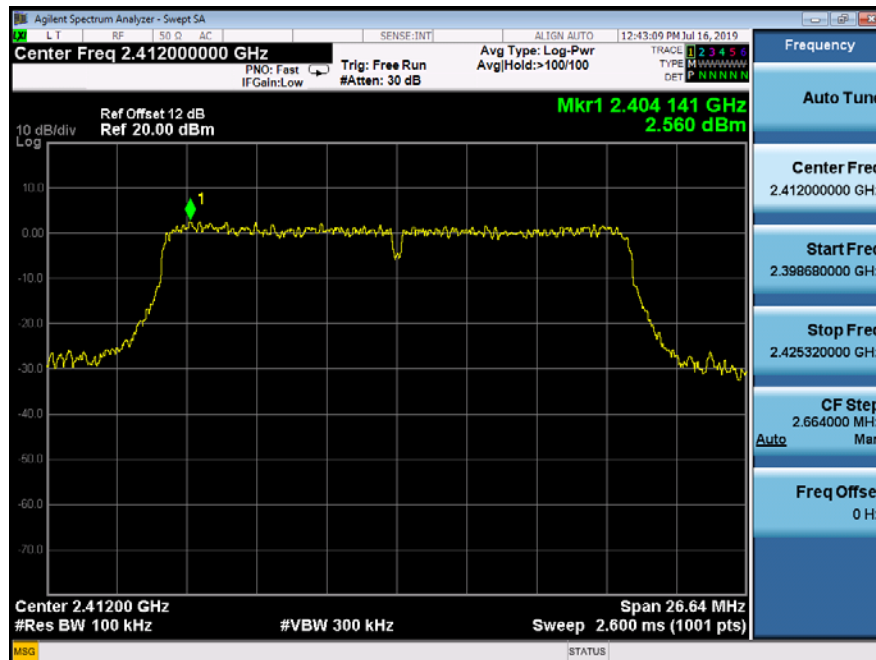
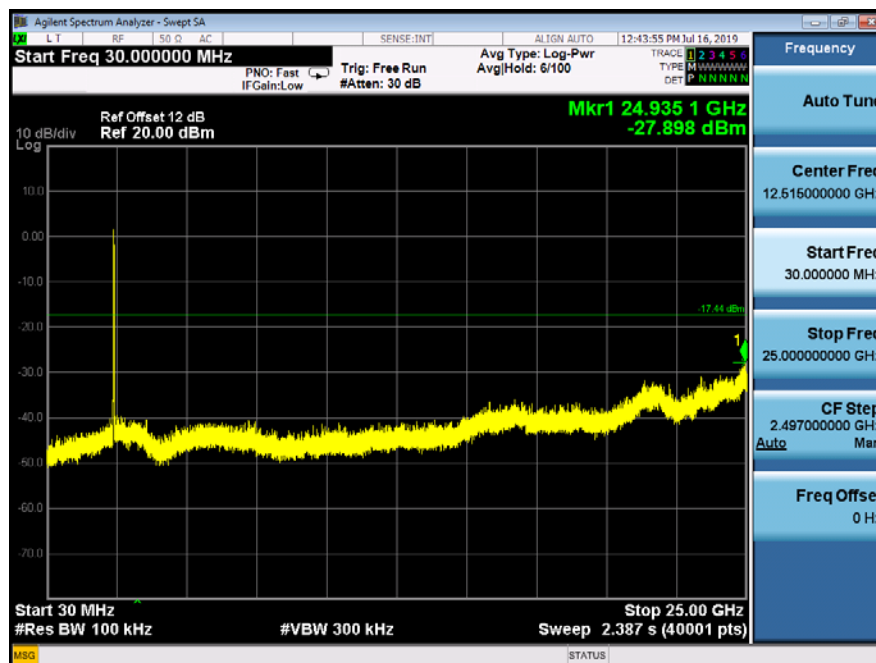


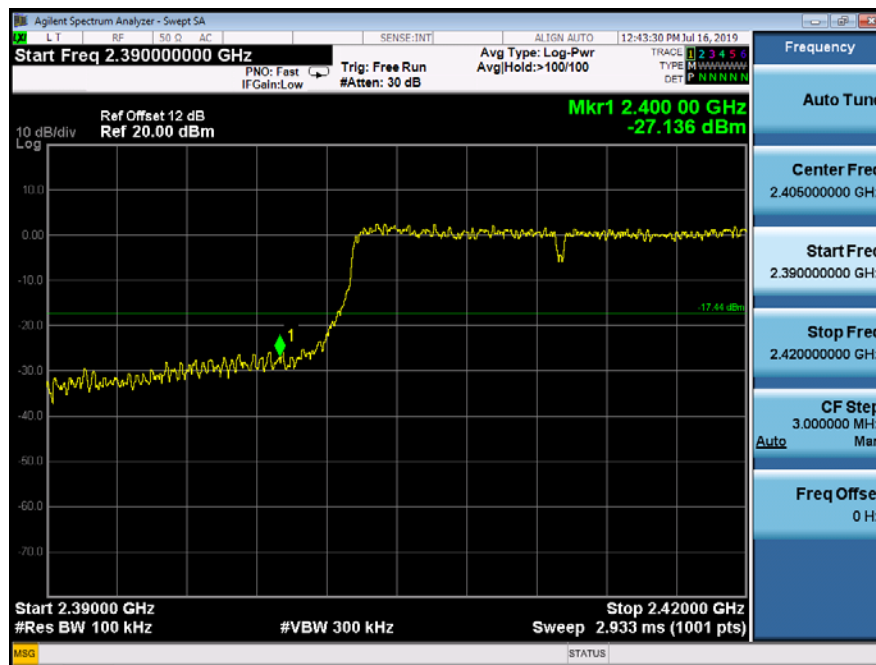
Test Model	PSD(Power Spectral Density) RBW=100kHz			
	☐ 802.11b	☐ 802.11g	☒ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel 1: 2412MHz	☐ Channel 3: 2422MHz	Mode: MIMO	



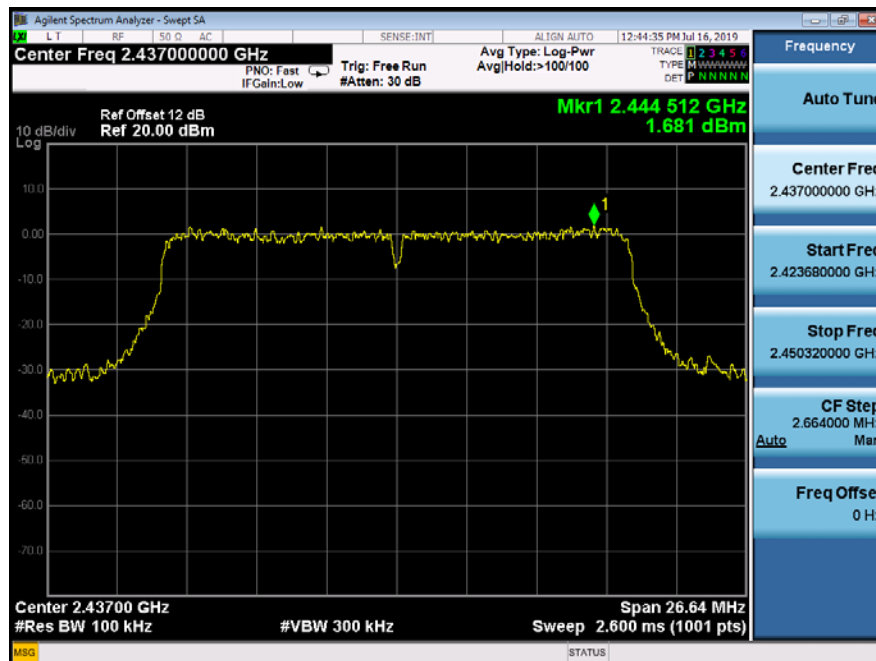
Test Model	Unwanted Emissions in non-restricted frequency bands			
	☐ 802.11b	☐ 802.11g	☒ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel 1: 2412MHz	☐ Channel 3: 2422MHz	Mode: MIMO	



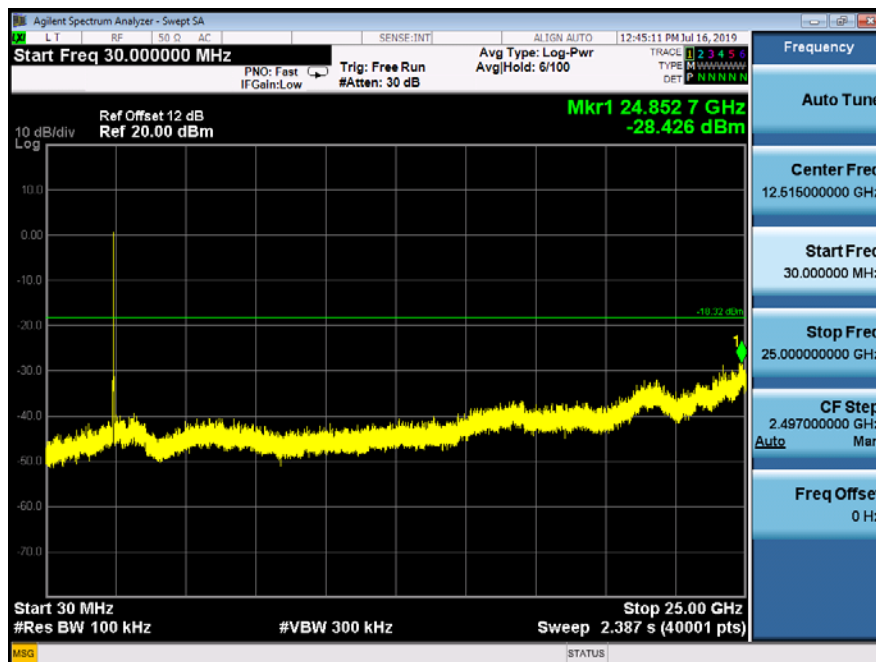
Test Model	☐ 802.11b	☐ 802.11g	☒ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel 1: 2412MHz	☐ Channel 3: 2422MHz	Mode: MIMO	



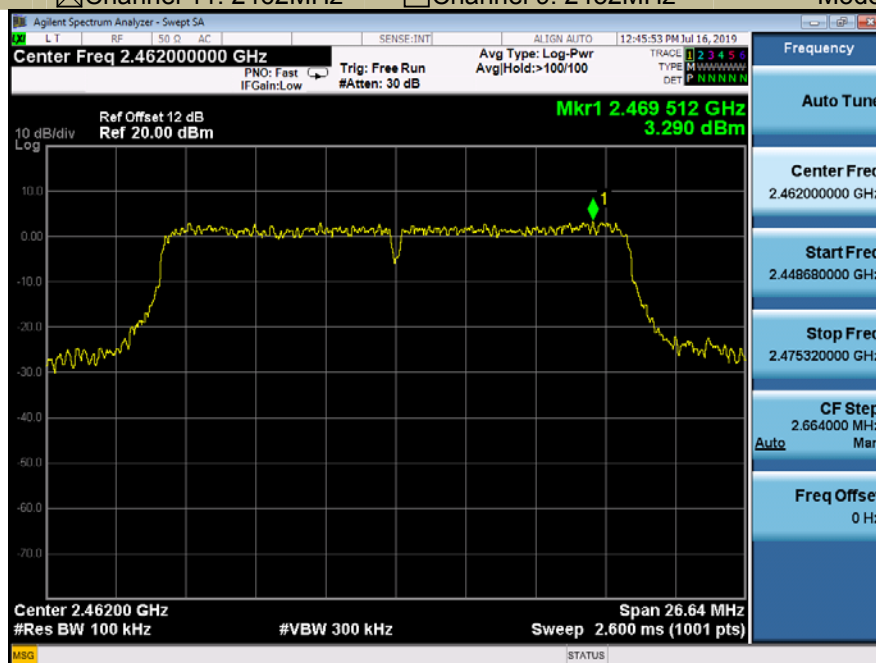
Test Model	PSD(Power Spectral Density) RBW=100kHz			
	☐ 802.11b	☐ 802.11g	☒ 802.11n(HT20)	☐ 802.11n(HT40)
	Channel 6: 2437MHz		Mode: MIMO	



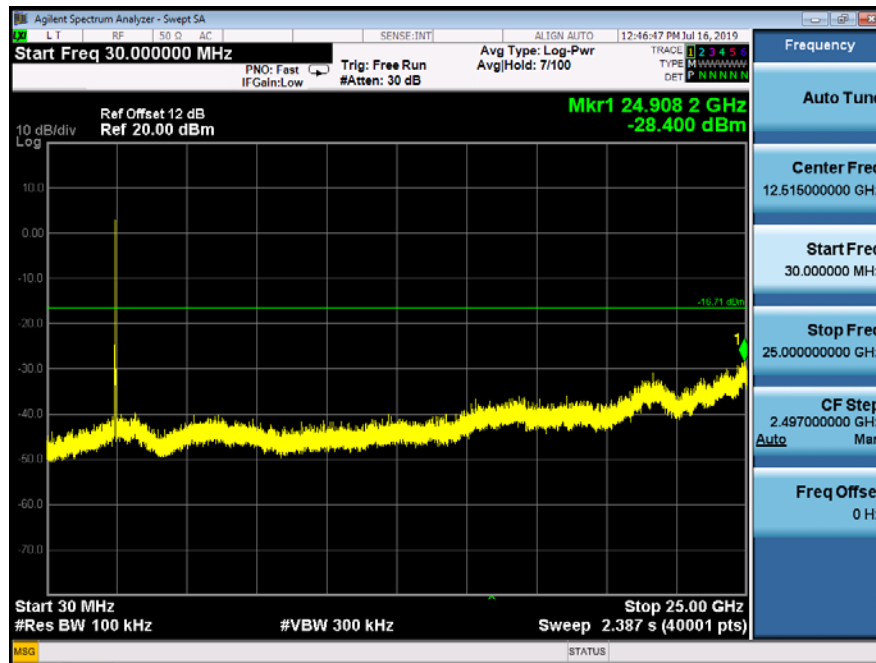
Unwanted Emissions In Non-Restricted Frequency Bands				
Test Model	☐ 802.11b	☐ 802.11g	☒ 802.11n(HT20)	☐ 802.11n(HT40)
	Channel 6: 2437MHz		Mode: MIMO	



PSD(Power Spectral Density) RBW=100kHz				
Test Model	☐ 802.11b	☐ 802.11g	☒ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel 11: 2462MHz		☐ Channel 9: 2452MHz	
	Mode: MIMO			



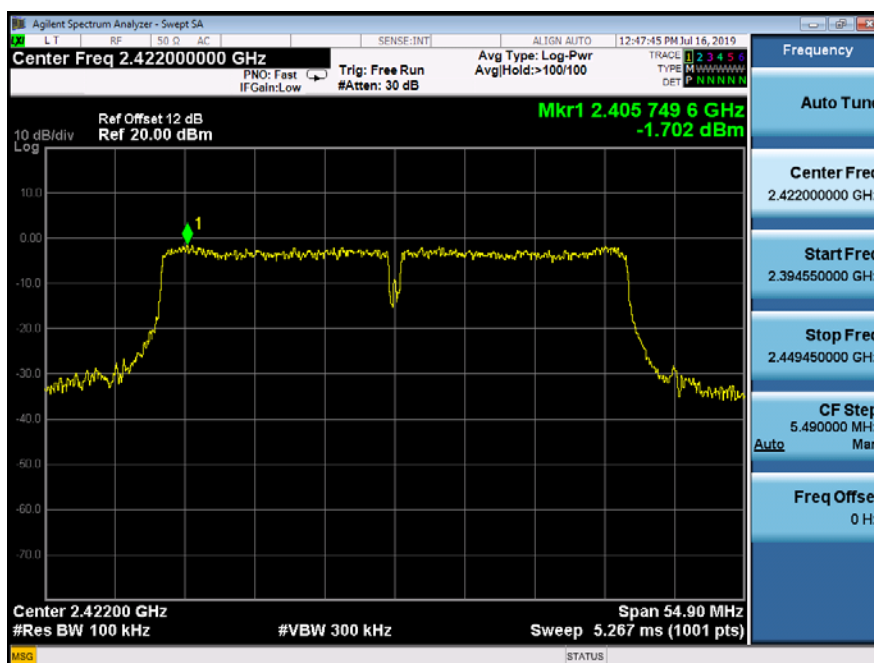
Unwanted Emissions In Non-Restricted Frequency Bands				
Test Model	☐ 802.11b	☐ 802.11g	☒ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel 11: 2462MHz	☐ Channel 9: 2452MHz	Mode: MIMO	



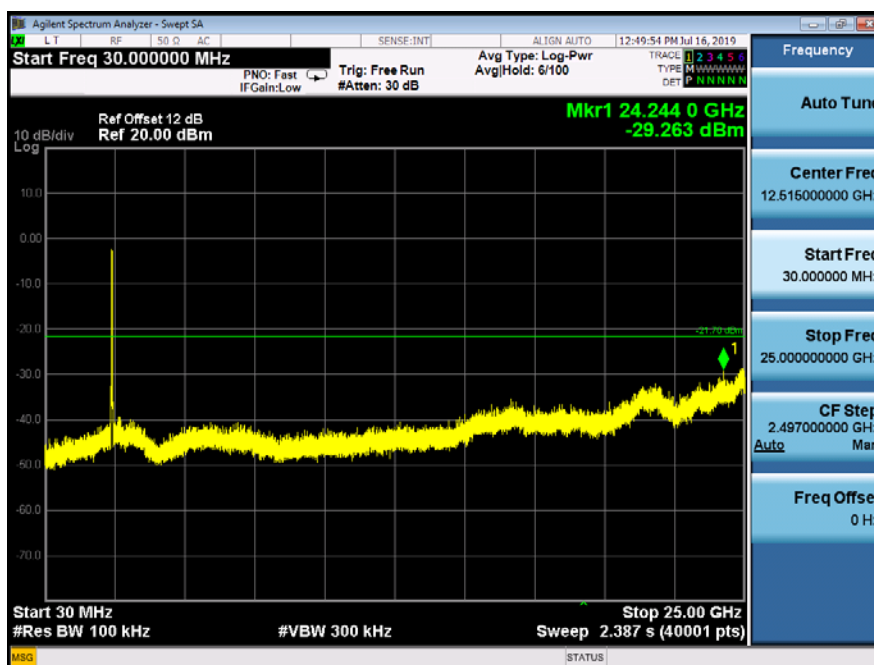
Band edge				
Test Model	☐ 802.11b	☐ 802.11g	☒ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel 11: 2462MHz	☐ Channel 9: 2452MHz	Mode: MIMO	



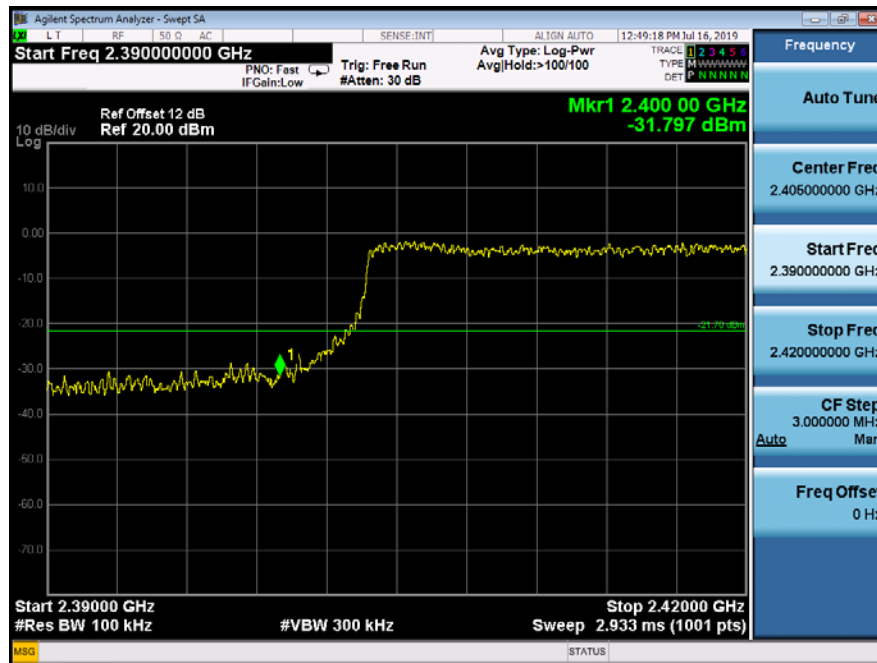
Test Model	PSD(Power Spectral Density) RBW=100kHz			
	☐ 802.11b	☐ 802.11g	☐ 802.11n(HT20)	☒ 802.11n(HT40)
	☐ Channel 1: 2412MHz	☒ Channel 3: 2422MHz	Mode: MIMO	



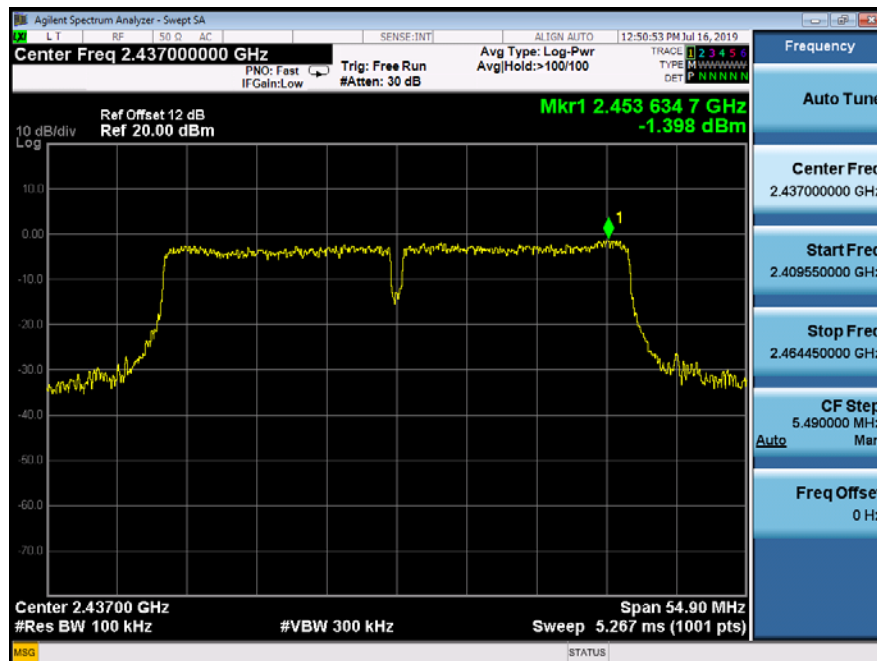
Test Model	Unwanted Emissions in non-restricted frequency bands			
	☐ 802.11b	☐ 802.11g	☐ 802.11n(HT20)	☒ 802.11n(HT40)
	☐ Channel 1: 2412MHz	☒ Channel 3: 2422MHz	Mode: MIMO	



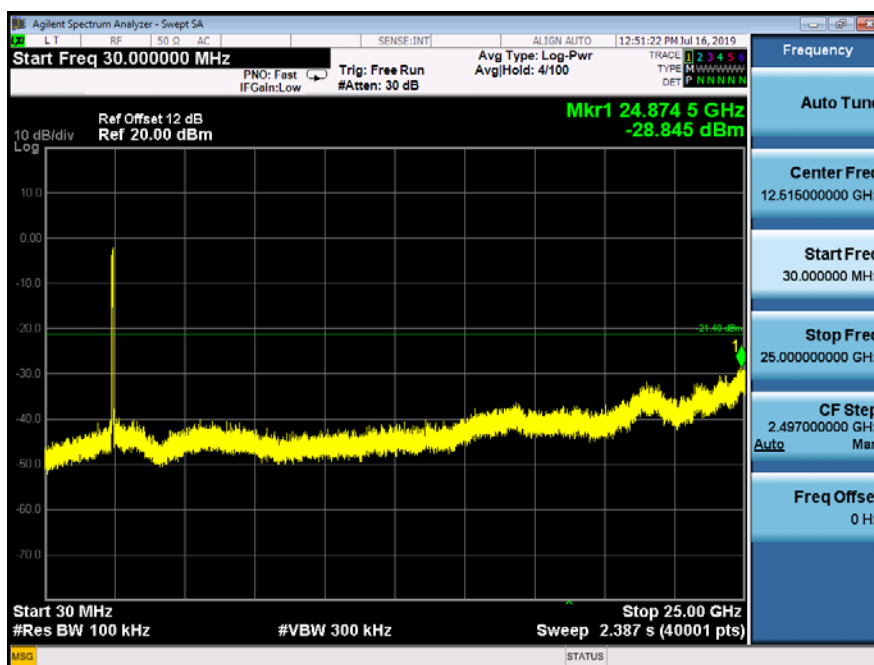
Test Model	Band edge			
	☐ 802.11b	☐ 802.11g	☐ 802.11n(HT20)	☒ 802.11n(HT40)
	☐ Channel 1: 2412MHz	☒ Channel 3: 2422MHz	Mode: MIMO	



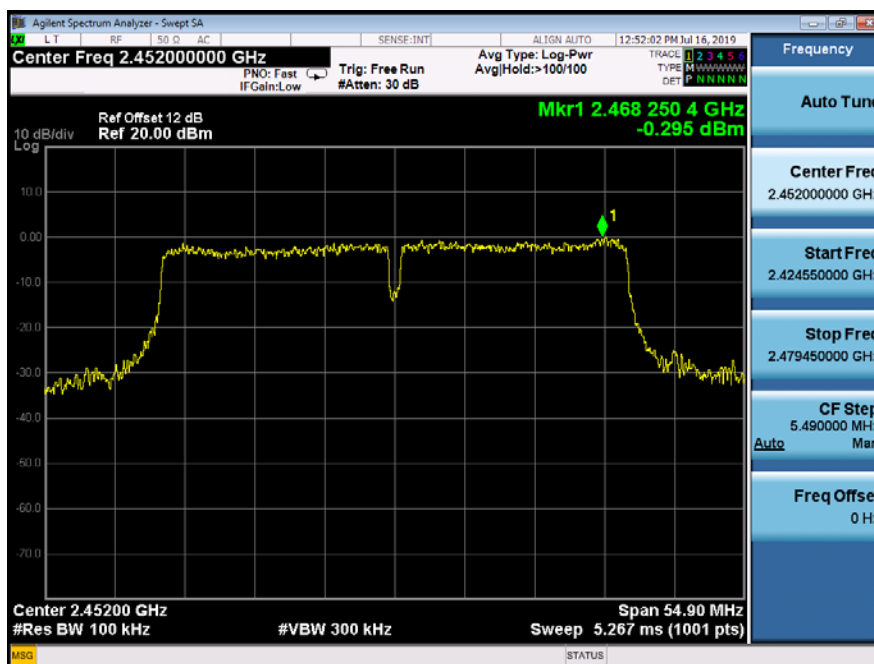
Test Model	PSD(Power Spectral Density) RBW=100kHz			
	☐ 802.11b	☐ 802.11g	☐ 802.11n(HT20)	☒ 802.11n(HT40)
	Channel 6: 2437MHz		Mode: MIMO	



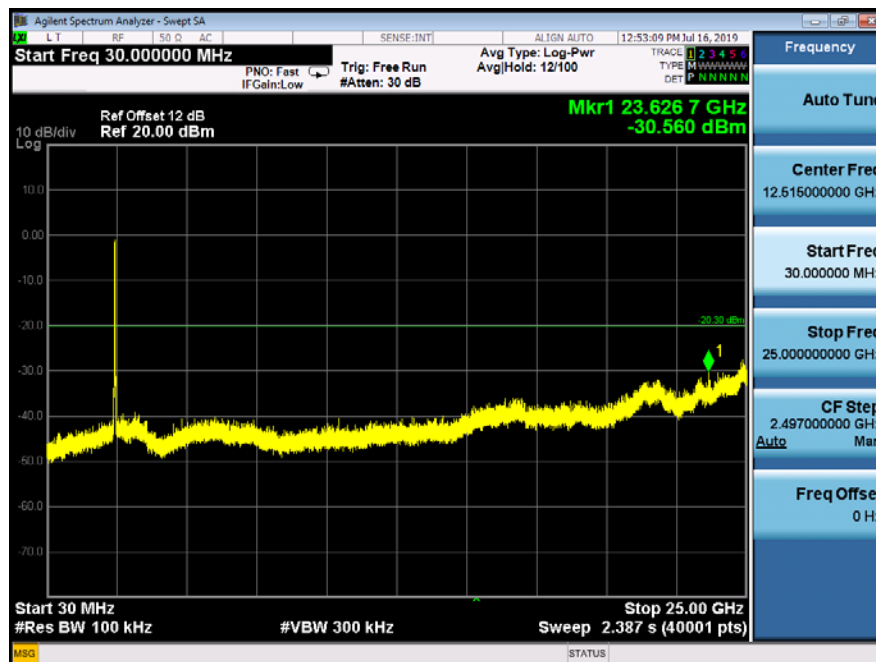
Unwanted Emissions In Non-Restricted Frequency Bands				
Test Model	☐ 802.11b	☐ 802.11g	☐ 802.11n(HT20)	☒ 802.11n(HT40)
	Channel 6: 2437MHz		Mode: MIMO	



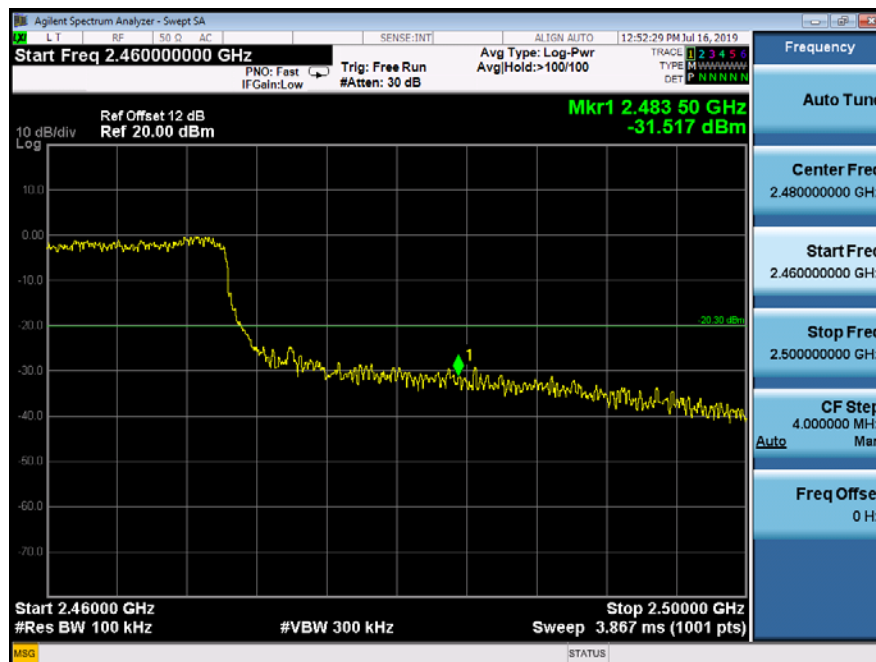
PSD(Power Spectral Density) RBW=100kHz				
Test Model	☐ 802.11b	☐ 802.11g	☐ 802.11n(HT20)	☒ 802.11n(HT40)
	☐ Channel 11: 2462MHz	☒ Channel 9: 2452MHz	Mode: MIMO	



Test Model	Unwanted Emissions In Non-Restricted Frequency Bands			
	☐ 802.11b	☐ 802.11g	☐ 802.11n(HT20)	☒ 802.11n(HT40)
	☐ Channel 11: 2462MHz	☒ Channel 9: 2452MHz	Mode: MIMO	



Test Model	Band edge			
	☐ 802.11b	☐ 802.11g	☐ 802.11n(HT20)	☒ 802.11n(HT40)
	☐ Channel 11: 2462MHz	☒ Channel 9: 2452MHz	Mode: MIMO	



8.5 RADIATED SPURIOUS EMISSION

8.5.1 Applicable Standard

According to FCC Part 15.247(d) and 15.209 and FCC KDB 558074 D01 Meas Guidance v05r02

8.5.2 Conformance Limit

According to FCC Part 15.247(d): radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).
 According to FCC Part 15.205, Restricted bands

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	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	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			

According to FCC Part 15.205, the level of any transmitter spurious emission in Restricted bands shall not exceed the level of the emission specified in the following table

Restricted Frequency(MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance
0.009-0.490	2400/F(KHz)	20 log (uV/m)	300
0.490-1.705	2400/F(KHz)	20 log (uV/m)	30
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

8.5.3 Test Configuration

Test according to clause 7.2 radio frequency test setup 2

8.5.4 Test Procedure

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

The EUT was placed on a turn table which is 0.8m above ground plane.

Maximum procedure was performed on the highest emissions to ensure EUT compliance.

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for $f \geq 1$ GHz (1GHz to 25GHz), 100 kHz for $f < 1$ GHz (30MHz to 1GHz), 200Hz for $f < 150$ KHz (9KHz to 150KHz), 9KHz for $f < 30$ MHz (150KHz to 30KHz)

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

Follow the guidelines in ANSI C63.10-2013 with respect to maximizing the emission by rotating the EUT,

measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b). Submit this data. Now set the VBW to 10 Hz, while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209. If the dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from $20\log(\text{dwell time}/100 \text{ ms})$, in an effort to demonstrate compliance with the 15.209 limit. Submit this data.

Repeat above procedures until all frequency measured was complete.

8.5.5 Test Results

■ Spurious Emission below 30MHz(9KHz to 30MHz)

Temperature: 24°C Test By: King Kong
 Humidity: 53 %
 Test mode: 802.11b

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
--	--	--	--	--	--	--	--

Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

Distance extrapolation factor = $40\log(\text{Specific distance}/\text{test distance})$ (dB);

Limit line = Specific limits(dBuV) + distance extrapolation factor

■ Spurious Emission Above 1GHz(1GHz to 25GHz)

2.4G 802.11b/g/n SISO and MIMO modes have been tested, and the worst case recorded was report as below:

Temperature : 26°C Test By: King Kong
 Humidity : 60 % Frequency: Channel 1: 2412MHz
 Test mode: 802.11b Mode: SISO antenna 0

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
4824.00	V	50.98	44.88	74.00	54.00	-23.02	-9.12
7236.00	V	49.52	42.95	74.00	54.00	-24.48	-11.05
15986.98	V	61.76	45.84	74.00	54.00	-12.24	-8.16
4824.00	H	49.60	43.01	74.00	54.00	-24.40	-10.99
7236.00	H	48.87	42.33	74.00	54.00	-25.13	-11.67
15864.10	H	61.73	46.51	74.00	54.00	-12.27	-7.49

Temperature : 26°C
Humidity : 60 %
Test mode: 802.11b

Test By: King Kong
Frequency: Channel 6: 2437MHz
Mode: SISO antenna 0

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
4874.00	V	50.57	44.53	74.00	54.00	-23.43	-9.47
7311.00	V	49.45	43.41	74.00	54.00	-24.55	-10.59
15823.31	V	62.14	46.37	74.00	54.00	-11.86	-7.63
4874.00	H	50.07	43.77	74.00	54.00	-23.93	-10.23
7311.00	H	48.99	42.22	74.00	54.00	-25.01	-11.78
16586.34	H	62.31	46.47	74.00	54.00	-11.69	-7.53

Temperature : 26°C
Humidity : 60 %
Test mode: 802.11b

Test By: King Kong
Frequency: Channel 11: 2462MHz
Mode: SISO antenna 0

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
4924.00	V	50.58	44.52	74.00	54.00	-23.42	-9.48
7386.00	V	49.12	42.66	74.00	54.00	-24.88	-11.34
15530.72	V	61.58	46.10	74.00	54.00	-12.42	-7.90
4924.00	H	49.82	43.35	74.00	54.00	-24.18	-10.65
7386.00	H	48.61	41.66	74.00	54.00	-25.39	-12.34
16018.07	H	60.59	45.38	74.00	54.00	-13.41	-8.62

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level + Probe Factor +Cable Loss.
(3) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Temperature : 26℃
Humidity : 60 %
Test mode: 802.11g

Test By: King Kong
Frequency: Channel 1: 2412MHz
Mode: SISO antenna 0

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
4824.00	V	49.50	43.39	74.00	54.00	-24.50	-10.61
7236.00	V	48.22	41.79	74.00	54.00	-25.78	-12.21
16991.83	V	60.84	45.55	74.00	54.00	-13.16	-8.45
4824.00	H	48.43	41.94	74.00	54.00	-25.57	-12.06
7236.00	H	47.17	40.54	74.00	54.00	-26.83	-13.46
16584.27	H	61.92	46.03	74.00	54.00	-12.08	-7.97

Temperature : 26℃
Humidity : 60 %
Test mode: 802.11g

Test By: King Kong
Frequency: Channel 6: 2437MHz
Mode: SISO antenna 0

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
4874.00	V	49.62	43.61	74.00	54.00	-24.38	-10.39
7311.00	V	48.31	41.60	74.00	54.00	-25.69	-12.40
17172.14	V	60.97	44.98	74.00	54.00	-13.03	-9.02
4874.00	H	48.49	41.89	74.00	54.00	-25.51	-12.11
7311.00	H	47.04	40.82	74.00	54.00	-26.96	-13.18
15714.43	H	61.61	45.78	74.00	54.00	-12.39	-8.22

Temperature : 26℃
Humidity : 60 %
Test mode: 802.11g

Test By: King Kong
Frequency: Channel 11: 2462MHz
Mode: SISO antenna 0

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
4924.00	V	49.42	42.96	74.00	54.00	-24.58	-11.04
7386.00	V	48.02	41.94	74.00	54.00	-25.98	-12.06
15987.30	V	61.71	46.44	74.00	54.00	-12.29	-7.56
4924.00	H	48.15	41.94	74.00	54.00	-25.85	-12.06
7386.00	H	46.58	40.54	74.00	54.00	-27.42	-13.46
17074.60	H	62.42	47.28	74.00	54.00	-11.58	-6.72

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level + Probe Factor +Cable Loss.
(3) Data of measurement within this frequency range shown “ -- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Temperature : 26°C Test By: King Kong
Humidity : 60 % Frequency: Channel 1: 2412MHz
Test mode: 802.11n20(HT20) Mode: MIMO

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
4824.00	V	45.42	38.58	74.00	54.00	-28.58	-15.42
9086.77	V	55.36	40.01	74.00	54.00	-18.64	-13.99
16847.06	V	61.92	46.82	74.00	54.00	-12.08	-7.18
4824.00	H	44.11	37.42	74.00	54.00	-29.89	-16.58
9086.77	H	54.02	38.96	74.00	54.00	-19.98	-15.04
16687.88	H	61.10	45.97	74.00	54.00	-12.90	-8.03

Temperature : 26°C Test By: King Kong
Humidity : 60 % Frequency: Channel 6: 2437MHz
Test mode: 802.11n(HT20) Mode: MIMO

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
4874.00	V	45.56	39.51	74.00	54.00	-28.44	-14.49
9743.20	V	55.30	39.41	74.00	54.00	-18.70	-14.59
16179.22	V	60.67	45.50	74.00	54.00	-13.33	-8.50
4874.00	H	44.19	38.06	74.00	54.00	-29.81	-15.94
9743.20	H	54.07	38.55	74.00	54.00	-19.93	-15.45
15899.08	H	62.18	46.64	74.00	54.00	-11.82	-7.36

Temperature : 26°C Test By: King Kong
Humidity : 60 % Frequency: Channel 11: 2462MHz
Test mode: 802.11n(HT20) Mode: MIMO

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
4924.00	V	44.98	38.04	74.00	54.00	-29.02	-15.96
9298.76	V	55.47	39.88	74.00	54.00	-18.53	-14.12
15636.39	V	60.19	45.14	74.00	54.00	-13.81	-8.86
4924.00	H	43.66	36.78	74.00	54.00	-30.34	-17.22
9298.76	H	54.22	39.11	74.00	54.00	-19.78	-14.89
15736.20	H	61.97	46.91	74.00	54.00	-12.03	-7.09

Note: (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level + Probe Factor +Cable Loss.
(3) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Temperature : 26°C Test By: King Kong
Humidity : 60 % Frequency: Channel 3: 2422MHz
Test mode: 802.11n(HT40) Mode: MIMO

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
4844.00	V	42.98	36.31	74.00	54.00	-31.02	-17.69
9421.38	V	55.65	39.95	74.00	54.00	-18.35	-14.05
16767.08	V	62.51	46.65	74.00	54.00	-11.49	-7.35
4844.00	H	41.67	35.31	74.00	54.00	-32.33	-18.69
9421.38	H	54.61	39.36	74.00	54.00	-19.39	-14.64
16216.44	H	59.92	44.41	74.00	54.00	-14.08	-9.59

Temperature : 26°C Test By: King Kong
Humidity : 60 % Frequency: Channel 6: 2437MHz
Test mode: 802.11n(HT40) Mode: MIMO

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
4874.00	V	42.90	36.57	74.00	54.00	-31.10	-17.43
9439.74	V	55.92	40.70	74.00	54.00	-18.08	-13.30
16520.03	V	61.82	46.23	74.00	54.00	-12.18	-7.77
4874.00	H	41.85	35.27	74.00	54.00	-32.15	-18.73
9439.74	H	54.82	39.67	74.00	54.00	-19.18	-14.33
16386.32	H	60.51	44.60	74.00	54.00	-13.49	-9.40

Temperature : 26°C Test By: King Kong
Humidity : 60 % Frequency: Channel 9: 2452MHz
Test mode: 802.11n(HT40) Mode: MIMO

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
4904.00	V	42.08	35.54	74.00	54.00	-31.92	-18.46
9542.27	V	55.06	39.99	74.00	54.00	-18.94	-14.01
15650.50	V	60.15	44.24	74.00	54.00	-13.85	-9.76
4904.00	H	40.99	34.84	74.00	54.00	-33.01	-19.16
9542.27	H	53.76	38.40	74.00	54.00	-20.24	-15.60
17207.24	H	61.34	45.99	74.00	54.00	-12.66	-8.01

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level + Probe Factor +Cable Loss.
(3) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

- Spurious Emission in Restricted Band 2310-2390MHz and 2483.5-2500MHz
 2.4G 802.11b/g/n SISO and MIMO modes have been tested, and the worst case recorded was report as below:

Temperature :	26°C	Test By:	King Kong
Humidity :	60 %	Frequency:	Channel 1: 2412MHz
Test mode:	802.11b	Mode:	SISO Antenna 0

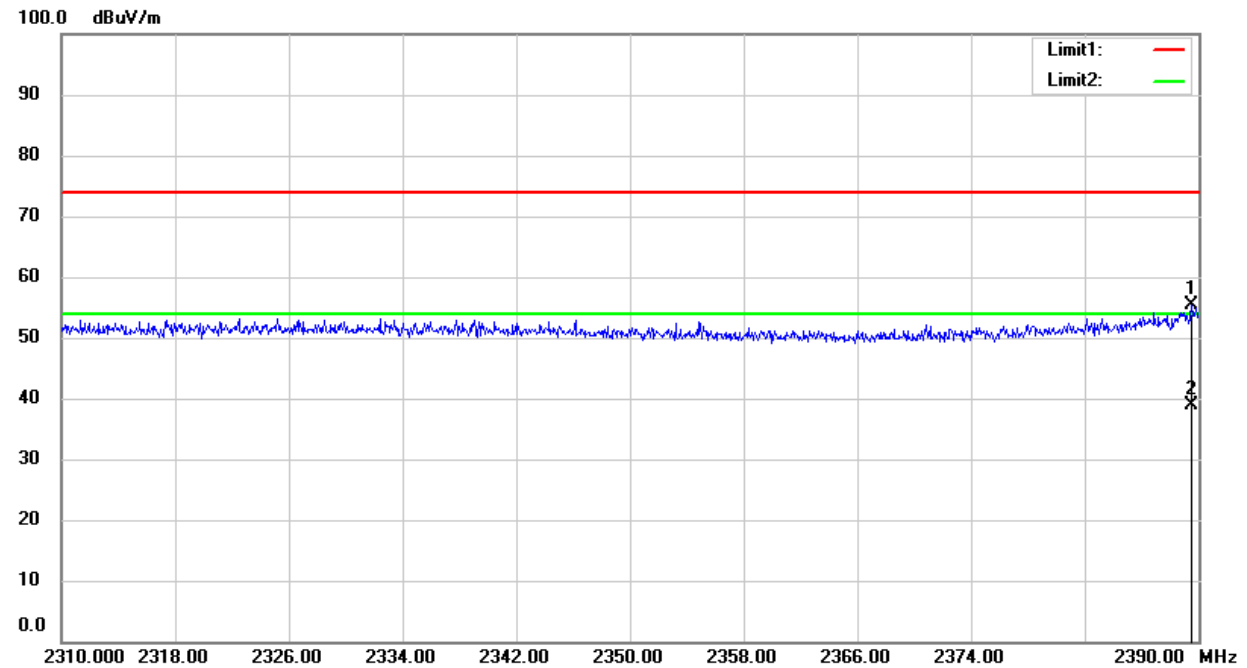
Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
2389.58	H	55.35	74.00	-18.65	38.99	54.00	-15.01
2389.33	V	50.22	74.00	-23.78	33.85	54.00	-20.15

Temperature :	26°C	Test By:	King Kong
Humidity :	60 %	Frequency:	Channel 11: 2462MHz
Test mode:	802.11b	Mode:	SISO Antenna 0

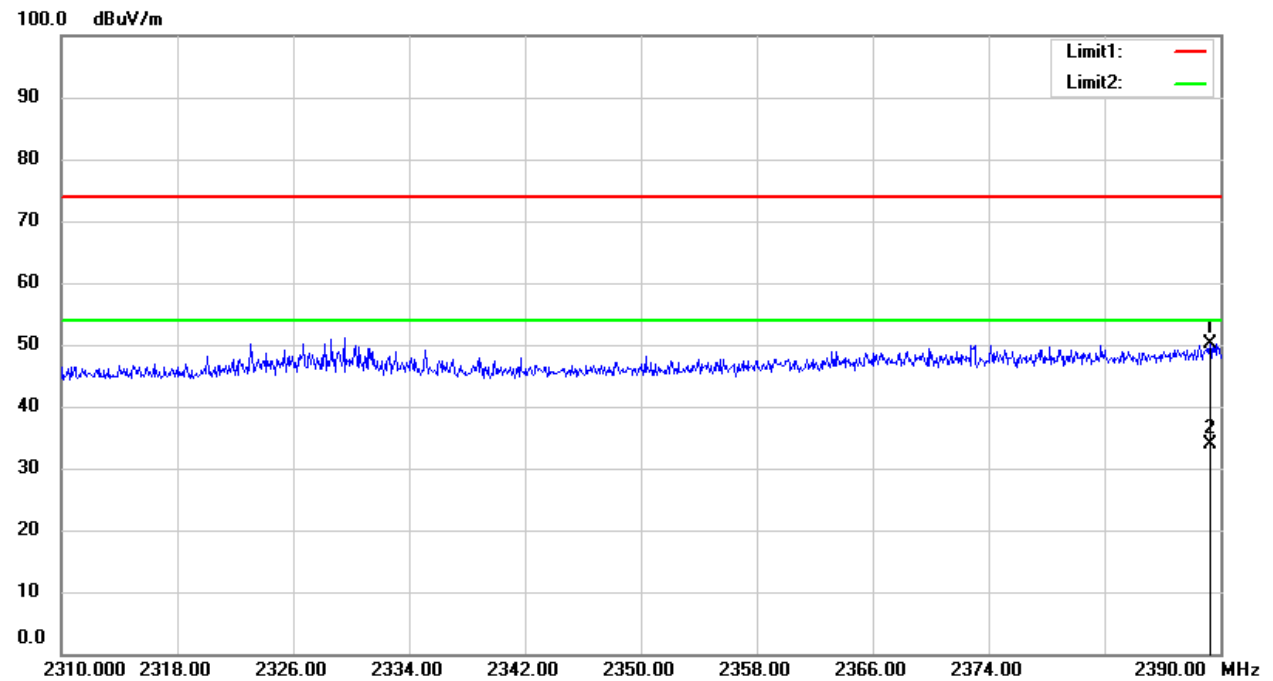
Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
2483.93	H	56.41	74.00	-17.59	39.87	54.00	-14.13
2483.50	V	48.93	74.00	-25.07	32.15	54.00	-21.85

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
 (2) Emission Level= Reading Level + Probe Factor +Cable Loss.
 (3) Data of measurement within this frequency range shown “ -- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

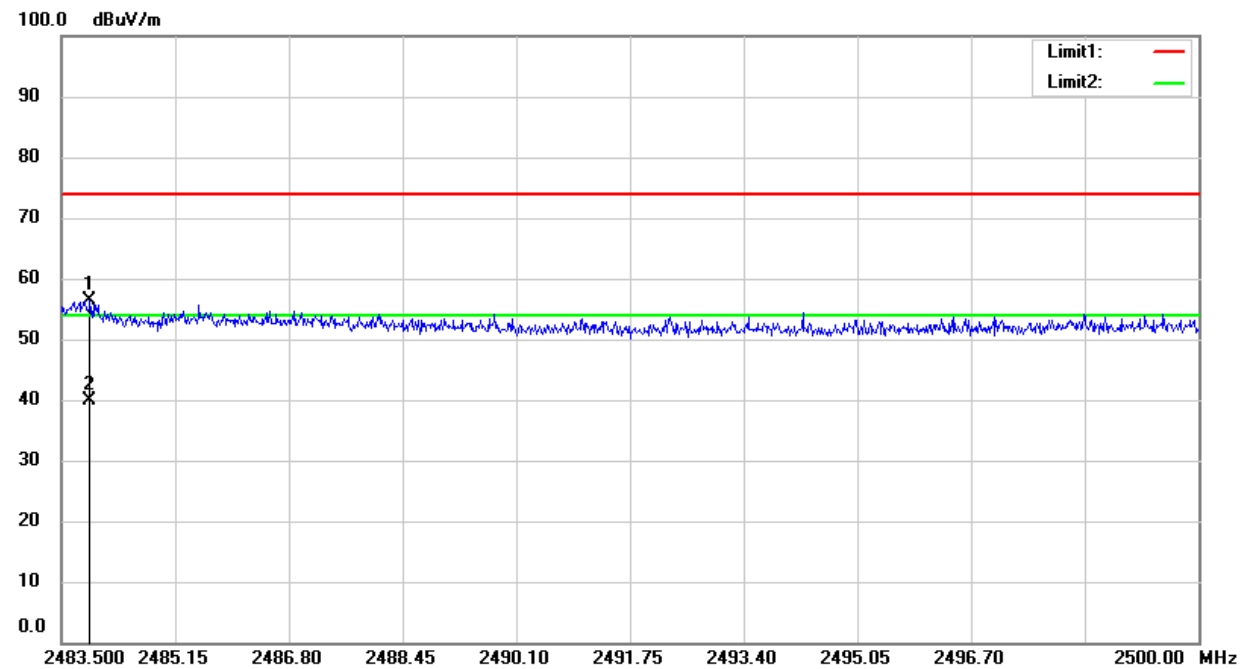
Spurious Emission in Restricted Band 2310-2390MHz				
Test Model	☒ 802.11b	☐ 802.11g	☐ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel 1: 2412MHz	☐ Channel 3: 2422MHz	Polarity: H	
	VBW=3MHz		Test By: King Kong	



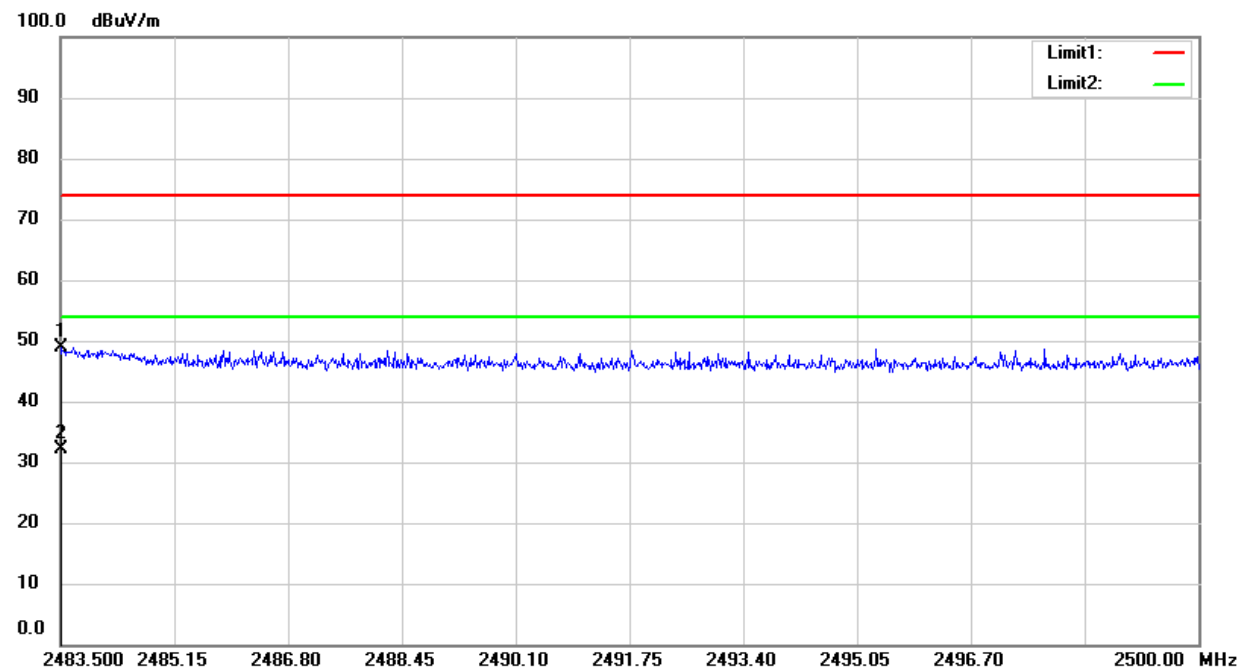
Spurious Emission in Restricted Band 2310-2390MHz				
Test Model	☒ 802.11b	☐ 802.11g	☐ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel 1: 2412MHz	☐ Channel 3: 2422MHz	Polarity: V	
	VBW=3MHz		Test By: King Kong	



Spurious Emission in Restricted Band 2483.5-2500MHz				
Test Model	☒ 802.11b	☐ 802.11g	☐ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel 11: 2462MHz	☐ Channel 9: 2452MHz	Polarity: H	
	VBW=3MHz		Test By: King Kong	



Spurious Emission in Restricted Band2483.5-2500MHz				
Test Model	☒ 802.11b	☐ 802.11g	☐ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel 11: 2462MHz	☐ Channel 9: 2452MHz	Polarity: V	
	VBW=3MHz		Test By: King Kong	



Temperature : 26°C
Humidity : 60 %
Test mode: 802.11g

Test By: King Kong
Frequency: Channel 1: 2412MHz
Mode: SISO Antenna 0

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
2389.80	H	64.63	74.00	-9.37	46.85	54.00	-7.15
2389.94	V	54.80	74.00	-19.20	38.69	54.00	-15.31

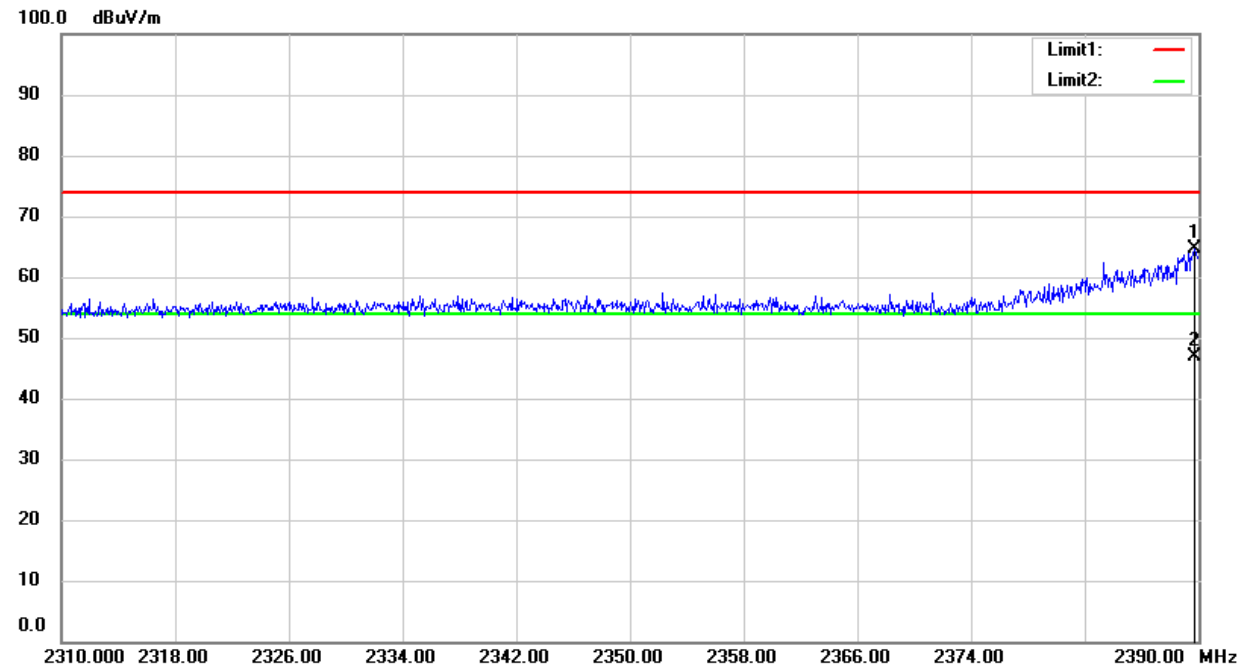
Temperature : 26°C
Humidity : 60 %
Test mode: 802.11g

Test By: King Kong
Frequency: Channel 11: 2462MHz
Mode: SISO Antenna 0

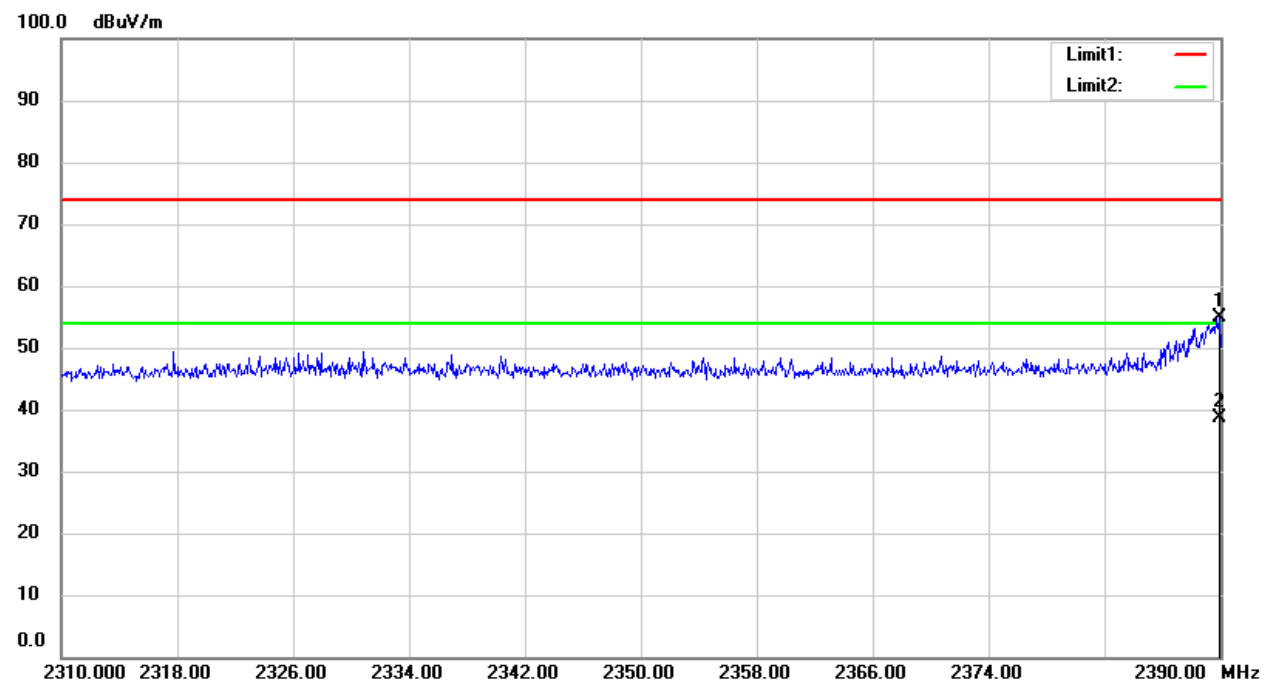
Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
2483.50	H	67.36	74.00	-6.64	49.25	54.00	-4.75
2483.63	V	61.62	74.00	-12.38	44.56	54.00	-9.44

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

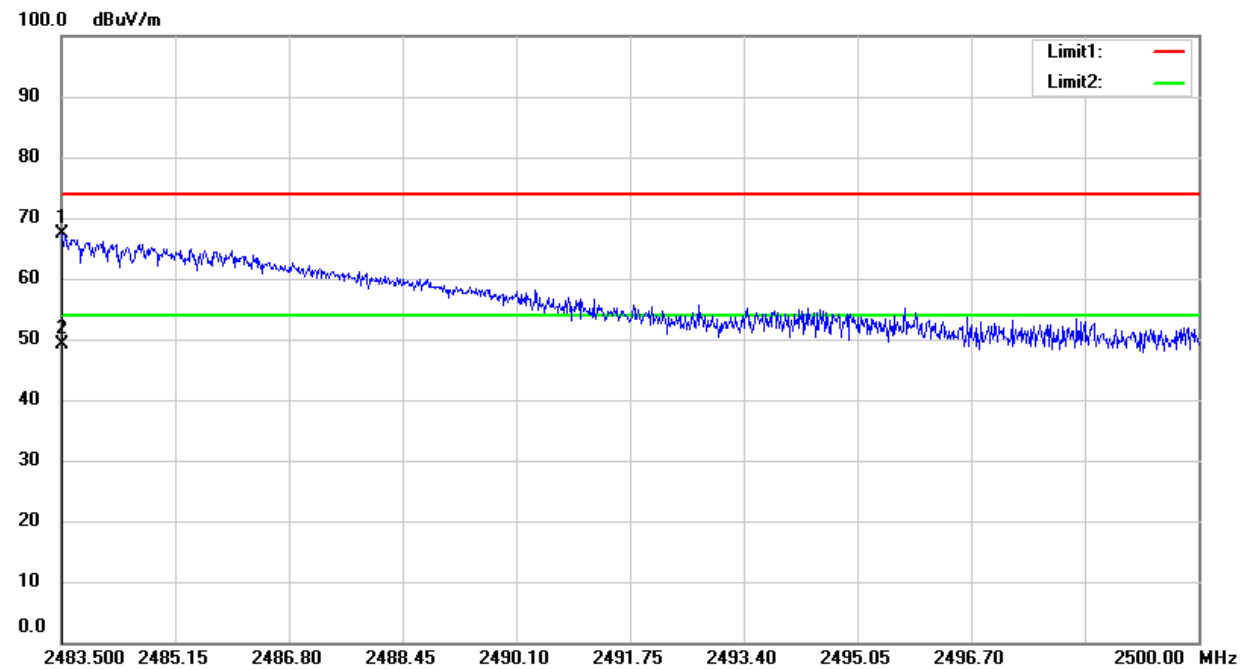
Spurious Emission in Restricted Band 2310-2390MHz				
Test Model	☐ 802.11b	☒ 802.11g	☐ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel 1: 2412MHz	☐ Channel 3: 2422MHz	Polarity: H	
VBW=3MHz			Test By: King Kong	



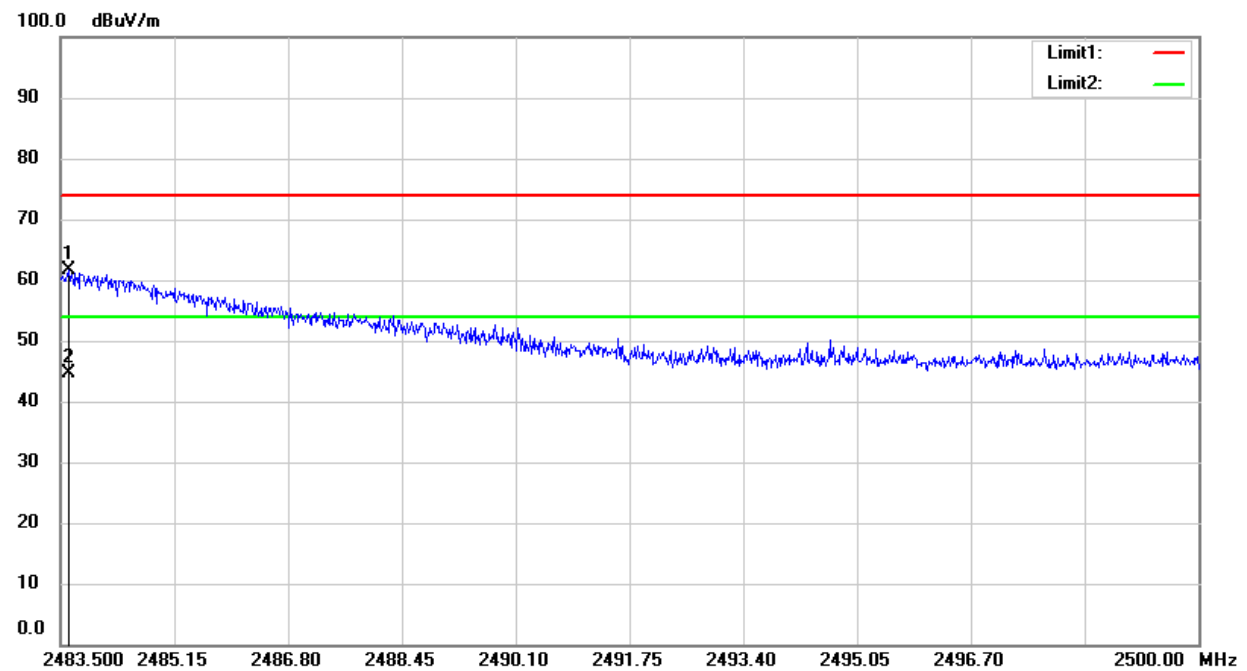
Spurious Emission in Restricted Band 2310-2390MHz				
Test Model	☐ 802.11b	☒ 802.11g	☐ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel 1: 2412MHz	☐ Channel 3: 2422MHz	Polarity: V	
VBW=3MHz			Test By: King Kong	



Spurious Emission in Restricted Band 2483.5-2500MHz				
Test Model	☐ 802.11b	☒ 802.11g	☐ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel 11: 2462MHz	☐ Channel 9: 2452MHz	Polarity: H	
	VBW=3MHz		Test By: King Kong	



Spurious Emission in Restricted Band2483.5-2500MHz				
Test Model	☐ 802.11b	☒ 802.11g	☐ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel 11: 2462MHz	☐ Channel 9: 2452MHz	Polarity: V	
	VBW=3MHz			



Temperature : 26°C Test By: King Kong
Humidity : 60 % Frequency: Channel 1: 2412MHz
Test mode: 802.11n (HT20) Mode: MIMO

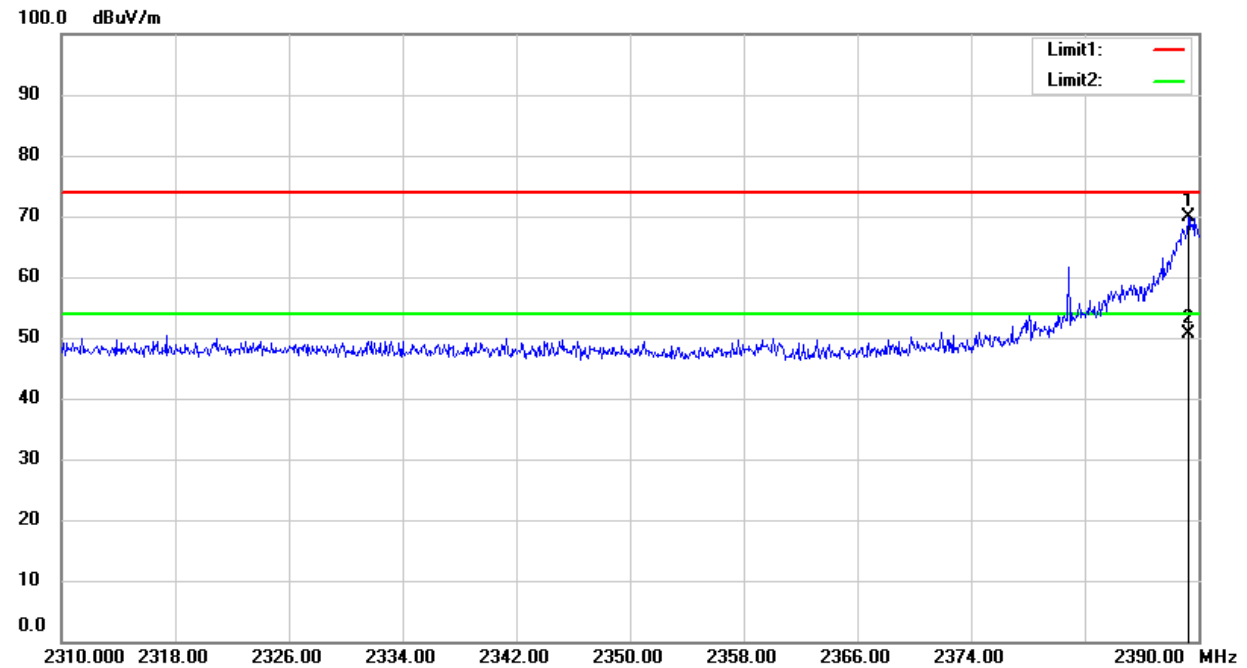
Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
2483.67	H	66.95	74.00	-7.05	48.96	54.00	-5.04
2483.60	V	57.13	74.00	-16.87	39.87	54.00	-14.13

Temperature : 26°C Test By: King Kong
Humidity : 60 % Frequency: Channel 11: 2462MHz
Test mode: 802.11n (HT20) Mode: MIMO

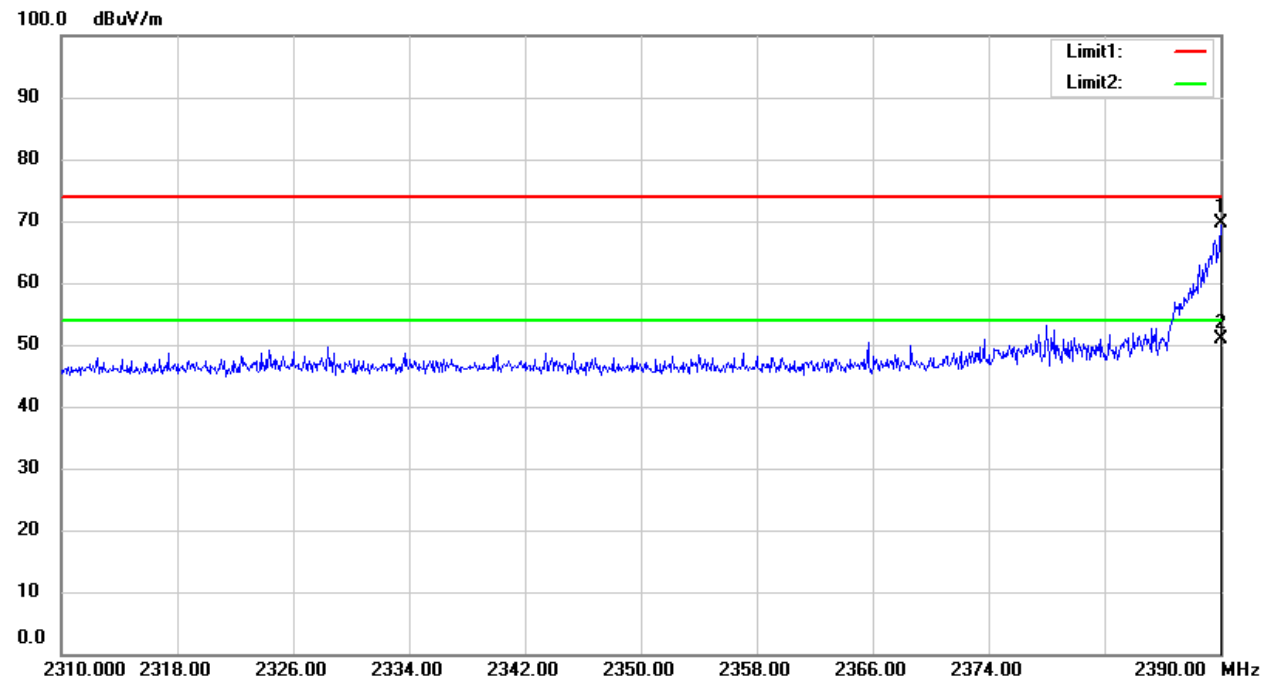
Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
2389.89	H	69.87	74.00	-4.13	50.65	54.00	-3.35
2390.00	V	69.74	74.00	-4.26	50.89	54.00	-3.11

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

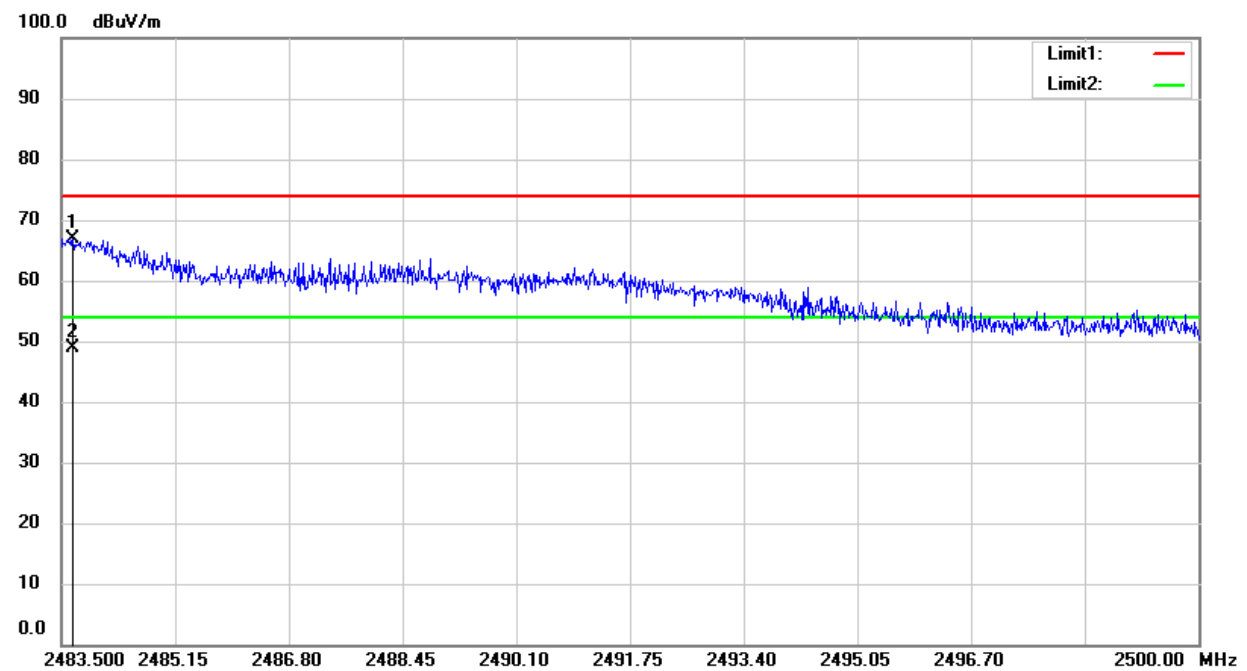
Spurious Emission in Restricted Band 2310-2390MHz			
Test Model	☐ 802.11b	☐ 802.11g	☒ 802.11n(HT20)
	☒ Channel 1: 2412MHz	☐ Channel 3: 2422MHz	☐ 802.11n(HT40)
	VBW=3MHz		Polarity: H
Test By: King Kong			



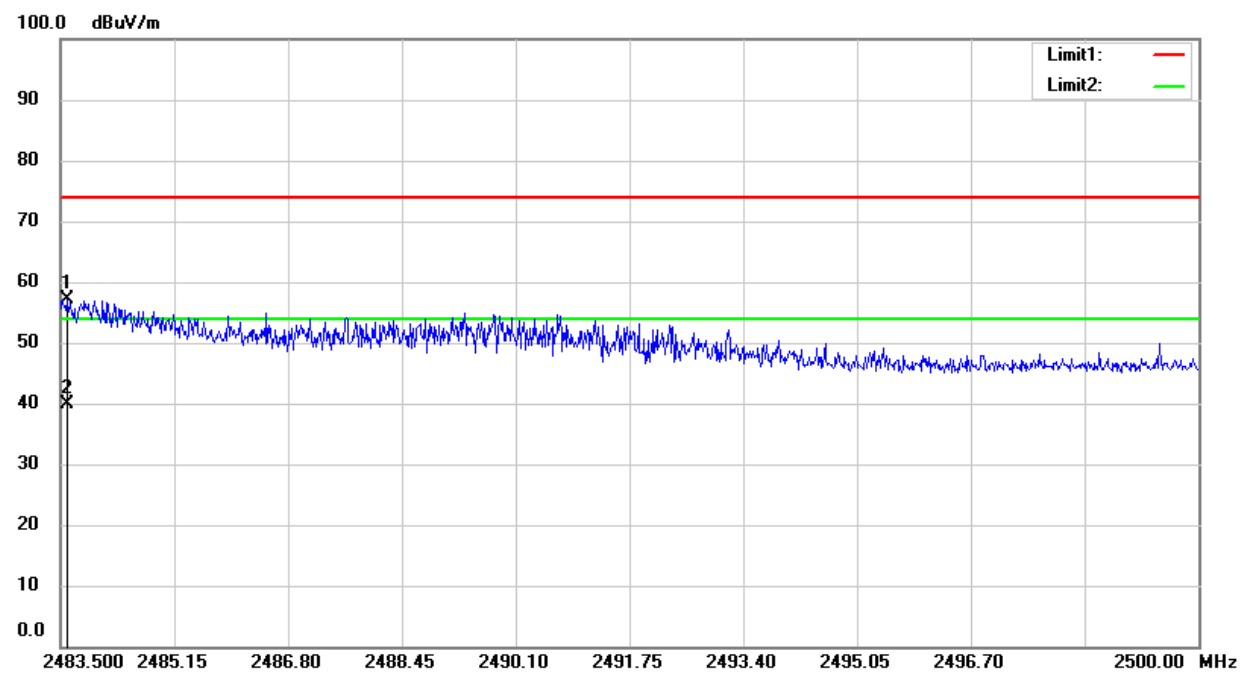
Spurious Emission in Restricted Band 2310-2390MHz			
Test Model	☐ 802.11b	☐ 802.11g	☒ 802.11n(HT20)
	☒ Channel 1: 2412MHz	☐ Channel 3: 2422MHz	☐ 802.11n(HT40)
	VBW=3MHz		Polarity: V
Test By: King Kong			



Spurious Emission in Restricted Band 2483.5-2500MHz				
Test Model	☐ 802.11b	☐ 802.11g	☒ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel 11: 2462MHz	☐ Channel 9: 2452MHz	Polarity: H	
	VBW=3MHz		Test By: King Kong	



Spurious Emission in Restricted Band2483.5-2500MHz				
Test Model	☐ 802.11b	☐ 802.11g	☒ 802.11n(HT20)	☐ 802.11n(HT40)
	☒ Channel 11: 2462MHz	☐ Channel 9: 2452MHz	Polarity: V	
	VBW=3MHz		Test By: King Kong	



Temperature : 26°C Test By: King Kong
Humidity : 60 % Frequency: Channel 3: 2422MHz
Test mode: 802.11n (HT40) Mode: MIMO

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
2390.00	H	64.89	74.00	-9.11	47.21	54.00	-6.79
2390.00	V	66.74	74.00	-7.26	48.69	54.00	-5.31

Temperature : 26°C Test By: King Kong
Humidity : 60 % Frequency: Channel 9: 2452MHz
Test mode: 802.11n (HT40) Mode: MIMO

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
2483.80	H	62.70	74.00	-11.30	46.98	54.00	-7.02
2483.50	V	56.95	74.00	-17.05	40.14	54.00	-13.86

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level + Probe Factor +Cable Loss.
(3) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Test Model

☐ 802.11b

☐ 802.11g

☐ 802.11n(HT20)

☒ 802.11n(HT40)

☐ Channel 1: 2412MHz

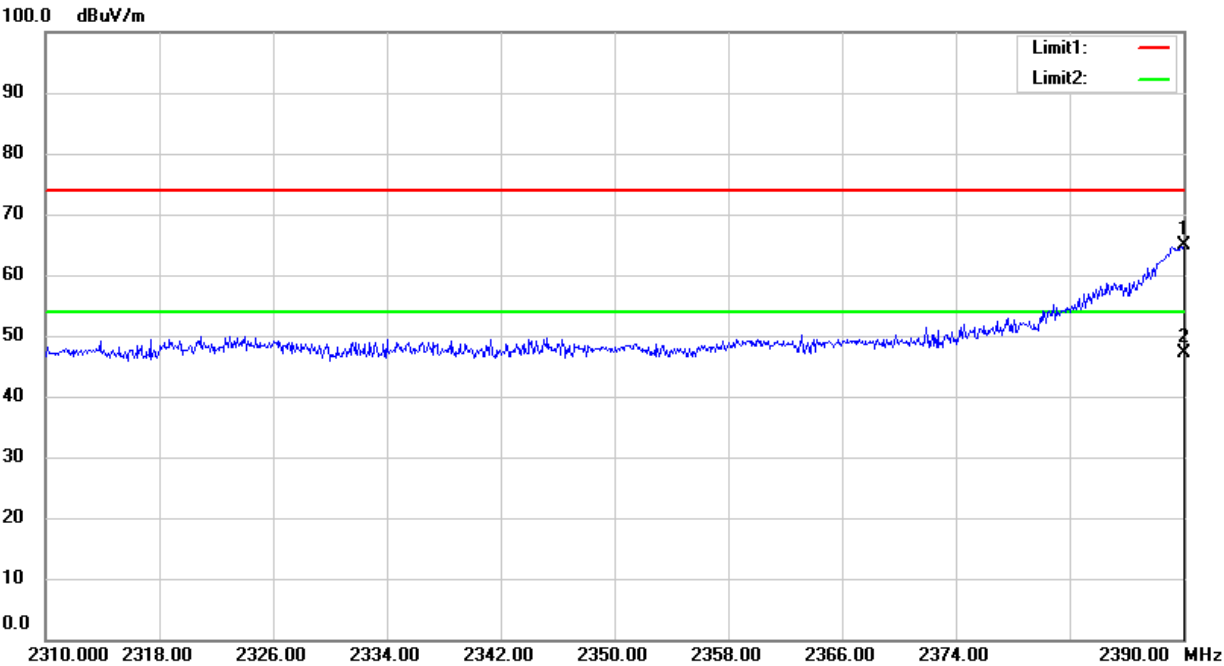
☒ Channel 3: 2422MHz

VBW=3MHz

Test By: King Kong

Polarity: H

Spurious Emission in Restricted Band 2310-2390MHz



Test Model

☐ 802.11b

☐ 802.11g

☐ 802.11n(HT20)

☒ 802.11n(HT40)

☐ Channel 1: 2412MHz

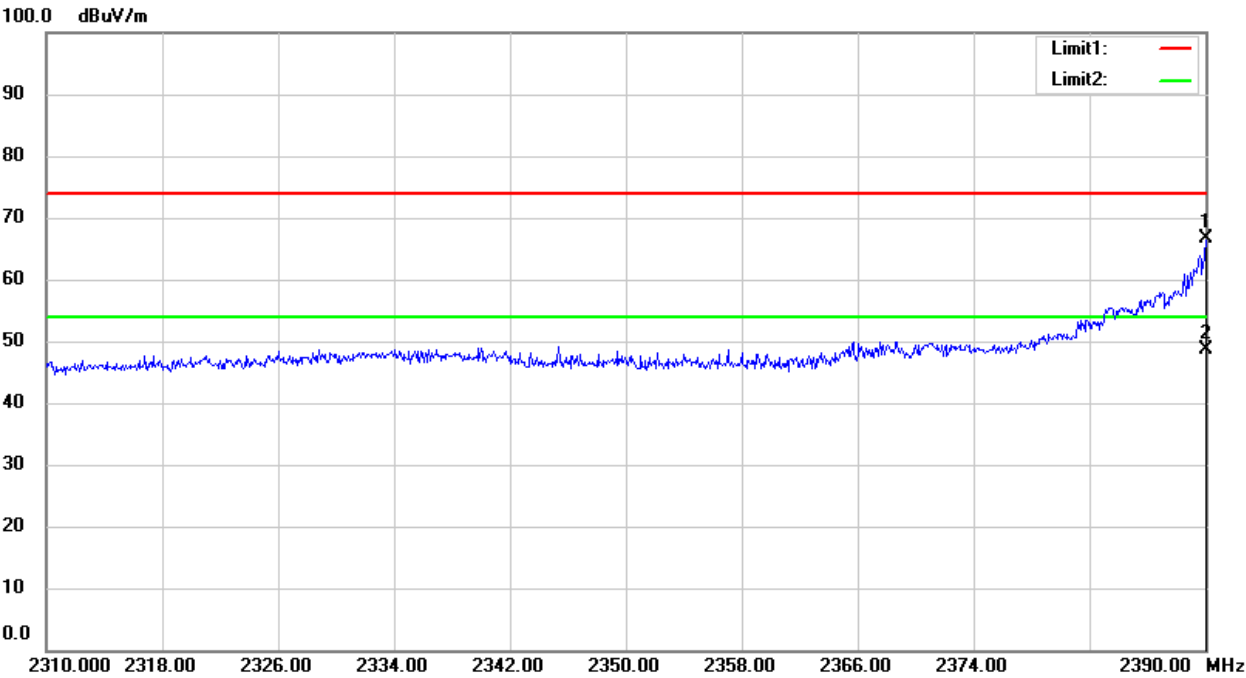
☒ Channel 3: 2422MHz

VBW=3MHz

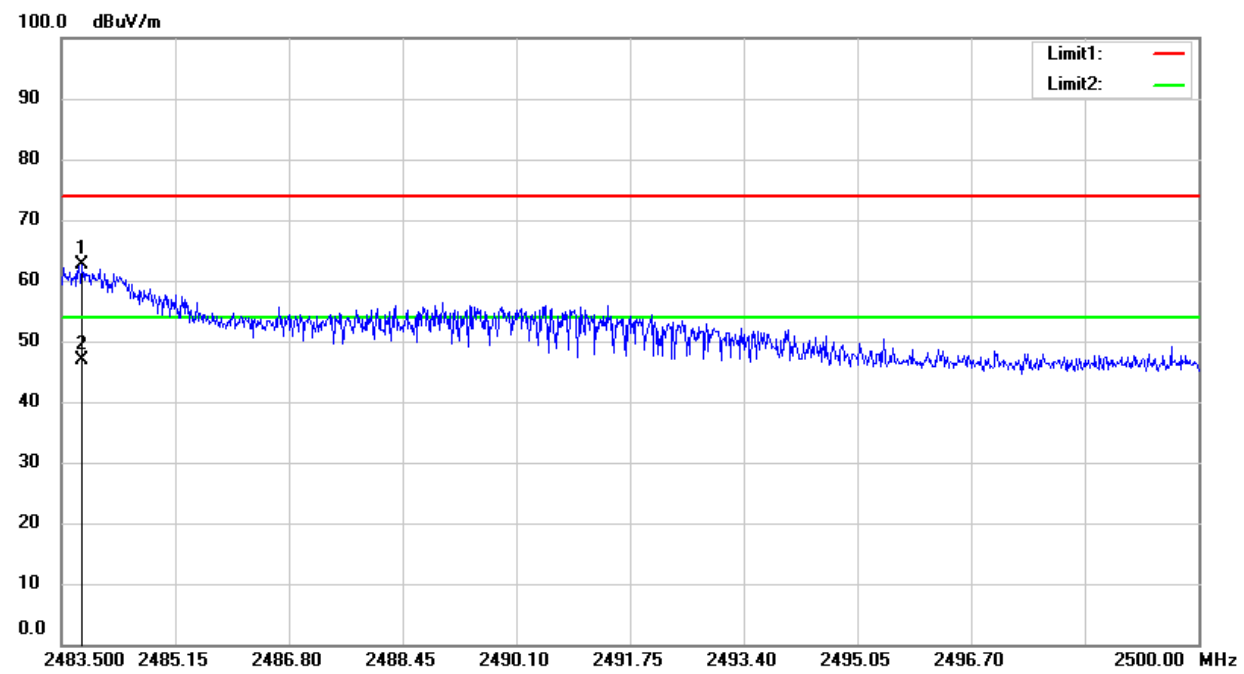
Test By: King Kong

Polarity: V

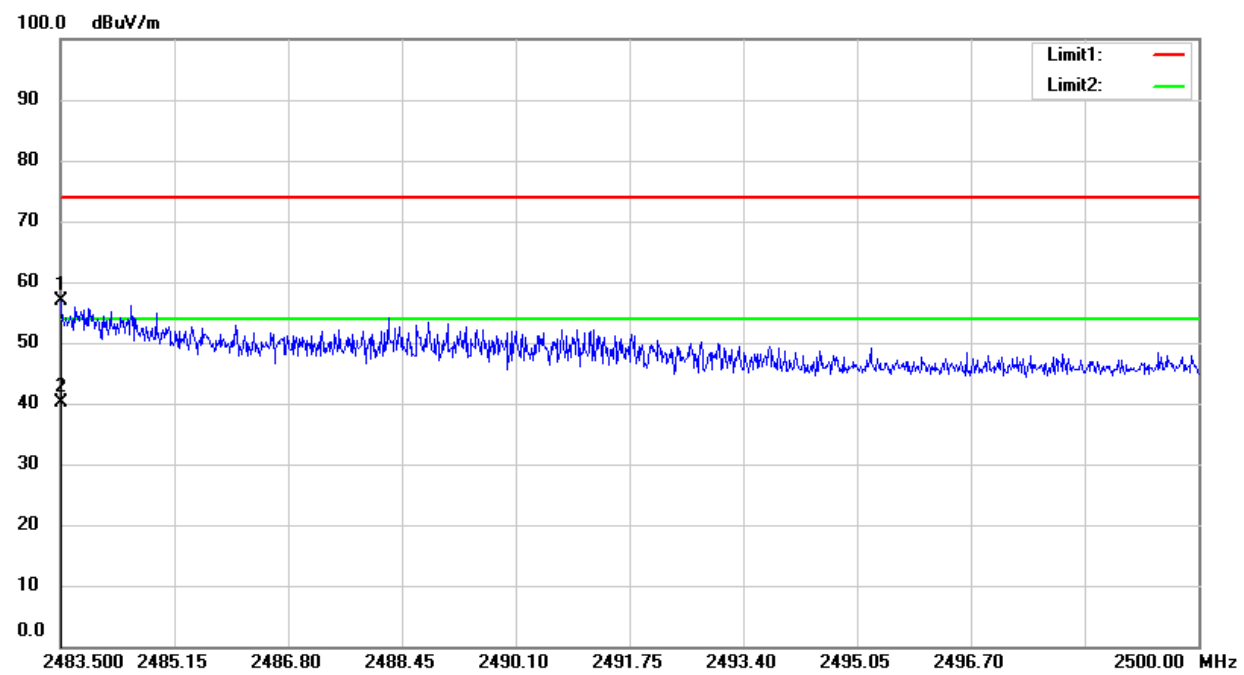
Spurious Emission in Restricted Band 2310-2390MHz



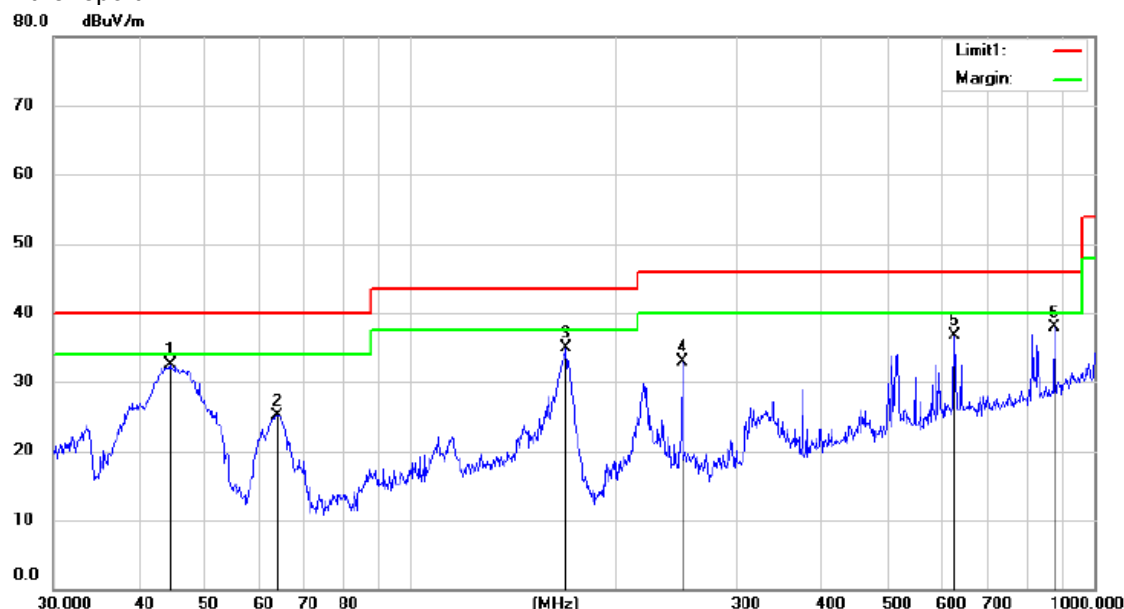
Spurious Emission in Restricted Band 2483.5-2500MHz				
Test Model	☐ 802.11b	☐ 802.11g	☐ 802.11n(HT20)	☒ 802.11n(HT40)
	☐ Channel 11: 2462MHz	☒ Channel 9: 2452MHz		Polarity: H
VBW=3MHz		Test By: King Kong		



Spurious Emission in Restricted Band 2483.5-2500MHz				
Test Model	☐ 802.11b	☐ 802.11g	☐ 802.11n(HT20)	☒ 802.11n(HT40)
	☐ Channel 11: 2462MHz	☒ Channel 9: 2452MHz		Polarity: V
VBW=3MHz		Test By: King Kong		



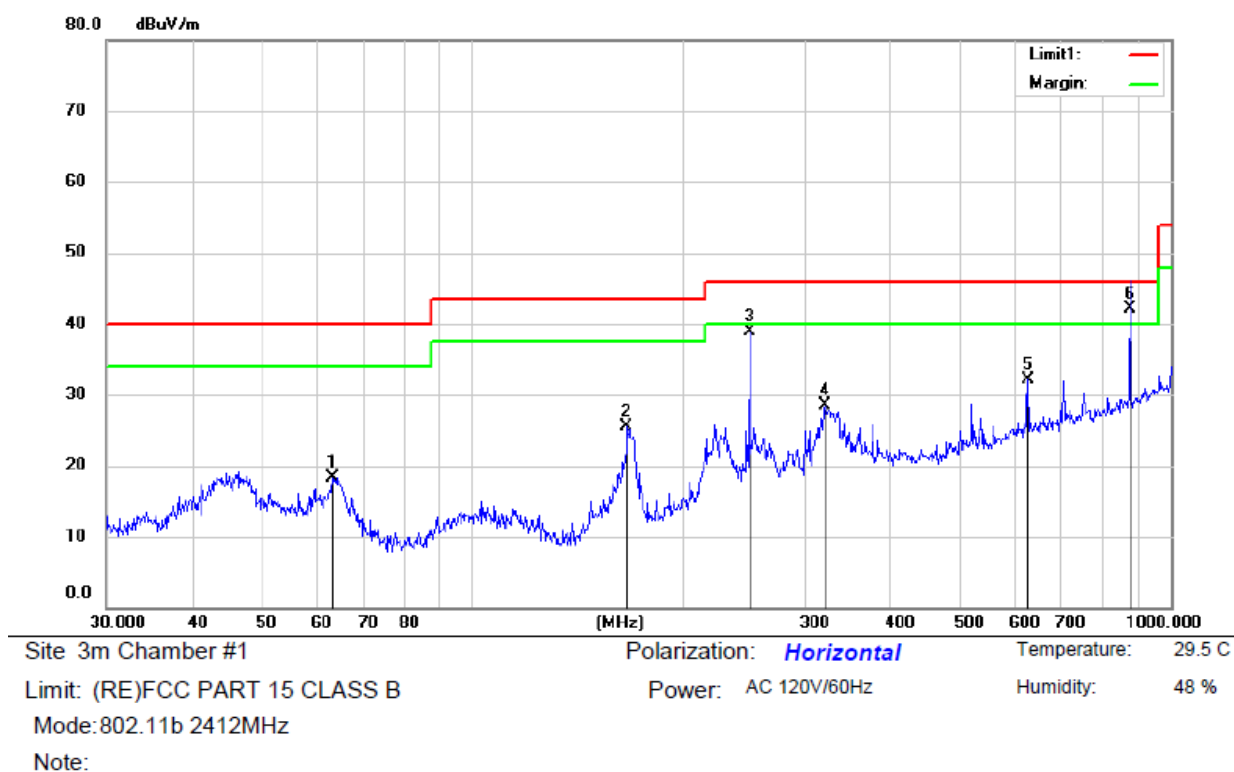
- Spurious Emission below 1GHz (30MHz to 1GHz)
All modes have been tested, and the worst results (802.11a siso mode antenna 0) have been recorded in the report.



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	44.4892	43.79	-11.37	32.42	40.00	-7.58	QP		
2		63.9547	38.57	-13.37	25.20	40.00	-14.80	QP		
3		169.3761	49.23	-14.33	34.90	43.50	-8.60	QP		
4		250.0818	42.86	-9.89	32.97	46.00	-13.03	QP		
5		625.0780	38.51	-1.89	36.62	46.00	-9.38	QP		
6		875.2470	36.44	1.55	37.99	46.00	-8.01	QP		

*:Maximum data x:Over limit !:over margin

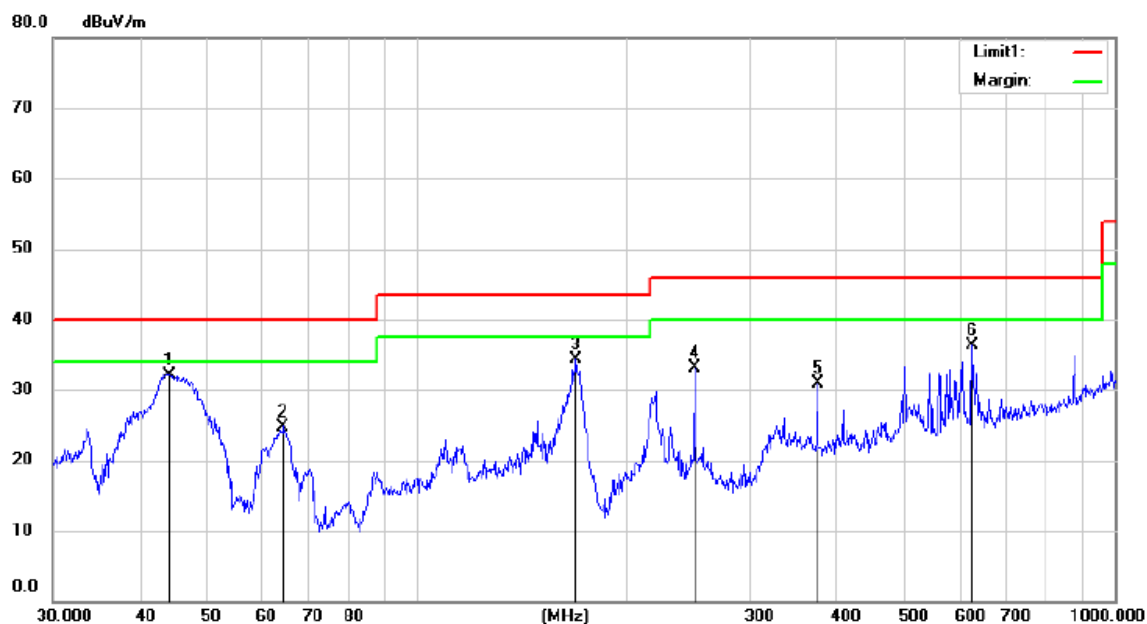
Operator: CSL



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		63.1192	31.56	-13.25	18.31	40.00	-21.69	QP		
2		167.0170	39.85	-14.36	25.49	43.50	-18.01	QP		
3		249.9722	48.83	-9.89	38.94	46.00	-7.06	QP		
4		320.6388	36.46	-7.90	28.56	46.00	-17.44	QP		
5		625.0780	34.06	-1.89	32.17	46.00	-13.83	QP		
6	*	875.2470	40.58	1.55	42.13	46.00	-3.87	QP		

*:Maximum data x:Over limit !:over margin

Operator: CSL



Site 3m Chamber #1

Polarization: **Vertical**

Temperature: 29.5 C

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 48 %

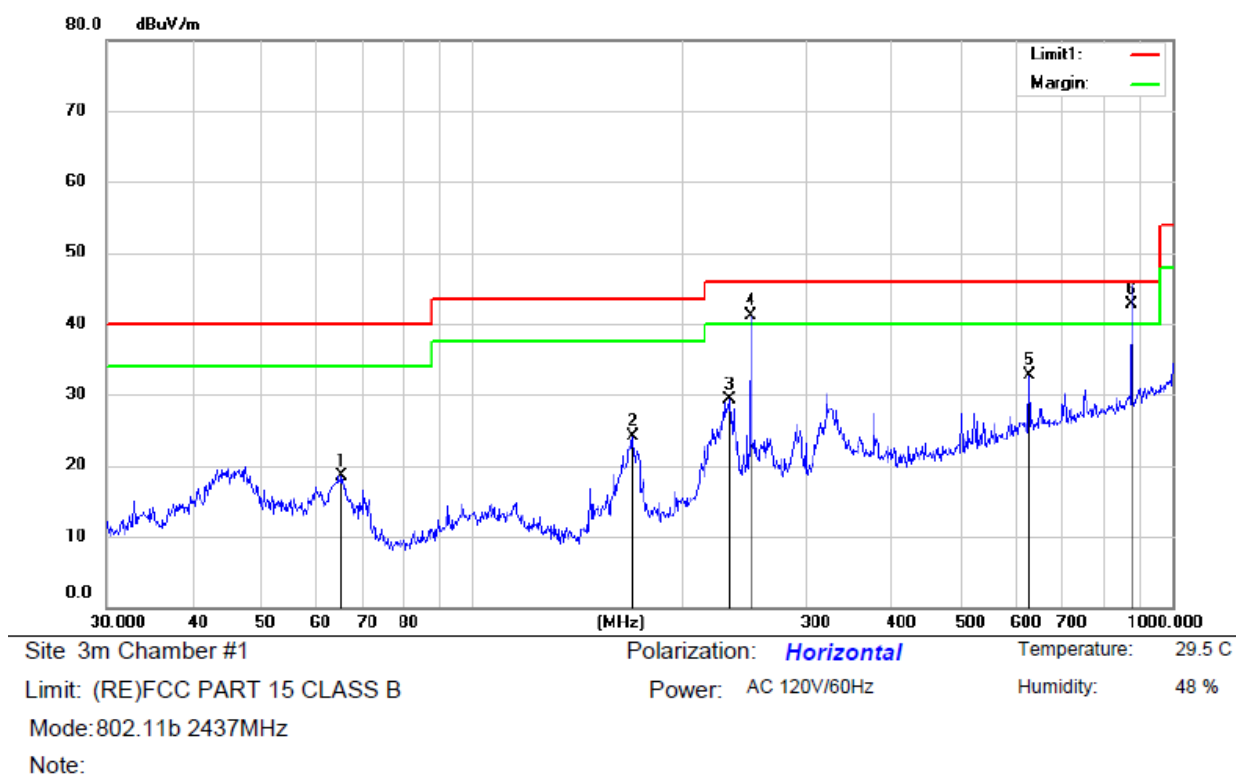
Mode: 802.11b 2437MHz

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	
										Comment
1	*	44.1783	43.54	-11.39	32.15	40.00	-7.85	QP		
2		64.2074	38.20	-13.40	24.80	40.00	-15.20	QP		
3		169.4504	48.59	-14.33	34.26	43.50	-9.24	QP		
4		250.0818	43.06	-9.89	33.17	46.00	-12.83	QP		
5		375.1155	37.64	-6.69	30.95	46.00	-15.05	QP		
6		625.0780	38.15	-1.89	36.26	46.00	-9.74	QP		

*:Maximum data x:Over limit !:over margin

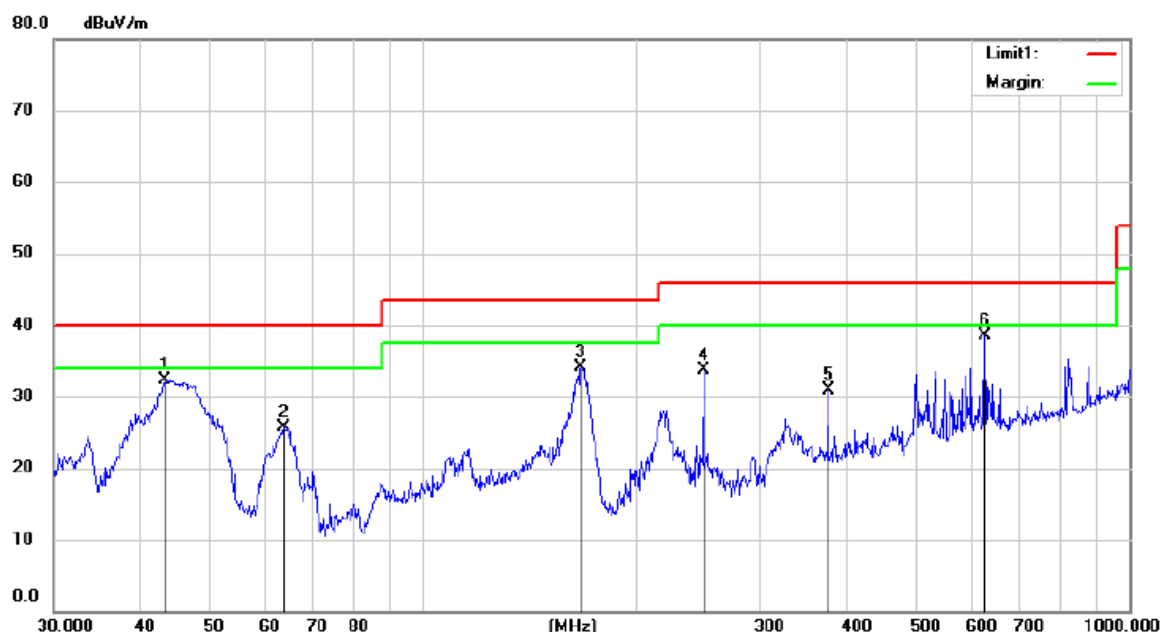
Operator: CSL



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		65.1430	32.16	-13.57	18.59	40.00	-21.41	QP		
2		169.5990	38.36	-14.33	24.03	43.50	-19.47	QP		
3		233.1441	39.77	-10.45	29.32	46.00	-16.68	QP		
4	!	250.0818	50.91	-9.89	41.02	46.00	-4.98	QP		
5		625.0780	34.61	-1.89	32.72	46.00	-13.28	QP		
6	*	875.2470	41.23	1.55	42.78	46.00	-3.22	QP		

*:Maximum data x:Over limit !:over margin

Operator: CSL



Site 3m Chamber #1

Polarization: **Vertical**

Temperature: 29.5 C

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 48 %

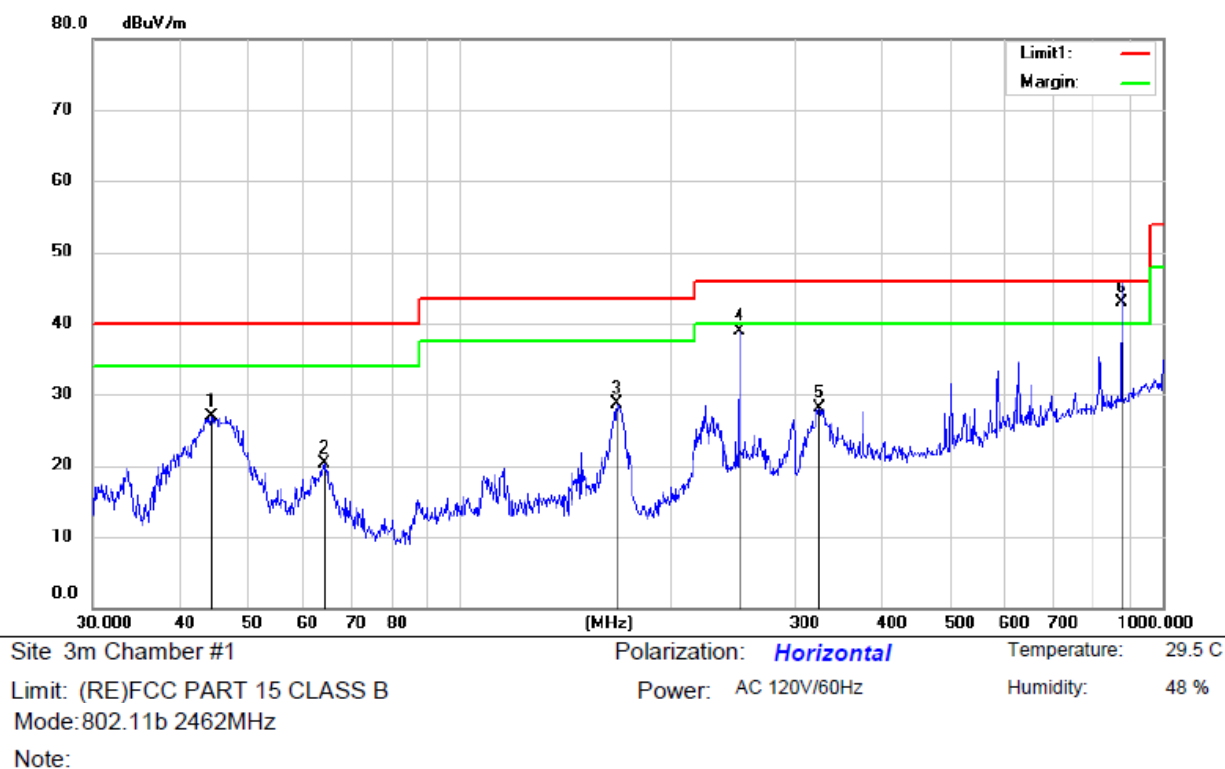
Mode: 802.11b 2462MHz

Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		43.0882	43.79	-11.49	32.30	40.00	-7.70	QP		
2		63.5356	38.96	-13.31	25.65	40.00	-14.35	QP		
3		167.5302	48.50	-14.35	34.15	43.50	-9.35	QP		
4		249.9722	43.66	-9.89	33.77	46.00	-12.23	QP		
5		375.1155	37.65	-6.69	30.96	46.00	-15.04	QP		
6	*	625.0780	40.33	-1.89	38.44	46.00	-7.56	QP		

*:Maximum data x:Over limit l:over margin

Operator: CSL



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		44.3723	38.30	-11.38	26.92	40.00	-13.08	QP		
2		64.2074	33.65	-13.40	20.25	40.00	-19.75	QP		
3		167.2366	43.14	-14.36	28.78	43.50	-14.72	QP		
4		250.0818	48.85	-9.89	38.96	46.00	-7.04	QP		
5		325.4531	35.78	-7.71	28.07	46.00	-17.93	QP		
6	*	875.2470	41.41	1.55	42.96	46.00	-3.04	QP		

*:Maximum data x:Over limit !:over margin

Operator: CSL

8.6 CONDUCTED EMISSIONS TEST

8.6.1 Applicable Standard

According to FCC Part 15.207(a)

8.6.2 Conformance Limit

Frequency(MHz)	Conducted Emission Limit	
	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

8.6.3 Test Configuration

Test according to clause 7.3conducted emission test setup

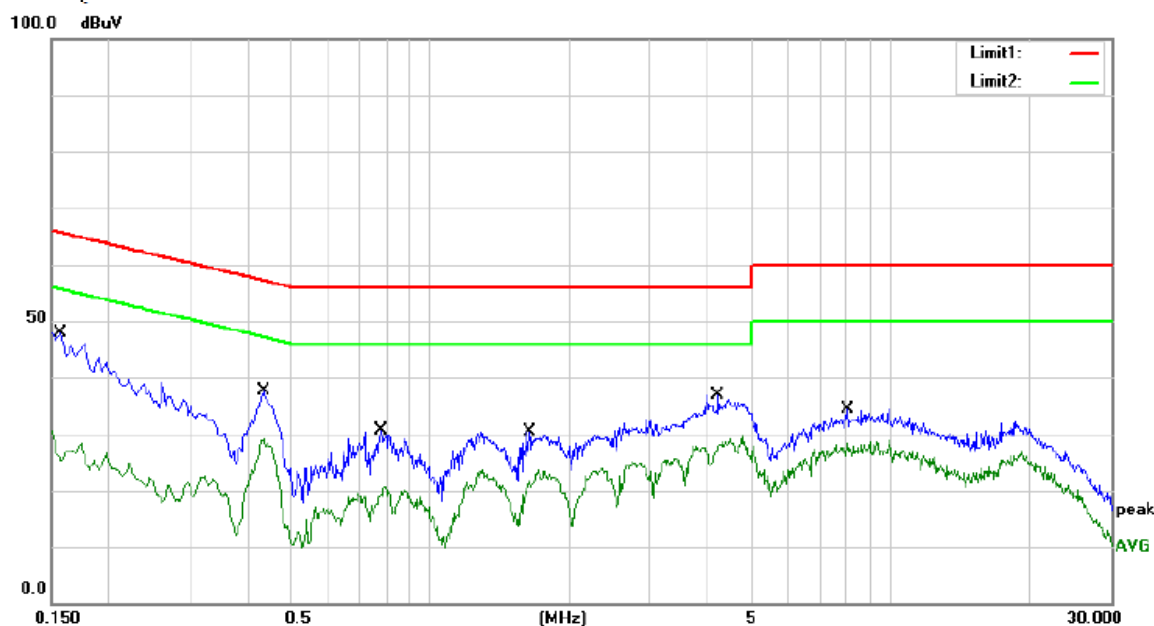
8.6.4 Test Procedure

The EUT was placed on a table which is 0.8m above ground plane.
Maximum procedure was performed on the highest emissions to ensure EUT compliance.
Repeat above procedures until all frequency measured were complete.

8.6.5 Test Results

Pass

All modes have been tested, and the worst results (802.11a siso mode antenna 0) have been recorded in the report



Site Conduction #2

Phase: **N**

Temperature: 23.7

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

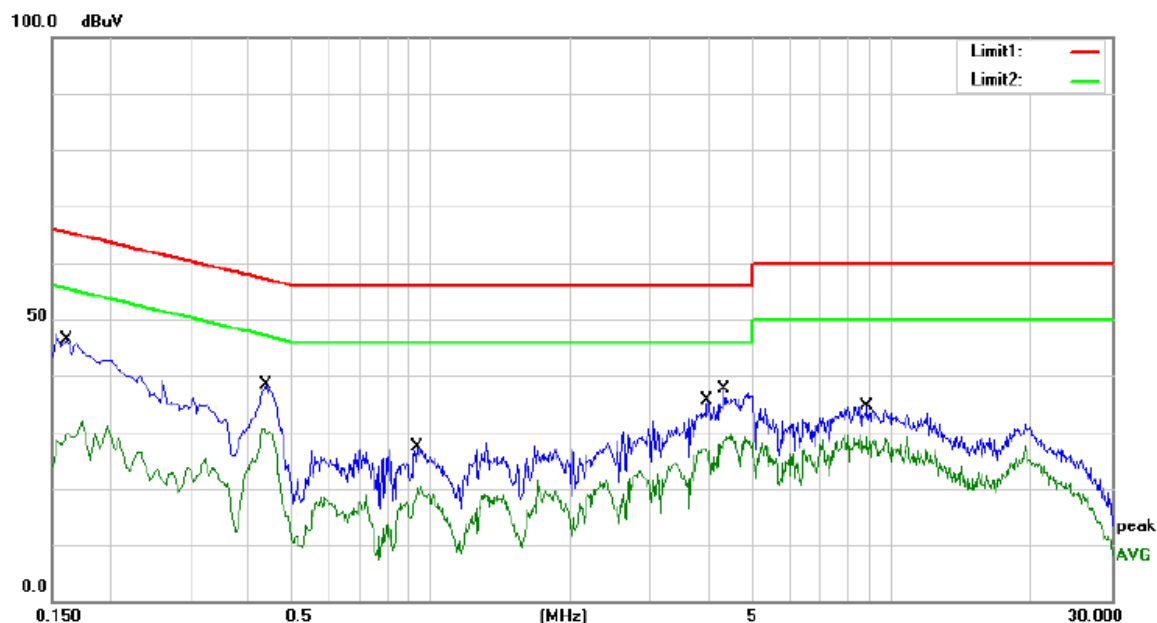
Humidity: 41 %

Mode: 802.11b 2412MHz

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1580	37.91	9.90	47.81	65.57	-17.76	QP	
2		0.1580	21.76	9.90	31.66	55.57	-23.91	AVG	
3		0.4340	27.77	9.92	37.69	57.18	-19.49	QP	
4		0.4340	19.21	9.92	29.13	47.18	-18.05	AVG	
5		0.7820	20.82	9.92	30.74	56.00	-25.26	QP	
6		0.7820	10.69	9.92	20.61	46.00	-25.39	AVG	
7		1.6420	20.37	9.93	30.30	56.00	-25.70	QP	
8		1.6420	13.50	9.93	23.43	46.00	-22.57	AVG	
9		4.2100	26.90	9.95	36.85	56.00	-19.15	QP	
10	*	4.2100	19.61	9.95	29.56	46.00	-16.44	AVG	
11		8.0220	24.35	10.00	34.35	60.00	-25.65	QP	
12		8.0220	18.80	10.00	28.80	50.00	-21.20	AVG	

Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: XZC



Site Conduction #2

Phase: **L1**

Temperature: 23.7

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

Humidity: 41 %

Mode: 802.11b 2412MHz

Note:

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1620	36.52	9.90	46.42	65.36	-18.94	QP	
2	0.1620	22.06	9.90	31.96	55.36	-23.40	AVG	
3	0.4380	28.45	9.92	38.37	57.10	-18.73	QP	
4	0.4380	20.74	9.92	30.66	47.10	-16.44	AVG	
5	0.9300	17.37	9.93	27.30	56.00	-28.70	QP	
6	0.9300	10.50	9.93	20.43	46.00	-25.57	AVG	
7	3.9740	25.70	9.94	35.64	56.00	-20.36	QP	
8	3.9740	15.81	9.94	25.75	46.00	-20.25	AVG	
9	4.3340	27.66	9.95	37.61	56.00	-18.39	QP	
10 *	4.3340	19.69	9.95	29.64	46.00	-16.36	AVG	
11	8.8620	24.62	10.00	34.62	60.00	-25.38	QP	
12	8.8620	19.46	10.00	29.46	50.00	-20.54	AVG	

*:Maximum data x:Over limit l:over margin Comment: Factor build in receiver. Operator: XZC

8.7 ANTENNA APPLICATION

8.7.1 Antenna Requirement

Standard	Requirement
FCC CRF Part15.203	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

8.7.2 Result

The EUT'S with 2.4G WIFI function has two external PCB antennas. The antenna0's gain is 5.0dBi, The antenna1's gain is 5.0dBi, and the two antennas can't be replaced by the user which in accordance to section 15.203, please refer to the photos.