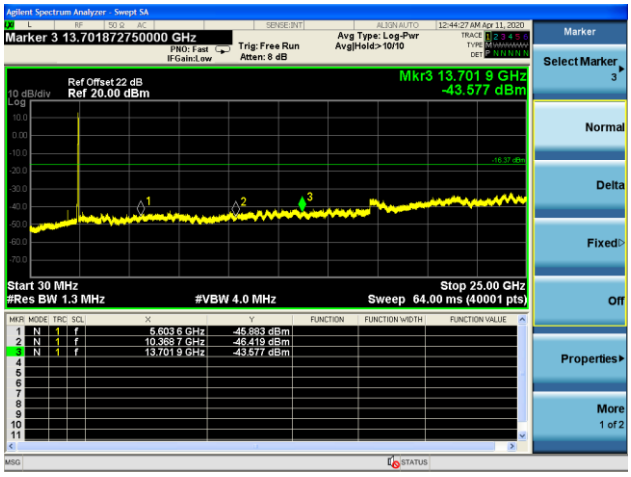
Channel 09 (2452MHz)	
100kHz PSD reference Level	High Band Edge
Spurious Emission	
	

7.6. Radiated Spurious Emission Measurement

7.6.1.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.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [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

7.6.2.Test Procedure Used

ANSI C63.10 Section 6.3 (General Requirements)

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

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

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

7.6.3.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

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 ≥ 98%, set VBW = 10 Hz.

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

4. Detector = Peak

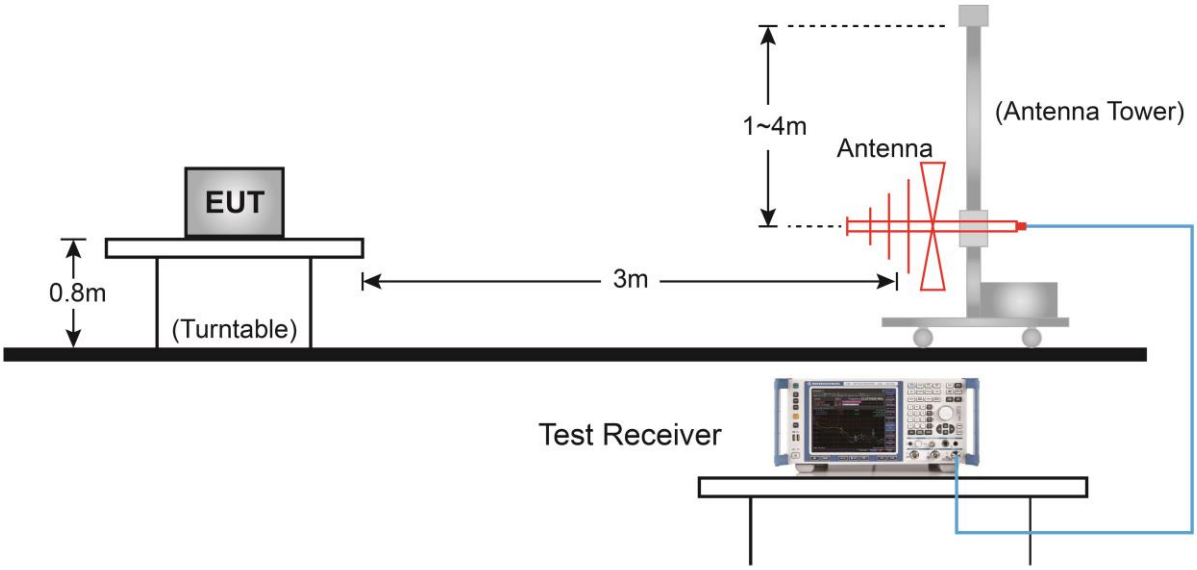
5. Sweep time = auto

6. Trace mode = max hold

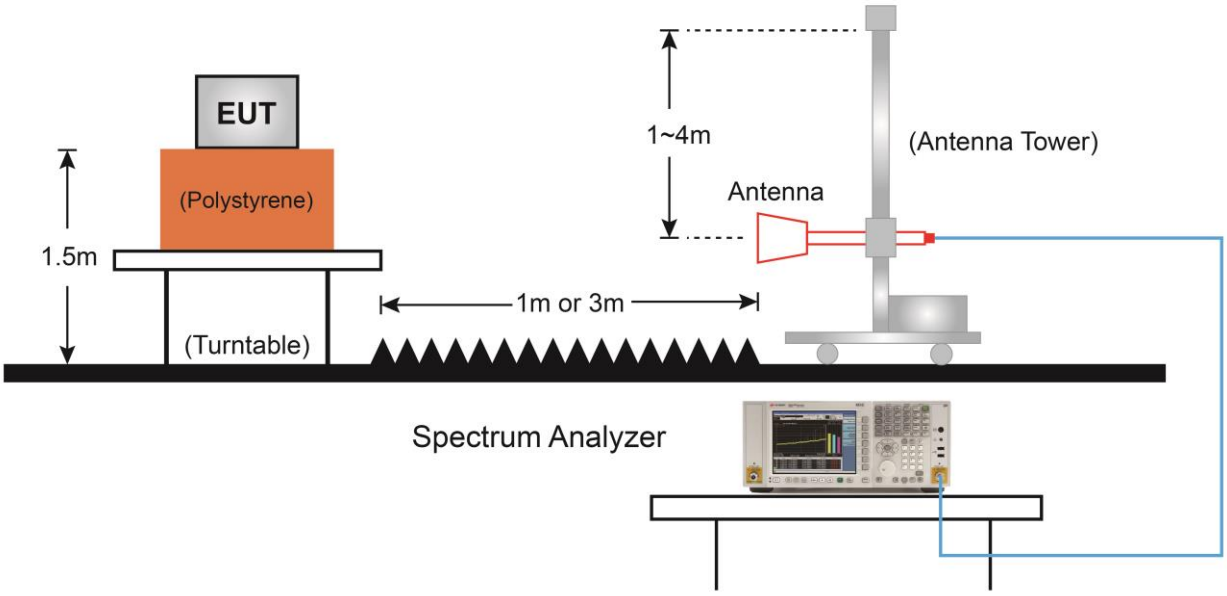
7. Trace was allowed to stabilize

7.6.4.Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



7.6.5.Test Result

Product	Notebook	Temperature	23°C
Test Engineer	Lewis Huang	Relative Humidity	53%
Test Site	AC1	Test Date	2020/04/11
Test Mode:	802.11b	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
	4119.5	39.6	3.5	43.1	74.0	-30.9	Peak	Horizontal
	4825.0	38.7	6.1	44.8	74.0	-29.2	Peak	Horizontal
*	6542.0	38.2	9.5	47.7	84.5	-36.8	Peak	Horizontal
*	7851.0	38.6	11.9	50.5	84.5	-34.0	Peak	Horizontal
	4017.5	39.7	3.3	43.0	74.0	-31.0	Peak	Vertical
	4825.0	41.4	6.1	47.5	74.0	-26.5	Peak	Vertical
*	6508.0	37.4	9.7	47.1	84.5	-37.4	Peak	Vertical
*	7953.0	38.1	12.5	50.6	84.5	-33.9	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (104.5dBμV/m) or 15.209 which is higher.

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	Notebook	Temperature	23°C
Test Engineer	Lewis Huang	Relative Humidity	53%
Test Site	AC1	Test Date	2020/04/11
Test Mode:	802.11b	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
	4119.5	39.2	3.5	42.7	74.0	-31.3	Peak	Horizontal
	4723.0	39.5	5.5	45.0	74.0	-29.0	Peak	Horizontal
*	6550.5	37.7	9.5	47.2	84.7	-37.5	Peak	Horizontal
*	7927.5	37.6	12.4	50.0	84.7	-34.7	Peak	Horizontal
	4255.5	39.2	4.0	43.2	74.0	-30.8	Peak	Vertical
	4876.0	39.8	5.9	45.7	74.0	-28.3	Peak	Vertical
*	6542.0	37.6	9.5	47.1	84.7	-37.6	Peak	Vertical
*	7987.0	37.7	12.4	50.1	84.7	-34.6	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (104.7dBμV/m) or 15.209 which is higher.

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	Notebook	Temperature	23°C
Test Engineer	Lewis Huang	Relative Humidity	53%
Test Site	AC1	Test Date	2020/04/11
Test Mode:	802.11b	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 (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	3881.5	39.7	3.0	42.7	74.0	-31.3	Peak	Horizontal
	4927.0	39.7	6.1	45.8	74.0	-28.2	Peak	Horizontal
*	6372.0	37.9	8.8	46.7	85.9	-39.2	Peak	Horizontal
*	8616.0	37.3	13.5	50.8	85.9	-35.1	Peak	Horizontal
	3941.0	39.4	3.2	42.6	74.0	-31.4	Peak	Vertical
	4927.0	42.0	6.1	48.1	74.0	-25.9	Peak	Vertical
*	6533.5	37.7	9.5	47.2	85.9	-38.7	Peak	Vertical
*	8021.0	39.3	12.6	51.9	85.9	-34.0	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (105.9dBμV/m) or 15.209 which is higher.

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	Notebook	Temperature	23°C
Test Engineer	Lewis Huang	Relative Humidity	53%
Test Site	AC1	Test Date	2020/04/11
Test Mode:	802.11g	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
	3864.5	40.2	2.9	43.1	74.0	-30.9	Peak	Horizontal
	4816.5	40.0	5.9	45.9	74.0	-28.1	Peak	Horizontal
*	6533.5	37.9	9.5	47.4	90.0	-42.6	Peak	Horizontal
*	7987.0	38.2	12.4	50.6	90.0	-39.4	Peak	Horizontal
	4034.5	38.7	3.3	42.0	74.0	-32.0	Peak	Vertical
	4833.5	40.7	6.0	46.7	74.0	-27.3	Peak	Vertical
*	6797.0	38.1	9.8	47.9	90.0	-42.1	Peak	Vertical
*	8641.5	37.2	13.6	50.8	90.0	-39.2	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (110.0dBμV/m) or 15.209 which is higher.

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	Notebook	Temperature	23°C
Test Engineer	Lewis Huang	Relative Humidity	53%
Test Site	AC1	Test Date	2020/04/11
Test Mode:	802.11g	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
	4383.0	39.8	4.5	44.3	74.0	-29.7	Peak	Horizontal
	5054.5	38.3	6.6	44.9	74.0	-29.1	Peak	Horizontal
*	6627.0	38.2	9.6	47.8	90.0	-42.2	Peak	Horizontal
*	8709.5	36.7	13.9	50.6	90.0	-39.4	Peak	Horizontal
	4102.5	39.9	3.4	43.3	74.0	-30.7	Peak	Vertical
	5054.5	38.5	6.6	45.1	74.0	-28.9	Peak	Vertical
*	6499.5	37.9	9.5	47.4	90.0	-42.6	Peak	Vertical
*	7842.5	38.5	11.9	50.4	90.0	-39.6	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (110.0dBμV/m) or 15.209 which is higher.

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	Notebook	Temperature	23°C
Test Engineer	Lewis Huang	Relative Humidity	53%
Test Site	AC1	Test Date	2020/04/11
Test Mode:	802.11g	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 (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	4085.5	39.6	3.3	42.9	74.0	-31.1	Peak	Horizontal
	4935.5	38.8	6.1	44.9	74.0	-29.1	Peak	Horizontal
*	5615.5	40.0	7.1	47.1	90.1	-43.0	Peak	Horizontal
*	6550.5	38.2	9.5	47.7	90.1	-42.4	Peak	Horizontal
	3932.5	39.8	3.1	42.9	74.0	-31.1	Peak	Vertical
	4927.0	40.4	6.1	46.5	74.0	-27.5	Peak	Vertical
*	5981.0	38.1	7.7	45.8	90.1	-44.3	Peak	Vertical
*	7859.5	38.0	12.0	50.0	90.1	-40.1	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (110.1dBμV/m) or 15.209 which is higher.

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	Notebook	Temperature	23°C
Test Engineer	Lewis Huang	Relative Humidity	53%
Test Site	AC1	Test Date	2020/04/11
Test Mode:	802.11n-HT20	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
	4187.5	40.2	3.7	43.9	74.0	-30.1	Peak	Horizontal
	5139.5	38.4	6.8	45.2	74.0	-28.8	Peak	Horizontal
*	6516.5	37.7	9.6	47.3	87.8	-40.5	Peak	Horizontal
*	7953.0	38.5	12.5	51.0	87.8	-36.8	Peak	Horizontal
	4179.0	39.4	3.6	43.0	74.0	-31.0	Peak	Vertical
	4825.0	39.8	6.1	45.9	74.0	-28.1	Peak	Vertical
*	6202.0	38.4	8.1	46.5	87.8	-41.3	Peak	Vertical
*	7953.0	38.1	12.5	50.6	87.8	-37.2	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (107.8dBμV/m) or 15.209 which is higher.

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	Notebook	Temperature	23°C
Test Engineer	Lewis Huang	Relative Humidity	53%
Test Site	AC1	Test Date	2020/04/11
Test Mode:	802.11n-HT20	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
	4026.0	39.8	3.3	43.1	74.0	-30.9	Peak	Horizontal
	5131.0	38.2	6.9	45.1	74.0	-28.9	Peak	Horizontal
*	6176.5	38.2	8.3	46.5	87.9	-41.4	Peak	Horizontal
*	7851.0	38.5	11.9	50.4	87.9	-37.5	Peak	Horizontal
	4051.5	39.4	3.4	42.8	74.0	-31.2	Peak	Vertical
	4867.5	40.6	5.9	46.5	74.0	-27.5	Peak	Vertical
*	6559.0	38.2	9.6	47.8	87.9	-40.1	Peak	Vertical
*	7953.0	38.3	12.5	50.8	87.9	-37.1	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (107.9dBμV/m) or 15.209 which is higher.

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	Notebook	Temperature	23°C
Test Engineer	Lewis Huang	Relative Humidity	53%
Test Site	AC1	Test Date	2020/04/11
Test Mode:	802.11n-HT20	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 (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	4111.0	39.5	3.4	42.9	74.0	-31.1	Peak	Horizontal
	4918.5	38.4	6.1	44.5	74.0	-29.5	Peak	Horizontal
*	6533.5	37.6	9.5	47.1	88.7	-41.6	Peak	Horizontal
*	7944.5	38.6	12.5	51.1	88.7	-37.6	Peak	Horizontal
	4179.0	39.7	3.6	43.3	74.0	-30.7	Peak	Vertical
	4918.5	41.6	6.1	47.7	74.0	-26.3	Peak	Vertical
*	6559.0	38.2	9.6	47.8	88.7	-40.9	Peak	Vertical
*	7970.0	37.9	12.4	50.3	88.7	-38.4	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (108.7dBμV/m) or 15.209 which is higher.

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	Notebook	Temperature	23°C
Test Engineer	Lewis Huang	Relative Humidity	53%
Test Site	AC1	Test Date	2020/04/11
Test Mode:	802.11n-HT40	Test Channel:	03
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
	4697.5	39.1	5.4	44.5	74.0	-29.5	Peak	Horizontal
	5131.0	39.3	6.9	46.2	74.0	-27.8	Peak	Horizontal
*	6567.5	37.7	9.6	47.3	86.3	-39.0	Peak	Horizontal
*	7978.5	38.3	12.4	50.7	86.3	-35.6	Peak	Horizontal
	4247.0	39.5	3.9	43.4	74.0	-30.6	Peak	Vertical
	4833.5	39.8	6.0	45.8	74.0	-28.2	Peak	Vertical
*	6805.5	37.9	9.8	47.7	86.3	-38.6	Peak	Vertical
*	7953.0	38.3	12.5	50.8	86.3	-35.5	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (106.3dBμV/m) or 15.209 which is higher.

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	Notebook	Temperature	23°C
Test Engineer	Lewis Huang	Relative Humidity	53%
Test Site	AC1	Test Date	2020/04/11
Test Mode:	802.11n-HT40	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
	4391.5	39.8	4.5	44.3	74.0	-29.7	Peak	Horizontal
	5046.0	38.7	6.6	45.3	74.0	-28.7	Peak	Horizontal
*	5879.0	37.9	7.6	45.5	86.3	-40.8	Peak	Horizontal
*	6814.0	37.9	9.8	47.7	86.3	-38.6	Peak	Horizontal
	4247.0	38.7	3.9	42.6	74.0	-31.4	Peak	Vertical
	4986.5	38.3	6.4	44.7	74.0	-29.3	Peak	Vertical
*	7018.0	37.7	11.0	48.7	86.3	-37.6	Peak	Vertical
*	8743.5	36.5	14.1	50.6	86.3	-35.7	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (106.3dBμV/m) or 15.209 which is higher.

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	Notebook	Temperature	23°C
Test Engineer	Lewis Huang	Relative Humidity	53%
Test Site	AC1	Test Date	2020/04/11
Test Mode:	802.11n-HT40	Test Channel:	09
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
	3907.0	39.3	3.1	42.4	74.0	-31.6	Peak	Horizontal
	4842.0	39.1	5.9	45.0	74.0	-29.0	Peak	Horizontal
*	5887.5	37.9	7.6	45.5	84.3	-38.8	Peak	Horizontal
*	7213.5	38.5	11.5	50.0	84.3	-34.3	Peak	Horizontal
	3907.0	39.6	3.1	42.7	74.0	-31.3	Peak	Vertical
	4901.5	38.5	6.1	44.6	74.0	-29.4	Peak	Vertical
*	6474.0	37.6	9.1	46.7	84.3	-37.6	Peak	Vertical
*	7953.0	38.0	12.5	50.5	84.3	-33.8	Peak	Vertical

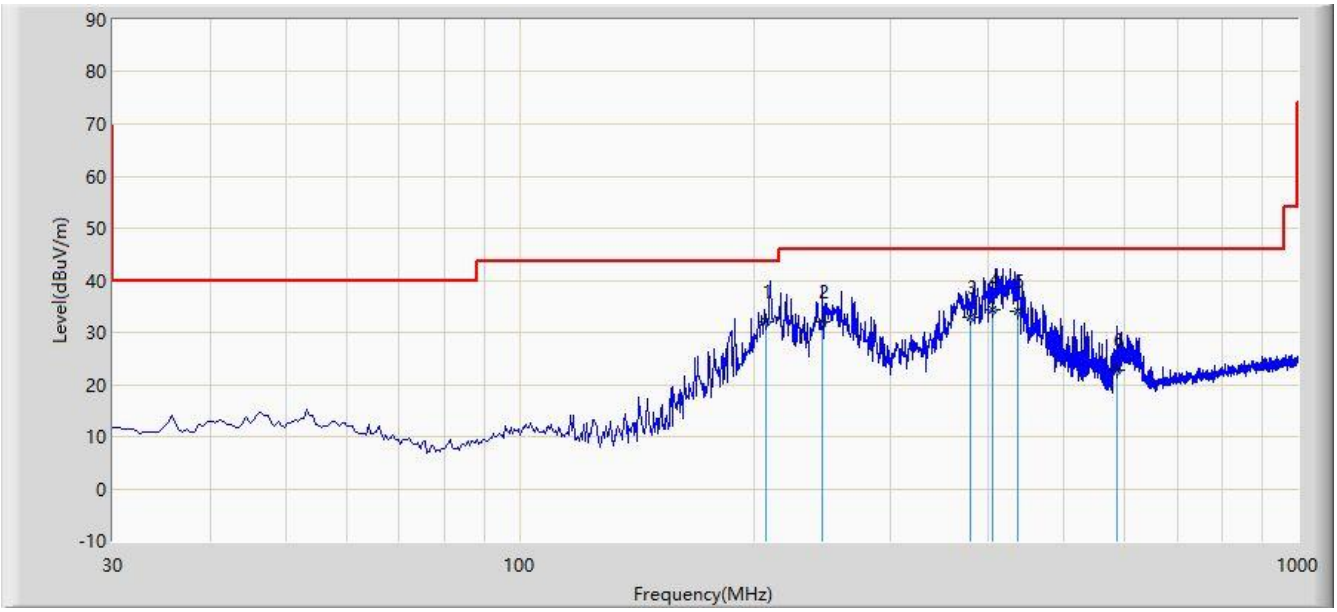
Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (104.3dBμV/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + 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: 2020/04/10 - 14:46
Limit: FCC_Part15.209_RSE(3m)	Engineer: Lewis Huang
Probe: AC1_VULB 9168 _30-2000MHz	Polarity: Horizontal
EUT: Notebook	Power: AC 120V/60Hz
Worst Case Mode: Transmit by 802.11b at Channel 2412MHz	



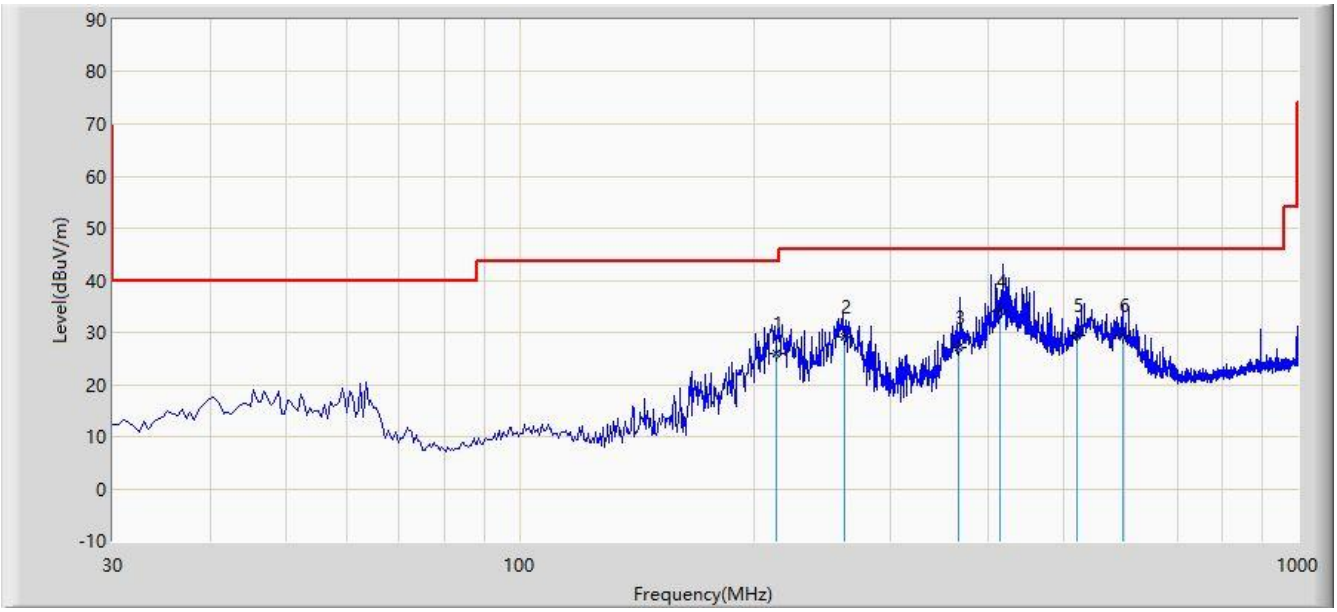
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	207.510	31.943	19.725	-11.557	43.500	12.218	QP
2			244.370	32.093	18.395	-13.907	46.000	13.698	QP
3			379.685	32.855	15.243	-13.145	46.000	17.611	QP
4			405.390	34.203	15.987	-11.797	46.000	18.216	QP
5			436.430	34.144	15.189	-11.856	46.000	18.955	QP
6			585.810	22.864	0.876	-23.136	46.000	21.988	QP

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

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

Note 2: The amplitude of Radiated emissions (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 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: AC2	Time: 2020/04/10 - 14:51
Limit: FCC_Part15.209_RSE(3m)	Engineer: Lewis Huang
Probe: AC2_VULB9162_0.03-7GHz	Polarity: Vertical
EUT: Notebook	Power: AC 120V/60Hz
Worst Case Mode: Transmit by 802.11b at Channel 2412MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			213.330	25.850	13.587	-17.650	43.500	12.263	QP
2			261.345	29.019	14.832	-16.981	46.000	14.187	QP
3			366.105	27.072	9.892	-18.928	46.000	17.179	QP
4		*	415.090	34.198	15.754	-11.802	46.000	18.444	QP
5			520.820	29.402	8.854	-16.598	46.000	20.548	QP
6			596.480	29.409	7.136	-16.591	46.000	22.273	QP

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

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

Note 2: The amplitude of Radiated emissions (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 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.

7.7. Radiated Restricted Band Edge Measurement

7.7.1.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
[1] 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
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 Subpart C Paragraph 15.209		
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

7.7.2.Test Procedure Used

ANSI C63.10 Section 6.3 (General Requirements)

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

7.7.3.Test Setting

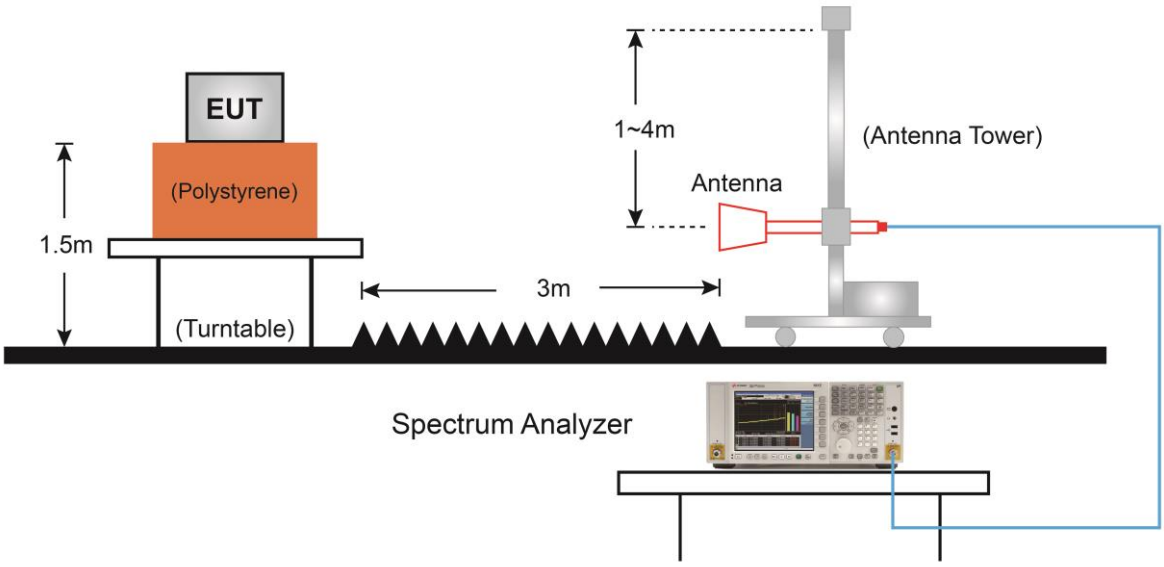
Peak Field Strength Measurements

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

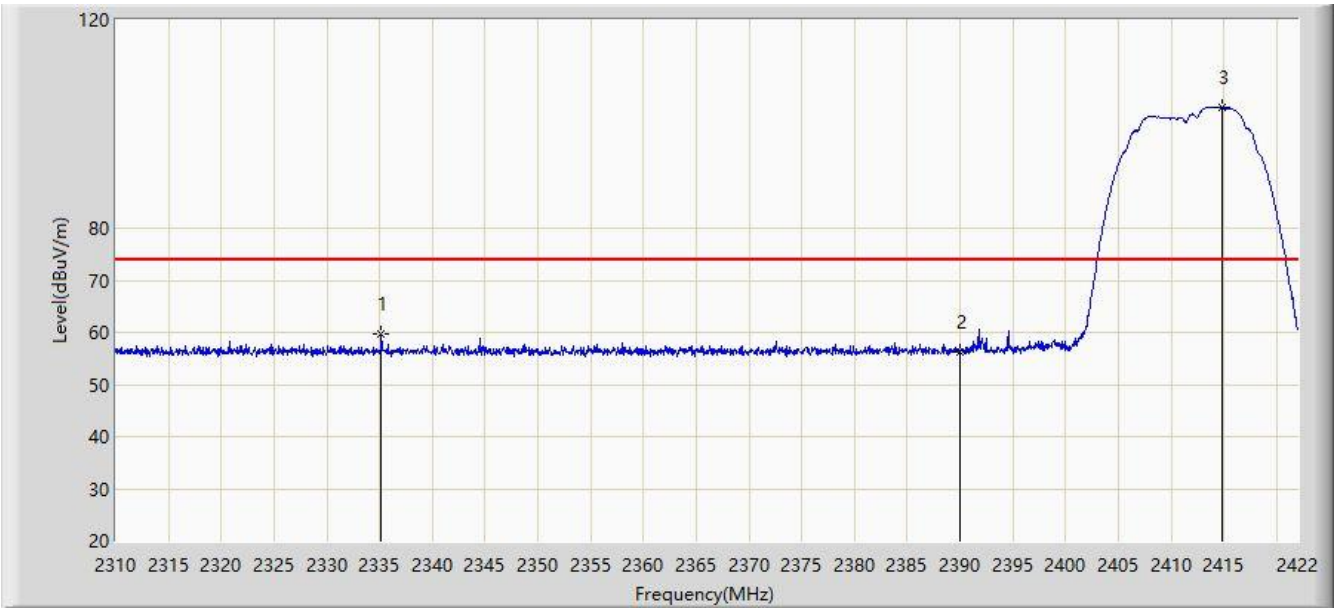
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW ≥ 1/T
4. De As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). 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

7.7.4.Test Setup



7.7.5.Test Result

Site: AC1	Time: 2020/04/10 - 19:48
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at channel 2412MHz	

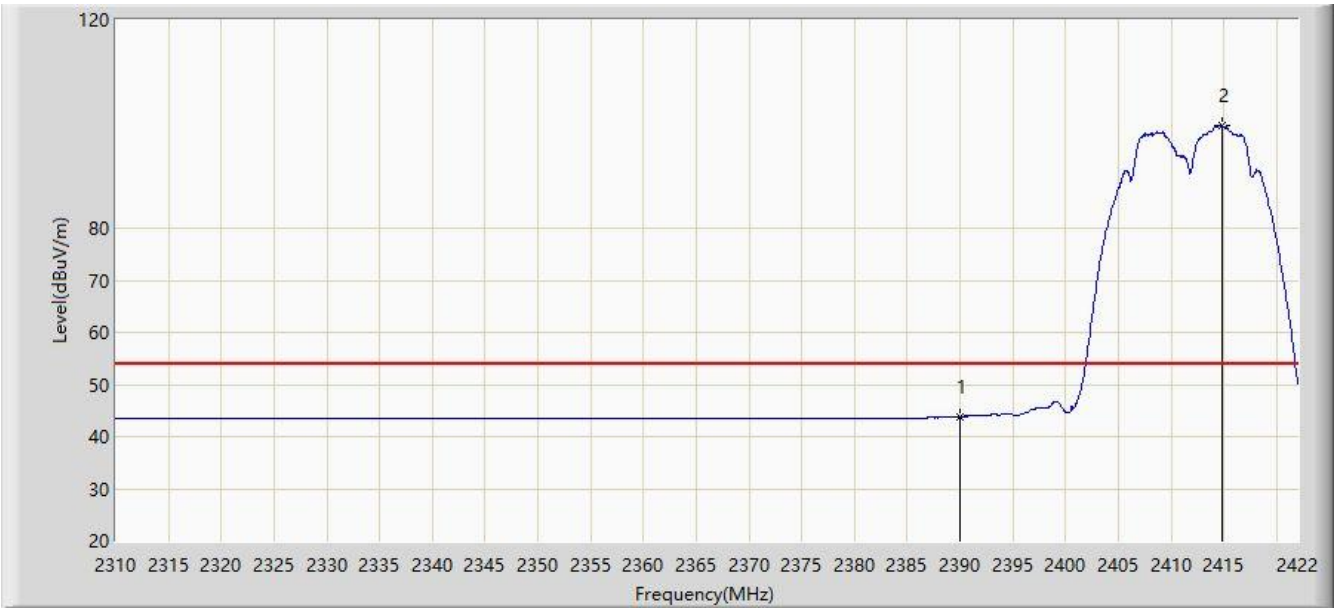


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2335.144	59.624	27.468	-14.376	74.000	32.157	PK
2			2390.000	56.245	24.173	-17.755	74.000	32.072	PK
3		*	2414.776	103.107	71.016	N/A	N/A	32.090	PK

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

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

Site: AC1	Time: 2020/04/10 - 19:58
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at channel 2412MHz	

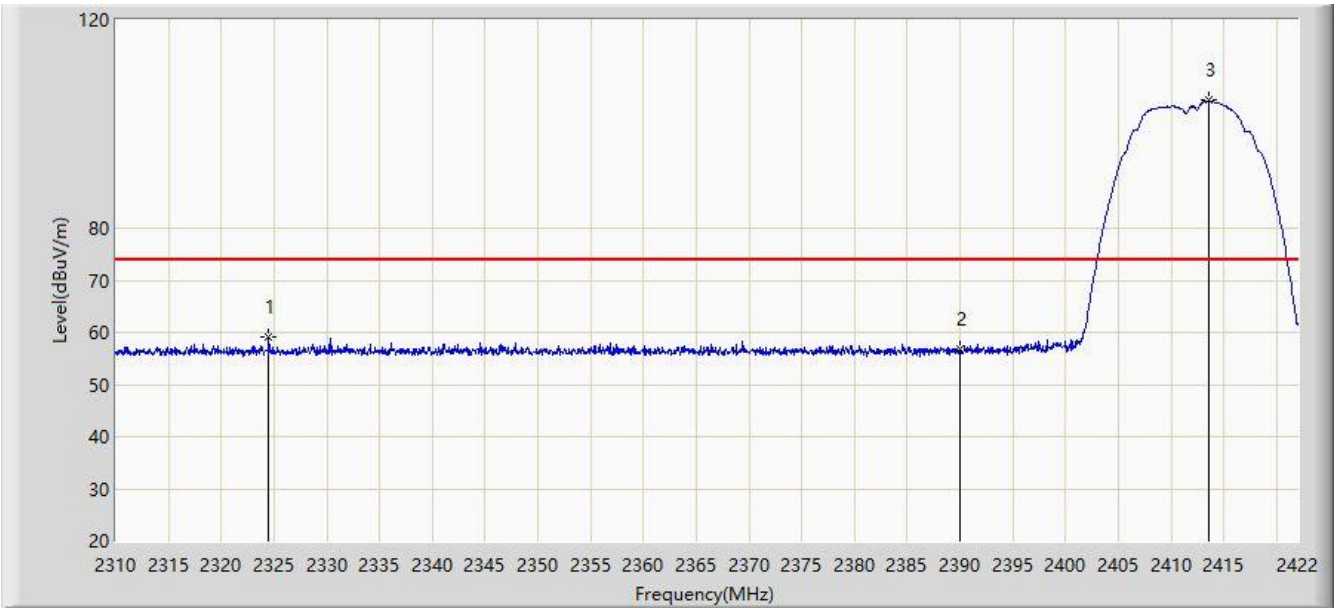


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2390.000	43.748	11.676	-10.252	54.000	32.072	AV
2		*	2414.776	99.755	67.664	N/A	N/A	32.090	AV

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

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

Site: AC1	Time: 2020/04/10 - 20:00
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at channel 2412MHz	

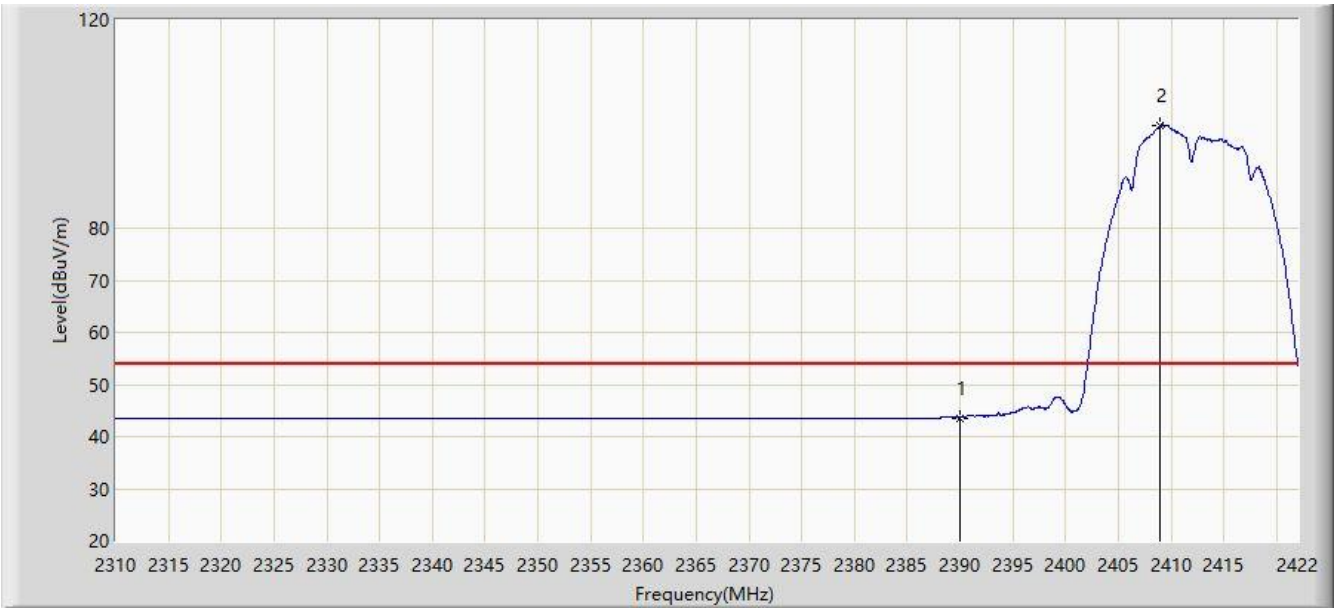


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2324.504	59.125	26.943	-14.875	74.000	32.182	PK
2			2390.000	56.817	24.745	-17.183	74.000	32.072	PK
3		*	2413.600	104.500	72.412	N/A	N/A	32.088	PK

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

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

Site: AC1	Time: 2020/04/10 - 20:05
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at channel 2412MHz	

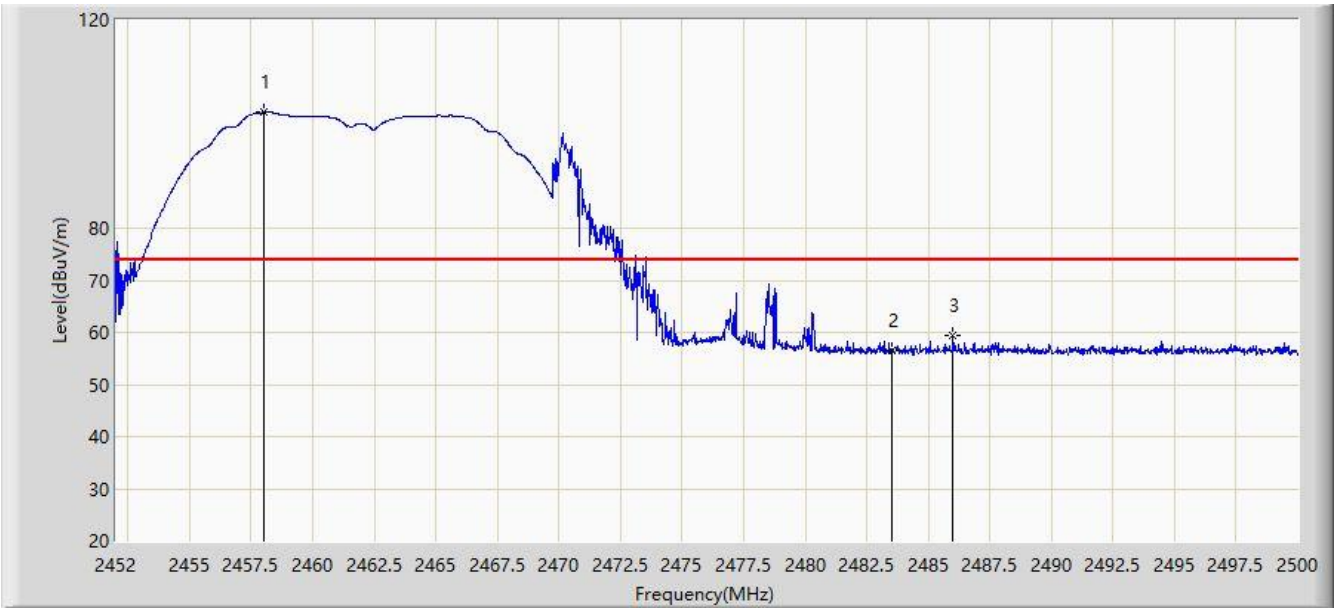


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2390.000	43.621	11.549	-10.379	54.000	32.072	AV
2		*	2409.008	99.668	67.588	N/A	N/A	32.079	AV

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

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

Site: AC1	Time: 2020/04/10 - 20:08
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at channel 2462MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2458.024	102.223	70.144	N/A	N/A	32.079	PK
2			2483.500	56.381	24.344	-17.619	74.000	32.037	PK
3			2486.008	59.448	27.416	-14.552	74.000	32.032	PK

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

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

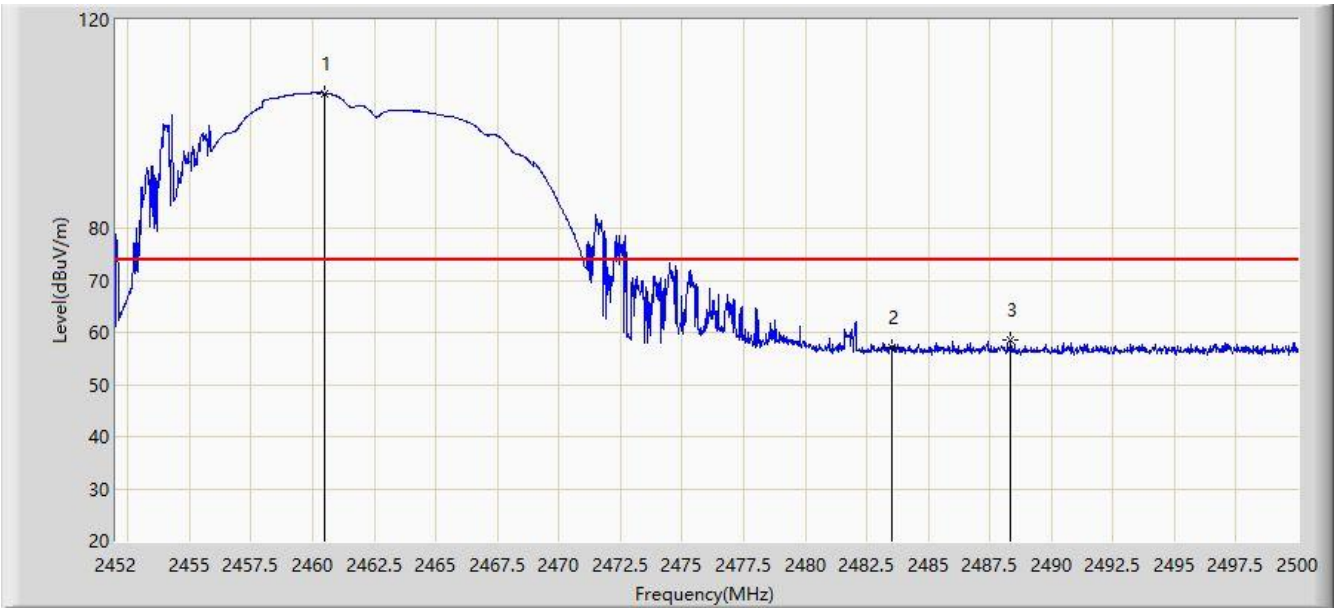
Site: AC1	Time: 2020/04/10 - 20:20
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at channel 2462MHz	

No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2459.296	97.823	65.744	N/A	N/A	32.079	AV
2			2483.500	43.839	11.802	-10.161	54.000	32.037	AV
3			2486.248	44.185	12.153	-9.815	54.000	32.032	AV

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

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

Site: AC1	Time: 2020/04/10 - 20:22
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at channel 2462MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2460.496	105.894	73.814	N/A	N/A	32.080	PK
2			2483.500	57.036	24.999	-16.964	74.000	32.037	PK
3			2488.336	58.523	26.495	-15.477	74.000	32.028	PK

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

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

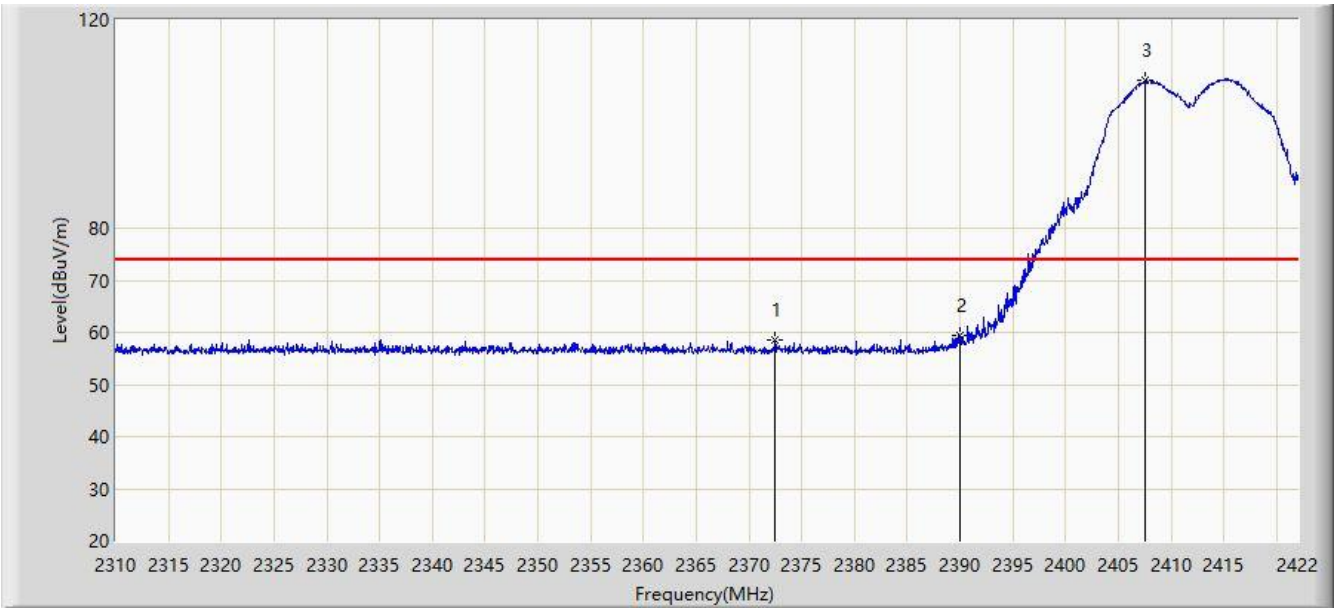
Site: AC1	Time: 2020/04/10 - 20:25
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11b at channel 2462MHz	

No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2459.656	101.405	69.325	N/A	N/A	32.080	AV
2			2483.500	44.496	12.459	-9.504	54.000	32.037	AV

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

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

Site: AC1	Time: 2020/04/11 - 10:34
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at channel 2412MHz	

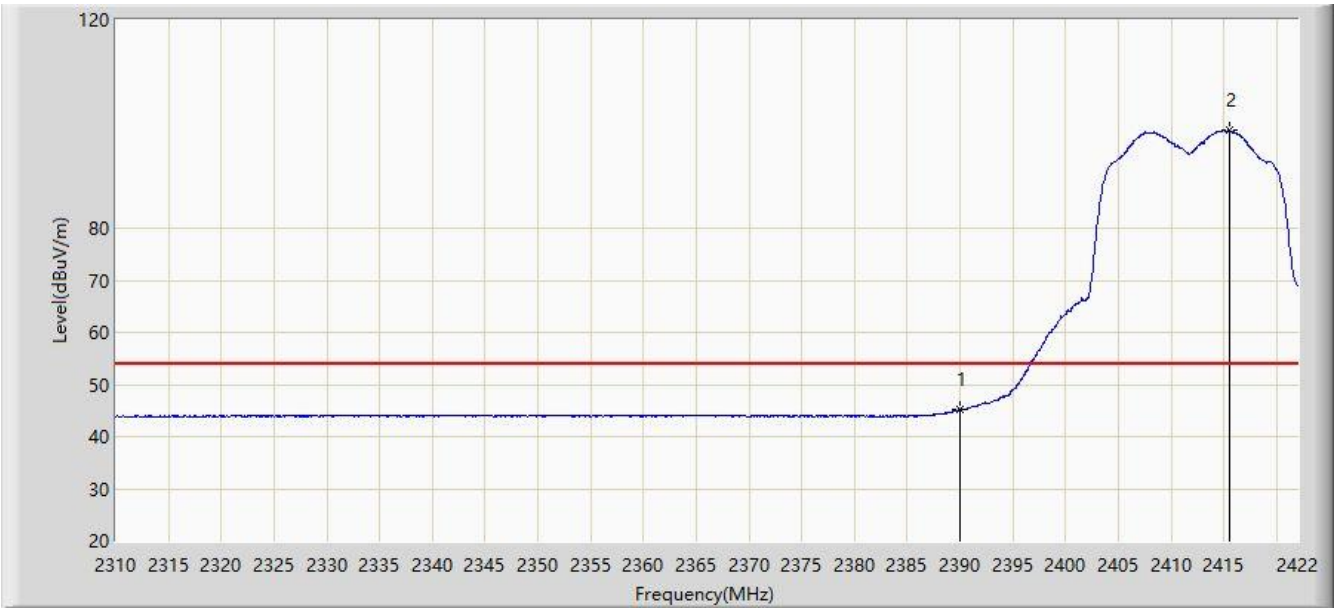


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2372.496	58.406	26.318	-15.594	74.000	32.088	PK
2			2390.000	59.417	27.345	-14.583	74.000	32.072	PK
3		*	2407.496	108.477	76.398	N/A	N/A	32.079	PK

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

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

Site: AC1	Time: 2020/04/11 - 10:44
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at channel 2412MHz	

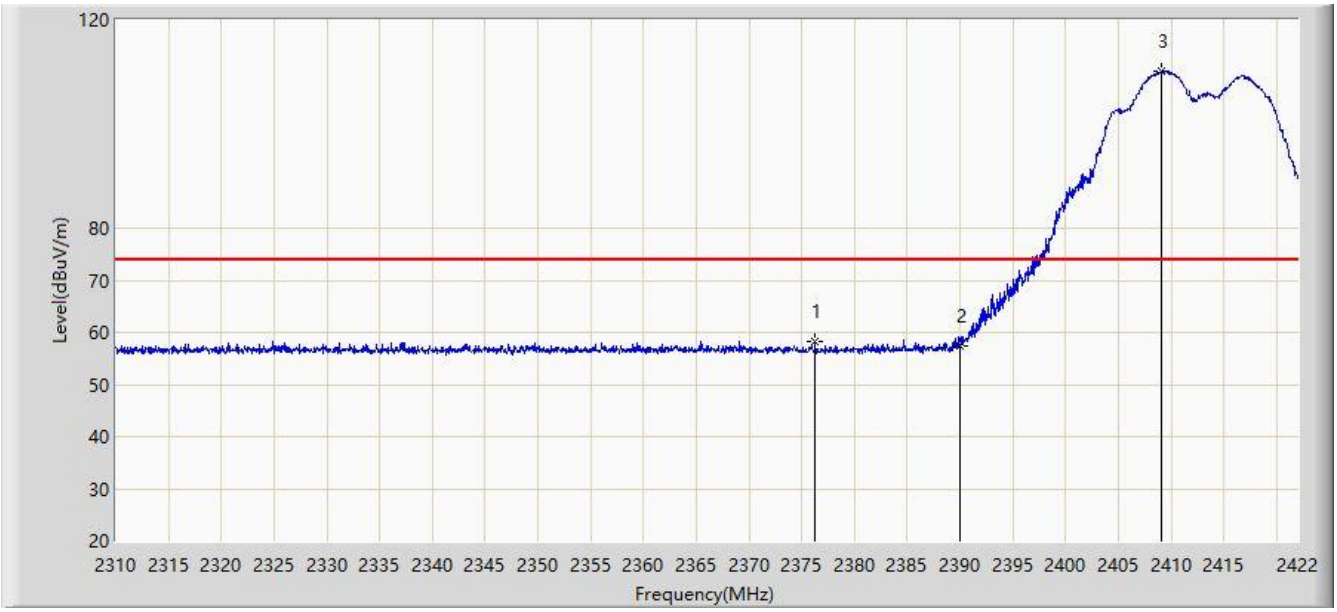


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2390.000	45.231	13.159	-8.769	54.000	32.072	AV
2		*	2415.504	98.758	66.665	N/A	N/A	32.092	AV

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

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

Site: AC1	Time: 2020/04/11 - 10:47
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at channel 2412MHz	

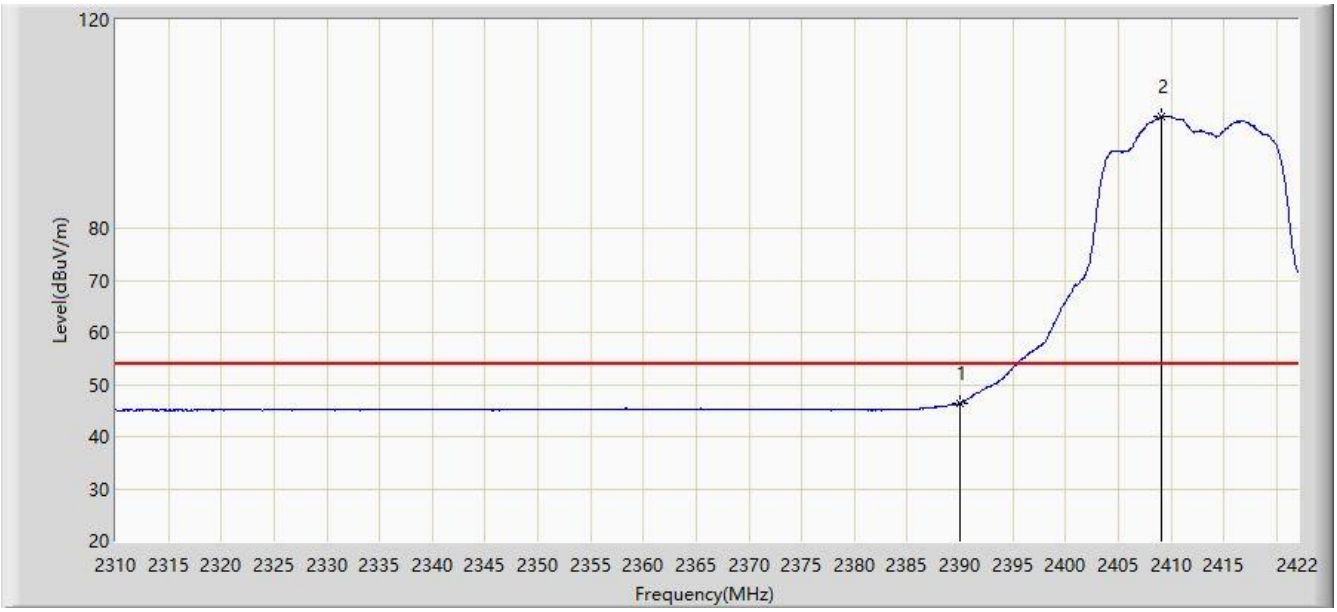


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2376.248	58.386	26.308	-15.614	74.000	32.079	PK
2			2390.000	57.281	25.209	-16.719	74.000	32.072	PK
3		*	2409.120	110.037	77.957	N/A	N/A	32.080	PK

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

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

Site: AC1	Time: 2020/04/11 - 10:52
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at channel 2412MHz	

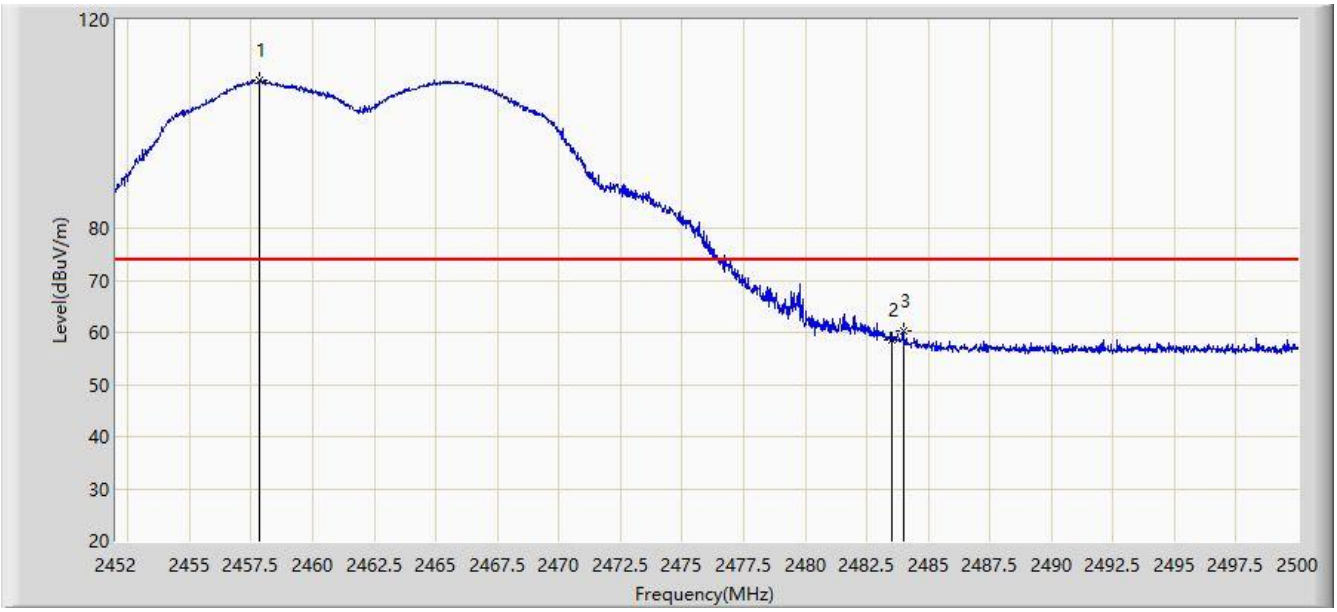


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2390.000	46.492	14.420	-7.508	54.000	32.072	AV
2		*	2409.120	101.578	69.498	N/A	N/A	32.080	AV

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

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

Site: AC1	Time: 2020/04/11 - 10:55
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at channel 2462MHz	

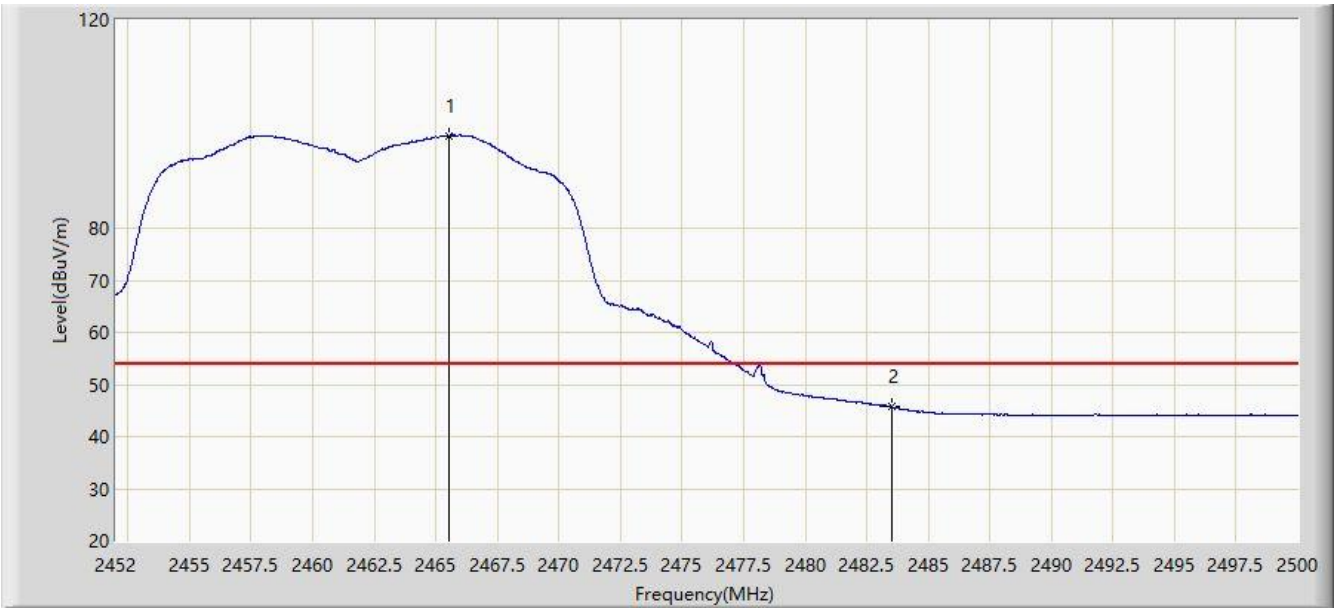


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2457.832	108.378	76.299	N/A	N/A	32.079	PK
2			2483.500	58.527	26.490	-15.473	74.000	32.037	PK
3			2483.992	60.161	28.125	-13.839	74.000	32.036	PK

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

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

Site: AC1	Time: 2020/04/11 - 10:59
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at channel 2462MHz	

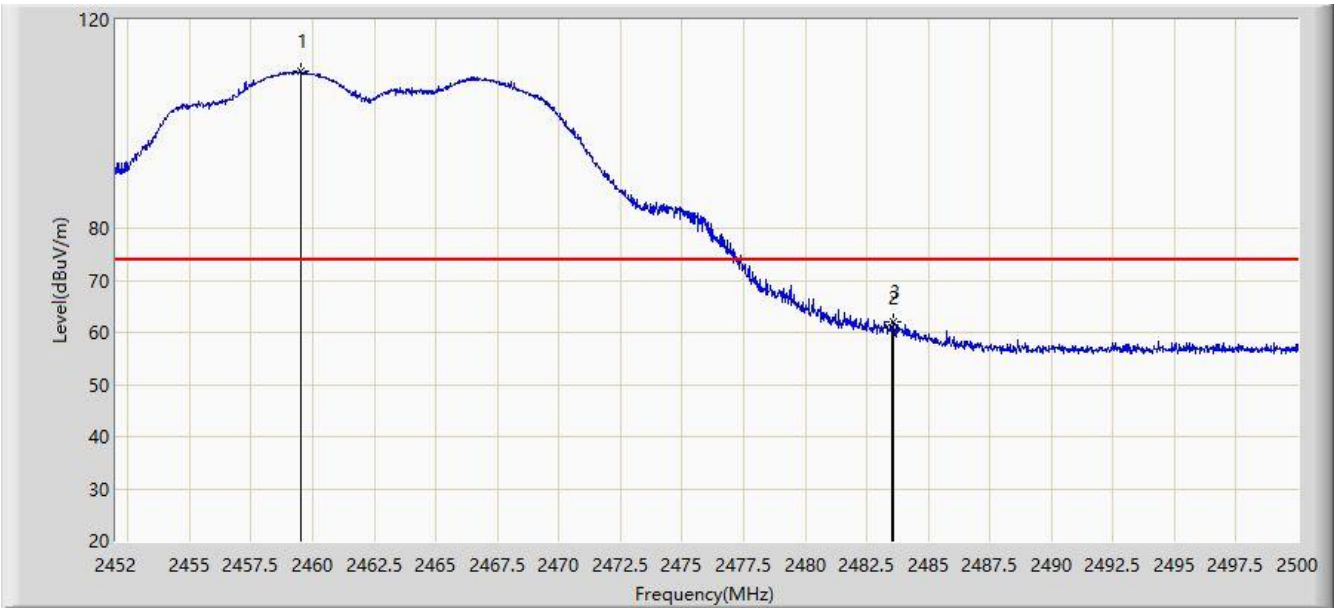


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2465.560	97.799	65.726	N/A	N/A	32.073	AV
2			2483.500	45.653	13.616	-8.347	54.000	32.037	AV

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

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

Site: AC1	Time: 2020/04/11 - 11:01
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at channel 2462MHz	

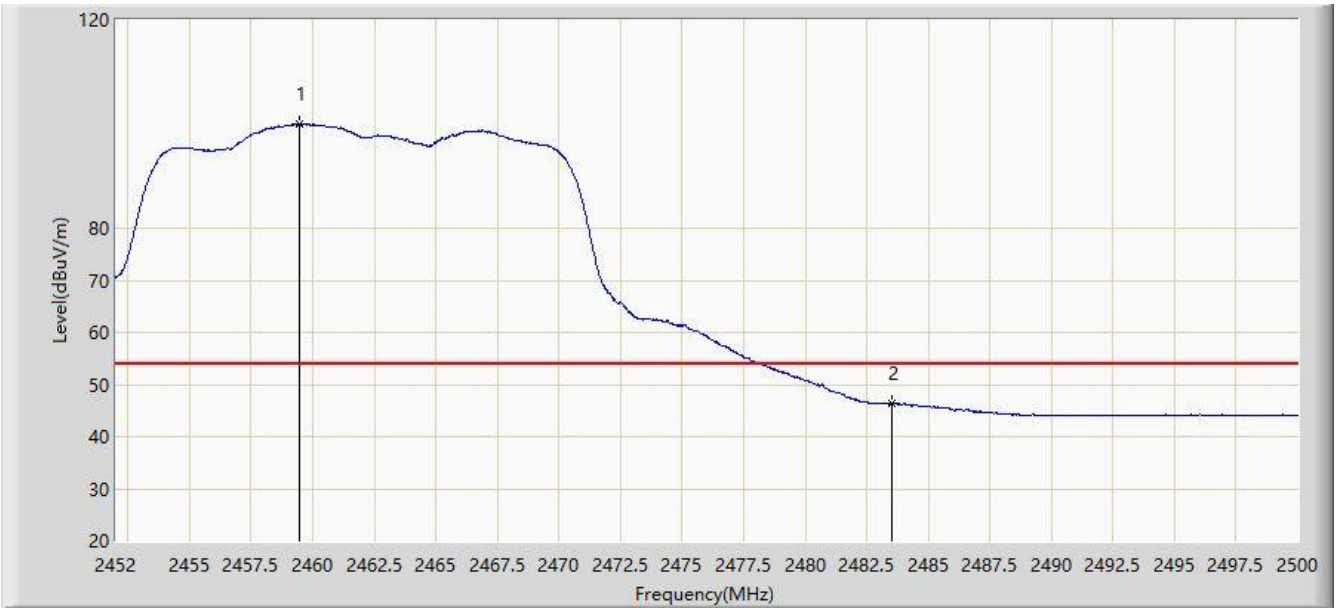


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2459.512	110.063	77.983	N/A	N/A	32.080	PK
2			2483.500	60.935	28.898	-13.065	74.000	32.037	PK
3			2483.608	61.886	29.849	-12.114	74.000	32.036	PK

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

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

Site: AC1	Time: 2020/04/11 - 11:05
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11g at channel 2462MHz	

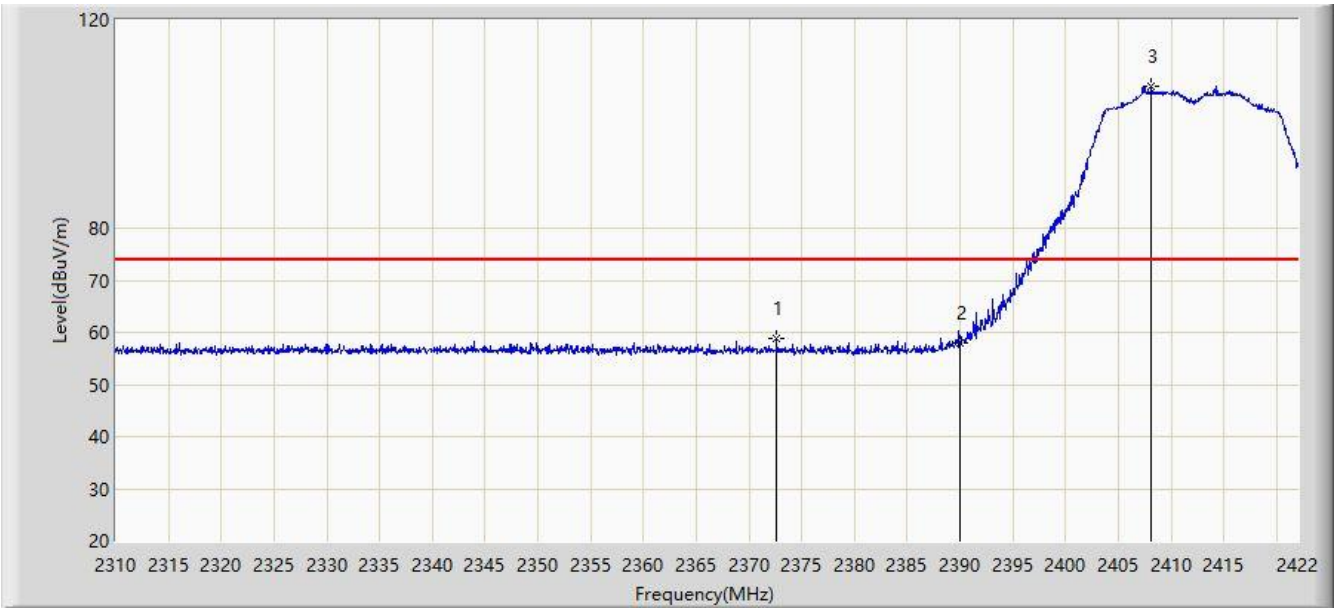


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2459.464	99.974	67.894	N/A	N/A	32.079	AV
2			2483.500	46.293	14.256	-7.707	54.000	32.037	AV

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

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

Site: AC1	Time: 2020/04/11 - 11:08
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at channel 2412MHz	

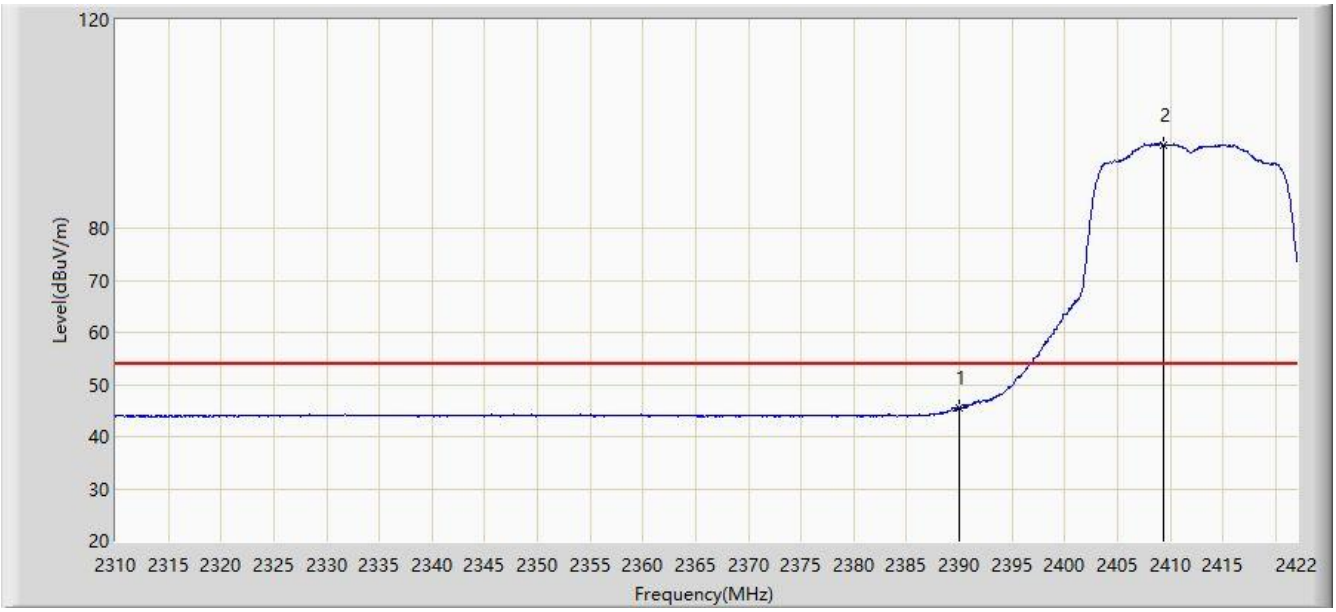


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2372.608	58.904	26.816	-15.096	74.000	32.088	PK
2			2390.000	58.050	25.978	-15.950	74.000	32.072	PK
3		*	2408.168	107.276	75.197	N/A	N/A	32.079	PK

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

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

Site: AC1	Time: 2020/04/11 - 11:11
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at channel 2412MHz	

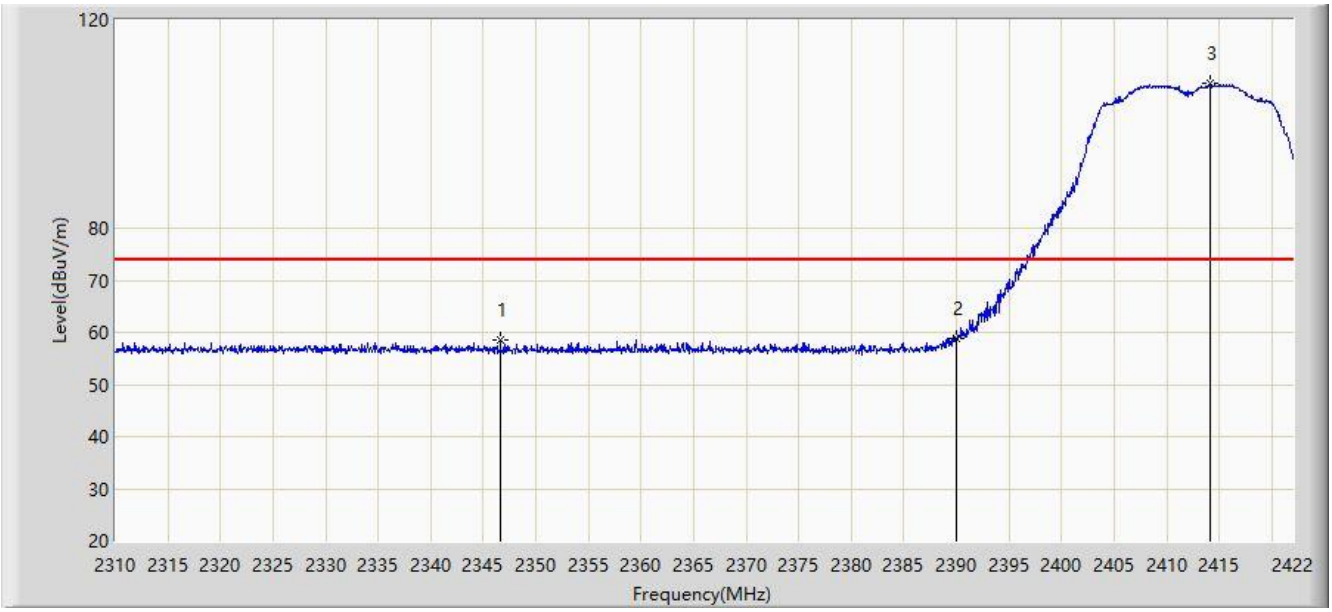


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2390.000	45.437	13.365	-8.563	54.000	32.072	AV
2		*	2409.400	95.977	63.897	N/A	N/A	32.080	AV

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

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

Site: AC1	Time: 2020/04/11 - 11:17
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at channel 2412MHz	

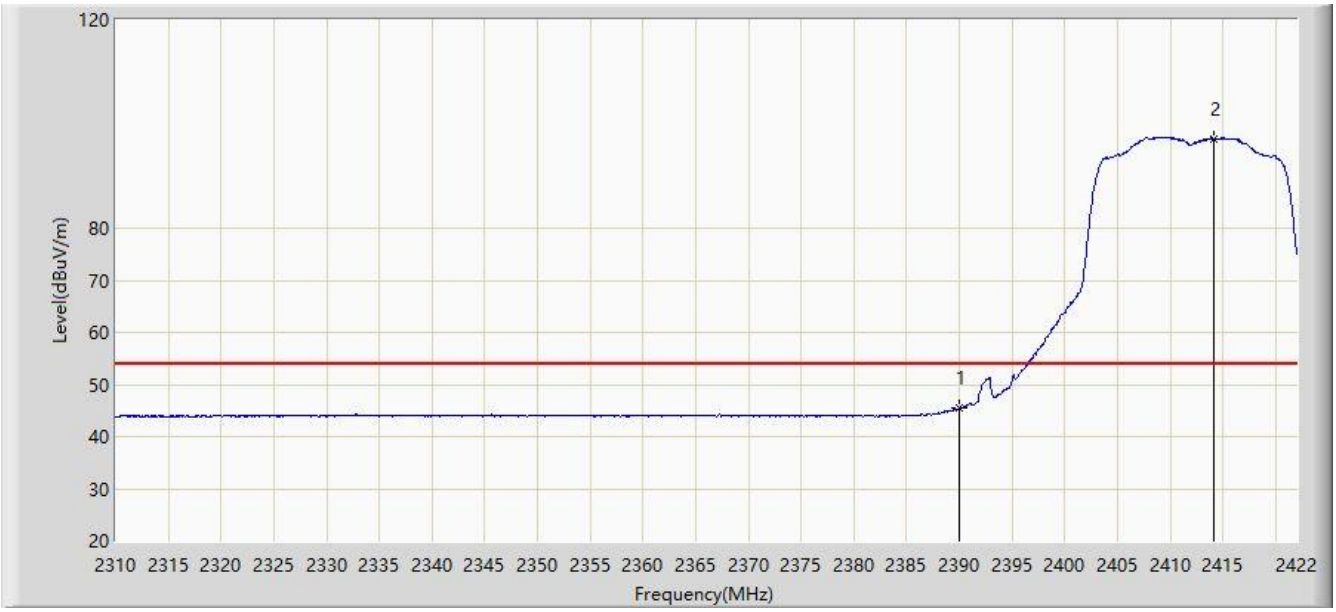


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2346.624	58.437	26.304	-15.563	74.000	32.133	PK
2			2390.000	58.896	26.824	-15.104	74.000	32.072	PK
3		*	2414.104	107.769	75.680	N/A	N/A	32.089	PK

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

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

Site: AC1	Time: 2020/04/11 - 11:19
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at channel 2412MHz	

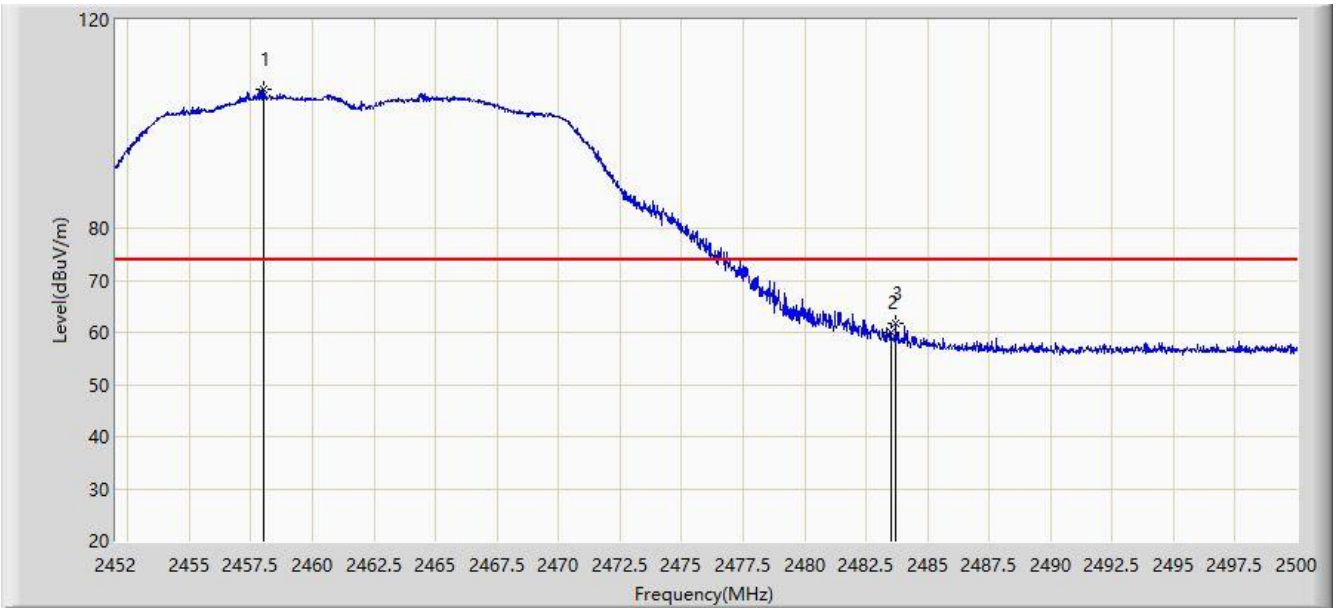


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2390.000	45.425	13.353	-8.575	54.000	32.072	AV
2		*	2414.104	97.216	65.127	N/A	N/A	32.089	AV

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

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

Site: AC1	Time: 2020/04/11 - 11:24
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at channel 2462MHz	

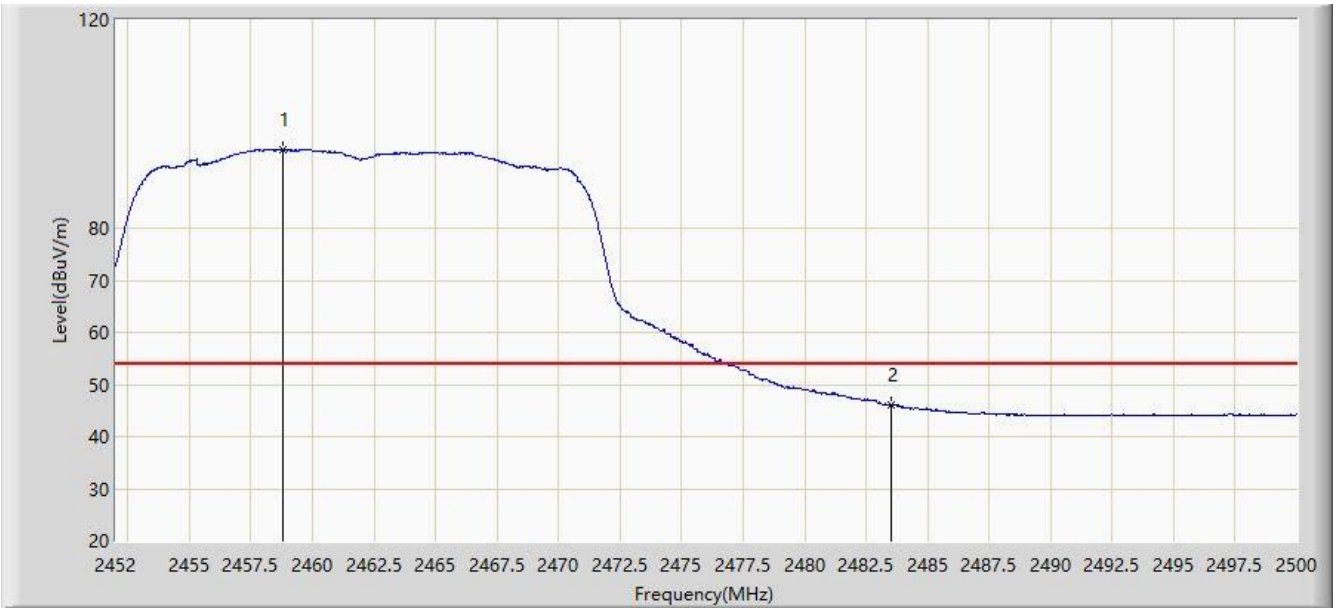


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2458.024	106.762	74.683	32.762	N/A	N/A	PK
2			2483.500	60.051	28.014	-13.949	74.000	32.037	PK
3			2483.728	61.785	29.748	-12.215	74.000	32.036	PK

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

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

Site: AC1	Time: 2020/04/11 - 11:27
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at channel 2462MHz	

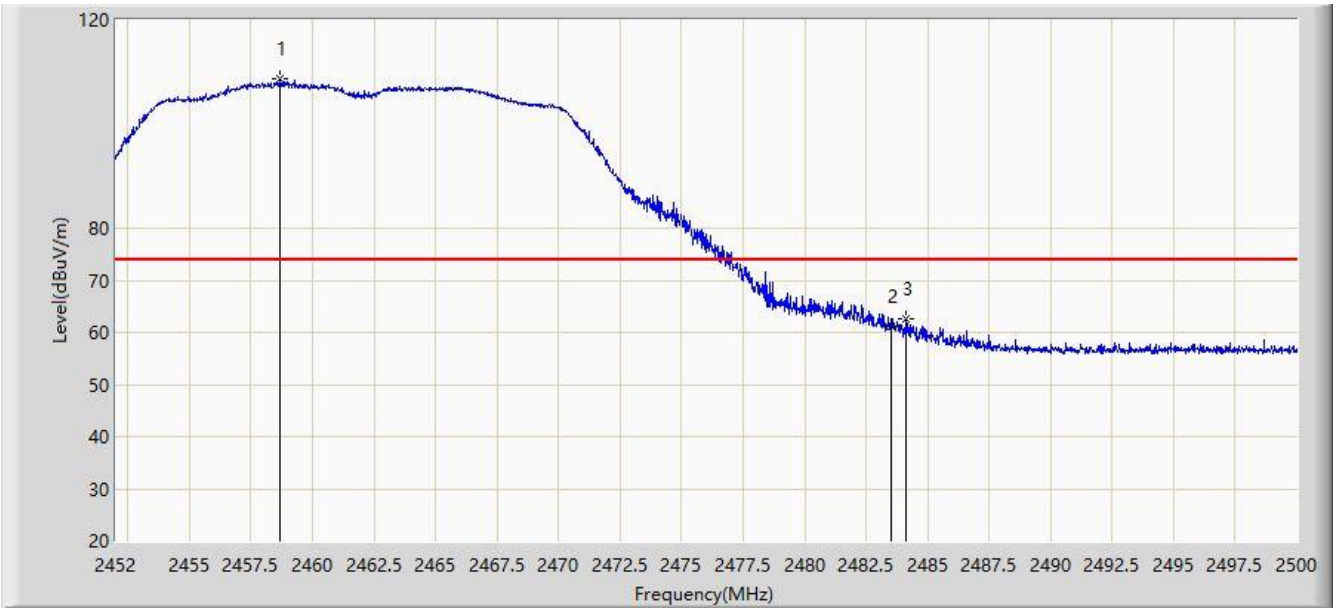


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2458.768	95.004	62.925	N/A	N/A	32.079	AV
2			2483.500	46.169	14.132	-7.831	54.000	32.037	AV

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

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

Site: AC1	Time: 2020/04/11 - 11:29
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at channel 2462MHz	

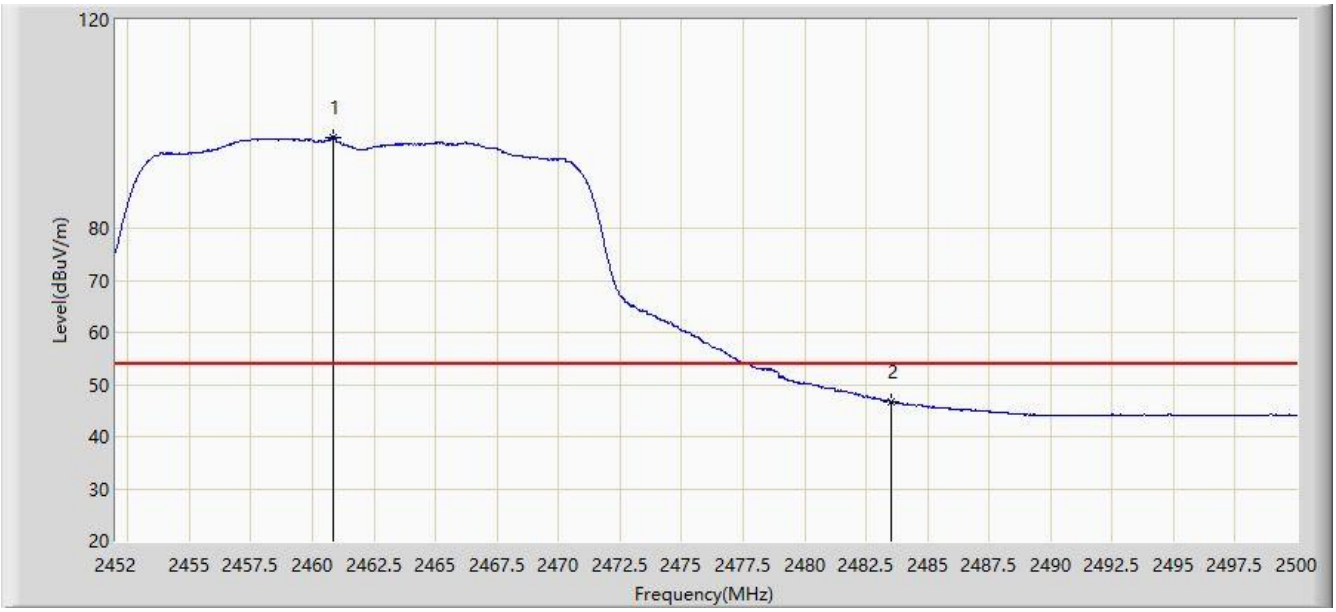


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2458.648	108.701	76.622	N/A	N/A	32.080	PK
2			2483.500	61.164	29.127	-12.836	74.000	32.037	PK
3			2484.136	62.487	30.451	-11.513	74.000	32.036	PK

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

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

Site: AC1	Time: 2020/04/11 - 11:32
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at channel 2462MHz	

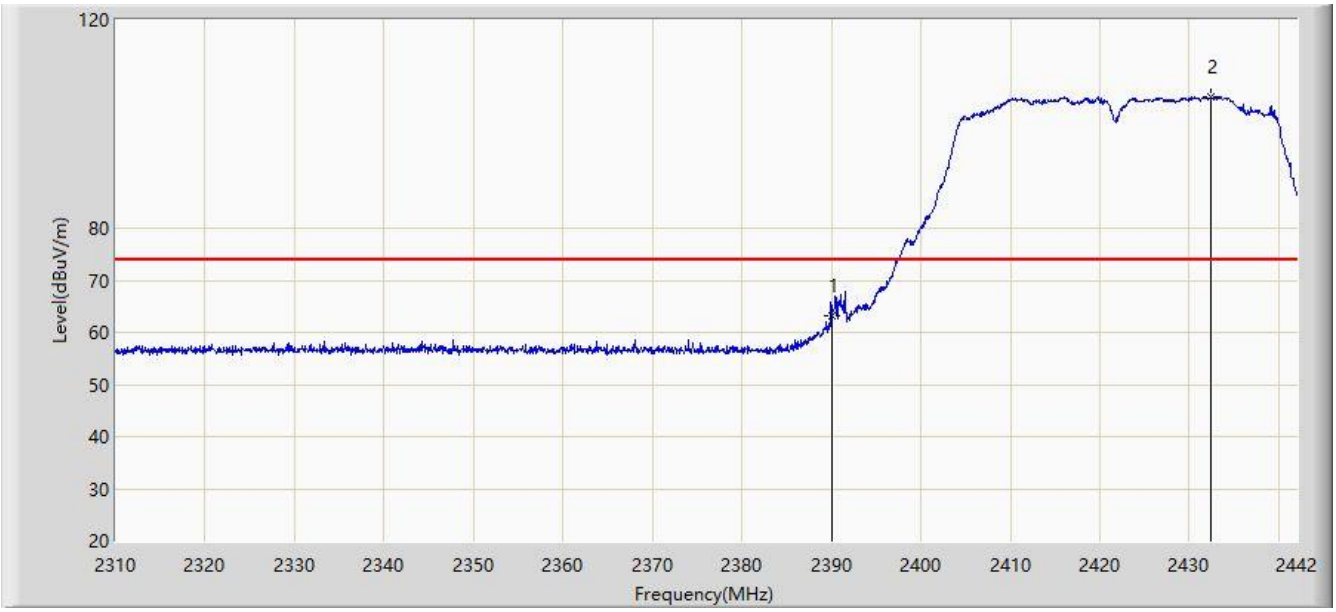


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2460.832	97.505	65.425	N/A	N/A	32.080	AV
2			2483.500	46.739	14.702	-7.261	54.000	32.037	AV

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

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

Site: AC1	Time: 2020/04/11 - 11:35
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at channel 2422MHz	

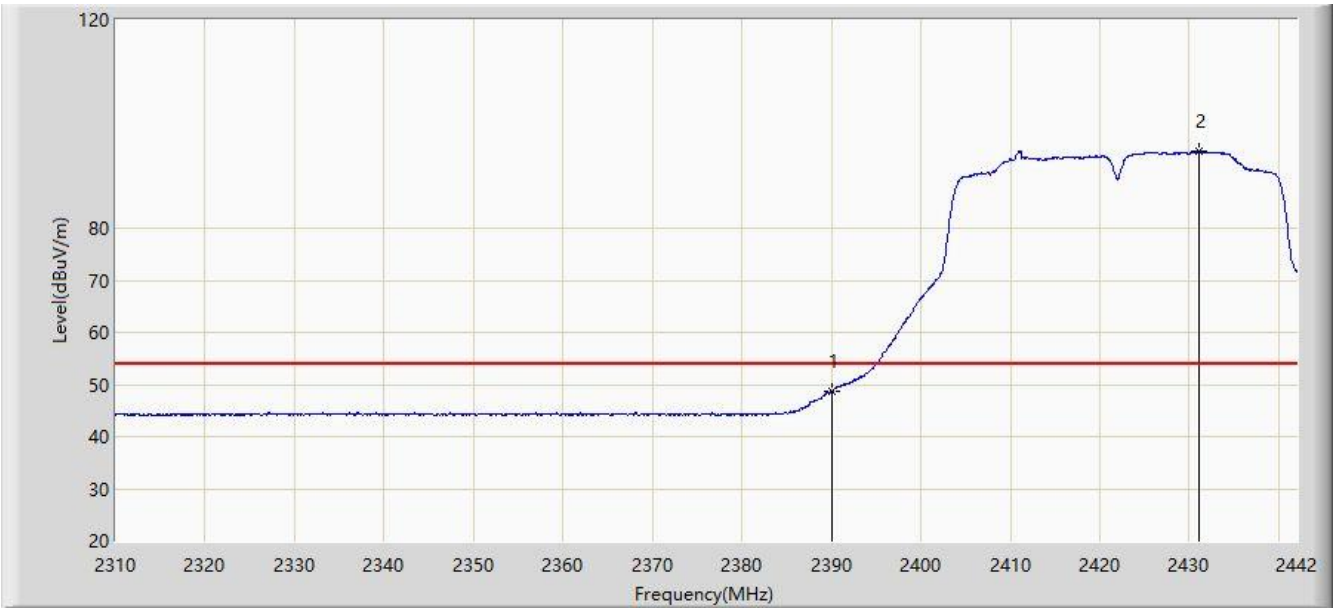


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2390.000	63.059	30.987	-10.941	74.000	32.072	PK
2		*	2432.430	105.323	73.211	N/A	N/A	32.112	PK

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

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

Site: AC1	Time: 2020/04/11 - 11:39
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at channel 2422MHz	

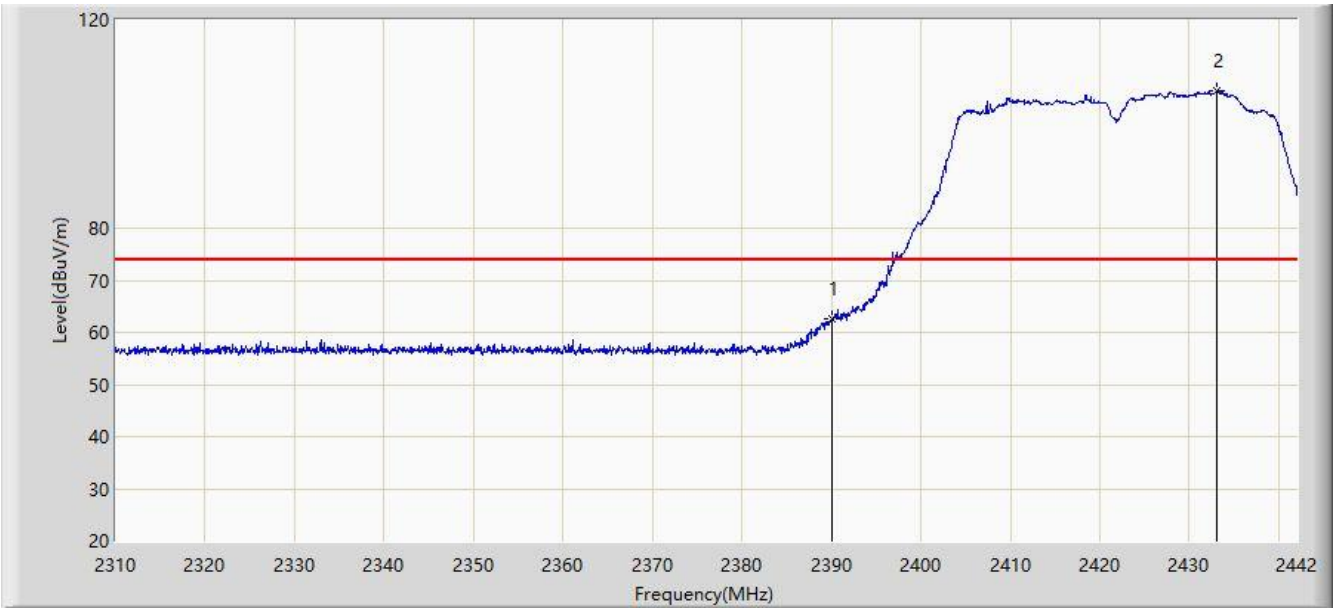


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2390.000	48.783	16.711	-5.217	54.000	32.072	AV
2		*	2431.044	94.726	62.610	N/A	N/A	32.116	AV

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

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

Site: AC1	Time: 2020/04/11 - 11:46
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at channel 2422MHz	

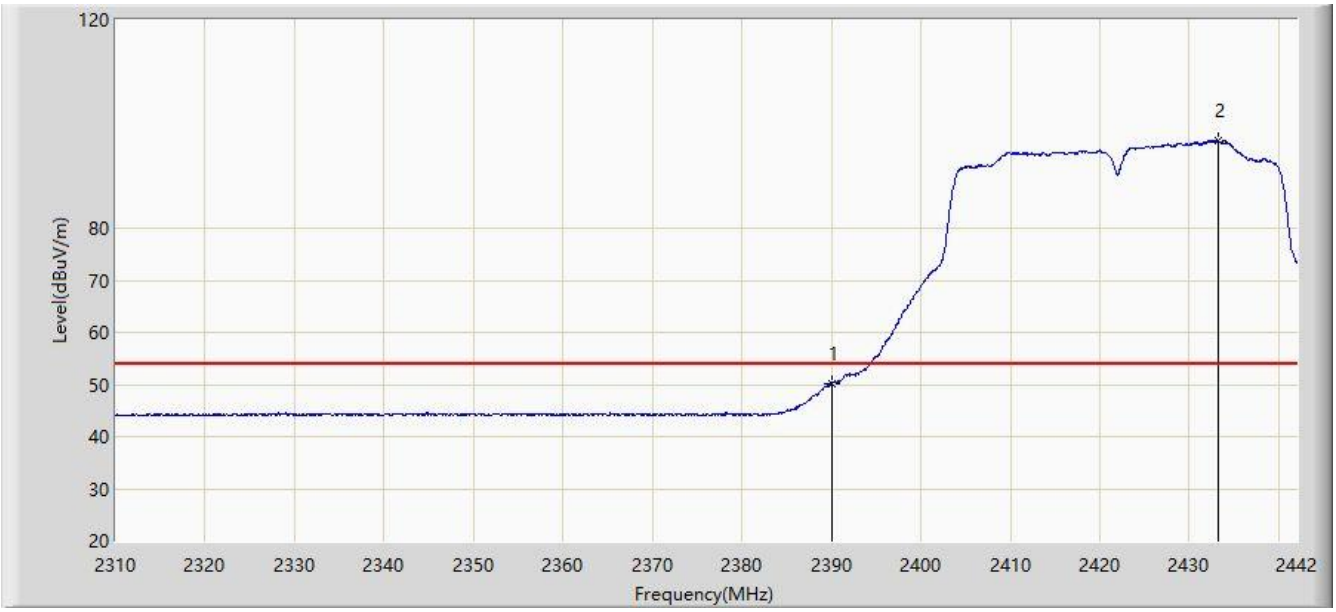


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2390.000	62.465	30.393	-11.535	74.000	32.072	PK
2		*	2433.024	106.314	74.204	N/A	N/A	32.110	PK

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

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

Site: AC1	Time: 2020/04/11 - 11:49
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at channel 2422MHz	

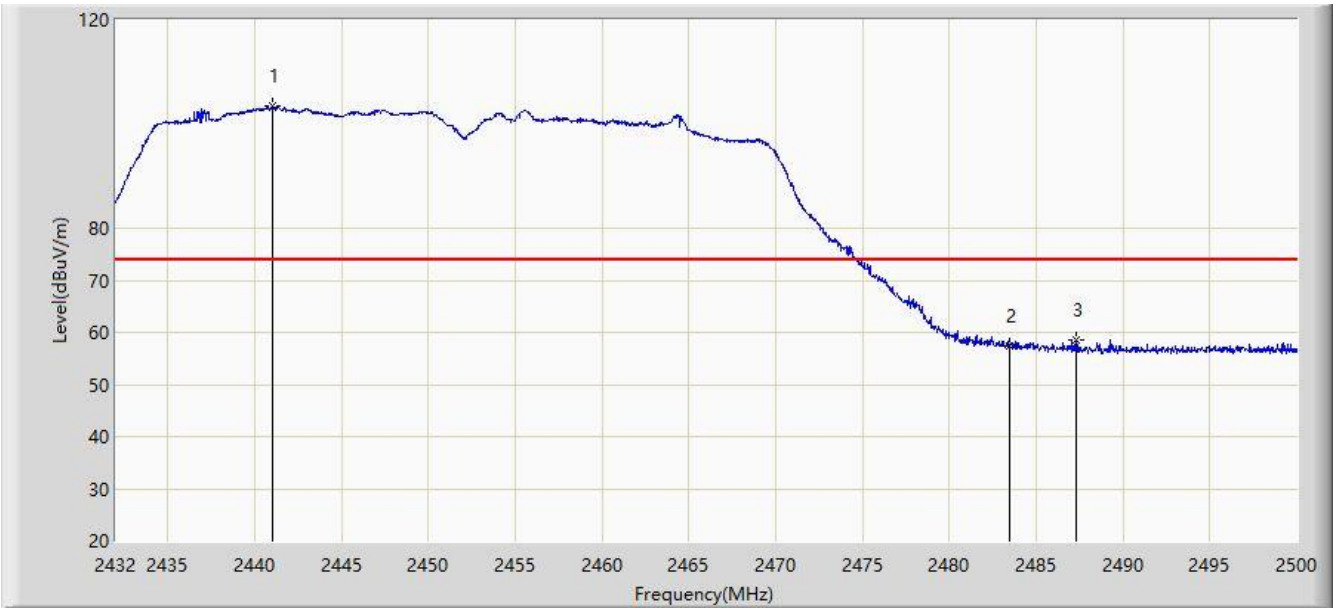


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2390.000	50.194	18.122	-3.806	54.000	32.072	AV
2		*	2433.288	96.674	64.565	N/A	N/A	32.110	AV

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

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

Site: AC1	Time: 2020/04/11 - 11:51
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at channel 2452MHz	

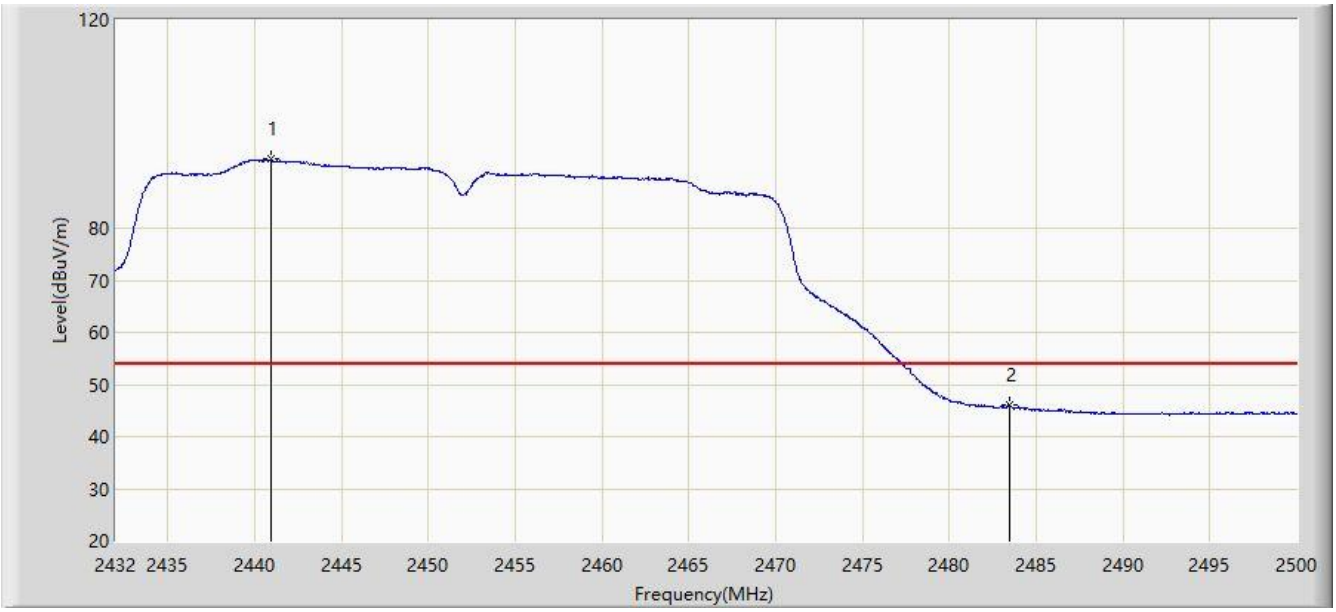


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2441.010	103.411	71.325	N/A	N/A	32.085	PK
2			2483.500	57.335	25.298	-16.665	74.000	32.037	PK
3			2487.318	58.676	26.646	-15.324	74.000	32.029	PK

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

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

Site: AC1	Time: 2020/04/11 - 11:55
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at channel 2452MHz	

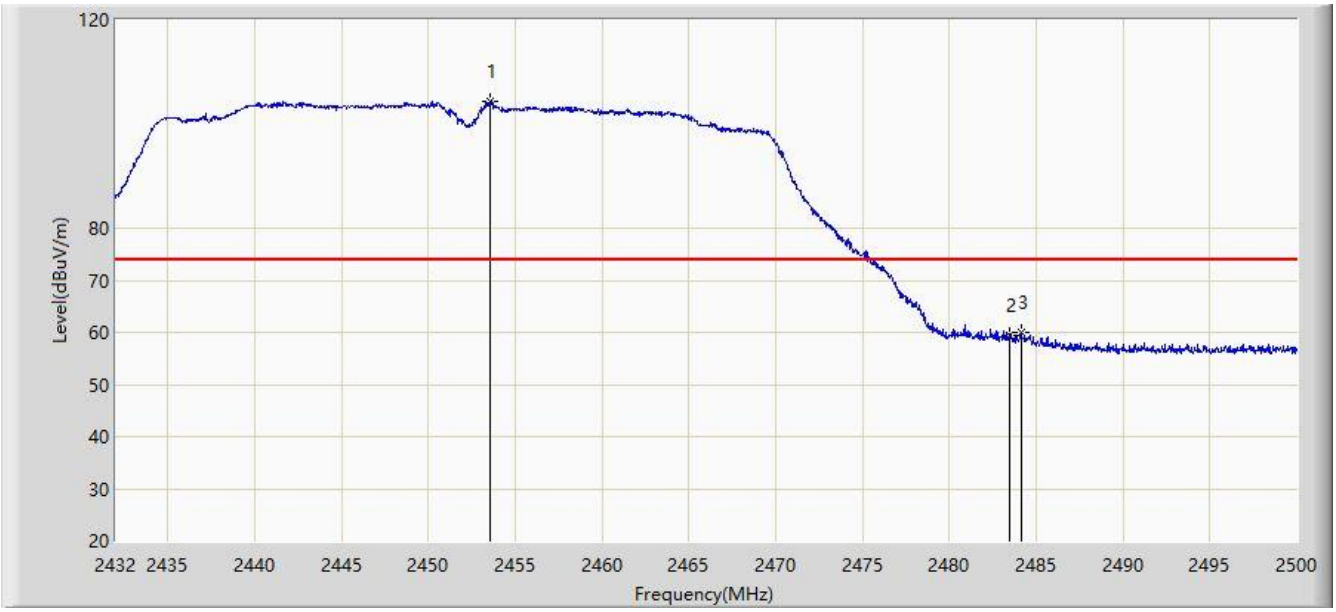


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2440.908	93.206	61.120	N/A	N/A	32.087	AV
2			2483.500	45.994	13.957	-8.006	54.000	32.037	AV

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

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

Site: AC1	Time: 2020/04/11 - 11:57
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at channel 2452MHz	

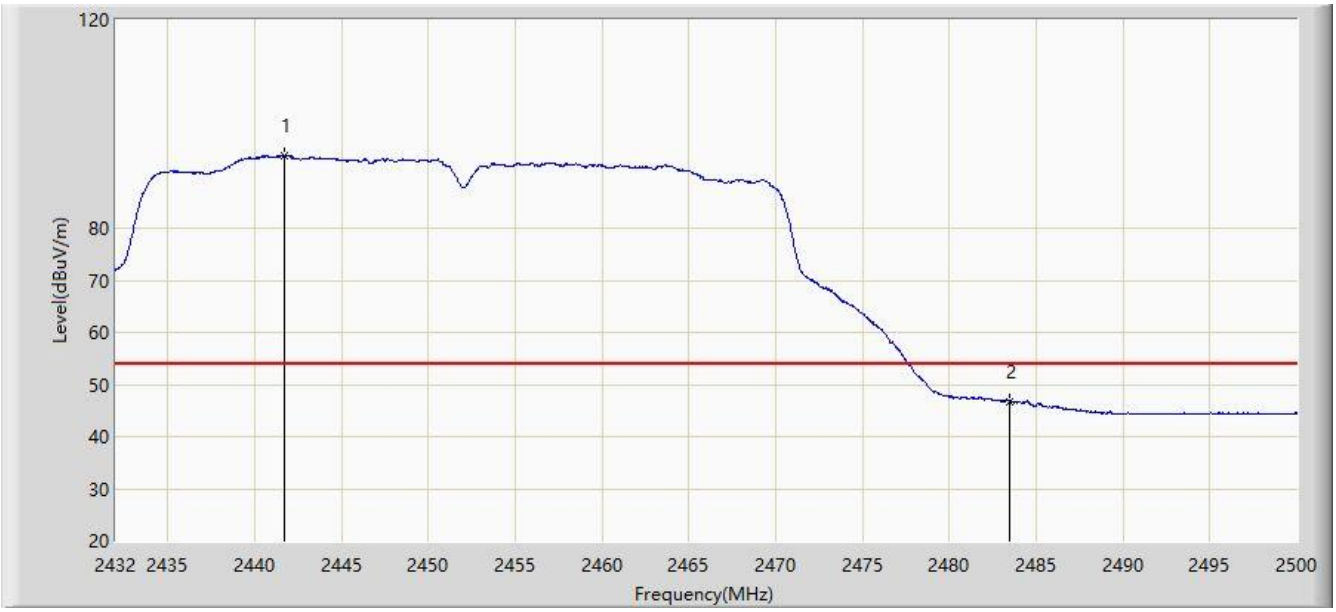


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2453.556	104.349	72.272	N/A	N/A	32.077	PK
2			2483.500	59.411	27.374	-14.589	74.000	32.037	PK
3			2484.122	59.977	27.941	-14.023	74.000	32.036	PK

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

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

Site: AC1	Time: 2020/04/11 - 12:00
Limit: FCC_Part15.209_RE (3m)	Engineer: Lewis Huang
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Notebook	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at channel 2452MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2441.690	93.860	61.776	N/A	N/A	32.083	AV
2			2483.500	46.760	14.723	-7.240	54.000	32.037	AV

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

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

7.8. AC Conducted Emissions Measurement

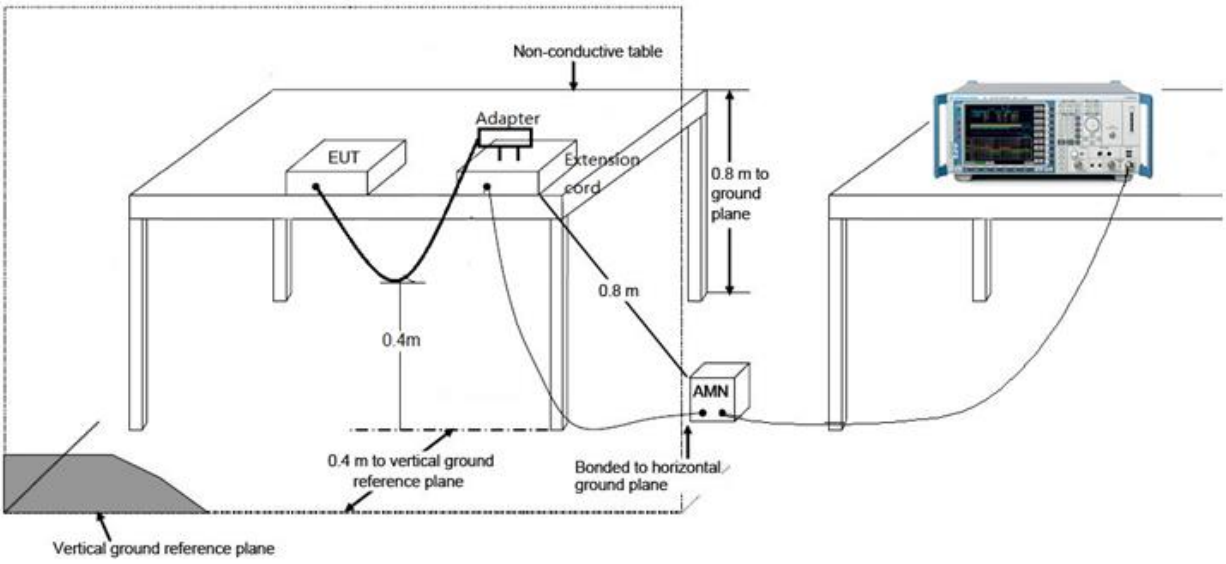
7.8.1.Test Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
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.

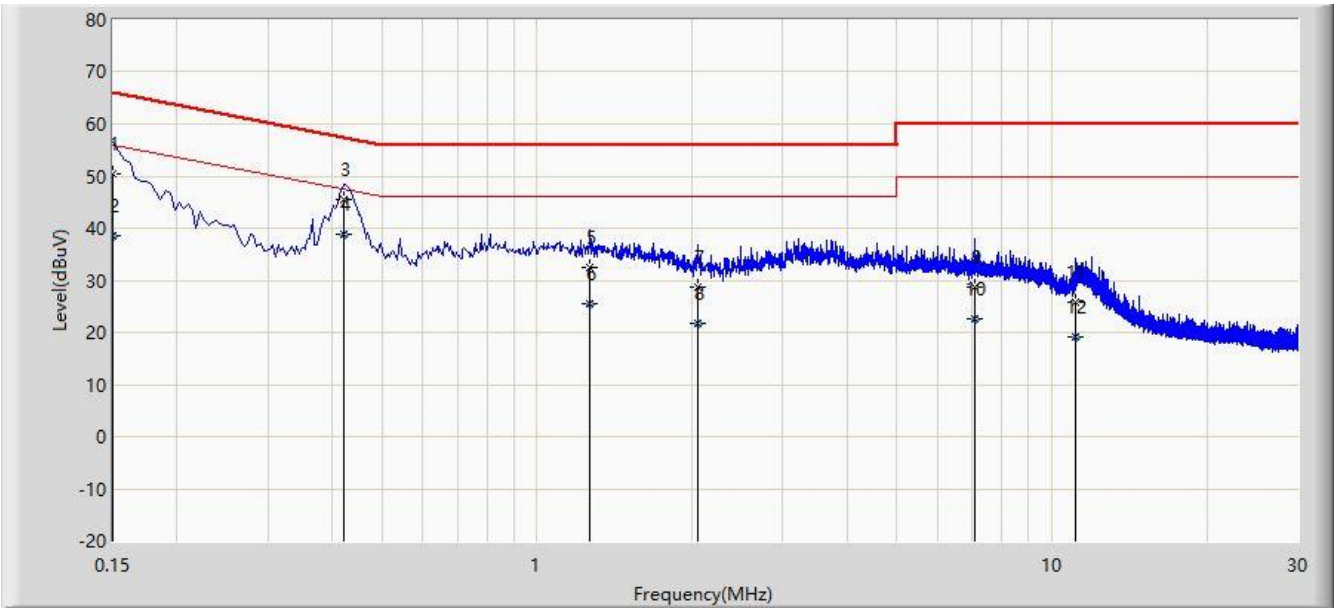
Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

7.8.2.Test Setup



7.8.3.Test Result

Site: SR2	Time: 2020/04/13 - 11:28
Limit: FCC_Part15.207_CE_AC Power	Engineer: Lewis Huang
Probe: ENV216_101683_Filter On	Polarity: Line
EUT: Notebook	Power: AC 120V/60Hz
Worst Case Mode: Transmit by 802.11b at Channel 2412MHz	

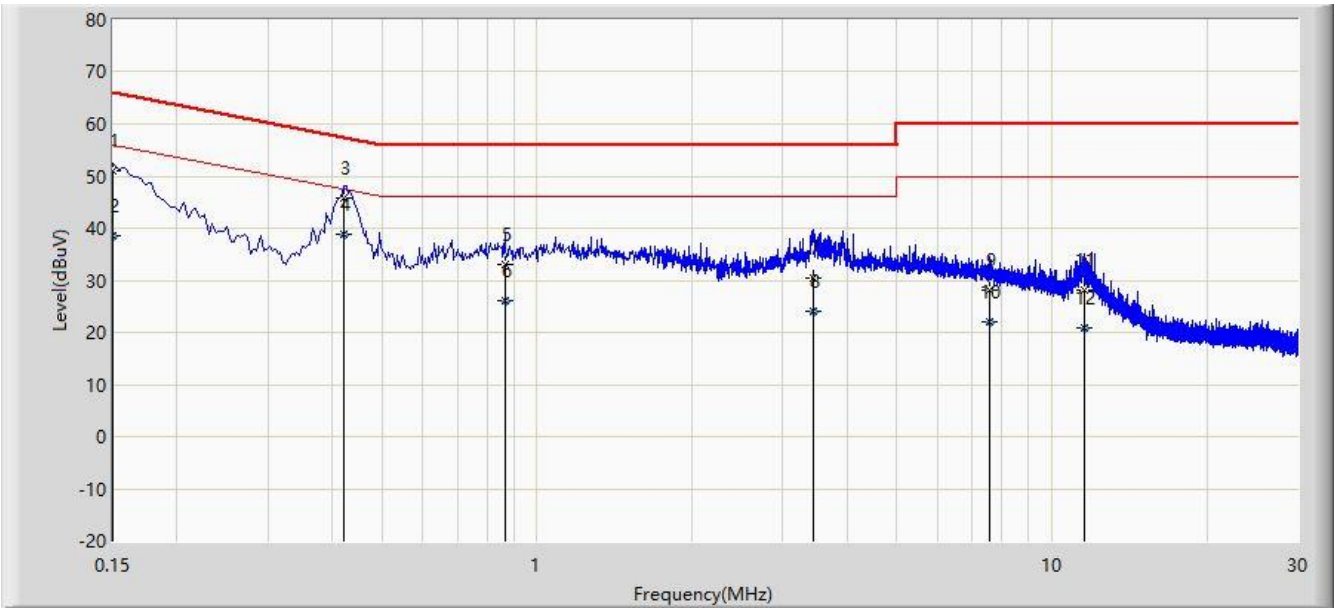


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.150	50.565	39.784	-15.435	66.000	10.781	QP
2			0.150	38.684	27.903	-17.316	56.000	10.781	AV
3			0.422	45.615	35.649	-11.794	57.409	9.966	QP
4		*	0.422	38.908	28.942	-8.501	47.409	9.966	AV
5			1.266	32.577	22.840	-23.423	56.000	9.737	QP
6			1.266	25.426	15.689	-20.574	46.000	9.737	AV
7			2.050	28.803	19.114	-27.197	56.000	9.689	QP
8			2.050	21.654	11.966	-24.346	46.000	9.689	AV
9			7.082	28.579	18.832	-31.421	60.000	9.747	QP
10			7.082	22.464	12.716	-27.536	50.000	9.747	AV
11			11.130	25.872	16.045	-34.128	60.000	9.826	QP
12			11.130	19.115	9.289	-30.885	50.000	9.826	AV

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

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

Site: SR2	Time: 2020/04/13 - 11:44
Limit: FCC_Part15.207_CE_AC Power	Engineer: Lewis Huang
Probe: ENV216_101683_Filter On	Polarity: Neutral
EUT: Notebook	Power: AC 120V/60Hz
Worst Case Mode: Transmit by 802.11b at Channel 2412MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.150	51.028	40.237	-14.972	66.000	10.791	QP
2			0.150	38.683	27.892	-17.317	56.000	10.791	AV
3			0.422	45.727	35.762	-11.681	57.409	9.966	QP
4		*	0.422	38.948	28.982	-8.461	47.409	9.966	AV
5			0.866	32.975	23.150	-23.025	56.000	9.825	QP
6			0.866	26.063	16.238	-19.937	46.000	9.825	AV
7			3.450	30.558	20.865	-25.442	56.000	9.693	QP
8			3.450	24.095	14.401	-21.905	46.000	9.693	AV
9			7.586	28.076	18.308	-31.924	60.000	9.768	QP
10			7.586	22.062	12.294	-27.938	50.000	9.768	AV
11			11.546	28.172	18.316	-31.828	60.000	9.856	QP
12			11.546	20.923	11.066	-29.077	50.000	9.856	AV

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

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

8. CONCLUSION

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

The End

Appendix A - Test Setup Photograph

Refer to “2004RSU019-UT” file.

Appendix B - EUT Photograph

Refer to “2004RSU019-UE” file.