

# RF MEASUREMENT REPORT

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**FCC ID:** 2ALJ3AP45X  
**Applicant:** HAN Networks Co., Ltd.  
**Product:** HAN Access Point  
**Model No.:** AP451  
**Brand Name:** HANNETWORKS; HAN NETWORKS  
**FCC Classification:** Digital Transmission System (DTS)  
**FCC Rule Part(s):** Part 15 Subpart C (Section 15.247)  
**Result:** Complies  
**Test Date:** 2022-04-03 ~ 2022-06-27

**Reviewed By:**

\_\_\_\_\_

**Approved By:**

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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
2203RSU065-U2	Rev. 01	Initial Report	2022-09-20	Valid

Note 1: This report is a copy report of original report 2203RSU064-U2. Only applicant information and Product information (name & model No. & brand name) has changed.

Note 2: AP451 referenced test data from AP351 (FCC ID: 2ALJ3AP35X), only spot check in this report.

This application is based on the differences between the two models as follows:

1. Identical internal printed circuit board layouts, a common design and components.
2. Enable 5150 ~ 5350MHz of High band chip.
3. Enable 5945 ~ 7125MHz and disable 5150 ~ 5350MHz of Low band chip, also disable 160MHz BW of 5GHz Wi-Fi.
4. There's no change of 2.4GHz Wi-Fi, Bluetooth and Wi-Fi Scan mode.

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## 1. General Information

### 1.1. Applicant

HAN Networks Co., Ltd.

101-A16, 1st Floor, Building 3, No.9 compound, Yongfeng Road, Haidian District, Beijing, P.R. China

### 1.2. Manufacturer

HAN Networks Co., Ltd.

101-A16, 1st Floor, Building 3, No.9 compound, Yongfeng Road, Haidian District, Beijing, P.R. China

### 1.3. Testing Facility

<input checked="" type="checkbox"/>	<p><b>Test Site – MRT Suzhou Laboratory</b></p> <p><b>Laboratory Location (Suzhou - Wuzhong)</b> D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China</p> <p><b>Laboratory Location (Suzhou - SIP)</b> 4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China</p> <p><b>Laboratory Accreditations</b></p> <p>A2LA: 3628.01 FCC: CN1166 VCCI: <input type="checkbox"/>R-20025 <input type="checkbox"/>G-20034 <input type="checkbox"/>C-20020 <input type="checkbox"/>T-20020 <input type="checkbox"/>R-20141 <input type="checkbox"/>G-20134 <input type="checkbox"/>C-20103 <input type="checkbox"/>T-20104</p> <p>CNAS: L10551 ISED: CN0001</p>
<input type="checkbox"/>	<p><b>Test Site – MRT Shenzhen Laboratory</b></p> <p><b>Laboratory Location (Shenzhen)</b> 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China</p> <p><b>Laboratory Accreditations</b></p> <p>A2LA: 3628.02 FCC: CN1284</p> <p>CNAS: L10551 ISED: CN0105</p>
<input type="checkbox"/>	<p><b>Test Site – MRT Taiwan Laboratory</b></p> <p><b>Laboratory Location (Taiwan)</b> No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)</p> <p><b>Laboratory Accreditations</b></p> <p>TAF: L3261-190725 FCC: 291082, TW3261 ISED: TW3261</p>

#### 1.4. Product Information

Product Name	HAN Access Point
Model No.	AP451
EUT Identification No.	20220324Sanmple#09 (Radiated) 20220324Sanmple#10 (Conducted)
Wi-Fi Specification	802.11a/b/g/n/ac/ax
Bluetooth Specification	V5.1 Single Mode
Antenna Information	Refer to Section 1.7
Power Type	AC Adapter Input or PoE Input
Operating Environment	Indoor Use
Accessories	
AC Adapter	Model: ADP-50GR B Input: 100-240V ~ 50/60Hz, 1.3A Output: 48.0V, 1.042A, 50.1W MAX
PoE Injector	Model: POE60U-1BT-X Input: 100-240V ~ 1.5A, 50/60Hz Output: 56.0V, 0.535A, 30W PIN 3, 6+ PIN 1, 2 Return Output: 56.0V, 0.535A, 30W PIN 4, 5+ PIN 7, 8 Return
Remark:	
<ol style="list-style-type: none"> <li>The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.</li> <li>AC Power Adapter and PoE Injector are not sold with Product.</li> <li>For this report, we select AC Adapter for testing.</li> </ol>	

### 1.5. Radio Specification

Frequency Range	802.11b/g/n-HT20/ax-HE20: 2412 ~ 2462MHz 802.11n-HT40/ax-HE40: 2422 ~ 2452MHz
Channel Number	802.11b/g/n-HT20/ax-HE20: 11 802.11n-HT40/ax-HE40: 7
Type of Modulation	802.11b: DSSS 802.11g/n: OFDM 802.11ax: OFDMA
Data Rate	802.11b: 1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 600Mbps 802.11ax: up to 1147.2Mbps

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

## 1.6. Working Frequencies

### 802.11b/g/n-HT20/ax-HE20

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/ax-HE40

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	--	--	--	--



**1.7. Description of Available Antennas**

Antenna Type	Frequency Band (MHz)	Tx Paths	Max Antenna Gain (dBi)	Directional Gain (dBi)		Beamforming Directional Gain (dBi)
				For Power	For PSD	
<b>Wi-Fi Antennas</b>						
PIFA	2400 ~ 2483.5	4	3.9	3.9	9.92	9.92
PIFA & Dipole	5150 ~ 5850	8	3.9	BW ≥ 40M, 3.9 BW=20M, 6.9	12.93	12.93
Dipole	5925 ~ 7125	4	3.8	3.8	9.82	9.82
<b>Scan Antenna</b>						
Dipole	2400 ~ 2483.5	1	3.5	3.5	3.5	--
Dipole	5150 ~ 5250 & 5725 ~ 5850	1	3.9	3.9	3.9	--
<b>Bluetooth Antenna</b>						
Dipole	2400 ~ 2483.5	1	3.5	3.5	3.5	--
Remark: <ol style="list-style-type: none"> <li>The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated. For CDD transmissions, directional gain is calculated as follows.                              Directional gain = <math>G_{ANT\ Max} + \text{Array Gain}</math>, where Array Gain is as follows.                             <ul style="list-style-type: none"> <li>For power spectral density (PSD) measurements on all devices,                                      Array Gain = <math>10 \log (N_{ANT} / N_{SS})</math> dB;</li> <li>For power measurements on IEEE 802.11 devices,                                      Array Gain = 0 dB for <math>N_{ANT} \leq 4</math>;                                      Array Gain = 0 dB for channel widths <math>\geq 40</math> MHz for any <math>N_{ANT}</math>;                                      Array Gain = <math>5 \log(N_{ANT} / N_{SS})</math> dB or 3 dB, whichever is less, for 20MHz channel widths with <math>N_{ANT} \geq 5</math>.</li> </ul> </li> <li>The EUT also supports Beam Forming mode, and the Beam Forming support 802.11n/ac/ax, not include 802.11a/b/g. Beamforming Directional gain = <math>G_{ANT\ Max} + 10 \log (N_{ANT} / N_{SS})</math>.</li> </ol>						

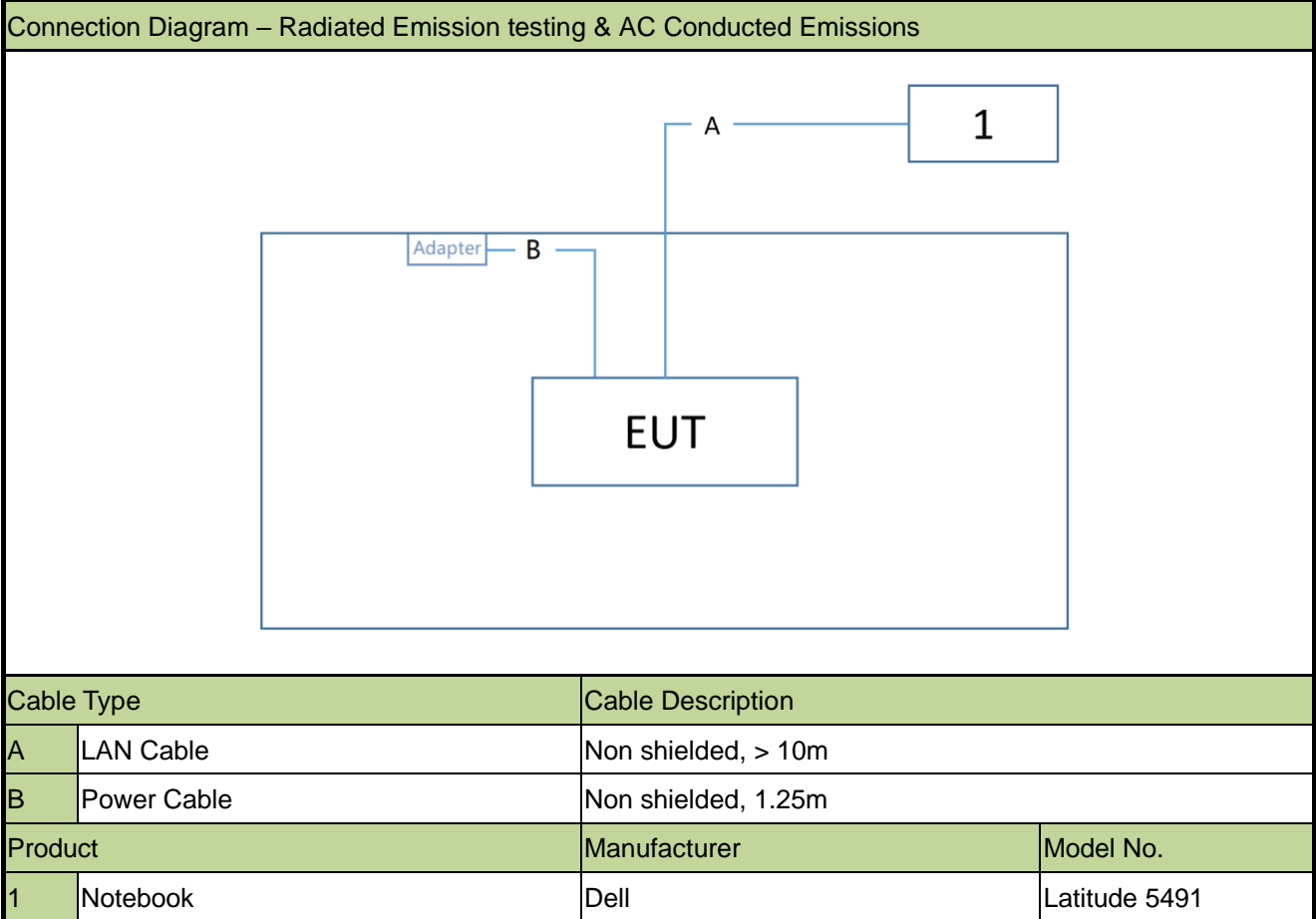
## 2. Test Configuration

### 2.1. Test Mode

Mode 1: Transmit by 802.11b (1Mbps) – CDD mode
Mode 2: Transmit by 802.11ax-HE20 (MCS0) – CDD mode
Mode 3: Transmit by 802.11ax-HE40 (MCS0) – CDD mode
Mode 4: Transmit by 802.11b (1Mbps) – Scan Mode
Mode 5: Transmit by 802.11n-HT40 (MCS0) – Scan Mode
Remark: <ol style="list-style-type: none"><li>1. For radiated spurious emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power.</li><li>2. This device supports 4 Nss and power level is the same of spatial multiplexing. The worst case is Nss=1.</li><li>3. After preliminary scan designated by the manufacturer, CDD mode is determined to be the worst case compared to Beamforming mode, hence, all the radiated test is performed in CDD mode.</li><li>4. For beamforming operation, manufacturer automatically backs power down based on CDD power. Therefore, only the CDD mode was evaluated in this report.</li><li>5. EUT supports one configuration only in 802.11ax full RU mode.</li></ol>

## 2.2. Test System Connection Diagram

The device was tested per the guidance ANSI C63.10: 2013 was used to reference the appropriate EUT setup for radiated emissions testing and AC line conducted testing.



### 2.3. Test Software

The test utility software used during testing was “QSPR”, and the version was 5.0-00099.

### 2.4. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15.247
- KDB 558074 D01v05r02
- KDB 662911 D01v02r01
- ANSI C63.10-2013
- KDB 484596 D01v01

### 2.5. Test Environment Condition

Ambient Temperature	15 ~ 35°C
Relative Humidity	20 ~ 75%RH

### 3. 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.

#### 4. Measuring Instrument

Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2022-12-29	WZ-AC1
Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06023	1 year	2022-09-16	WZ-AC1
Preamplifier	Agilent	83017A	MRTSUE06076	1 year	2022-11-12	WZ-AC1
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2022-08-05	WZ-AC1
Anechoic Chamber	TDK	WZ-AC1	MRTSUE06212	1 year	2022-04-29	WZ-AC1
Anechoic Chamber	TDK	WZ-AC1	MRTSUE06212	1 year	2023-04-21	WZ-AC1
Thermohygrometer	testo	608-H1	MRTSUE06403	1 year	2022-06-28	WZ-AC1
Signal Analyzer	Keysight	N9010B	MRTSUE06607	1 year	2022-12-29	WZ-AC1
Thermohygrometer	testo	Testo 608-H1	MRTSUE11039	1 year	2022-11-11	WZ-AC1
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2022-10-28	WZ-AC1
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06597	1 year	2022-12-01	WZ-AC1
Preamplifier	EMCI	EMC184045SE	MRTSUE06640	1 year	2023-01-13	WZ-AC1
Two-Line V-Network	R&S	ENV216	MRTSUE06002	1 year	2022-06-08	WZ-SR2
Two-Line V-Network	R&S	ENV216	MRTSUE06002	1 year	2023-06-04	WZ-SR2
Shielding Room	MIX-BEP	WZ-SR2	MRTSUE06215	N/A	N/A	WZ-SR2
Thermohygrometer	testo	608-H1	MRTSUE06404	1 year	2022-06-28	WZ-SR2
Four-Line V-Network	R&S	ENV432	MRTSUE06615	1 year	2022-10-13	WZ-SR2
EMI Test Receiver	R&S	ESR3	MRTSUE06909	1 year	2022-11-01	WZ-SR2
USB Power Sensor	Keysight	U2021XA	MRTSUE06446	1 year	2022-06-08	WZ-SR5
USB Power Sensor	Keysight	U2021XA	MRTSUE06446	1 year	2023-06-04	WZ-SR5
Thermohygrometer	testo	608-H1	MRTSUE06402	1 year	2022-06-28	WZ-SR5
Shielding Room	HUAMING	WZ-SR5	MRTSUE06442	N/A	N/A	WZ-SR5
Attenuator	MVE	MVE2213	MRTSUE11072	1 year	2022-06-10	WZ-SR5
Attenuator	MVE	MVE2213	MRTSUE11072	1 year	2023-06-09	WZ-SR5

Software	Version	Function
EMI Software	V3.0.0	EMI Test Software
Controller_MF 7802	2.03C	RE Antenna&turntable
BenchVue Power Meter	2021	Power

## 5. Decision Rules and Measurement Uncertainty

### 5.1. Decision Rules

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

### 5.2. 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  $k = 2$ .

<b>AC Conducted Emission Measurement</b>
Measurement Uncertainty for a Level of Confidence of 95% ( $U=2Uc(y)$ ): 9kHz~150kHz: 3.74dB 150kHz~30MHz: 3.44dB
<b>Radiated Disturbance</b>
Measurement Uncertainty for a Level of Confidence of 95% ( $U=2Uc(y)$ ): Horizontal: 30MHz~300MHz: 5.04dB 300MHz~1GHz: 4.95dB 1GHz~40GHz: 6.40dB Vertical: 30MHz~300MHz: 5.24dB 300MHz~1GHz: 6.03dB 1GHz~40GHz: 6.40dB
<b>Output Power</b>
Measuring Uncertainty for a Level of Confidence of 95% ( $U=2Uc(y)$ ): 1.13dB

## 6. Test Result

### 6.1. Summary

FCC Section(s)	Test Description	Test Condition	Verdict
15.247(b)(3)	Output Power	Conducted	Pass
15.205 15.209	General Field Strength (Restricted Bands and Radiated Emission)	Radiated	Pass
15.207	AC Conducted Emissions 150kHz - 30MHz	Line Conducted	Pass

**Remark:**

1. 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.
2. For radiated emission tests, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst-case emissions.



**2.4G Wi-Fi spot check list**

Test Items	Test Mode	Test Channel	Test Frequency (MHz)
Output power	802.11b	01	2412
	802.11b	11	2462
	802.11ax-HE20	11	2462
	802.11ax-HE40	03	2422
Radiated Spurious Emission	802.11b	01	2412
	802.11b	11	2462
	802.11ax-HE20	11	2462
	802.11ax-HE40	03	2422
AC Conducted Emissions	802.11ax-HE20	11	2462

**Scan Mode spot check list**

Test Items	Test Mode	Test Channel	Test Frequency (MHz)
Output power	802.11b	01	2412
	802.11b	11	2462
	802.11n-HT40	03	2422
	802.11n-HT40	06	2437
	802.11n-HT40	09	2452
Radiated Spurious Emission	802.11b	01	2412
	802.11b	11	2462
Radiated Band Edge	802.11n-HT40	03	2422
	802.11n-HT40	09	2452

## **6.2. Output Power Measurement**

### **6.2.1. Test Limit**

The maximum output 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.

### **6.2.2. Test Procedure**

ANSI C63.10-2013 Section 11.9.1.3

ANSI C63.10 - 2013 - Section 11.9.2.3.2

### **6.2.3. Test Setting**

#### **Method PKPM1 (Peak Power Measurement)**

Peak power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The pulse sensor employs a VBW = 50MHz so this method was only used for signals whose DTS bandwidth was less than or equal to 50MHz.

#### **Average Power Measurement**

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.

#### 6.2.4. Test Setup



#### 6.2.5. Test Result

Refer to Appendix A.1.

### 6.3. Radiated Spurious Emission Measurement

#### 6.3.1. 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 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [ $\mu\text{V/m}$ ]	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

#### 6.3.2. Test Procedure

ANSI C63.10 - 2013 - Section 11.11 & 11.12

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)

#### 6.3.3. 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
> 1000MHz	1MHz

**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**

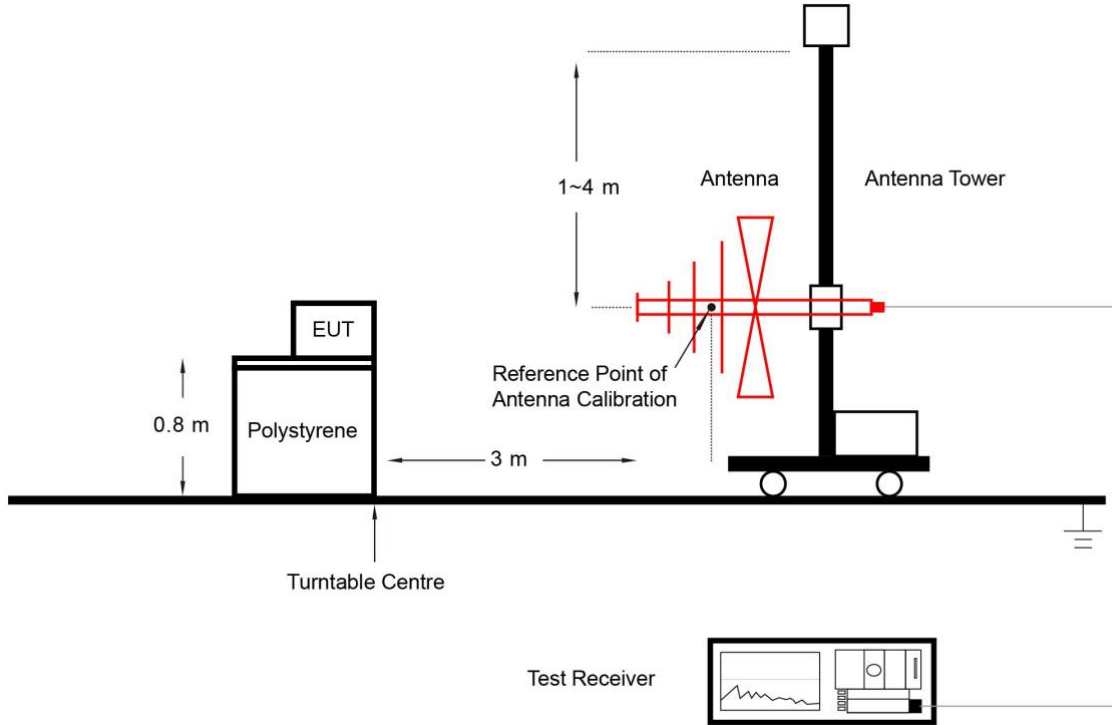
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

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

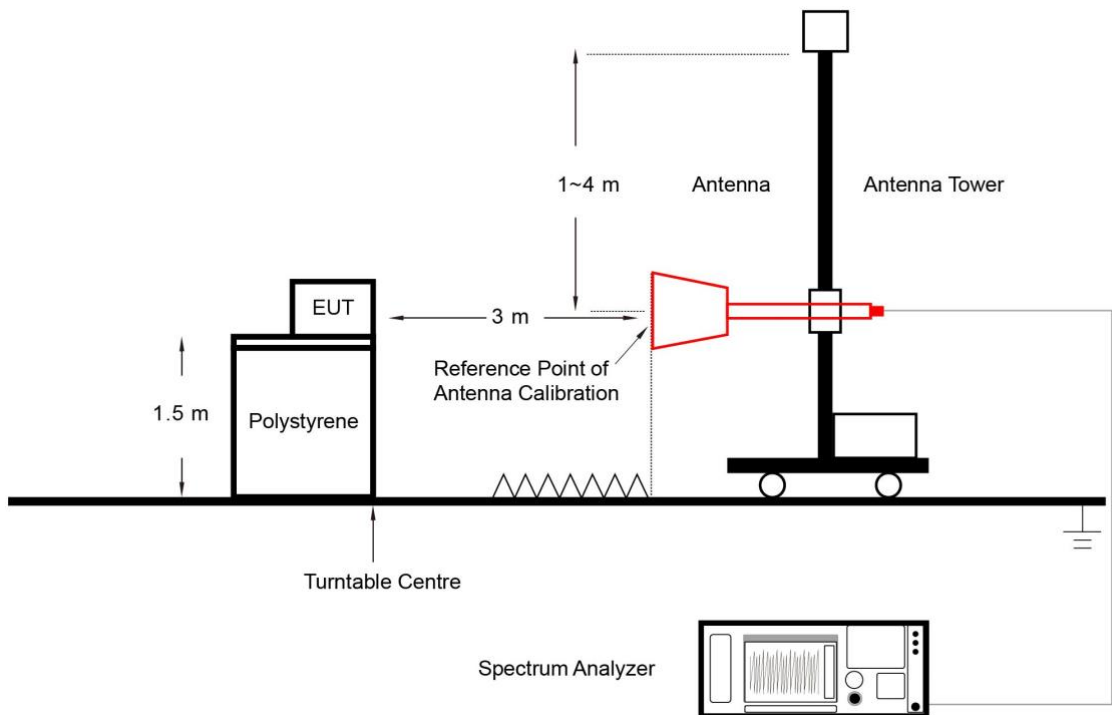
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle  $\geq 98\%$ , set VBW = 10 Hz.  
If the EUT duty cycle is  $< 98\%$ , set VBW  $\geq 1/T$ . T is the minimum transmission duration.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

### 6.3.4. Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



### 6.3.5. Test Result

Refer to Appendix A.2.

## 6.4. Radiated Restricted Band Edge Measurement

### 6.4.1. Test Limit

#### For 15.205 requirement:

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
<sup>1</sup> 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 per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [ $\mu\text{V}/\text{m}$ ]	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

#### 6.4.2. Test Procedure

ANSI C63.10-2013 Section 6.3 & 6.6 & 11.13

#### 6.4.3. Test Setting

##### Peak Field Strength Measurements

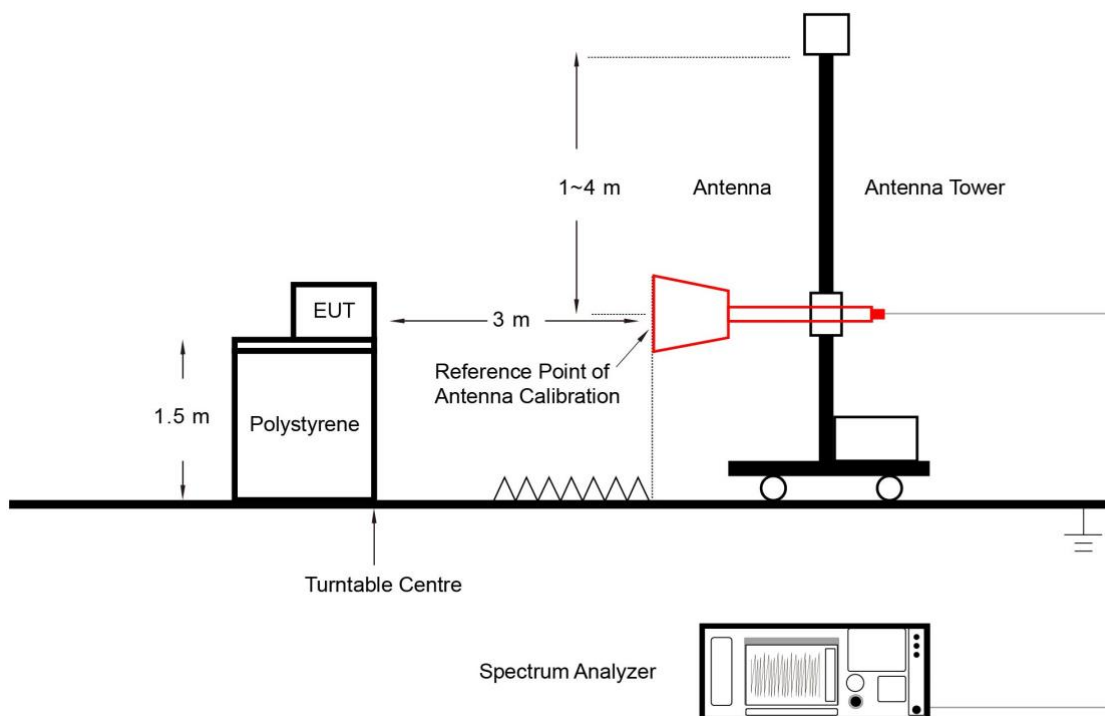
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize



### 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  $\geq 1/T$
4. As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode
5. Detector = Peak
6. Sweep time = auto
7. Trace mode = max hold
8. Allow max hold to run for at least 50 times (1/duty cycle) traces

#### 6.4.4. Test Setup



#### 6.4.5. Test Result

Refer to Appendix A.3.

## 6.5. AC Conducted Emissions Measurement

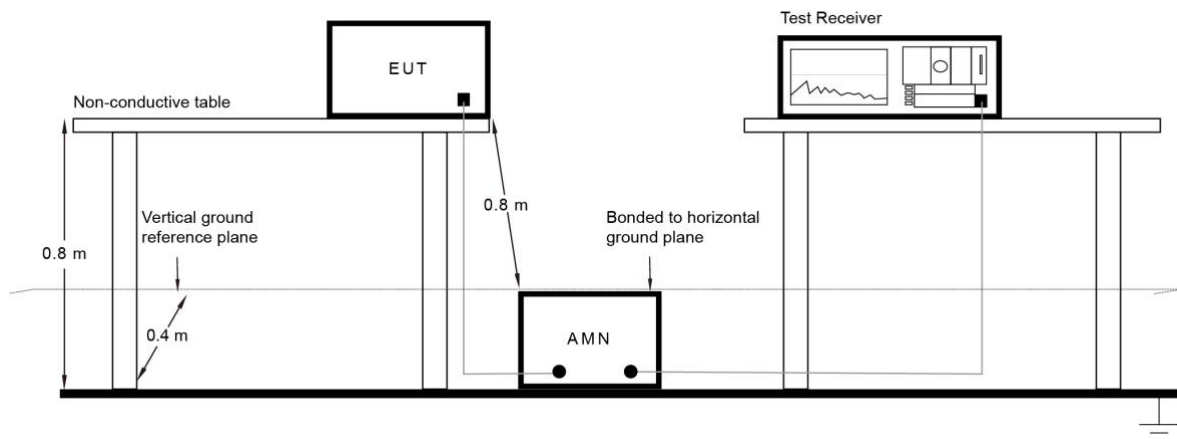
### 6.5.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dB $\mu$ V)	AV (dB $\mu$ V)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

### 6.5.2. Test Setup



### 6.5.3. Test Result

Refer to Appendix A.4.

## Appendix A – Test Result

### A.1 Output Power Test Result

Test Site	WZ-SR5	Test Engineer	Liz Yuan
Test Date	2022/04/26		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Average Power (dBm)				Total Average Power (dBm)	Limit (dBm)
				Ant 0	Ant 1	Ant 2	Ant 3		
11b	1Mbps	01	2412	17.62	17.65	17.78	17.72	23.71	≤ 30.00
11b	1Mbps	11	2462	17.92	17.83	17.92	17.52	23.82	≤ 30.00
11ax-HE20	MCS0	11	2462	16.21	16.39	16.40	16.20	22.32	≤ 30.00
11ax-HE40	MCS0	03	2422	15.29	15.34	15.43	15.26	21.35	≤ 30.00

Note: Total Average Power (dBm) =  $10 \cdot \log \{10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)} + 10^{(\text{Ant 2 Average Power} / 10)} + 10^{(\text{Ant 3 Average Power} / 10)}\}$ .

### Scan Mode

Test Site	WZ-SR5	Test Engineer	Liz Yuan
Test Date	2022/04/26		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Peak Power (dBm)	Average Power (dBm)	Limit (dBm)
11b	1Mbps	01	2412	19.58	16.72	≤ 30.00
11b	1Mbps	11	2462	17.85	14.85	≤ 30.00
11n-HT40	MCS0	03	2422	13.85	8.86	≤ 30.00
11n-HT40	MCS0	06	2437	20.85	16.08	≤ 30.00
11n-HT40	MCS0	09	2452	10.56	5.16	≤ 30.00

**A.2 Radiated Spurious Emission Test Result**

Test Site	WZ-AC1	Test Engineer	Kin Xia
Test Date	2022/04/03	Test Mode:	802.11b
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.		

Test Channel	Frequency (MHz)	Reading Level (dB $\mu$ V)	Factor (dB/m)	Measure Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Detector	Polarization
01	4825.0	48.3	3.1	51.4	74.0	-22.6	Peak	Horizontal
	10928.0	34.3	12.8	47.1	74.0	-26.9	Peak	Horizontal
	12067.0	36.7	12.2	48.9	74.0	-25.1	Peak	Horizontal
	4825.0	46.2	3.1	49.3	74.0	-24.7	Peak	Vertical
	12084.0	36.7	12.1	48.8	74.0	-25.2	Peak	Vertical
	4825.0	48.3	3.1	51.4	74.0	-22.6	Peak	Vertical
11	4944.0	47.2	3.4	50.6	74.0	-23.4	Peak	Horizontal
	11157.5	35.6	12.7	48.3	74.0	-25.7	Peak	Horizontal
	12194.5	35.7	12.1	47.8	74.0	-26.2	Peak	Horizontal
	4944.0	48.1	3.4	51.5	74.0	-22.5	Peak	Vertical
	10894.0	35.4	12.7	48.1	74.0	-25.9	Peak	Vertical
	12050.0	35.1	12.3	47.4	74.0	-26.6	Peak	Vertical

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

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

**Scan Mode**

Test Site	WZ-AC1	Test Engineer	Kin Xia
Test Date	2022/06/27	Test Mode:	802.11b
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.		

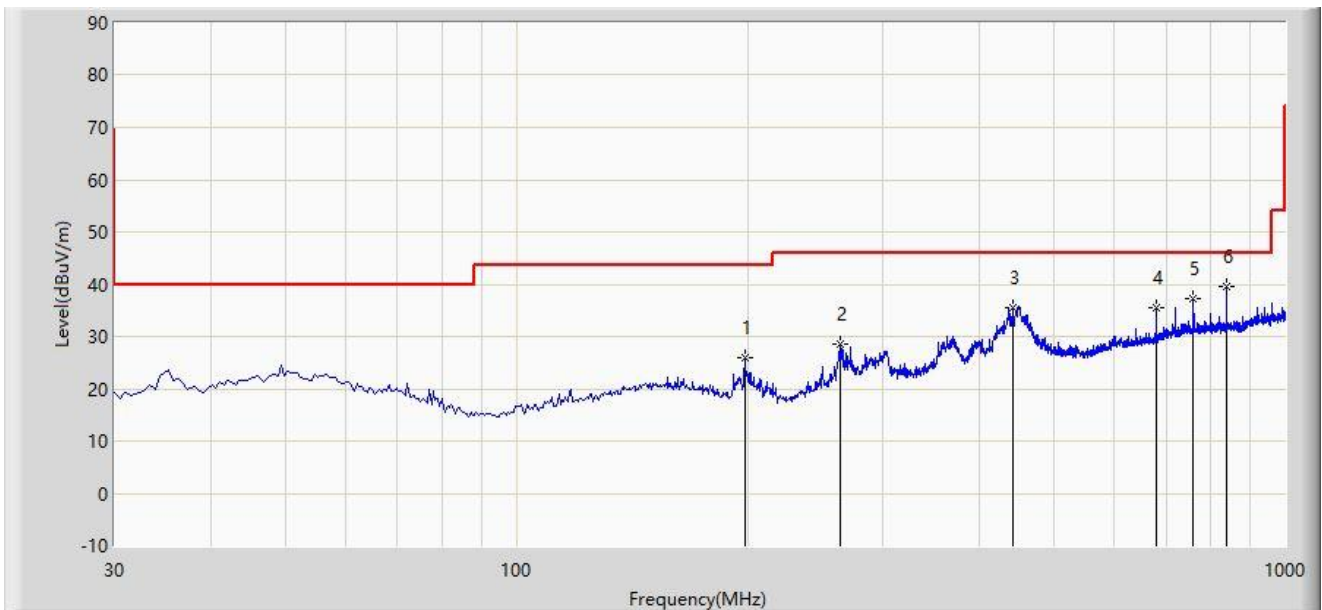
Test Channel	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
01	4825.0	45.1	3.1	48.2	74.0	-25.8	Peak	Horizontal
	7587.5	37.9	7.9	45.8	74.0	-28.2	Peak	Horizontal
	12160.5	36.5	12.2	48.7	74.0	-25.3	Peak	Horizontal
	4825.0	45.9	3.1	49.0	74.0	-25.0	Peak	Vertical
	7562.0	37.1	7.9	45.0	74.0	-29.0	Peak	Vertical
	11531.5	36.5	12.4	48.9	74.0	-25.1	Peak	Vertical
11	4927.0	47.5	3.4	50.9	74.0	-23.1	Peak	Horizontal
	7604.5	37.2	7.9	45.1	74.0	-28.9	Peak	Horizontal
	11659.0	36.4	12.1	48.5	74.0	-25.5	Peak	Horizontal
	4927.0	47.9	3.4	51.3	74.0	-22.7	Peak	Vertical
	8327.0	36.5	8.6	45.1	74.0	-28.9	Peak	Vertical
	11404.0	36.3	12.6	48.9	74.0	-25.1	Peak	Vertical

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

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

**The Result of Radiated Emission below 1GHz:**

Site: WZ-AC1	Time: 2022/04/03
Limit: FCC_Part15.209_RSE(3m)	Engineer: Carl Jiang
Probe: VULB 9168_25-2000MHz	Polarity: Horizontal
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2412MHz (2.4G Wi-Fi module)	



No	Mark	Frequency (MHz)	Measure Level (dB $\mu$ V/m)	Reading Level (dB $\mu$ V)	Margin (dB)	Limit (dB $\mu$ V/m)	Factor (dB/m)	Type
1		198.295	25.836	11.457	-17.664	43.500	14.379	PK
2		263.285	28.646	11.837	-17.354	46.000	16.809	PK
3		441.765	35.522	13.452	-10.478	46.000	22.070	PK
4		679.900	35.474	9.172	-10.526	46.000	26.302	PK
5		759.925	37.312	9.439	-8.688	46.000	27.873	PK
6	*	839.950	39.422	10.580	-6.578	46.000	28.842	PK

Note 1: " \* ", means this data is the worst emission level.

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

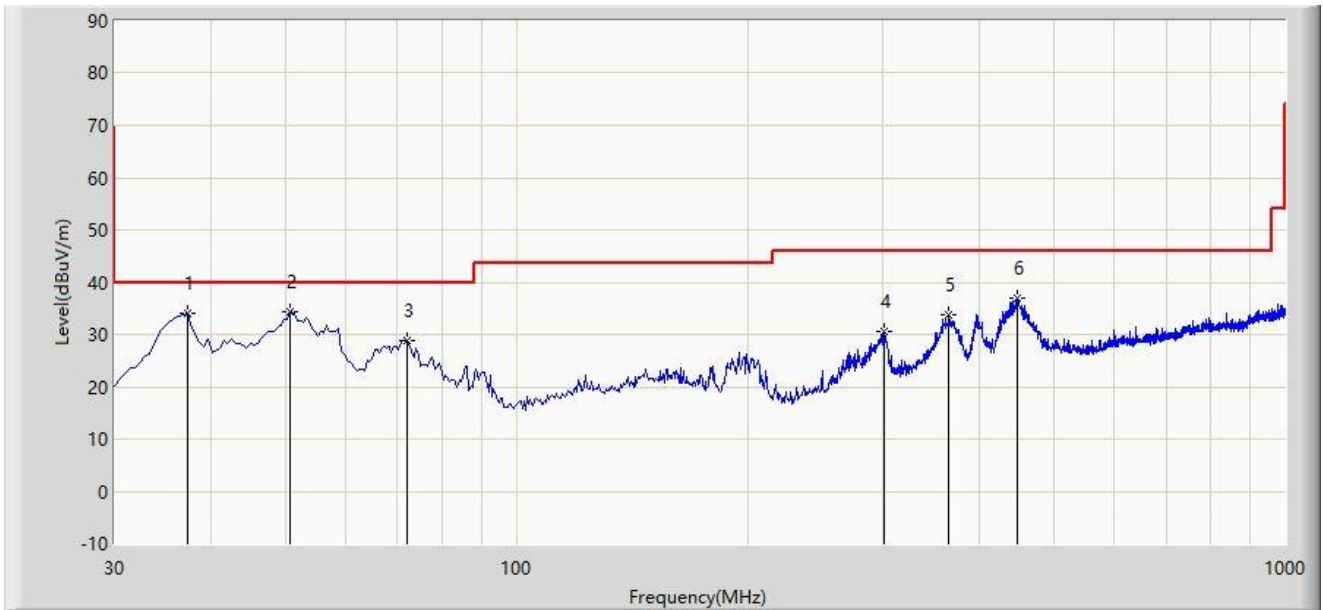
Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 4: Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Note 5: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 25GHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value.

Therefore, the data is not presented in the report.

Site: WZ-AC1	Time: 2022/04/03
Limit: FCC_Part15.209_RSE(3m)	Engineer: Carl Jiang
Probe: VULB 9168_25-2000MHz	Polarity: Vertical
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11b at Channel 2412MHz (2.4G Wi-Fi module)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		37.275	33.998	16.670	-6.002	40.000	17.328	PK
2	*	50.855	34.327	15.837	-5.673	40.000	18.490	PK
3		72.195	28.741	13.278	-11.259	40.000	15.462	PK
4		300.630	30.570	12.412	-15.430	46.000	18.158	PK
5		364.650	33.814	13.976	-12.186	46.000	19.838	PK
6		447.585	36.935	14.738	-9.065	46.000	22.196	PK

Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

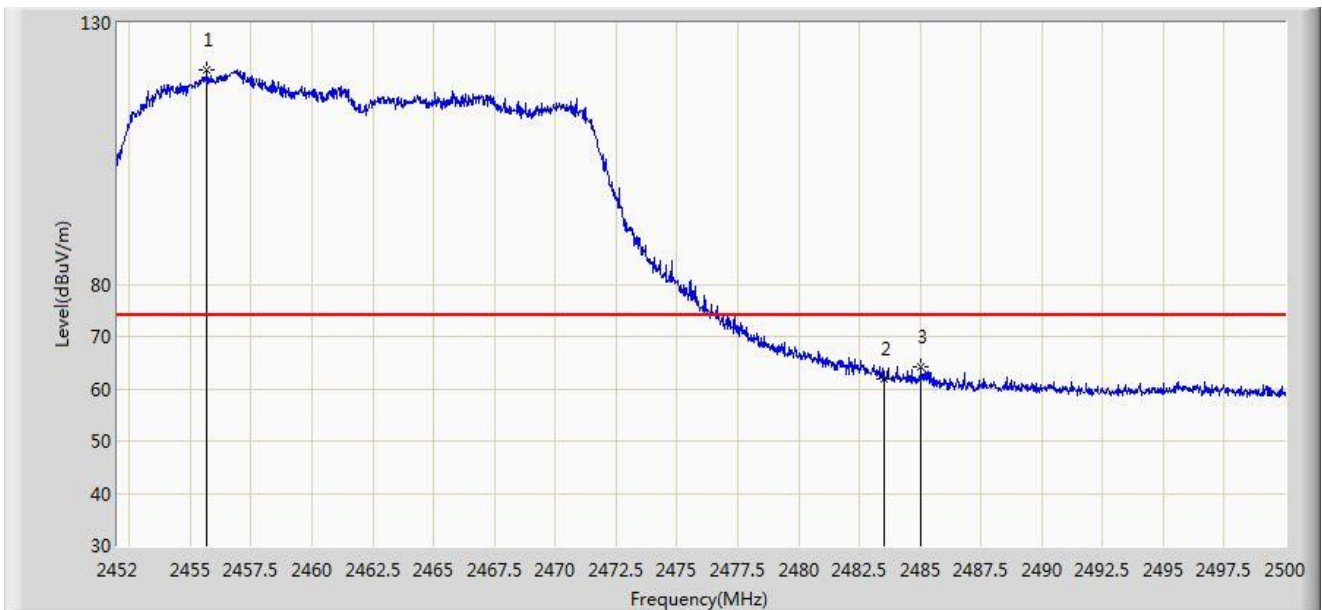
Note 4: Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Note 5: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 25GHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value.

Therefore, the data is not presented in the report.

### A.3 Radiated Restricted Band Edge Test Result

Site: WZ-AC1	Time: 2022/04/03
Limit: FCC_2.4G_RE(3m)	Engineer: Kin Xia
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11ax-HE20 at Channel 2462MHz	



No	Mark	Frequency (MHz)	Measure Level (dB $\mu$ V/m)	Reading Level (dB $\mu$ V)	Margin (dB)	Limit (dB $\mu$ V/m)	Factor (dB/m)	Type
1		2455.696	120.968	90.021	N/A	N/A	30.948	PK
2		2483.500	61.912	30.891	-12.088	74.000	31.021	PK
3	*	2485.048	64.235	33.208	-9.765	74.000	31.027	PK

Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).



Site: WZ-AC1	Time: 2022/04/03
Limit: FCC_2.4G_RE(3m)	Engineer: Kin Xia
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11ax-HE20 at Channel 2462MHz	



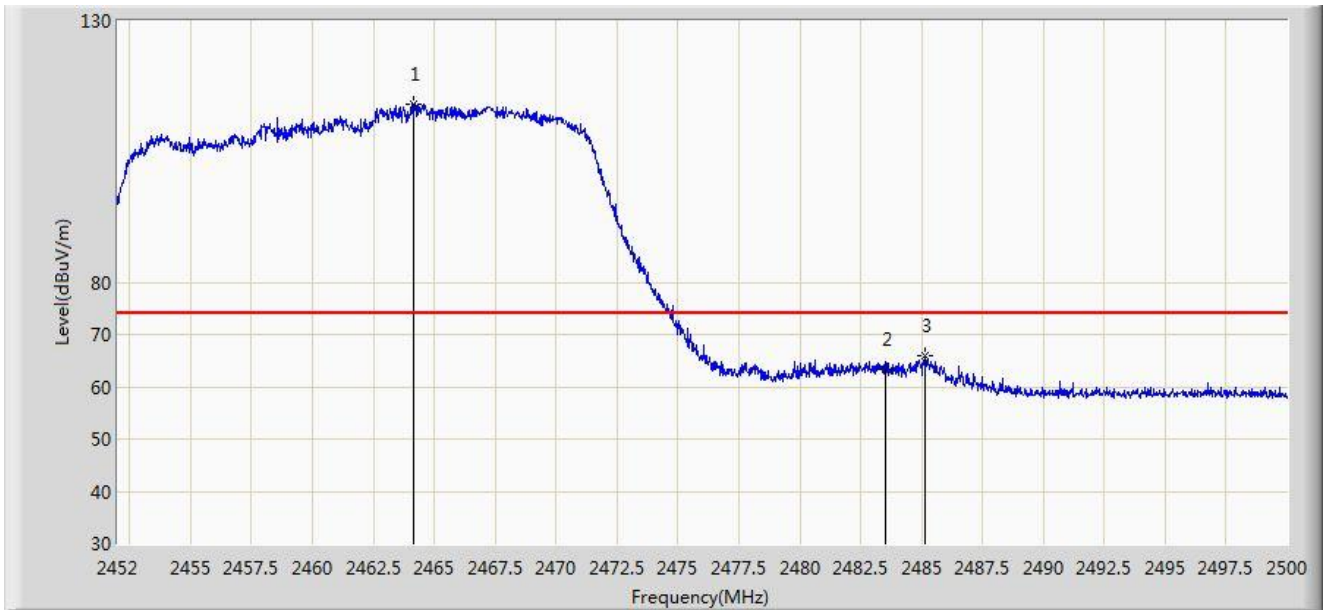
No	Mark	Frequency (MHz)	Measure Level (dB $\mu$ V/m)	Reading Level (dB $\mu$ V)	Margin (dB)	Limit (dB $\mu$ V/m)	Factor (dB/m)	Type
1		2456.128	108.419	77.471	N/A	N/A	30.949	AV
2	*	2483.500	52.889	21.868	-1.111	54.000	31.021	AV

Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: WZ-AC1	Time: 2022/04/03
Limit: FCC_2.4G_RE(3m)	Engineer: Kin Xia
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11ax-HE20 at Channel 2462MHz	



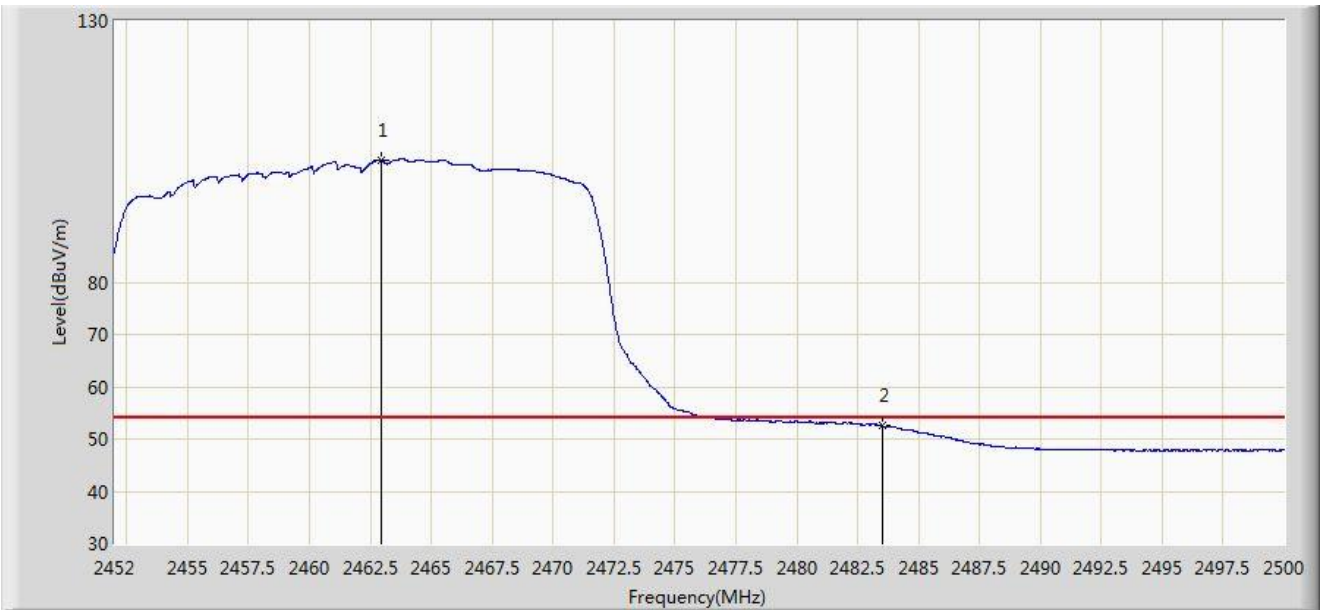
No	Mark	Frequency (MHz)	Measure Level (dB $\mu$ V/m)	Reading Level (dB $\mu$ V)	Margin (dB)	Limit (dB $\mu$ V/m)	Factor (dB/m)	Type
1		2464.168	114.087	83.126	N/A	N/A	30.961	PK
2		2483.500	63.268	32.247	-10.732	74.000	31.021	PK
3	*	2485.168	65.838	34.810	-8.162	74.000	31.028	PK

Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: WZ-AC1	Time: 2022/04/03
Limit: FCC_2.4G_RE(3m)	Engineer: Kin Xia
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11ax-HE20 at Channel 2462MHz	



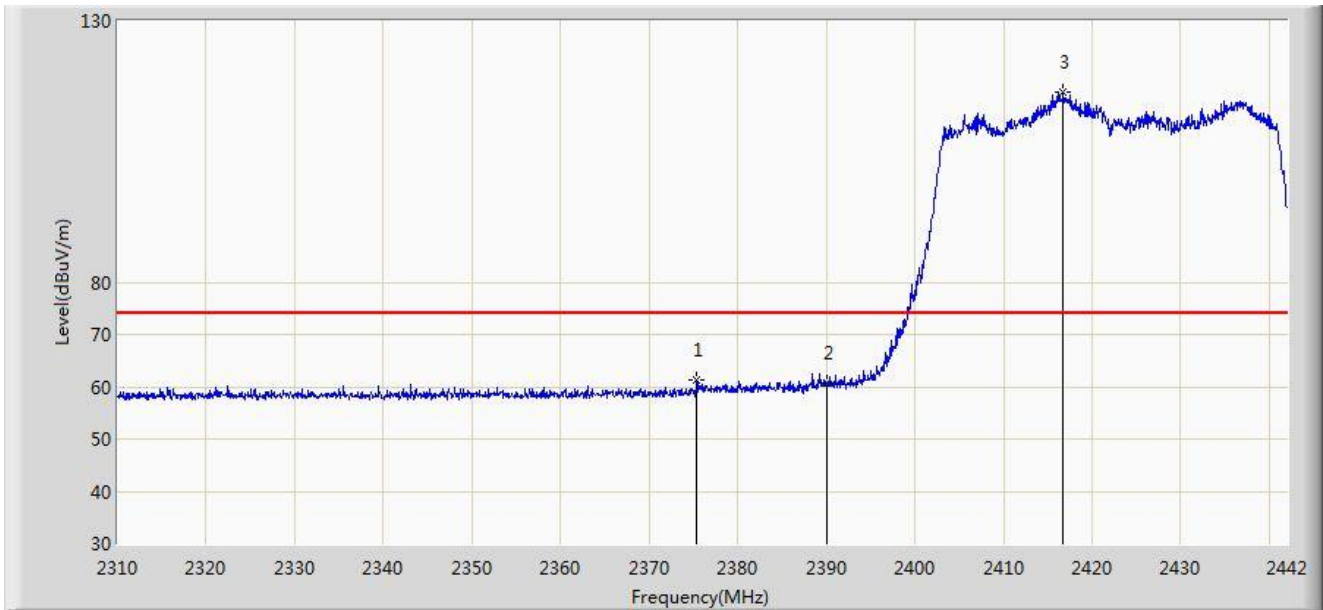
No	Mark	Frequency (MHz)	Measure Level (dB $\mu$ V/m)	Reading Level (dB $\mu$ V)	Margin (dB)	Limit (dB $\mu$ V/m)	Factor (dB/m)	Type
1		2462.920	103.454	72.495	N/A	N/A	30.959	AV
2	*	2483.500	52.545	21.524	-1.455	54.000	31.021	AV

Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: WZ-AC1	Time: 2022/04/03
Limit: FCC_2.4G_RE(3m)	Engineer: Kin Xia
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11ax-HE40 at Channel 2422MHz	



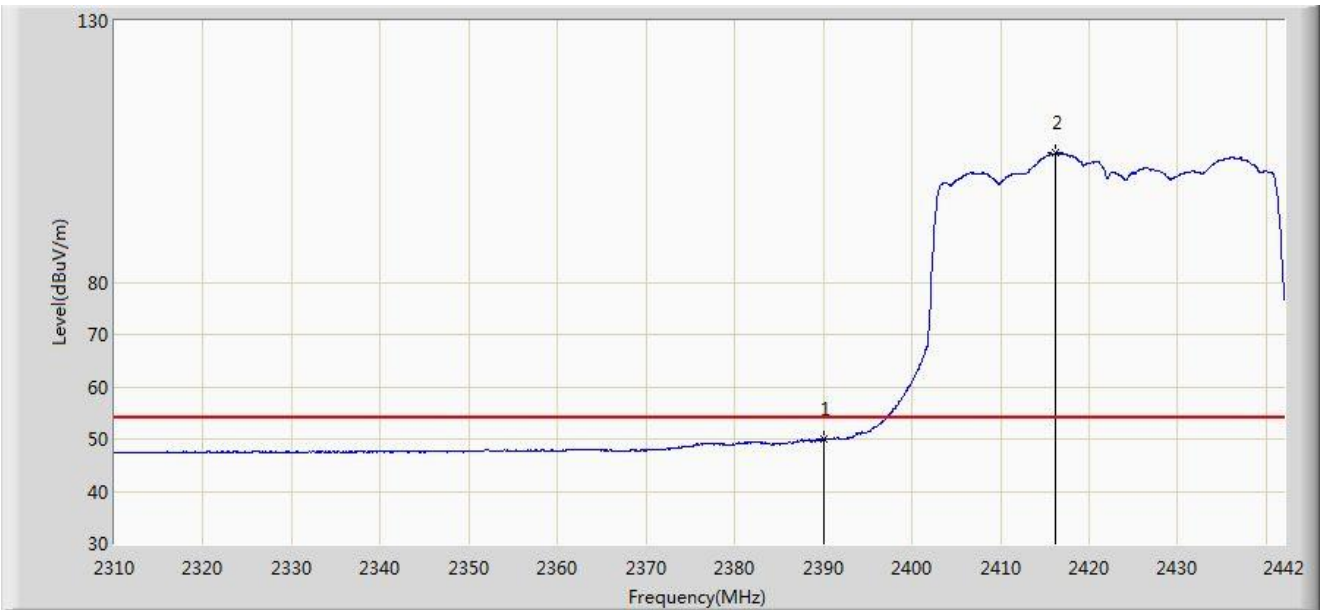
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2375.340	61.383	30.584	-12.617	74.000	30.799	PK
2		2390.000	60.591	29.775	-13.409	74.000	30.816	PK
3		2416.722	116.488	85.654	N/A	N/A	30.835	PK

Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: WZ-AC1	Time: 2022/04/03
Limit: FCC_2.4G_RE(3m)	Engineer: Kin Xia
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11ax-HE40 at Channel 2422MHz	



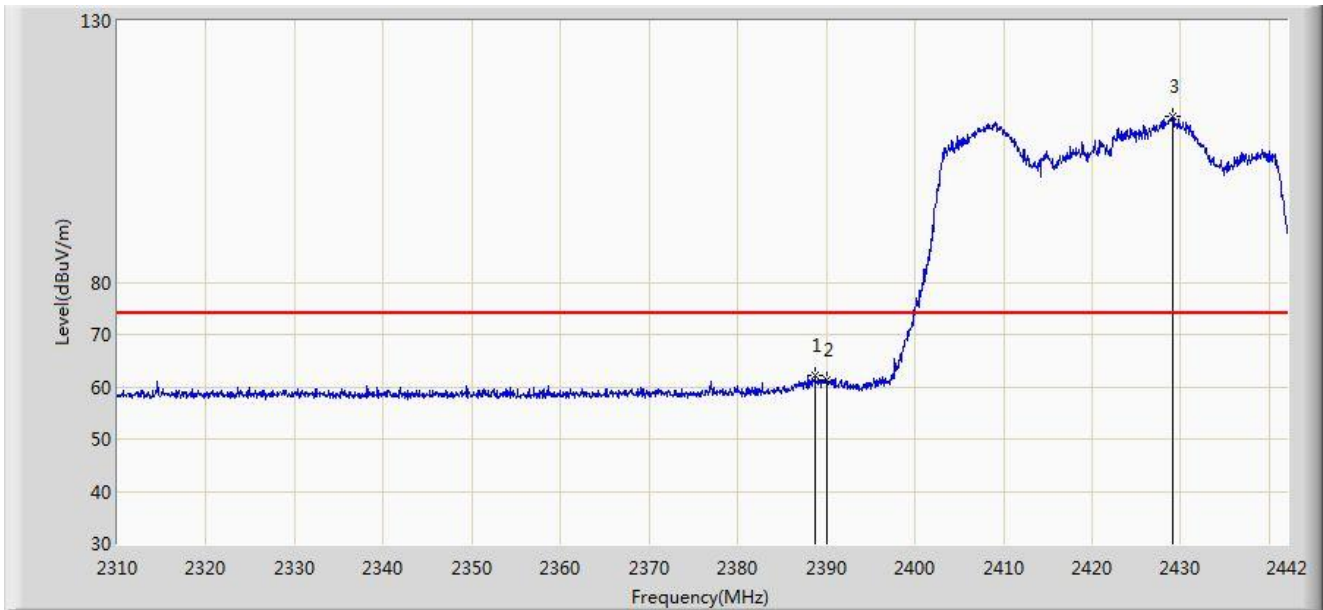
No	Mark	Frequency (MHz)	Measure Level (dB $\mu$ V/m)	Reading Level (dB $\mu$ V)	Margin (dB)	Limit (dB $\mu$ V/m)	Factor (dB/m)	Type
1	*	2390.000	49.984	19.168	-4.016	54.000	30.816	AV
2		2416.128	104.694	73.860	N/A	N/A	30.834	AV

Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: WZ-AC1	Time: 2022/04/03
Limit: FCC_2.4G_RE(3m)	Engineer: Kin Xia
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11ax-HE40 at Channel 2422MHz	



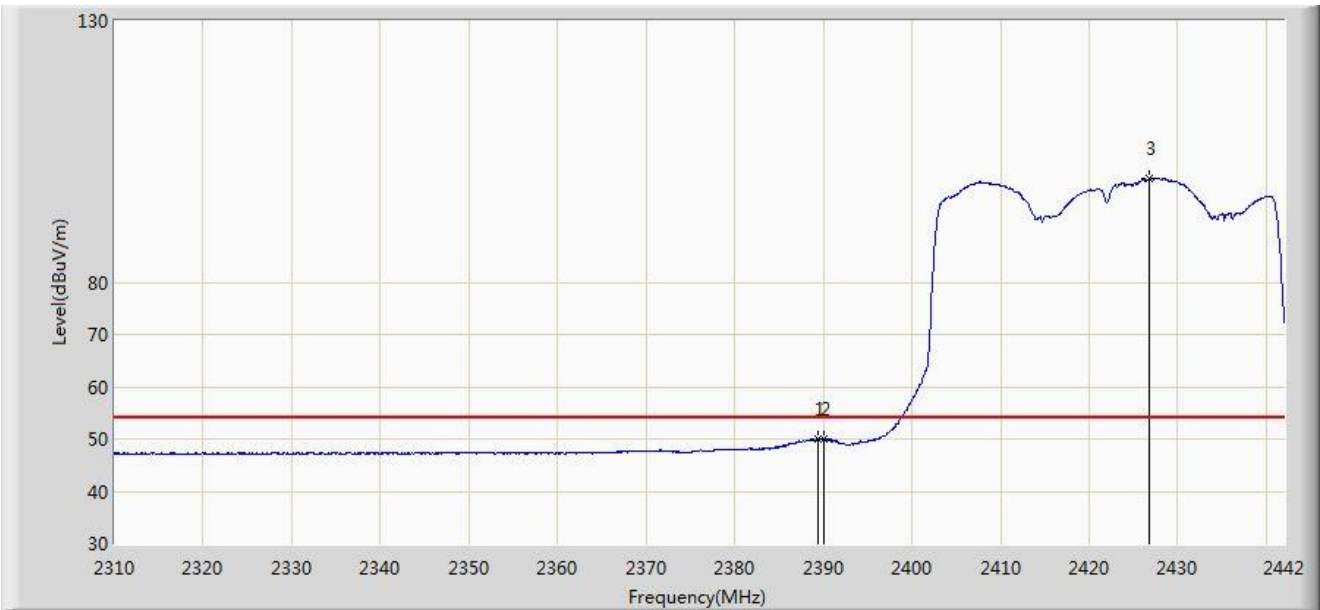
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2388.738	62.050	31.236	-11.950	74.000	30.814	PK
2		2390.000	61.192	30.376	-12.808	74.000	30.816	PK
3		2429.064	111.746	80.884	N/A	N/A	30.862	PK

Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: WZ-AC1	Time: 2022/04/03
Limit: FCC_2.4G_RE(3m)	Engineer: Kin Xia
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11ax-HE40 at Channel 2422MHz	



No	Mark	Frequency (MHz)	Measure Level (dB $\mu$ V/m)	Reading Level (dB $\mu$ V)	Margin (dB)	Limit (dB $\mu$ V/m)	Factor (dB/m)	Type
1	*	2389.398	50.112	19.297	-3.888	54.000	30.815	AV
2		2390.000	49.860	19.044	-4.140	54.000	30.816	AV
3		2426.754	99.764	68.910	N/A	N/A	30.855	AV

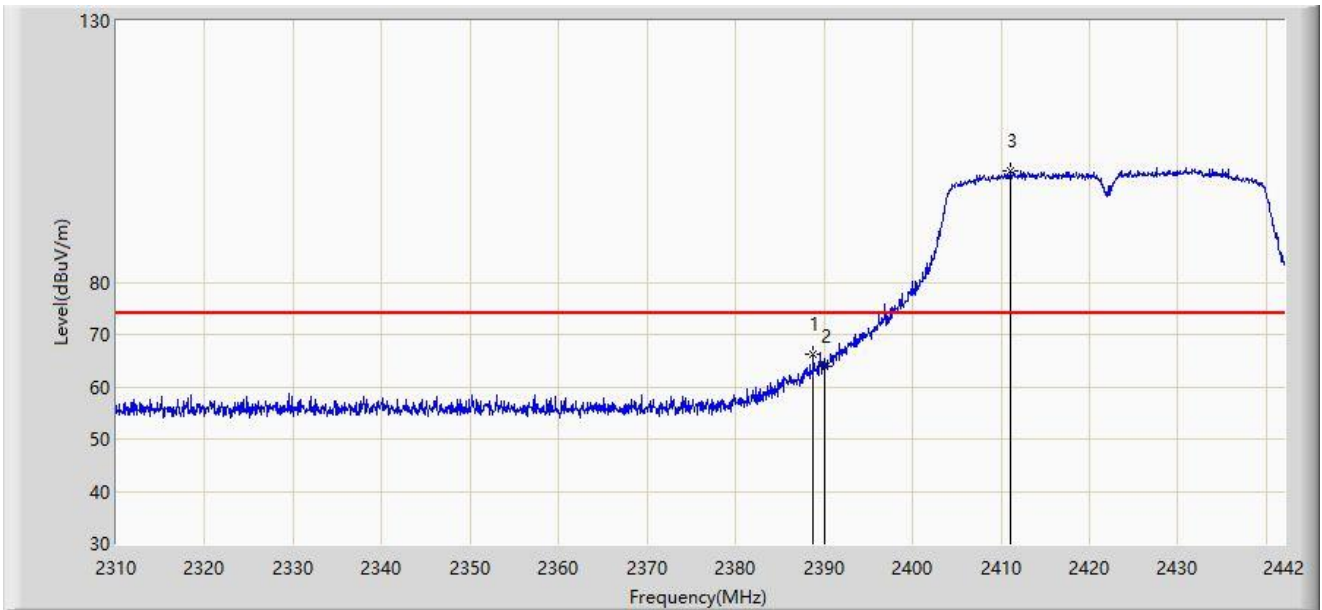
Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

**Scan Mode**

Site: WZ-AC1	Time: 2022/06/27
Limit: FCC_2.4G_RE(3m)	Engineer: Charles Zhang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at 2422MHz	



No	Mark	Frequency (MHz)	Measure Level (dB $\mu$ V/m)	Reading Level (dB $\mu$ V)	Margin (dB)	Limit (dB $\mu$ V/m)	Factor (dB/m)	Type
1	*	2388.804	66.213	35.689	-7.787	74.000	30.524	PK
2		2390.000	63.883	33.357	-10.117	74.000	30.526	PK
3		2411.046	101.370	70.812	N/A	N/A	30.558	PK

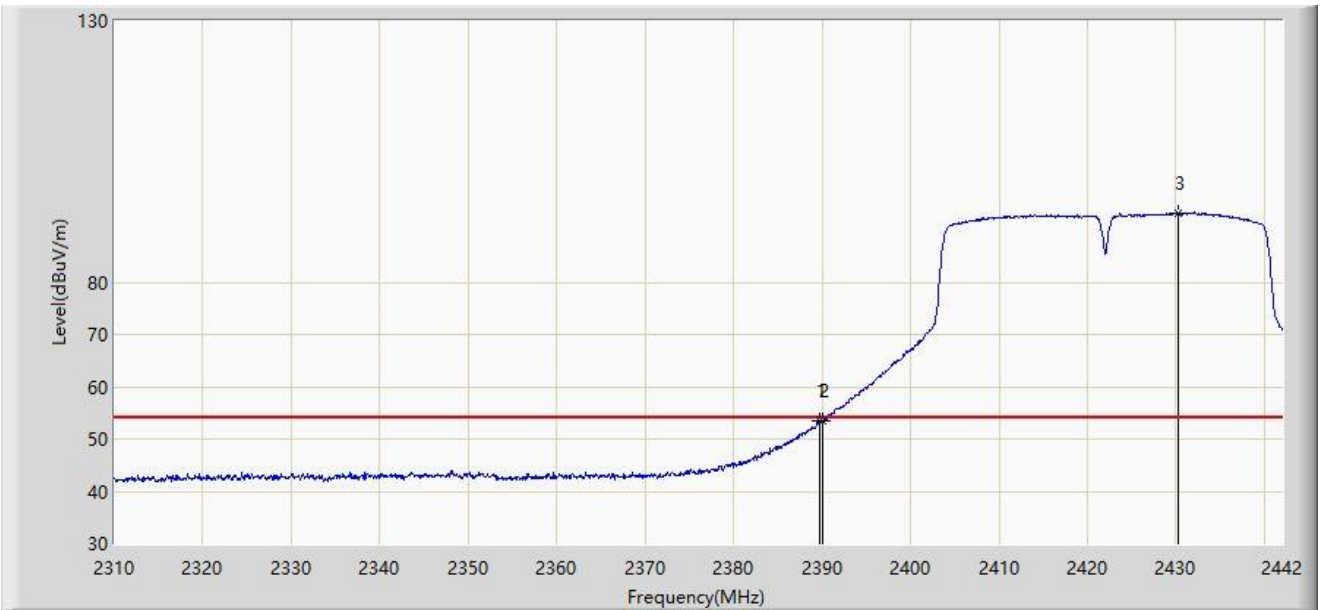
Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).



Site: WZ-AC1	Time: 2022/06/27
Limit: FCC_2.4G_RE(3m)	Engineer: Charles Zhang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at 2422MHz	



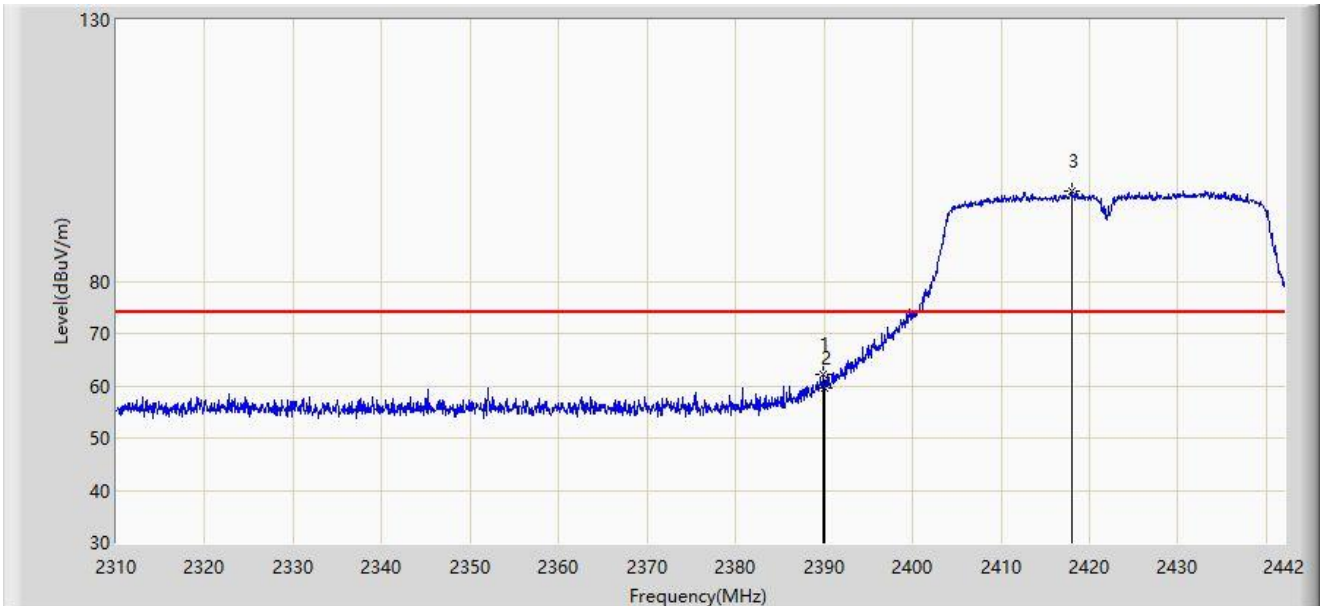
No	Mark	Frequency (MHz)	Measure Level (dB $\mu$ V/m)	Reading Level (dB $\mu$ V)	Margin (dB)	Limit (dB $\mu$ V/m)	Factor (dB/m)	Type
1	*	2389.794	53.595	23.069	-0.405	54.000	30.526	AV
2		2390.000	53.437	22.911	-0.563	54.000	30.526	AV
3		2430.252	93.222	62.674	N/A	N/A	30.548	AV

Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: WZ-AC1	Time: 2022/06/27
Limit: FCC_2.4G_RE(3m)	Engineer: Charles Zhang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at 2422MHz	



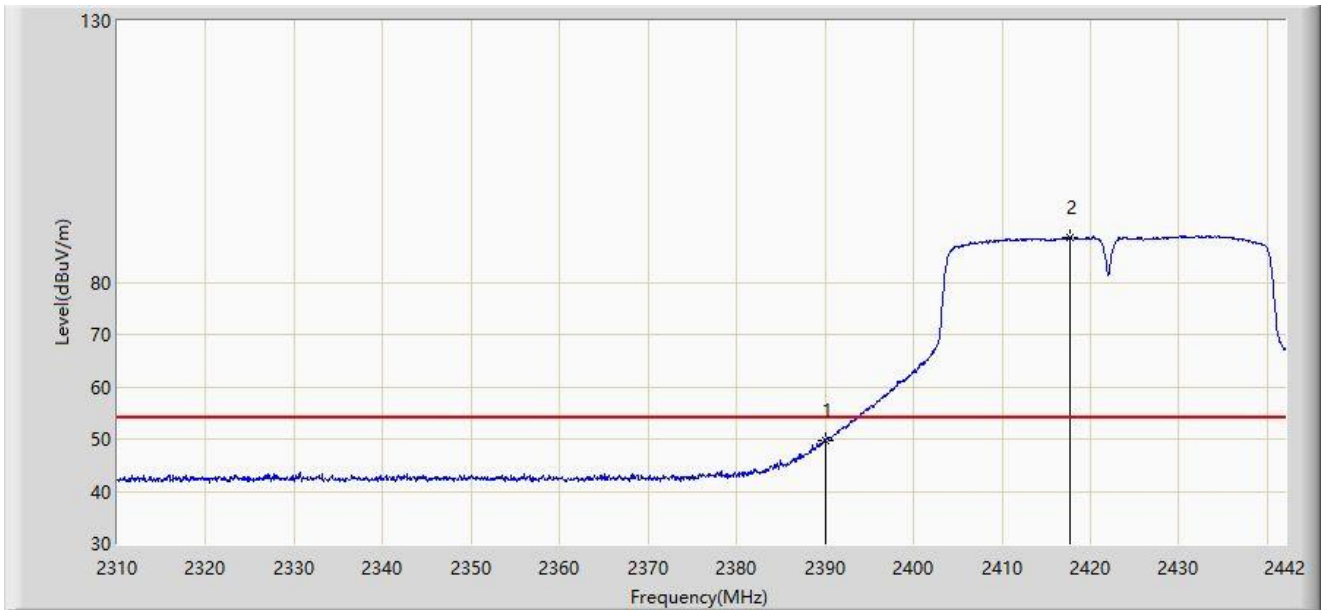
No	Mark	Frequency (MHz)	Measure Level (dB $\mu$ V/m)	Reading Level (dB $\mu$ V)	Margin (dB)	Limit (dB $\mu$ V/m)	Factor (dB/m)	Type
1	*	2389.926	62.261	31.735	-11.739	74.000	30.526	PK
2		2390.000	59.673	29.147	-14.327	74.000	30.526	PK
3		2417.976	97.349	66.790	N/A	N/A	30.559	PK

Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: WZ-AC1	Time: 2022/06/27
Limit: FCC_2.4G_RE(3m)	Engineer: Charles Zhang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at 2422MHz	



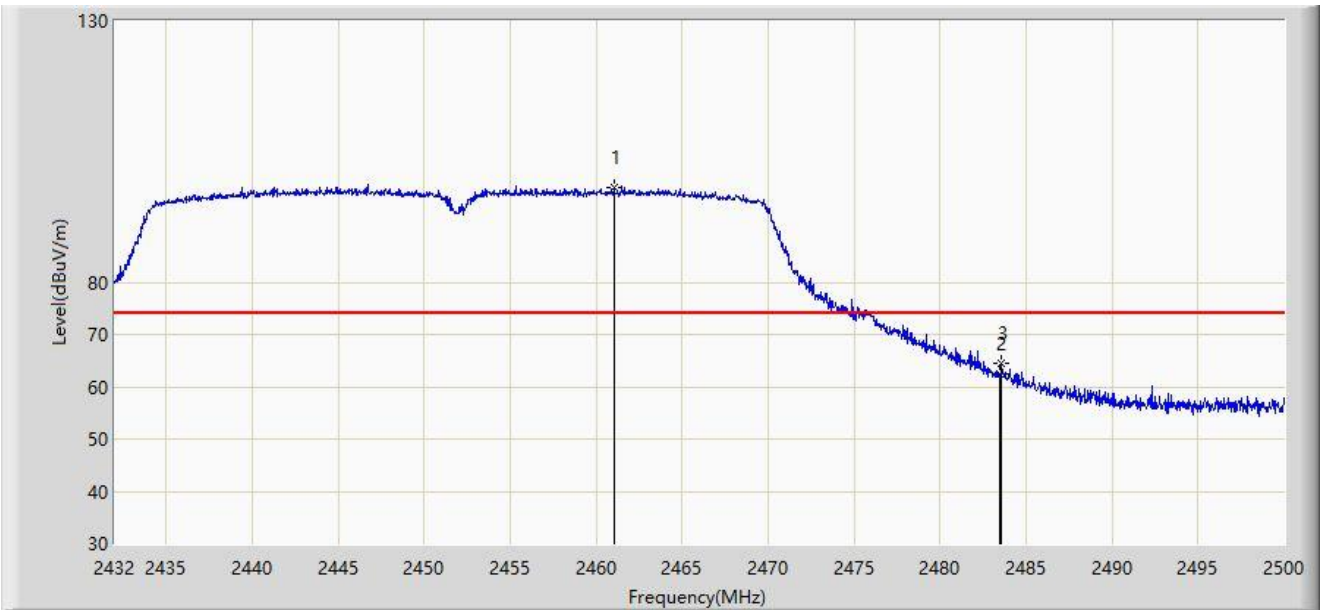
No	Mark	Frequency (MHz)	Measure Level (dB $\mu$ V/m)	Reading Level (dB $\mu$ V)	Margin (dB)	Limit (dB $\mu$ V/m)	Factor (dB/m)	Type
1	*	2390.000	49.806	19.280	-4.194	54.000	30.526	AV
2		2417.712	88.558	57.999	N/A	N/A	30.560	AV

Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: WZ-AC1	Time: 2022/06/27
Limit: FCC_2.4G_RE(3m)	Engineer: Charles Zhang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at 2452MHz	



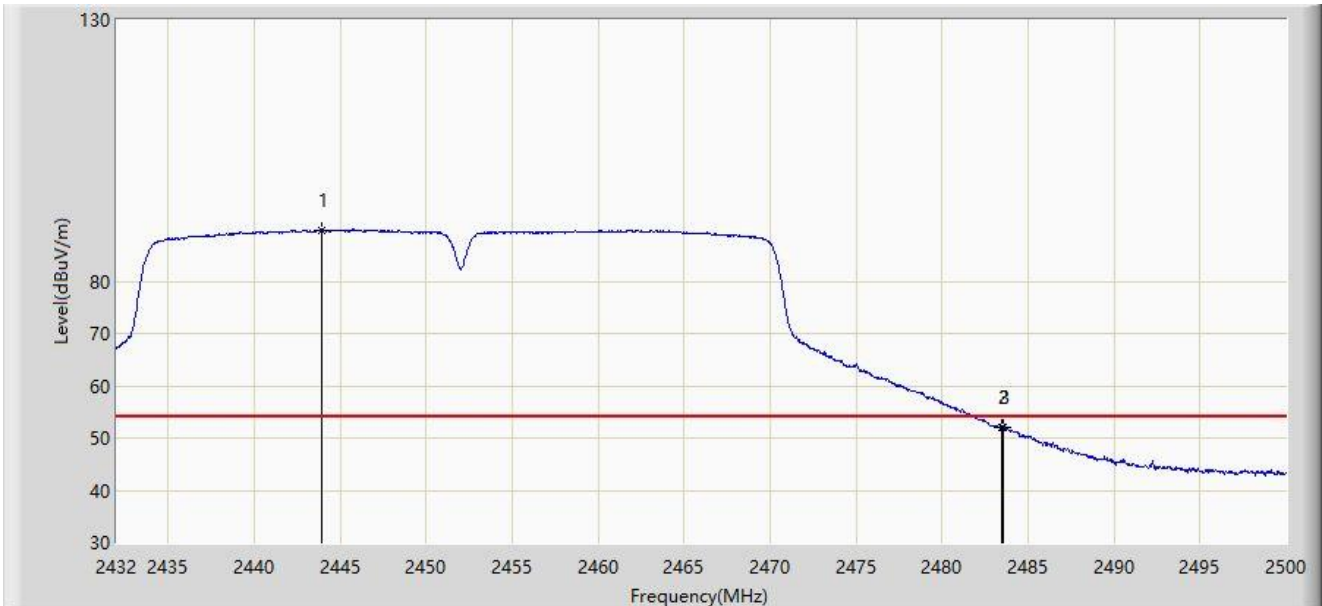
No	Mark	Frequency (MHz)	Measure Level (dB $\mu$ V/m)	Reading Level (dB $\mu$ V)	Margin (dB)	Limit (dB $\mu$ V/m)	Factor (dB/m)	Type
1		2461.036	98.259	67.628	N/A	N/A	30.631	PK
2		2483.500	62.319	31.616	-11.681	74.000	30.704	PK
3	*	2483.578	64.510	33.806	-9.490	74.000	30.704	PK

Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: WZ-AC1	Time: 2022/06/27
Limit: FCC_2.4G_RE(3m)	Engineer: Charles Zhang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at 2452MHz	



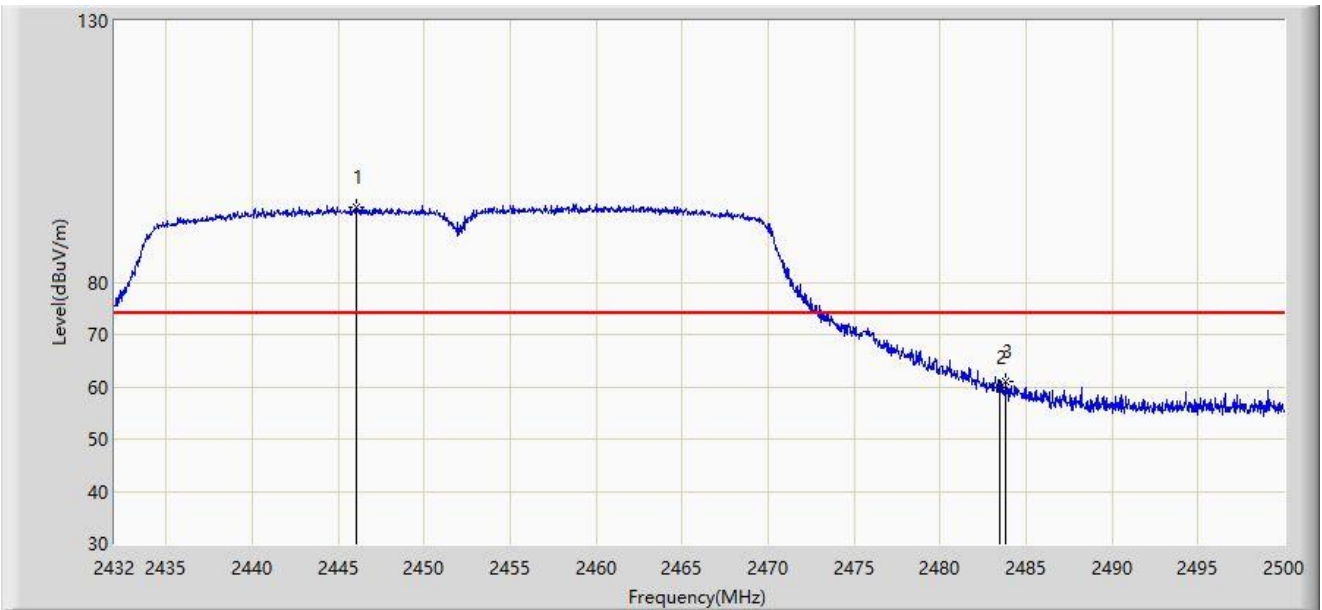
No	Mark	Frequency (MHz)	Measure Level (dB $\mu$ V/m)	Reading Level (dB $\mu$ V)	Margin (dB)	Limit (dB $\mu$ V/m)	Factor (dB/m)	Type
1		2443.900	89.823	59.259	N/A	N/A	30.564	AV
2		2483.500	52.007	21.304	-1.993	54.000	30.704	AV
3	*	2483.578	52.152	21.448	-1.848	54.000	30.704	AV

Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: WZ-AC1	Time: 2022/06/27
Limit: FCC_2.4G_RE(3m)	Engineer: Charles Zhang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at 2452MHz	



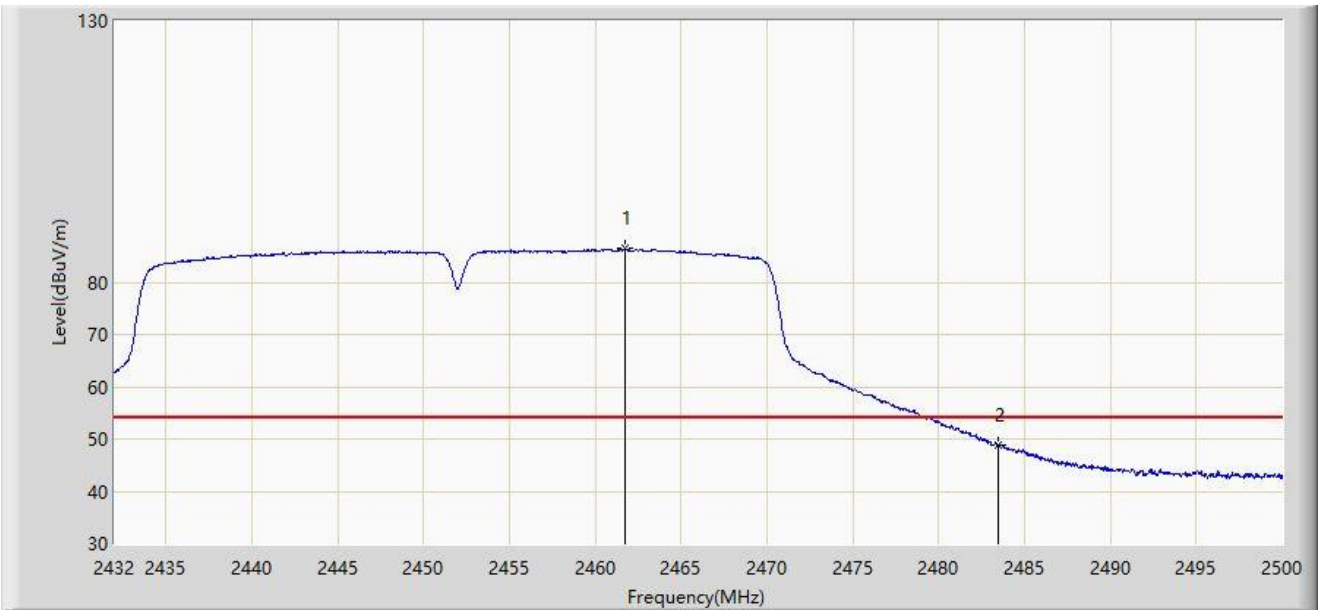
No	Mark	Frequency (MHz)	Measure Level (dB $\mu$ V/m)	Reading Level (dB $\mu$ V)	Margin (dB)	Limit (dB $\mu$ V/m)	Factor (dB/m)	Type
1		2446.042	94.488	63.916	N/A	N/A	30.571	PK
2		2483.500	59.779	29.076	-14.221	74.000	30.704	PK
3	*	2483.850	60.891	30.187	-13.109	74.000	30.703	PK

Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: WZ-AC1	Time: 2022/06/27
Limit: FCC_2.4G_RE(3m)	Engineer: Charles Zhang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: HAN Access Point	Power: 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at 2452MHz	



No	Mark	Frequency (MHz)	Measure Level (dB $\mu$ V/m)	Reading Level (dB $\mu$ V)	Margin (dB)	Limit (dB $\mu$ V/m)	Factor (dB/m)	Type
1		2461.750	86.435	55.800	N/A	N/A	30.634	AV
2	*	2483.500	48.853	18.150	-5.147	54.000	30.704	AV

Note 1: " \* ", means this data is the worst emission level.

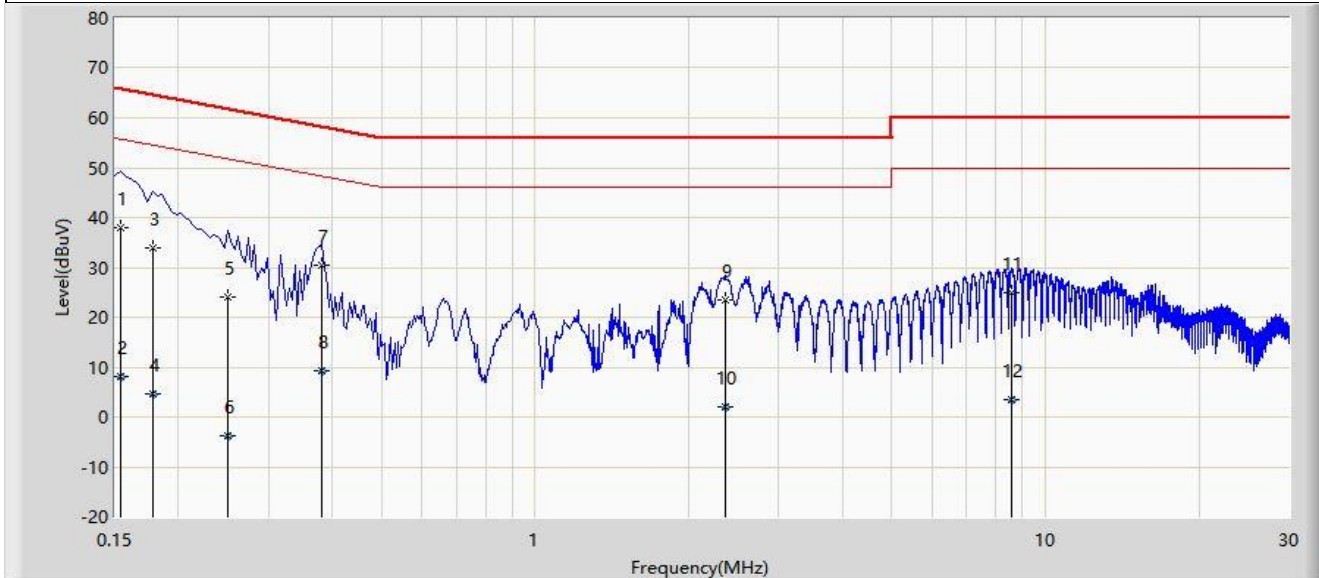
Note 2: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

#### A.4 AC Conducted Emissions Test Result

Site: WZ-SR2	Time: 2022/05/30
Temperature: 22.9°C	Humidity: 64.8%
Limit: FCC_Part15.207_CE_AC Power	Engineer: Helen Han
Probe: ENV216_101683_Filter Off_C	Polarity: Line
EUT: HAN Access Point	Power: 120V/60Hz

**Test Mode:** Transmit by 802.11ax-HE20 at channel 2462MHz



No	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1	*	0.154	37.957	27.908	-27.825	65.781	10.049	QP
2		0.154	8.070	-1.978	-47.711	55.781	10.049	AV
3		0.178	33.839	23.795	-30.740	64.578	10.044	QP
4		0.178	4.663	-5.381	-49.916	54.578	10.044	AV
5		0.250	24.000	13.946	-37.757	61.757	10.053	QP
6		0.250	-3.702	-13.755	-55.459	51.757	10.053	AV
7		0.382	30.405	20.317	-27.831	58.236	10.089	QP
8		0.382	9.264	-0.824	-38.971	48.236	10.089	AV
9		2.362	23.588	13.257	-32.412	56.000	10.332	QP
10		2.362	1.941	-8.390	-44.059	46.000	10.332	AV
11		8.554	24.947	14.114	-35.053	60.000	10.833	QP
12		8.554	3.346	-7.487	-46.654	50.000	10.833	AV

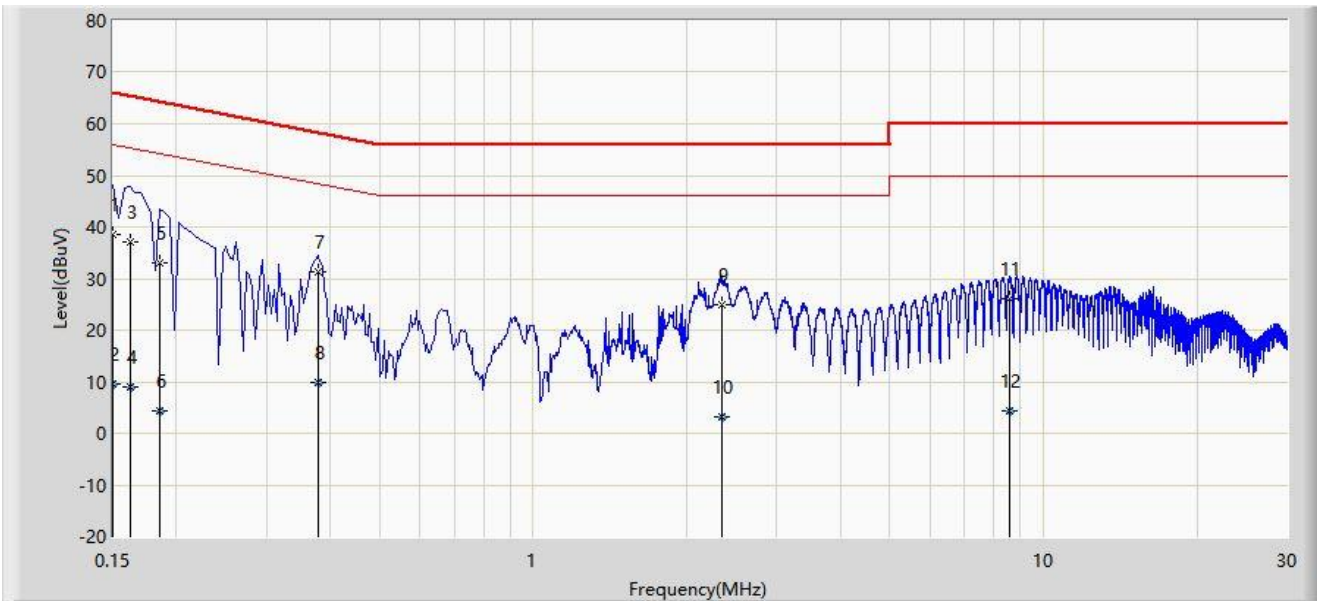
Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB) = Cable Loss (dB) + LISN Factor (dB).



Site: WZ-SR2	Time: 2022/05/30
Temperature: 22.9°C	Humidity: 64.8%
Limit: FCC_Part15.207_CE_AC Power	Engineer: Helen Han
Probe: ENV216_101683_Filter Off_C	Polarity: Neutral
EUT: HAN Access Point	Power: 120V/60Hz
<b>Test Mode:</b> Transmit by 802.11ax-HE20 at channel 2462MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1		0.150	38.513	28.136	-27.487	66.000	10.377	QP
2		0.150	9.583	-0.793	-46.417	56.000	10.377	AV
3		0.162	37.183	26.823	-28.177	65.361	10.361	QP
4		0.162	9.056	-1.305	-46.305	55.361	10.361	AV
5		0.186	33.038	22.697	-31.175	64.213	10.341	QP
6		0.186	4.339	-6.003	-49.875	54.213	10.341	AV
7	*	0.378	31.298	20.939	-27.025	58.323	10.360	QP
8		0.378	9.752	-0.608	-38.572	48.323	10.360	AV
9		2.350	25.035	14.464	-30.965	56.000	10.571	QP
10		2.350	3.065	-7.506	-42.935	46.000	10.571	AV
11		8.578	26.221	15.138	-33.779	60.000	11.083	QP
12		8.578	4.394	-6.689	-45.606	50.000	11.083	AV

Note 1: " \* ", means this data is the worst emission level.

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

Note 3: Factor (dB) = Cable Loss (dB) + LISN Factor (dB).

## Appendix B – Test Setup Photograph

Refer to “2203RSU065-UT” file.

## Appendix C – EUT Photograph

Refer to “2203RSU065-UE” file.

————— The End —————