

# MEASUREMENT REPORT

## FCC PART 15C WLAN 802.11b/g/n

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**FCC ID:** RYK-WUBR508N

**Applicant:** SparkLAN Communications, Inc.

**Application Type:** Class II Permissive Change

**Product:** 802.11abgn, USB module

**Model No.:** WUBR-508N

**Brand Name:** SparkLAN

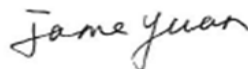
**FCC Classification:** Digital Transmission System (DTS)

**FCC Rule Part(s):** Part 15 Subpart C (Section 15.247)

**Test Procedure(s):** ANSI C63.10-2013

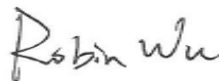
**Test Date:** June 06 ~ 29, 2020

Reviewed By:



( Jame Yuan )

Approved By:



( Robin Wu )



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

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## Revision History

Report No.	Version	Description	Issue Date	Note
2005RSU029-U1	Rev. 01	Initial Report	07-30-2020	Valid

Note: This module was used in portable host and changed the antenna, so we only evaluated the output power, radiated spurious emissions and radiated restricted band edge items.

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## General Information

<b>Applicant:</b>	SparkLAN Communications, Inc.
<b>Applicant Address:</b>	8F., No.257, Sec. 2, Tiding Blvd., Neihu District, Taipei, Taiwan
<b>Manufacturer:</b>	SparkLAN Communications, Inc.
<b>Manufacturer Address:</b>	8F., No.257, Sec. 2, Tiding Blvd., Neihu District, Taipei, Taiwan
<b>Test Site:</b>	MRT Technology (Suzhou) Co., Ltd
<b>Test Site Address:</b>	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
<b>Test Device Serial No.:</b>	N/A <input type="checkbox"/> Production <input checked="" type="checkbox"/> Pre-Production <input type="checkbox"/> Engineering

## Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian'edang Rd., Suzhou, China.

- MRT facility is an FCC registered (MRT Designation No. CN1166) test facility with the site description report on file and has met all the requirements specified in ANSI C63.4-2014.
- MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.
- MRT facility is a VCCI registered (R-20025, G-20034, C-20020, T-20020) test laboratory with the site description on file at VCCI Council.
- MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications, Radio and SAR testing.



# 1. INTRODUCTION

## 1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada and Certification and Engineering Bureau.

## 1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taihu Lake. These measurement tests were conducted at the MRT Technology (Suzhou) Co., Ltd. Facility located at D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China. The measurement facility compliant with the test site requirements specified in ANSI C63.4-2014.



## 2. PRODUCT INFORMATION

### 2.1. Equipment Description

Product Name:	802.11abgn, USB module
Model No.:	WUBR-508N
Brand Name:	SparkLAN
Wi-Fi Specification:	802.11a/b/g/n

### 2.2. Product Specification Subjective to this Report

Frequency Range:	802.11b/g/n-HT20: 2412 ~ 2462MHz 802.11n-HT40: 2422 ~ 2452MHz
Channel Number:	802.11b/g/n-HT20: 11 802.11n-HT40: 7
Type of Modulation:	802.11b: DSSS 802.11g/n: OFDM
Data Rate:	802.11b: 1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 300Mbps
Antenna Type:	PCB Antenna
Antenna Gain:	2.70dBi for Ant 1 1.48dBi for Ant 2

Note: For other features of this EUT, test report will be issued separately.

### 2.3. Description of Host

Host Name:	X-ray Flat Panel Detectors
Host Model:	CareView 750Cw
Derived Host Model:	CareView 1500Cw, CareView 1500Cwe, CareView 1500P, CareView 1800Cw, CareView 1800Cwe
Brand Name:	CareRay
Host Manufacturer:	CareRay Digital Medical Technology Co., Ltd.
Manufacturer Address:	A2-201/B3-501, Biobay, 218 Xinghu Street, Suzhou Industrial Park, Suzhou 215123, P. R. China
Contain one Module	
Module 1#:	FCC ID: RYK-WUBR508N

Note: Host models difference are only for size of exterior, others are identical.

## 2.4. Working Frequencies for this report

802.11b/g/n-HT20

Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2412 MHz	02	2417 MHz	03	2422 MHz
04	2427 MHz	05	2432 MHz	06	2437 MHz
07	2442 MHz	08	2447 MHz	09	2452 MHz
10	2457 MHz	11	2462 MHz	--	--

802.11n-HT40

Channel	Frequency	Channel	Frequency	Channel	Frequency
03	2422 MHz	04	2427 MHz	05	2432 MHz
06	2437 MHz	07	2442 MHz	08	2447 MHz
09	2452 MHz	--	--	--	--

## 2.5. Test Mode

Test Mode	Mode 1: Transmit by 802.11b (1Mbps)
	Mode 2: Transmit by 802.11g (6Mbps)
	Mode 3: Transmit by 802.11n-HT20 (MCS8)
	Mode 4: Transmit by 802.11n-HT40 (MCS8)

Note: The data rate was selected refer to the original module report.

## 2.6. Description of Test Software

The test utility software used during testing was directive commands provided by manufacture.

## 2.7. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

## 2.8. Labeling Requirements

Per 2.1074 & 15.19; Docket 95-19

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase.

However, when the device is so small wherein placement of the label with specified statement is not practical, only the FCC ID must be displayed on the device per Section 15.19(a)(5). Please see attachment for FCC ID label and label location.



### **3. DESCRIPTION of TEST**

#### **3.1. Evaluation Procedure**

The measurement procedures described in the American National Standard for Testing Unlicensed Wireless Devices (ANSI C63.10-2013), and the guidance provided in ANSI C63.10-2013 were used in the measurement.

#### **3.2. Radiated Emissions**

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. For measurements above 1GHz absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1GHz, the absorbers are removed. A MF Model 210SS turntable is used for radiated measurement. It is a continuously rotatable, remote controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm high PVC support structure is placed on top of the turntable.

For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30MHz up to the upper frequency shown in 15.33(b)(1) depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up for frequencies below 1GHz was placed on top of the 0.8 meter high, 1 x 1.5 meter table; and test set-up for frequencies 1-40GHz was placed on top of the 1.5 meter high, 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, clock speed, mode of operation or video resolution, if applicable, turntable azimuth, and receive antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was

varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, which produced the worst-case emissions. According to 3dB Beam-Width of horn antenna, the horn antenna should be always directed to the EUT when rising height.

## 4. ANTENNA REQUIREMENTS

### **Excerpt from §15.203 of the FCC Rules/Regulations:**

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

- The antenna of the device is **permanently attached**.
- There are no provisions for connection to an external antenna.

### **Conclusion:**

The unit complies with the requirement of §15.203.

## 5. TEST EQUIPMENT CALIBRATION DATE

### Radiated Emission - AC1

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2021/01/18
PXA Signal Analyzer	Keysight	N9030B	MRTSUE06395	1 year	2020/09/03
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2020/11/13
Bilog Period Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2021/04/03
Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06023	1 year	2020/10/13
Horn Antenna	Schwarzbeck	BBHA9170	MRTSUE06597	1 year	2020/12/17
Microwave System Amplifier	Agilent	83017A	MRTSUE06076	1 year	2020/11/15
Preamplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2021/06/11
Thermohygrometer	Testo	608-H1	MRTSUE06403	1 year	2020/08/08
Anechoic Chamber	TDK	Chamber-AC1	MRTSUE06212	1 year	2021/04/30

### Radiated Emission - AC2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
MXE EMI Receiver	Keysight	N9038A	MRTSUE06125	1 year	2020/08/01
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2020/11/13
Bilog Period Antenna	Schwarzbeck	VULB 9162	MRTSUE06022	1 year	2020/10/13
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06171	1 year	2020/10/27
Horn Antenna	Schwarzbeck	BBHA9170	MRTSUE06597	1 year	2020/12/17
Broadband Coaxial Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06176	1 year	2020/11/15
Preamplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2021/06/11
Temperature/Humidity Meter	Minggao	ETH529	MRTSUE06170	1 year	2020/12/15
Anechoic Chamber	RIKEN	Chamber-AC2	MRTSUE06213	1 year	2021/04/30

### Conducted Test Equipment - TR3

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Power Meter	Agilent	U2021XA	MRTSUE06030	1 year	2020/11/18
Thermohygrometer	Testo	608-H1	MRTSUE06401	1 year	2020/08/08

Software	Version	Function
EMI Software	V3	EMI Test Software

## 6. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

### Radiated Emission Measurement

The maximum measurement uncertainty is evaluated as:

Horizontal: 30MHz~300MHz: 5.04dB

300MHz~1GHz: 4.95dB

1GHz~18GHz: 6.40dB

Vertical: 30MHz~300MHz: 5.24dB

300MHz~1GHz: 6.03dB

1GHz~18GHz: 6.40dB

## 7. TEST RESULT

### 7.1. Summary

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.247(b)(3)	Output Power	$\leq 1\text{Watt}$	Conducted	Pass	Section 7.2
15.205 15.209	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209	Radiated	Pass	Section 7.3 & 7.4

**Notes:**

- 1) All modes of operation and data rates were investigated. For radiated emission test, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst-case emissions.
- 2) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.

## **7.2. Output Power Measurement**

### **7.2.1. Test Limit**

The maximum out power shall be less 1 Watt (30dBm).

The conducted output power limit specified in paragraph FCC Part 15.247(b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs FCC Part 15.247(b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### **7.2.2. Test Procedure Used**

ANSI C63.10-2013 Section 11.9.2.3

### **7.2.3. Test Setting**

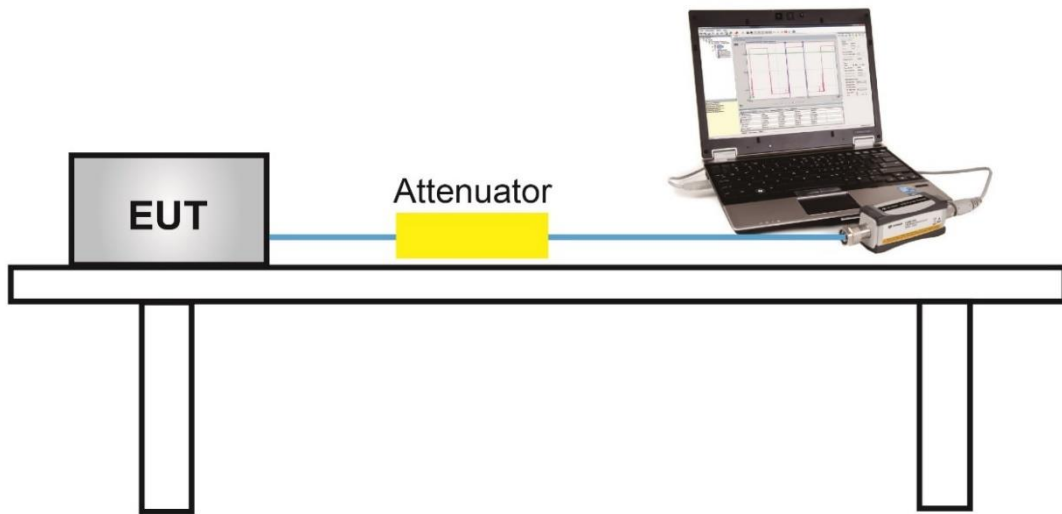
#### **PKPM1 Peak-reading power meter method**

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.

#### **Method AVGPM-G (Measurement using a gated RF average-reading power meter)**

Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since this measurement is made only during the ON time of the transmitter, no duty cycle correction is required.

### 7.2.4. Test Setup





**7.2.5. Test Result**

Product	802.11abgn, USB module	Temperature	27°C
Test Engineer	Hunk Li	Relative Humidity	47%
Test Site	TR3	Test Date	2020/06/06

**Test Result of Peak Output Power**

Test Mode	Data Rate / MCS	Channel No.	Frequency (MHz)	Ant 1 Peak Power (dBm)	Ant 2 Peak Power (dBm)	Total Peak Power (dBm)	Limit (dBm)	Result
11b	1Mbps	01	2412	--	21.05	--	≤ 30.00	Pass
11b	1Mbps	06	2437	--	20.83	--	≤ 30.00	Pass
11b	1Mbps	11	2462	--	19.91	--	≤ 30.00	Pass
11g	6Mbps	01	2412	--	24.19	--	≤ 30.00	Pass
11g	6Mbps	06	2437	--	24.11	--	≤ 30.00	Pass
11g	6Mbps	11	2462	--	23.66	--	≤ 30.00	Pass
11n-HT20	MCS8	01	2412	18.35	21.11	22.96	≤ 30.00	Pass
11n-HT20	MCS8	06	2437	17.96	20.56	22.46	≤ 30.00	Pass
11n-HT20	MCS8	11	2462	19.13	21.67	23.59	≤ 30.00	Pass
11n-HT40	MCS8	03	2422	17.25	19.86	21.76	≤ 30.00	Pass
11n-HT40	MCS8	06	2437	15.64	18.78	20.50	≤ 30.00	Pass
11n-HT40	MCS8	09	2452	15.91	18.60	20.47	≤ 30.00	Pass

Note: Total Peak Power (dBm) =  $10 \cdot \log \{10^{(\text{Ant 1 Peak Power} / 10)} + 10^{(\text{Ant 2 Peak Power} / 10)}\}$  (dBm)

**Test Result of Average Output Power**

Test Mode	Data Rate / MCS	Channel No.	Frequency (MHz)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Total Average Power (dBm)	Limit (dBm)	Result
11b	1Mbps	01	2412	--	18.79	--	≤ 30.00	Pass
11b	1Mbps	06	2437	--	18.58	--	≤ 30.00	Pass
11b	1Mbps	11	2462	--	17.66	--	≤ 30.00	Pass
11g	6Mbps	01	2412	--	15.51	--	≤ 30.00	Pass
11g	6Mbps	06	2437	--	14.58	--	≤ 30.00	Pass
11g	6Mbps	11	2462	--	14.23	--	≤ 30.00	Pass
11n-HT20	MCS8	01	2412	9.72	12.91	14.61	≤ 30.00	Pass
11n-HT20	MCS8	06	2437	9.34	12.28	14.06	≤ 30.00	Pass
11n-HT20	MCS8	11	2462	10.76	13.12	15.11	≤ 30.00	Pass
11n-HT40	MCS8	03	2422	8.15	11.22	12.96	≤ 30.00	Pass
11n-HT40	MCS8	06	2437	6.86	10.06	11.76	≤ 30.00	Pass
11n-HT40	MCS8	09	2452	6.84	9.69	11.51	≤ 30.00	Pass

Note: Total Average Power (dBm) =  $10 \cdot \log \{10^{(\text{Ant 1 Average Power} / 10)} + 10^{(\text{Ant 2 Average Power} / 10)}\}$  (dBm)

### 7.3. Radiated Spurious Emission Measurement

#### 7.3.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15.209 Limits		
Frequency (MHz)	Field Strength ( $\mu\text{V}/\text{m}$ )	Measured Distance (m)
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

#### 7.3.2. Test Procedure Used

ANSI C63.10-2013 Section 6.3 (General Requirements)

ANSI C63.10-2013 Section 6.4 (Standard test method below 30MHz)

ANSI C63.10-2013 Section 6.5 (Standard test method above 30MHz to 1GHz)

ANSI C63.10-2013 Section 6.6 (Standard test method above 1GHz)

#### 7.3.3. Test Setting

**Table 1 - RBW as a function of frequency**

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

**Quasi-Peak Measurements below 1GHz**

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = As specified in Table 1
4. Detector = CISPR quasi-peak
5. Sweep time = Auto couple
6. Trace was allowed to stabilize

**Peak Measurements above 1GHz**

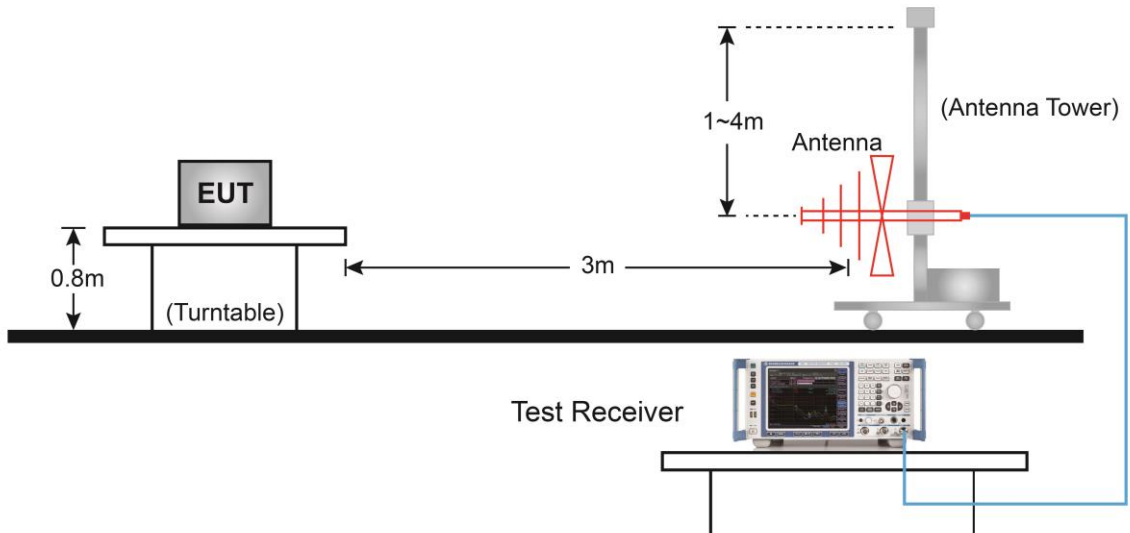
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = Peak
5. Sweep time = Auto couple
6. Trace mode = Max hold
7. Trace was allowed to stabilize

**Average Measurements above 1GHz (Method VB)**

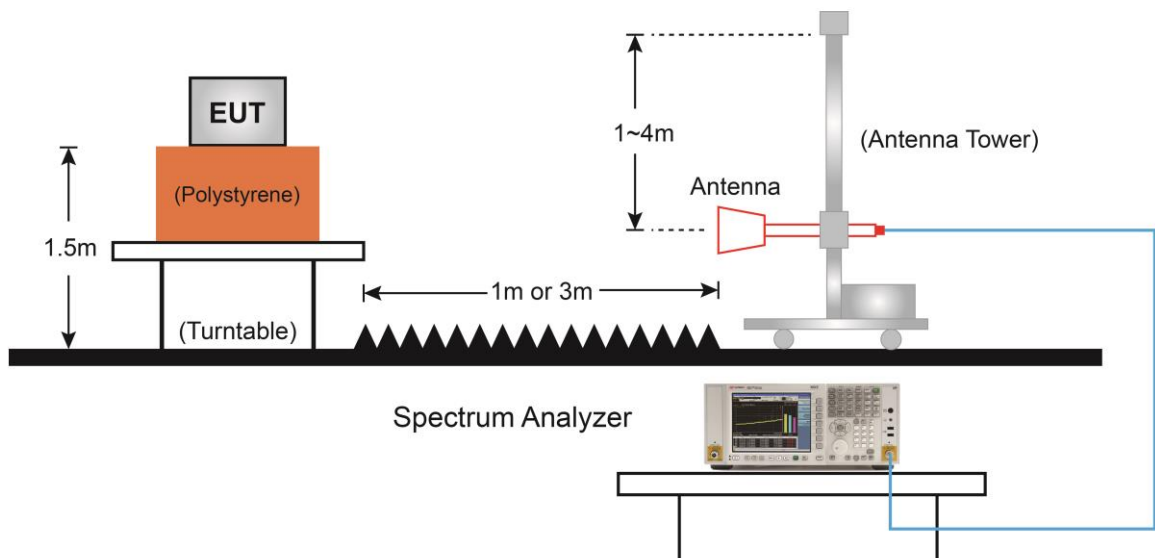
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle  $\geq 98\%$ , set VBW = 10Hz  
If the EUT duty cycle is  $< 98\%$ , set VBW  $\geq 1/T$ . T is the minimum transmission duration
4. Detector = Peak
5. Sweep time = Auto
6. Trace mode = Max hold
7. Trace was allowed to stabilize

### 7.3.4. Test Setup

#### Below 1GHz Test Setup:



#### Above 1GHz Test Setup:



### 7.3.5. Test Result

Product	802.11abgn, USB module	Test Engineer	Buter Shi
Test Site	AC1	Test Date	2020/06/29
Test Mode	802.11b, Ant 2	Test Channel	01
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB $\mu$ V)	Factor (dB)	Measure Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Detector	Polarization
	4825.0	38.5	5.8	44.3	74.0	-29.7	Peak	Horizontal
	7494.0	35.5	10.8	46.3	74.0	-27.7	Peak	Horizontal
*	7910.5	36.1	11.2	47.3	74.0	-26.7	Peak	Horizontal
*	8837.0	34.0	12.7	46.7	74.0	-27.3	Peak	Horizontal
	7383.5	37.6	10.8	48.4	74.0	-25.6	Peak	Vertical
	8131.5	37.1	11.4	48.5	74.0	-25.5	Peak	Vertical
*	8760.5	35.4	12.9	48.3	74.0	-25.7	Peak	Vertical
*	9704.0	35.0	14.7	49.7	74.0	-24.3	Peak	Vertical

Note 1: "\*" is not in restricted band.

Note 2: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)

Product	802.11abgn, USB module	Test Engineer	Buter Shi
Test Site	AC1	Test Date	2020/06/29
Test Mode	802.11b, Ant 2	Test Channel	06
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB $\mu$ V)	Factor (dB)	Measure Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Detector	Polarization
	4153.5	37.6	3.8	41.4	74.0	-32.6	Peak	Horizontal
	7366.5	36.4	10.9	47.3	74.0	-26.7	Peak	Horizontal
*	7910.5	35.9	11.2	47.1	74.0	-26.9	Peak	Horizontal
*	8820.0	35.0	13.2	48.2	74.0	-25.8	Peak	Horizontal
	7715.0	37.6	10.5	48.1	74.0	-25.9	Peak	Vertical
	8429.0	35.7	11.4	47.1	74.0	-26.9	Peak	Vertical
*	8854.0	34.6	12.8	47.3	74.0	-26.7	Peak	Vertical
*	9738.0	34.1	15.2	49.3	74.0	-24.7	Peak	Vertical

Note 1: "\*" is not in restricted band.

Note 2: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)

Product	802.11abgn, USB module	Test Engineer	Buter Shi
Test Site	AC1	Test Date	2020/06/29
Test Mode	802.11b, Ant 2	Test Channel	11
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB $\mu$ V)	Factor (dB)	Measure Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Detector	Polarization
	7570.5	35.5	10.8	46.2	74.0	-27.8	Peak	Horizontal
	8403.5	36.2	11.4	47.6	74.0	-26.4	Peak	Horizontal
*	8769.0	35.8	12.9	48.6	74.0	-25.4	Peak	Horizontal
*	9789.0	36.3	15.2	51.6	74.0	-22.4	Peak	Horizontal
	7375.0	36.7	10.8	47.5	74.0	-26.5	Peak	Vertical
	8301.5	37.7	11.2	48.9	74.0	-25.1	Peak	Vertical
*	8692.5	36.1	13.1	49.2	74.0	-24.8	Peak	Vertical
*	9942.0	34.5	15.0	49.5	74.0	-24.5	Peak	Vertical

Note 1: "\*" is not in restricted band.

Note 2: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)



Product	802.11abgn, USB module	Test Engineer	Buter Shi
Test Site	AC1	Test Date	2020/06/29
Test Mode	802.11g, Ant 2	Test Channel	01
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB $\mu$ V)	Factor (dB)	Measure Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Detector	Polarization
	7570.5	36.3	10.8	47.1	74.0	-26.9	Peak	Horizontal
	8318.5	36.5	11.1	47.6	74.0	-26.4	Peak	Horizontal
*	8658.5	35.5	12.8	48.3	74.0	-25.7	Peak	Horizontal
*	9865.5	35.6	15.5	51.1	74.0	-22.9	Peak	Horizontal
	7366.5	37.3	10.9	48.2	74.0	-25.8	Peak	Vertical
	8259.0	36.8	11.5	48.3	74.0	-25.7	Peak	Vertical
*	8837.0	36.8	12.7	49.5	74.0	-24.5	Peak	Vertical
*	10171.5	34.7	15.5	50.3	74.0	-23.7	Peak	Vertical

Note 1: "\*" is not in restricted band.

Note 2: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)

Product	802.11abgn, USB module	Test Engineer	Buter Shi
Test Site	AC1	Test Date	2020/06/29
Test Mode	802.11g, Ant 2	Test Channel	06
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB $\mu$ V)	Factor (dB)	Measure Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Detector	Polarization
	7443.0	36.8	11.0	47.8	74.0	-26.2	Peak	Horizontal
	8208.0	36.4	11.4	47.7	74.0	-26.3	Peak	Horizontal
*	8752.0	34.9	12.9	47.8	74.0	-26.2	Peak	Horizontal
*	9644.5	33.9	14.4	48.4	74.0	-25.6	Peak	Horizontal
	7485.5	38.3	10.8	49.1	74.0	-24.9	Peak	Vertical
	8301.5	37.2	11.2	48.4	74.0	-25.6	Peak	Vertical
*	8769.0	33.7	12.9	46.6	74.0	-27.4	Peak	Vertical
*	10171.5	35.0	15.5	50.5	74.0	-23.5	Peak	Vertical

Note 1: "\*" is not in restricted band.

Note 2: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)

Product	802.11abgn, USB module	Test Engineer	Buter Shi
Test Site	AC1	Test Date	2020/06/29
Test Mode	802.11g, Ant 2	Test Channel	11
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB $\mu$ V)	Factor (dB)	Measure Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Detector	Polarization
	7706.5	36.7	10.6	47.3	74.0	-26.7	Peak	Horizontal
	8276.0	37.4	11.2	48.6	74.0	-25.4	Peak	Horizontal
*	8964.5	36.5	12.9	49.4	74.0	-24.6	Peak	Horizontal
*	10358.5	36.8	16.2	53.0	74.0	-21.0	Peak	Horizontal
	7468.5	37.3	10.9	48.2	74.0	-25.8	Peak	Vertical
	8157.0	38.4	11.4	49.8	74.0	-24.2	Peak	Vertical
*	8786.0	37.1	12.8	49.9	74.0	-24.1	Peak	Vertical
*	10282.0	35.9	15.8	51.7	74.0	-22.3	Peak	Vertical

Note 1: "\*" is not in restricted band.

Note 2: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)

Product	802.11abgn, USB module	Test Engineer	Buter Shi
Test Site	AC1	Test Date	2020/06/29
Test Mode	802.11n-HT20, Ant 1 + 2	Test Channel	01
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	7468.5	35.6	10.9	46.6	74.0	-27.4	Peak	Horizontal
	8412.0	37.5	11.3	48.7	74.0	-25.3	Peak	Horizontal
*	8973.0	36.8	13.0	49.8	74.0	-24.2	Peak	Horizontal
*	9857.0	35.5	15.4	50.8	74.0	-23.2	Peak	Horizontal
	7502.5	35.6	10.8	46.4	74.0	-27.6	Peak	Vertical
	8276.0	34.8	11.2	46.0	74.0	-28.0	Peak	Vertical
*	8582.0	36.3	12.3	48.6	74.0	-25.4	Peak	Vertical
*	10273.5	35.7	15.8	51.5	74.0	-22.5	Peak	Vertical

Note 1: "\*" is not in restricted band.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)

Product	802.11abgn, USB module	Test Engineer	Buter Shi
Test Site	AC1	Test Date	2020/06/29
Test Mode	802.11n-HT20, Ant 1 + 2	Test Channel	06
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB $\mu$ V)	Factor (dB)	Measure Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Detector	Polarization
	7400.5	36.3	10.7	47.0	74.0	-27.0	Peak	Horizontal
	8165.5	36.1	11.5	47.6	74.0	-26.4	Peak	Horizontal
*	8990.0	36.5	13.0	49.5	74.0	-24.5	Peak	Horizontal
*	10324.5	36.1	15.9	52.0	74.0	-22.0	Peak	Horizontal
	7468.5	36.3	10.9	47.2	74.0	-26.8	Peak	Vertical
	8199.5	36.6	11.4	48.0	74.0	-26.0	Peak	Vertical
*	8760.5	36.2	12.9	49.1	74.0	-24.9	Peak	Vertical
*	10341.5	35.8	15.8	51.6	74.0	-22.4	Peak	Vertical

Note 1: "\*" is not in restricted band.

Note 2: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)

Product	802.11abgn, USB module	Test Engineer	Buter Shi
Test Site	AC1	Test Date	2020/06/29
Test Mode	802.11n-HT20, Ant 1 + 2	Test Channel	11
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB $\mu$ V)	Factor (dB)	Measure Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Detector	Polarization
	7477.0	36.5	10.8	47.3	74.0	-26.7	Peak	Horizontal
	8259.0	36.3	11.5	47.9	74.0	-26.1	Peak	Horizontal
*	8811.5	34.6	13.3	47.8	74.0	-26.2	Peak	Horizontal
*	10171.5	36.4	15.5	51.9	74.0	-22.1	Peak	Horizontal
	7383.5	37.4	10.8	48.2	74.0	-25.8	Peak	Vertical
	8123.0	37.4	11.5	48.9	74.0	-25.1	Peak	Vertical
*	8743.5	35.9	12.8	48.7	74.0	-25.3	Peak	Vertical
*	10061.0	35.0	14.9	49.9	74.0	-24.1	Peak	Vertical

Note 1: "\*" is not in restricted band.

Note 2: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)

Product	802.11abgn, USB module	Test Engineer	Buter Shi
Test Site	AC1	Test Date	2020/06/29
Test Mode	802.11n-HT40, Ant 1 + 2	Test Channel	01
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB $\mu$ V)	Factor (dB)	Measure Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Detector	Polarization
	7434.5	37.2	10.9	48.0	74.0	-26.0	Peak	Horizontal
	8216.5	37.5	11.4	48.9	74.0	-25.1	Peak	Horizontal
*	8939.0	36.4	13.1	49.5	74.0	-24.5	Peak	Horizontal
*	9721.0	36.0	15.1	51.1	74.0	-22.9	Peak	Horizontal
	7528.0	36.6	10.9	47.5	74.0	-26.5	Peak	Vertical
	8131.5	37.0	11.4	48.4	74.0	-25.6	Peak	Vertical
*	8888.0	36.9	12.7	49.6	74.0	-24.4	Peak	Vertical
*	9823.0	35.1	15.3	50.4	74.0	-23.6	Peak	Vertical

Note 1: "\*" is not in restricted band.

Note 2: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)

Product	802.11abgn, USB module	Test Engineer	Buter Shi
Test Site	AC1	Test Date	2020/06/29
Test Mode	802.11n-HT40, Ant 1 + 2	Test Channel	06
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	7451.5	35.3	11.0	46.3	74.0	-27.7	Peak	Horizontal
	8386.5	35.2	11.1	46.2	74.0	-27.8	Peak	Horizontal
*	8837.0	36.8	12.7	49.5	74.0	-24.5	Peak	Horizontal
*	10384.0	35.9	15.7	51.6	74.0	-22.4	Peak	Horizontal
	7553.5	36.3	10.8	47.1	74.0	-26.9	Peak	Vertical
	8284.5	35.9	11.2	47.1	74.0	-26.9	Peak	Vertical
*	8658.5	35.5	12.8	48.3	74.0	-25.7	Peak	Vertical
*	10316.0	35.5	15.8	51.3	74.0	-22.7	Peak	Vertical

Note 1: "\*" is not in restricted band.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)



Product	802.11abgn, USB module	Test Engineer	Buter Shi
Test Site	AC1	Test Date	2020/06/29
Test Mode	802.11n-HT40, Ant 1 + 2	Test Channel	11
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB $\mu$ V)	Factor (dB)	Measure Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Detector	Polarization
	7375.0	36.6	10.8	47.4	74.0	-26.6	Peak	Horizontal
	8301.5	36.6	11.2	47.7	74.0	-26.3	Peak	Horizontal
*	8939.0	36.1	13.1	49.3	74.0	-24.7	Peak	Horizontal
*	10350.0	35.2	16.0	51.2	74.0	-22.8	Peak	Horizontal
	7443.0	36.6	11.0	47.6	74.0	-26.4	Peak	Vertical
	8097.5	37.4	11.9	49.3	74.0	-24.7	Peak	Vertical
*	8930.5	34.9	13.1	48.0	74.0	-26.0	Peak	Vertical
*	10494.5	33.6	16.2	49.8	74.0	-24.2	Peak	Vertical

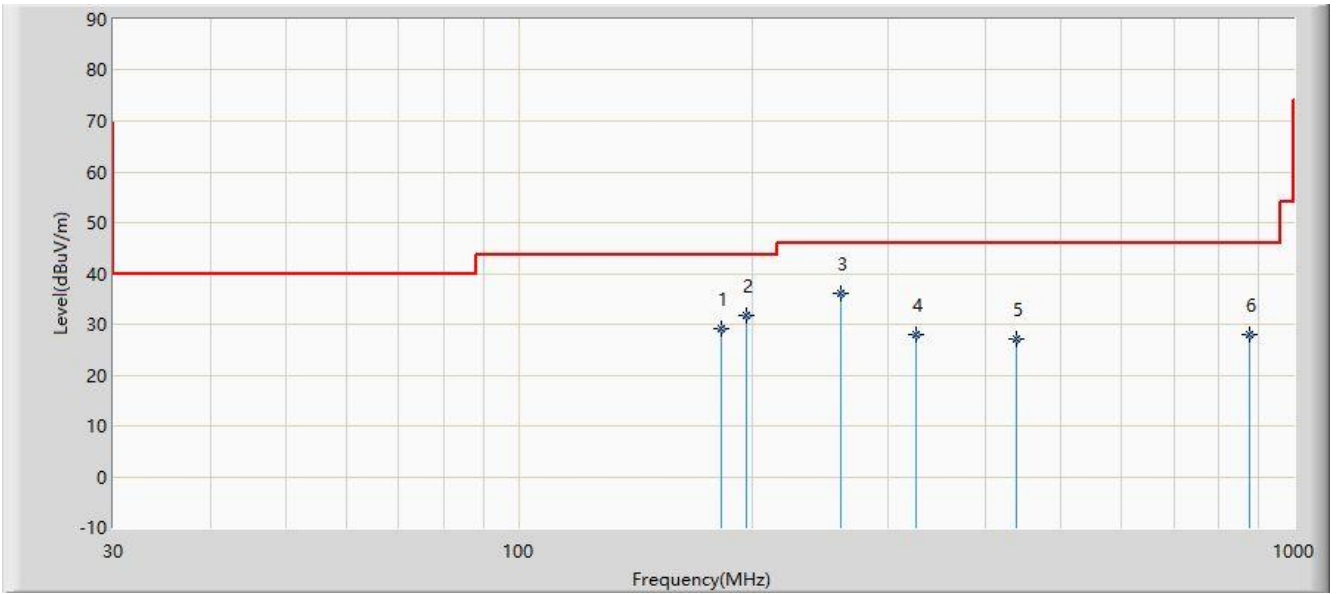
Note 1: "\*" is not in restricted band.

Note 2: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)

**The Worst Case of Radiated Emission below 1GHz:**

Site: AC1	Time: 2020/06/29 - 04:25
Limit: FCC_Part15.209_RSE(3m)	Engineer: Buter Shi
Probe: AC1_VULB 9168 _30-1000MHz	Polarity: Horizontal
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at Channel 2462MHz	



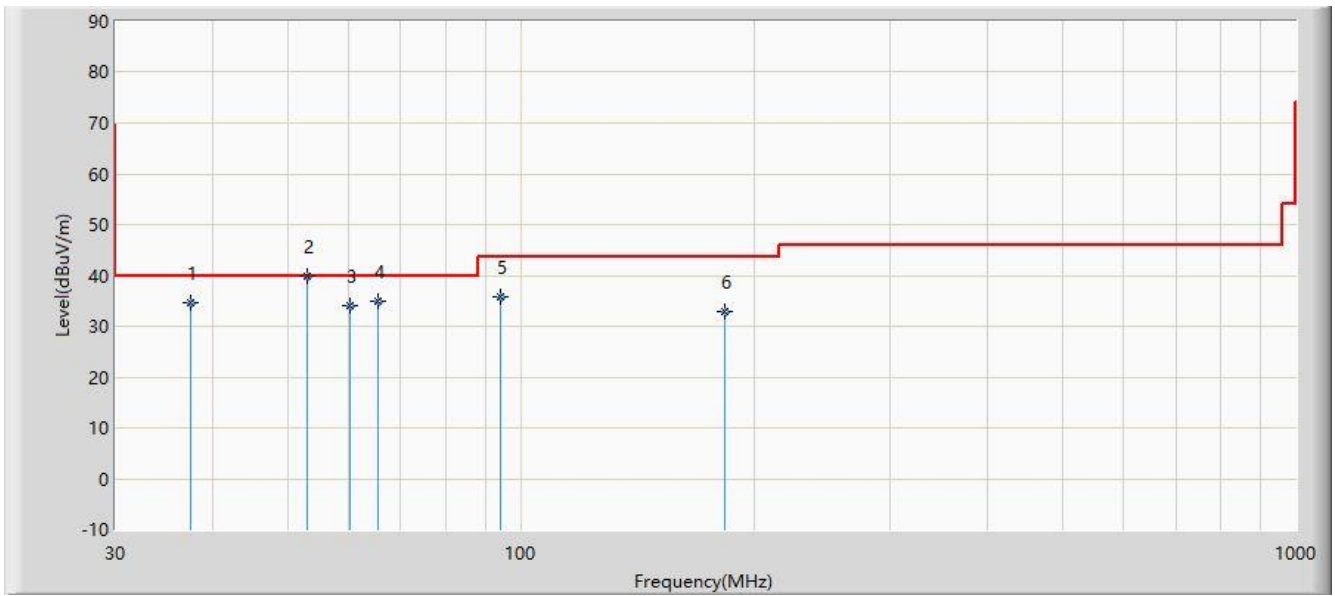
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		182.775	29.133	16.485	-14.367	43.500	12.648	QP
2		196.840	31.830	20.480	-11.670	43.500	11.350	QP
3	*	260.465	36.043	22.700	-9.957	46.000	13.343	QP
4		325.850	27.847	12.145	-18.153	46.000	15.702	QP
5		437.885	26.998	8.441	-19.002	46.000	18.557	QP
6		875.355	27.872	2.359	-18.128	46.000	25.513	QP

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Note 2: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.

Site: AC1	Time: 2020/06/29 - 04:34
Limit: FCC_Part15.209_RSE(3m)	Engineer: Buter Shi
Probe: AC1_VULB 9168 _30-1000MHz	Polarity: Vertical
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at Channel 2462MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		37.547	34.738	21.121	-5.262	40.000	13.618	QP
2	*	53.020	39.739	25.300	-0.261	40.000	14.439	QP
3		60.132	33.917	20.032	-6.083	40.000	13.885	QP
4		65.456	34.797	21.564	-5.203	40.000	13.233	QP
5		94.020	35.899	27.146	-7.601	43.500	8.753	QP
6		183.745	32.952	20.484	-10.548	43.500	12.468	QP

Note 1: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Note 2: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.

## 7.4. Radiated Restricted Band Edge Measurement

### 7.4.1. Test Limit

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
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	( <sup>2</sup> )
13.36 - 13.41	--	--	--

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47CFR must not exceed the limits shown in Table.

FCC Part 15.209 Limit		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

**7.4.2. Test Procedure Used**

ANSI C63.10-2013 Section 6.3 (General Requirements)

ANSI C63.10-2013 Section 6.6 (Standard test method above 1GHz)

**7.4.3. Test Setting**

**Peak Field Strength Measurements**

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

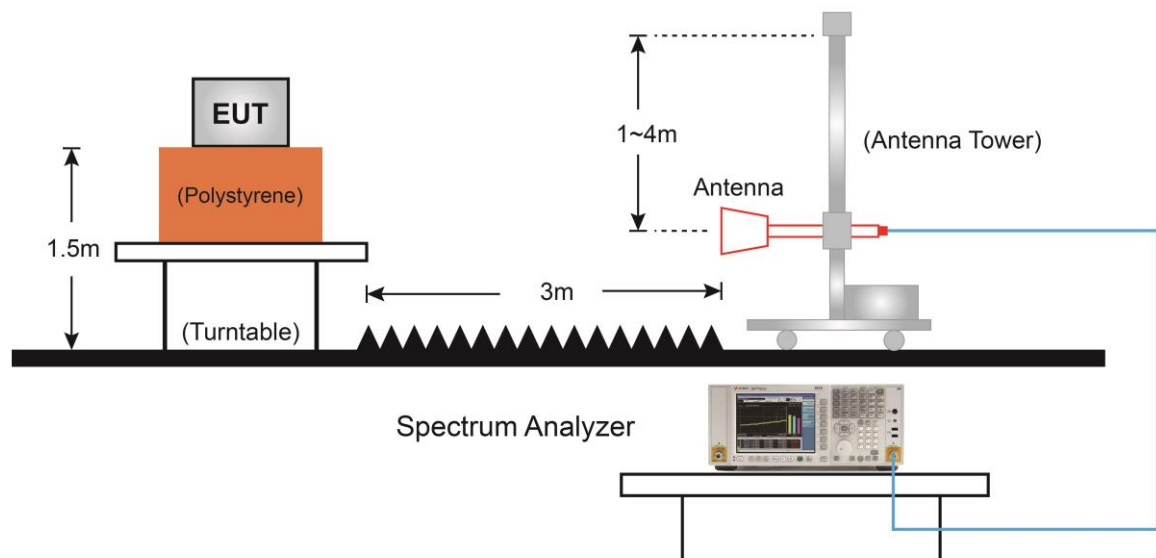
### Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle  $\geq 98\%$ , set VBW = 10 Hz.

If the EUT duty cycle is  $< 98\%$ , set VBW  $\geq 1/T$ . T is the minimum transmission duration.

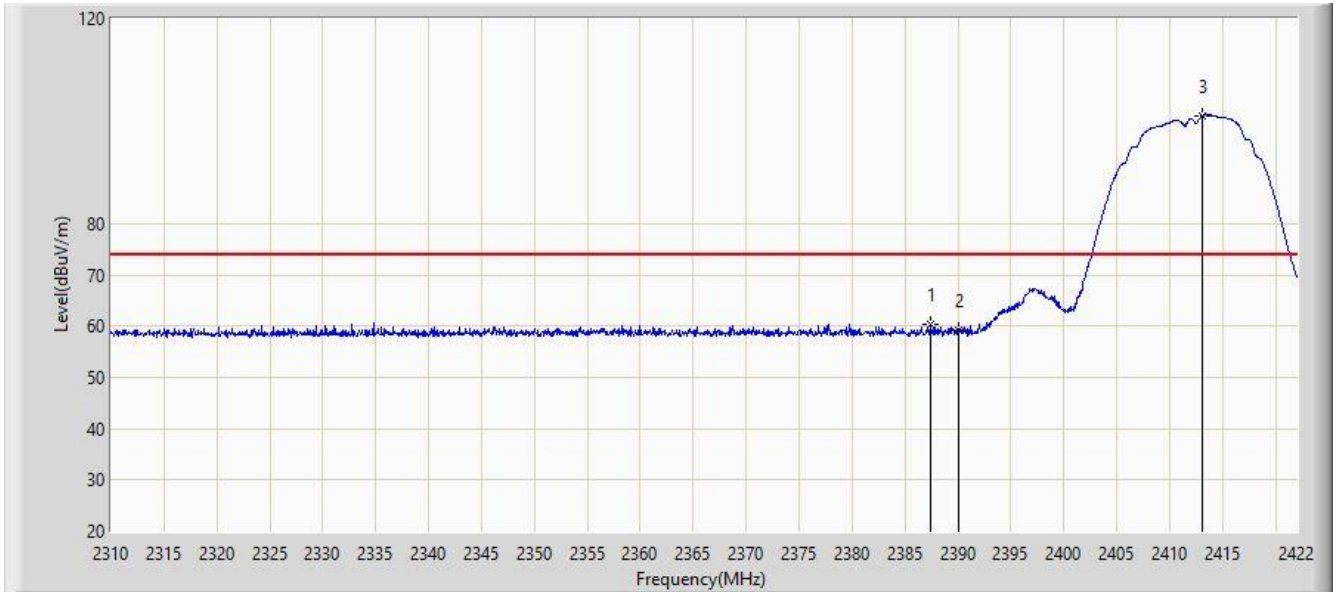
4. Detector = Peak
5. Sweep time = auto
6. Trace mode = max hold
7. Trace was allowed to stabilize

#### 7.4.4. Test Setup



### 7.4.5. Test Result

Site: AC1	Time: 2020/06/29 - 03:04
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2412MHz, Ant 2	

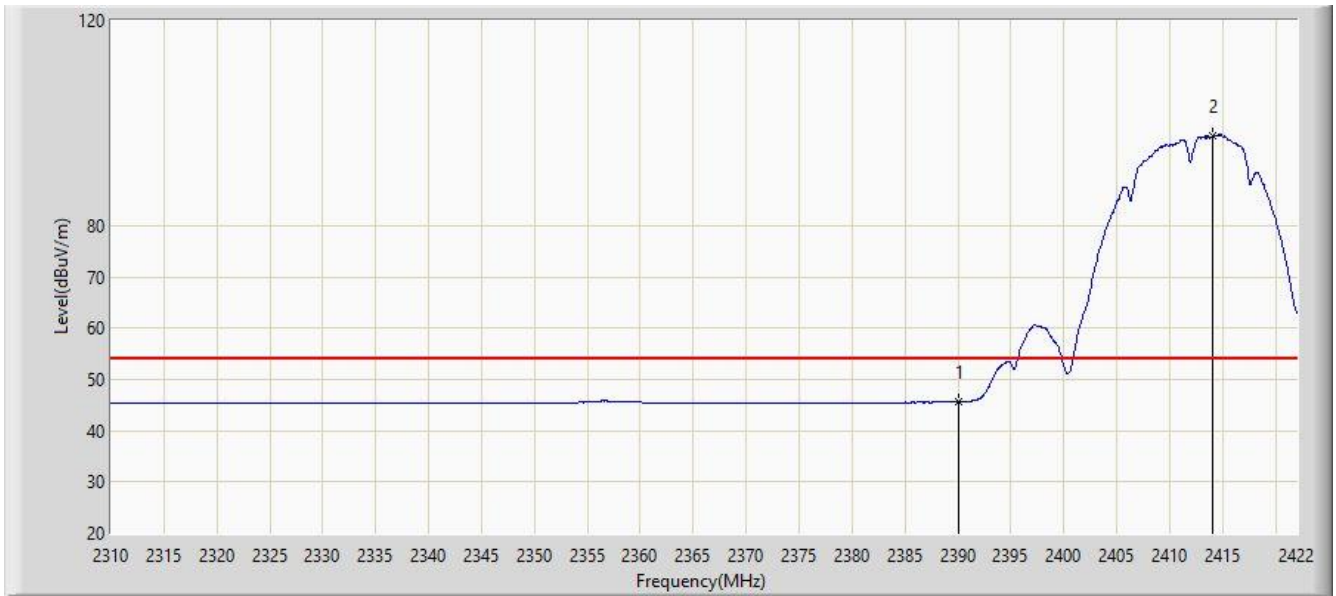


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2387.392	60.255	27.555	-13.745	74.000	32.700	PK
2		2390.000	59.290	26.578	-14.710	74.000	32.712	PK
3	*	2413.040	100.946	68.217	N/A	N/A	32.728	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:13
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2412MHz, Ant 2	



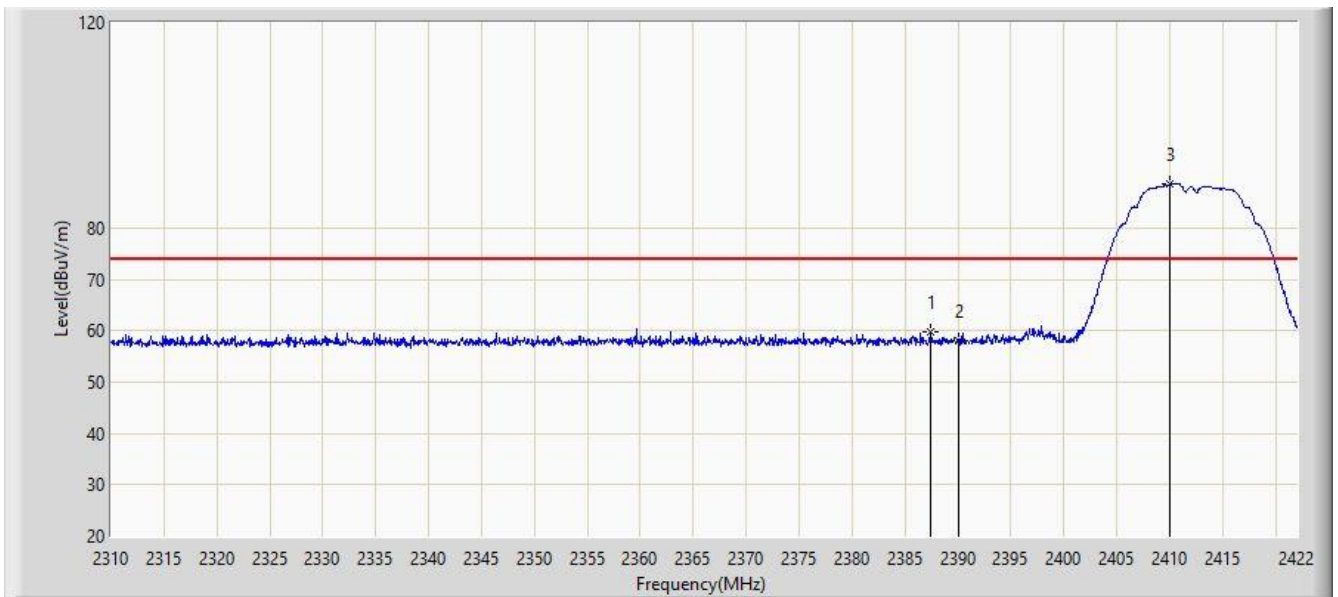
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	45.616	12.904	-8.384	54.000	32.712	AV
2	*	2414.048	97.495	64.767	N/A	N/A	32.728	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)



Profile: 2.4G	Page No.: 3
Engineer: Buter Shi	
Site: AC1	Time: 2020/06/29 - 03:18
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2412MHz, Ant 2	

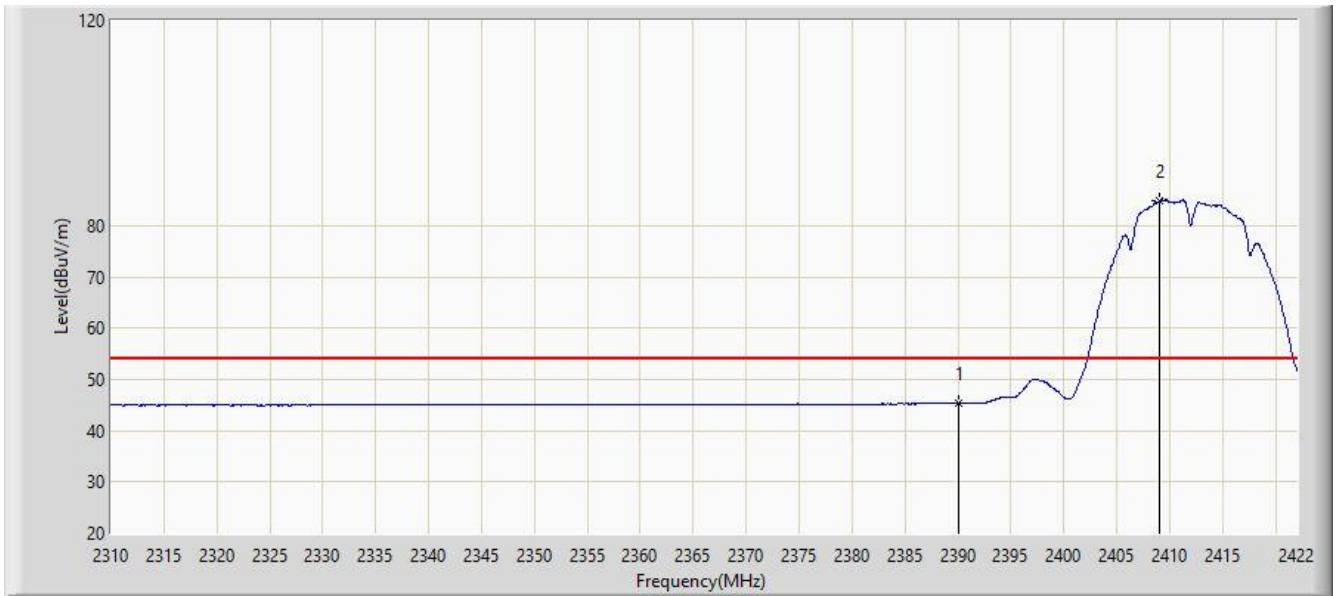


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2387.392	59.725	27.025	-14.275	74.000	32.700	PK
2		2390.000	58.154	25.442	-15.846	74.000	32.712	PK
3	*	2410.072	88.495	55.763	N/A	N/A	32.733	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:20
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2412MHz, Ant 2	

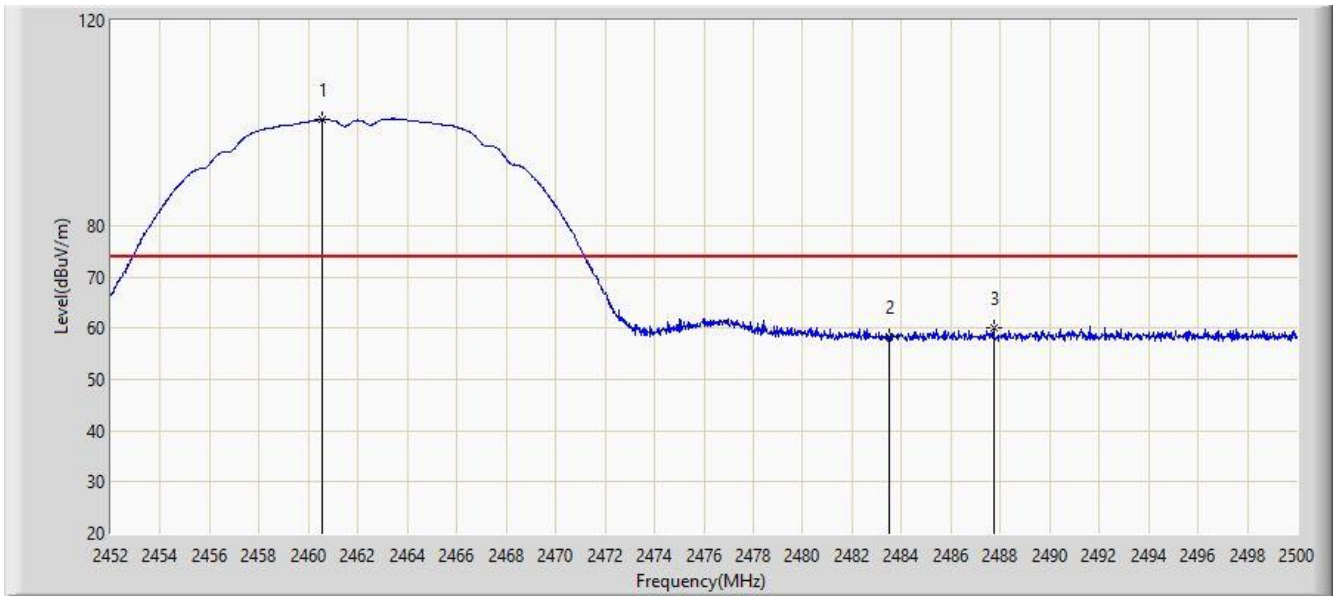


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	45.304	12.592	-8.696	54.000	32.712	AV
2	*	2409.008	84.796	52.062	N/A	N/A	32.734	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:22
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2462MHz, Ant 2	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2460.544	100.596	67.844	N/A	N/A	32.752	PK
2		2483.500	58.264	25.614	-15.736	74.000	32.651	PK
3		2487.736	59.919	27.304	-14.081	74.000	32.615	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:23
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2462MHz, Ant 2	

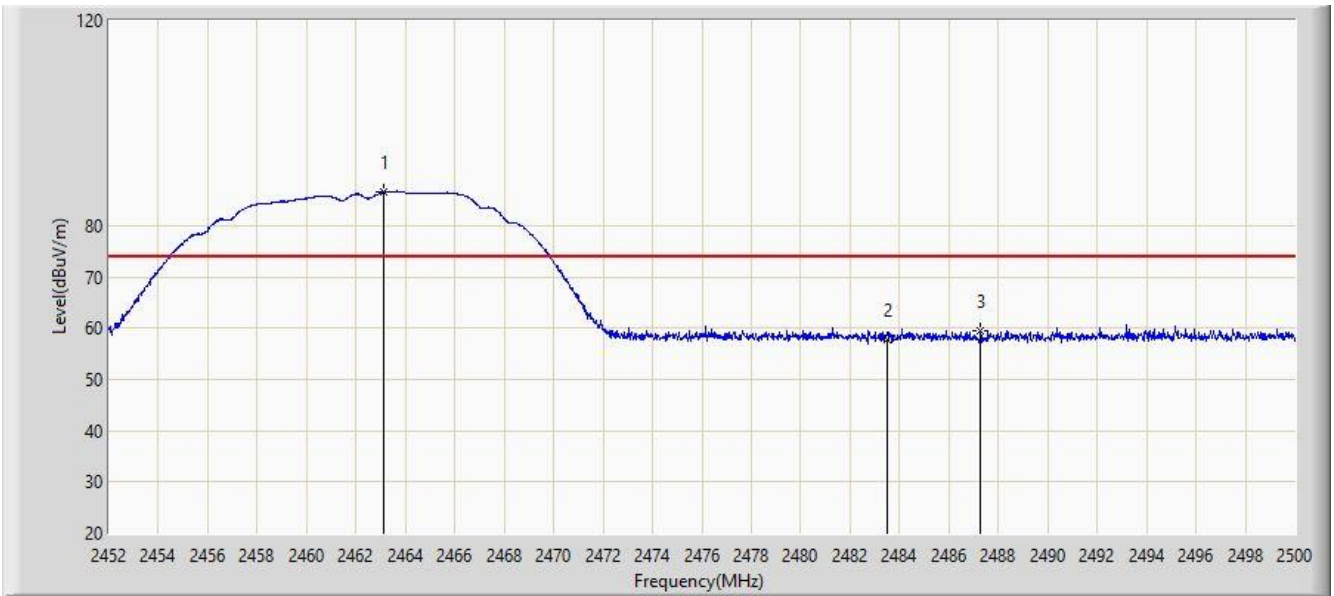


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.168	97.191	64.437	N/A	N/A	32.754	AV
2		2483.500	46.043	13.393	-7.957	54.000	32.651	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:24
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2462MHz, Ant 2	

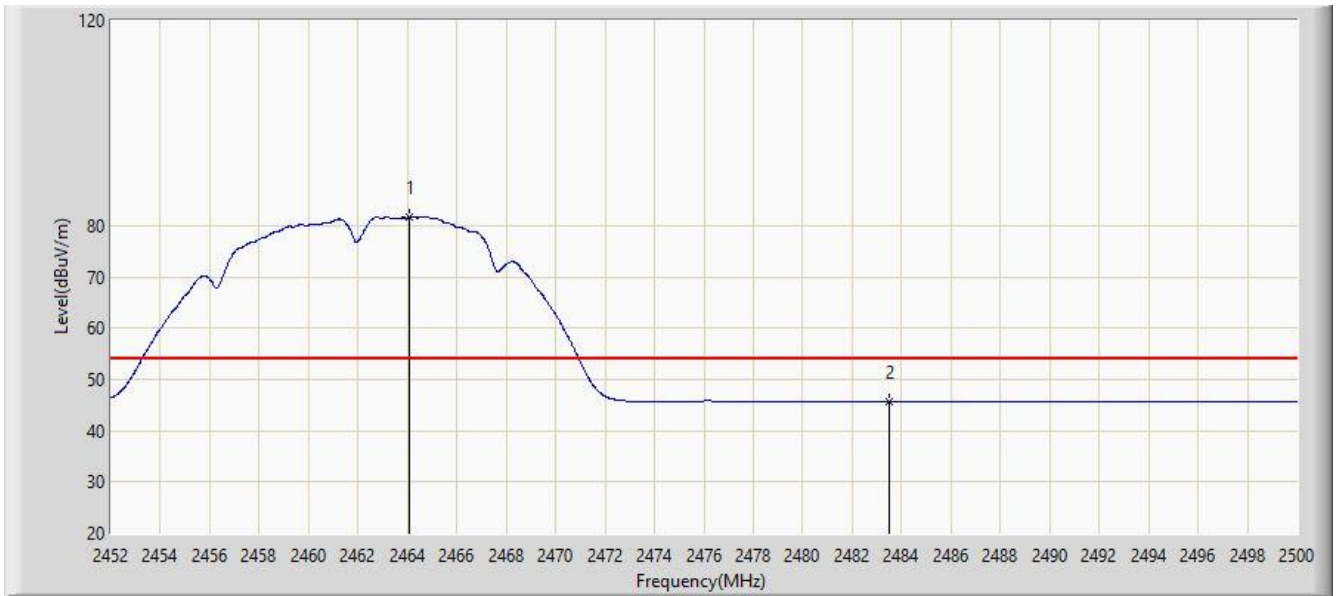


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.112	86.578	53.818	N/A	N/A	32.760	PK
2		2483.500	57.667	25.017	-16.333	74.000	32.651	PK
3		2487.280	59.363	26.746	-14.637	74.000	32.617	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:26
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2462MHz, Ant 2	

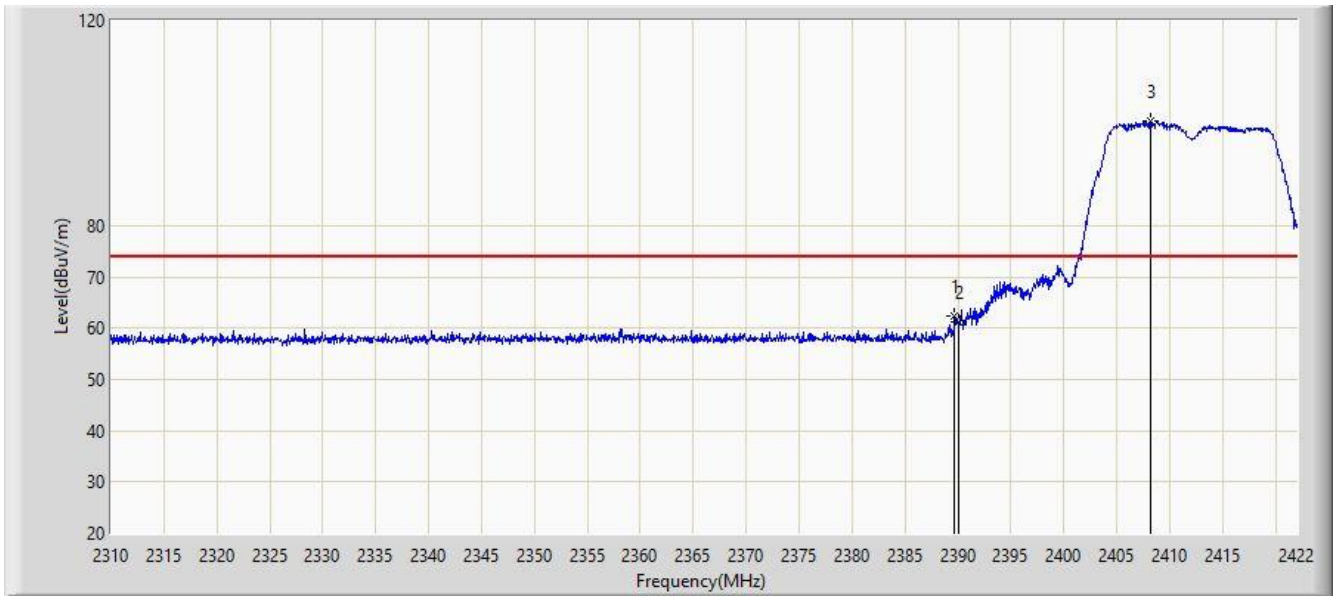


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2464.096	81.658	48.895	N/A	N/A	32.763	AV
2		2483.500	45.618	12.968	-8.382	54.000	32.651	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:26
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at Channel 2412MHz, Ant 2	

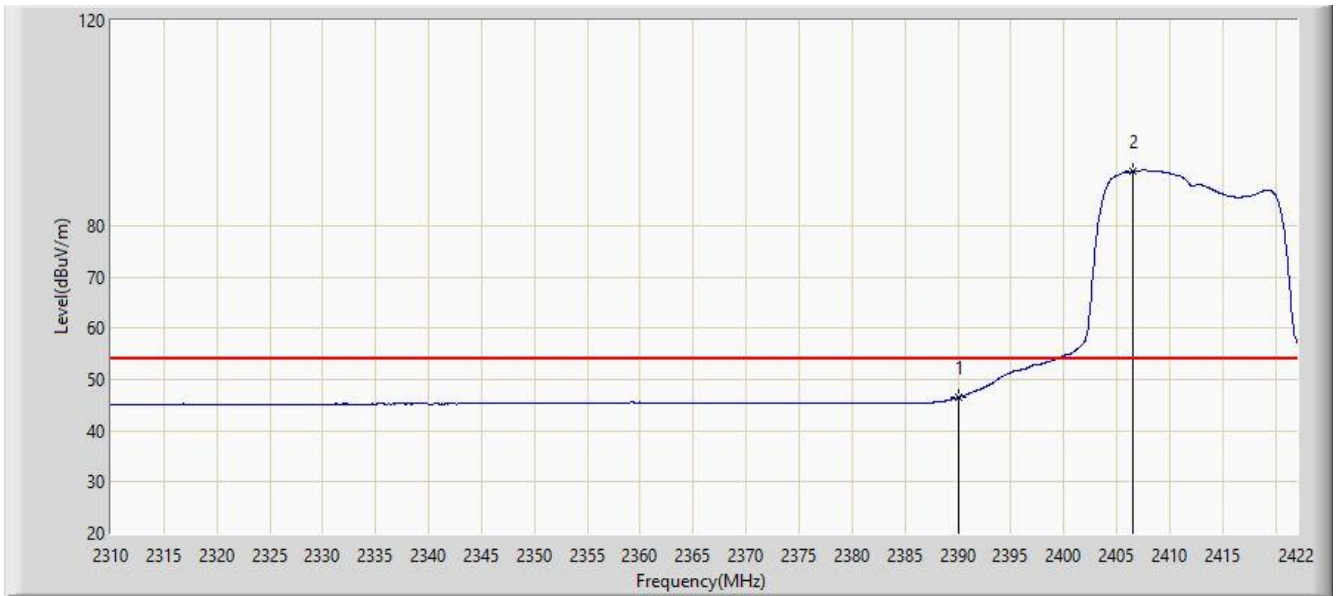


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2389.688	62.230	29.520	-11.770	74.000	32.711	PK
2		2390.000	61.116	28.404	-12.884	74.000	32.712	PK
3	*	2408.168	100.472	67.737	N/A	N/A	32.735	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:28
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at Channel 2412MHz, Ant 2	



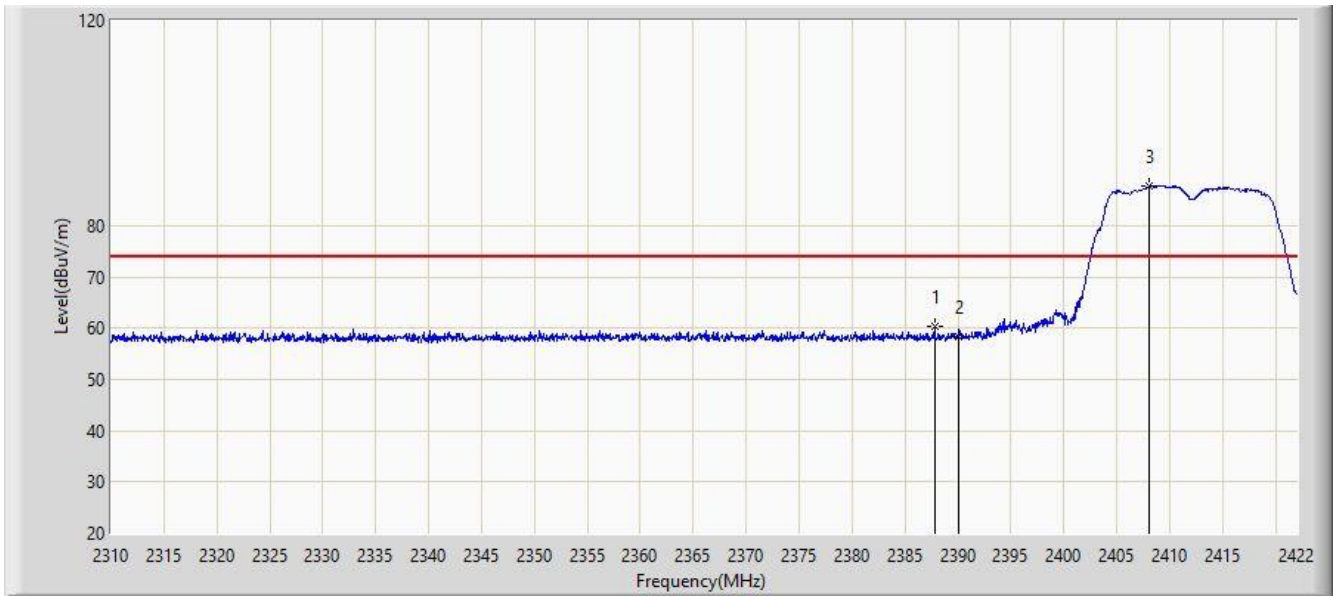
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	46.503	13.791	-7.497	54.000	32.712	AV
2	*	2406.488	90.499	57.762	N/A	N/A	32.737	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)



Site: AC1	Time: 2020/06/29 - 03:30
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at Channel 2412MHz, Ant 2	

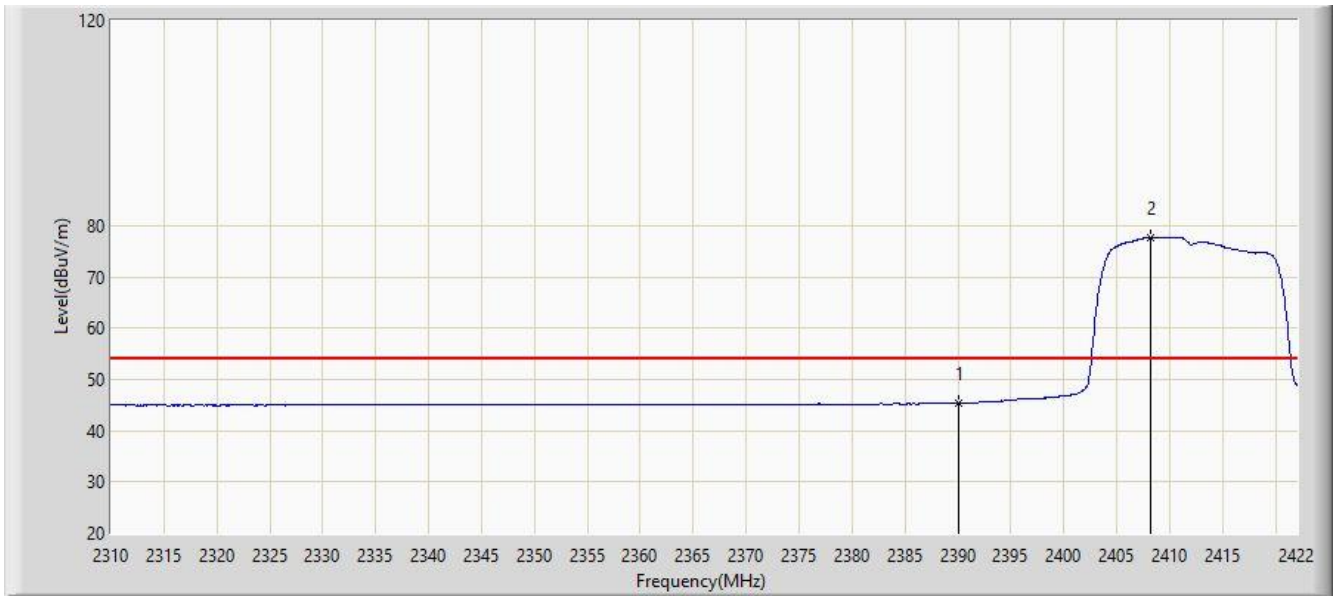


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2387.784	60.353	27.652	-13.647	74.000	32.702	PK
2		2390.000	58.326	25.614	-15.674	74.000	32.712	PK
3	*	2408.056	87.593	54.858	N/A	N/A	32.735	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:32
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at Channel 2412MHz, Ant 2	

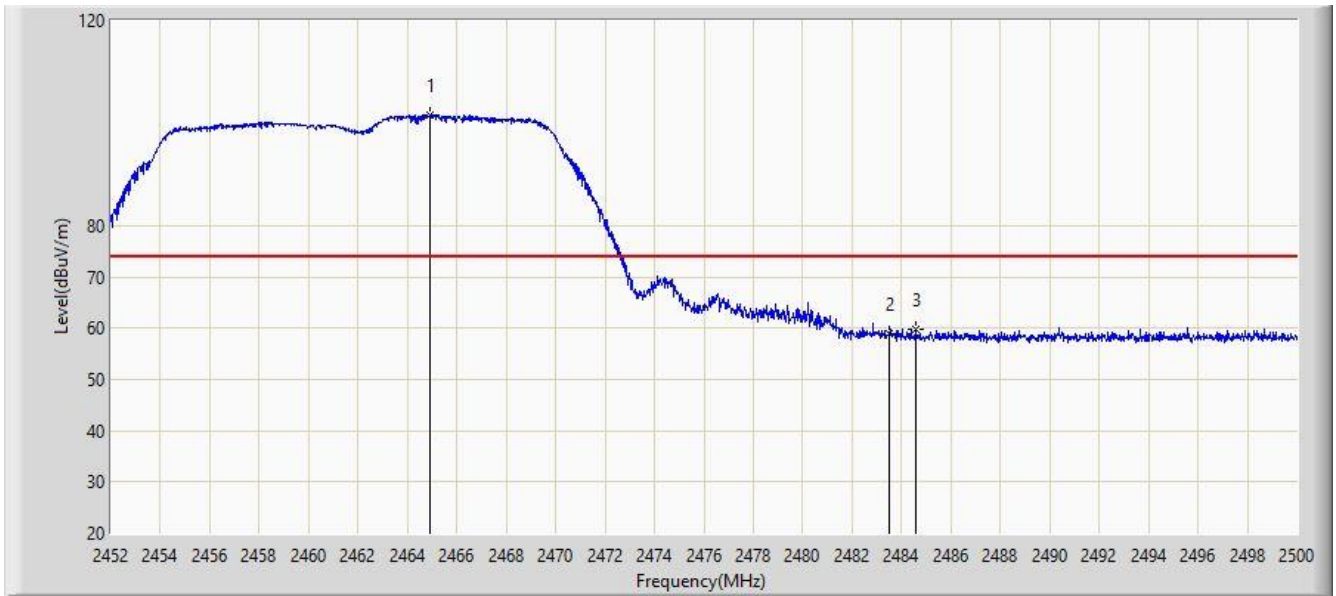


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	45.357	12.645	-8.643	54.000	32.712	AV
2	*	2408.224	77.627	44.892	N/A	N/A	32.735	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:33
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at Channel 2462MHz, Ant 2	

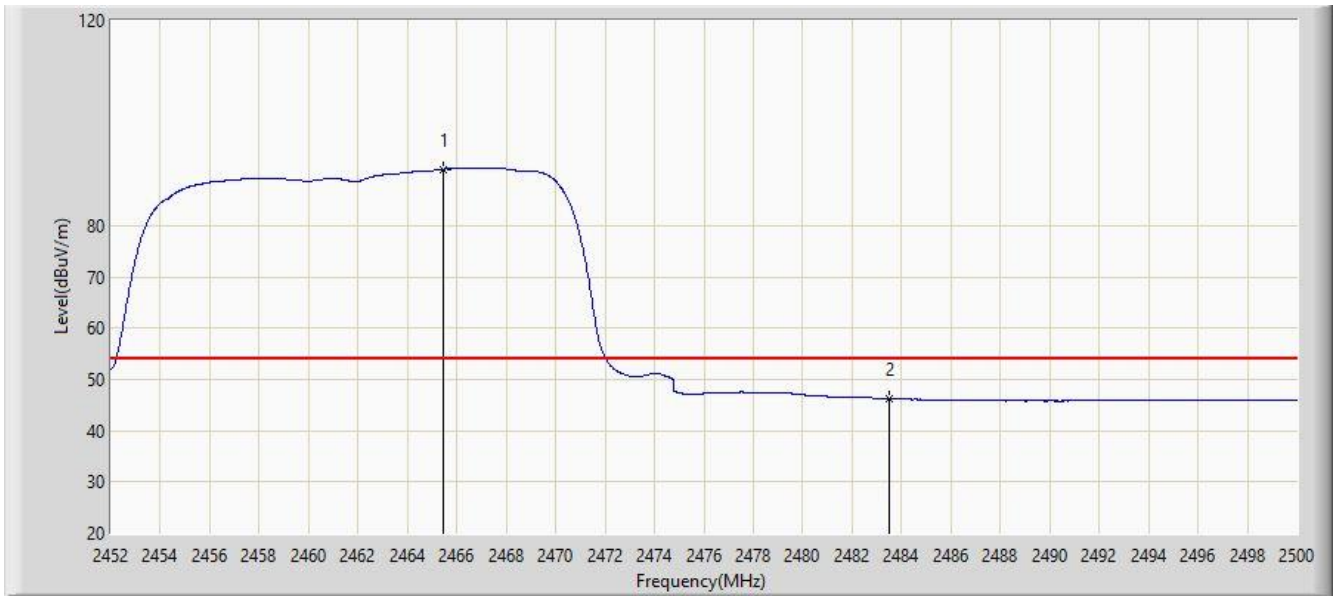


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2464.888	101.547	68.781	N/A	N/A	32.766	PK
2		2483.500	58.881	26.231	-15.119	74.000	32.651	PK
3		2484.568	59.655	27.014	-14.345	74.000	32.641	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:34
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at Channel 2462MHz, Ant 2	

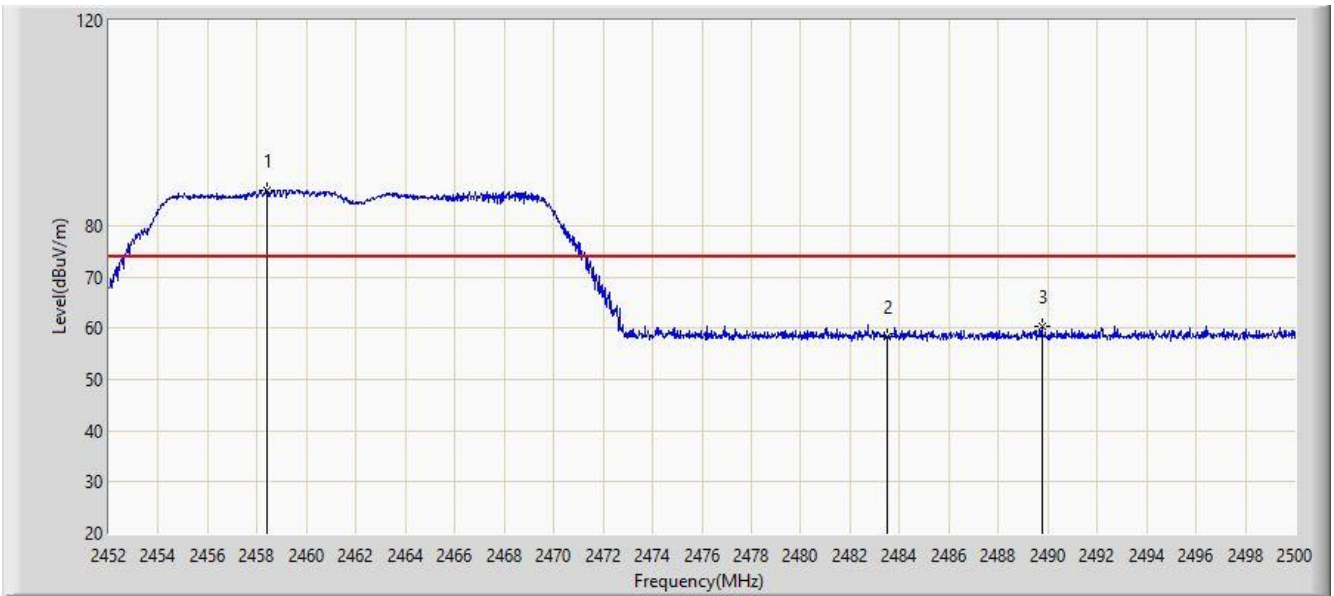


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2465.440	90.970	58.202	N/A	N/A	32.768	AV
2		2483.500	46.219	13.569	-7.781	54.000	32.651	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:35
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at Channel 2462MHz, Ant 2	

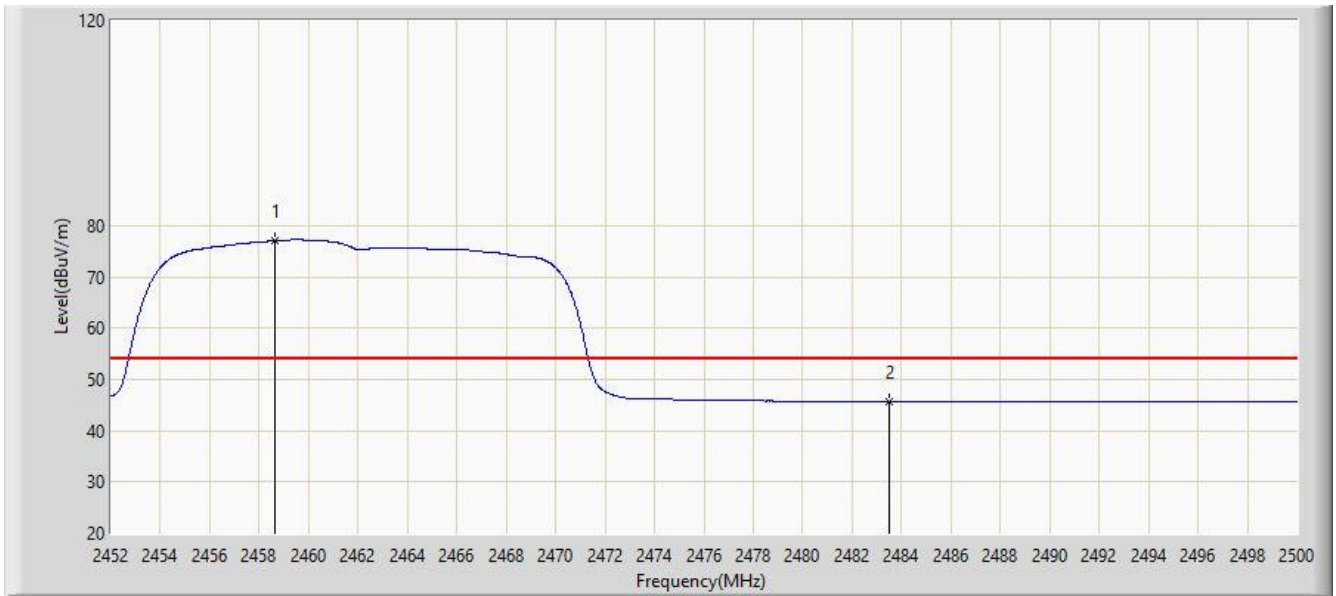


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2458.408	86.952	54.208	N/A	N/A	32.744	PK
2		2483.500	58.186	25.536	-15.814	74.000	32.651	PK
3		2489.752	60.295	27.679	-13.705	74.000	32.616	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:37
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at Channel 2462MHz, Ant 2	

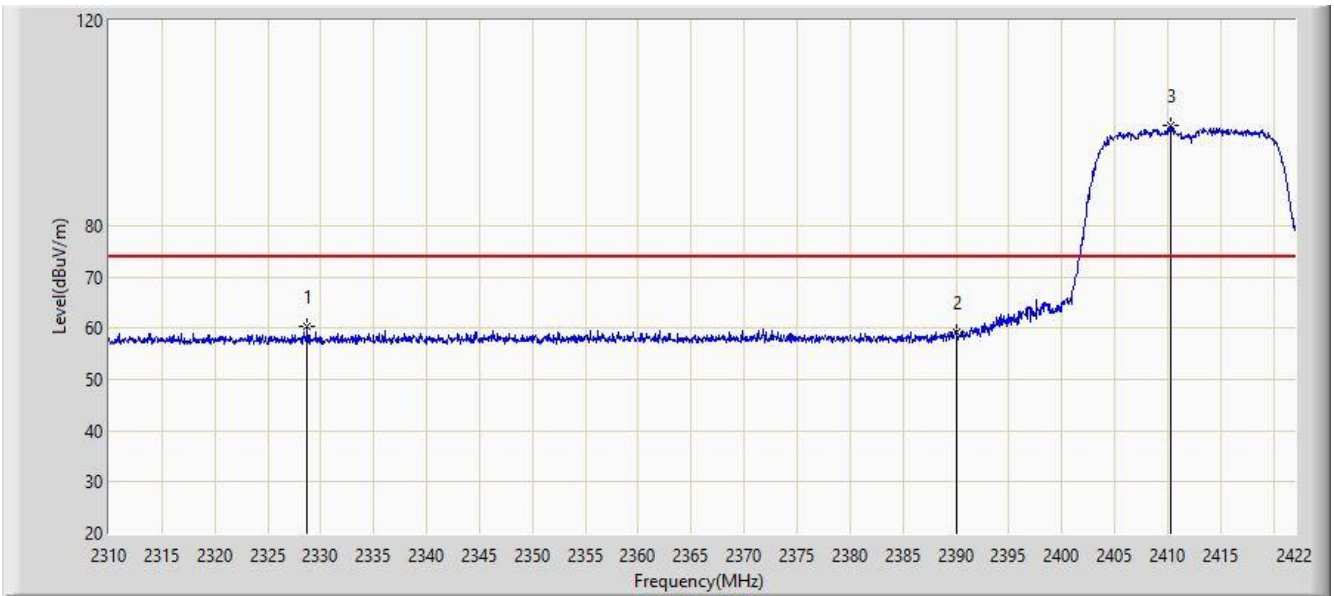


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2458.624	76.994	44.249	N/A	N/A	32.745	AV
2		2483.500	45.625	12.975	-8.375	54.000	32.651	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:38
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at Channel 2412MHz, Ant 1 + 2	

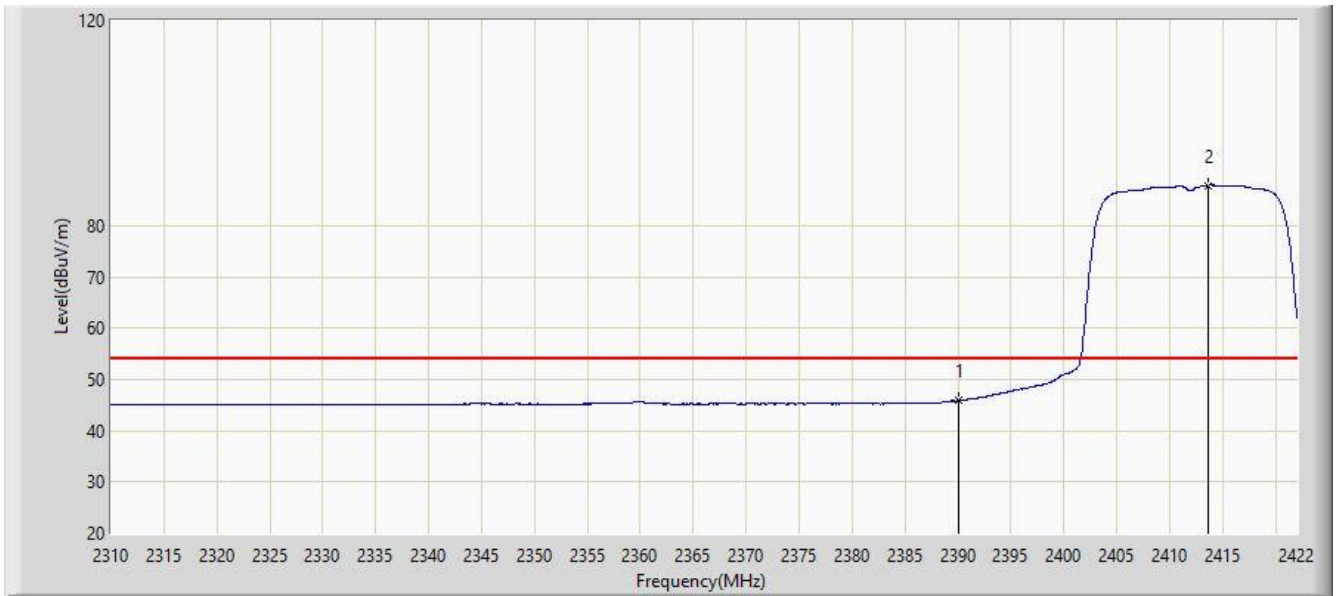


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2328.704	60.255	27.485	-13.745	74.000	32.770	PK
2		2390.000	59.255	26.543	-14.745	74.000	32.712	PK
3	*	2410.240	99.409	66.677	N/A	N/A	32.732	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:40
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at Channel 2412MHz, Ant 1 + 2	



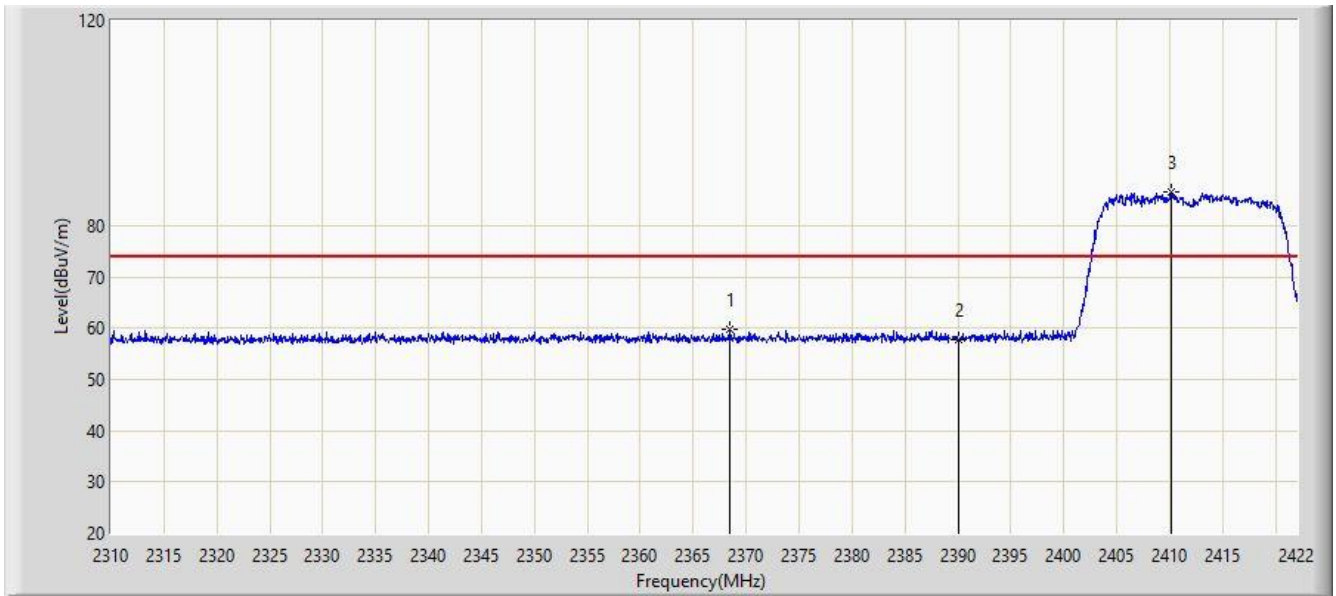
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	45.793	13.081	-8.207	54.000	32.712	AV
2	*	2413.656	87.858	55.130	N/A	N/A	32.729	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)



Site: AC1	Time: 2020/06/29 - 03:41
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at Channel 2412MHz, Ant 1 + 2	

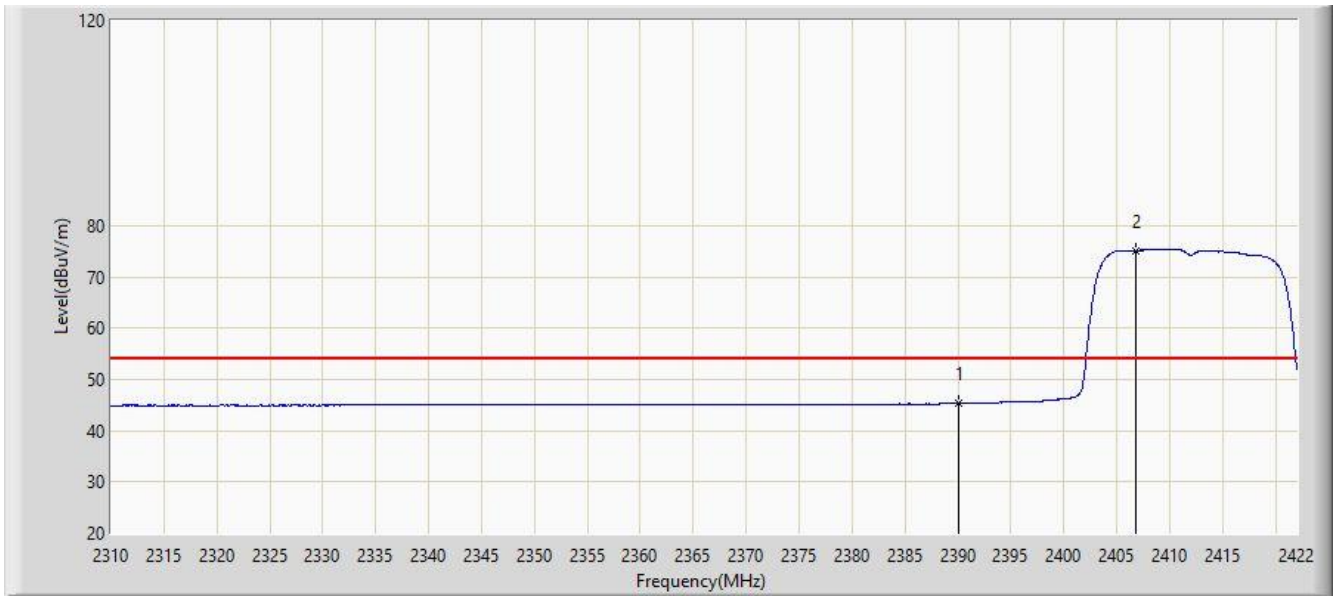


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2368.464	59.834	27.111	-14.166	74.000	32.723	PK
2		2390.000	57.665	24.953	-16.335	74.000	32.712	PK
3	*	2410.128	86.500	53.768	N/A	N/A	32.732	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:43
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at Channel 2412MHz, Ant 1 + 2	

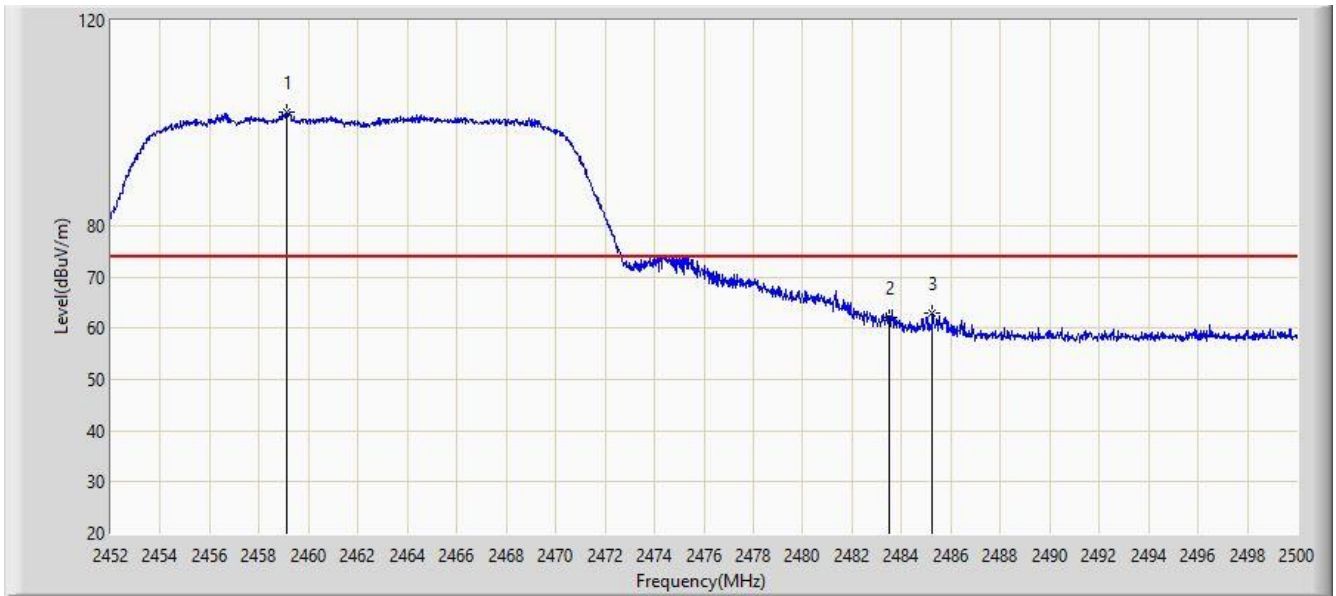


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	45.263	12.551	-8.737	54.000	32.712	AV
2	*	2406.824	75.137	42.400	N/A	N/A	32.737	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:44
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at Channel 2462MHz, Ant 1 + 2	

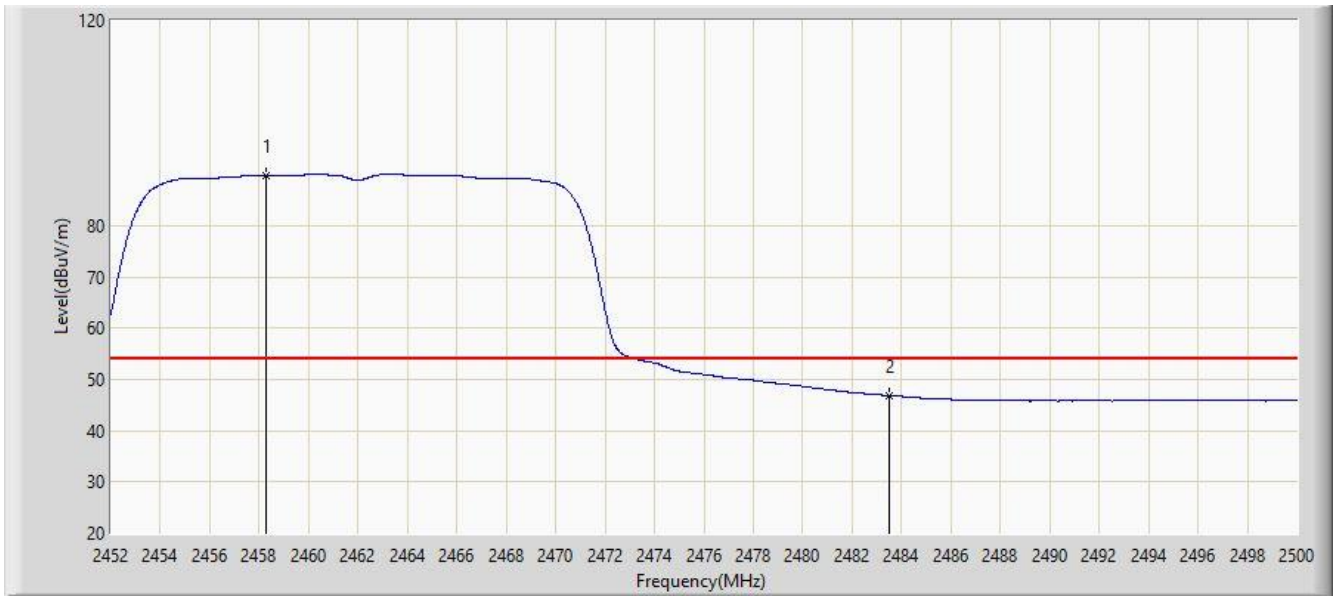


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2459.104	101.997	69.251	N/A	N/A	32.747	PK
2		2483.500	62.048	29.398	-11.952	74.000	32.651	PK
3		2485.264	62.827	30.192	-11.173	74.000	32.635	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:46
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at Channel 2462MHz, Ant 1 + 2	

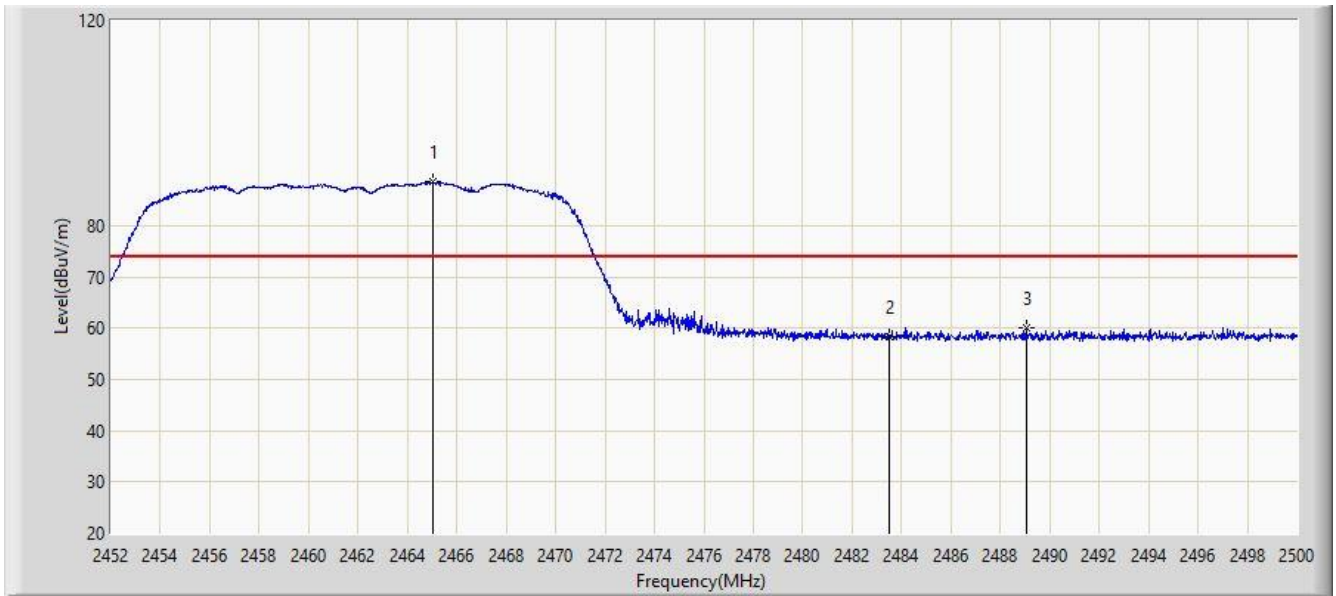


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2458.288	89.721	56.978	N/A	N/A	32.743	AV
2		2483.500	46.865	14.215	-7.135	54.000	32.651	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:46
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at Channel 2462MHz, Ant 1 + 2	

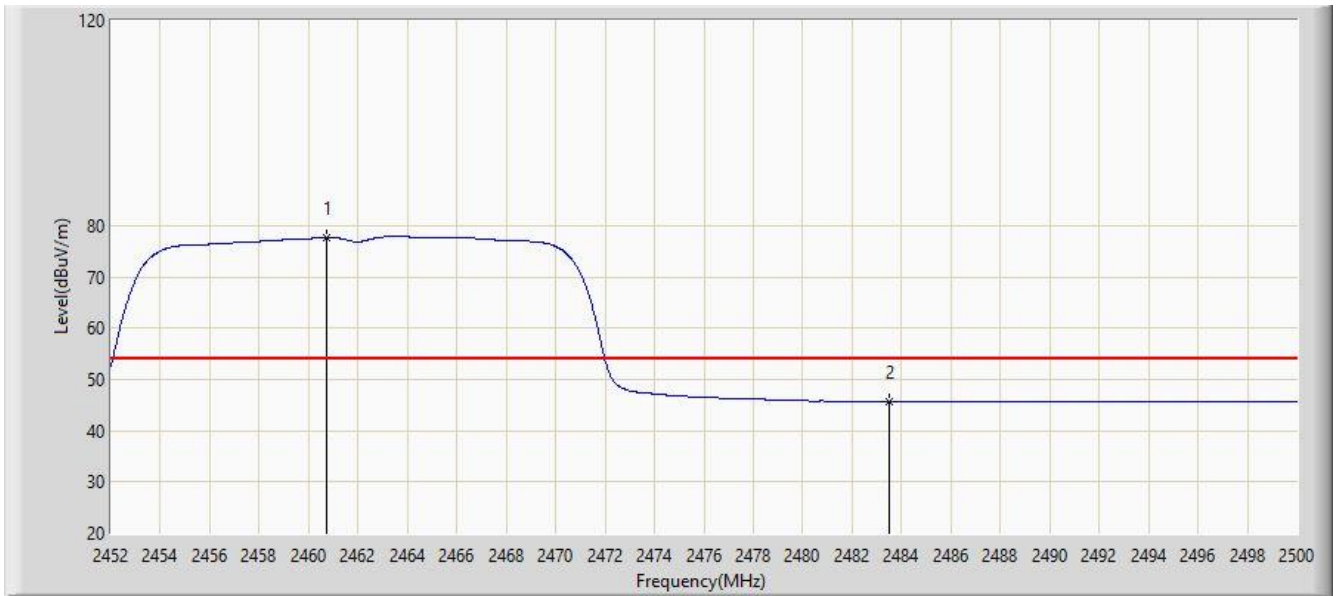


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2465.032	88.504	55.738	N/A	N/A	32.767	PK
2		2483.500	58.420	25.770	-15.580	74.000	32.651	PK
3		2489.032	59.929	27.313	-14.071	74.000	32.616	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:48
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at Channel 2462MHz, Ant 1 + 2	

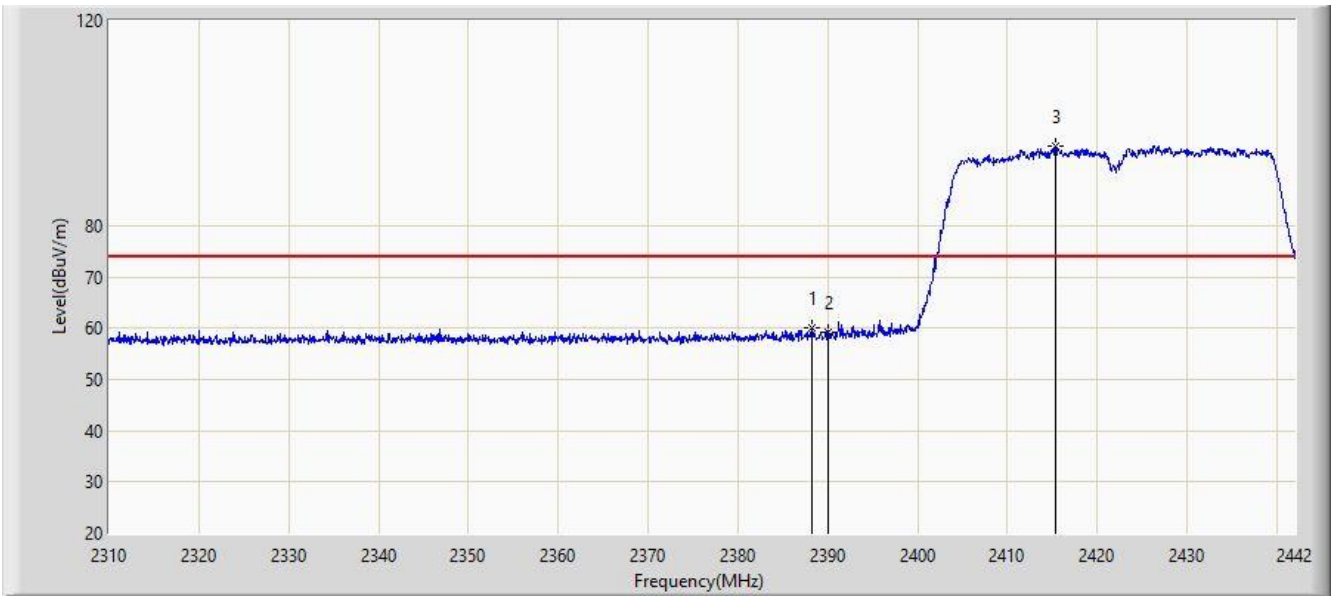


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2460.736	77.611	44.859	N/A	N/A	32.753	AV
2		2483.500	45.641	12.991	-8.359	54.000	32.651	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:48
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at Channel 2422MHz, Ant 1 + 2	

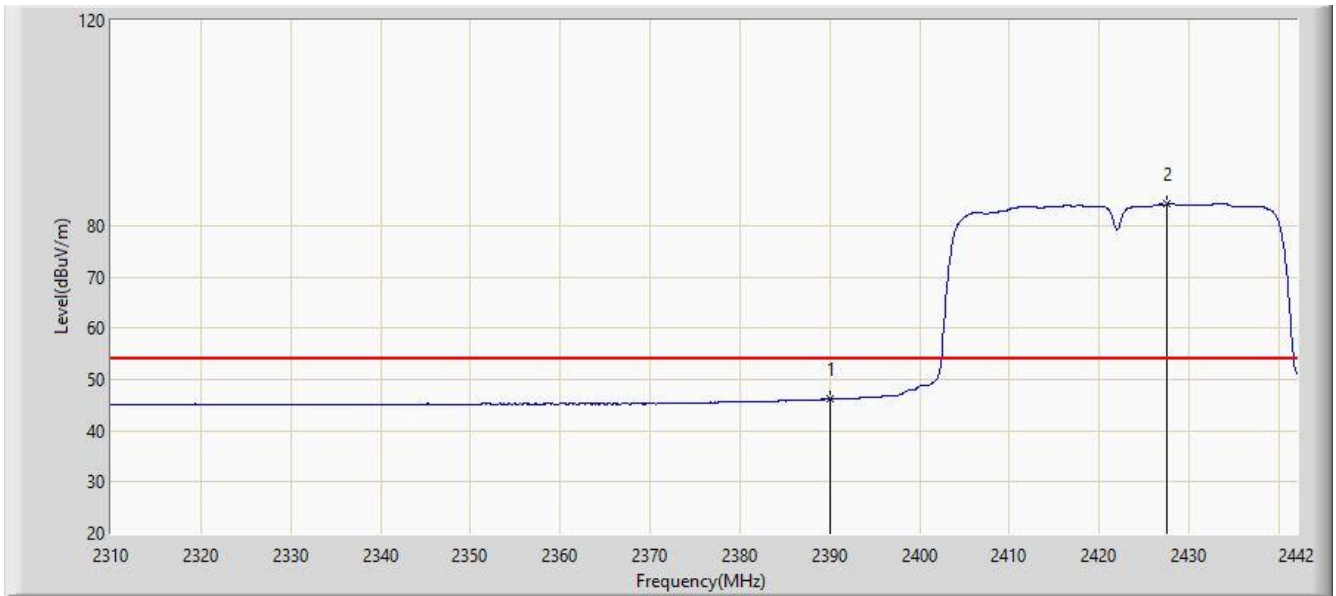


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2388.276	59.932	27.228	-14.068	74.000	32.704	PK
2		2390.000	59.299	26.587	-14.701	74.000	32.712	PK
3	*	2415.336	95.478	62.751	N/A	N/A	32.727	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:50
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at Channel 2422MHz, Ant 1 + 2	



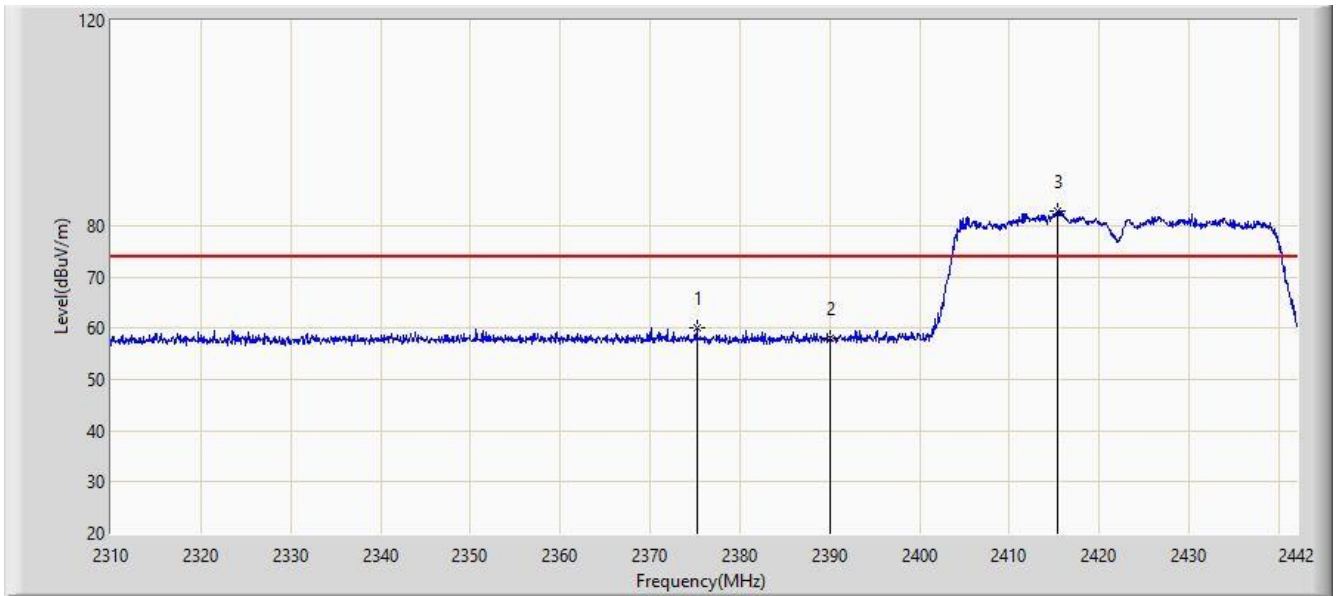
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	46.095	13.383	-7.905	54.000	32.712	AV
2	*	2427.612	84.135	51.388	N/A	N/A	32.747	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)



Site: AC1	Time: 2020/06/29 - 03:51
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at Channel 2422MHz, Ant 1 + 2	

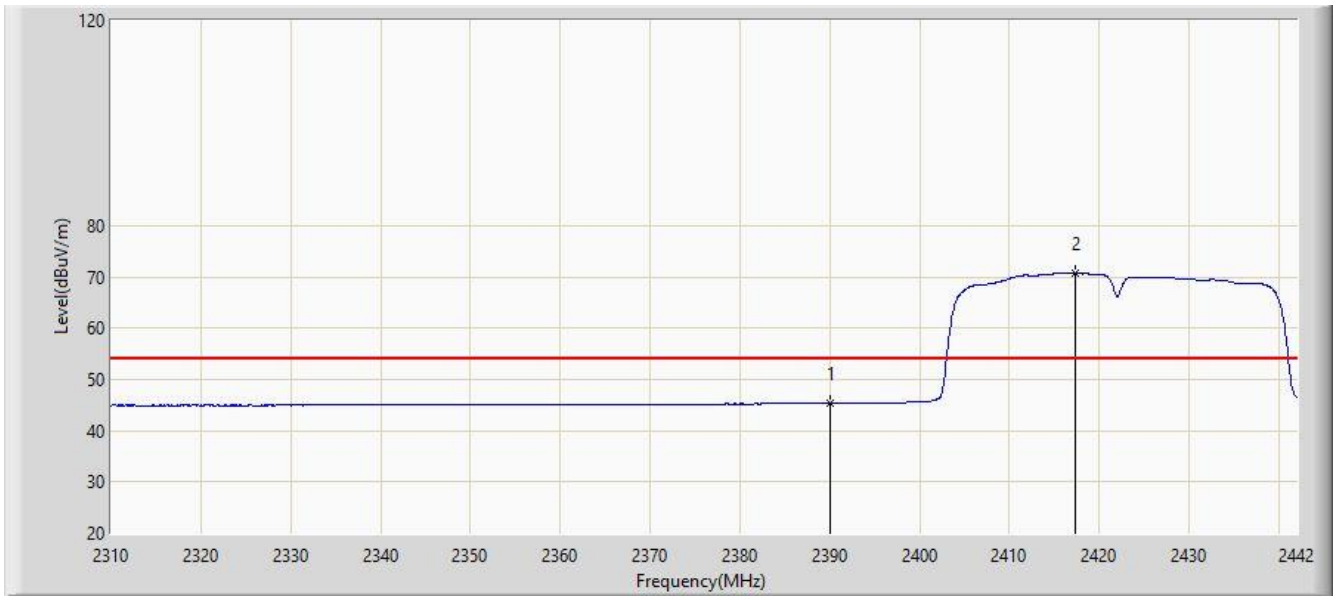


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2375.274	59.919	27.232	-14.081	74.000	32.687	PK
2		2390.000	58.080	25.368	-15.920	74.000	32.712	PK
3	*	2415.336	82.827	50.100	N/A	N/A	32.727	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:52
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at Channel 2422MHz, Ant 1 + 2	

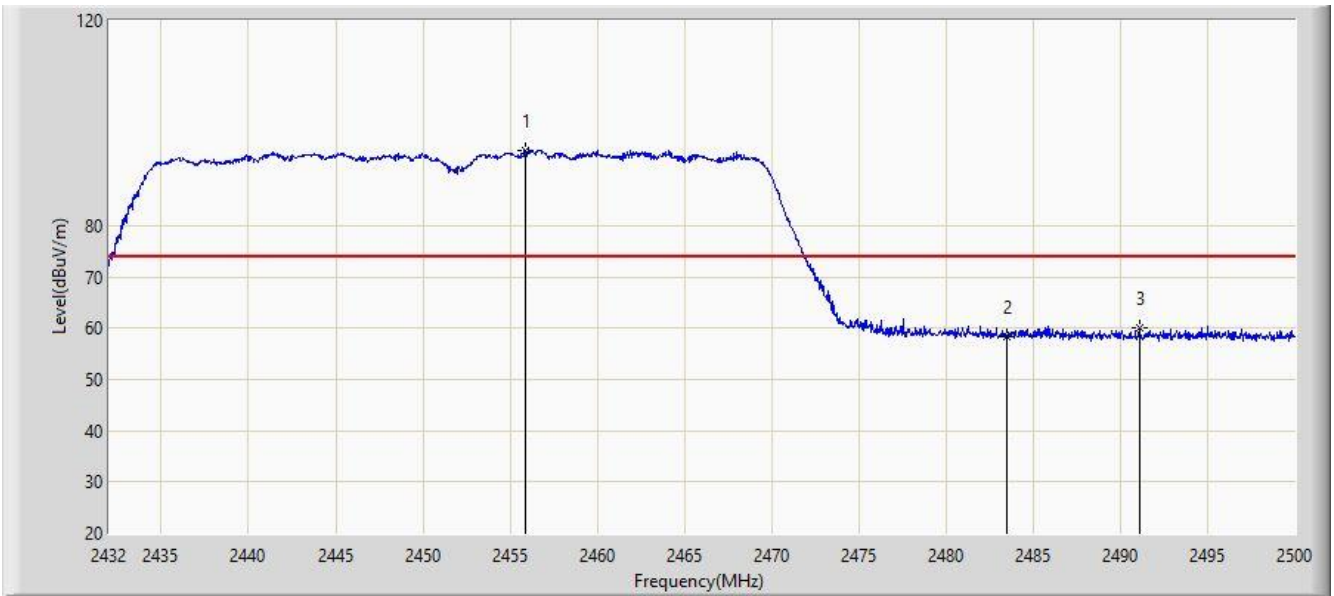


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	45.325	12.613	-8.675	54.000	32.712	AV
2	*	2417.382	70.778	38.049	N/A	N/A	32.729	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:53
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at Channel 2452MHz, Ant 1 + 2	

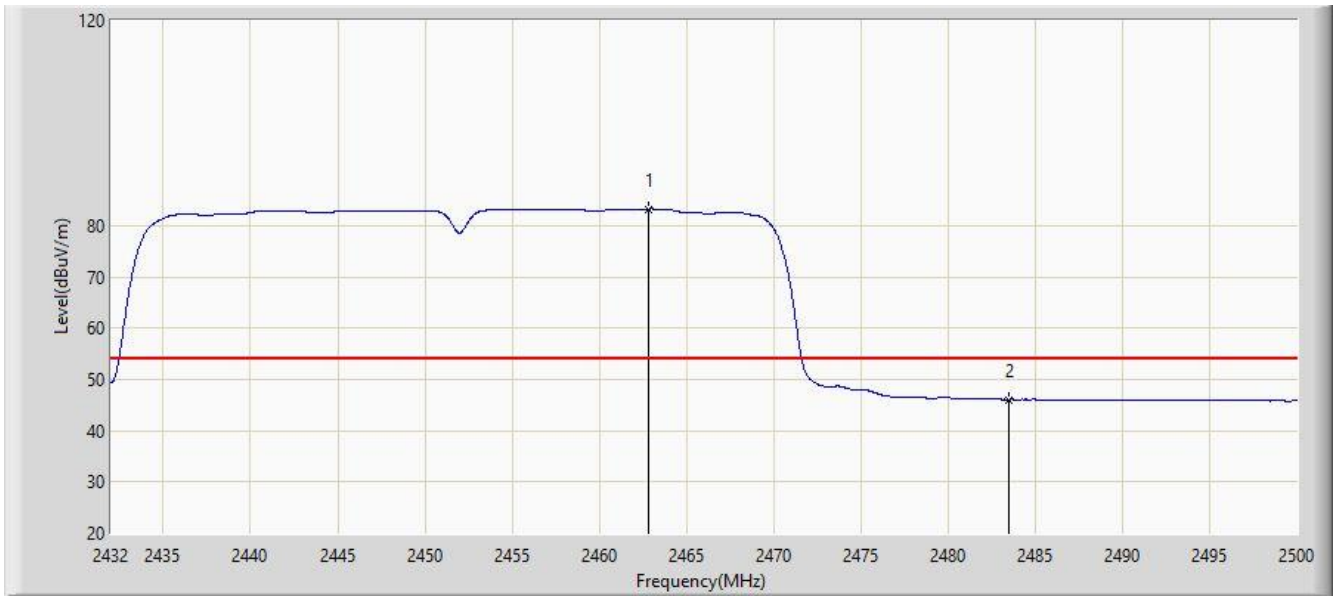


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2455.902	94.721	61.986	N/A	N/A	32.735	PK
2		2483.500	58.438	25.788	-15.562	74.000	32.651	PK
3		2491.092	59.996	27.380	-14.004	74.000	32.616	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:54
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at Channel 2452MHz, Ant 1 + 2	

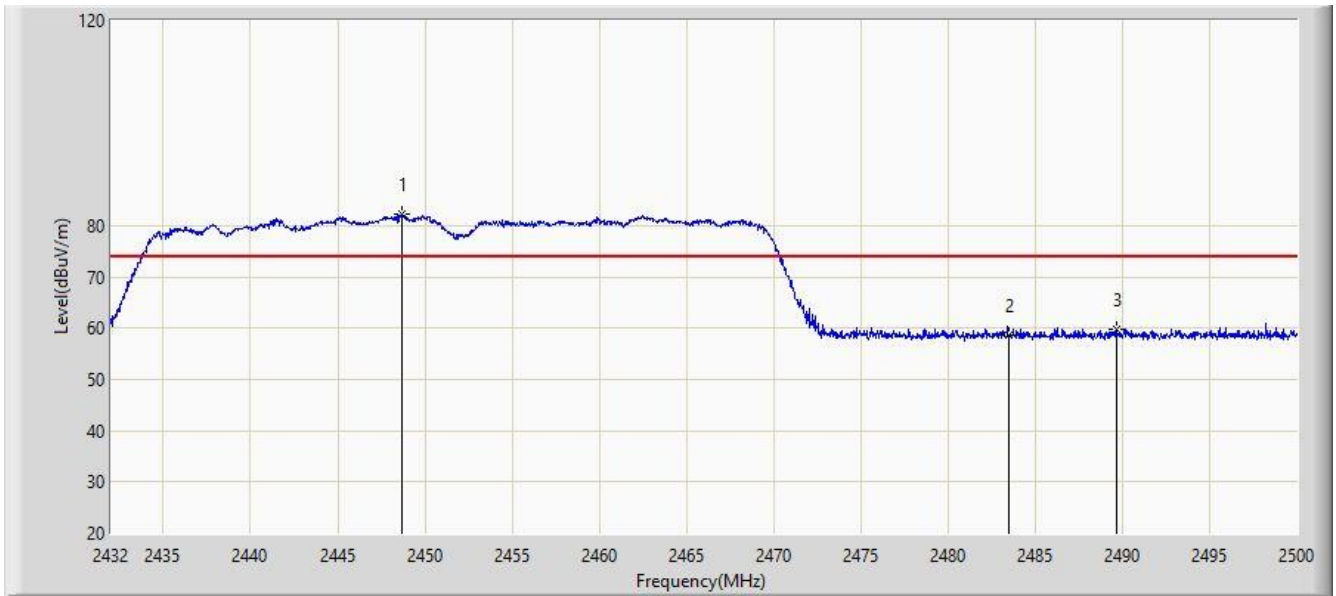


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.804	83.204	50.445	N/A	N/A	32.759	AV
2		2483.500	46.067	13.417	-7.933	54.000	32.651	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:55
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at Channel 2452MHz, Ant 1 + 2	

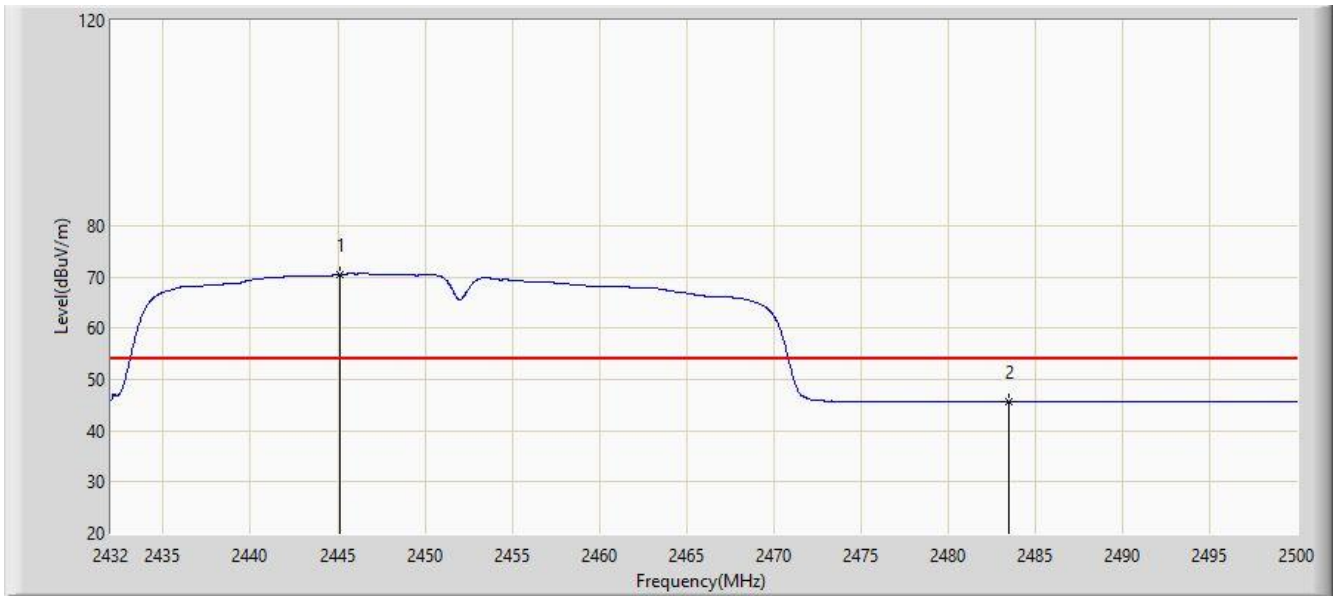


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2448.694	82.189	49.462	N/A	N/A	32.727	PK
2		2483.500	58.536	25.886	-15.464	74.000	32.651	PK
3		2489.630	59.648	27.032	-14.352	74.000	32.616	PK

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: AC1	Time: 2020/06/29 - 03:57
Limit: FCC_Part15.209_RE(3m)	Engineer: Buter Shi
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: 802.11abgn, USB module	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at Channel 2452MHz, Ant 1 + 2	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2445.124	70.483	37.747	N/A	N/A	32.736	AV
2		2483.500	45.648	12.998	-8.352	54.000	32.651	AV

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

## 8. CONCLUSION

The data collected relate only the item(s) tested and show that the device is in compliance with Part 15C of the FCC rules.

————— The End —————

## **Appendix A - Test Setup Photograph**

Refer to "2005RSU029-UT" file.



## **Appendix B - EUT Photograph**

Refer to "2005RSU029-UE" file.