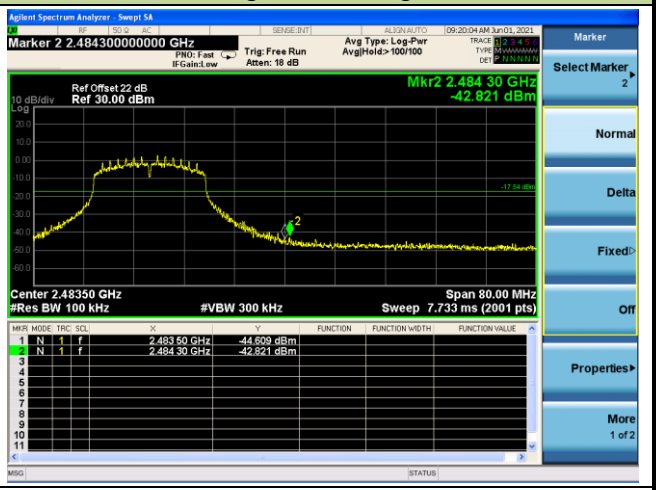
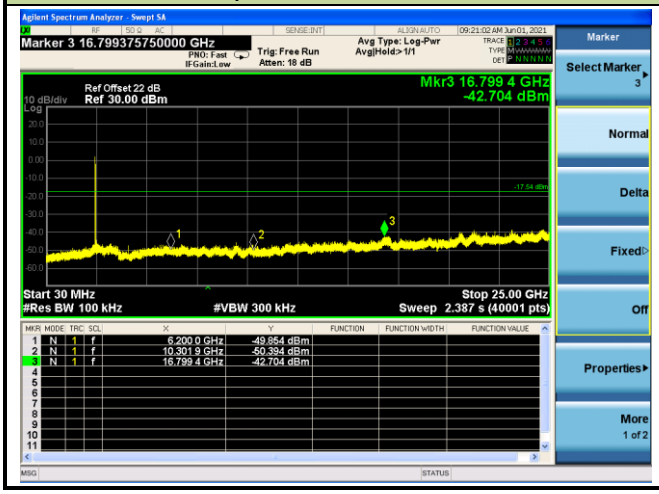
802.11n-HT20 Out-of-Band Emissions	
Channel 11 (2462MHz)	
100kHz PSD Reference Level	High Band Edge
	
Spurious Emission	
	

6.6. Radiated Spurious Emission Measurement

6.6.1.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 per Section 15.209.

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

All out of band emissions appearing in a restricted band as specified in Section 8.10 of the RSS-Gen must not exceed the limits shown in Table per Section 8.9.

RSS-Gen Section 8.9			
Frequency (MHz)	Field Strength (μV/m)	Magnetic Field Strength (H-Field) (μA/m)	Measured Distance (m)
0.009 - 0.490	--	6.37/F (F in kHz)	300
0.490 - 1.705	--	6.37/F (F in kHz)	30
1.705 - 30	--	0.08	30
30 - 88	100	--	3
88 - 216	150	--	3
216 - 960	200	--	3
Above 960	500	--	3

6.6.2.Test Procedure Used

ANSI C63.10-2013 Section 6.3 & 6.4 & 6.5 & 6.6 & 11.11 & 11.12

6.6.3.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 (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 = 10 Hz.

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

4. Detector = Peak

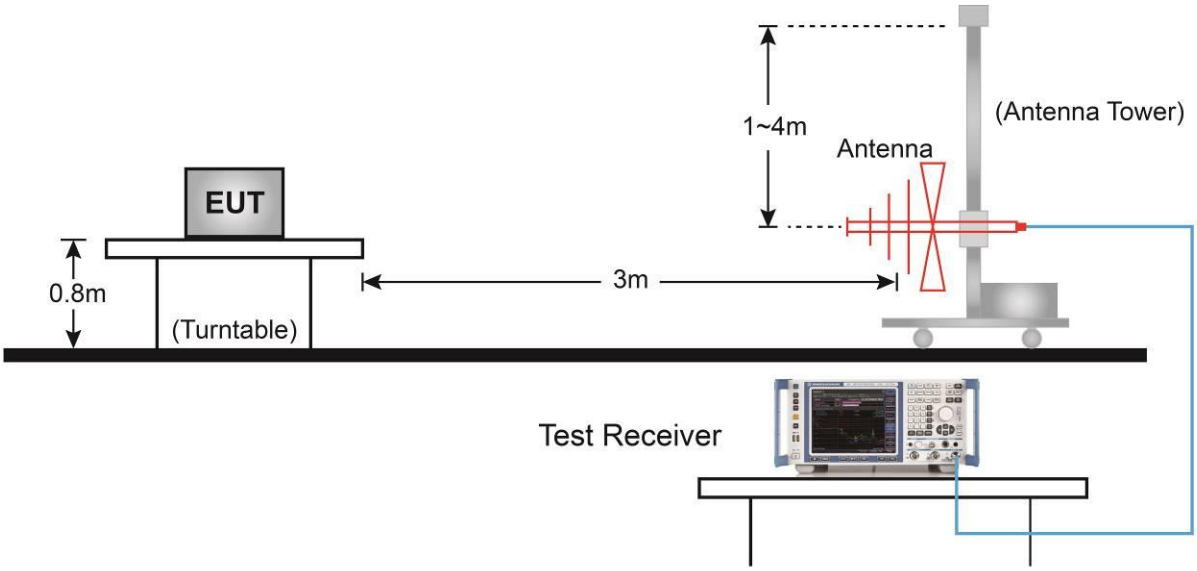
5. Sweep time = auto

6. Trace mode = max hold

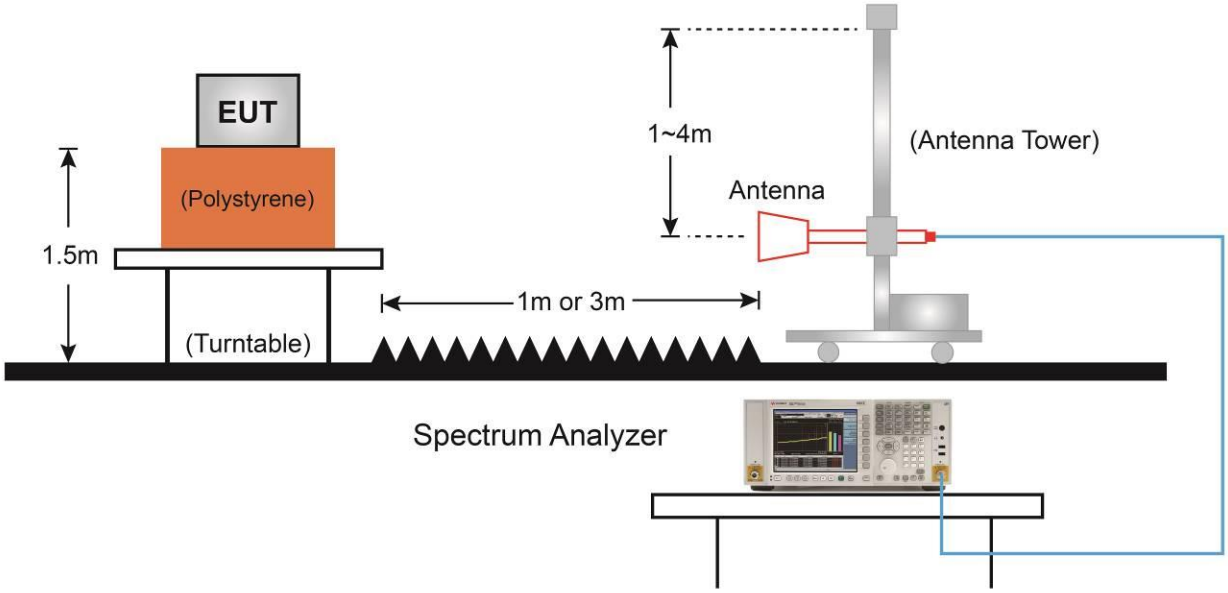
7. Trace was allowed to stabilize

6.6.4.Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



6.6.5.Test Result

Test Site	NS-AC1	Test Engineer	Flay Yang
Test Date	2021/05/28	Test Channel:	01
Test Mode:	802.11b		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4026.0	54.0	0.2	54.2	74.0	-19.8	Peak	Horizontal
4026.0	49.6	0.2	49.8	54.0	-4.2	Average	Horizontal
8828.5	37.4	12.7	50.1	74.0	-23.9	Peak	Horizontal
13376.0	36.0	17.0	53.0	74.0	-21.0	Peak	Horizontal
4017.5	54.1	0.1	54.2	74.0	-19.8	Peak	Vertical
4019.0	50.1	0.1	50.2	54.0	-3.8	Average	Vertical
6431.5	47.3	6.5	53.8	74.0	-20.2	Peak	Vertical
6432.0	47.0	6.5	53.5	54.0	-0.5	Average	Vertical
12866.0	39.0	15.9	54.9	74.0	-19.1	Peak	Vertical
12864.0	36.9	15.9	52.8	54.0	-1.2	Average	Vertical

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	NS-AC1	Test Engineer	Flay Yang
Test Date	2021/05/28	Test Channel:	06
Test Mode:	802.11b		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4017.5	54.2	0.1	54.3	74.0	-19.7	Peak	Horizontal
4017.0	50.1	0.1	50.2	54.0	-3.8	Average	Horizontal
6431.5	40.7	6.5	47.2	74.0	-26.8	Peak	Horizontal
8480.0	37.8	11.7	49.5	74.0	-24.5	Peak	Horizontal
4017.5	53.4	0.1	53.5	74.0	-20.5	Peak	Vertical
4017.0	50.3	0.1	50.4	54.0	-3.6	Average	Vertical
6431.5	47.1	6.5	53.6	74.0	-20.4	Peak	Vertical
6432.0	46.3	6.5	52.8	54.0	-1.2	Average	Vertical
12866.0	39.4	15.9	55.3	74.0	-18.7	Peak	Vertical
12864.0	37.8	15.9	53.7	54.0	-0.3	Average	Vertical

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	NS-AC1	Test Engineer	Flay Yang
Test Date	2021/05/28	Test Channel:	11
Test Mode:	802.11b		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4102.5	52.5	0.6	53.1	74.0	-20.9	Peak	Horizontal
8021.0	38.6	11.0	49.6	74.0	-24.4	Peak	Horizontal
11072.5	36.0	16.1	52.1	74.0	-21.9	Peak	Horizontal
4102.5	54.5	0.6	55.1	74.0	-18.9	Peak	Vertical
4102.0	51.5	0.6	52.1	54.0	-1.9	Average	Vertical
6567.5	45.8	7.1	52.9	74.0	-21.1	Peak	Vertical
13129.5	37.5	16.0	53.5	74.0	-20.5	Peak	Vertical

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	NS-AC1	Test Engineer	Flay Yang
Test Date	2021/05/28	Test Channel:	01
Test Mode:	802.11g		
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.		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4017.5	48.3	0.1	48.4	74.0	-25.6	Peak	Horizontal
6431.5	38.9	6.5	45.4	74.0	-28.6	Peak	Horizontal
11064.0	35.5	16.2	51.7	74.0	-22.3	Peak	Horizontal
4017.5	56.9	0.1	57.0	74.0	-17.0	Peak	Vertical
4017.0	48.5	0.1	48.6	54.0	-5.4	Average	Vertical
6431.5	46.0	6.5	52.5	74.0	-21.5	Peak	Vertical
12866.0	38.4	15.9	54.3	74.0	-19.7	Peak	Vertical
12864.0	36.1	15.9	52.0	54.0	-2.0	Average	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB) Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)							

Test Site	NS-AC1	Test Engineer	Flay Yang
Test Date	2021/05/28	Test Channel:	06
Test Mode:	802.11g		
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.		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4017.5	52.4	0.1	52.5	74.0	-21.5	Peak	Horizontal
8106.0	38.1	11.1	49.2	74.0	-24.8	Peak	Horizontal
11157.5	36.4	16.0	52.4	74.0	-21.6	Peak	Horizontal
4017.5	54.9	0.1	55.0	74.0	-19.0	Peak	Vertical
4021.0	47.4	0.2	47.6	54.0	-6.4	Average	Vertical
6431.5	45.4	6.5	51.9	74.0	-22.1	Peak	Vertical
12866.0	38.8	15.9	54.7	74.0	-19.3	Peak	Vertical
12864.0	36.4	15.9	52.3	54.0	-1.7	Average	Vertical

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	NS-AC1	Test Engineer	Flay Yang
Test Date	2021/05/28	Test Channel:	11
Test Mode:	802.11g		
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.		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4094.0	47.7	0.5	48.2	74.0	-25.8	Peak	Horizontal
8106.0	38.0	11.1	49.1	74.0	-24.9	Peak	Horizontal
10588.0	36.8	15.0	51.8	74.0	-22.2	Peak	Horizontal
4102.5	52.1	0.6	52.7	74.0	-21.3	Peak	Vertical
6567.5	44.7	7.1	51.8	74.0	-22.2	Peak	Vertical
13129.5	37.0	16.0	53.0	74.0	-21.0	Peak	Vertical

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	NS-AC1	Test Engineer	Flay Yang
Test Date	2021/05/28	Test Channel:	01
Test Mode:	802.11n-HT20		
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.		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4017.5	49.8	0.1	49.9	74.0	-24.1	Peak	Horizontal
8556.5	36.7	11.9	48.6	74.0	-25.4	Peak	Horizontal
10664.5	36.3	15.2	51.5	74.0	-22.5	Peak	Horizontal
4017.5	54.1	0.1	54.2	74.0	-19.8	Peak	Vertical
4017.0	46.8	0.1	46.9	54.0	-7.1	Average	Vertical
6431.5	46.1	6.5	52.6	74.0	-21.4	Peak	Vertical
12866.0	39.2	15.9	55.1	74.0	-18.9	Peak	Vertical
12864.0	37.2	15.9	53.1	54.0	-0.9	Average	Vertical

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	NS-AC1	Test Engineer	Flay Yang
Test Date	2021/05/28	Test Channel:	06
Test Mode:	802.11n-HT20		
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.		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4060.0	56.0	0.4	56.4	74.0	-17.6	Peak	Horizontal
4060.0	47.9	0.4	48.3	54.0	-5.7	Average	Vertical
6499.5	39.5	6.7	46.2	74.0	-27.8	Peak	Horizontal
10664.5	37.2	15.2	52.4	74.0	-21.6	Peak	Horizontal
4060.0	56.5	0.4	56.9	74.0	-17.1	Peak	Vertical
4060.0	49.4	0.4	49.8	54.0	-4.2	Average	Vertical
6499.5	46.9	6.7	53.6	74.0	-20.4	Peak	Vertical
6499.0	45.5	6.7	52.2	54.0	-1.8	Average	Vertical
12993.5	38.4	16.1	54.5	74.0	-19.5	Peak	Vertical
12997.5	36.8	16.2	53.0	54.0	-1.0	Average	Vertical

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	NS-AC1	Test Engineer	Flay Yang
Test Date	2021/05/28	Test Channel:	11
Test Mode:	802.11n-HT20		
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.		

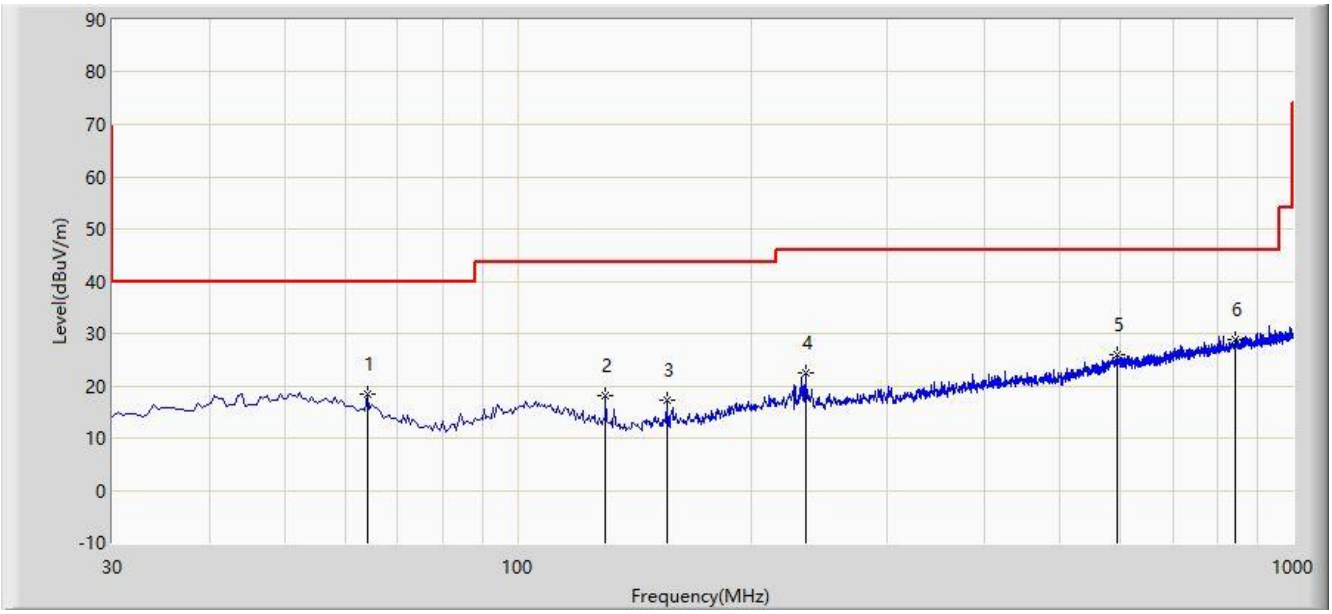
Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4102.5	47.2	0.6	47.8	74.0	-26.2	Peak	Horizontal
9483.0	38.5	13.0	51.5	74.0	-22.5	Peak	Horizontal
11378.5	35.6	16.1	51.7	74.0	-22.3	Peak	Horizontal
4102.5	51.9	0.6	52.5	74.0	-21.5	Peak	Vertical
6567.5	44.2	7.1	51.3	74.0	-22.7	Peak	Vertical
13129.5	37.4	16.0	53.4	74.0	-20.6	Peak	Vertical

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

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

The Result of Radiated Emission below 1GHz:

Site: NS-AC1	Time: 2021/05/19
Limit: FCC_Part15.209_RE(3m)	Engineer: Flay Yang
Probe: NS-AC1_VULB9162	Polarity: Horizontal
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11g at Channel 2437MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			63.950	18.521	0.759	-21.479	40.000	17.762	PK
2			129.910	18.096	3.285	-25.404	43.500	14.811	PK
3			155.615	17.287	2.889	-26.213	43.500	14.399	PK
4			235.155	22.432	4.597	-23.568	46.000	17.835	PK
5			592.600	25.998	1.319	-20.002	46.000	24.679	PK
6		*	844.315	28.711	0.580	-17.289	46.000	28.131	PK

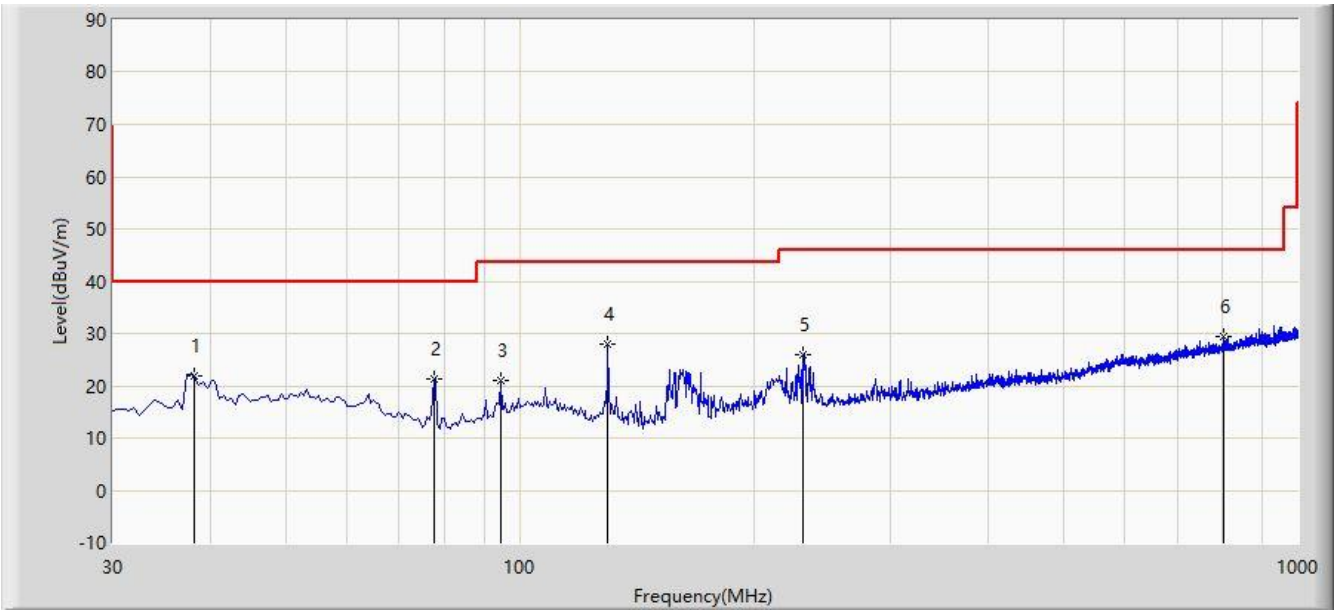
Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

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

Note 2: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 25GHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

Note 3: QP measurement was not performed when peak measure level was lower than the QP limit.

Site: NS-AC1	Time: 2021/05/19
Limit: FCC_Part15.209_RE(3m)	Engineer: Flay Yang
Probe: NS-AC1_VULB9162	Polarity: Vertical
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11g at Channel 2437MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			38.245	21.895	4.036	-18.105	40.000	17.859	PK
2			77.530	21.204	7.417	-18.796	40.000	13.787	PK
3			94.505	21.096	4.404	-22.404	43.500	16.692	PK
4		*	129.910	27.960	13.149	-15.540	43.500	14.811	PK
5			231.760	26.013	8.213	-19.987	46.000	17.800	PK
6			804.545	29.322	1.954	-16.678	46.000	27.368	PK

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 (frequency range from 9kHz to 30MHz and 18GHz to 25GHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

Note 3: QP measurement was not performed when peak measure level was lower than the QP limit.

6.7. Radiated Restricted Band Edge Measurement

6.7.1.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
[1] 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
13.36 - 13.41	--	--	--

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

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

For RSS-Gen Section 8.10 Requirement

Radiated emissions which fall in the restricted bands, as defined in Section 8.10 of RSS-Gen, must also comply with the radiated emission limits specified in Section 8.9.

Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 - 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	--
8.37625 - 8.38675	1718.8 -1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 -2390	
12.51975 - 12.52025	2483.5 -2500	
12.57675 - 12.57725	2655 - 2900	
13.36 -13.41	3260 - 3267	
16.42 - 16.423	3332 -3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 - 8500	
108 - 138		

All out of band emissions appearing in a restricted band as specified in Section 8.10 of the RSS-Gen must not exceed the limits shown in Table.

RSS-Gen Section 8.9			
Frequency (MHz)	Field Strength (μV/m)	Magnetic Field Strength (H-Field) (μA/m)	Measured Distance (m)
0.009 - 0.490	--	6.37/F (F in kHz)	300
0.490 - 1.705	--	6.37/F (F in kHz)	30
1.705 - 30	--	0.08	30
30 - 88	100	--	3
88 - 216	150	--	3
216 - 960	200	--	3
Above 960	500	--	3

6.7.2.Test Procedure Used

ANSI C63.10-2013 Section 6.3 & 6.6 & 6.10 & 11.13

6.7.3.Test Setting

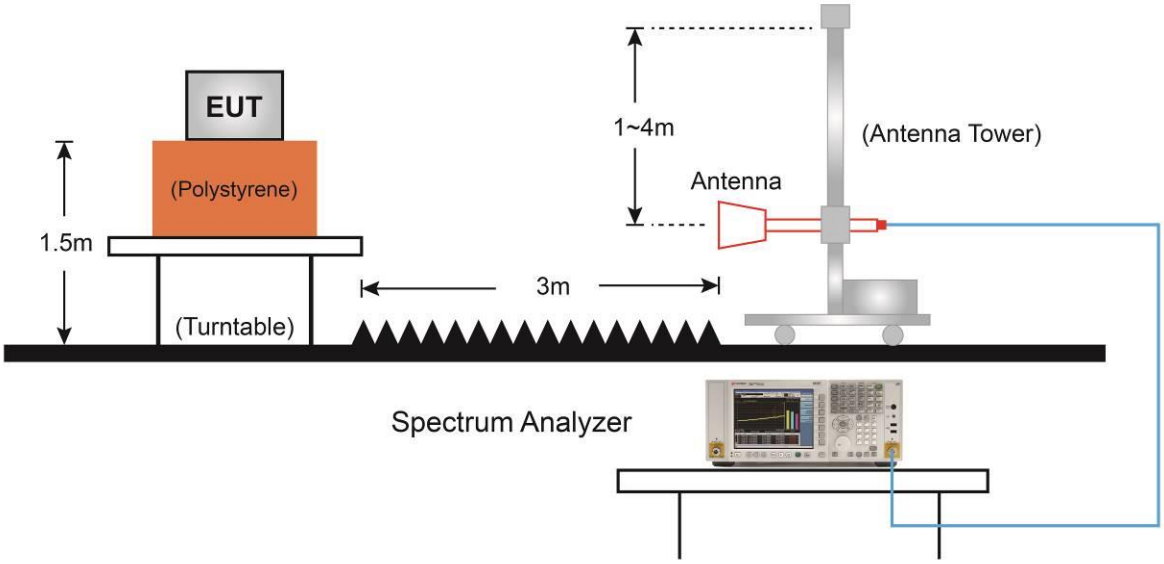
Peak Field Strength Measurements

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

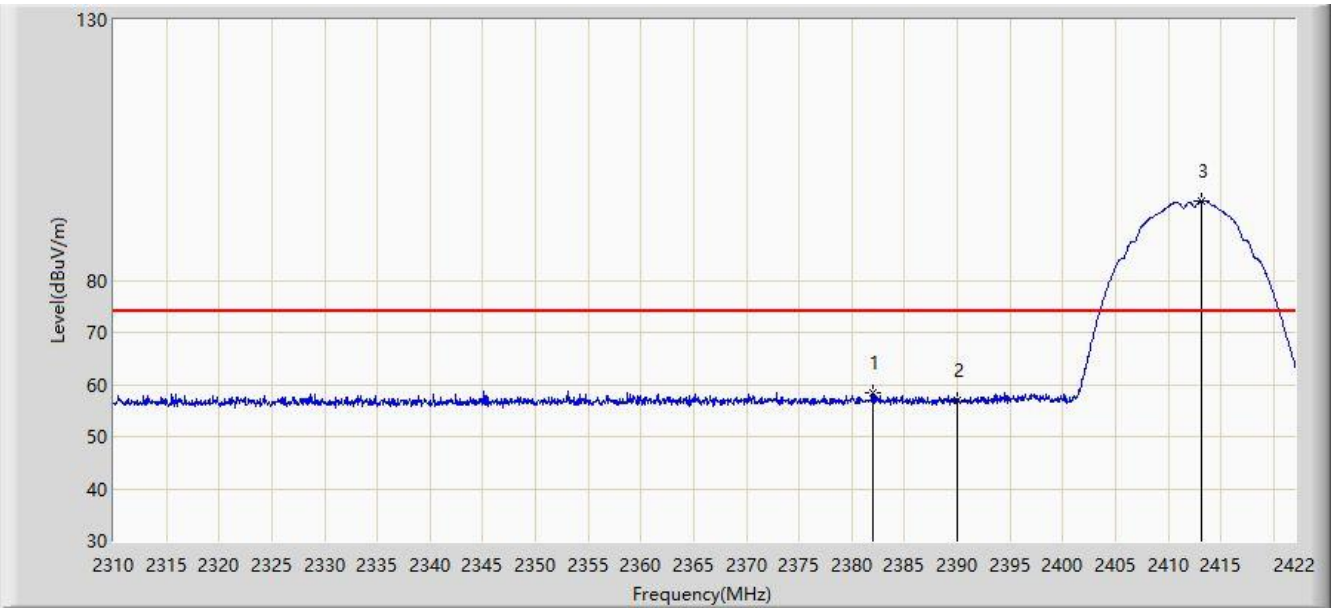
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW ≥ 1/T
4. As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to “Voltage” regardless of the display mode
5. Detector = Peak
6. Sweep time = auto
7. Trace mode = max hold
8. Allow max hold to run for at least 50 times (1/duty cycle) traces

6.7.4.Test Setup



6.7.5.Test Result

Site: NS-AC1	Time: 2021/05/19 - 15:07
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11b at channel 2412MHz	

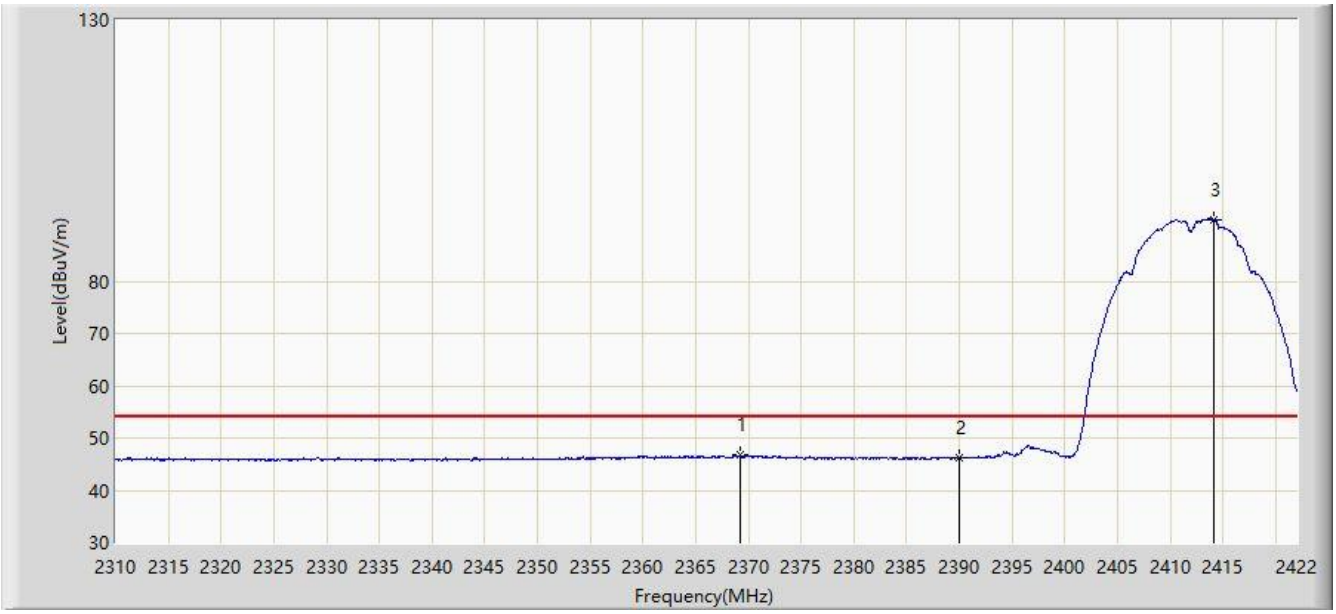


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			2381.960	58.425	27.500	-15.575	74.000	30.924	PK
2			2390.000	57.048	26.142	-16.952	74.000	30.906	PK
3		*	2413.096	95.247	64.355	N/A	N/A	30.892	PK

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

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

Site: NS-AC1	Time: 2021/05/19 - 15:09
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11b at channel 2412MHz	

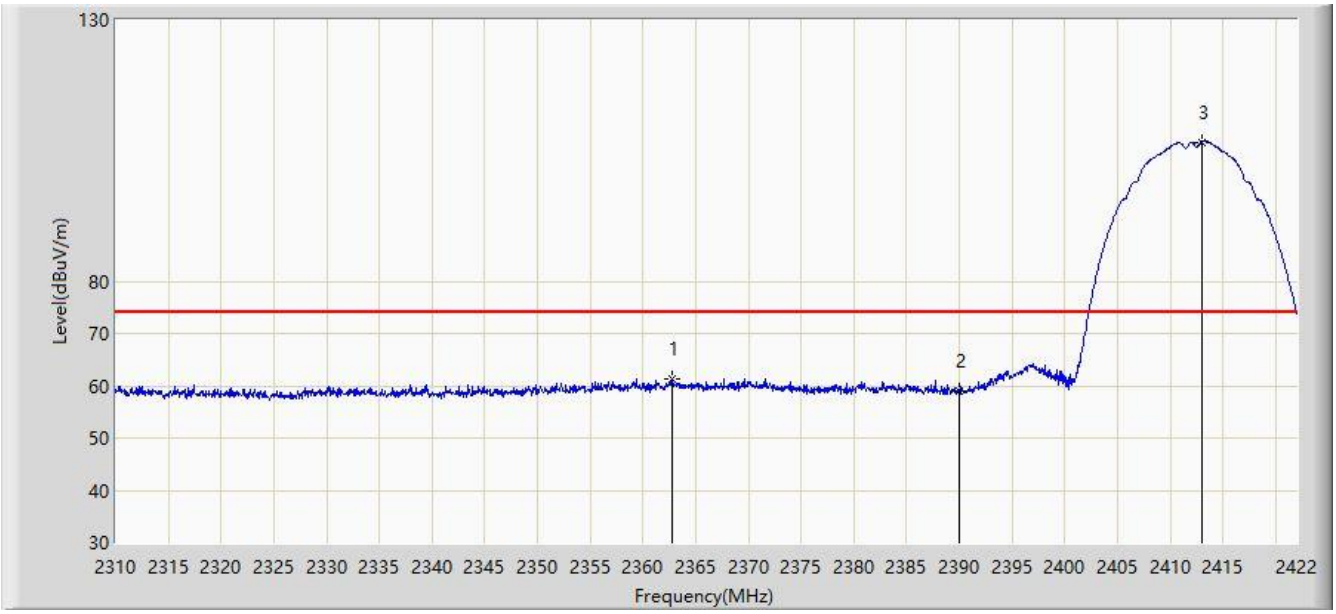


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB)	Type
1			2369.192	46.669	15.714	-7.331	54.000	30.955	AV
2			2390.000	46.228	15.322	-7.772	54.000	30.906	AV
3		*	2414.104	91.732	60.842	N/A	N/A	30.890	AV

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

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

Site: NS-AC1	Time: 2021/05/19 - 15:00
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11b at channel 2412MHz	

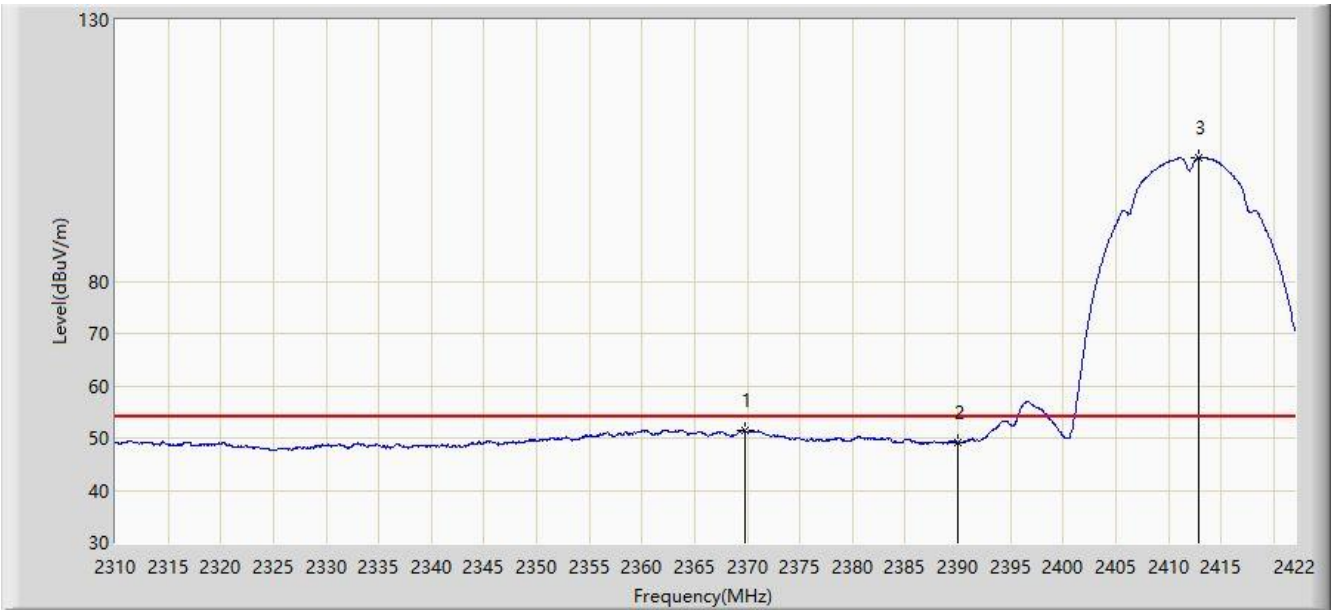


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB)	Type
1			2362.808	61.267	30.298	-12.733	74.000	30.969	PK
2			2390.000	59.105	28.199	-14.895	74.000	30.906	PK
3		*	2412.984	106.641	75.749	N/A	N/A	30.892	PK

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

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

Site: NS-AC1	Time: 2021/05/19 - 15:02
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11b at channel 2412MHz	

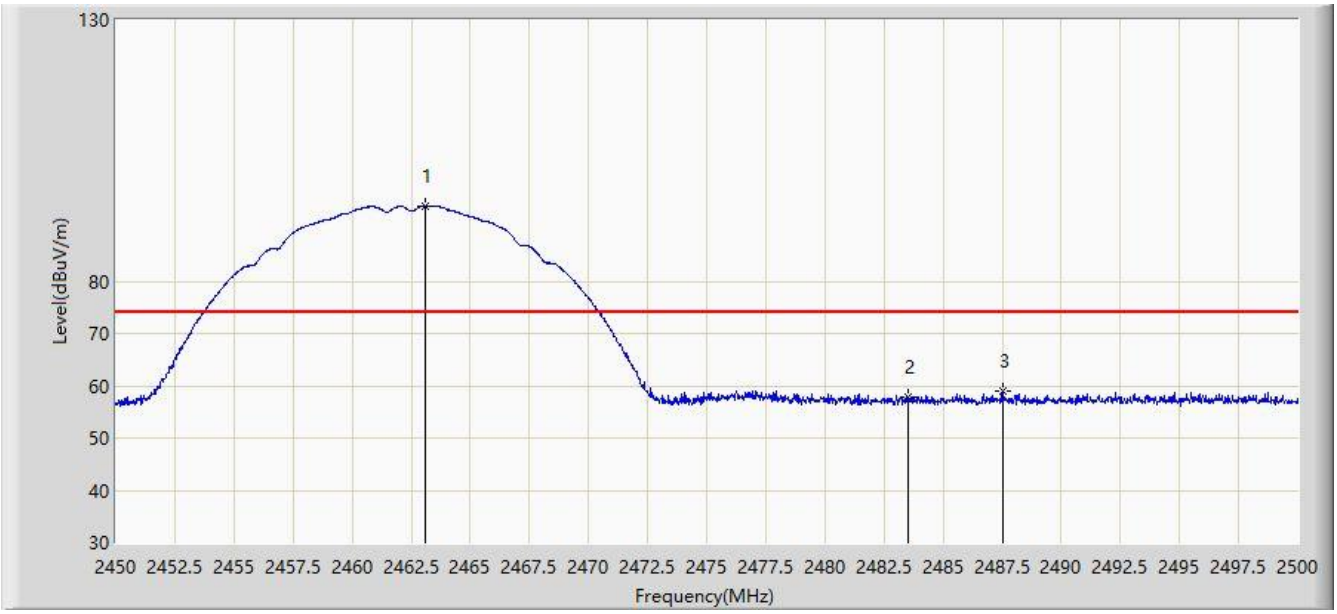


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB)	Type
1			2369.752	51.363	20.410	-2.637	54.000	30.954	AV
2			2390.000	49.095	18.189	-4.905	54.000	30.906	AV
3		*	2412.928	103.746	72.854	N/A	N/A	30.892	AV

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

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

Site: NS-AC1	Time: 2021/05/19 - 15:37
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11b at channel 2462MHz	

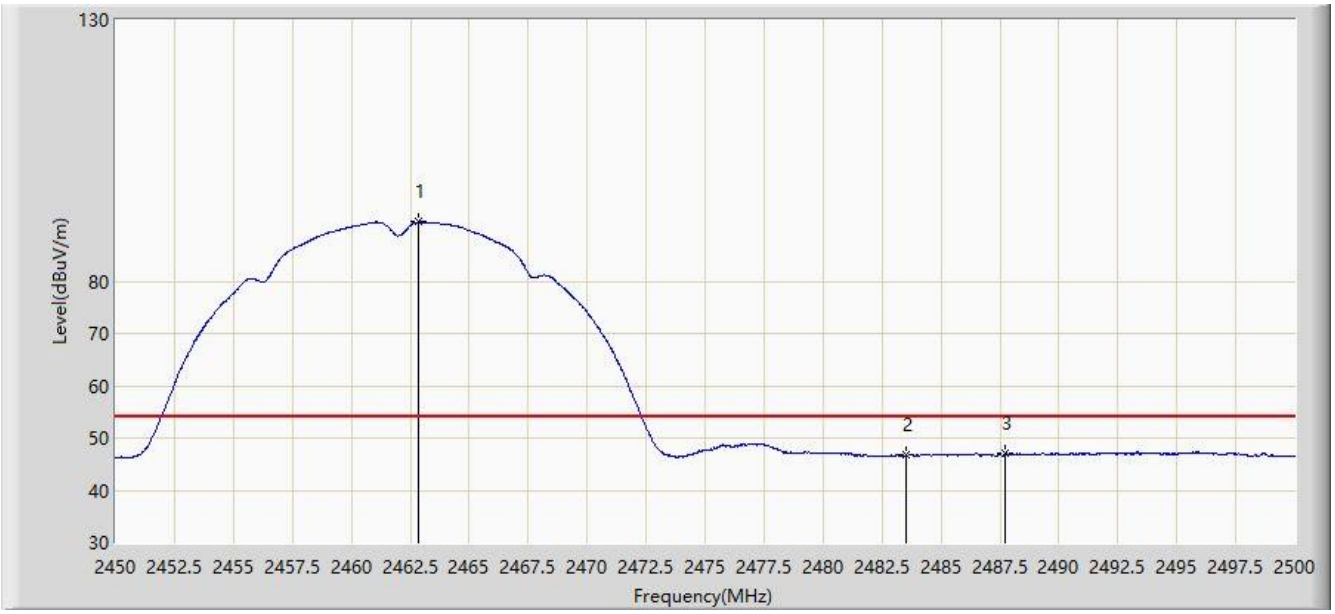


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	2463.100	94.474	63.622	N/A	N/A	30.852	PK
2			2483.500	57.691	26.803	-16.309	74.000	30.888	PK
3			2487.550	58.864	27.979	-15.136	74.000	30.885	PK

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

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

Site: NS-AC1	Time: 2021/05/19 - 15:39
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11b at channel 2462MHz	

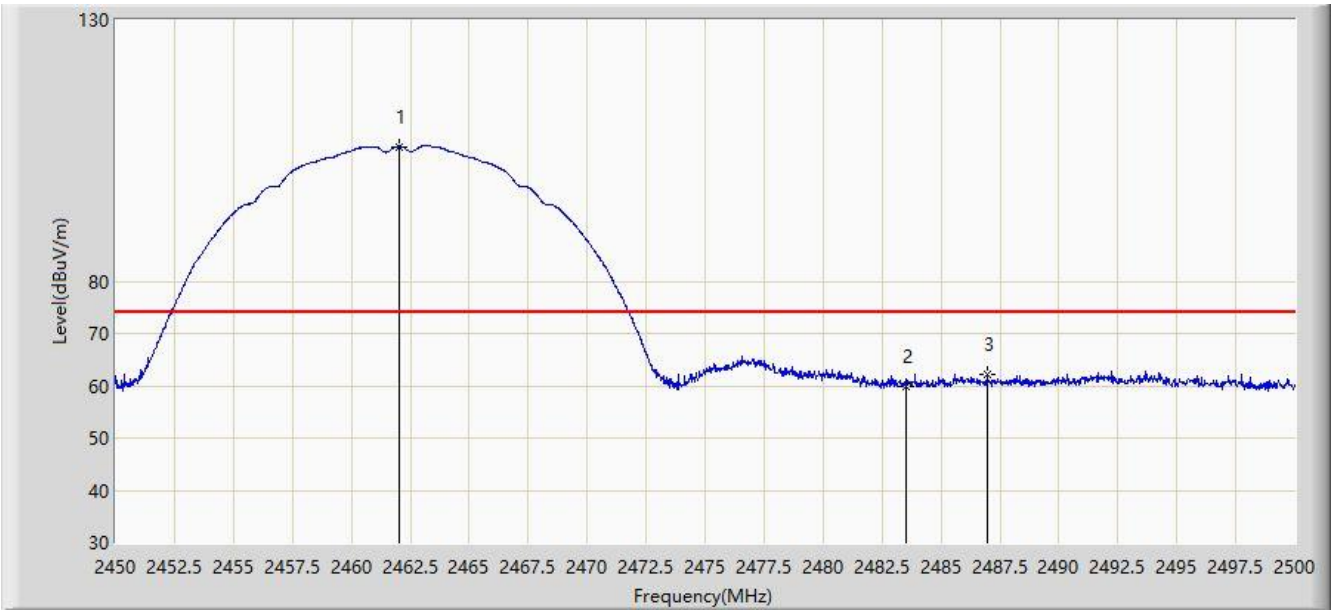


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	2462.825	91.349	60.497	N/A	N/A	30.852	AV
2			2483.500	46.681	15.793	-7.319	54.000	30.888	AV
3			2487.700	46.973	16.088	-7.027	54.000	30.885	AV

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

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

Site: NS-AC1	Time: 2021/05/19 - 15:35
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11b at channel 2462MHz	

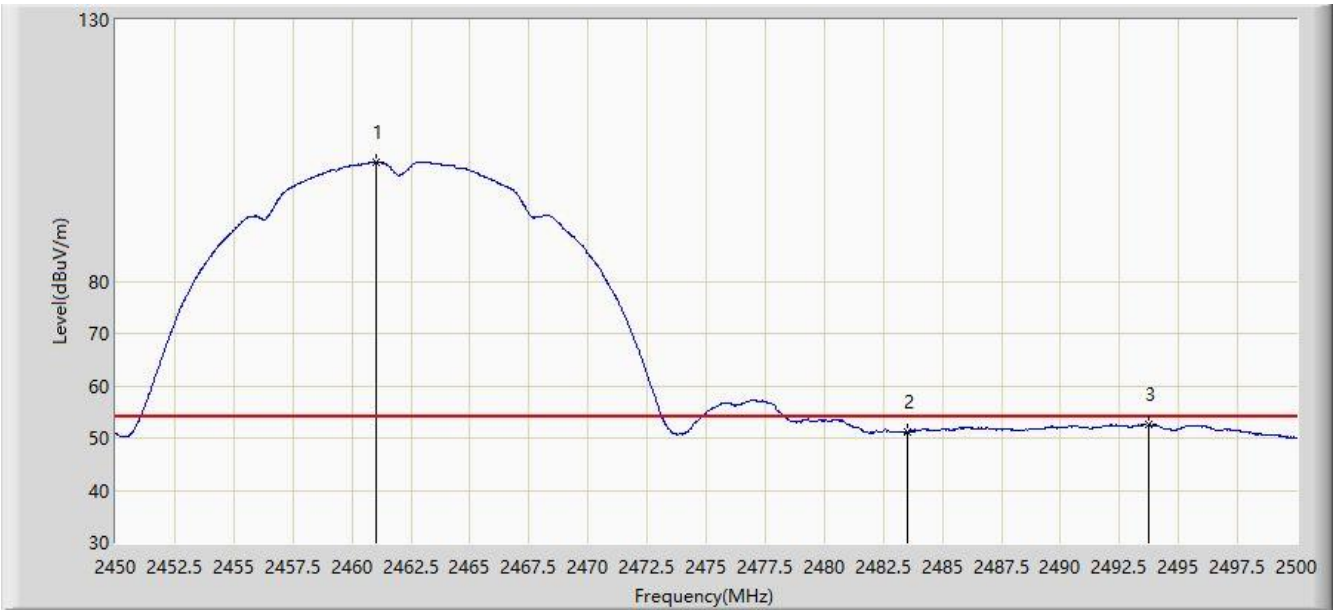


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	2462.025	105.778	74.928	N/A	N/A	30.850	PK
2			2483.500	59.813	28.925	-14.187	74.000	30.888	PK
3			2486.950	62.042	31.156	-11.958	74.000	30.886	PK

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

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

Site: NS-AC1	Time: 2021/05/19 - 15:34
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11b at channel 2462MHz	

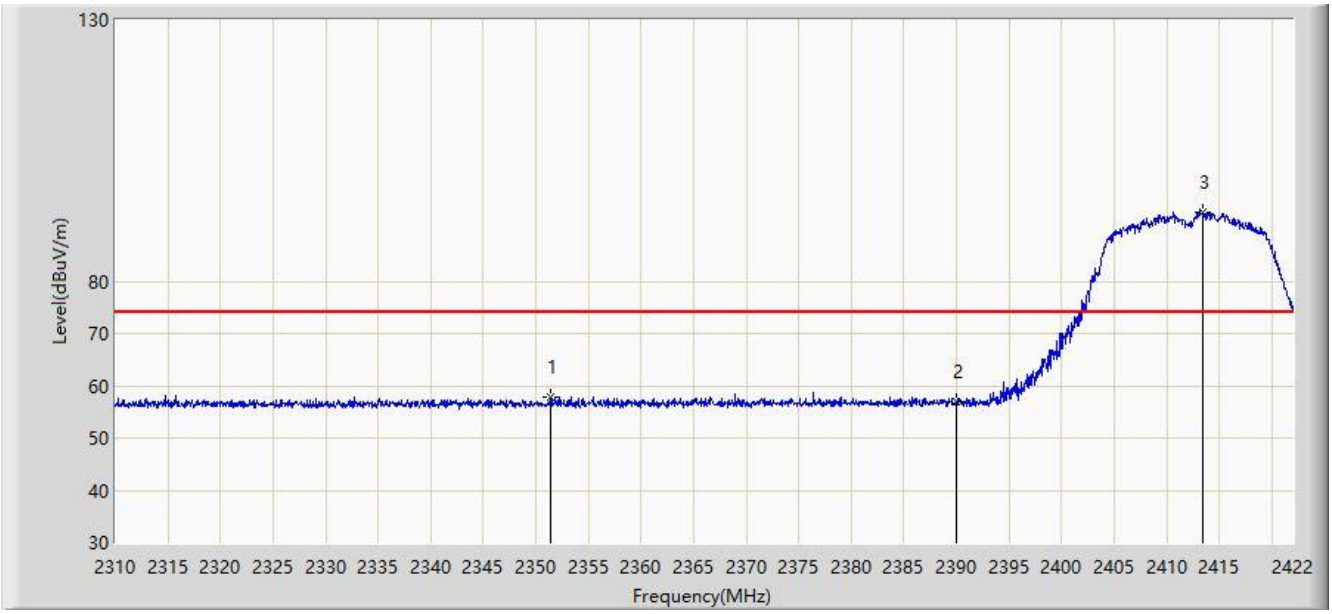


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	2461.000	102.830	71.980	N/A	N/A	30.850	AV
2			2483.500	51.117	20.229	-2.883	54.000	30.888	AV
3			2493.750	52.565	21.684	-1.435	54.000	30.881	AV

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

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

Site: NS-AC1	Time: 2021/05/19 - 15:42
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11g at channel 2412MHz	

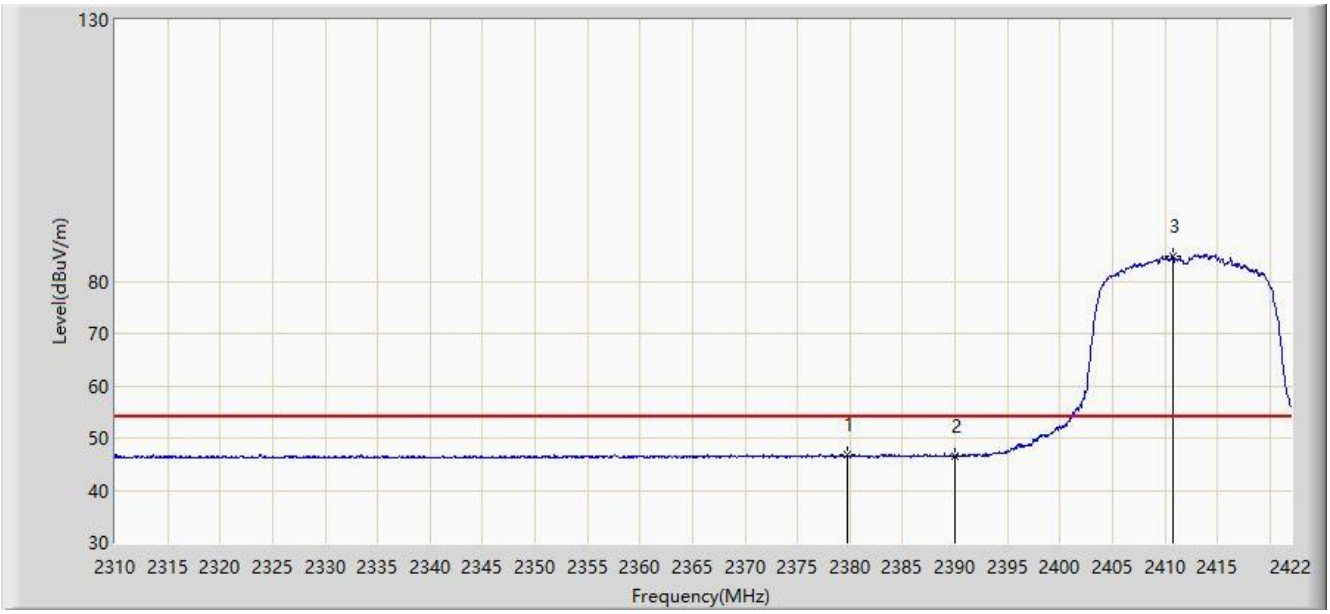


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB)	Type
1			2351.440	57.811	26.814	-16.189	74.000	30.998	PK
2			2390.000	56.854	25.948	-17.146	74.000	30.906	PK
3		*	2413.432	93.215	62.323	N/A	N/A	30.891	PK

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

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

Site: NS-AC1	Time: 2021/05/19 - 15:47
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11g at channel 2412MHz	

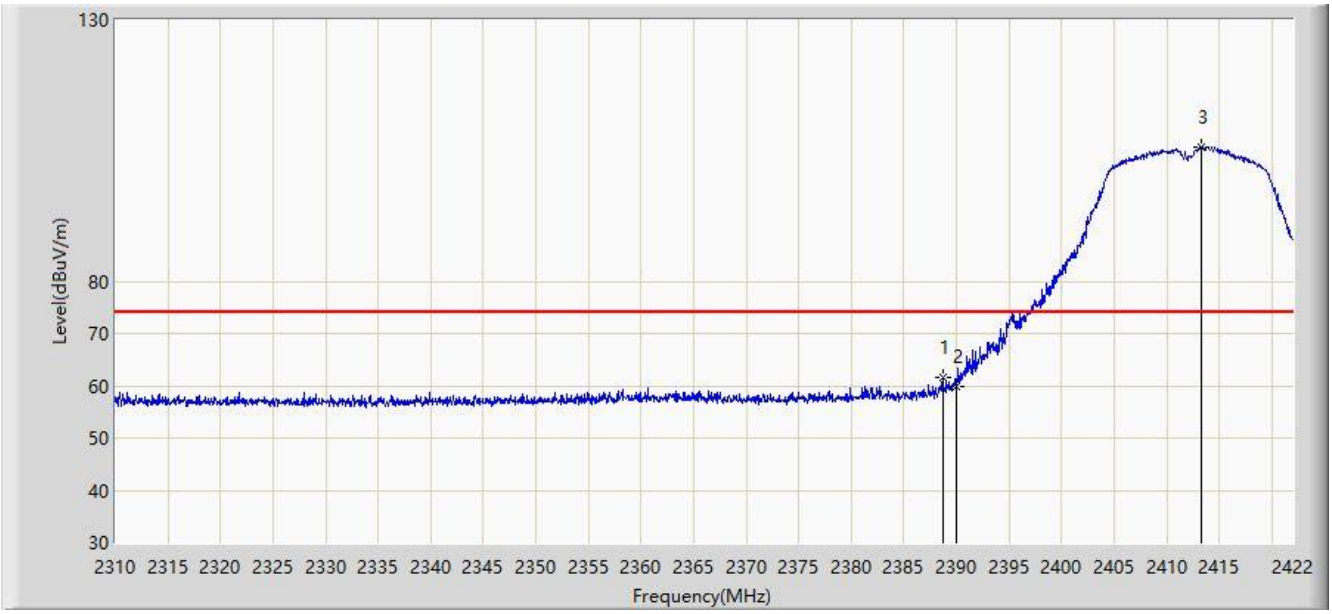


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB)	Type
1			2379.720	46.944	16.014	-7.056	54.000	30.930	AV
2			2390.000	46.549	15.643	-7.451	54.000	30.906	AV
3		*	2410.744	84.888	53.992	N/A	N/A	30.897	AV

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

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

Site: NS-AC1	Time: 2021/05/19 - 15:49
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11g at channel 2412MHz	

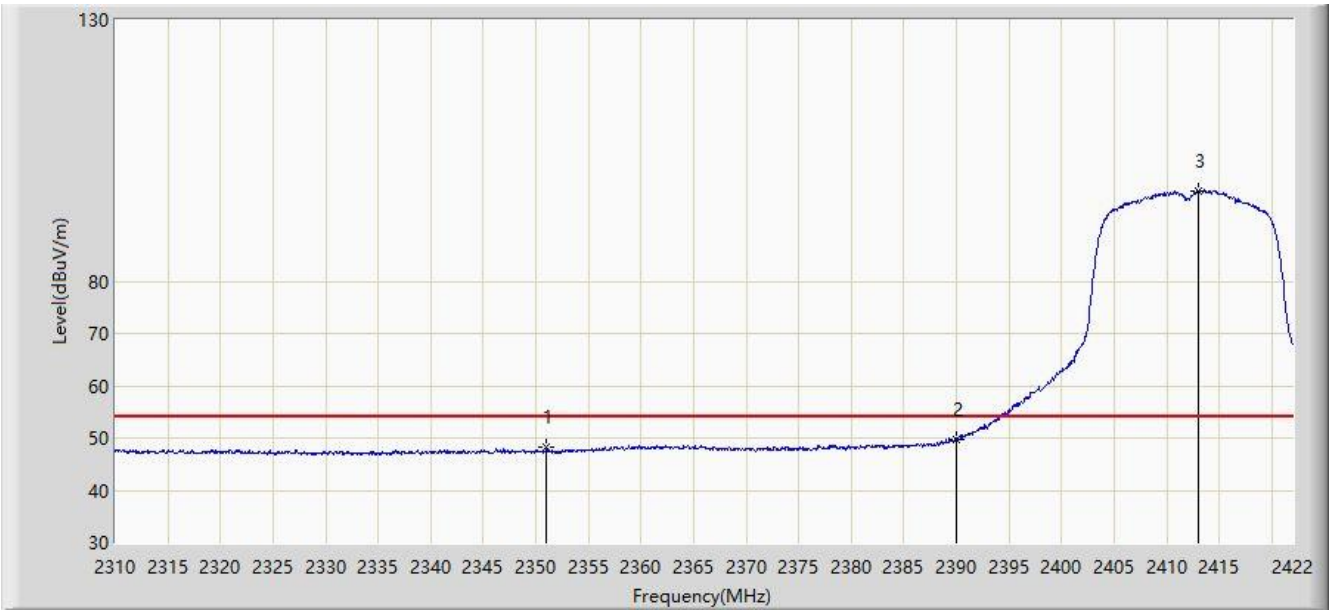


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB)	Type
1			2388.736	61.695	30.786	-12.305	74.000	30.908	PK
2			2390.000	59.857	28.951	-14.143	74.000	30.906	PK
3		*	2413.320	105.714	74.822	N/A	N/A	30.891	PK

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

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

Site: NS-AC1	Time: 2021/05/19 - 15:50
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11g at channel 2412MHz	

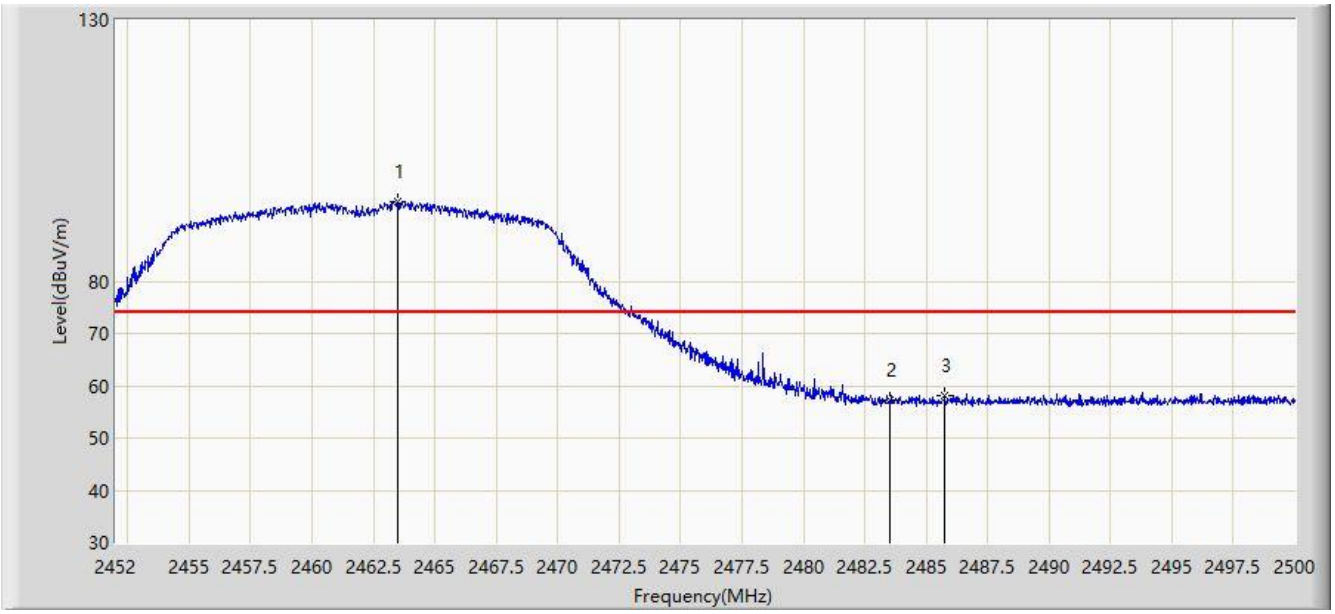


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			2350.992	48.179	17.181	-5.821	54.000	30.998	AV
2			2390.000	49.852	18.946	-4.148	54.000	30.906	AV
3		*	2413.040	97.364	66.472	N/A	N/A	30.892	AV

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

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

Site: NS-AC1	Time: 2021/05/19 - 15:56
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11g at channel 2462MHz	

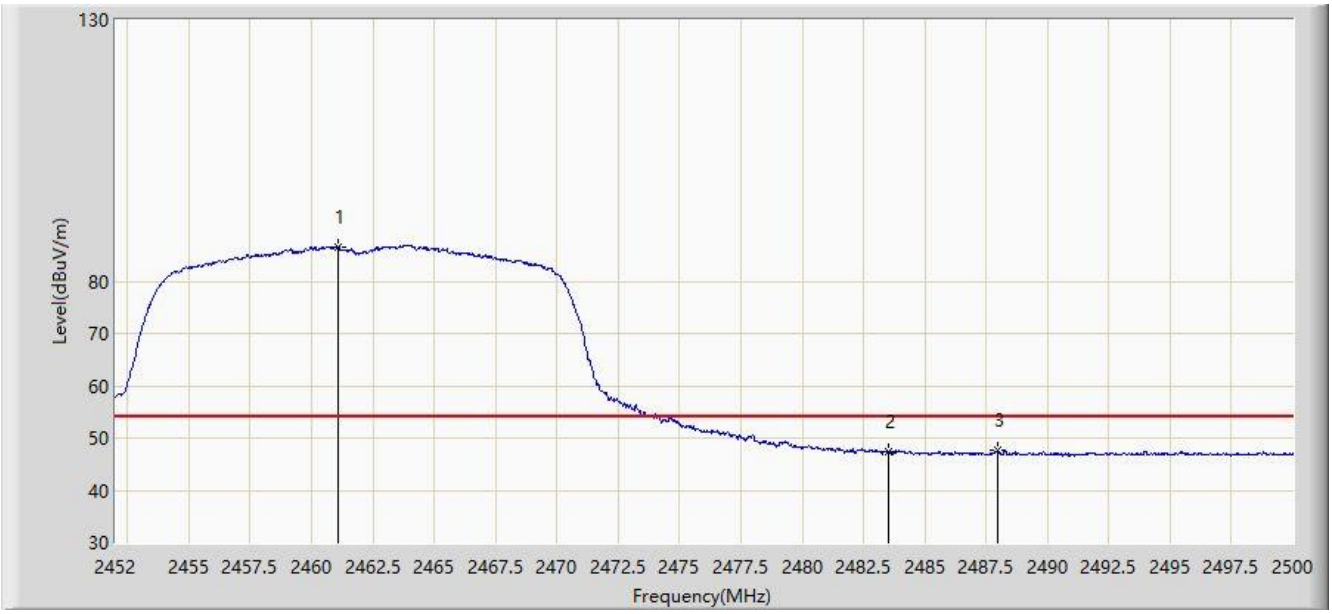


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	2463.496	95.302	64.449	N/A	N/A	30.853	PK
2			2483.500	57.106	26.218	-16.894	74.000	30.888	PK
3			2485.744	58.124	27.238	-15.876	74.000	30.886	PK

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

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

Site: NS-AC1	Time: 2021/05/19 - 15:58
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11g at channel 2462MHz	

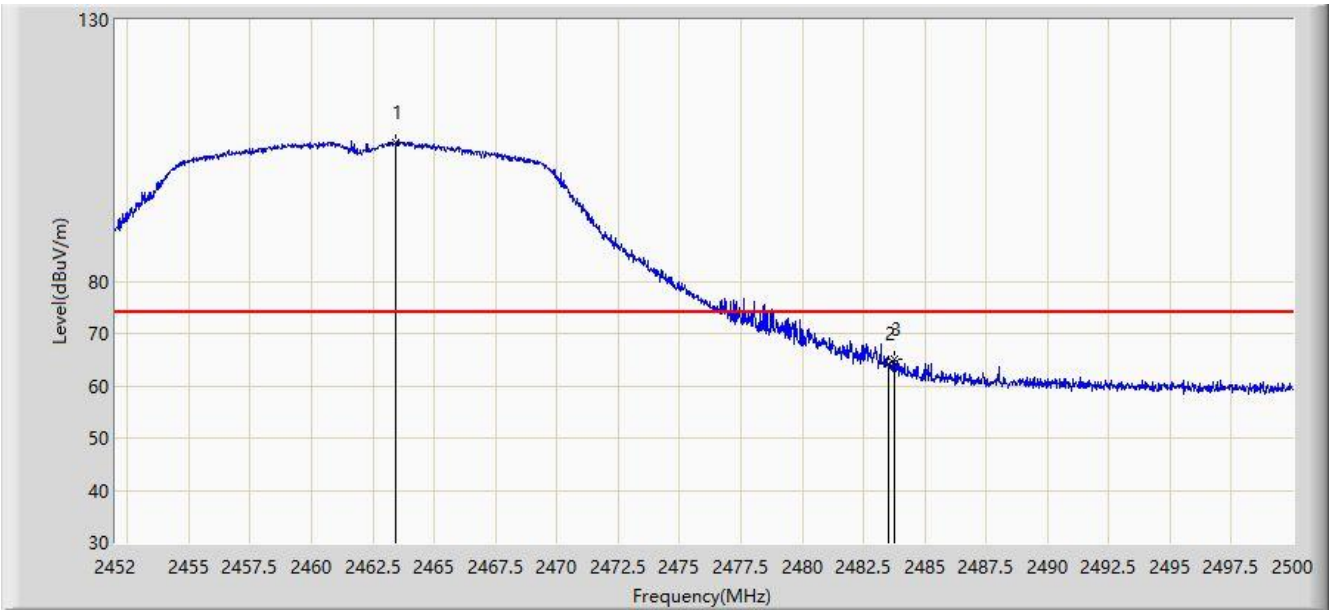


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	2461.072	86.602	55.752	N/A	N/A	30.850	AV
2			2483.500	47.347	16.459	-6.653	54.000	30.888	AV
3			2487.976	47.597	16.712	-6.403	54.000	30.885	AV

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

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

Site: NS-AC1	Time: 2021/05/19 - 15:52
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11g at channel 2462MHz	

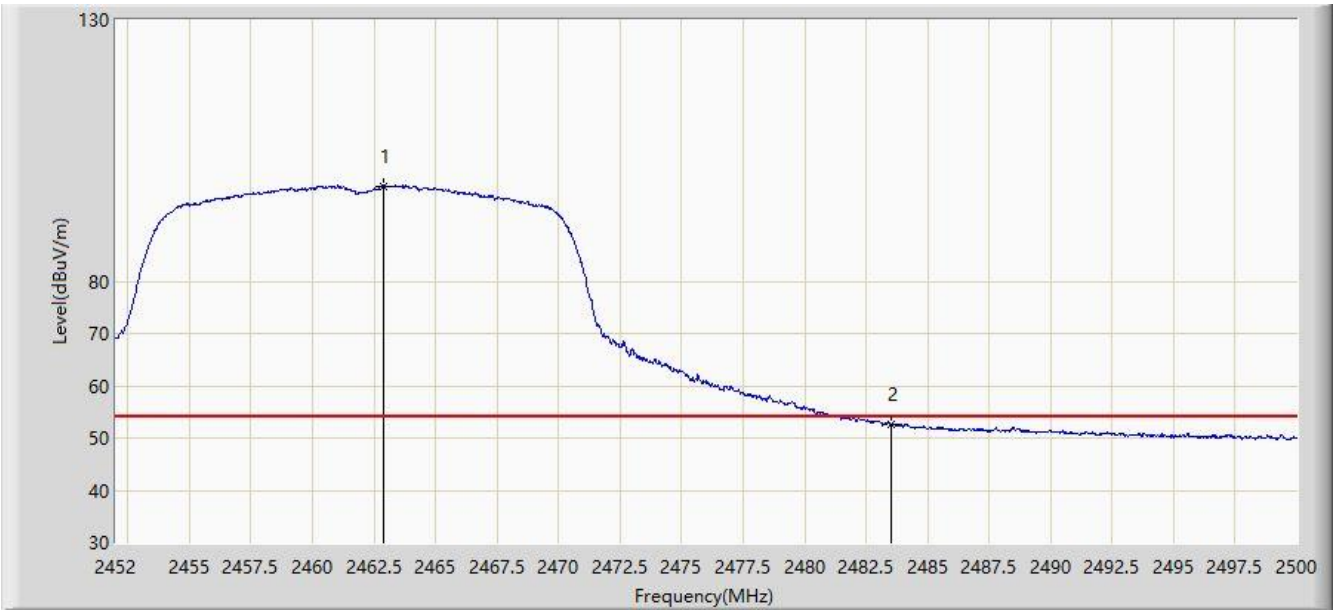


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	2463.400	106.583	75.730	N/A	N/A	30.853	PK
2			2483.500	64.201	33.313	-9.799	74.000	30.888	PK
3			2483.776	64.972	34.084	-9.028	74.000	30.888	PK

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

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

Site: NS-AC1	Time: 2021/05/19 - 15:54
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11g at channel 2462MHz	

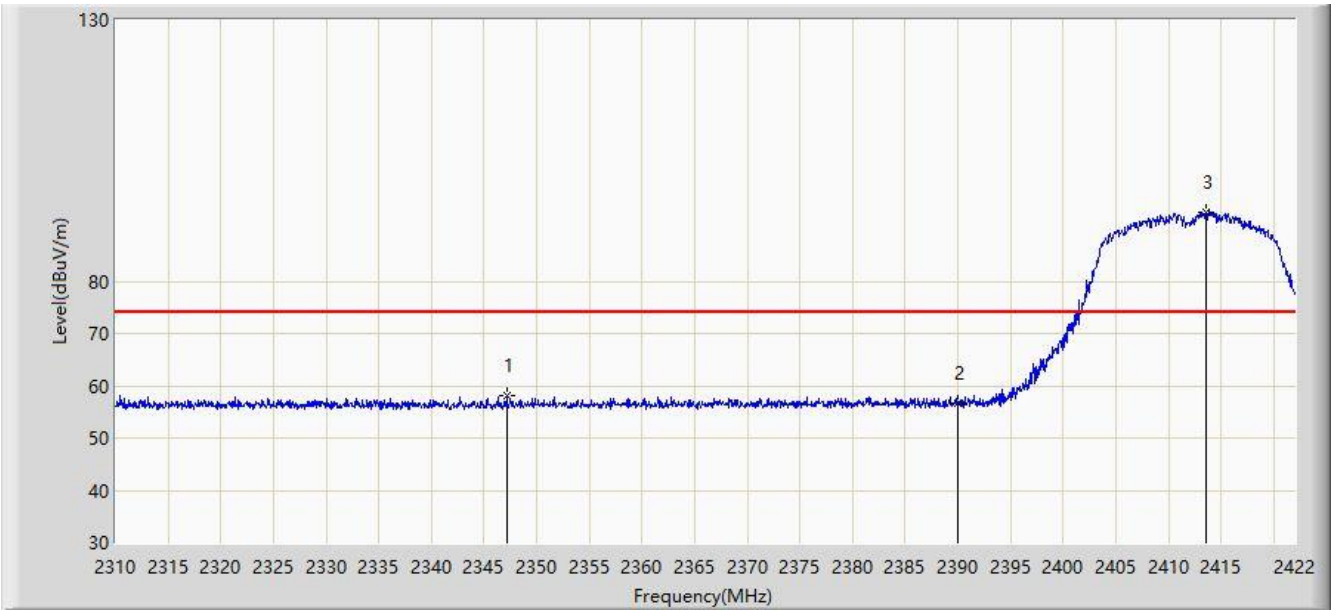


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	2462.872	98.214	67.362	N/A	N/A	30.852	AV
2			2483.500	52.632	21.744	-1.368	54.000	30.888	AV

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

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

Site: NS-AC1	Time: 2021/05/19 - 16:00
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11n-HT20 at channel 2412MHz	

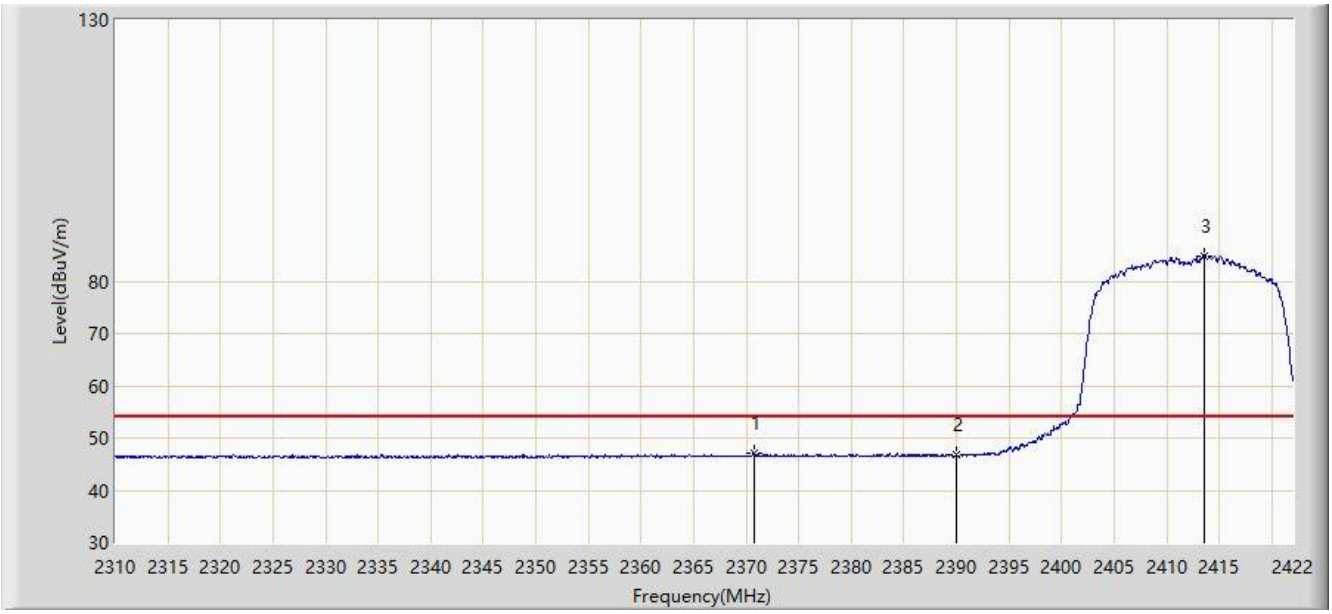


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB)	Type
1			2347.128	58.005	26.997	-15.995	74.000	31.008	PK
2			2390.000	56.560	25.654	-17.440	74.000	30.906	PK
3		*	2413.600	93.227	62.336	N/A	N/A	30.891	PK

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

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

Site: NS-AC1	Time: 2021/05/19 - 16:02
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11n-HT20 at channel 2412MHz	

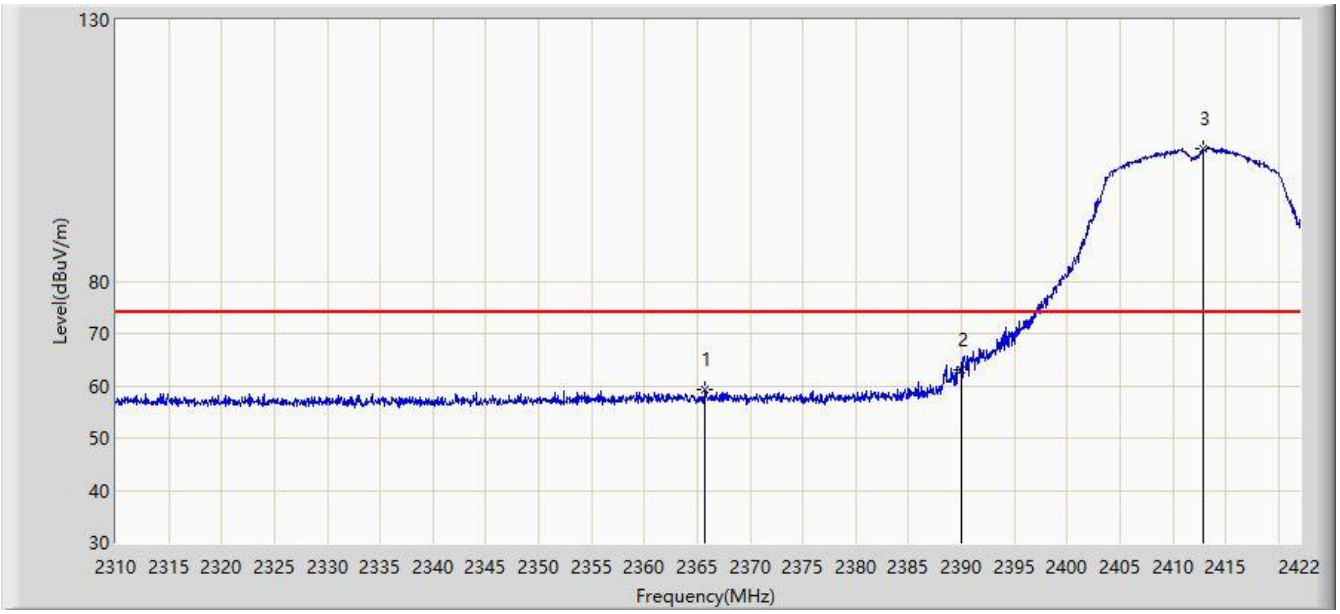


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB)	Type
1			2370.704	47.000	16.049	-7.000	54.000	30.951	AV
2			2390.000	46.693	15.787	-7.307	54.000	30.906	AV
3		*	2413.544	84.868	53.977	N/A	N/A	30.891	AV

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

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

Site: NS-AC1	Time: 2021/05/19 - 16:07
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11n-HT20 at channel 2412MHz	

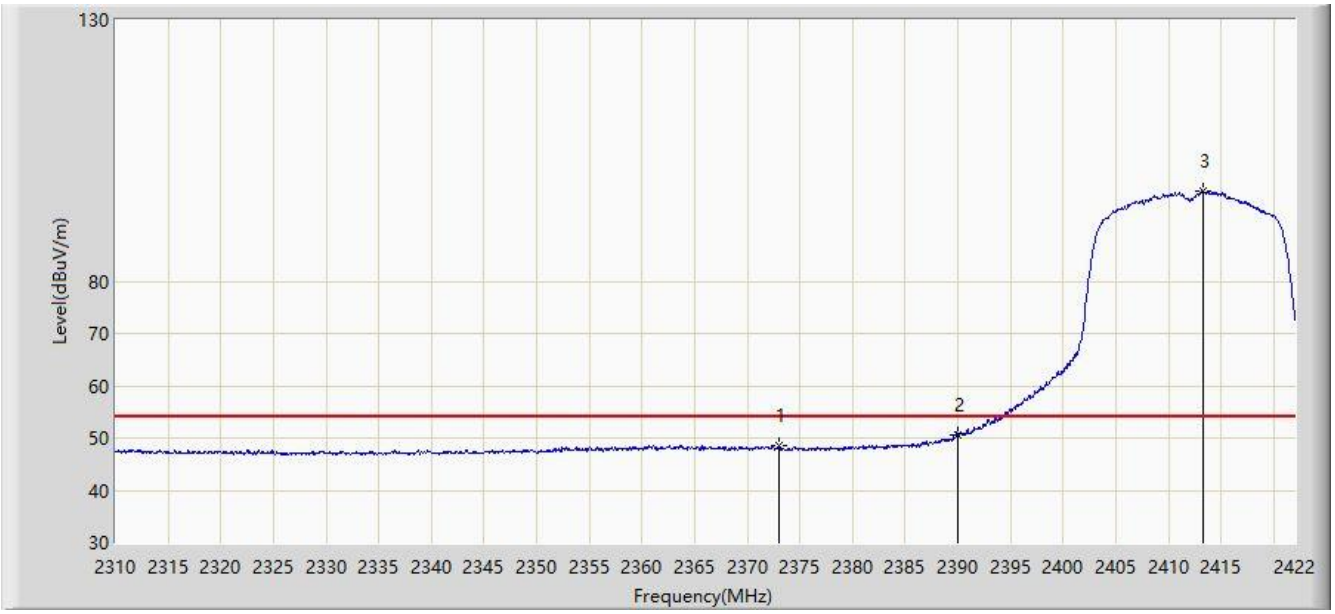


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB)	Type
1			2365.776	59.167	28.204	-14.833	74.000	30.962	PK
2			2390.000	63.157	32.251	-10.843	74.000	30.906	PK
3		*	2412.816	105.396	74.503	N/A	N/A	30.892	PK

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

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

Site: NS-AC1	Time: 2021/05/19 - 16:09
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11n-HT20 at channel 2412MHz	

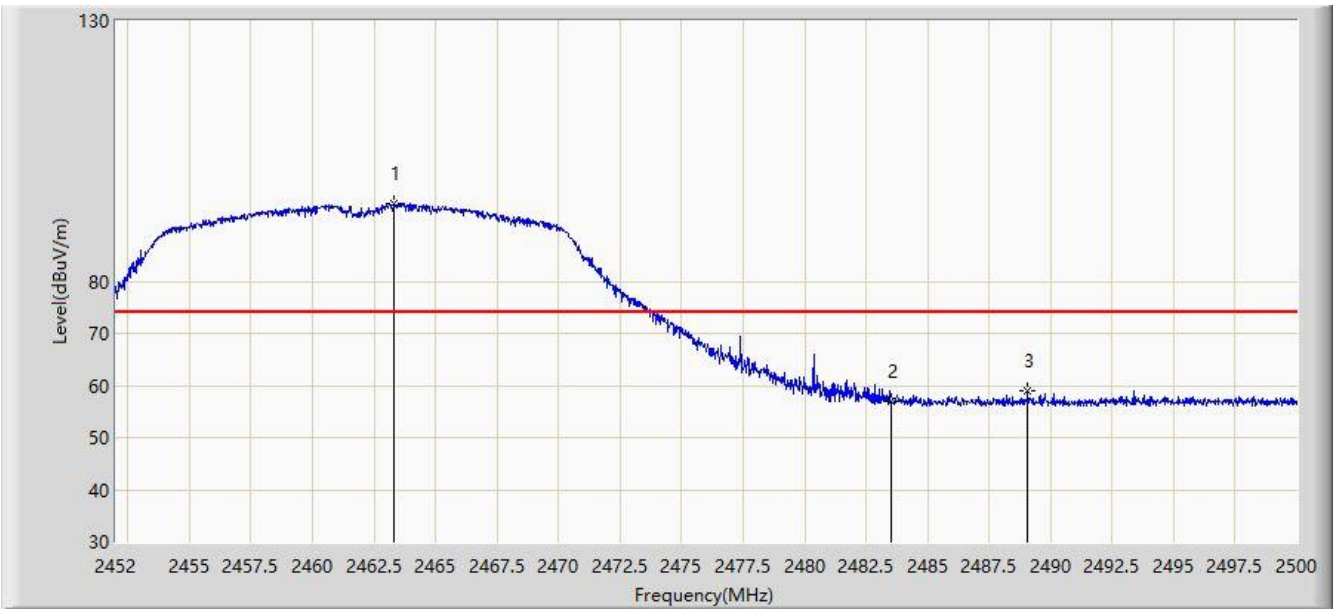


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB)	Type
1			2373.000	48.484	17.538	-5.516	54.000	30.946	AV
2			2390.000	50.675	19.769	-3.325	54.000	30.906	AV
3		*	2413.264	97.240	66.348	N/A	N/A	30.892	AV

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

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

Site: NS-AC1	Time: 2021/05/19 - 16:11
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11n-HT20 at channel 2462MHz	

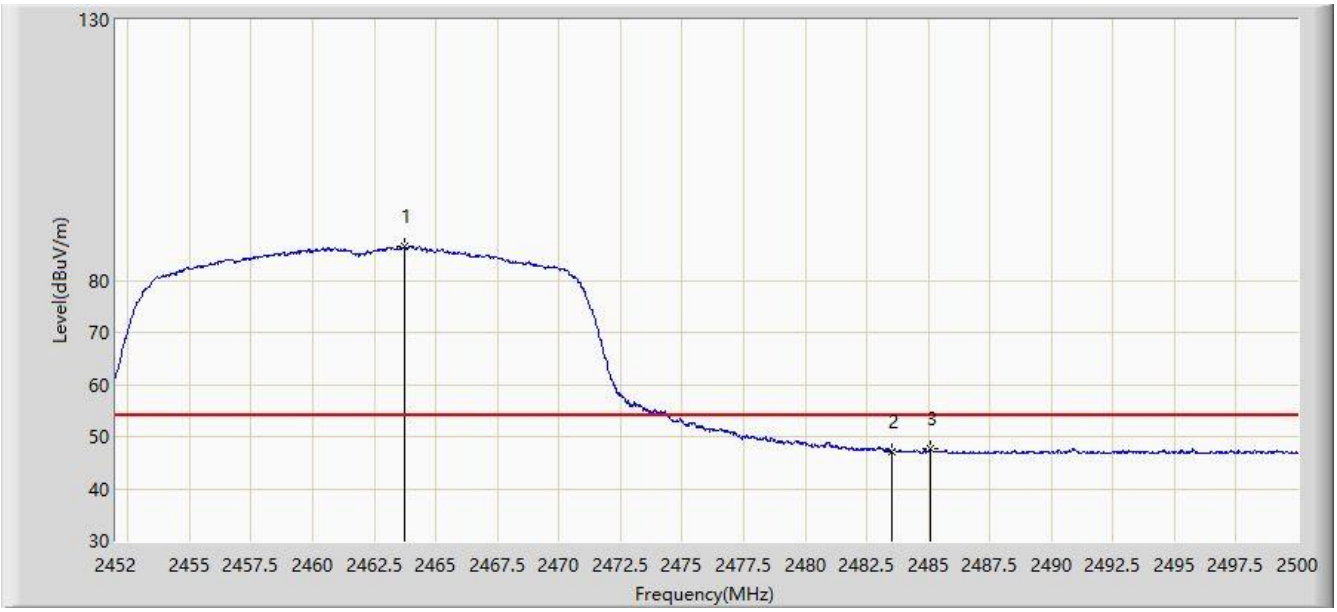


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	2463.328	95.016	64.163	N/A	N/A	30.853	PK
2			2483.500	56.987	26.099	-17.013	74.000	30.888	PK
3			2489.080	58.994	28.110	-15.006	74.000	30.884	PK

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

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

Site: NS-AC1	Time: 2021/05/19 - 16:13
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11n-HT20 at channel 2462MHz	

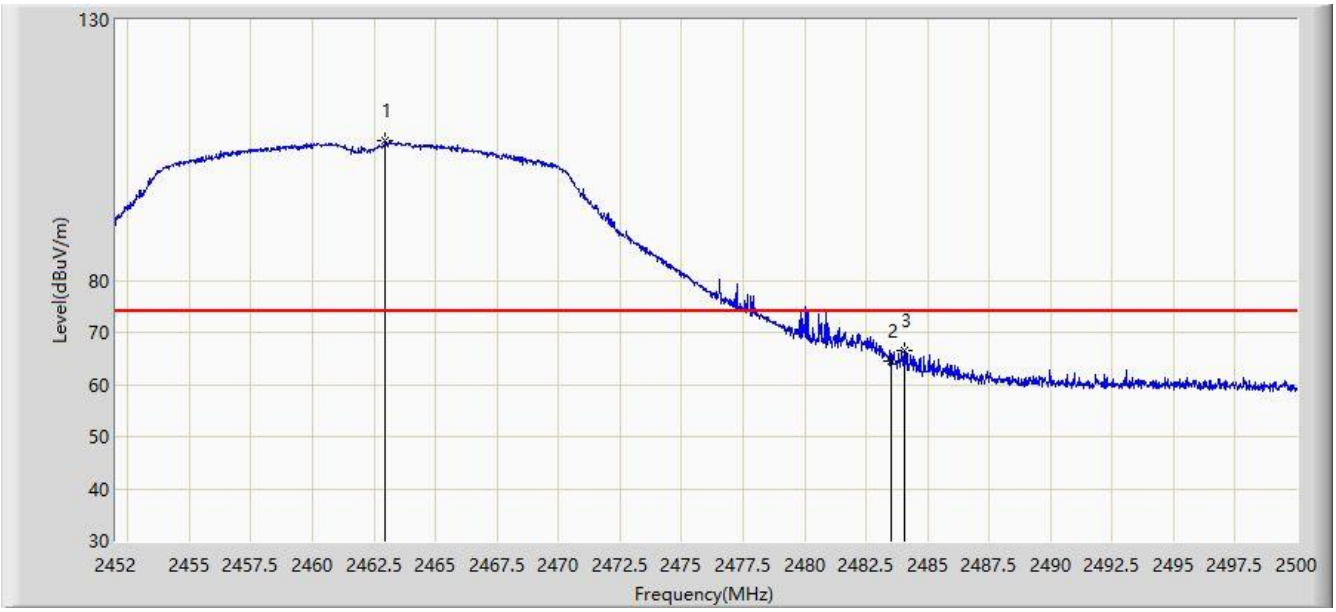


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	2463.736	86.391	55.537	N/A	N/A	30.854	AV
2			2483.500	47.103	16.215	-6.897	54.000	30.888	AV
3			2485.072	47.644	16.757	-6.356	54.000	30.887	AV

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

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

Site: NS-AC1	Time: 2021/05/19 - 16:15
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11n-HT20 at channel 2462MHz	

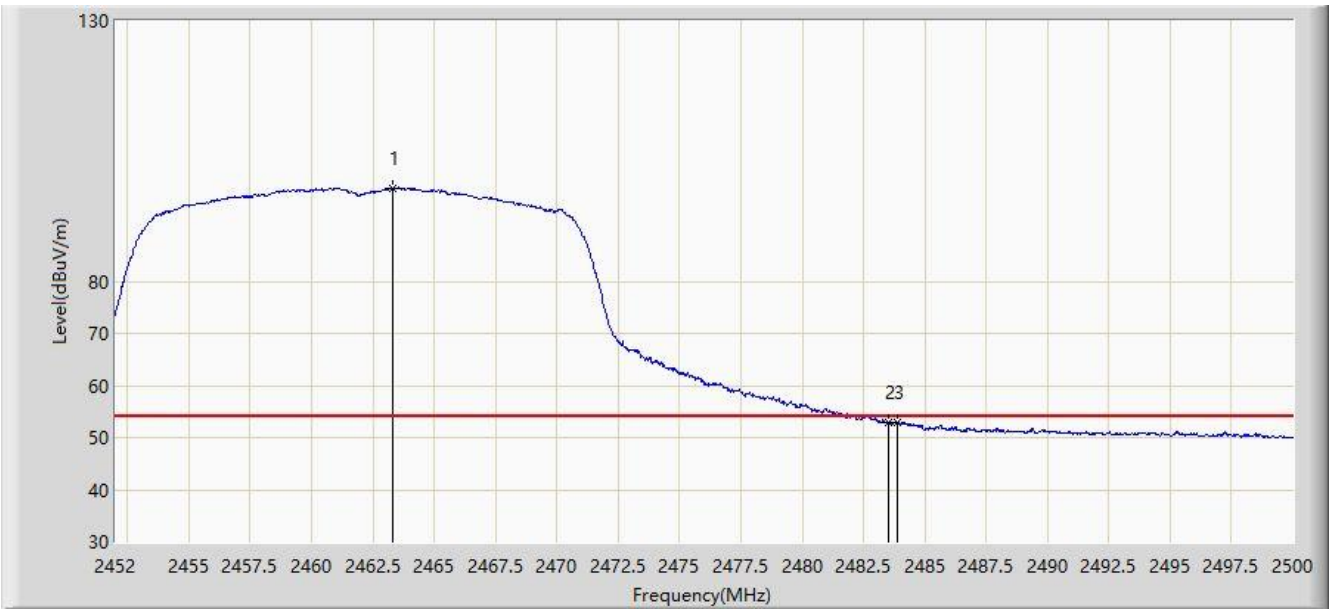


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB)	Type
1		*	2462.968	106.904	76.052	N/A	N/A	30.852	PK
2			2483.500	64.372	33.484	-9.628	74.000	30.888	PK
3			2484.088	66.552	35.664	-7.448	74.000	30.888	PK

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

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

Site: NS-AC1	Time: 2021/05/19 - 16:17
Limit: FCC_Part15.209_RE(3m)	Engineer: Dillon Diao
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: Wireless Network Control	Power: DC 12V
Test Mode: Transmit by 802.11n-HT20 at channel 2462MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	2463.328	97.891	67.038	N/A	N/A	30.853	AV
2			2483.500	52.776	21.888	-1.224	54.000	30.888	AV
3			2483.872	53.031	22.143	-0.969	54.000	30.888	AV

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

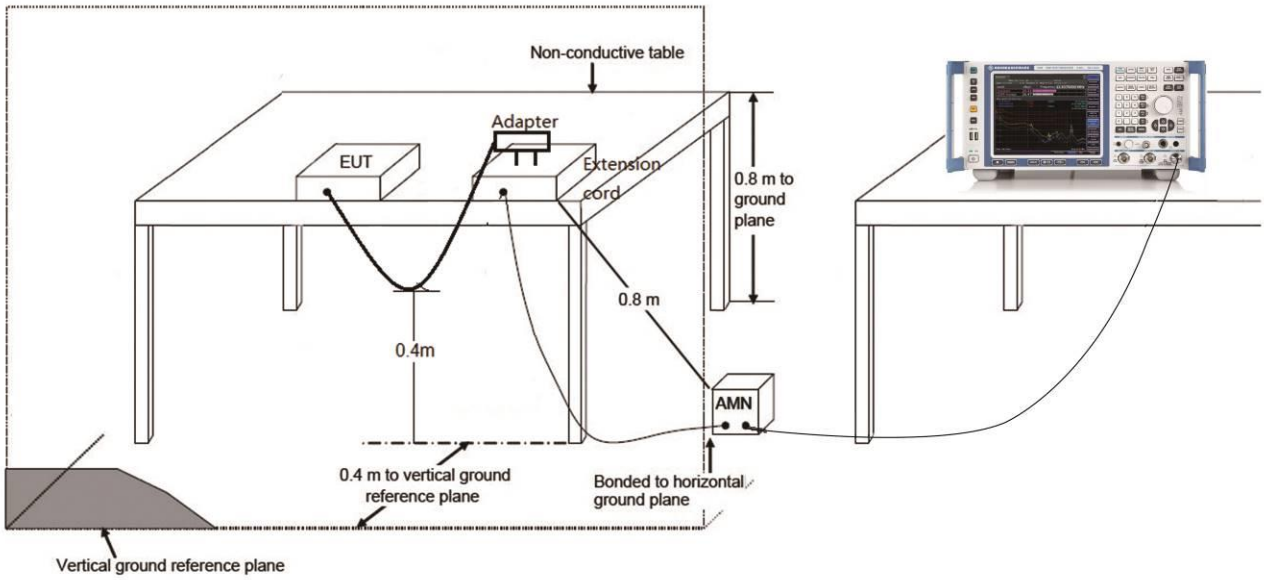
Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

6.8. AC Conducted Emissions Measurement

6.8.1.Test Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits & RSS-Gen Issue 5 Section 8.8 Limits		
Frequency (MHz)	QP (dBμV)	AV (dBμV)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50
Note 1: The lower limit shall apply at the transition frequencies. Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.		

6.8.2.Test Setup



6.8.3.Test Result

The EUT is powered by DC, so this requirement is not applicable.

7. CONCLUSION

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

The End

Appendix A - Test Setup Photograph

Refer to “2105RSZ038-UT” file.

Appendix B - EUT Photograph

Refer to “2105RSZ038-UE” file.