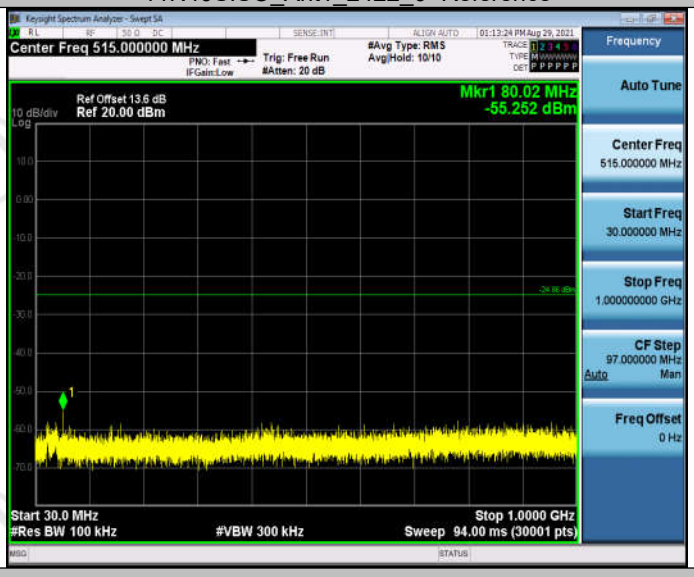
11N20SISO_Ant1_2462_1000~26500

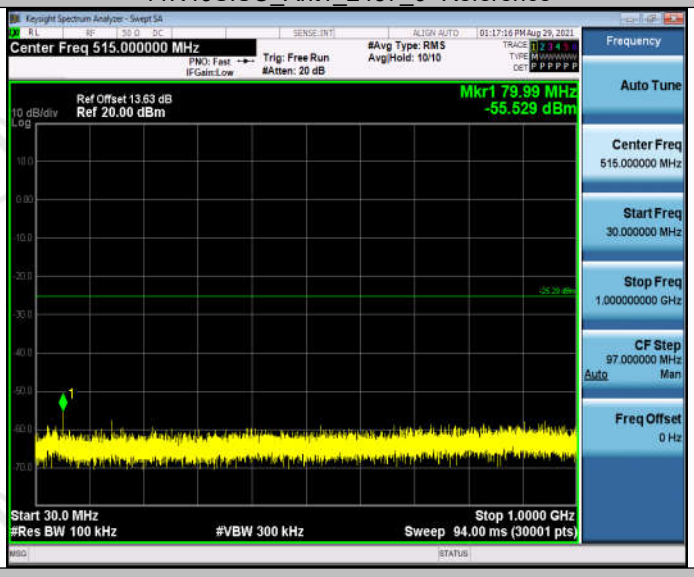
11N40SISO_Ant1_2422_0~Reference



11N40SISO_Ant1_2422_30~1000

11N40SISO_Ant1_2422_1000~26500

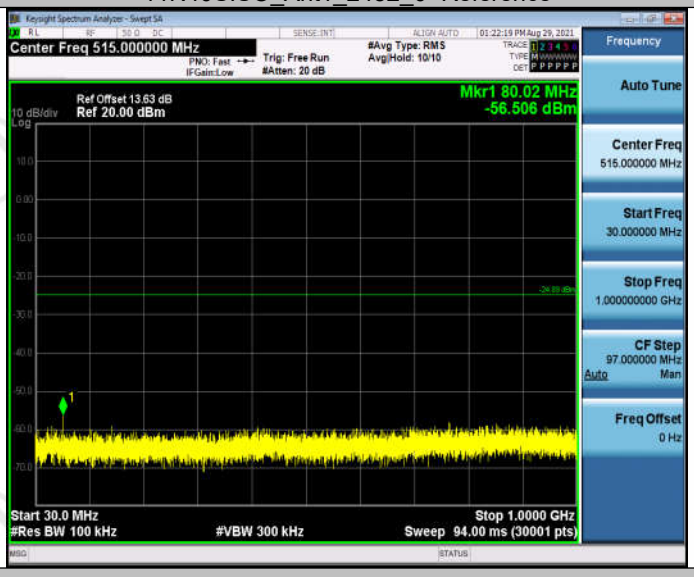
11N40SISO_Ant1_2437_0~Reference



11N40SISO_Ant1_2437_30~1000

11N40SISO_Ant1_2437_1000~26500

11N40SISO_Ant1_2452_0~Reference



11N40SISO_Ant1_2452_30~1000

11N40SISO_Ant1_2452_1000~26500

11A_Ant1_2412_0~Reference

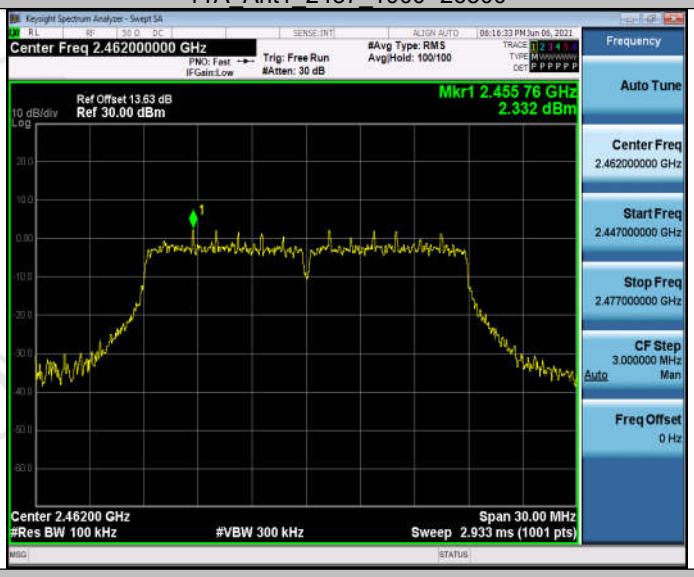
11A_Ant1_2412_30~1000

11A_Ant1_2412_1000~26500

11A_Ant1_2437_0~Reference

11A_Ant1_2437_30~1000

11A_Ant1_2437_1000~26500



11A_Ant1_2462_0~Reference

11A_Ant1_2462_30~1000

11A_Ant1_2462_1000~26500

Appendix E): Power Spectral Density

Test Limit

According to §15.247(e),

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

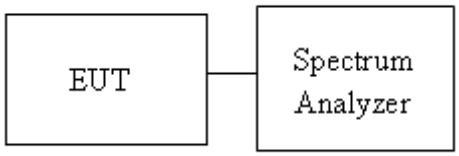
Limit	☒ Antenna not exceed 6 dBi：8dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 8 – (DG – 6)] ☐ Point-to-point operation：

Test Procedure

Test method Refer as KDB 558074 D01.

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 3kHz, VBW = 30kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
4. The path loss was compensated to the results for each measurement by SA.
5. Mark the maximum level.
6. Measure and record the result of power spectral density. in the test report.

Test Setup

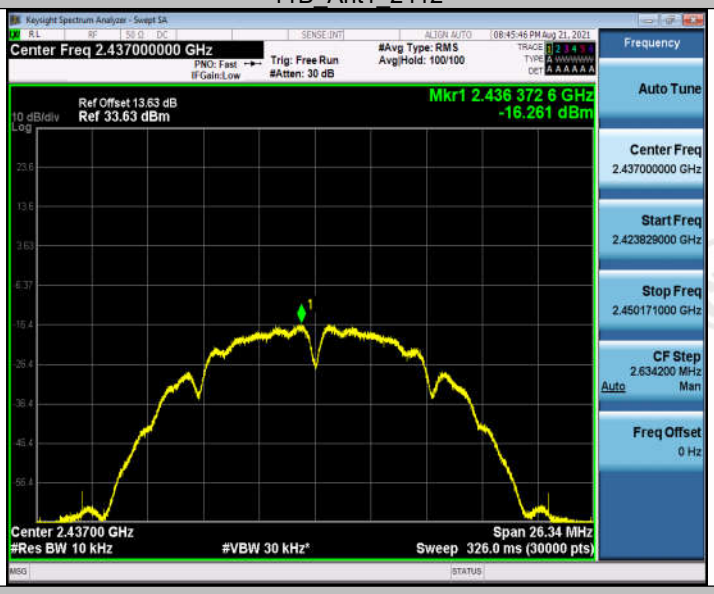


Result Table

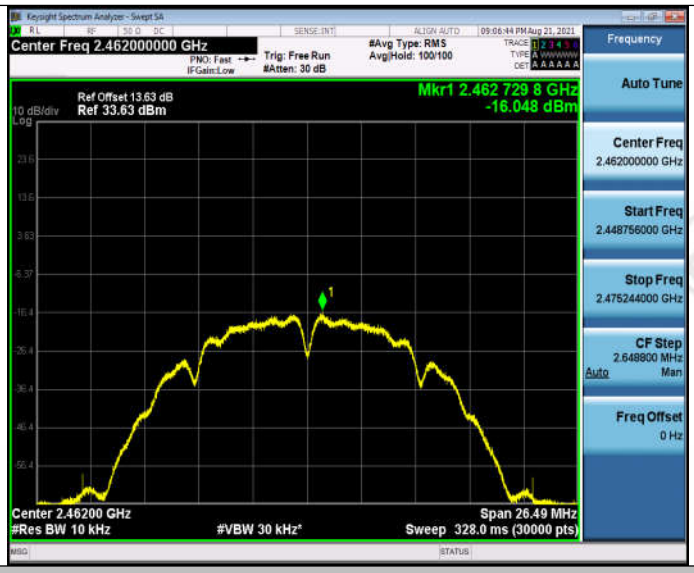
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-15.26	<=8	PASS
		2437	-16.26	<=8	PASS
		2462	-16.05	<=8	PASS
11G	Ant1	2412	-17.72	<=8	PASS
		2437	-18.6	<=8	PASS
		2462	-19.06	<=8	PASS
11N20SISO	Ant1	2412	-18.75	<=8	PASS
		2437	-20.09	<=8	PASS
		2462	-19.95	<=8	PASS
11N40SISO	Ant1	2422	-23.14	<=8	PASS
		2437	-22.88	<=8	PASS
		2452	-22.7	<=8	PASS

Test Graph

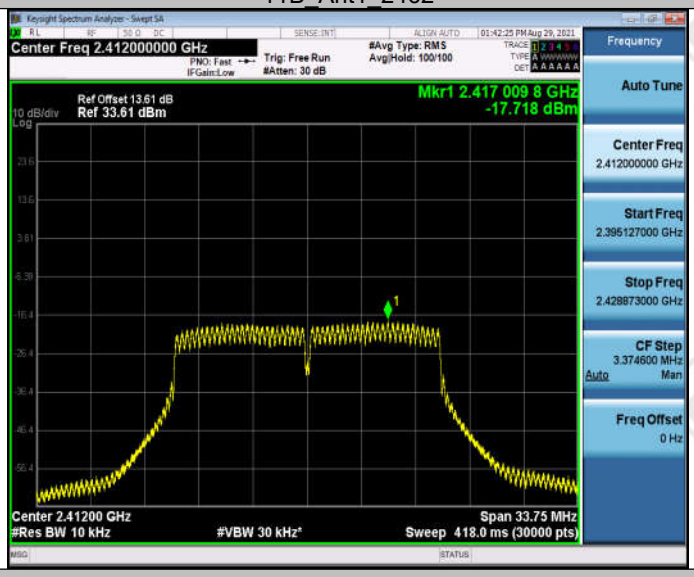
11B_Ant1_2412



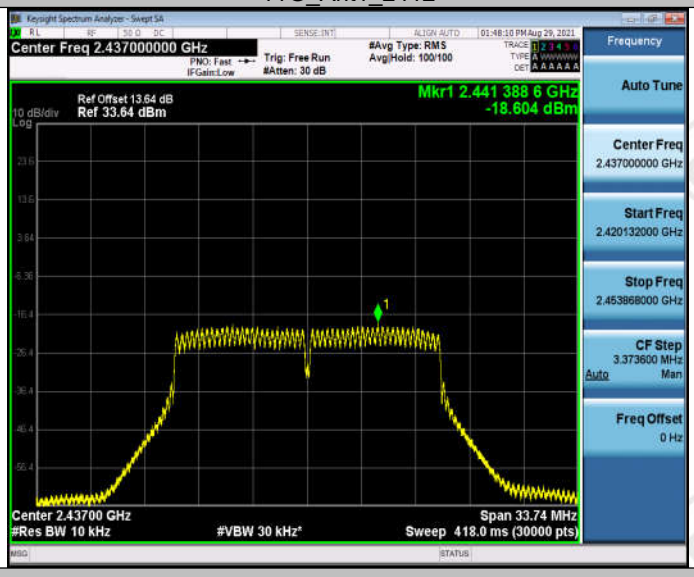
11B_Ant1_2437



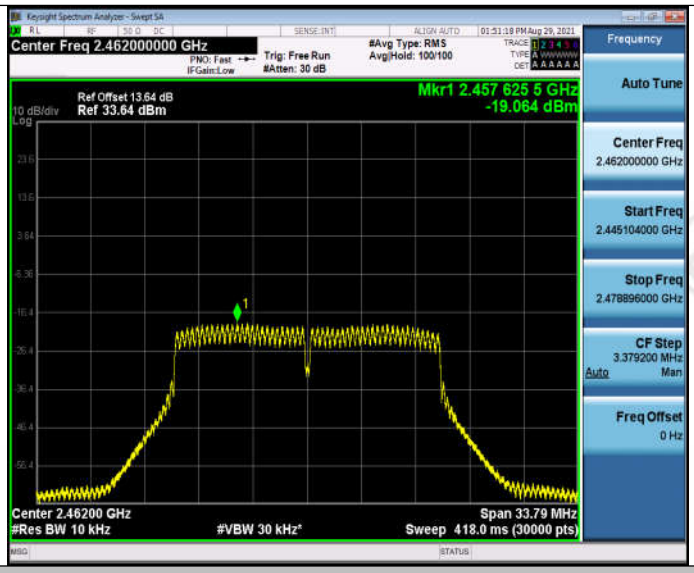
11B_Ant1_2462



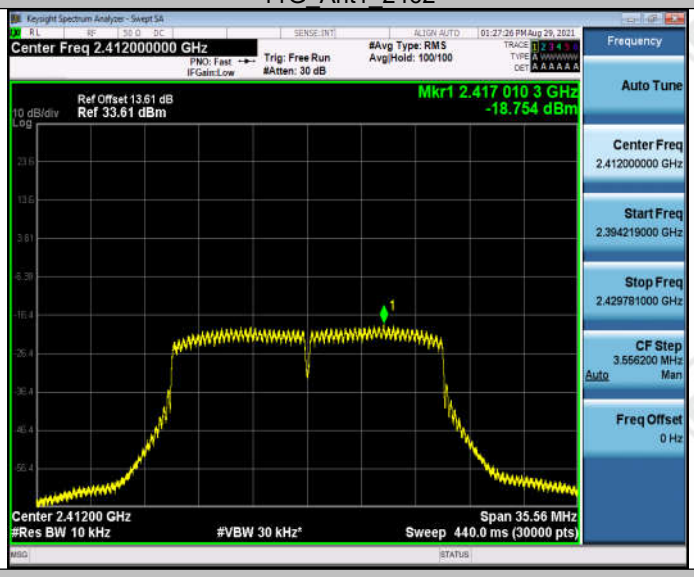
11G_Ant1_2412



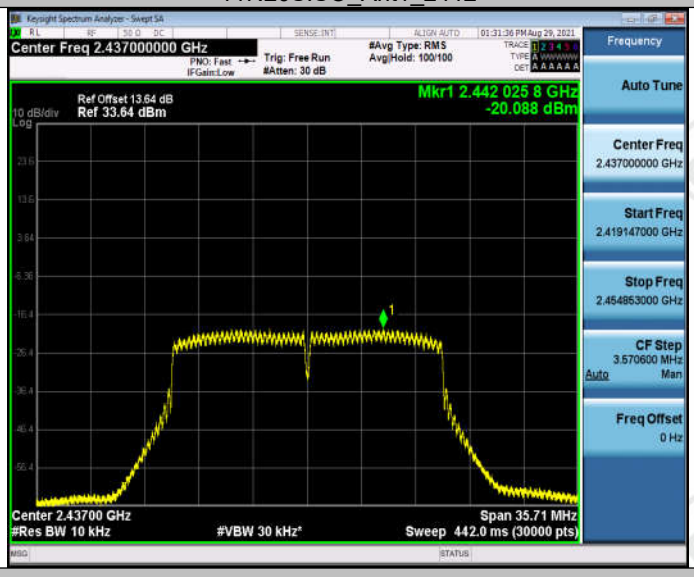
11G_Ant1_2437



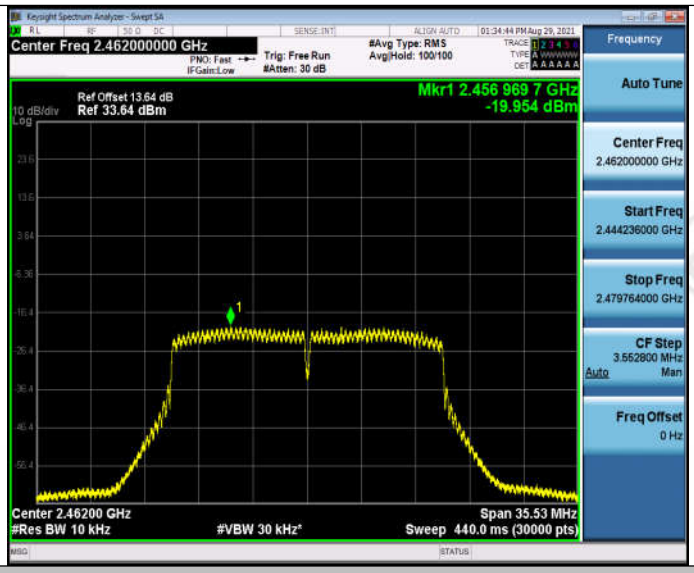
11G_Ant1_2462



11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



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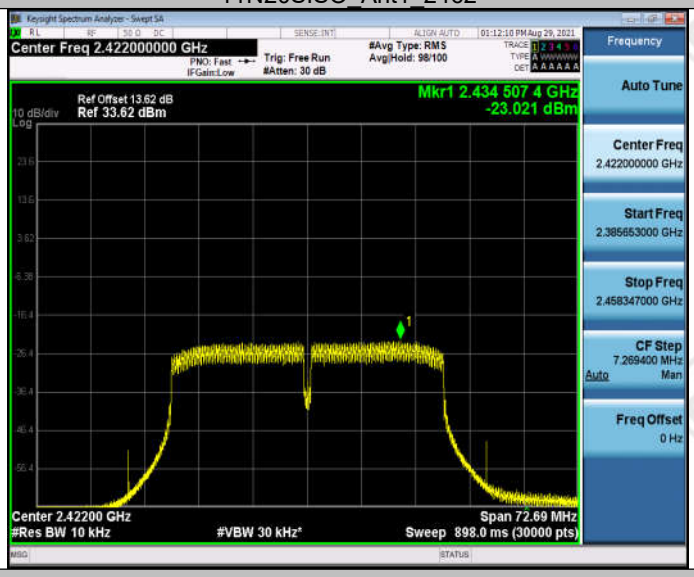
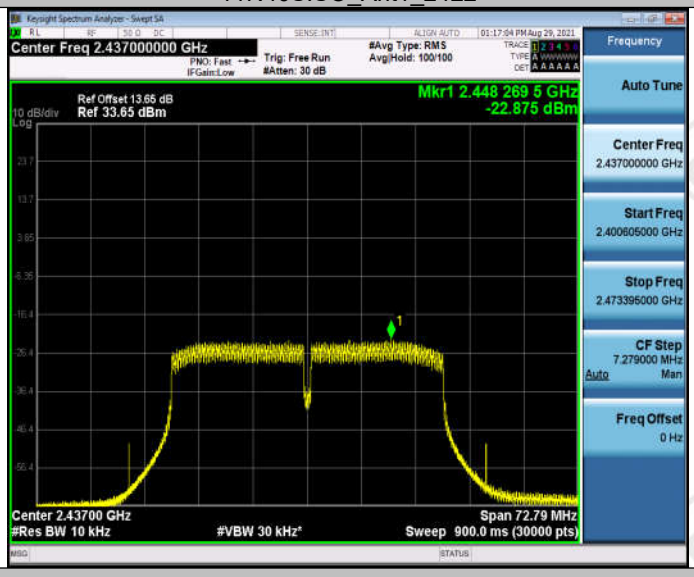
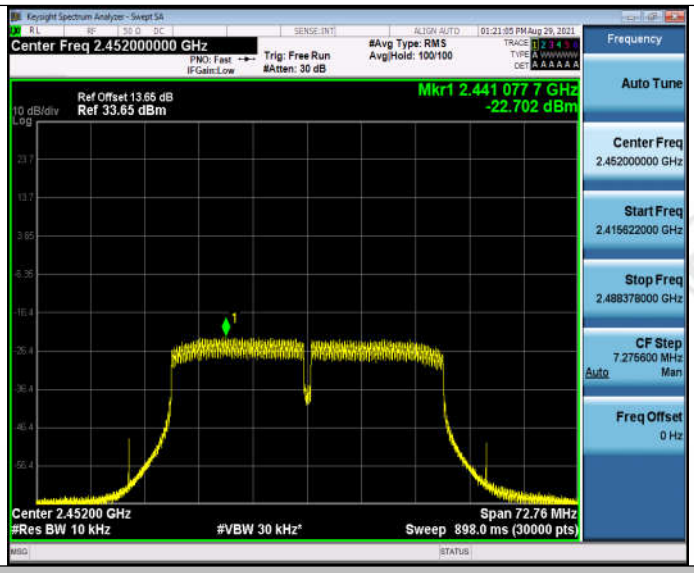


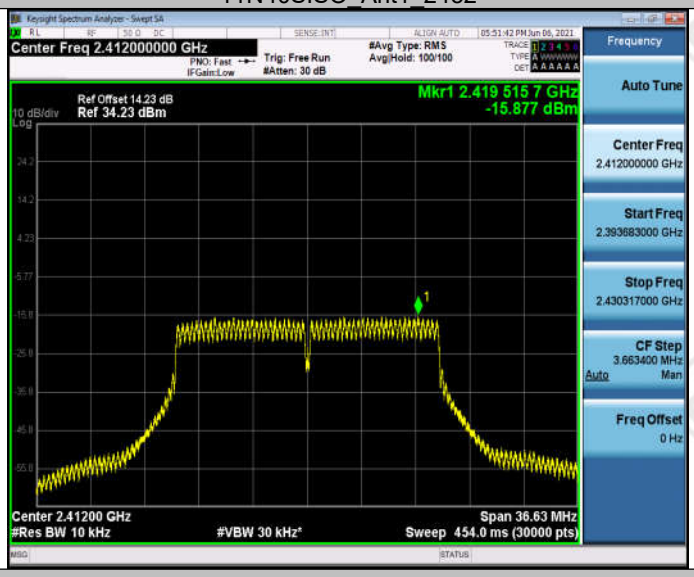
11N40SISO_Ant1_2422



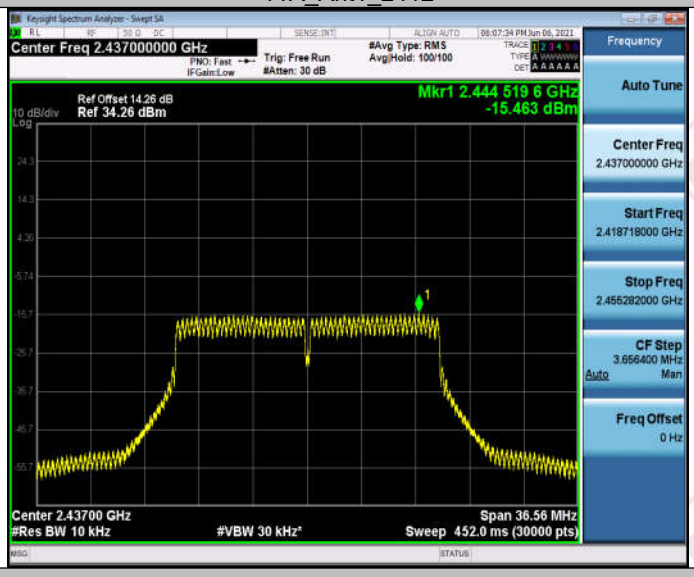
11N40SISO_Ant1_2437



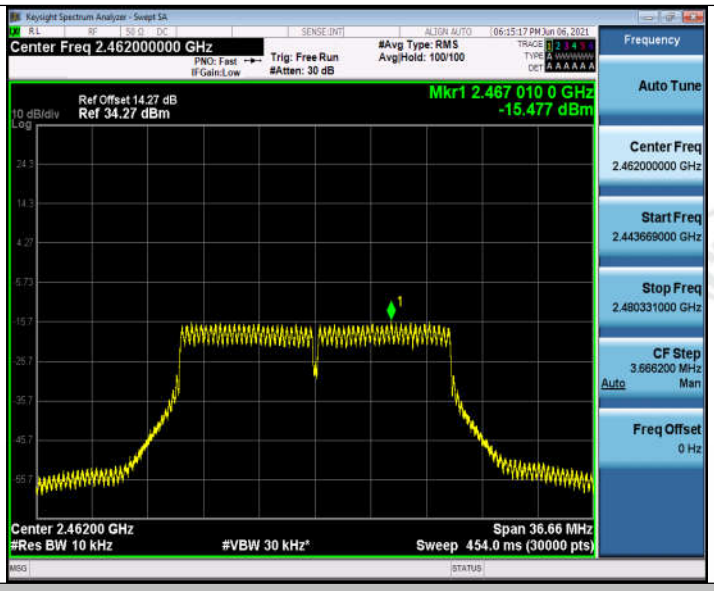
11N40SISO_Ant1_2452



11A_Ant1_2412



11A_Ant1_2437



11A_Ant1_2462

Appendix F): Antenna Requirement

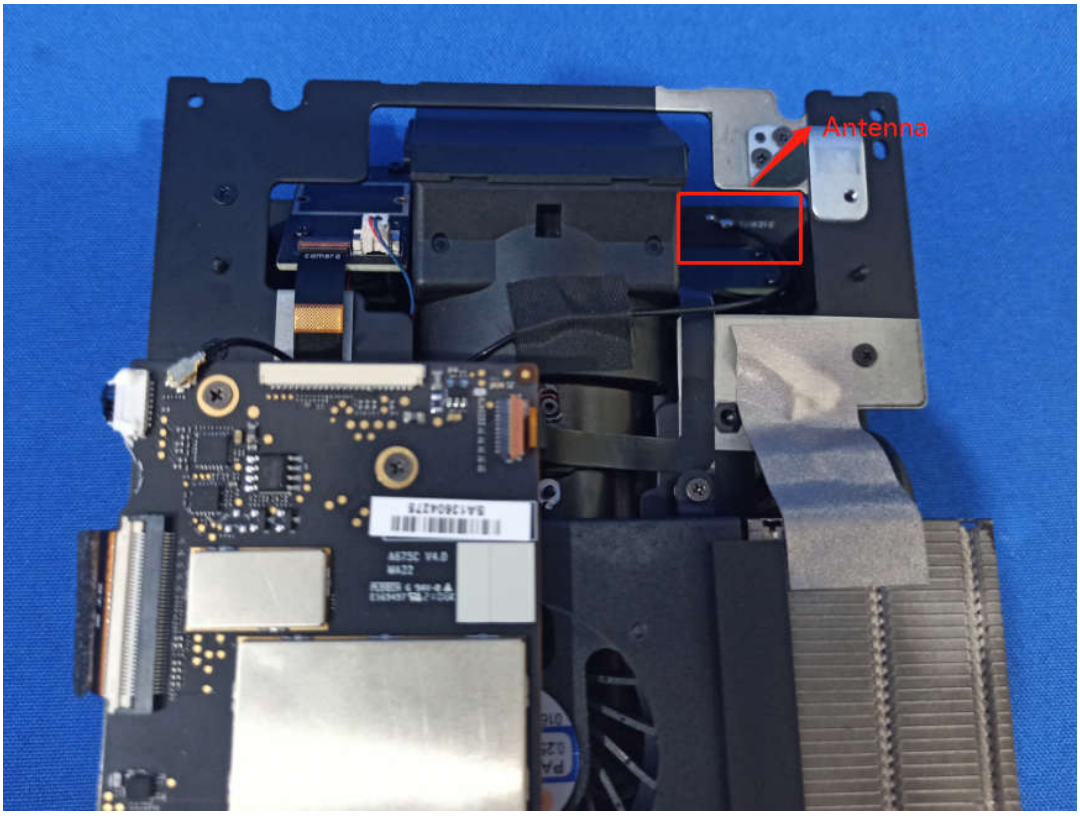
15.203 requirement:

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, 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.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:



The antenna is integrated on the main FPC and no consideration of replacement. The best case gain of the antenna is 3.4 dBi.

Appendix G): AC Power Line Conducted Emission

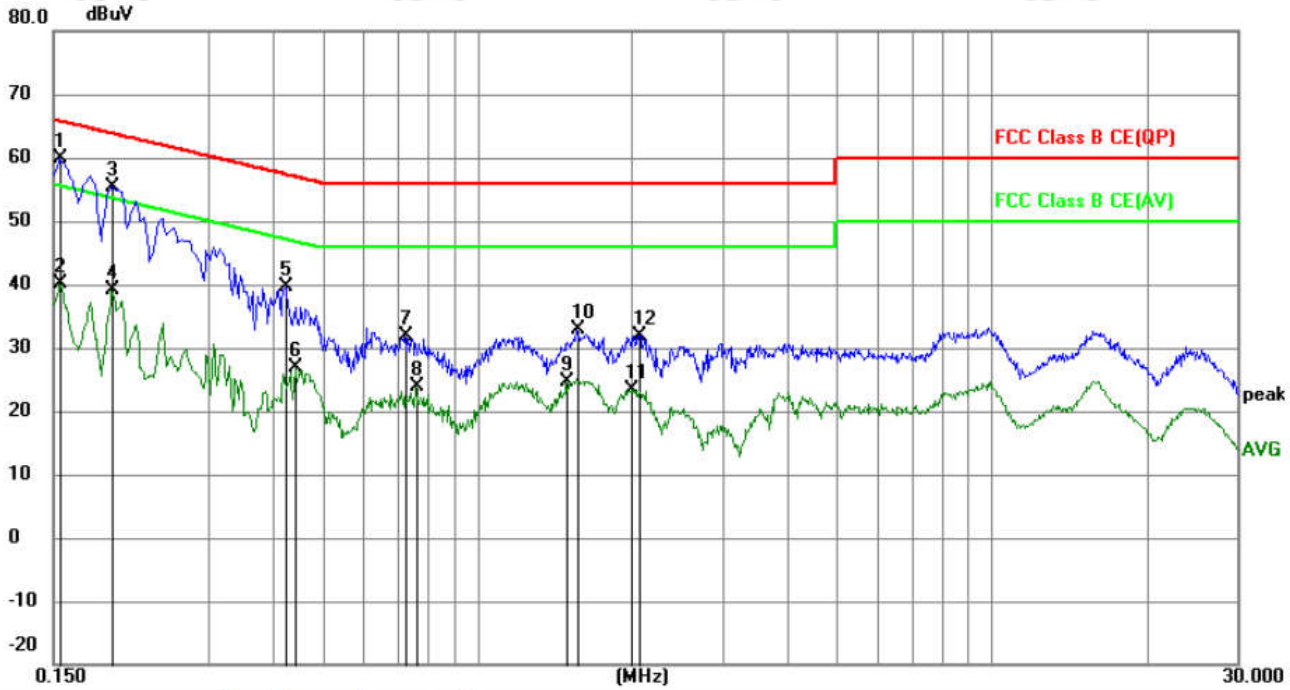
<table>
<tr><td>Test Procedure:</td><td>Test frequency range :150KHz-30MHz
1) The mains terminal disturbance voltage test was conducted in a shielded room.
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBμV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>
* The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.
NOTE : The lower limit is applicable at the transition frequency</td></tr>
</table>

Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

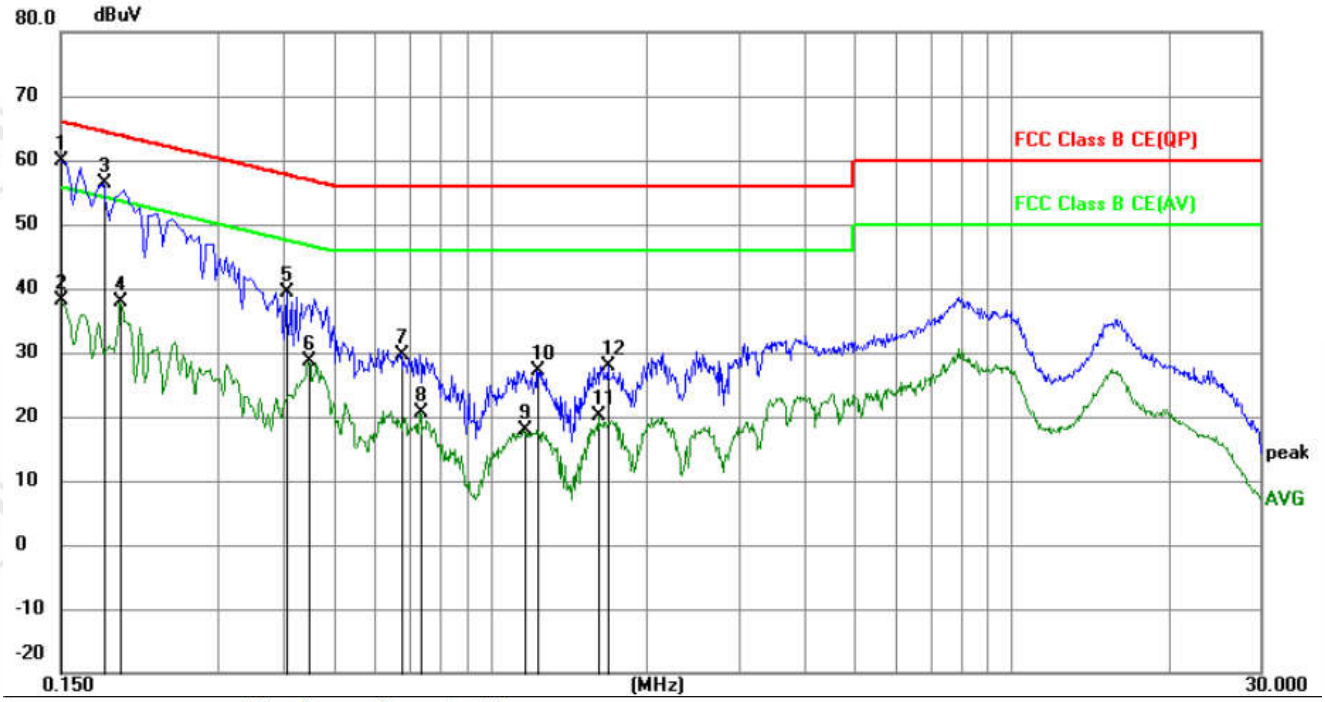
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Live line:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1545	49.92	9.87	59.79	65.75	-5.96	QP	
2		0.1545	30.21	9.87	40.08	55.75	-15.67	AVG	
3		0.1949	45.61	9.87	55.48	63.83	-8.35	QP	
4		0.1949	29.14	9.87	39.01	53.83	-14.82	AVG	
5		0.4245	29.54	9.97	39.51	57.36	-17.85	QP	
6		0.4425	16.95	9.96	26.91	47.01	-20.10	AVG	
7		0.7260	21.92	9.87	31.79	56.00	-24.21	QP	
8		0.7620	14.02	9.86	23.88	46.00	-22.12	AVG	
9		1.4910	14.80	9.81	24.61	46.00	-21.39	AVG	
10		1.5630	22.99	9.81	32.80	56.00	-23.20	QP	
11		1.9950	13.65	9.79	23.44	46.00	-22.56	AVG	
12		2.0625	22.15	9.79	31.94	56.00	-24.06	QP	

Neutral line:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1500	49.98	9.87	59.85	66.00	-6.15	QP	
2		0.1500	28.36	9.87	38.23	56.00	-17.77	AVG	
3		0.1815	46.50	9.87	56.37	64.42	-8.05	QP	
4		0.1949	27.96	9.87	37.83	53.83	-16.00	AVG	
5		0.4065	29.30	9.97	39.27	57.72	-18.45	QP	
6		0.4470	18.66	9.96	28.62	46.93	-18.31	AVG	
7		0.6720	19.82	9.93	29.75	56.00	-26.25	QP	
8		0.7350	10.67	9.87	20.54	46.00	-25.46	AVG	
9		1.1625	8.13	9.82	17.95	46.00	-28.05	AVG	
10		1.2300	17.40	9.82	27.22	56.00	-28.78	QP	
11		1.6170	10.29	9.81	20.10	46.00	-25.90	AVG	
12		1.6890	18.17	9.80	27.97	56.00	-28.03	QP	

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

Appendix H): Restricted bands around fundamental frequency (Radiated)

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Test Procedure:

Below 1GHz test procedure as below:

Test method Refer as KDB 558074 D01

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. 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 antenna height 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 was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel

Above 1GHz test procedure as below:

g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter).
h. Test the EUT in the lowest channel , the Highest channel
i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.
j. Repeat above procedures until all frequencies measured was complete.

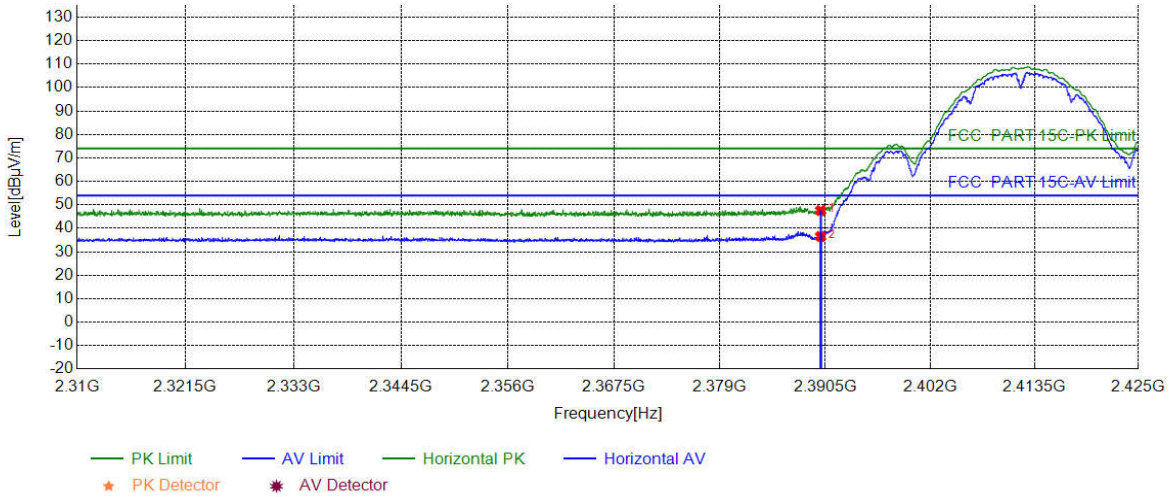
Limit:

Frequency	Limit (dBμV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
	74.0	Peak Value

Test plot as follows:

Mode:	802.11 b(1Mbps) Transmitting	Channel:	2412
Remark:			

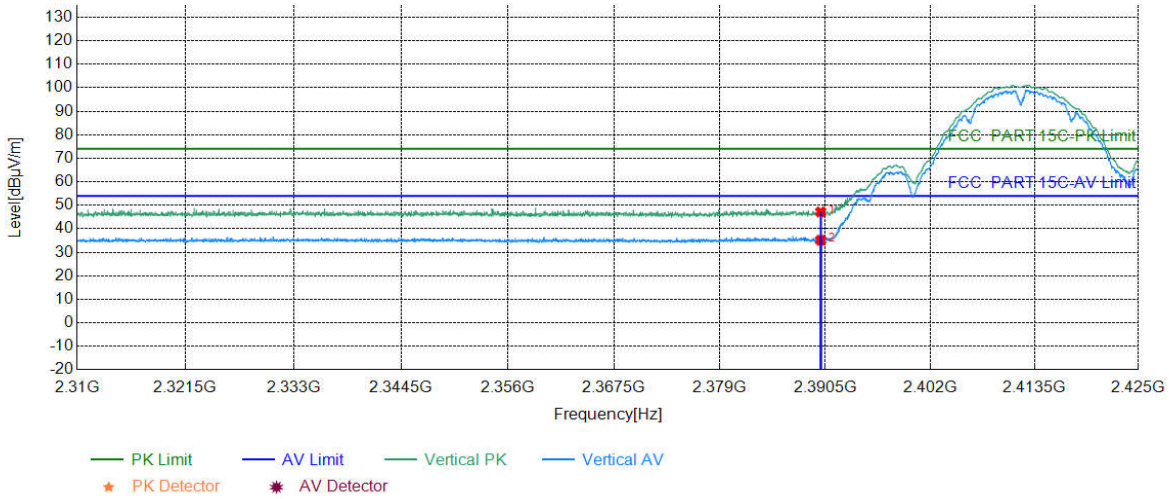
Test Graph



NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	2390.000	5.77	41.79	47.56	74.00	26.44	PASS	Horizontal	PK
2	2390.000	5.77	30.76	36.53	54.00	17.47	PASS	Horizontal	AV

Mode:	802.11 b(1Mbps) Transmitting	Channel:	2412
Remark:			

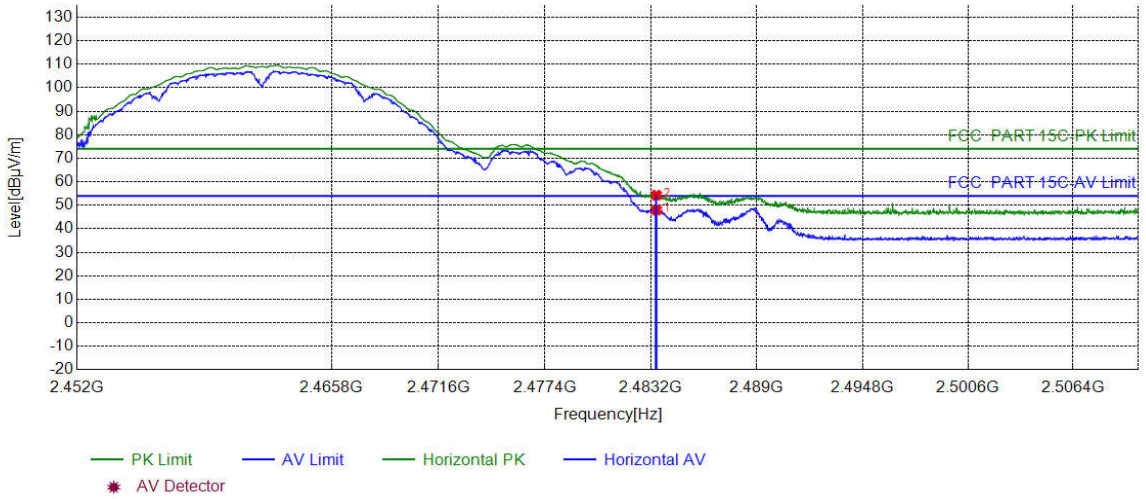
Test Graph



NO	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	2390.00	5.77	41.41	47.18	74.00	26.82	PASS	Vertical	PK
2	2390.00	5.77	29.38	35.15	54.00	18.85	PASS	Vertical	AV

Mode:	802.11 b(1Mbps) Transmitting	Channel:	2462
Remark:			

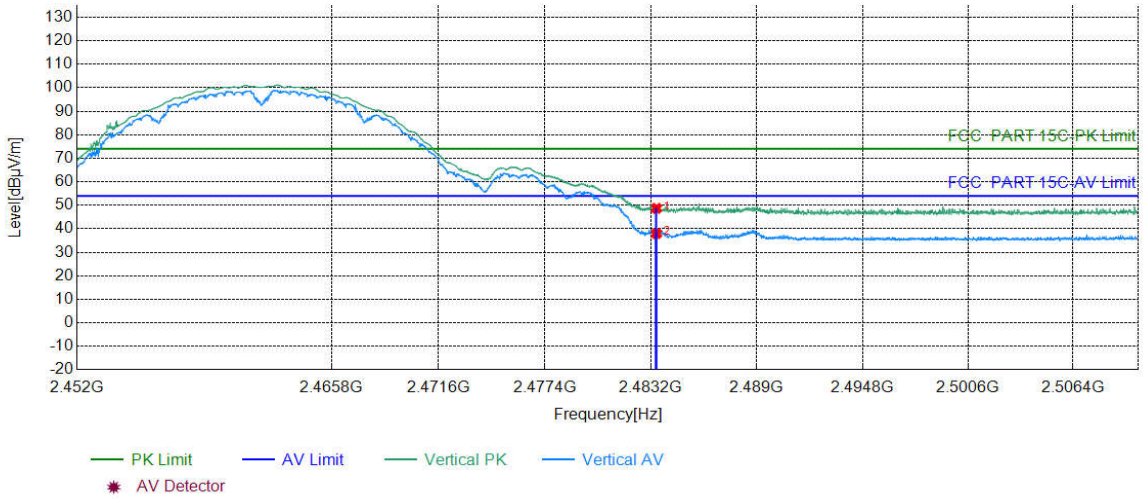
Test Graph



NO	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	2483.50	6.57	41.43	48.00	54.00	6.00	PASS	Horizontal	AV
2	2483.50	6.57	47.74	54.31	74.00	19.69	PASS	Horizontal	PK

Mode:	802.11 b(1Mbps) Transmitting	Channel:	2462
Remark:			

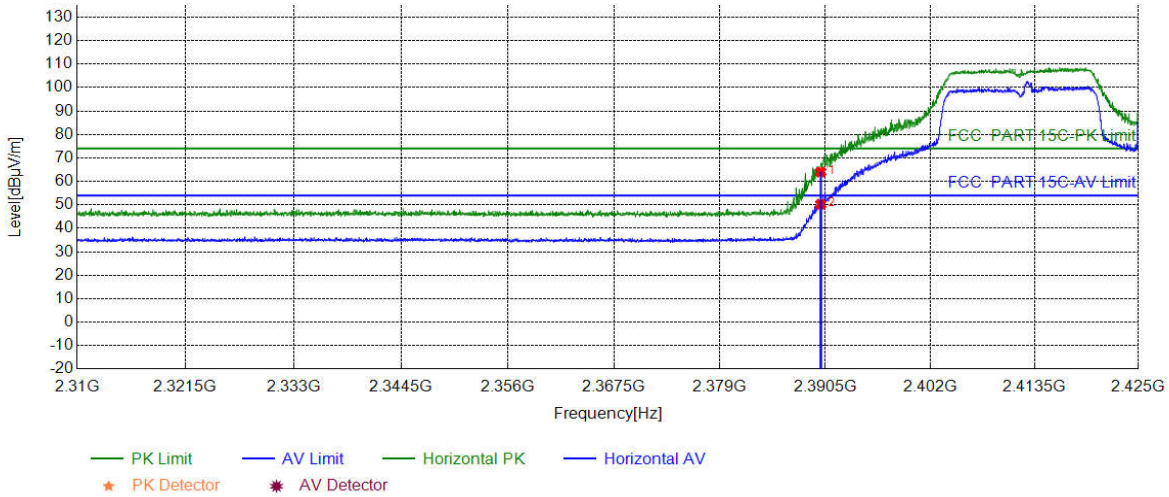
Test Graph



NO	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	2483.50	6.57	42.13	48.70	74.00	25.30	PASS	Vertical	PK
2	2483.50	6.57	31.41	37.98	54.00	16.02	PASS	Vertical	AV

Mode:	802.11 g(6Mbps) Transmitting	Channel:	2412
Remark:			

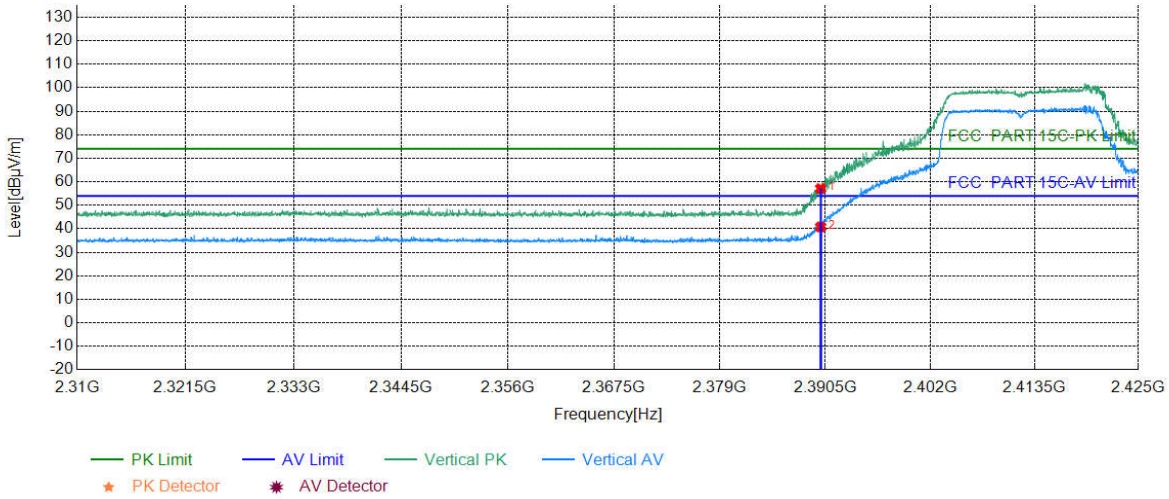
Test Graph



NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	2390.00	5.77	58.24	64.01	74.00	9.99	PASS	Horizontal	PK
2	2390.00	5.77	44.49	50.26	54.00	3.74	PASS	Horizontal	AV

Mode:	802.11 g(6Mbps) Transmitting	Channel:	2412
Remark:			

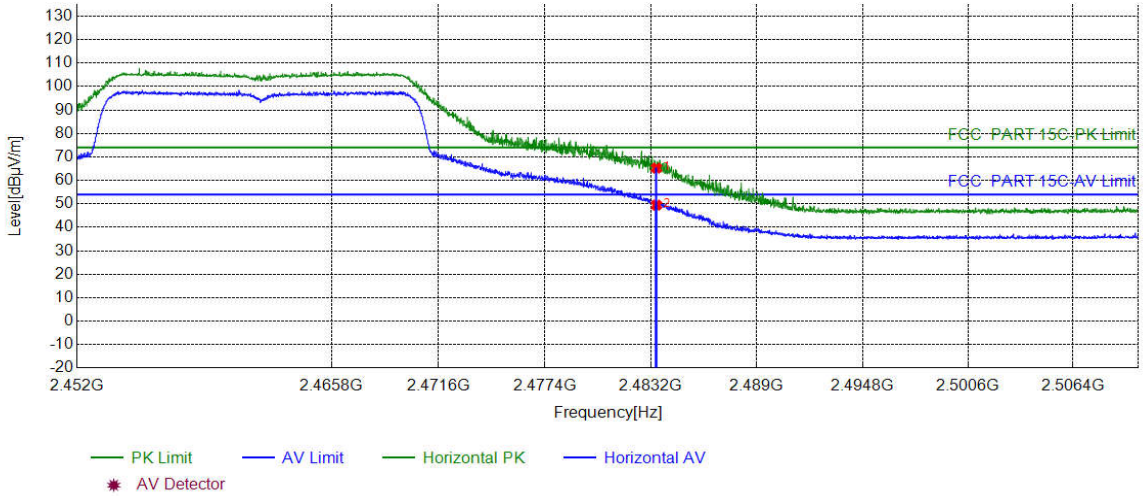
Test Graph



NO	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	2390.00	5.77	51.34	57.11	74.00	16.89	PASS	Vertical	PK
2	2390.00	5.77	35.04	40.81	54.00	13.19	PASS	Vertical	AV

Mode:	802.11 g(6Mbps) Transmitting	Channel:	2462
Remark:			

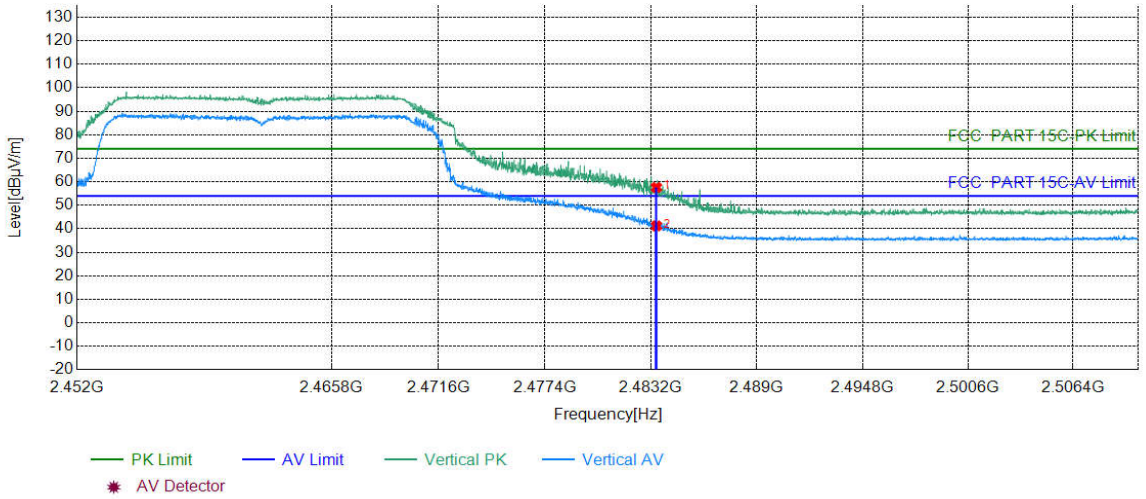
Test Graph



NO	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	2483.50	6.57	58.66	65.23	74.00	8.77	PASS	Horizontal	PK
2	2483.50	6.57	42.90	49.47	54.00	4.53	PASS	Horizontal	AV

Mode:	802.11 g(6Mbps) Transmitting	Channel:	2462
Remark:			

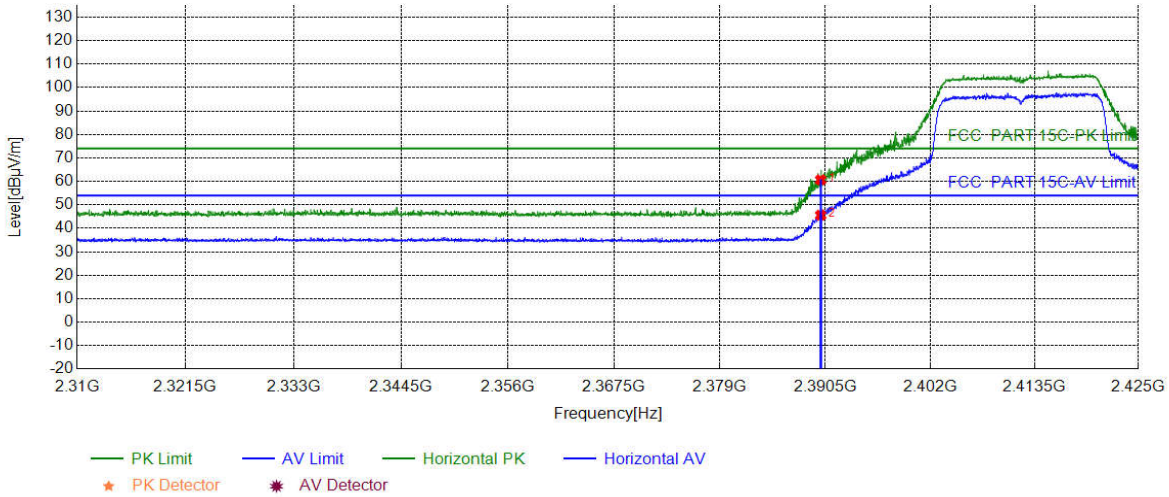
Test Graph



NO	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	2483.50	6.57	51.01	57.58	74.00	16.42	PASS	Vertical	PK
2	2483.50	6.57	34.68	41.25	54.00	12.75	PASS	Vertical	AV

Mode:	802.11 n(HT20) (6.5Mbps) Transmitting	Channel:	2412
Remark:			

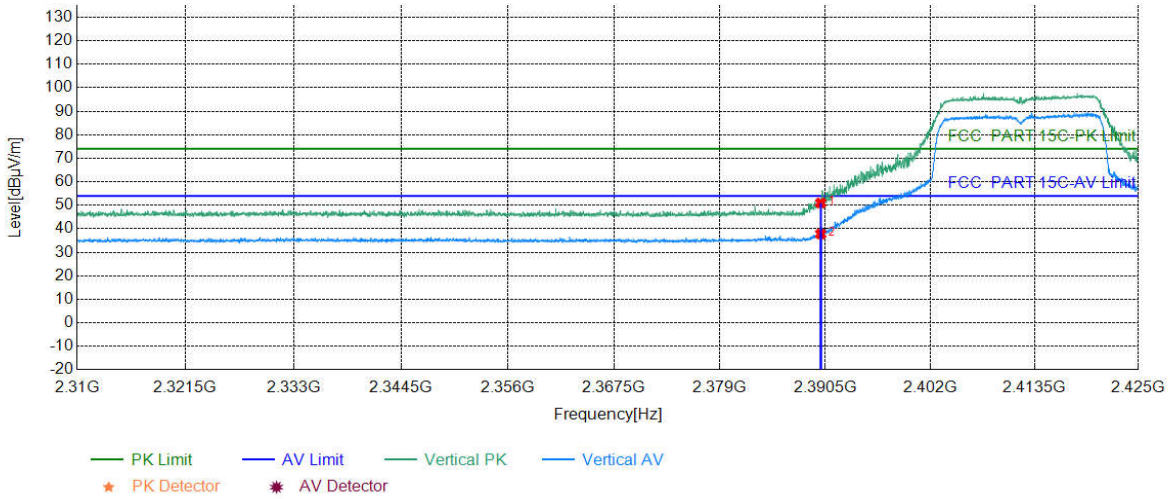
Test Graph



NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	2390.00	5.77	54.89	60.66	74.00	13.34	PASS	Horizontal	PK
2	2390.00	5.77	39.83	45.60	54.00	8.40	PASS	Horizontal	AV

Mode:	802.11 n(HT20) (6.5Mbps) Transmitting	Channel:	2412
Remark:			

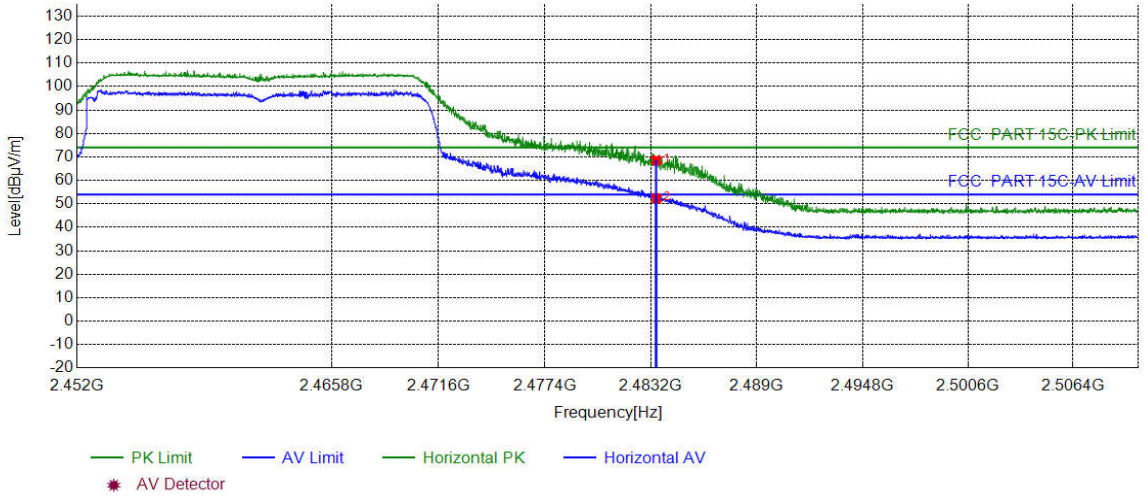
Test Graph



NO	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	2390.00	5.77	45.22	50.99	74.00	23.01	PASS	Vertical	PK
2	2390.00	5.77	32.03	37.80	54.00	16.20	PASS	Vertical	AV

Mode:	802.11 n(HT20) (6.5Mbps) Transmitting	Channel:	2462
Remark:			

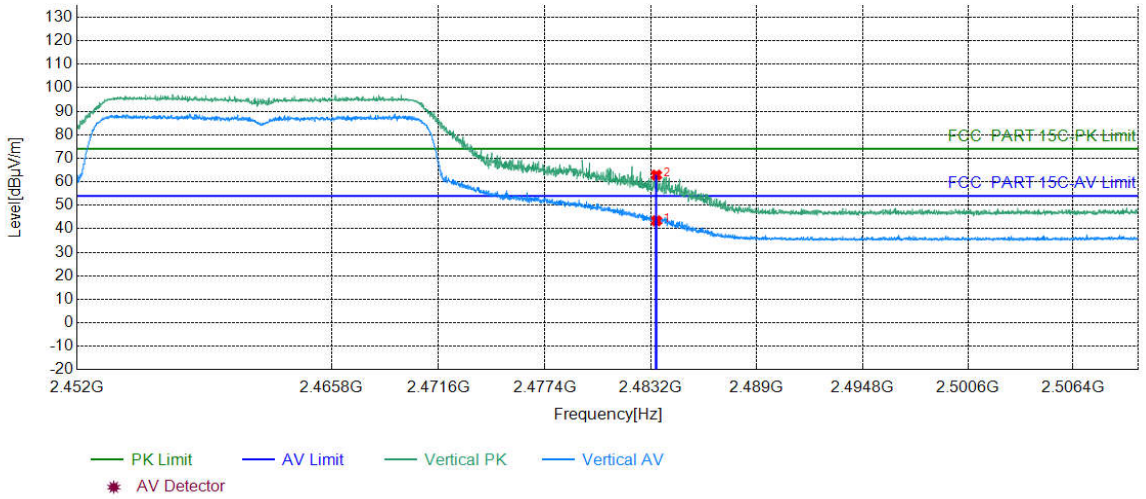
Test Graph



NO	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	2483.50	6.57	61.94	68.51	74.00	5.49	PASS	Horizontal	PK
2	2483.50	6.57	45.73	52.30	54.00	1.70	PASS	Horizontal	AV

Mode:	802.11 n(HT20) (6.5Mbps) Transmitting	Channel:	2462
Remark:			

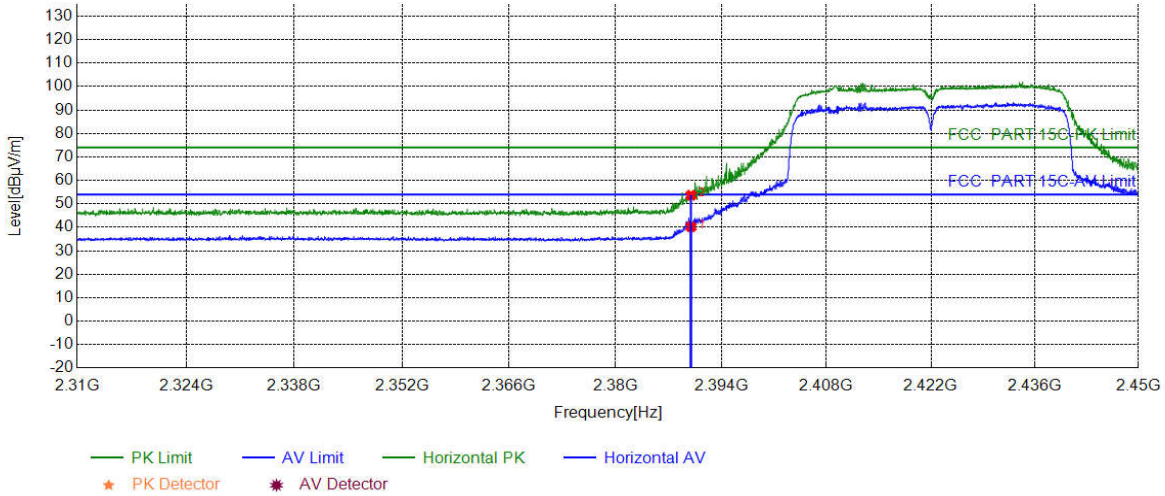
Test Graph



NO	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	2483.50	6.57	36.85	43.42	54.00	10.58	PASS	Vertical	AV
2	2483.50	6.57	56.31	62.88	74.00	11.12	PASS	Vertical	PK

Mode:	802.11 n(HT40) (13.5Mbps) Transmitting	Channel:	2422
Remark:			

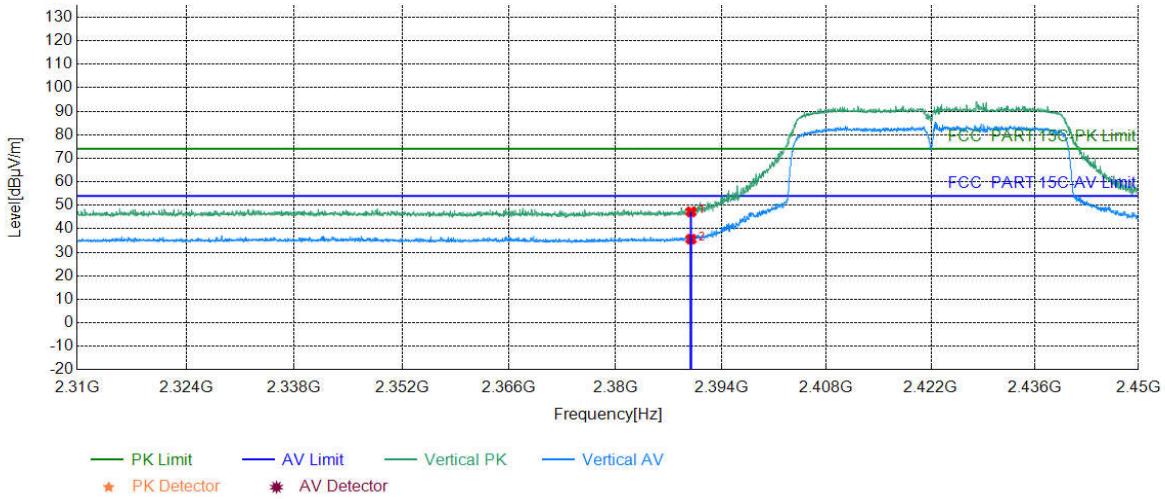
Test Graph



NO	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	2390.00	5.77	34.45	40.22	54.00	13.78	PASS	Horizontal	AV
2	2390.00	5.77	47.91	53.68	74.00	20.32	PASS	Horizontal	PK

Mode:	802.11 n(HT40) (13.5Mbps) Transmitting	Channel:	2422
Remark:			

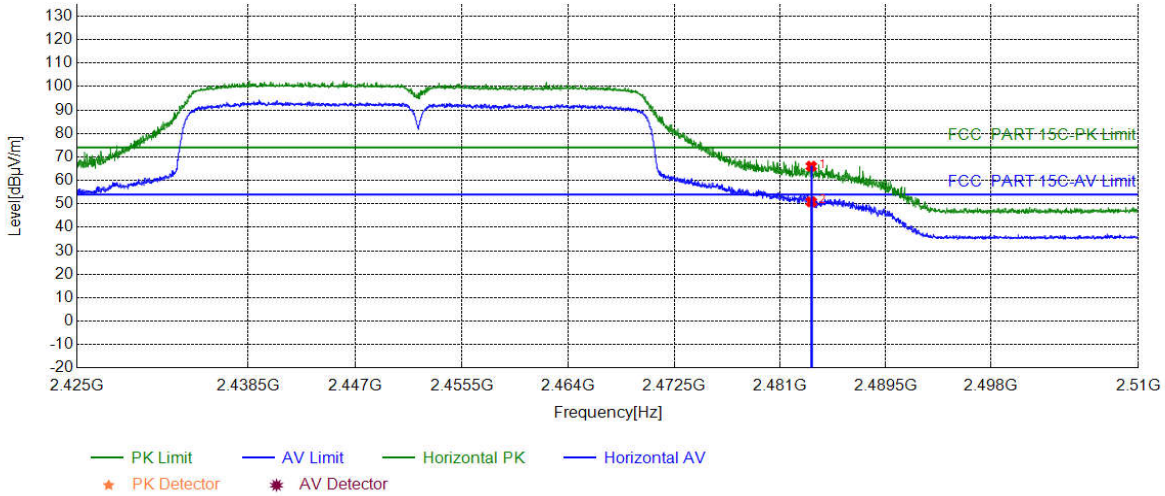
Test Graph



NO	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	2390.00	5.77	41.45	47.22	74.00	26.78	PASS	Vertical	PK
2	2390.00	5.77	29.83	35.60	54.00	18.40	PASS	Vertical	AV

Mode:	802.11 n(HT40) (13.5Mbps) Transmitting	Channel:	2452
Remark:			

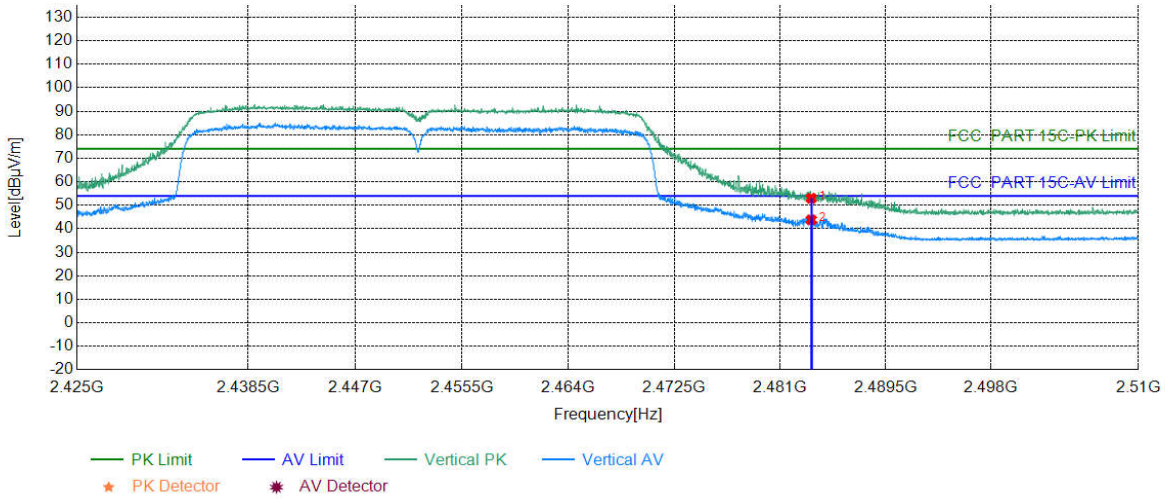
Test Graph



NO	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	2483.50	6.57	59.46	66.03	74.00	7.97	PASS	Horizontal	PK
2	2483.50	6.57	44.28	50.85	54.00	3.15	PASS	Horizontal	AV

Mode:	802.11 n(HT40) (13.5Mbps) Transmitting	Channel:	2452
Remark:			

Test Graph



NO	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	2483.50	6.57	46.42	52.99	74.00	21.01	PASS	Vertical	PK
2	2483.50	6.57	37.25	43.82	54.00	10.18	PASS	Vertical	AV

Note:

1) Through Pre-scan transmitting mode and charge+transmitter mode with all kind of modulation and data rate, find the 11Mbps of rate is the worst case of 802.11b; 6Mbpsof rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) ; 13.5Mbps of rate is the worst case of 802.11n(HT40),and then Only the worst case is recorded in the report.

2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

Appendix I): Radiated Spurious Emissions

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Test Procedure:

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. 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 antenna height 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter).
h. Test the EUT in the lowest channel, the middle channel ,the Highest channel .
i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.
j. Repeat above procedures until all frequencies measured was complete.

Limit:

Frequency	Field strength (microvolt/meter)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3

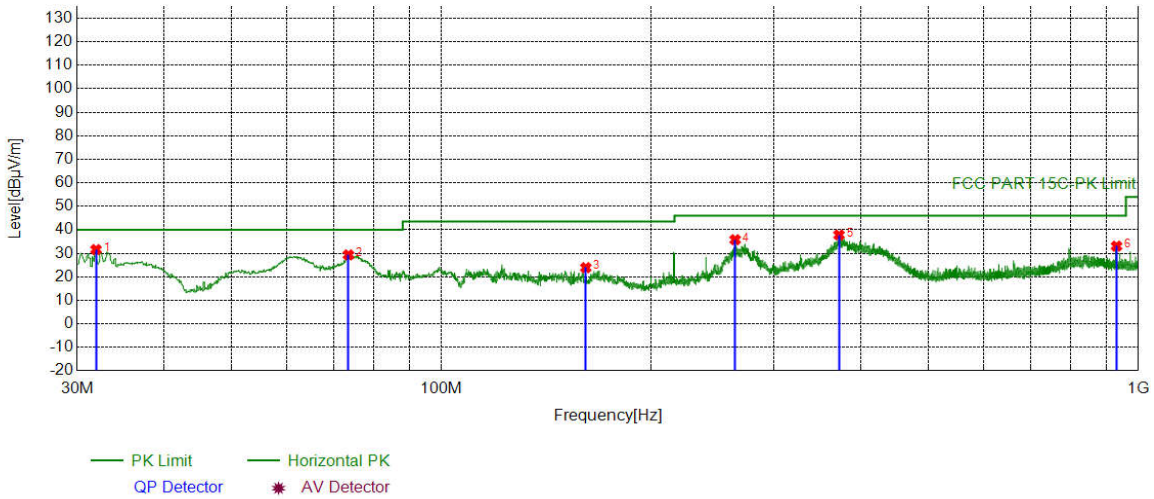
Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

Radiated Spurious Emissions test Data:

Radiated Emission below 1GHz

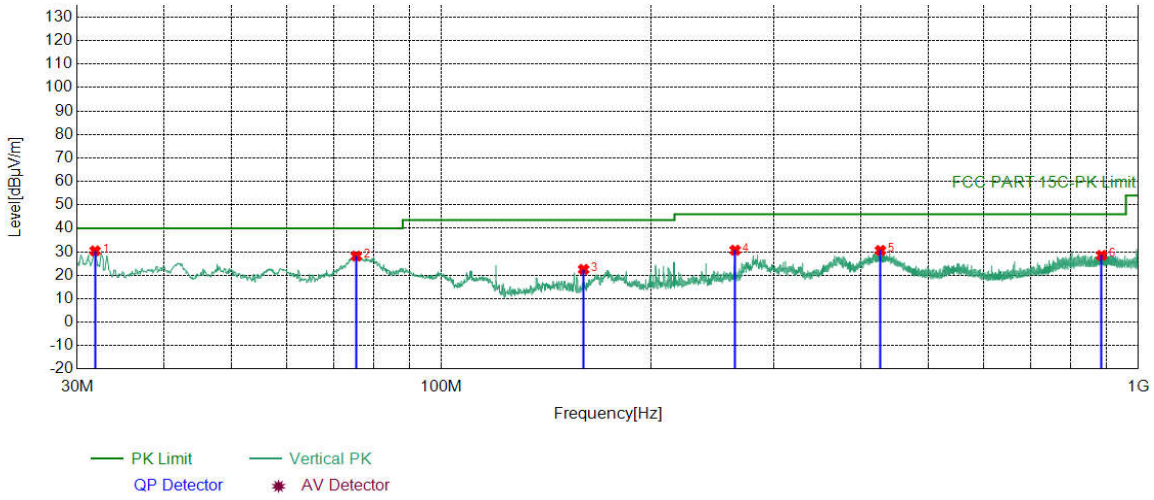
During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, 802.11b Channel 2412MHz was selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Mode:	802.11 b Transmitting	Channel:	2412
Remark:			



NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	31.9402	-19.71	51.30	31.59	40.00	8.41	PASS	Horizontal	PK
2	73.5574	-21.43	50.76	29.33	40.00	10.67	PASS	Horizontal	PK
3	161.1571	-21.07	44.96	23.89	43.50	19.61	PASS	Horizontal	PK
4	263.9874	-16.27	52.06	35.79	46.00	10.21	PASS	Horizontal	PK
5	372.0562	-13.51	51.31	37.80	46.00	8.20	PASS	Horizontal	PK
6	930.8321	-4.67	37.72	33.05	46.00	12.95	PASS	Horizontal	PK

Mode:	802.11 b Transmitting	Channel:	2412
Remark:			



NO	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	31.8432	-19.72	50.10	30.38	40.00	9.62	PASS	Vertical	PK
2	75.4976	-21.77	49.93	28.16	40.00	11.84	PASS	Vertical	PK
3	159.9930	-21.15	43.65	22.50	43.50	21.00	PASS	Vertical	PK
4	263.9874	-16.27	46.94	30.67	46.00	15.33	PASS	Vertical	PK
5	426.5757	-12.36	42.92	30.56	46.00	15.44	PASS	Vertical	PK
6	885.9166	-5.13	33.58	28.45	46.00	17.55	PASS	Vertical	PK

Transmitter Emission above 1GHz

Mode:	802.11 b Transmitting				Channel:		2412		
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1033.2033	0.92	45.43	46.35	74.00	27.65	PASS	Horizonta	PK
2	1982.6983	4.46	41.13	45.59	74.00	28.41	PASS	Horizonta	PK
3	4824.1216	-16.22	62.03	45.81	74.00	28.19	PASS	Horizonta	PK
4	7428.2952	-11.39	54.50	43.11	74.00	30.89	PASS	Horizonta	PK
5	9647.4432	-7.52	56.08	48.56	74.00	25.44	PASS	Horizonta	PK
6	13673.7116	-1.73	50.00	48.27	74.00	25.73	PASS	Horizonta	PK
7	1328.8329	1.16	45.72	46.88	74.00	27.12	PASS	Vertical	PK
8	1992.4993	4.51	43.46	47.97	74.00	26.03	PASS	Vertical	PK
9	3329.0219	-19.92	60.84	40.92	74.00	33.08	PASS	Vertical	PK
10	5312.1541	-14.78	62.13	47.35	74.00	26.65	PASS	Vertical	PK
11	9647.4432	-7.52	53.41	45.89	74.00	28.11	PASS	Vertical	PK
12	11999.6000	-5.25	54.20	48.95	74.00	25.05	PASS	Vertical	PK

Mode:	802.11 b Transmitting				Channel:		2437		
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1080.6081	0.87	43.58	44.45	74.00	29.55	PASS	Horizonta	PK
2	1992.8993	4.51	42.35	46.86	74.00	27.14	PASS	Horizonta	PK
3	4265.0843	-17.51	56.35	38.84	74.00	35.16	PASS	Horizonta	PK
4	7313.2876	-11.67	55.87	44.20	74.00	29.80	PASS	Horizonta	PK
5	9748.4499	-7.55	54.84	47.29	74.00	26.71	PASS	Horizonta	PK
6	12599.6400	-4.11	52.19	48.08	74.00	25.92	PASS	Horizonta	PK
7	1250.2250	0.93	43.17	44.10	74.00	29.90	PASS	Vertical	PK
8	1997.6998	4.54	42.35	46.89	74.00	27.11	PASS	Vertical	PK
9	3322.0215	-19.89	61.68	41.79	74.00	32.21	PASS	Vertical	PK
10	5310.1540	-14.78	62.64	47.86	74.00	26.14	PASS	Vertical	PK
11	9747.4498	-7.55	54.51	46.96	74.00	27.04	PASS	Vertical	PK
12	14385.7591	0.98	48.78	49.76	74.00	24.24	PASS	Vertical	PK

Mode:	802.11 b Transmitting				Channel:		2462		
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1080.2080	0.87	45.08	45.95	74.00	28.05	PASS	Horizonta	PK
2	2028.5029	4.64	41.07	45.71	74.00	28.29	PASS	Horizonta	PK
3	3328.0219	-19.91	57.84	37.93	74.00	36.07	PASS	Horizonta	PK
4	5652.1768	-14.09	54.35	40.26	74.00	33.74	PASS	Horizonta	PK
5	7807.3205	-11.35	53.51	42.16	74.00	31.84	PASS	Horizonta	PK
6	12506.6338	-4.78	52.86	48.08	74.00	25.92	PASS	Horizonta	PK
7	1074.0074	0.88	43.18	44.06	74.00	29.94	PASS	Vertical	PK
8	1997.0997	4.53	42.00	46.53	74.00	27.47	PASS	Vertical	PK
9	3329.0219	-19.92	62.23	42.31	74.00	31.69	PASS	Vertical	PK
10	5328.1552	-14.73	65.13	50.40	74.00	23.60	PASS	Vertical	PK
11	8716.3811	-10.03	54.93	44.90	74.00	29.10	PASS	Vertical	PK
12	11959.5973	-5.48	53.87	48.39	74.00	25.61	PASS	Vertical	PK

Mode:	802.11 g Transmitting				Channel:		2412		
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1062.8063	0.89	43.70	44.59	74.00	29.41	PASS	Horizonta	PK
2	1746.6747	3.10	41.76	44.86	74.00	29.14	PASS	Horizonta	PK
3	3762.0508	-19.50	58.60	39.10	74.00	34.90	PASS	Horizonta	PK
4	4823.1215	-16.22	57.34	41.12	74.00	32.88	PASS	Horizonta	PK
5	7819.3213	-11.29	54.12	42.83	74.00	31.17	PASS	Horizonta	PK
6	12490.6327	-4.82	54.81	49.99	74.00	24.01	PASS	Horizonta	PK
7	1063.6064	0.89	45.82	46.71	74.00	27.29	PASS	Vertical	PK
8	1705.8706	2.96	41.30	44.26	74.00	29.74	PASS	Vertical	PK
9	3986.0657	-18.92	60.37	41.45	74.00	32.55	PASS	Vertical	PK
10	6000.2000	-12.96	62.88	49.92	74.00	24.08	PASS	Vertical	PK
11	9312.4208	-7.95	52.67	44.72	74.00	29.28	PASS	Vertical	PK
12	12000.6000	-5.25	55.00	49.75	74.00	24.25	PASS	Vertical	PK

Mode:	802.11 g Transmitting				Channel:		2437		
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1064.8065	0.89	44.85	45.74	74.00	28.26	PASS	Horizonta	PK
2	1905.0905	4.06	40.49	44.55	74.00	29.45	PASS	Horizonta	PK
3	3990.0660	-18.91	60.17	41.26	74.00	32.74	PASS	Horizonta	PK
4	5976.1984	-13.11	56.83	43.72	74.00	30.28	PASS	Horizonta	PK
5	8943.3962	-8.89	53.46	44.57	74.00	29.43	PASS	Horizonta	PK
6	14396.7598	1.17	48.06	49.23	74.00	24.77	PASS	Horizonta	PK
7	1278.4278	1.00	42.56	43.56	74.00	30.44	PASS	Vertical	PK
8	1998.0998	4.54	43.16	47.70	74.00	26.30	PASS	Vertical	PK
9	3332.0221	-19.93	62.17	42.24	74.00	31.76	PASS	Vertical	PK
10	6000.2000	-12.96	61.65	48.69	74.00	25.31	PASS	Vertical	PK
11	7342.2895	-11.61	59.61	48.00	74.00	26.00	PASS	Vertical	PK
12	11999.6000	-5.25	54.55	49.30	74.00	24.70	PASS	Vertical	PK

Mode:	802.11 g Transmitting				Channel:		2462		
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1084.0084	0.87	44.08	44.95	74.00	29.05	PASS	Horizonta	PK
2	1776.0776	3.20	41.62	44.82	74.00	29.18	PASS	Horizonta	PK
3	4839.1226	-16.22	56.01	39.79	74.00	34.21	PASS	Horizonta	PK
4	7135.2757	-11.67	53.93	42.26	74.00	31.74	PASS	Horizonta	PK
5	9848.4566	-7.23	53.23	46.00	74.00	28.00	PASS	Horizonta	PK
6	14400.7601	1.21	49.08	50.29	74.00	23.71	PASS	Horizonta	PK
7	1333.2333	1.17	46.36	47.53	74.00	26.47	PASS	Vertical	PK
8	1991.8992	4.51	42.23	46.74	74.00	27.26	PASS	Vertical	PK
9	3827.0551	-19.20	60.01	40.81	74.00	33.19	PASS	Vertical	PK
10	6000.2000	-12.96	62.74	49.78	74.00	24.22	PASS	Vertical	PK
11	9847.4565	-7.23	55.16	47.93	74.00	26.07	PASS	Vertical	PK
12	12000.6000	-5.25	54.83	49.58	74.00	24.42	PASS	Vertical	PK

Mode:	802.11 n(HT20) Transmitting				Channel:		2412		
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1073.0073	0.88	43.83	44.71	74.00	29.29	PASS	Horizonta	PK
2	1578.0578	2.11	41.77	43.88	74.00	30.12	PASS	Horizonta	PK
3	4513.1009	-16.92	57.12	40.20	74.00	33.80	PASS	Horizonta	PK
4	6702.2468	-12.48	54.64	42.16	74.00	31.84	PASS	Horizonta	PK
5	10327.4885	-6.41	52.33	45.92	74.00	28.08	PASS	Horizonta	PK
6	14473.7649	0.17	48.71	48.88	74.00	25.12	PASS	Horizonta	PK
7	1074.8075	0.88	43.93	44.81	74.00	29.19	PASS	Vertical	PK
8	1331.2331	1.16	46.00	47.16	74.00	26.84	PASS	Vertical	PK
9	3994.0663	-18.90	59.75	40.85	74.00	33.15	PASS	Vertical	PK
10	5313.1542	-14.77	62.30	47.53	74.00	26.47	PASS	Vertical	PK
11	6000.2000	-12.96	61.82	48.86	74.00	25.14	PASS	Vertical	PK
12	12000.6000	-5.25	54.43	49.18	74.00	24.82	PASS	Vertical	PK

Mode:	802.11 n(HT20) Transmitting				Channel:		2437		
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1033.2033	0.92	44.95	45.87	74.00	28.13	PASS	Horizonta	PK
2	1692.8693	2.89	41.18	44.07	74.00	29.93	PASS	Horizonta	PK
3	4032.0688	-18.67	57.85	39.18	74.00	34.82	PASS	Horizonta	PK
4	5764.1843	-13.70	55.96	42.26	74.00	31.74	PASS	Horizonta	PK
5	7416.2944	-11.44	54.16	42.72	74.00	31.28	PASS	Horizonta	PK
6	11345.5564	-6.40	53.43	47.03	74.00	26.97	PASS	Horizonta	PK
7	1330.6331	1.16	43.44	44.60	74.00	29.40	PASS	Vertical	PK
8	3323.0215	-19.89	63.35	43.46	74.00	30.54	PASS	Vertical	PK
9	5333.1555	-14.72	62.46	47.74	74.00	26.26	PASS	Vertical	PK
10	6657.2438	-12.63	58.69	46.06	74.00	27.94	PASS	Vertical	PK
11	8794.3863	-9.50	53.59	44.09	74.00	29.91	PASS	Vertical	PK
12	11999.6000	-5.25	53.81	48.56	74.00	25.44	PASS	Vertical	PK

Mode:	802.11 n(HT20) Transmitting				Channel:		2462		
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1063.8064	0.89	44.10	44.99	74.00	29.01	PASS	Horizonta	PK
2	1766.2766	3.17	41.23	44.40	74.00	29.60	PASS	Horizonta	PK
3	3762.0508	-19.50	58.24	38.74	74.00	35.26	PASS	Horizonta	PK
4	5308.1539	-14.79	58.41	43.62	74.00	30.38	PASS	Horizonta	PK
5	7381.2921	-11.54	54.71	43.17	74.00	30.83	PASS	Horizonta	PK
6	9847.4565	-7.23	53.78	46.55	74.00	27.45	PASS	Horizonta	PK
7	1052.6053	0.90	44.73	45.63	74.00	28.37	PASS	Vertical	PK
8	1664.6665	2.71	41.94	44.65	74.00	29.35	PASS	Vertical	PK
9	3324.0216	-19.90	62.61	42.71	74.00	31.29	PASS	Vertical	PK
10	5337.1558	-14.71	55.88	41.17	74.00	32.83	PASS	Vertical	PK
11	6659.2440	-12.62	58.17	45.55	74.00	28.45	PASS	Vertical	PK
12	12000.6000	-5.25	54.47	49.22	74.00	24.78	PASS	Vertical	PK

Mode:	802.11 n(HT40) Transmitting				Channel:		2422		
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1032.0032	0.92	45.97	46.89	74.00	27.11	PASS	Horizonta	PK
2	2134.9135	4.50	41.44	45.94	74.00	28.06	PASS	Horizonta	PK
3	3793.0529	-19.29	57.40	38.11	74.00	35.89	PASS	Horizonta	PK
4	6000.2000	-12.96	55.12	42.16	74.00	31.84	PASS	Horizonta	PK
5	9221.4148	-7.89	53.05	45.16	74.00	28.84	PASS	Horizonta	PK
6	13427.6952	-2.79	51.53	48.74	74.00	25.26	PASS	Horizonta	PK
7	1328.2328	1.15	45.80	46.95	74.00	27.05	PASS	Vertical	PK
8	1998.2998	4.54	43.61	48.15	74.00	25.85	PASS	Vertical	PK
9	3860.0573	-19.16	59.37	40.21	74.00	33.79	PASS	Vertical	PK
10	5319.1546	-14.76	63.58	48.82	74.00	25.18	PASS	Vertical	PK
11	9290.4194	-7.94	52.69	44.75	74.00	29.25	PASS	Vertical	PK
12	11999.6000	-5.25	55.04	49.79	74.00	24.21	PASS	Vertical	PK

Mode:	802.11 n(HT40) Transmitting				Channel:		2437		
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1043.6044	0.91	44.94	45.85	74.00	28.15	PASS	Horizonta	PK
2	1616.0616	2.39	41.45	43.84	74.00	30.16	PASS	Horizonta	PK
3	3990.0660	-18.91	58.08	39.17	74.00	34.83	PASS	Horizonta	PK
4	6646.2431	-12.67	56.40	43.73	74.00	30.27	PASS	Horizonta	PK
5	9236.4158	-7.91	52.38	44.47	74.00	29.53	PASS	Horizonta	PK
6	13852.7235	-1.81	51.63	49.82	74.00	24.18	PASS	Horizonta	PK
7	1328.0328	1.15	43.97	45.12	74.00	28.88	PASS	Vertical	PK
8	1661.2661	2.69	42.88	45.57	74.00	28.43	PASS	Vertical	PK
9	3811.0541	-19.22	59.47	40.25	74.00	33.75	PASS	Vertical	PK
10	5325.1550	-14.74	63.90	49.16	74.00	24.84	PASS	Vertical	PK
11	8399.3600	-11.00	53.59	42.59	74.00	31.41	PASS	Vertical	PK
12	12599.6400	-4.11	53.12	49.01	74.00	24.99	PASS	Vertical	PK

Mode:	802.11 n(HT40) Transmitting				Channel:		2437		
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1072.8073	0.88	43.46	44.34	74.00	29.66	PASS	Horizonta	PK
2	1987.0987	4.48	41.17	45.65	74.00	28.35	PASS	Horizonta	PK
3	3776.0517	-19.40	57.74	38.34	74.00	35.66	PASS	Horizonta	PK
4	5806.1871	-13.57	54.70	41.13	74.00	32.87	PASS	Horizonta	PK
5	8059.3373	-11.03	53.18	42.15	74.00	31.85	PASS	Horizonta	PK
6	12409.6273	-4.70	52.42	47.72	74.00	26.28	PASS	Horizonta	PK
7	1064.6065	0.89	49.22	50.11	74.00	23.89	PASS	Vertical	PK
8	1995.6996	4.53	43.40	47.93	74.00	26.07	PASS	Vertical	PK
9	3333.0222	-19.93	60.84	40.91	74.00	33.09	PASS	Vertical	PK
10	6000.2000	-12.96	62.03	49.07	74.00	24.93	PASS	Vertical	PK
11	10380.4920	-6.32	51.72	45.40	74.00	28.60	PASS	Vertical	PK
12	14425.7617	0.85	48.55	49.40	74.00	24.60	PASS	Vertical	PK

Note:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

2) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.