

10.1. Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

10.2. Antenna Connected Construction

The antennas used for this product are FPC antenna that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is 2.3dBi.

11. DEVIATION TO TEST SPECIFICATIONS

[NONE]

THE END