



### 5.7. Frequency Stability Measurement

#### 5.7.1.Test Limit

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

#### 5.7.2.Test Procedure Used

#### **Frequency Stability Under Temperature Variations:**

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to highest. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C decreased per stage until the lowest temperature reached.

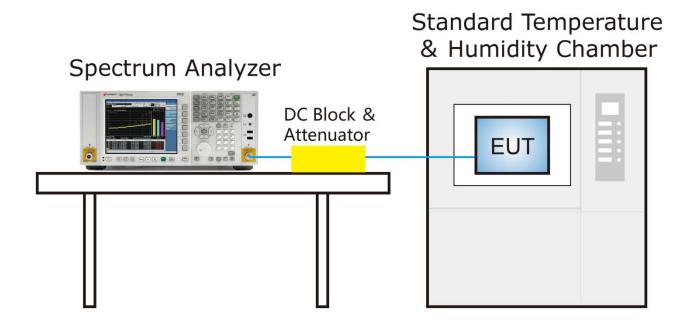
### **Frequency Stability Under Voltage Variations:**

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation (±15%) and endpoint, recordthe maximum frequency change. For hand-carried battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.



## 5.7.3.Test Setup





### 5.7.4.Test Result

Test Site	NS-SR2	Test Engineer	Flag Yang	
Test Mode	5180MHz (Carrier Mode)	Test Time	2021/05/22	

Voltage	Power	Temp	Frequency Tolerance (ppm)					
(%)	(V <sub>AC</sub> )	(°C)	0 minutes	2 minutes	5 minutes	10 minutes		
		- 30	3.90	3.89	3.89	3.90		
		- 20	3.89	3.88	3.87	3.90		
		- 10	3.90	3.86	3.87	3.91		
		0	3.90	3.89	3.90	3.89		
100%	120	+ 10	3.90	3.89	3.89	3.89		
		+ 20	3.90	3.88	3.87	3.89		
		+ 30	3.89	3.90	3.89	3.88		
		+ 40	3.89	3.88	3.90	3.89		
		+ 50	3.90	3.90	3.89	3.89		
115%	138	+ 20	3.90	3.89	3.88	3.90		
85%	102	+ 20	3.90	3.90	3.87	3.89		

Note: Frequency Tolerance (ppm) =  $\{[Measured Frequency (MHz) - Declared Frequency (MHz)] / Declared Frequency (MHz)\} *10<sup>6</sup>.$ 



# 5.8. Radiated Spurious Emission Measurement

### 5.8.1.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	Field Strength	Measured Distance					
(MHz)	(μV/m)	(m)					
0.009 - 0.490	2400/F (kHz)	300					
0.490 - 1.705	24000/F (kHz)	30					
1.705 - 30	30	30					
30 - 88	100	3					
88 - 216	150	3					
216 - 960	200	3					
Above 960	500	3					

### 5.8.2.Test Procedure Used

KDB 789033 D02v02r01- Section G

# 5.8.3.Test Setting

Table 1 - RBW as a function of frequency

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



### **Quasi-Peak Measurements below 1GHz**

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

## Peak Measurements above 1GHz

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

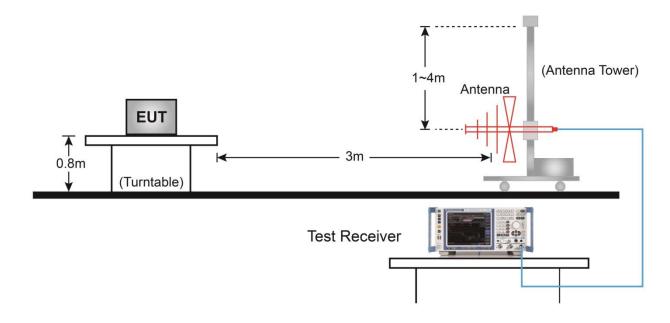
#### <u>Average Measurements above 1GHz (Method VB)</u>

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

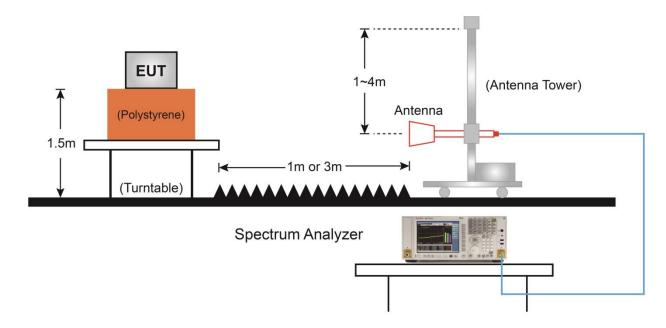


# 5.8.4.Test Setup

# Below 1GHz Test Setup:



# Above1GHz Test Setup:





#### 5.8.5.Test Result

Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11a	Test Date	2021/05/22				
Test Channel	36						
Remark	1. Average measurement was not p	Average measurement was not performed if peak level lower than average					
	limit.	limit.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	7885.0	38.1	10.6	48.7	68.2	-19.5	Peak	Horizontal
*	8658.5	36.4	12.4	48.8	68.2	-19.4	Peak	Horizontal
	11098.0	35.2	16.2	51.4	74.0	-22.6	Peak	Horizontal
	12602.5	35.6	15.5	51.1	74.0	-22.9	Peak	Horizontal
*	7936.0	35.1	10.7	45.8	68.2	-22.4	Peak	Vertical
*	8701.0	35.1	12.7	47.8	68.2	-20.4	Peak	Vertical
	11132.0	35.0	16.2	51.2	74.0	-22.8	Peak	Vertical
	11922.5	35.4	15.4	50.8	74.0	-23.2	Peak	Vertical

Note 1: "\*" is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBµV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

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



Test Site	NS-AC1	Test Engineer	Dillon Diao					
Test Mode	802.11a	Test Date	2021/05/22					
Test Channel	44							
Remark	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	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	8692.5	35.4	12.6	48.0	68.2	-20.2	Peak	Horizontal
*	9772.0	35.5	13.8	49.3	68.2	-18.9	Peak	Horizontal
	11888.5	35.7	15.2	50.9	74.0	-23.1	Peak	Horizontal
	15654.0	37.3	17.2	54.5	74.0	-19.5	Peak	Horizontal
*	8658.5	36.0	12.4	48.4	68.2	-19.8	Peak	Vertical
*	9814.5	35.3	13.9	49.2	68.2	-19.0	Peak	Vertical
	11489.0	35.4	16.4	51.8	74.0	-22.2	Peak	Vertical
	15654.0	42.0	17.2	59.2	74.0	-14.8	Peak	Vertical
	15654.0	33.6	17.2	50.8	54.0	-3.2	Average	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11a	Test Date	2021/05/22				
Test Channel	48						
Remark	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	8837.0	35.9	12.7	48.6	68.2	-19.6	Peak	Horizontal
*	9772.0	36.6	13.8	50.4	68.2	-17.8	Peak	Horizontal
	11378.5	35.4	16.1	51.5	74.0	-22.5	Peak	Horizontal
	15722.0	36.5	16.9	53.4	74.0	-20.6	Peak	Horizontal
*	8828.5	36.8	12.7	49.5	68.2	-18.7	Peak	Vertical
*	10120.5	35.9	13.9	49.8	68.2	-18.4	Peak	Vertical
	11327.5	34.1	15.5	49.6	74.0	-24.4	Peak	Vertical
	15722.0	42.3	16.9	59.2	74.0	-14.8	Peak	Vertical
	15722.0	33.3	16.9	50.2	54.0	-3.8	Average	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao					
Test Mode	802.11a	Test Date	2021/05/22					
Test Channel	149							
Remark	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	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	9950.5	35.1	14.0	49.1	68.2	-19.1	Peak	Horizontal
	11183.0	34.6	16.3	50.9	74.0	-23.1	Peak	Horizontal
	12373.0	35.8	15.1	50.9	74.0	-23.1	Peak	Horizontal
*	17235.0	39.9	20.7	60.6	68.2	-7.6	Peak	Horizontal
*	8794.5	35.2	12.6	47.8	68.2	-20.4	Peak	Vertical
	11072.5	33.4	16.1	49.5	74.0	-24.5	Peak	Vertical
	11829.0	34.5	15.5	50.0	74.0	-24.0	Peak	Vertical
*	17235.0	46.1	20.7	66.8	68.2	-1.4	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11a	Test Date	2021/05/22				
Test Channel	157						
Remark	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	9976.0	36.5	14.1	50.6	68.2	-17.6	Peak	Horizontal
	11174.5	33.1	16.2	49.3	74.0	-24.7	Peak	Horizontal
	12177.5	33.6	15.9	49.5	74.0	-24.5	Peak	Horizontal
*	17345.5	39.8	21.8	61.6	68.2	-6.6	Peak	Horizontal
*	10299.0	35.6	14.7	50.3	68.2	-17.9	Peak	Vertical
	10936.5	35.6	15.7	51.3	74.0	-22.7	Peak	Vertical
	12194.5	35.5	15.8	51.3	74.0	-22.7	Peak	Vertical
*	17354.0	42.1	21.8	63.9	68.2	-4.3	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11a	Test Date	2021/05/22				
Test Channel	165						
Remark	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	9967.5	37.7	14.0	51.7	68.2	-16.5	Peak	Horizontal
	10707.0	35.7	15.4	51.1	74.0	-22.9	Peak	Horizontal
	11999.0	35.1	15.6	50.7	74.0	-23.3	Peak	Horizontal
*	17464.5	37.1	22.6	59.7	68.2	-8.5	Peak	Horizontal
*	8837.0	36.5	12.7	49.2	68.2	-19.0	Peak	Vertical
	10987.5	36.1	15.5	51.6	74.0	-22.4	Peak	Vertical
	11652.0	38.7	16.6	55.3	74.0	-18.7	Peak	Vertical
	11652.0	30.1	16.6	46.7	54.0	-7.3	Average	Vertical
*	17481.5	42.1	22.9	65.0	68.2	-3.2	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao					
Test Mode	802.11ac-VHT20	Test Date	2021/05/22					
Test Channel	36							
Remark	1. Average measurement was not p	performed if peak level lov	wer than average					
	limit.							
	2. Other frequency was 20dB below	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	10375.5	36.5	14.9	51.4	68.2	-16.8	Peak	Horizontal
	11378.5	35.6	16.1	51.7	74.0	-22.3	Peak	Horizontal
	12033.0	35.5	15.8	51.3	74.0	-22.7	Peak	Horizontal
*	12840.5	34.4	16.0	50.4	68.2	-17.8	Peak	Horizontal
*	10137.5	36.4	14.2	50.6	68.2	-17.6	Peak	Vertical
	11344.5	36.0	15.4	51.4	74.0	-22.6	Peak	Vertical
	12084.0	35.4	16.0	51.4	74.0	-22.6	Peak	Vertical
*	13690.5	33.2	17.4	50.6	68.2	-17.6	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11ac-VHT20	Test Date	2021/05/22				
Test Channel	44						
Remark	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	10562.5	37.1	14.9	52.0	68.2	-16.2	Peak	Horizontal
	11276.5	35.3	16.1	51.4	74.0	-22.6	Peak	Horizontal
	12033.0	35.4	15.8	51.2	74.0	-22.8	Peak	Horizontal
*	13741.5	32.9	17.6	50.5	68.2	-17.7	Peak	Horizontal
*	10188.5	36.6	14.3	50.9	68.2	-17.3	Peak	Vertical
	15656.0	34.6	17.2	51.8	74.0	-22.2	Peak	Vertical
	15656.0	29.8	17.2	47.0	54.0	-7.0	Average	Vertical
	15662.5	38.3	17.1	55.4	74.0	-18.6	Peak	Vertical
*	16427.5	34.1	17.3	51.4	68.2	-16.8	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11ac-VHT20	Test Date	2021/05/22				
Test Channel	48						
Remark	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	9517.0	37.2	13.1	50.3	68.2	-17.9	Peak	Horizontal
*	10137.5	36.9	14.2	51.1	68.2	-17.1	Peak	Horizontal
	12084.0	35.3	16.0	51.3	74.0	-22.7	Peak	Horizontal
	15722.0	38.9	16.9	55.8	74.0	-18.2	Peak	Horizontal
	15722.0	28.5	16.9	45.4	54.0	-8.6	Average	Horizontal
*	9636.0	37.4	13.1	50.5	68.2	-17.7	Peak	Vertical
*	10154.5	36.9	14.4	51.3	68.2	-16.9	Peak	Vertical
	12016.0	35.9	15.7	51.6	74.0	-22.4	Peak	Vertical
	15721.0	40.7	16.9	57.6	74.0	-16.4	Peak	Vertical
	15721.0	31.0	16.9	47.9	54.0	-6.1	Average	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao					
Test Mode	802.11ac-VHT20	Test Date	2021/05/22					
Test Channel	149							
Remark	1. Average measurement was not p	performed if peak level lov	wer than average					
	limit.							
	2. Other frequency was 20dB below	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	9967.5	36.5	14.0	50.5	68.2	-17.7	Peak	Horizontal
	11038.5	35.2	16.2	51.4	74.0	-22.6	Peak	Horizontal
	11863.0	35.3	15.1	50.4	74.0	-23.6	Peak	Horizontal
*	17243.5	43.3	20.9	64.2	68.2	-4.0	Peak	Horizontal
*	10239.5	36.3	14.4	50.7	68.2	-17.5	Peak	Vertical
	11489.0	38.0	16.4	54.4	74.0	-19.6	Peak	Vertical
	11489.0	30.1	16.4	46.5	54.0	-7.5	Average	Vertical
	12347.5	35.3	15.1	50.4	74.0	-23.6	Peak	Vertical
*	17226.5	44.0	20.5	64.5	68.2	-3.7	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao					
Test Mode	802.11ac-VHT20	Test Date	2021/05/22					
Test Channel	157							
Remark	1. Average measurement was not p	performed if peak level lov	wer than average					
	limit.							
	2. Other frequency was 20dB below	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	8837.0	36.6	12.7	49.3	68.2	-18.9	Peak	Horizontal
	10962.0	36.0	15.9	51.9	74.0	-22.1	Peak	Horizontal
	12024.5	36.2	15.8	52.0	74.0	-22.0	Peak	Horizontal
*	17354.0	42.1	21.8	63.9	68.2	-4.3	Peak	Horizontal
*	9593.5	37.6	13.2	50.8	68.2	-17.4	Peak	Vertical
	11565.5	30.2	16.5	46.7	54.0	-7.3	Average	Vertical
	11565.5	37.6	16.5	54.1	74.0	-19.9	Peak	Vertical
	12084.0	35.8	16.0	51.8	74.0	-22.2	Peak	Vertical
*	17354.0	43.3	21.8	65.1	68.2	-3.1	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao					
Test Mode	802.11ac-VHT20	Test Date	2021/05/22					
Test Channel	165							
Remark	1. Average measurement was not p	performed if peak level lov	wer than average					
	limit.							
	2. Other frequency was 20dB below	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	10197.0	36.6	14.4	51.0	68.2	-17.2	Peak	Horizontal
	11276.5	35.0	16.1	51.1	74.0	-22.9	Peak	Horizontal
	12152.0	35.3	15.9	51.2	74.0	-22.8	Peak	Horizontal
*	17464.5	38.9	22.6	61.5	68.2	-6.7	Peak	Horizontal
*	10375.5	35.7	14.9	50.6	68.2	-17.6	Peak	Vertical
	11650.5	31.2	16.6	47.8	54.0	-6.2	Average	Vertical
	11650.5	37.9	16.6	54.5	74.0	-19.5	Peak	Vertical
	12551.5	36.6	15.2	51.8	74.0	-22.2	Peak	Vertical
*	17473.0	42.1	22.7	64.8	68.2	-3.4	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11ac-VHT40	Test Date	2021/05/22				
Test Channel	38						
Remark	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit.						
	2. Other frequency was 20dB below	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show					
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	10154.5	36.1	14.4	50.5	68.2	-17.7	Peak	Horizontal
	10970.5	35.0	15.8	50.8	74.0	-23.2	Peak	Horizontal
	12050.0	36.5	15.8	52.3	74.0	-21.7	Peak	Horizontal
*	16835.5	37.8	19.2	57.0	68.2	-11.2	Peak	Horizontal
*	9942.0	36.3	14.2	50.5	68.2	-17.7	Peak	Vertical
	11854.5	37.1	15.2	52.3	74.0	-21.7	Peak	Vertical
	12475.0	36.0	15.3	51.3	74.0	-22.7	Peak	Vertical
*	16495.5	34.8	17.2	52.0	68.2	-16.2	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao					
Test Mode	802.11ac-VHT40	Test Date	2021/05/22					
Test Channel	46							
Remark	1. Average measurement was not p	performed if peak level lov	wer than average					
	limit.							
	2. Other frequency was 20dB below	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	8675.5	37.9	12.3	50.2	68.2	-18.0	Peak	Horizontal
	11047.0	35.2	16.1	51.3	74.0	-22.7	Peak	Horizontal
	12007.5	36.0	15.7	51.7	74.0	-22.3	Peak	Horizontal
*	16393.5	34.1	17.2	51.3	68.2	-16.9	Peak	Horizontal
*	10061.0	36.5	14.2	50.7	68.2	-17.5	Peak	Vertical
	11191.5	36.2	16.4	52.6	74.0	-21.4	Peak	Vertical
	11990.5	35.9	15.6	51.5	74.0	-22.5	Peak	Vertical
*	16368.0	34.1	17.4	51.5	68.2	-16.7	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao					
Test Mode	802.11ac-VHT40	Test Date	2021/05/22					
Test Channel	151							
Remark	1. Average measurement was not p	performed if peak level lov	wer than average					
	limit.							
	2. Other frequency was 20dB below	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	10163.0	37.1	14.6	51.7	68.2	-16.5	Peak	Horizontal
	10962.0	35.9	15.9	51.8	74.0	-22.2	Peak	Horizontal
	12041.5	36.2	15.8	52.0	74.0	-22.0	Peak	Horizontal
*	16283.0	35.8	17.2	53.0	68.2	-15.2	Peak	Horizontal
*	10061.0	35.9	14.2	50.1	68.2	-18.1	Peak	Vertical
	11523.0	36.1	16.5	52.6	74.0	-21.4	Peak	Vertical
	12577.0	35.6	15.5	51.1	74.0	-22.9	Peak	Vertical
*	17252.0	41.0	21.0	62.0	68.2	-6.2	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao					
Test Mode	802.11ac-VHT40	Test Date	2021/05/22					
Test Channel	159							
Remark	1. Average measurement was not p	performed if peak level lov	wer than average					
	limit.							
	2. Other frequency was 20dB below	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	10163.0	37.0	14.6	51.6	68.2	-16.6	Peak	Horizontal
	11200.0	35.1	16.5	51.6	74.0	-22.4	Peak	Horizontal
	11990.5	36.2	15.6	51.8	74.0	-22.2	Peak	Horizontal
*	16436.0	34.9	17.5	52.4	68.2	-15.8	Peak	Horizontal
*	10214.0	35.7	14.2	49.9	68.2	-18.3	Peak	Vertical
	10970.5	36.1	15.8	51.9	74.0	-22.1	Peak	Vertical
	11990.5	35.6	15.6	51.2	74.0	-22.8	Peak	Vertical
*	16521.0	33.2	17.4	50.6	68.2	-17.6	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11ac-VHT80	Test Date	2021/05/22				
Test Channel	42						
Remark	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit.	limit.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	10171.5	37.1	14.3	51.4	68.2	-16.8	Peak	Horizontal
	10647.5	36.4	15.2	51.6	74.0	-22.4	Peak	Horizontal
	11931.0	36.2	15.5	51.7	74.0	-22.3	Peak	Horizontal
*	16368.0	33.9	17.4	51.3	68.2	-16.9	Peak	Horizontal
*	10367.0	36.3	14.8	51.1	68.2	-17.1	Peak	Vertical
	11633.5	34.6	16.8	51.4	74.0	-22.6	Peak	Vertical
	12619.5	36.1	15.4	51.5	74.0	-22.5	Peak	Vertical
*	16444.5	34.3	17.5	51.8	68.2	-16.4	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11ac-VHT80	Test Date	2021/05/22				
Test Channel	155						
Remark	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit.	limit.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.	·					

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	10044.0	36.9	14.2	51.1	68.2	-17.1	Peak	Horizontal
	11548.5	34.5	16.6	51.1	74.0	-22.9	Peak	Horizontal
	12033.0	35.3	15.8	51.1	74.0	-22.9	Peak	Horizontal
*	16402.0	33.5	17.1	50.6	68.2	-17.6	Peak	Horizontal
*	10154.5	36.7	14.4	51.1	68.2	-17.1	Peak	Vertical
	11497.5	36.1	16.3	52.4	74.0	-21.6	Peak	Vertical
	12024.5	35.5	15.8	51.3	74.0	-22.7	Peak	Vertical
*	16274.5	34.1	17.2	51.3	68.2	-16.9	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11ax-HE20	Test Date	2021/05/22				
Test Channel	36						
Remark	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit.	limit.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.	•					

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	10129.0	36.6	14.1	50.7	68.2	-17.5	Peak	Horizontal
	11191.5	35.1	16.4	51.5	74.0	-22.5	Peak	Horizontal
	11922.5	36.0	15.4	51.4	74.0	-22.6	Peak	Horizontal
*	12934.0	35.8	16.4	52.2	68.2	-16.0	Peak	Horizontal
*	10197.0	36.5	14.4	50.9	68.2	-17.3	Peak	Vertical
	11200.0	34.5	16.5	51.0	74.0	-23.0	Peak	Vertical
	11931.0	37.0	15.5	52.5	74.0	-21.5	Peak	Vertical
*	16504.0	33.2	17.1	50.3	68.2	-17.9	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11ax-HE20	Test Date	2021/05/22				
Test Channel	44						
Remark	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit.	limit.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	8607.5	36.6	12.1	48.7	68.2	-19.5	Peak	Horizontal
*	10163.0	36.7	14.6	51.3	68.2	-16.9	Peak	Horizontal
	11939.5	35.6	15.5	51.1	74.0	-22.9	Peak	Horizontal
	15665.0	37.4	17.1	54.5	74.0	-19.5	Peak	Horizontal
	15665.0	28.5	17.1	45.6	54.0	-8.4	Average	Horizontal
*	8701.0	36.0	12.7	48.7	68.2	-19.5	Peak	Vertical
*	10154.5	36.7	14.4	51.1	68.2	-17.1	Peak	Vertical
	12033.0	35.9	15.8	51.7	74.0	-22.3	Peak	Vertical
	15661.0	40.9	17.1	58.0	74.0	-16.0	Peak	Vertical
	15661.0	33.5	17.1	50.6	54.0	-3.4	Average	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11ax-HE20	Test Date	2021/05/22				
Test Channel	48						
Remark	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit.	limit.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.	·					

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	8692.5	36.0	12.6	48.6	68.2	-19.6	Peak	Horizontal
*	10418.0	36.2	15.2	51.4	68.2	-16.8	Peak	Horizontal
	12033.0	35.9	15.8	51.7	74.0	-22.3	Peak	Horizontal
	15772.0	37.9	17.0	54.9	74.0	-19.1	Peak	Horizontal
	15772.0	28.5	17.0	45.5	54.0	-8.5	Average	Horizontal
*	8845.5	36.4	12.5	48.9	68.2	-19.3	Peak	Vertical
*	10299.0	36.7	14.7	51.4	68.2	-16.8	Peak	Vertical
	12075.5	35.6	16.0	51.6	74.0	-22.4	Peak	Vertical
	15772.0	41.9	17.0	58.9	74.0	-15.1	Peak	Vertical
*	15772.0	32.5	17.0	49.5	54.0	-4.5	Average	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11ax-HE20	Test Date	2021/05/22				
Test Channel	149						
Remark	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	9976.0	36.7	14.1	50.8	68.2	-17.4	Peak	Horizontal
	10970.5	35.7	15.8	51.5	74.0	-22.5	Peak	Horizontal
	11914.0	36.0	15.4	51.4	74.0	-22.6	Peak	Horizontal
*	17226.5	42.8	20.5	63.3	68.2	-4.9	Peak	Horizontal
*	9967.5	37.0	14.0	51.0	68.2	-17.2	Peak	Vertical
	11489.0	39.3	16.4	55.7	74.0	-18.3	Peak	Vertical
	11489.0	30.9	16.4	47.3	54.0	-6.7	Average	Vertical
	12517.5	36.0	15.4	51.4	74.0	-22.6	Peak	Vertical
*	17235.0	45.1	20.7	65.8	68.2	-2.4	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11ax-HE20	Test Date	2021/05/22				
Test Channel	157						
Remark	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	10171.5	35.0	14.3	49.3	68.2	-18.9	Peak	Horizontal
	11166.0	34.3	16.1	50.4	74.0	-23.6	Peak	Horizontal
	12194.5	34.5	15.8	50.3	74.0	-23.7	Peak	Horizontal
*	17345.5	40.7	21.8	62.5	68.2	-5.7	Peak	Horizontal
*	10154.5	37.4	14.4	51.8	68.2	-16.4	Peak	Vertical
	10809.0	35.2	15.5	50.7	74.0	-23.3	Peak	Vertical
	11565.5	37.0	16.5	53.5	74.0	-20.5	Peak	Vertical
*	17337.0	42.3	21.9	64.2	68.2	-4.0	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11ax-HE20	Test Date	2021/05/22				
Test Channel	165						
Remark	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	10205.5	36.6	14.3	50.9	68.2	-17.3	Peak	Horizontal
	11021.5	35.6	16.0	51.6	74.0	-22.4	Peak	Horizontal
	12016.0	35.7	15.7	51.4	74.0	-22.6	Peak	Horizontal
*	16325.5	34.2	17.1	51.3	68.2	-16.9	Peak	Horizontal
*	10545.5	36.7	14.8	51.5	68.2	-16.7	Peak	Vertical
	11650.5	36.1	16.6	52.7	74.0	-21.3	Peak	Vertical
	12067.0	36.0	16.0	52.0	74.0	-22.0	Peak	Vertical
*	17473.0	41.7	22.7	64.4	68.2	-3.8	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11ax-HE40	Test Date	2021/05/22				
Test Channel	38						
Remark	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	9865.5	35.5	13.9	49.4	68.2	-18.8	Peak	Horizontal
	11174.5	35.8	16.2	52.0	74.0	-22.0	Peak	Horizontal
	12007.5	36.8	15.7	52.5	74.0	-21.5	Peak	Horizontal
*	16385.0	33.7	17.2	50.9	68.2	-17.3	Peak	Horizontal
*	10222.5	37.7	14.2	51.9	68.2	-16.3	Peak	Vertical
	11208.5	34.9	16.3	51.2	74.0	-22.8	Peak	Vertical
	12075.5	33.8	16.0	49.8	74.0	-24.2	Peak	Vertical
*	13061.5	33.3	16.0	49.3	68.2	-18.9	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11ax-HE40	Test Date	2021/05/22				
Test Channel	46						
Remark	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	9916.5	36.8	13.8	50.6	68.2	-17.6	Peak	Horizontal
	10732.5	34.9	15.5	50.4	74.0	-23.6	Peak	Horizontal
	12033.0	35.9	15.8	51.7	74.0	-22.3	Peak	Horizontal
*	13070.0	33.2	15.9	49.1	68.2	-19.1	Peak	Horizontal
*	8820.0	35.7	12.7	48.4	68.2	-19.8	Peak	Vertical
*	10588.0	33.9	15.0	48.9	68.2	-19.3	Peak	Vertical
	12058.5	36.1	15.9	52.0	74.0	-22.0	Peak	Vertical
	15662.0	29.5	17.1	46.6	54.0	-7.4	Average	Vertical
	15662.0	39.0	17.1	56.1	74.0	-17.9	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao				
Test Mode	802.11ax-HE40	Test Date	2021/05/22				
Test Channel	151						
Remark	1. Average measurement was not p	performed if peak level lov	wer than average				
	limit.						
	2. er frequency was 20dB below limit line within 1-18GHz, there is not show in						
	the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	10154.5	37.1	14.4	51.5	68.2	-16.7	Peak	Horizontal
	10962.0	35.8	15.9	51.7	74.0	-22.3	Peak	Horizontal
	11710.0	34.9	16.3	51.2	74.0	-22.8	Peak	Horizontal
*	12806.5	36.2	15.9	52.1	68.2	-16.1	Peak	Horizontal
*	10078.0	37.7	14.0	51.7	68.2	-16.5	Peak	Vertical
	11498.0	37.8	16.3	54.1	74.0	-19.9	Peak	Vertical
	11498.0	28.5	16.3	44.8	54.0	-9.2	Average	Vertical
	11897.0	35.2	15.2	50.4	74.0	-23.6	Peak	Vertical
*	17243.5	39.2	20.9	60.1	68.2	-8.1	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao			
Test Mode	802.11ax-HE40	Test Date	2021/05/22			
Test Channel	159					
Remark	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	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	10222.5	37.2	14.2	51.4	68.2	-16.8	Peak	Horizontal
	11174.5	35.2	16.2	51.4	74.0	-22.6	Peak	Horizontal
	11922.5	36.2	15.4	51.6	74.0	-22.4	Peak	Horizontal
*	13019.0	34.0	16.4	50.4	68.2	-17.8	Peak	Horizontal
*	10214.0	36.7	14.2	50.9	68.2	-17.3	Peak	Vertical
	10962.0	36.4	15.9	52.3	74.0	-21.7	Peak	Vertical
	11591.0	35.1	16.4	51.5	74.0	-22.5	Peak	Vertical
*	12934.0	33.8	16.4	50.2	68.2	-18.0	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao			
Test Mode	802.11ax-HE80	Test Date	2021/05/22			
Test Channel	42					
Remark	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	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	10384.0	36.2	15.1	51.3	68.2	-16.9	Peak	Horizontal
	11378.5	34.5	16.1	50.6	74.0	-23.4	Peak	Horizontal
	12016.0	37.4	15.7	53.1	74.0	-20.9	Peak	Horizontal
*	13010.5	33.9	16.3	50.2	68.2	-18.0	Peak	Horizontal
*	10205.5	36.3	14.3	50.6	68.2	-17.6	Peak	Vertical
	10741.0	36.9	15.8	52.7	74.0	-21.3	Peak	Vertical
	12058.5	35.7	15.9	51.6	74.0	-22.4	Peak	Vertical
*	12976.5	35.1	16.1	51.2	68.2	-17.0	Peak	Vertical

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



Test Site	NS-AC1	Test Engineer	Dillon Diao			
Test Mode	802.11ax-HE80	Test Date	2021/05/22			
Test Channel	155					
Remark	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.					

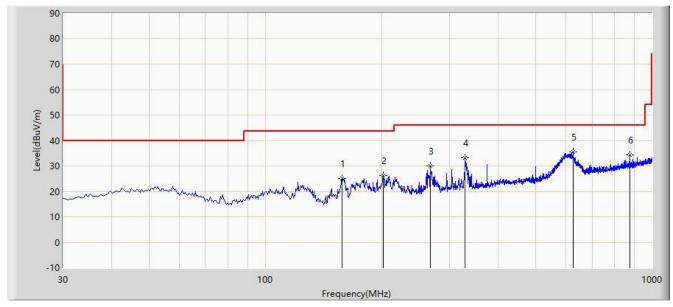
Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
*	10299.0	36.9	14.7	51.6	68.2	-16.6	Peak	Horizontal
	11191.5	34.7	16.4	51.1	74.0	-22.9	Peak	Horizontal
	11531.5	33.8	16.5	50.3	74.0	-23.7	Peak	Horizontal
*	12908.5	36.2	16.1	52.3	68.2	-15.9	Peak	Horizontal
*	10214.0	36.9	14.2	51.1	68.2	-17.1	Peak	Vertical
	11021.5	34.2	16.0	50.2	74.0	-23.8	Peak	Vertical
	11514.5	35.1	16.4	51.5	74.0	-22.5	Peak	Vertical
*	13112.5	34.9	16.2	51.1	68.2	-17.1	Peak	Vertical

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



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

Site: NS-AC1	Time: 2021/05/12			
Limit: FCC_Part 15.209_RE(3m)	Engineer: Dillon Diao			
Probe: NS-AC1_VULB9162	Polarity: Horizontal			
EUT: AX1800 DUAL-BAND MESH WIFI	Power: AC 120V/60Hz			
Worst Case Mode: Transmit by 802.11ax-HE40 at Channel 5190MHz				



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBµV/m)	(dB)	
				(dBµV/m)	(dBµV)				
1			158.040	25.162	10.662	-18.338	43.500	14.500	PK
2		*	201.690	26.277	8.782	-17.223	43.500	17.495	PK
3			267.165	29.901	11.537	-16.099	46.000	18.364	PK
4			328.760	33.094	13.385	-12.906	46.000	19.709	PK
5			625.095	35.471	10.396	-10.529	46.000	25.075	PK
6			874.870	34.263	5.843	-11.737	46.000	28.420	PK

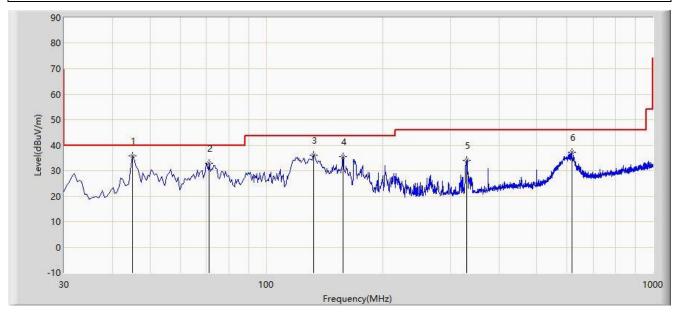
Note 1: Measure Level  $(dB\mu V/m)$  = Reading Level  $(dB\mu V)$  + Factor (dB)

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

Note 2: The amplitude of radiated emissions (frequency range from  $9kHz \sim 30MHz$ , 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: NS-AC1	Time: 2021/05/12			
Limit: FCC_Part 15.209_RE(3m)	Engineer: Dillon Diao			
Probe: NS-AC1_VULB9162	Polarity: Horizontal			
EUT: AX1800 DUAL-BAND MESH WIFI	Power: AC 120V/60Hz			
Worst Case Mode: Transmit by 802.11ax-HE40 at Channel 5190MHz				



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBµV/m)	(dB)	
				(dBµV/m)	(dBµV)				
1			45.035	35.809	16.893	-4.191	40.000	18.916	PK
2		*	71.225	32.991	17.589	-7.009	40.000	15.401	PK
3			132.820	36.192	21.659	-7.308	43.500	14.533	PK
4			158.040	35.565	21.065	-7.935	43.500	14.500	PK
5			329.730	33.945	14.214	-12.055	46.000	19.731	PK
6			616.850	37.121	12.128	-8.879	46.000	24.993	PK

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

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

Note 2: The amplitude of radiated emissions (frequency range from 9kHz ~ 30MHz, 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.



## 5.9. Radiated Restricted Band Edge Measurement

#### 5.9.1.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	12.51975-12.52025 240 - 285		36.43-36.5
12.57675-12.57725	322-335.4	3600 - 4400	(2)
13.36-13.41			

#### For 15.407(b) Requirement:

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.

Refer to KDB 789033 D02v02r01 G)2)c), as specified in § 15.407(b), emissions above 1000 MHz



that are outside of the restricted bands are subject to a maximum emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in § 15.407(b)(4)). However, an out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

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	Field Strength	Measured Distance						
(MHz)	(μV/m)	(m)						
0.009 - 0.490	2400/F (kHz)	300						
0.490 - 1.705	24000/F (kHz)	30						
1.705 - 30	30	30						
30 - 88	100	3						
88 - 216	150	3						
216 - 960	200	3						
Above 960	500	3						

#### **5.9.2.Test Procedure Used**

KDB 789033 D02v02r01- Section G



## 5.9.3.Test Setting

## Peak Measurements above 1GHz

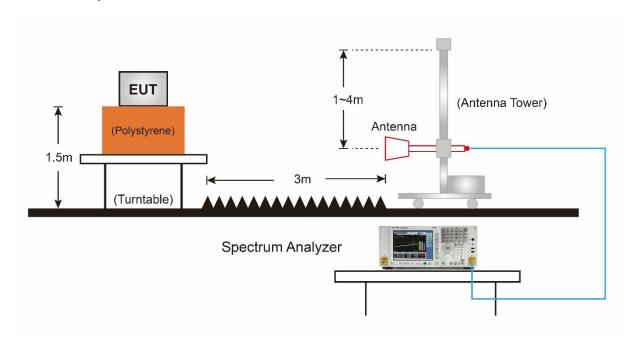
- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. VBW = 3MHz
- 4. Detector = Peak
- 5. Sweep time = Auto couple
- 6. Trace mode = Max hold
- 7. Trace was allowed to stabilize

## 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 ≥ 98%, set VBW = 10Hz
- 4. If the EUT duty cycle is < 98%, set VBW ≥ 1/T. T is the minimum transmission duration
- 5. Detector = Peak
- 6. Sweep time = Auto
- 7. Trace mode = Max hold
- 8. Trace was allowed to stabilize



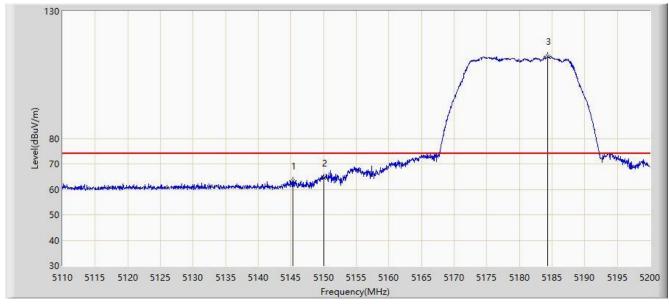
# 5.9.4.Test Setup





#### 5.9.5.Test Result

Site: NS-AC1	Time: 2021/05/12
Limit: FCC _Part 15_15.209_RE (3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: AX1800 Dual-band Mesh WiFi	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11a at channel 5180MHz	

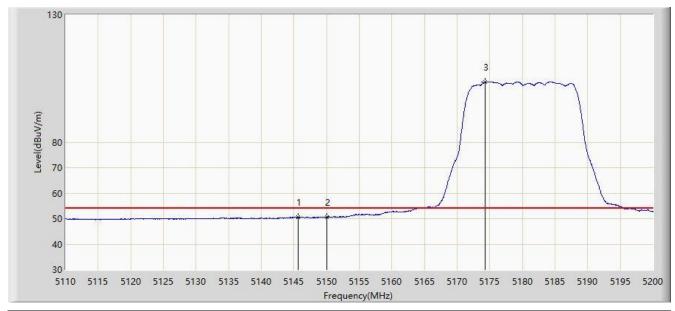


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBµV/m)	(dB)	
				(dBµV/m)	(dBµV)				
1			5145.280	63.461	59.579	-10.539	74.000	3.883	PK
2			5150.000	64.433	60.568	-9.567	74.000	3.865	PK
3		*	5184.340	112.233	108.700	N/A	N/A	3.533	PK

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



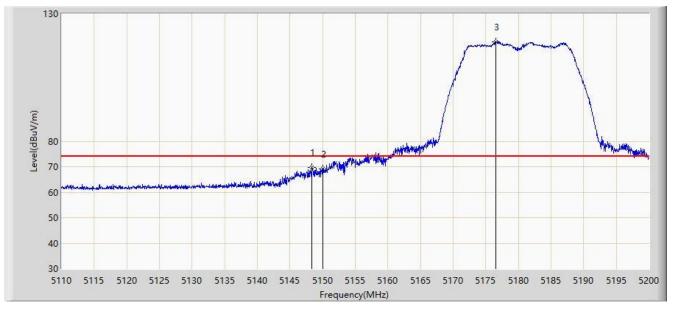
Site: NS-AC1	Time: 2021/05/12
Limit: FCC_Part 15_15.209_RE (3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: AX1800 Dual-band Mesh WiFi	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11a at channel 5180MHz	



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBµV/m)	(dB)	
				(dBµV/m)	(dBµV)				
1			5145.595	50.684	46.803	-3.316	54.000	3.881	AV
2			5150.000	50.651	46.786	-3.349	54.000	3.865	AV
3		*	5174.260	103.493	99.829	N/A	N/A	3.665	AV



Site: NS-AC1	Time: 2021/05/12
Limit: FCC_Part 15_15.209_RE (3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: AX1800 Dual-band Mesh WiFi	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11a at channel 5180MHz	



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBµV/m)	(dB)	
				(dBµV/m)	(dBµV)				
1			5148.295	69.805	65.934	-4.195	74.000	3.871	PK
2			5150.000	69.084	65.219	-4.916	74.000	3.865	PK
3		*	5176.510	119.113	115.484	N/A	N/A	3.629	PK



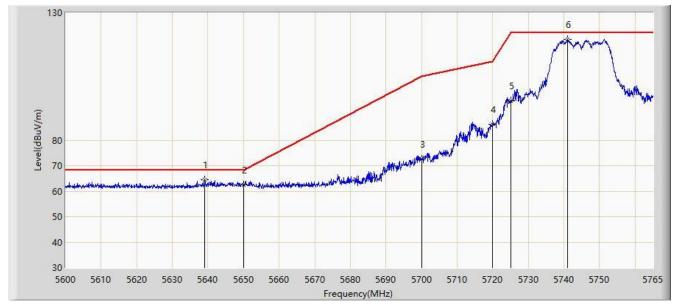
Site: NS-AC1	Time: 2021/05/12
Limit: FCC_Part 15_15.209_RE (3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: AX1800 Dual-band Mesh WiFi	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11a at channel 5180MHz	



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBµV/m)	(dB)	
				(dBµV/m)	(dBµV)				
1			5149.105	53.145	49.277	-0.855	54.000	3.867	AV
2			5150.000	52.469	48.604	-1.531	54.000	3.865	AV
3	Х	*	5181.685	110.672	107.126	N/A	N/A	3.545	AV



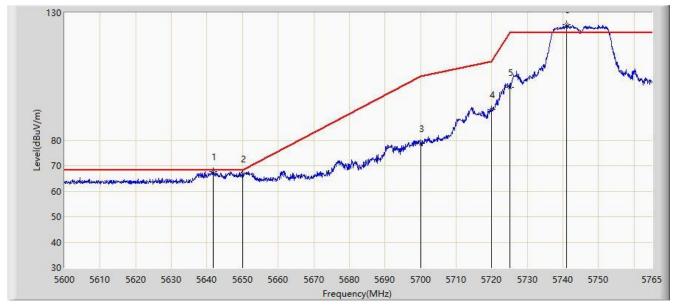
Site: NS-AC1	Time: 2021/05/12
Limit: FCC_Part 15_15.209_RE (3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: AX1800 Dual-band Mesh WiFi	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11a at channel 5745MHz	



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBµV/m)	(dB)	
				(dBµV/m)	(dBµV)				
1			5639.105	64.584	60.469	-3.616	68.200	4.114	PK
2			5650.000	62.561	58.410	-5.639	68.200	4.151	PK
3			5700.000	72.487	68.174	-32.713	105.200	4.312	PK
4			5720.000	86.158	82.000	-24.642	110.800	4.158	PK
5			5725.000	95.622	91.498	-26.578	122.200	4.124	PK
6		*	5740.993	119.556	115.352	N/A	N/A	4.204	PK



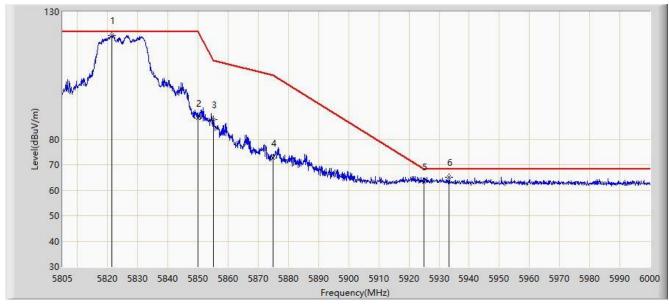
Site: NS-AC1	Time: 2021/05/12
Limit: FCC_Part 15_15.209_RE (3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: AX1800 Dual-band Mesh WiFi	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11a at channel 5745MHz	



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBµV/m)	(dB)	
				(dBµV/m)	(dBµV)				
1			5641.745	67.798	63.688	-0.402	68.200	4.110	PK
2			5650.000	66.918	62.767	-1.282	68.200	4.151	PK
3			5700.000	78.695	74.382	-26.505	105.200	4.312	PK
4			5720.000	91.934	87.776	-18.866	110.800	4.158	PK
5			5725.000	100.614	96.490	-21.586	122.200	4.124	PK
6		*	5740.993	125.376	121.172	N/A	N/A	4.204	PK



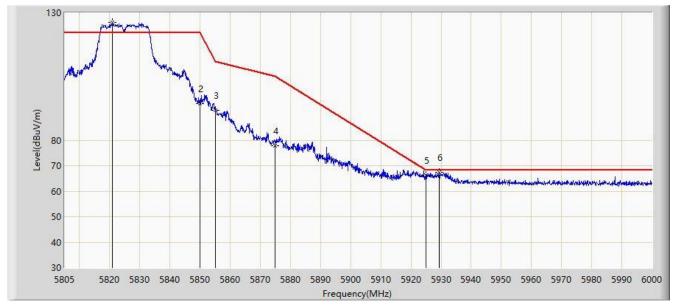
Site: NS-AC1	Time: 2021/05/12				
Limit: FCC_Part 15_15.209_RE (3m)	Engineer: Dillon Diao				
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal				
EUT: AX1800 Dual-band Mesh WiFi	Power: AC 120V/60Hz				
Test Mode: Transmit by 802.11a at channel 5825MHz					



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBµV/m)	(dB)	
				(dBµV/m)	(dBµV)				
1		*	5821.283	120.734	116.377	N/A	N/A	4.358	PK
2			5850.000	88.242	83.589	-33.958	122.200	4.653	PK
3			5855.000	87.722	83.038	-23.078	110.800	4.684	PK
4			5875.000	72.528	67.829	-32.672	105.200	4.700	PK
5			5925.000	63.435	58.479	-4.765	68.200	4.956	PK
6			5933.408	65.156	60.172	-3.044	68.200	4.984	PK



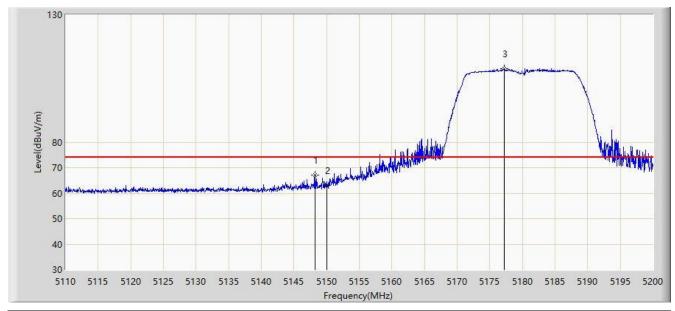
Site: NS-AC1	Time: 2021/05/12				
Limit: FCC_Part 15_15.209_RE (3m)	Engineer: Dillon Diao				
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical				
EUT: AX1800 Dual-band Mesh WiFi	Power: AC 120V/60Hz				
Test Mode: Transmit by 802.11a at channel 5825MHz					



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBµV/m)	(dB)	
				(dBµV/m)	(dBµV)				
1		*	5820.990	126.324	121.967	N/A	N/A	4.357	PK
2			5850.000	94.336	89.683	-27.864	122.200	4.653	PK
3			5855.000	91.747	87.063	-19.053	110.800	4.684	PK
4			5875.000	77.841	73.142	-27.359	105.200	4.700	PK
5			5925.000	66.317	61.361	-1.883	68.200	4.956	PK
6			5929.410	67.514	62.529	-0.686	68.200	4.985	PK



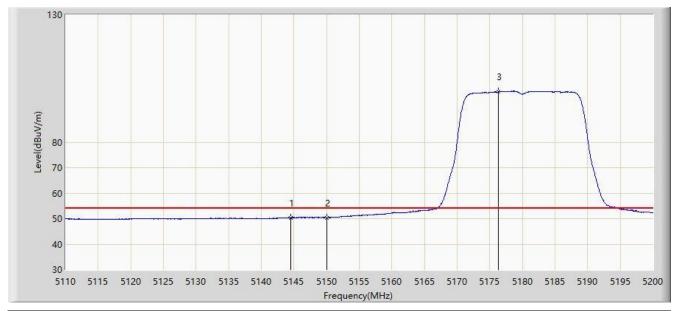
Site: NS-AC1	Time: 2021/05/13 - 11:32				
Limit: FCC_Part 15_15.209_RE (3m)	Engineer: Dillon Diao				
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal				
EUT: AX1800 Dual-band Mesh WiFi	Power: AC 120V/60Hz				
Test Mode: Transmit by 802.11ac-VHT20 at channel 5180MHz					



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBµV/m)	(dB)	
				(dBµV/m)	(dBµV)				
1			5148.250	67.131	63.260	-6.869	74.000	3.871	PK
2			5150.000	63.167	59.302	-10.833	74.000	3.865	PK
3		*	5177.185	108.797	105.179	N/A	N/A	3.618	PK



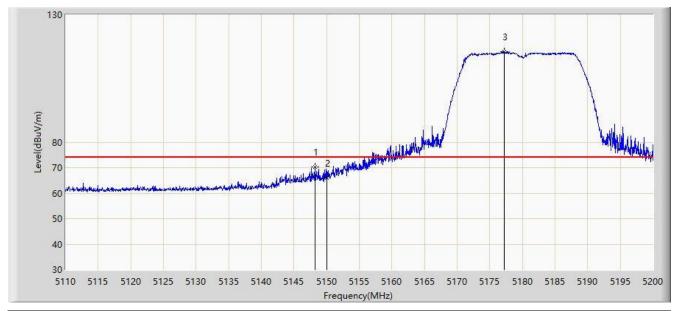
Site: NS-AC1	Time: 2021/05/13 - 11:36				
Limit: FCC_Part 15_15.209_RE (3m)	Engineer: Dillon Diao				
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal				
EUT: AX1800 Dual-band Mesh WiFi	Power: AC 120V/60Hz				
Test Mode: Transmit by 802.11ac-VHT20 at channel 5180MHz					



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBµV/m)	(dB)	
				(dBµV/m)	(dBµV)				
1			5144.515	50.401	46.516	-3.599	54.000	3.886	AV
2			5150.000	50.422	46.557	-3.578	54.000	3.865	AV
3		*	5176.330	99.743	96.112	N/A	N/A	3.632	AV



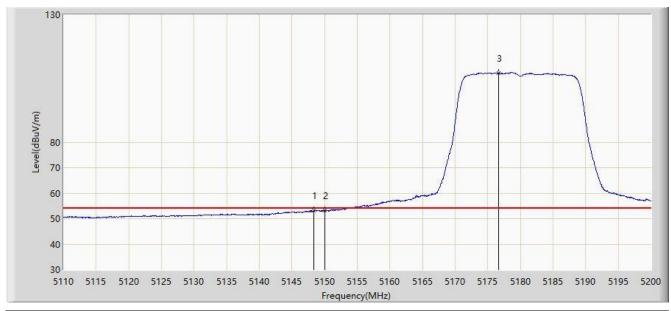
Site: NS-AC1	Time: 2021/05/13 - 11:29				
Limit: FCC_Part 15_15.209_RE (3m)	Engineer: Dillon Diao				
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical				
EUT: AX1800 Dual-band Mesh WiFi	Power: AC 120V/60Hz				
Test Mode: Transmit by 802.11ac-VHT20 at channel 5180MHz					



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBµV/m)	(dB)	
				(dBµV/m)	(dBµV)				
1			5148.205	70.228	66.357	-3.772	74.000	3.871	PK
2			5150.000	65.984	62.119	-8.016	74.000	3.865	PK
3		*	5177.230	115.612	111.995	N/A	N/A	3.617	PK



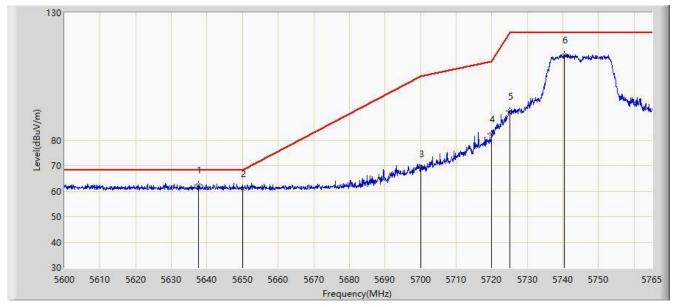
Site: NS-AC1	Time: 2021/05/13 - 11:19				
Limit: FCC_Part 15_15.209_RE (3m)	Engineer: Dillon Diao				
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical				
EUT: AX1800 Dual-band Mesh WiFi	Power: AC 120V/60Hz				
Test Mode: Transmit by 802.11ac-VHT20 at channel 5180MHz					



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBµV/m)	(dB)	
				(dBµV/m)	(dBµV)				
1			5148.340	53.175	49.305	-0.825	54.000	3.871	AV
2			5150.000	53.174	49.309	-0.826	54.000	3.865	AV
3		*	5176.645	107.195	103.569	N/A	N/A	3.626	AV



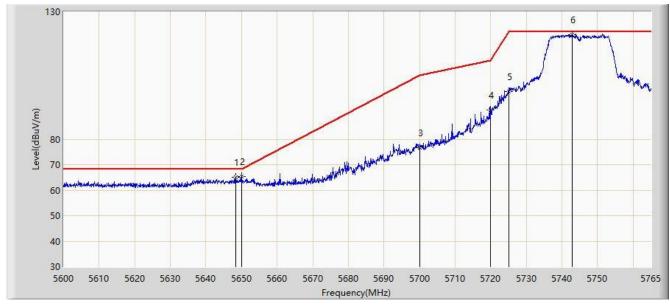
Site: NS-AC1	Time: 2021/05/24 - 15:29			
Limit: FCC_Part 15_15.209_RE (3m)	Engineer: Dillon Diao			
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal			
EUT: AX1800 Dual-band Mesh WiFi	Power: AC 120V/60Hz			
Test Mode: Transmit by 802.11ac-VHT20 at channel 5745MH				



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBµV/m)	(dB)	
				(dBµV/m)	(dBµV)				
1		*	5637.620	62.598	58.476	-5.602	68.200	4.122	PK
2			5650.000	60.932	56.781	-7.268	68.200	4.151	PK
3			5700.000	68.900	64.587	-36.300	105.200	4.312	PK
4			5720.000	82.403	78.245	-28.397	110.800	4.158	PK
5			5725.000	91.336	87.212	-30.864	122.200	4.124	PK
6			5740.333	113.399	109.199	N/A	N/A	4.200	PK



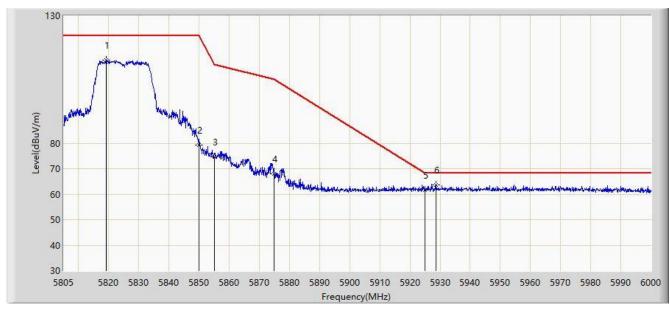
Site: NS-AC1	Time: 2021/05/24 - 15:30			
Limit: FCC_Part 15_15.209_RE (3m)	Engineer: Dillon Diao			
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical			
EUT: AX1800 Dual-band Mesh WiFi	Power: AC 120V/60Hz			
Test Mode: Transmit by 802.11ac-VHT20 at channel 5745MHz				



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBµV/m)	(dB)	
				(dBµV/m)	(dBµV)				
1			5648.345	65.027	60.885	-3.173	68.200	4.142	PK
2			5650.000	65.413	61.262	-2.787	68.200	4.151	PK
3			5700.000	76.665	72.352	-28.535	105.200	4.312	PK
4			5720.000	91.344	87.186	-19.456	110.800	4.158	PK
5			5725.000	98.598	94.474	-23.602	122.200	4.124	PK
6		*	5742.890	121.158	116.943	N/A	N/A	4.215	PK



Site: NS-AC1	Time: 2021/05/21 - 11:36			
Limit: FCC_Part 15_15.209_RE (3m)	Engineer: Dillon Diao			
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal			
EUT: AX1800 Dual-band Mesh WiFi	Power: AC 120V/60Hz			
Test Mode: Transmit by 802.11ac-VHT20 at channel 5825MHz				



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBµV/m)	(dB)	
				(dBµV/m)	(dBµV)				
1			5819.138	112.697	108.340	N/A	N/A	4.356	PK
2			5850.000	79.279	74.626	-42.921	122.200	4.653	PK
3			5855.000	74.571	69.887	-36.229	110.800	4.684	PK
4			5875.000	67.947	63.248	-37.253	105.200	4.700	PK
5			5925.000	61.612	56.656	-6.588	68.200	4.956	PK
6		*	5928.728	63.733	58.753	-4.467	68.200	4.981	PK