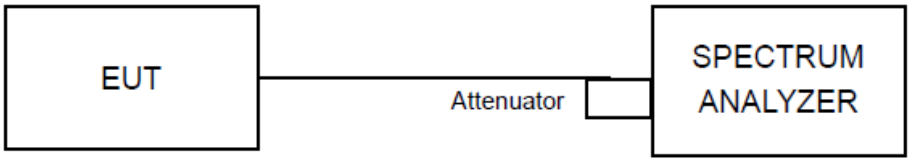
4.5 Conducted Band Edges Measurement

4.5.1 Limit

Below 20 dB of the highest emission level of operating band (in 100 kHz Resolution Bandwidth).

4.5.2 Test Setup



4.5.3 Test Procedures

The EUT was tested according to DTS test procedure of “KDB558074 D01 DTS Meas Guidance” (clause 11.0) for compliance to FCC 47CFR 15.247 requirements.

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

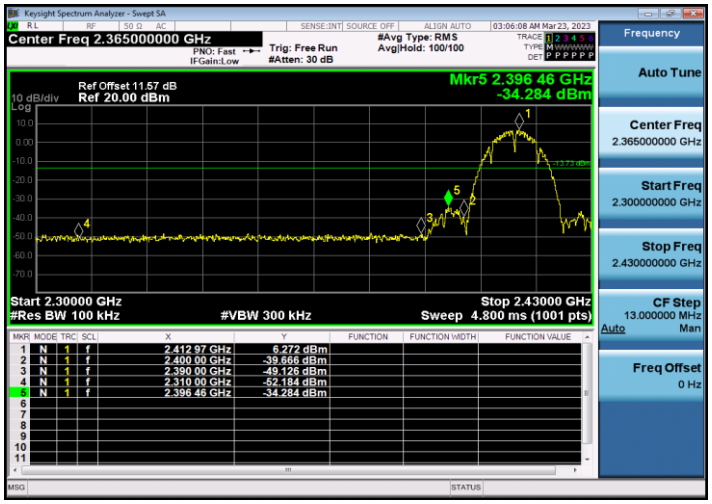
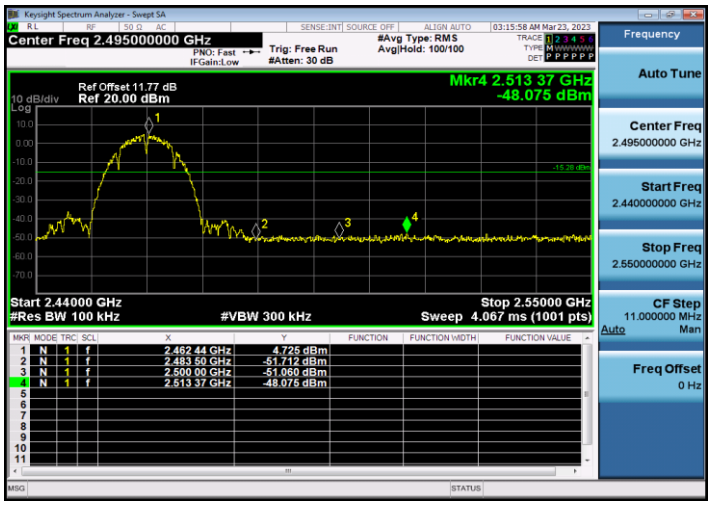
1. Set RBW = 100 kHz.
2. Set VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

4.5.4 Deviation of Test Standard

No deviation.

4.5.5 Test Results

Test Mode	Antenna	ChName	Channel [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	Low	2412	6.27	-34.28	≤-13.73	PASS
		High	2462	4.73	-48.08	≤-15.28	PASS
11G	Ant1	Low	2412	4.19	-30.99	≤-15.81	PASS
		High	2462	2.93	-46.7	≤-17.07	PASS
11N20SISO	Ant1	Low	2412	3.88	-34.49	≤-16.12	PASS
		High	2462	2.66	-45.1	≤-17.34	PASS

11B_Ant1_Low_2412

11B_Ant1_High_2462

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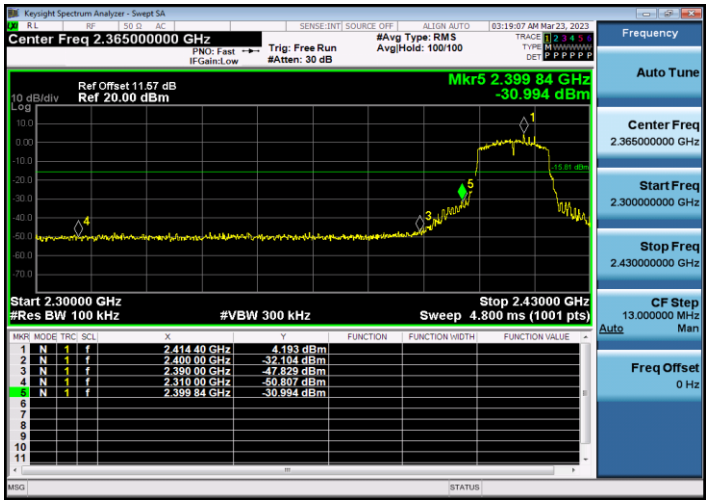
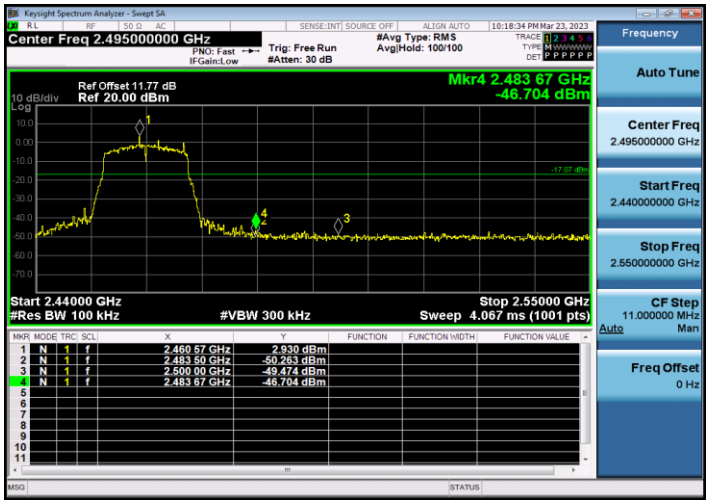


11G_Ant1_High_2462

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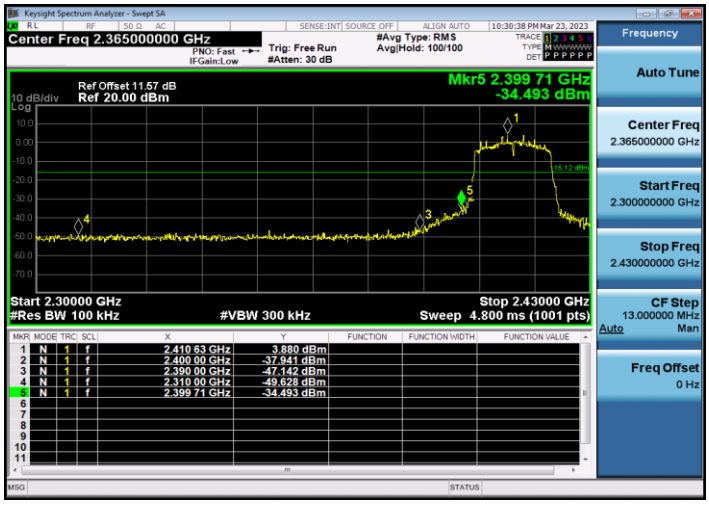
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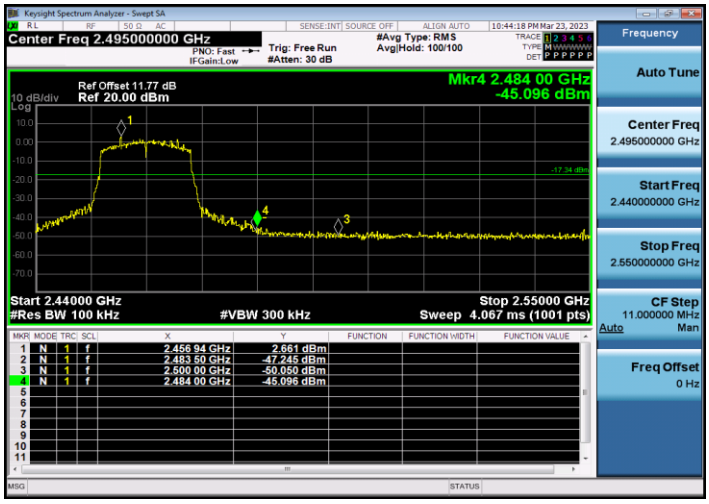
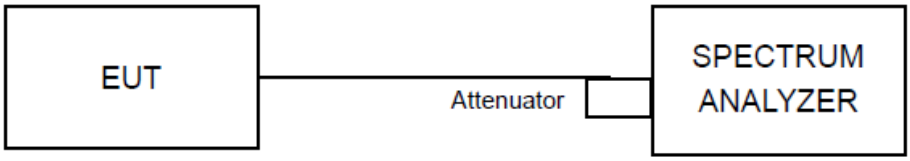


4.6 Conducted Spurious Emissions

4.6.1 Limit

Below 20 dB of the highest emission level of operating band (in 100 kHz Resolution Bandwidth).

4.6.2 Test Setup



4.6.3 Test Procedures

The EUT was tested according to DTS test procedure of “KDB558074 D01 DTS Meas Guidance” (clause 11.0) for compliance to FCC 47CFR 15.247 requirements.

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.

2. Set the VBW ≥ 300 kHz.

3. Detector = peak.

4. Sweep time = auto couple.

5. Trace mode = max hold.

6. Allow trace to fully stabilize.

7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

1. Set RBW = 100 kHz.

2. Set VBW ≥ 300 kHz.

3. Detector = peak.

4. Sweep = auto couple.

5. Trace Mode = max hold.

6. Allow trace to fully stabilize.

7. Use the peak marker function to determine the maximum amplitude level.

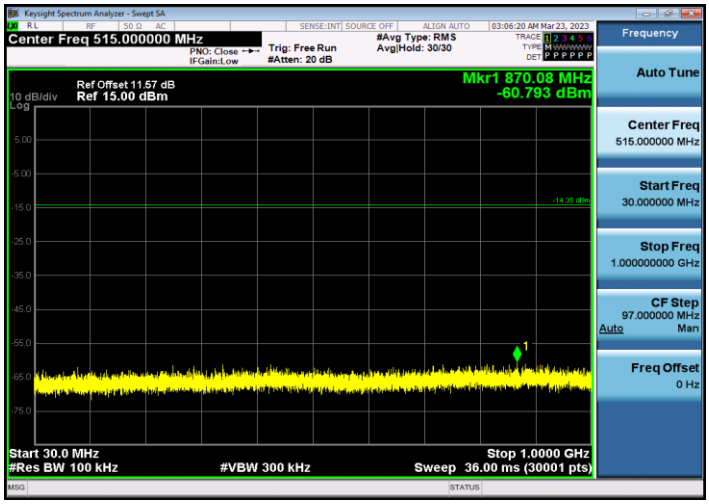
4.6.4 Deviation of Test Standard

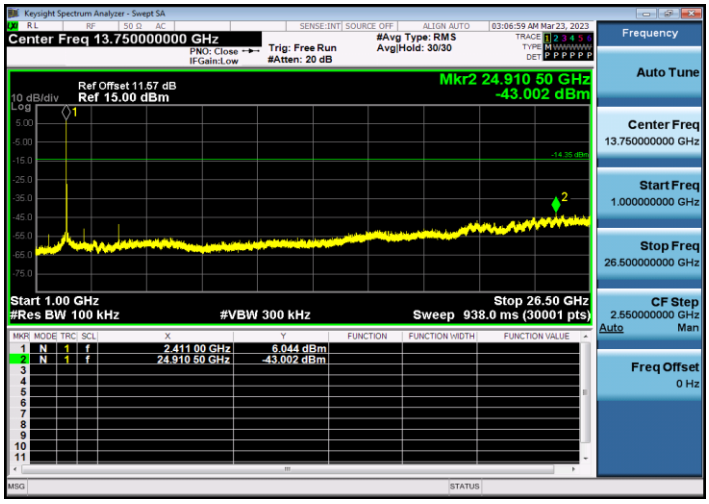
No deviation.

4.6.5 Test Results

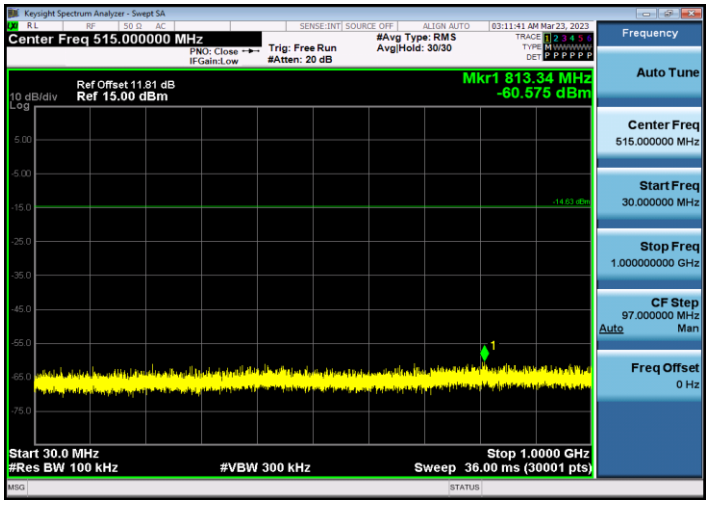
Test Mode	Antenna	Channel [MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	5.65	5.65	---	PASS
			30~1000	5.65	-60.79	≤-14.35	PASS
			1000~26500	5.65	-43	≤-14.35	PASS
		2437	Reference	5.37	5.37	---	PASS
			30~1000	5.37	-60.58	≤-14.63	PASS
			1000~26500	5.37	-42.6	≤-14.63	PASS
		2462	Reference	4.33	4.33	---	PASS
			30~1000	4.33	-59.94	≤-15.67	PASS
			1000~26500	4.33	-43.27	≤-15.67	PASS
11G	Ant1	2412	Reference	1.31	1.31	---	PASS
			30~1000	1.31	-60.41	≤-18.69	PASS
			1000~26500	1.31	-42.91	≤-18.69	PASS
		2437	Reference	3.77	3.77	---	PASS
			30~1000	3.77	-55.41	≤-16.23	PASS
			1000~26500	3.77	-42.22	≤-16.23	PASS
		2462	Reference	2.20	2.20	---	PASS
			30~1000	2.20	-59.75	≤-17.8	PASS
			1000~26500	2.20	-43.63	≤-17.8	PASS
11N20SISO	Ant1	2412	Reference	0.58	0.58	---	PASS
			30~1000	0.58	-60.17	≤-19.42	PASS
			1000~26500	0.58	-43.01	≤-19.42	PASS
		2437	Reference	1.70	1.70	---	PASS
			30~1000	1.70	-60.62	≤-18.3	PASS
			1000~26500	1.70	-42.9	≤-18.3	PASS
		2462	Reference	2.12	2.12	---	PASS
			30~1000	2.12	-60.08	≤-17.88	PASS
			1000~26500	2.12	-43.59	≤-17.88	PASS

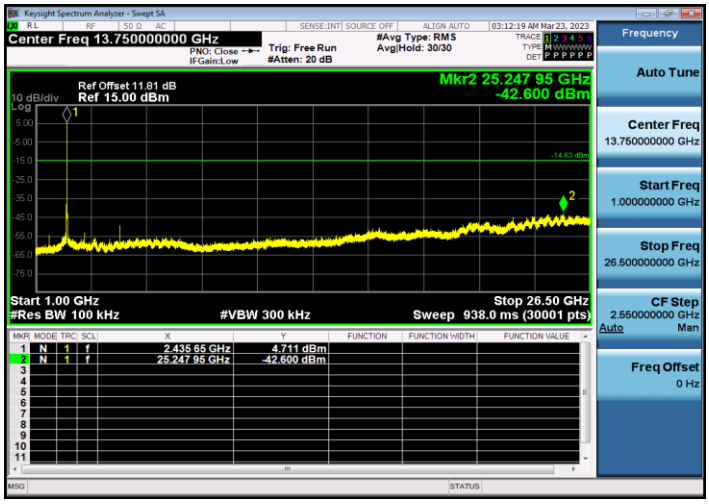
11B_Ant1_2412_0~Reference


11B_Ant1_2412_30~1000


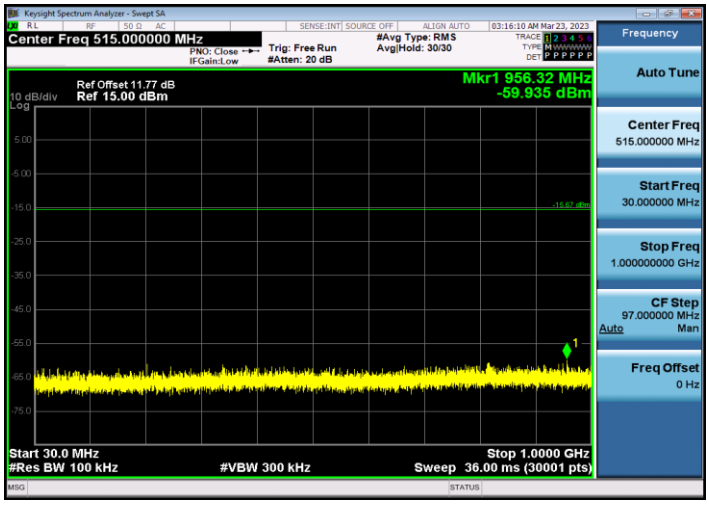
11B_Ant1_2412_1000~26500


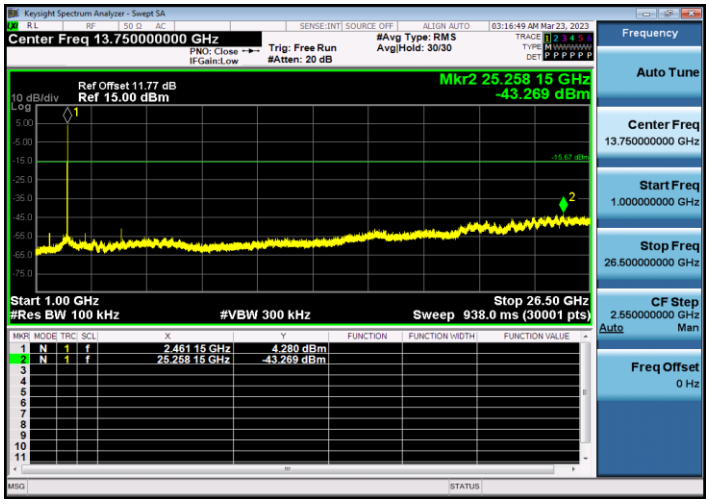
11B_Ant1_2437_0~Reference


11B_Ant1_2437_30~1000


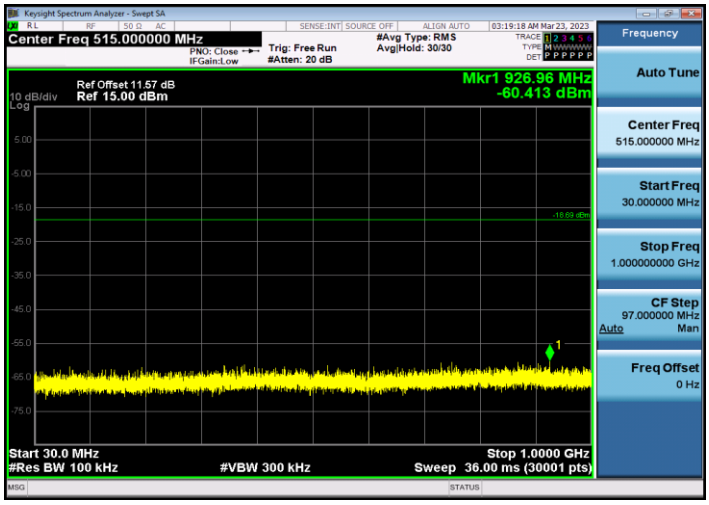
11B_Ant1_2437_1000~26500


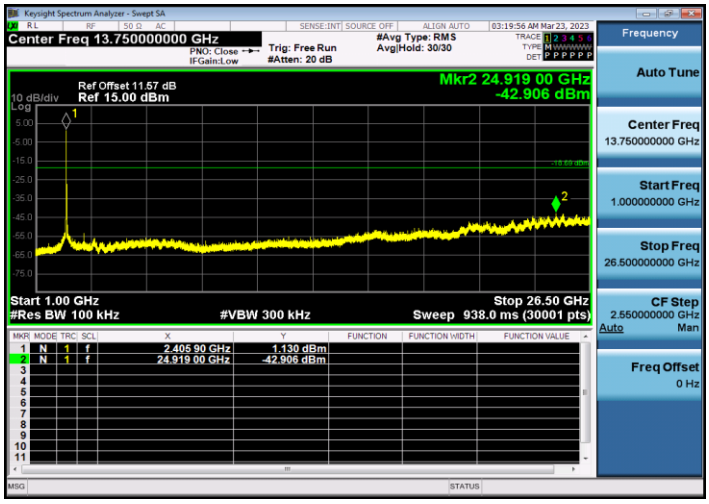
11B_Ant1_2462_0~Reference


11B_Ant1_2462_30~1000


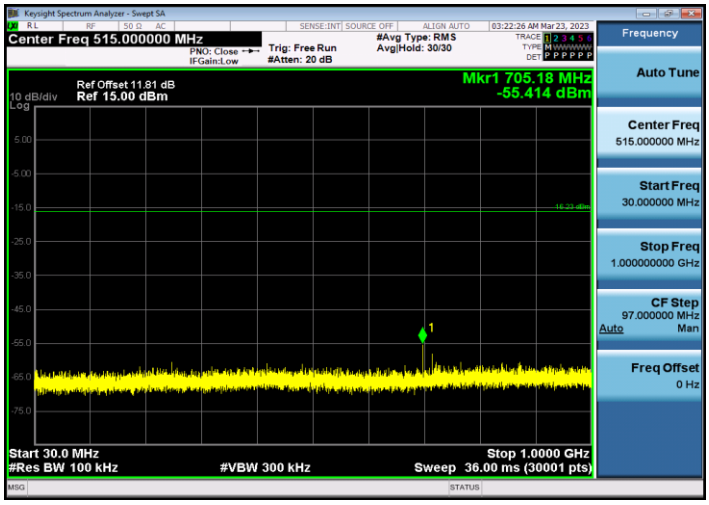
11B_Ant1_2462_1000~26500


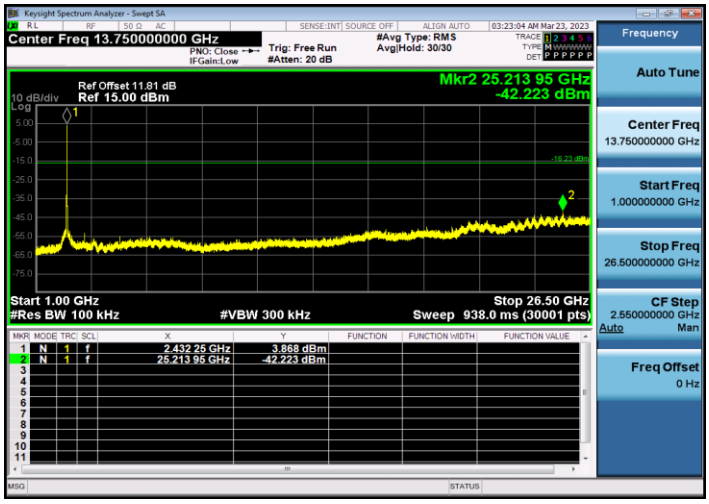
11G_Ant1_2412_0~Reference

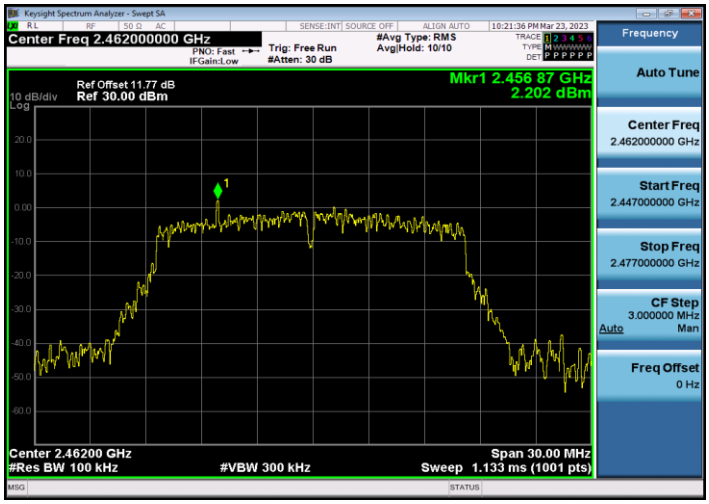

11G_Ant1_2412_30~1000


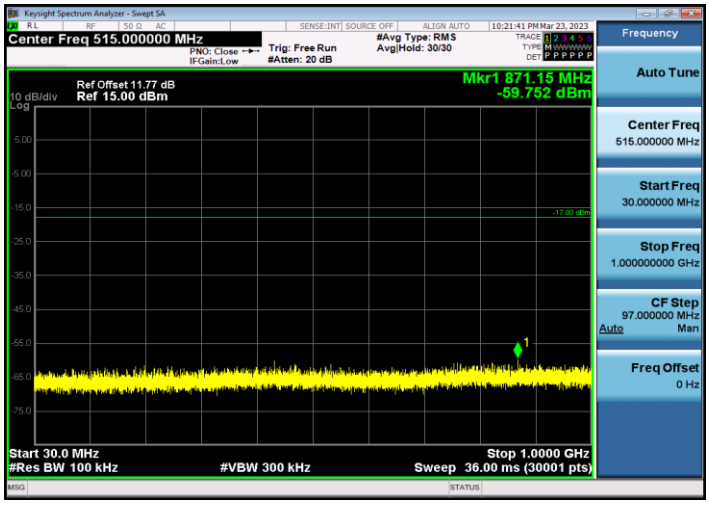
11G_Ant1_2412_1000~26500


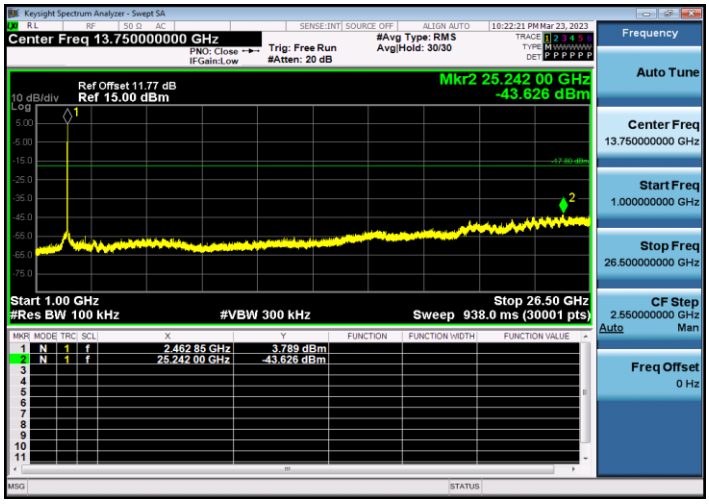
11G_Ant1_2437_0~Reference


11G_Ant1_2437_30~1000


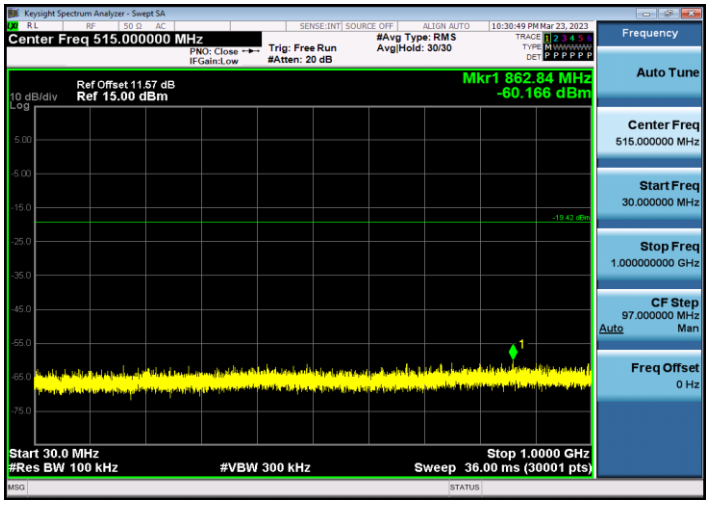
11G_Ant1_2437_1000~26500


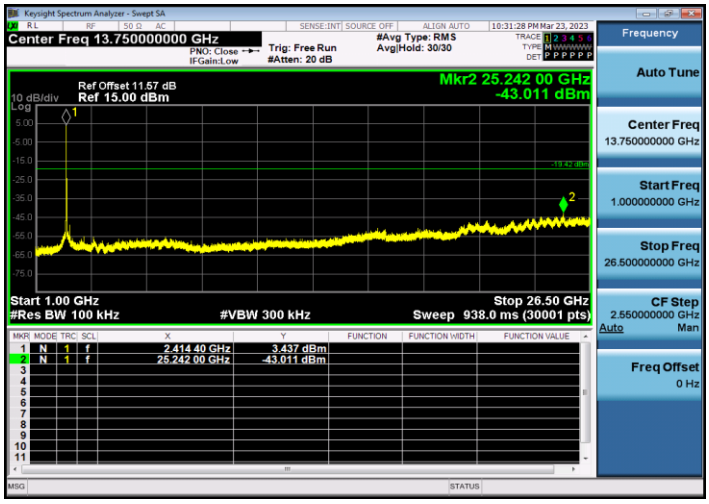
11G_Ant1_2462_0~Reference


11G_Ant1_2462_30~1000


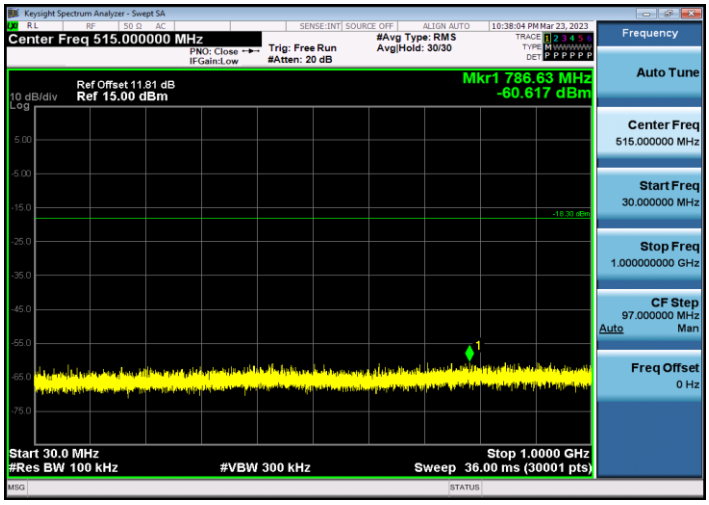
11G_Ant1_2462_1000~26500


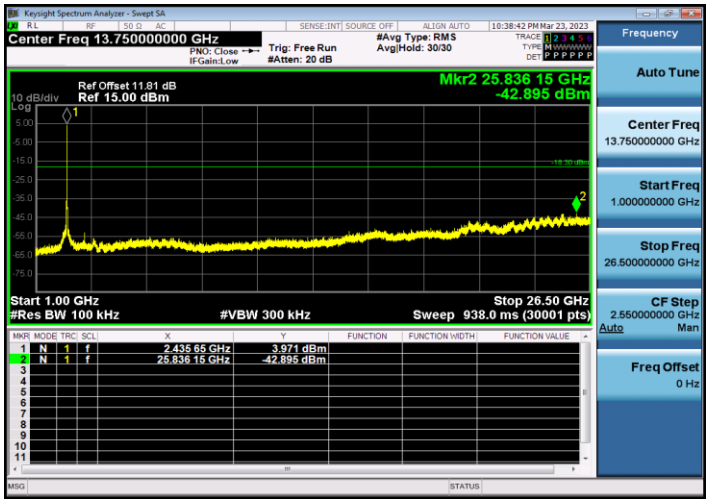
11N20SISO_Ant1_2412_0~Reference


11N20SISO_Ant1_2412_30~1000


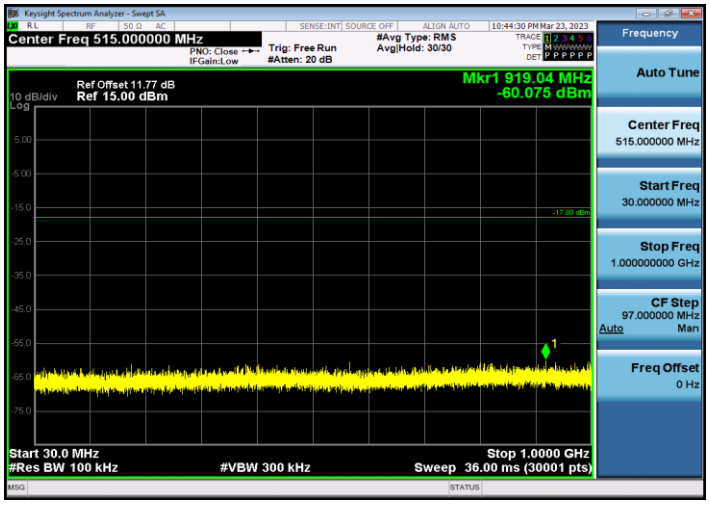
11N20SISO_Ant1_2412_1000~26500


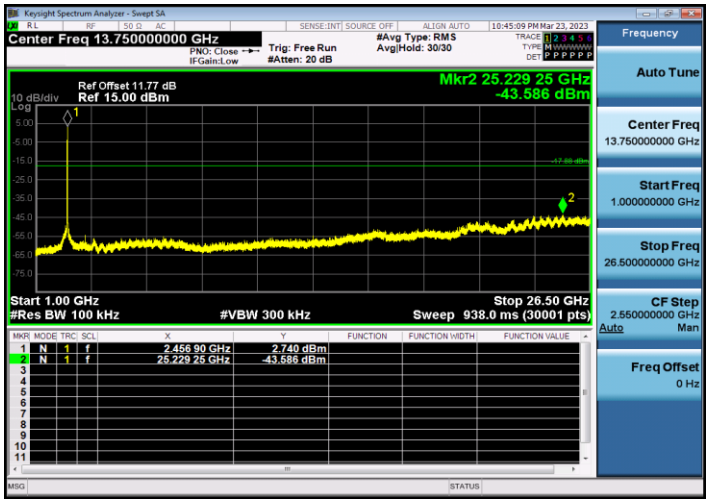
11N20SISO_Ant1_2437_0~Reference


11N20SISO_Ant1_2437_30~1000


11N20SISO_Ant1_2437_1000~26500


11N20SISO_Ant1_2462_0~Reference


11N20SISO_Ant1_2462_30~1000


11N20SISO_Ant1_2462_1000~26500


4.7 Emissions in restricted frequency bands

4.7.1 Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part15, must also comply with the radiated emission limits specified in Section 15.209(a).

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
1 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(2)
13.36 - 13.41	--	--	--

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

4.7.2 Test Procedure Reference

ANSI C63.10 Section 6.3 (General Requirements)

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

4.7.3 Test Procedures

Peak Field Strength Measurements

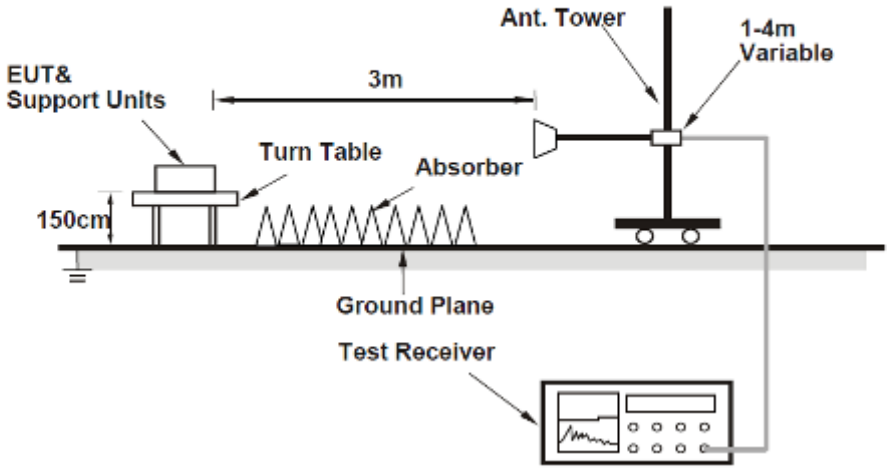
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)(Duty Cycle is constant)

1. The EUT shall be configured to operate at the maximum achievable duty cycle.
2. RBW = 1MHz
3. VBW ≥ 3MHz
4. Detector = RMS (power averaging), Averaging Type= power (RMS)
5. Sweep time = auto
6. Trace mode = max hold
7. Perform a trace average of at least 100 traces.
8. A correction factor [10 log (1 / D)] shall be added to the measurement results, where D is the duty cycle.

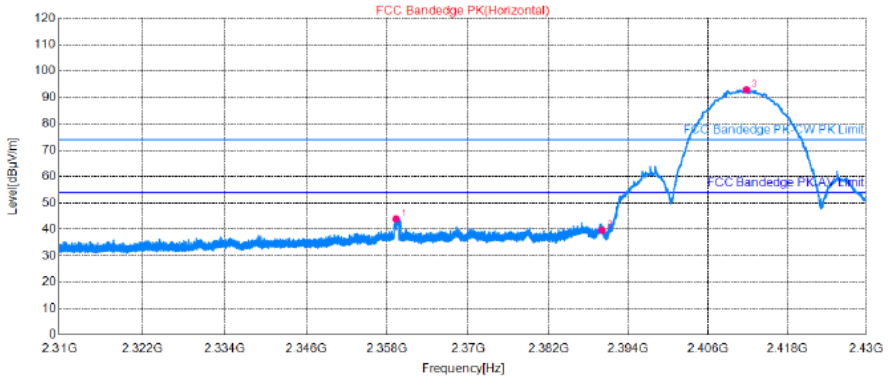
4.7.4 Test Setup

For Radiated emission above 1GHz



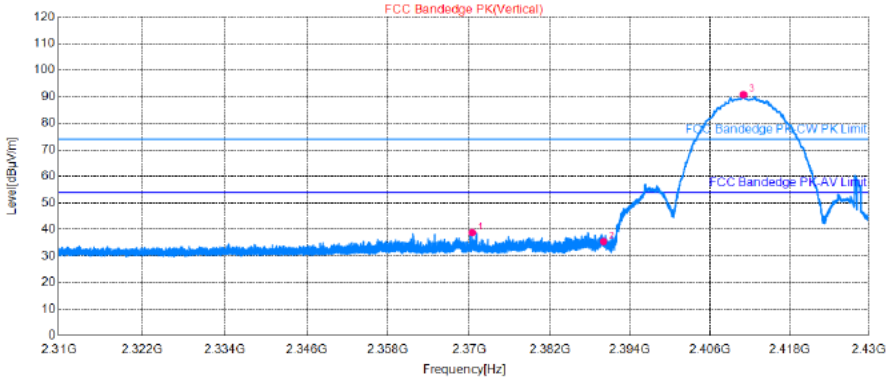
4.7.5 Test Results

802.11b-2412MHz/ Horizontal



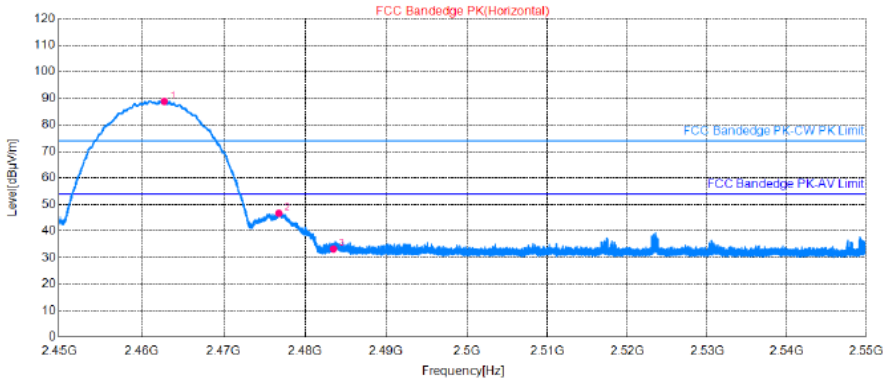
NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	2359.2660	61.53	43.89	74.00	30.11	155	207	Horizontal	PK
2	2390.0040	57.34	39.62	74.00	34.38	155	308	Horizontal	PK
3	2411.8260	110.69	92.91	74.00	-18.91	155	302	Horizontal	PK

802.11b-2412MHz/ Vertical



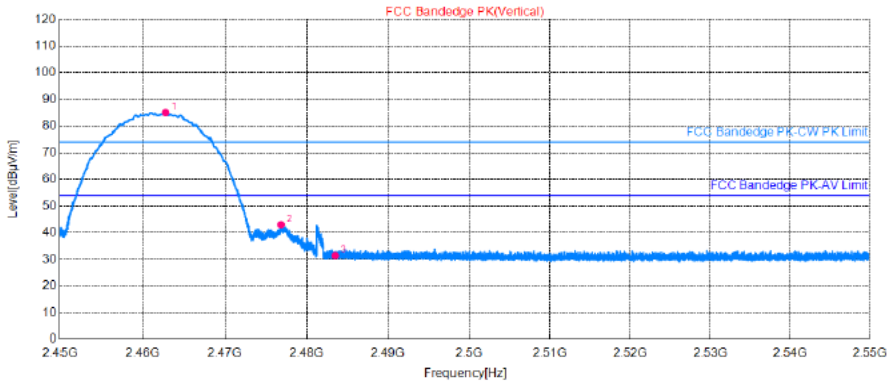
NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	2370.4500	56.43	38.77	74.00	35.23	155	175	Vertical	PK
2	2390.0040	53.24	35.52	74.00	38.48	155	242	Vertical	PK
3	2411.0400	108.60	90.82	74.00	-16.82	155	230	Vertical	PK

802.11b-2462MHz/ Horizontal



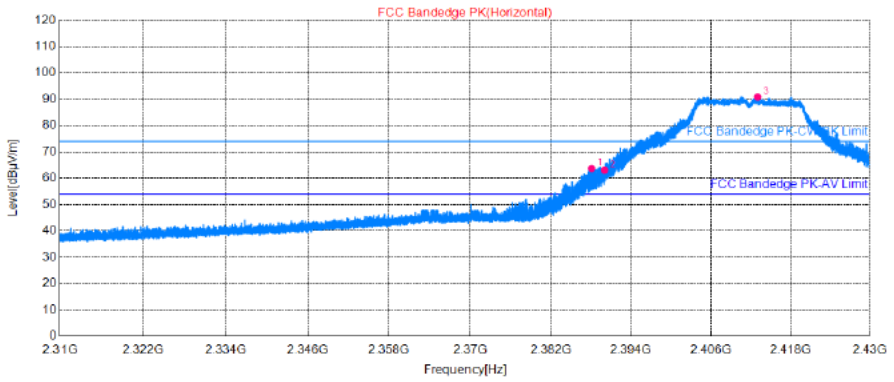
NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	2462.7350	106.79	88.95	74.00	-14.95	155	113	Horizontal	PK
2	2476.7800	64.49	46.64	74.00	27.36	155	110	Horizontal	PK
3	2483.5000	51.15	33.30	74.00	40.70	155	290	Horizontal	PK

802.11b-2462MHz/ Vertical



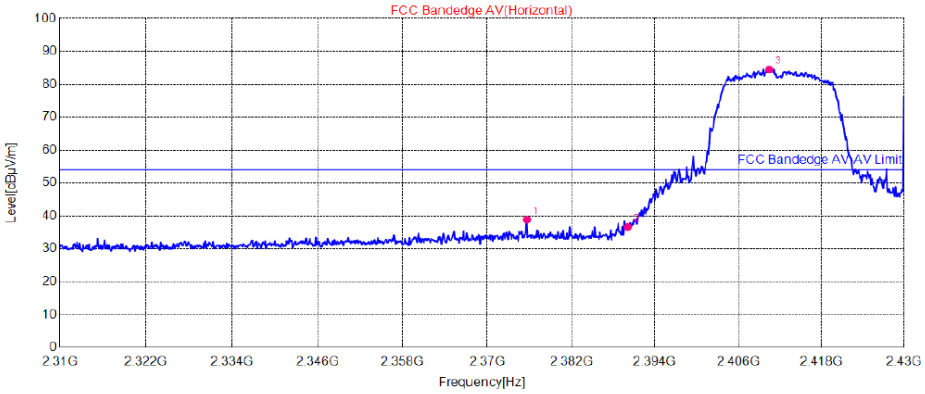
NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	2462.7600	102.91	85.07	74.00	-11.07	155	228	Vertical	PK
2	2476.8550	60.87	43.02	74.00	30.98	155	228	Vertical	PK
3	2483.5000	49.19	31.34	74.00	42.66	155	348	Vertical	PK

802.11g-2412MHz/ Horizontal-PK



NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	2388.0840	81.47	63.75	74.00	10.25	155	305	Horizontal	PK
2	2390.0040	80.83	63.11	74.00	10.89	155	299	Horizontal	PK
3	2413.0440	108.67	90.89	74.00	-16.89	155	134	Horizontal	PK

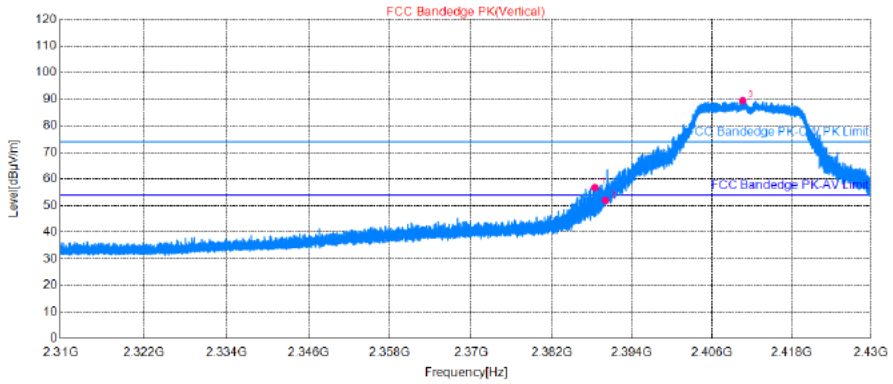
802.11g-2412MHz/ Horizontal-AV



NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	10 log (1 /D) Factor[dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	2375.6400	56.56	38.87	0.27	54.00	14.86	155	57	Horizontal	AV
2	2390.0400	54.36	36.64	0.27	54.00	17.09	155	27	Horizontal	AV
3	2410.4400	102.27	84.49	0.27	54.00	-30.76	155	25	Horizontal	AV

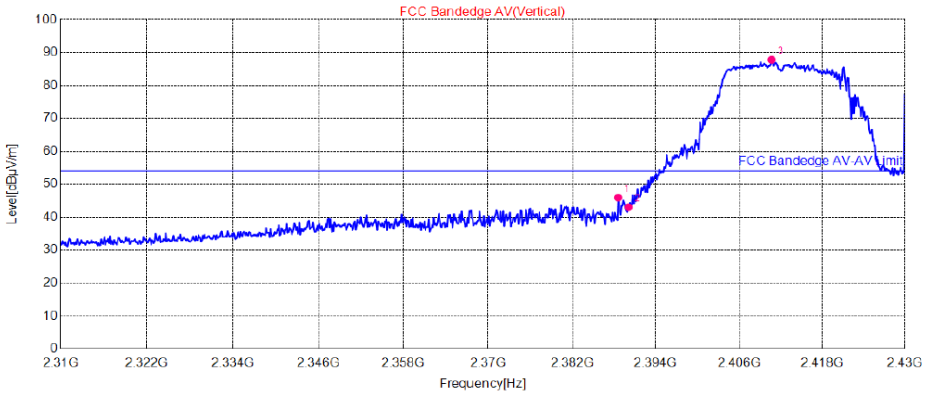
Note: Margin= Limit-Level-10 log (1 /D) Factor, where D is Duty Cycle.

802.11g-2412MHz/ Vertical-PK



NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	2388.4320	74.43	56.71	74.00	17.29	155	232	Vertical	PK
2	2390.0040	69.60	51.88	74.00	22.12	155	235	Vertical	PK
3	2410.6320	107.24	89.46	74.00	-15.46	155	247	Vertical	PK

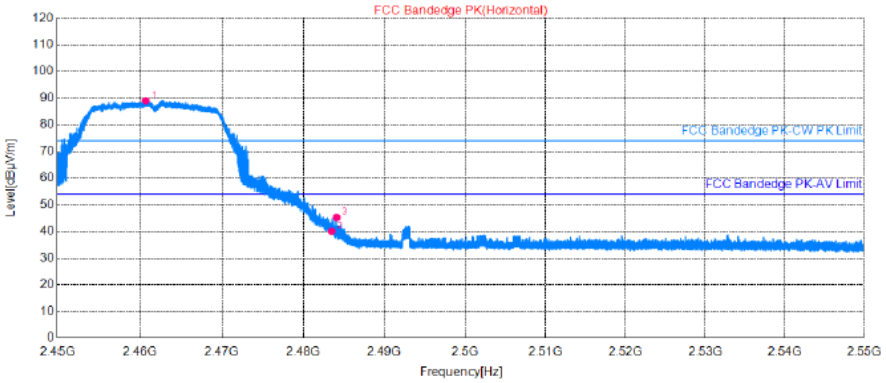
802.11g-2412MHz/ Vertical-AV



NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	10 log (1 /D) Factor[dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	2388.6000	63.63	45.91	0.27	54.00	7.82	155	351	Vertical	AV
2	2390.0400	60.76	43.04	0.27	54.00	10.69	155	351	Vertical	AV
3	2410.6800	105.62	87.84	0.27	54.00	-34.11	155	245	Vertical	AV

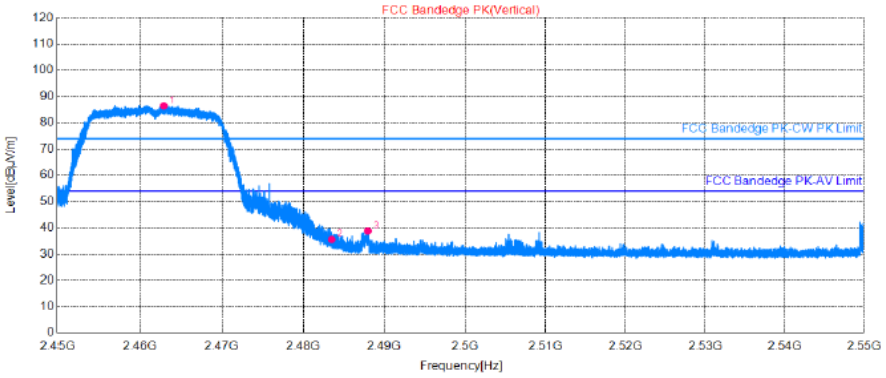
Note: Margin= Limit-Level-10 log (1 /D) Factor, where D is Duty Cycle.

802.11g-2462MHz/ Horizontal



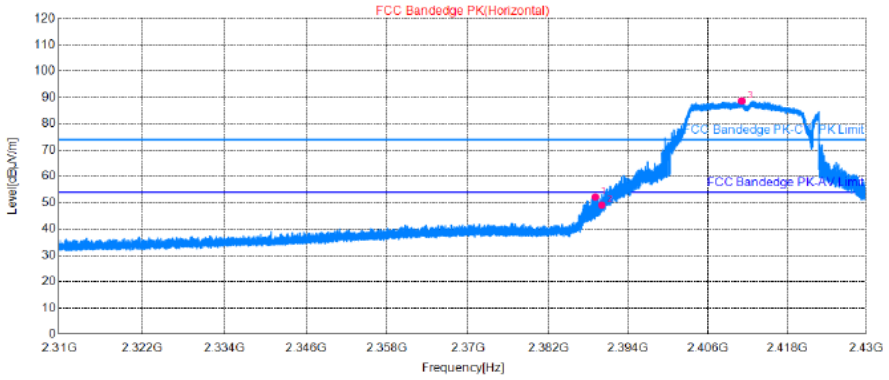
NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	2460.6600	106.91	89.07	74.00	-15.07	155	120	Horizontal	PK
2	2483.5000	57.89	40.04	74.00	33.96	155	113	Horizontal	PK
3	2484.0950	63.07	45.22	74.00	28.78	155	110	Horizontal	PK

802.11g-2462MHz/ Vertical



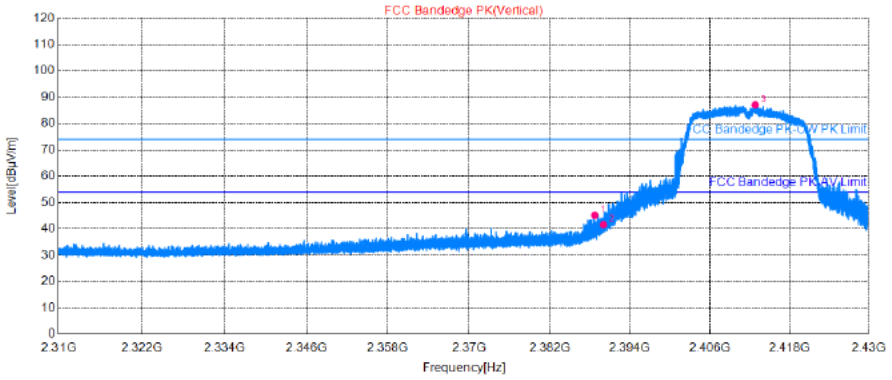
NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	2462.8850	104.37	86.53	74.00	-12.53	155	228	Vertical	PK
2	2483.5000	53.42	35.57	74.00	38.43	155	228	Vertical	PK
3	2487.9450	56.70	38.85	74.00	35.15	155	332	Vertical	PK

802.11n (HT20)-2412MHz/ Horizontal



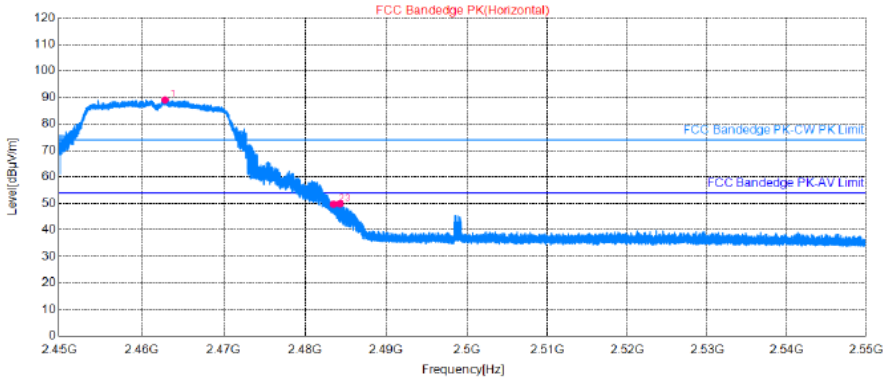
NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	2389.0500	69.98	52.26	74.00	21.74	155	297	Horizontal	PK
2	2390.0040	66.91	49.19	74.00	24.81	155	300	Horizontal	PK
3	2411.1300	106.45	88.67	74.00	-14.67	155	297	Horizontal	PK

802.11n (HT20)-2412MHz/ Vertical



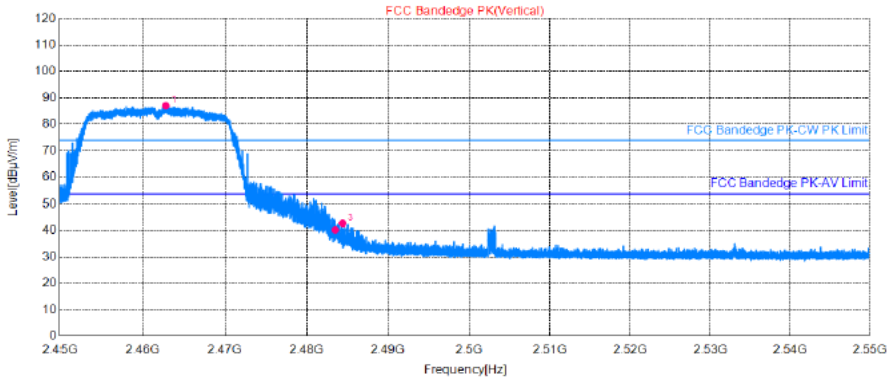
NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	2388.7260	62.91	45.19	74.00	28.81	155	232	Vertical	PK
2	2390.0040	59.27	41.55	74.00	32.45	155	232	Vertical	PK
3	2412.8280	104.86	87.08	74.00	-13.08	155	232	Vertical	PK

802.11n (HT20)-2462MHz/ Horizontal



NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	2462.8200	106.98	89.14	74.00	-15.14	155	107	Horizontal	PK
2	2483.5000	67.51	49.66	74.00	24.34	155	141	Horizontal	PK
3	2484.2650	67.69	49.84	74.00	24.16	155	110	Horizontal	PK

802.11n (HT20)-2462MHz/ Vertical



NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	2462.7800	104.85	87.01	74.00	-13.01	155	231	Vertical	PK
2	2483.5000	58.10	40.25	74.00	33.75	155	231	Vertical	PK
3	2484.3900	60.65	42.80	74.00	31.20	155	246	Vertical	PK

4.8 Radiated Emission Measurement

4.8.1 Limits

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F (kHz)	300
0.490 ~ 1.705	24000/F (kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

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

2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

4.8.2 Test Procedures

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degree to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. Both X and Y axes of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and the rotate table was turned from 0 degree to 360 degree to find the maximum reading.

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1 GHz) / 1.5 meters (for above 1 GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detected function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

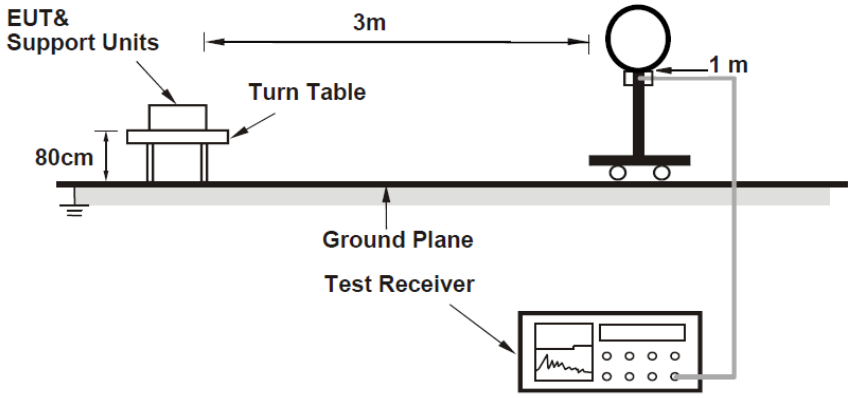
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz & 360 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1/T for RMS Average (Duty cycle < 98 %) for Peak detection at frequency above 1 GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz (Duty cycle ≥ 98 %) for Average detection (AV) at frequency above 1 GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

4.8.3 Deviation from Test Standard

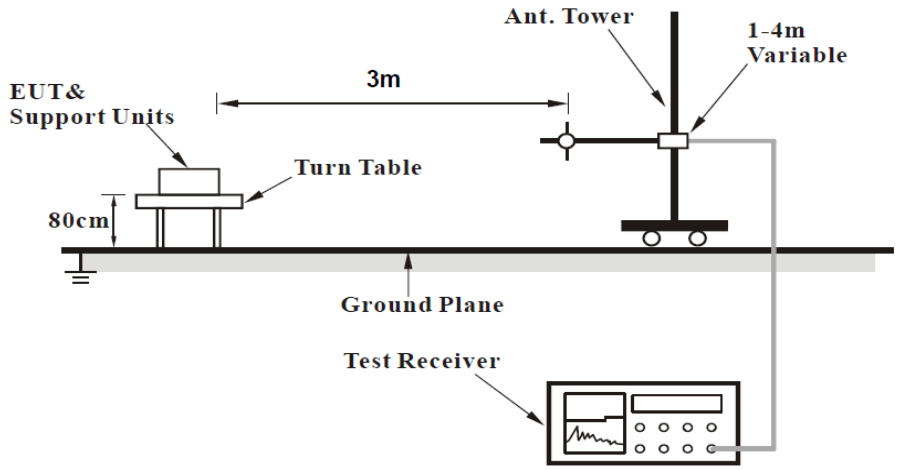
No deviation.

4.8.4 Test Setup

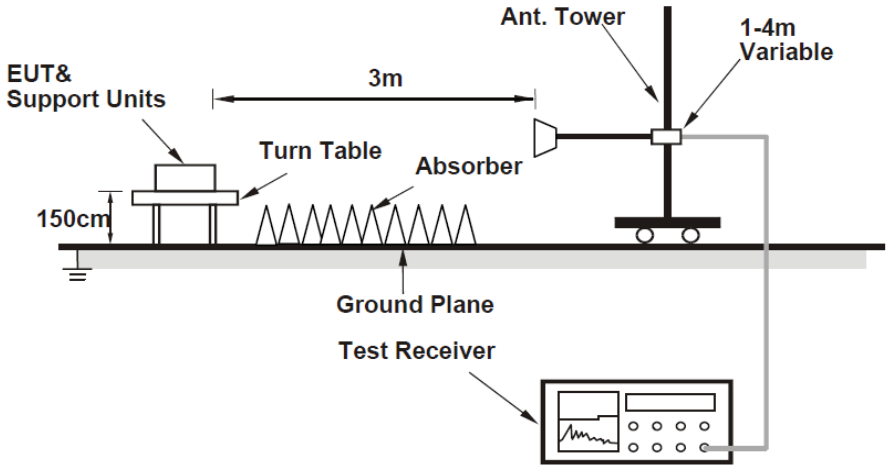
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.8.5 EUT Operating Conditions

a. Placed the EUT on a testing table.

b. Use the software to control the EUT under transmission condition continuously at specific channel frequency.

4.8.6 Test Results

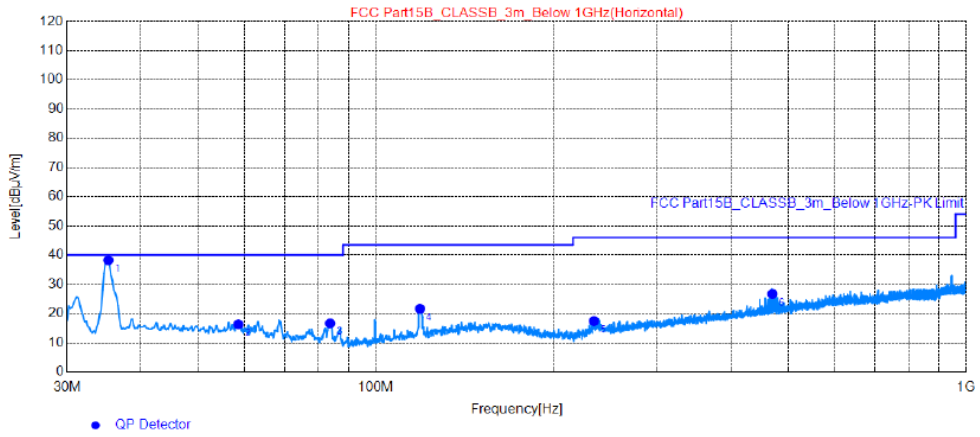
Radiated Emissions Range 9kHz~30MHz

The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

Radiated Emissions Range 30MHz~1GHz

Below is the worst test data

Channel	11b_2412_Ant1	**Detector Function**	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz	**Antenna Polarity**	Horizontal
Power supply	Powered by battery		



Final Data List

NO.	Freq. [MHz]	QP Reading [dBμV/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	35.23	49.17	-10.93	38.24	40.00	1.76	200	299	Horizontal
2	58.51	27.29	-11.04	16.25	40.00	23.75	200	301	Horizontal
3	83.73	31.67	-15.05	16.62	40.00	23.38	200	304	Horizontal
4	118.8	33.79	-12.15	21.64	43.50	21.86	200	322	Horizontal
5	234.2	28.4	-10.98	17.42	46.00	28.58	200	285	Horizontal
6	469.9	30.77	-4.09	26.68	46.00	19.32	200	111	Horizontal

REMARKS:

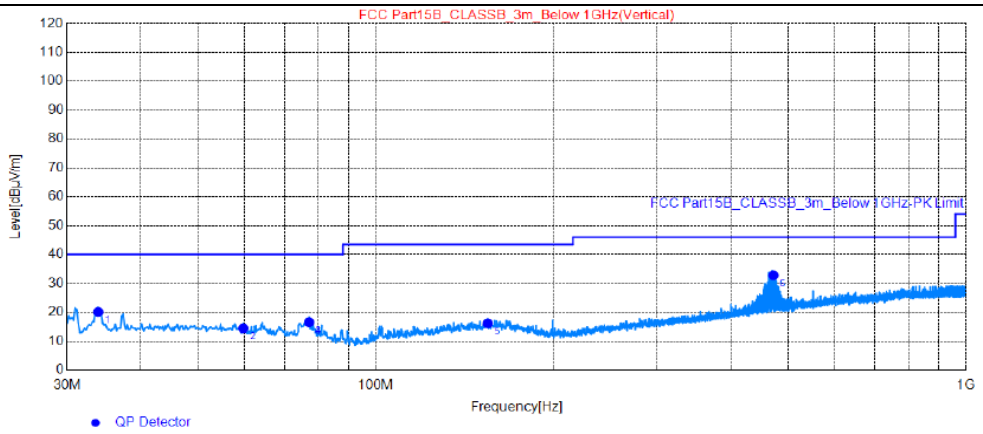
1. Emission Level(dBuV/m) = Spectrum reading (dBuV) + Correction Factor(dB/m)

2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)

3. The other emission levels were very low against the limit.

4. Margin value = Limit value – Emission Level

Channel	11b_2412_Ant1	**Detector Function**	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz	**Antenna Polarity**	Vertical
Power supply	Powered by battery		



Final Data List

NO.	Freq. [MHz]	QP Reading [dBμV/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	33.88	31.22	-11.10	20.12	40.00	19.88	100	174	Vertical
2	59.68	25.58	-11.16	14.42	40.00	25.58	100	2	Vertical
3	77.14	30.71	-14.19	16.52	40.00	23.48	100	360	Vertical
4	77.14	30.71	-14.19	16.52	40.00	23.48	100	360	Vertical
5	154.9	25.54	-9.40	16.14	43.50	27.36	100	239	Vertical
6	471.9	36.86	-4.08	32.78	46.00	13.22	100	360	Vertical

REMARKS:

1. Emission Level(dBuV/m) = Original Spectrum reading (dBuV) + Correction Factor(dB/m)

2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)

3. The other emission levels were very low against the limit.

4. Margin value = Limit value – Emission Level

Radiated Emission Range 1GHz~10th Harmonic

Below is the worst test data

802.11b

Channel	TX Channel 1	**Detector Function**	Peak (PK)
Frequency Range	1GHz ~ 25GHz		Average (AV)

Spurious Emission Level							
No.	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Correction Factor (dB/m)**	**Antenna Polarity**	**Detector**
1	7233.9000	42.93	74.00	31.07	-8.79	H	PK
2	7235.6000	40.91	54.00	13.09	-8.79	H	AV
3	4823.3000	44.64	74.00	29.36	-13.24	V	PK
4	4825.0000	39.76	54.00	14.24	-13.24	V	AV

REMARKS:

1. Emission Level(dBuV/m) = Original Spectrum reading (dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Limit value – Emission Level

Channel	TX Channel 6	**Detector Function**	Peak (PK)
Frequency Range	1GHz ~ 25GHz		Average (AV)

Spurious Emission Level							
No.	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Correction Factor (dB/m)**	**Antenna Polarity**	**Detector**
1	4874.3000	48.77	74.00	25.23	-13.19	H	PK
2	4874.3000	41.34	54.00	12.66	-13.19	H	AV
3	4874.3000	45.77	74.00	28.23	-13.19	V	PK
4	4874.3000	38.01	54.00	15.99	-13.19	V	AV

REMARKS:

1. Emission Level(dBuV/m) = Original Spectrum reading (dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Limit value – Emission Level

Channel	TX Channel 11	**Detector Function**	Peak (PK)
Frequency Range	1GHz ~ 25GHz		Average (AV)

Spurious Emission Level							
No.	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Correction Factor (dB/m)**	**Antenna Polarity**	**Detector**
1	4923.6000	53.63	74.00	20.37	-13.13	H	PK
2	4925.3000	48.14	54.00	5.86	-13.13	H	AV
3	7386.9000	36.35	74.00	37.65	-8.83	V	PK
4	7386.9000	31.75	54.00	22.25	-8.83	V	AV

REMARKS:

1. Emission Level(dBuV/m) = Original Spectrum reading (dBuV) + Correction Factor(dB/m)

2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)

3. The other emission levels were very low against the limit.

4. Margin value =Limit value – Emission Level

802.11g

Channel	TX Channel 1	**Detector Function**	Peak (PK)
Frequency Range	1GHz ~ 25GHz		Average (AV)

Spurious Emission Level							
No.	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Correction Factor (dB/m)**	**Antenna Polarity**	**Detector**
1	7233.9000	40.73	74.00	33.27	-8.79	H	PK
2	7233.9000	37.02	54.00	16.98	-8.79	H	AV
3	7233.9000	42.55	74.00	31.45	-8.79	V	PK
4	7237.3000	36.48	54.00	17.52	-8.79	V	AV

REMARKS:

1. Emission Level(dBuV/m) = Original Spectrum reading (dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Limit value – Emission Level

Channel	TX Channel 6	**Detector Function**	Peak (PK)
Frequency Range	1GHz ~ 25GHz		Average (AV)

Spurious Emission Level							
No.	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Correction Factor (dB/m)**	**Antenna Polarity**	**Detector**
1	4874.3000	44.64	74.00	29.36	-13.19	H	PK
2	4872.6000	41.06	54.00	12.94	-13.20	H	AV
3	4872.6000	43.39	74.00	30.61	-13.20	V	PK
4	4874.3000	37.98	54.00	16.02	-13.19	V	AV

REMARKS:

1. Emission Level(dBuV/m) = Original Spectrum reading (dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value =Limit value – Emission Level

Channel	TX Channel 11	**Detector Function**	Peak (PK)
Frequency Range	1GHz ~ 25GHz		Average (AV)

Spurious Emission Level							
No.	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Correction Factor (dB/m)**	**Antenna Polarity**	**Detector**
1	4923.6000	44.92	74.00	29.08	-13.13	H	PK
2	4927.0000	39.15	54.00	14.85	-13.12	H	AV
3	4925.3000	41.92	74.00	32.08	-13.13	V	PK
4	4927.0000	36.27	54.00	17.73	-13.12	V	AV

REMARKS:

1. Emission Level(dBuV/m) = Original Spectrum reading (dBuV) + Correction Factor(dB/m)

2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)

3. The other emission levels were very low against the limit.

4. Margin value = Limit value – Emission Level

802.11n (HT20)

Channel	TX Channel 1	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 25GHz		Average (AV)

Spurious Emission Level							
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Correction Factor (dB/m)	Antenna Polarity	Detector
1	7237.3000	50.39	74.00	23.61	-8.79	H	PK
2	7237.3000	45.29	54.00	8.71	-8.79	H	AV
3	7237.3000	48.67	74.00	25.33	-8.79	V	PK
4	7228.8000	45.23	54.00	8.77	-8.80	V	AV

REMARKS:

1. Emission Level(dBuV/m) = Original Spectrum reading (dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Limit value – Emission Level

Channel	TX Channel 6	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 25GHz		Average (AV)

Spurious Emission Level							
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Correction Factor (dB/m)	Antenna Polarity	Detector
1	4870.9000	50.79	74.00	23.21	-13.20	H	PK
2	4872.6000	44.87	54.00	9.13	-13.20	H	AV
3	4877.7000	44.87	74.00	29.13	-13.19	V	PK
4	4867.5000	39.44	54.00	14.56	-13.20	V	AV

REMARKS:

1. Emission Level(dBuV/m) = Original Spectrum reading (dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value =Limit value – Emission Level

Channel	TX Channel 11	**Detector Function**	Peak (PK)
Frequency Range	1GHz ~ 25GHz		Average (AV)

Spurious Emission Level							
No.	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Correction Factor (dB/m)**	**Antenna Polarity**	**Detector**
1	4925.3000	45.28	74.00	28.72	-13.13	H	PK
2	4923.6000	40.38	54.00	13.62	-13.13	H	AV
3	4923.6000	35.61	54.00	18.39	-13.13	V	PK
4	4923.6000	35.61	54.00	18.39	-13.13	V	AV

REMARKS:

1. Emission Level(dBuV/m) = Original Spectrum reading (dBuV) + Correction Factor(dB/m)

2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)

3. The other emission levels were very low against the limit.

4. Margin value = Limit value – Emission Level

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

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