

## 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 PCB and no consideration of replacement. The best case gain of the antenna is 0.43dBi.



## Appendix G): AC Power Line Conducted Emission

Test Procedure:	<p>Test frequency range :150KHz-30MHz</p> <p>1)The mains terminal disturbance voltage test was conducted in a shielded room.</p> <p>2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a <math>50\Omega/50\mu\text{H} + 5\Omega</math> 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.</p> <p>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,</p> <p>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.</p> <p>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.</p>														
Limit:	<table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th> <th colspan="2">Limit (dB<math>\mu</math>V)</th> </tr> <tr> <th>Quasi-peak</th> <th>Average</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>* The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.</p> <p>NOTE : The lower limit is applicable at the transition frequency</p>	Frequency range (MHz)	Limit (dB $\mu$ V)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	5-30	60	50
Frequency range (MHz)	Limit (dB $\mu$ V)														
	Quasi-peak	Average													
0.15-0.5	66 to 56*	56 to 46*													
0.5-5	56	46													
5-30	60	50													

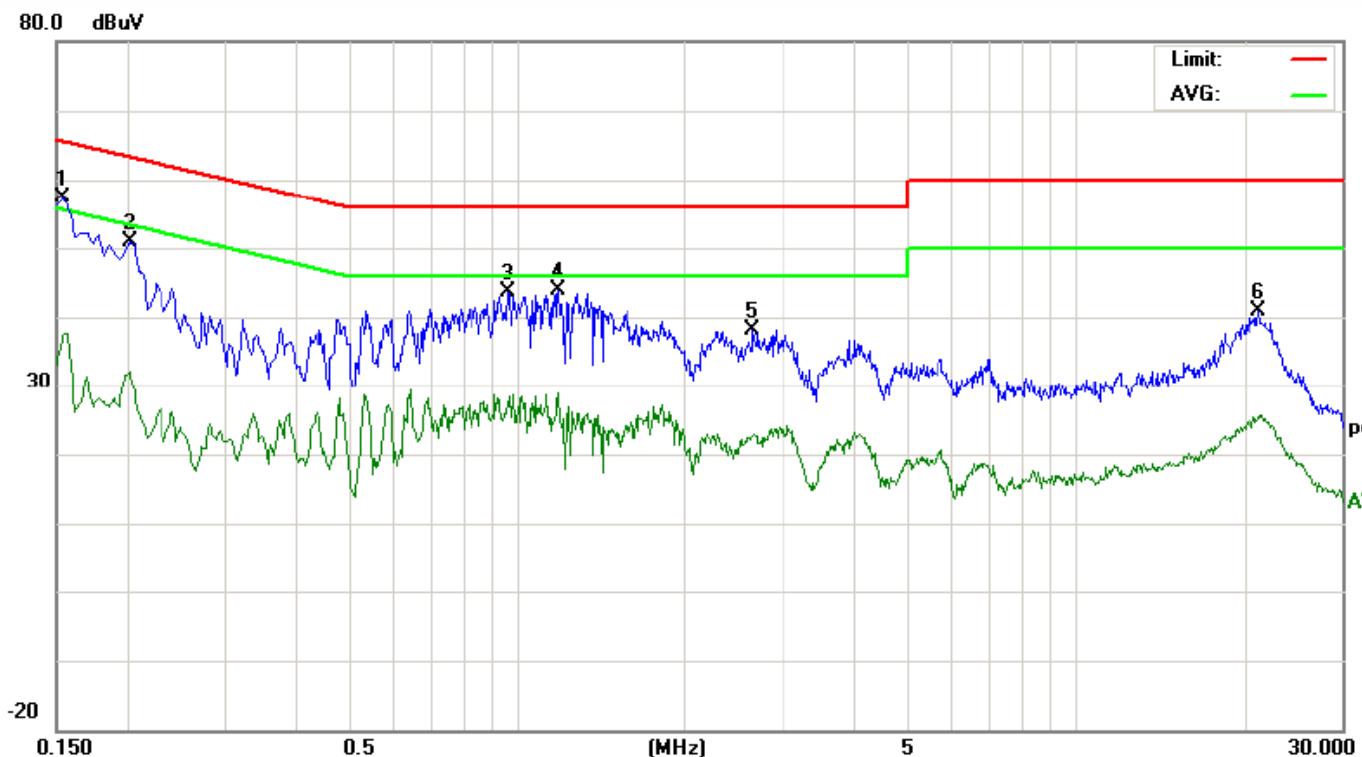
### Measurement Data

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.

**Product** : Handheld UHF Reader  
**Temperature** : 22°C  
**Phase** : L

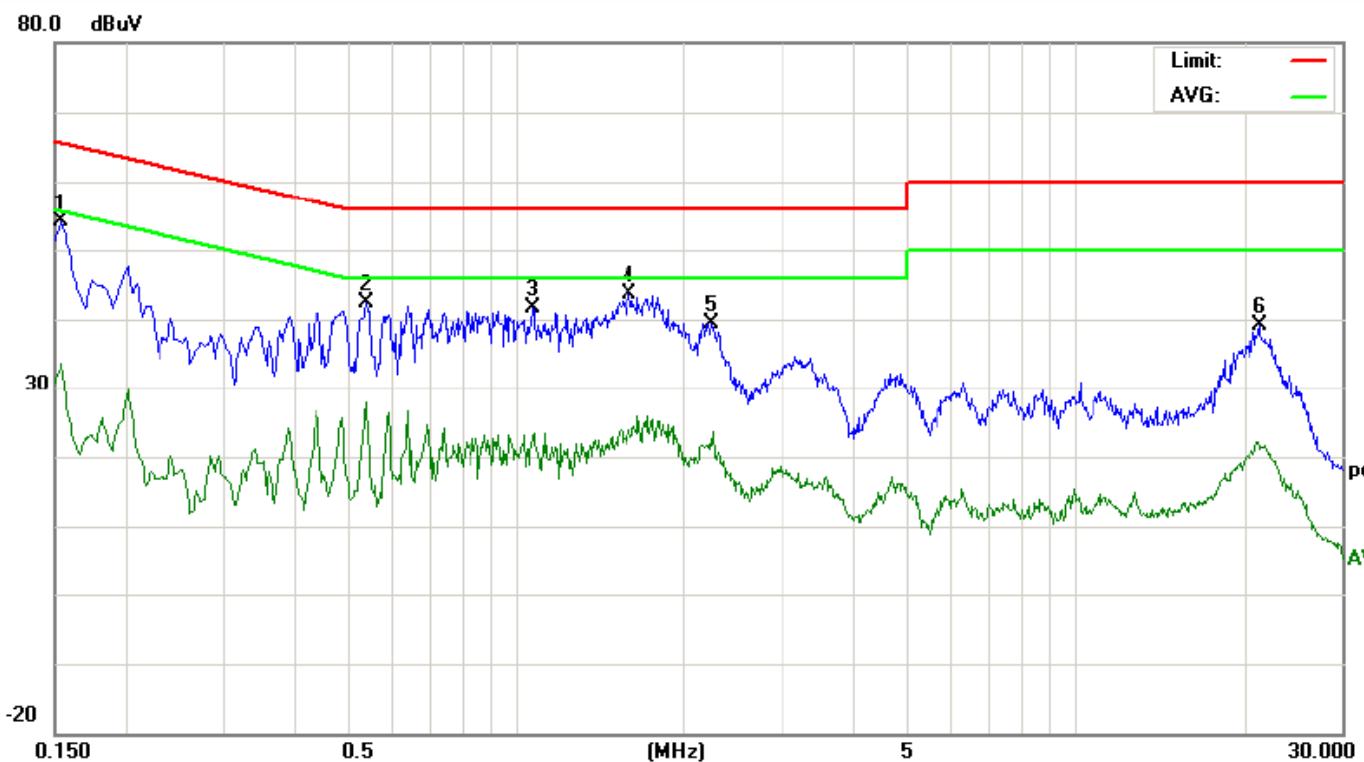
**Model/Type reference** : C76  
**Humidity** : 53%



No.	Freq.	Reading_Level (dBuV)			Correct Factor		Measurement (dBuV)			Limit (dBuV)			Margin (dB)		
		MHz	Peak	QP	AVG	dB	peak	QP	Avg	QP	Avg	QP	Avg	P/F	Comment
1	0.1539	47.61	43.21	27.74	9.76	57.37	52.97	37.50	65.78	55.78	-12.81	-18.28	P		
2	0.2020	41.07	38.21	22.38	9.71	50.78	47.92	32.09	63.52	53.52	-15.60	-21.43	P		
3	0.9660	33.81	30.21	17.89	9.73	43.54	39.94	27.62	56.00	46.00	-16.06	-18.38	P		
4	1.1860	34.22	31.36	19.18	9.72	43.94	41.08	28.90	56.00	46.00	-14.92	-17.10	P		
5	2.6380	28.37	25.69	12.97	9.70	38.07	35.39	22.67	56.00	46.00	-20.61	-23.33	P		
6	21.3540	30.84	27.59	15.02	10.09	40.93	37.68	25.11	60.00	50.00	-22.32	-24.89	P		

**Product** : Handheld UHF Reader  
**Temperature** : 22°C  
**Phase** : N

**Model/Type reference** : C76  
**Humidity** : 53%



No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor			Measurement (dBuV)			Limit (dBuV)			Margin (dB)		
		Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment		
1	0.1539	44.32	41.47	23.82	9.76	54.08	51.23	33.58	65.78	55.78	-14.55	-22.20	P			
2	0.5420	32.63	28.63	18.11	9.73	42.36	38.36	27.84	56.00	46.00	-17.64	-18.16	P			
3	1.0740	31.93	28.84	13.07	9.72	41.65	38.56	22.79	56.00	46.00	-17.44	-23.21	P			
4	1.5980	33.83	30.14	14.24	9.72	43.55	39.86	23.96	56.00	46.00	-16.14	-22.04	P			
5	2.2420	29.73	26.33	11.83	9.71	39.44	36.04	21.54	56.00	46.00	-19.96	-24.46	P			
6	21.4260	28.92	25.78	11.63	10.09	39.01	35.87	21.72	60.00	50.00	-24.13	-28.28	P			

Notes:

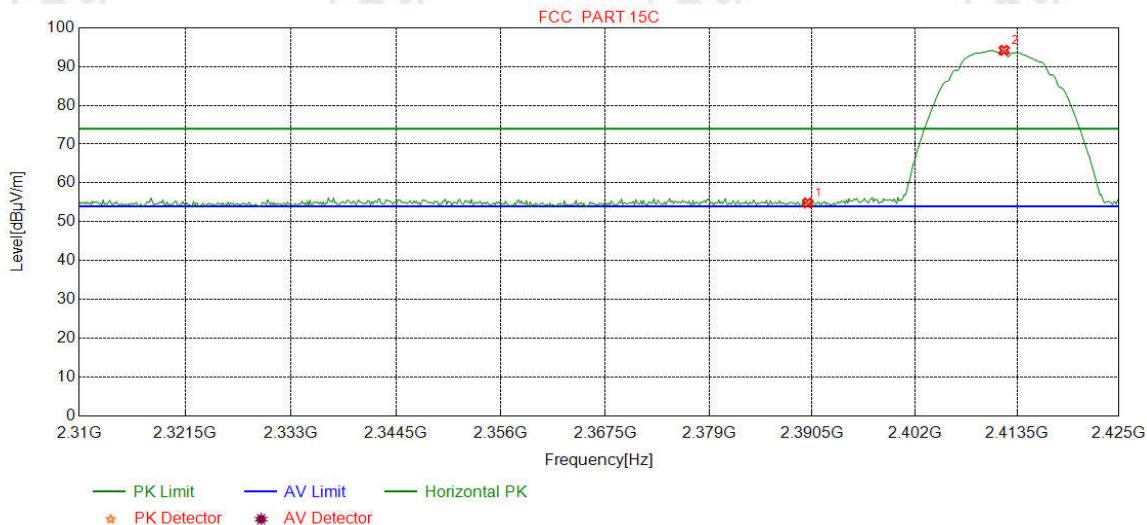
1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

## 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:	<p><b>Below 1GHz test procedure as below:</b></p> <ol style="list-style-type: none"> <li>The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>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.</li> <li>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.</li> <li>The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>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</li> </ol> <p><b>Above 1GHz test procedure as below:</b></p> <ol style="list-style-type: none"> <li>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).</li> <li>Test the EUT in the lowest channel , the Highest channel</li> <li>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.</li> <li>Repeat above procedures until all frequencies measured was complete.</li> </ol>						
Limit:	Frequency	Limit (dB $\mu$ V/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				

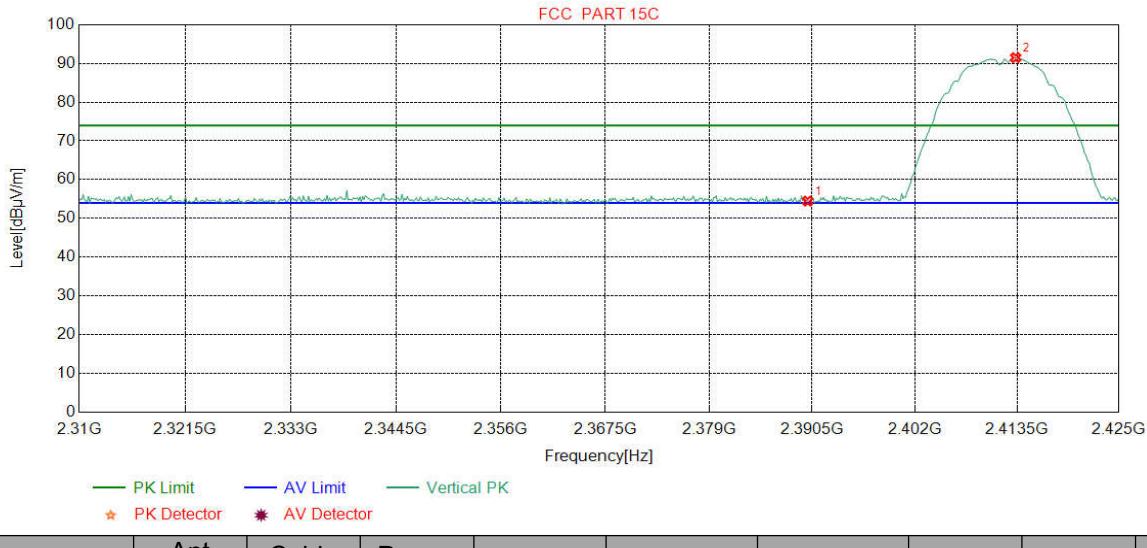
Test plot as follows:

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2412
Remark:	Peak		



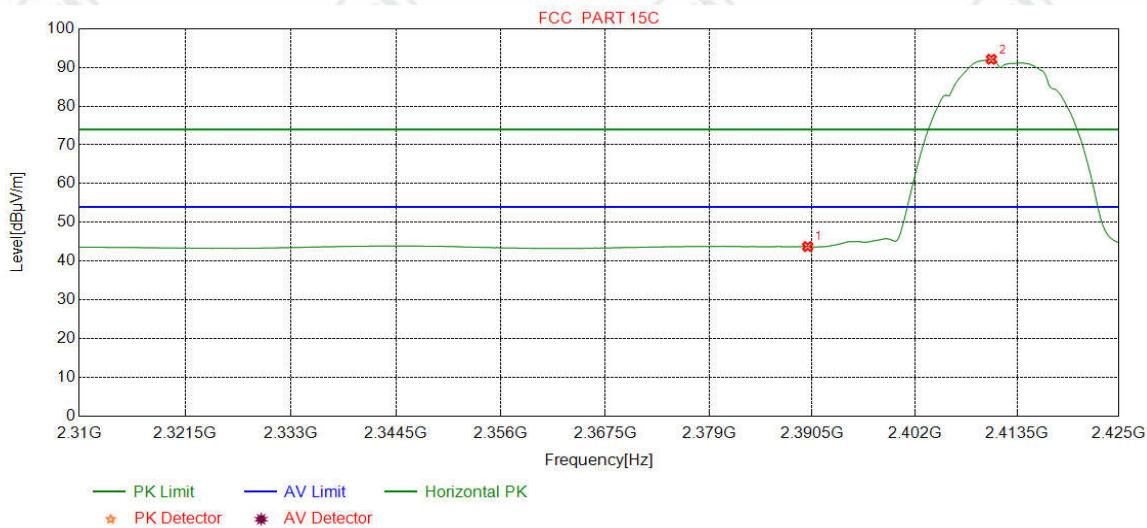
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-36.62	45.86	54.86	74.00	19.14	Pass	Horizontal
2	2412.0463	32.28	13.36	-36.61	85.18	94.21	74.00	-20.21	Pass	Horizontal

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2412
Remark:	Peak		



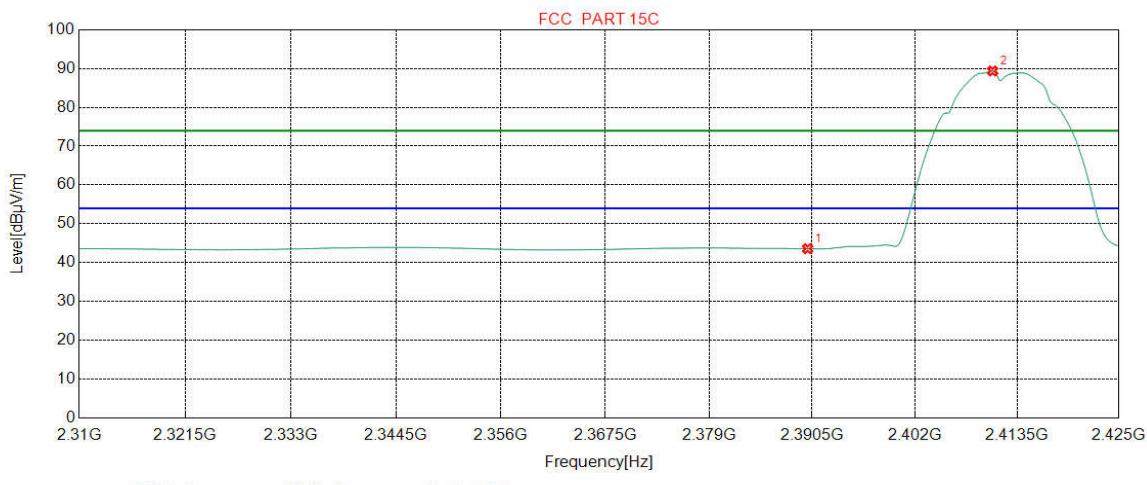
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-36.62	45.45	54.45	74.00	19.55	Pass	Vertical
2	2413.3417	32.28	13.36	-36.61	82.48	91.51	74.00	-17.51	Pass	Vertical

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2412
Remark:	Average		



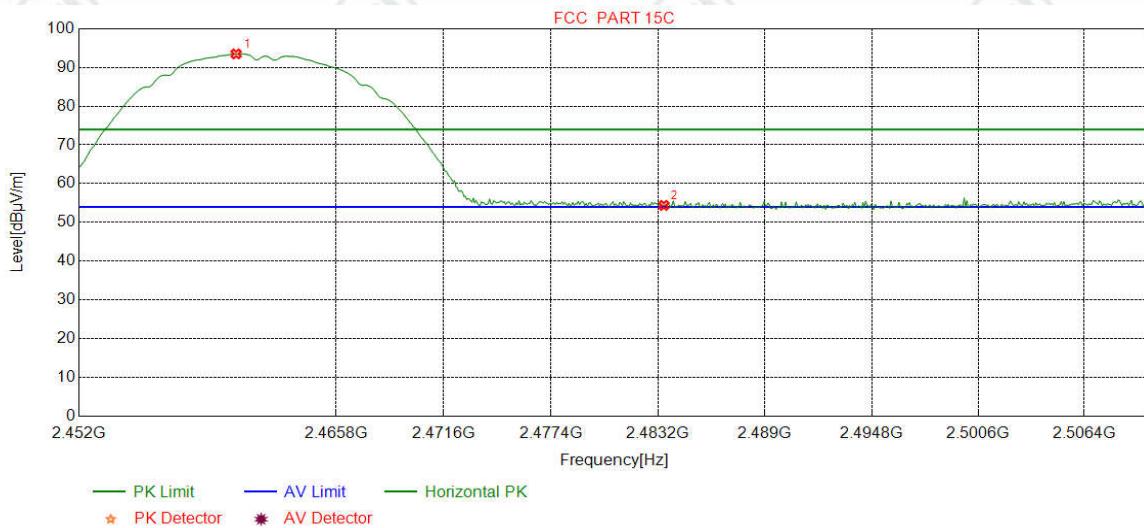
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1	2390.0000	32.25	13.37	-36.62	34.74	43.74	54.00	10.26	Pass	Horizontal
2	2410.6070	32.27	13.35	-36.60	83.10	92.12	54.00	-38.12	Pass	Horizontal

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2412
Remark:	Average		



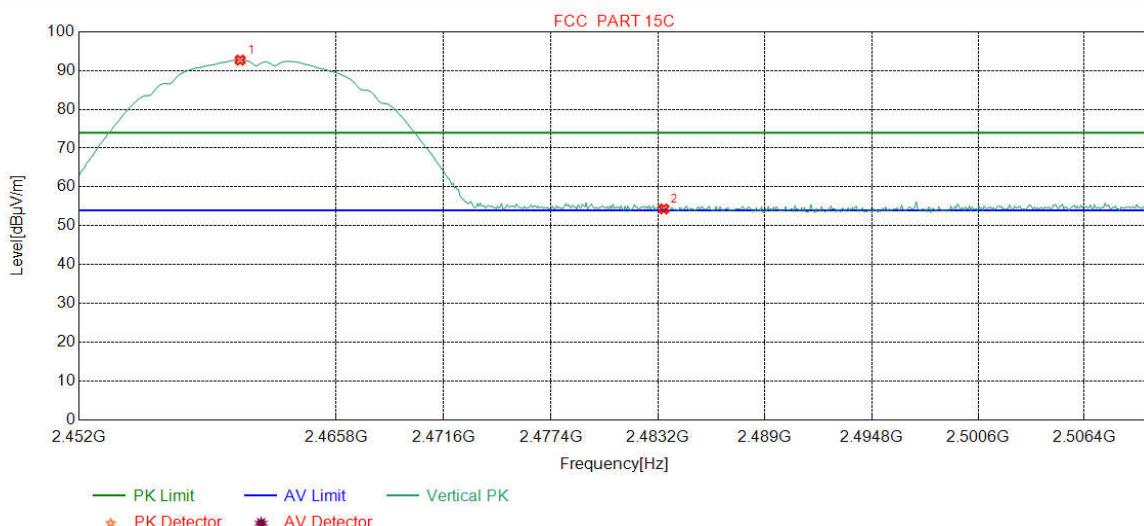
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1	2390.0000	32.25	13.37	-36.62	34.57	43.57	54.00	10.43	Pass	Vertical
2	2410.7509	32.28	13.35	-36.61	80.37	89.39	54.00	-35.39	Pass	Vertical

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2462
Remark:	Peak		



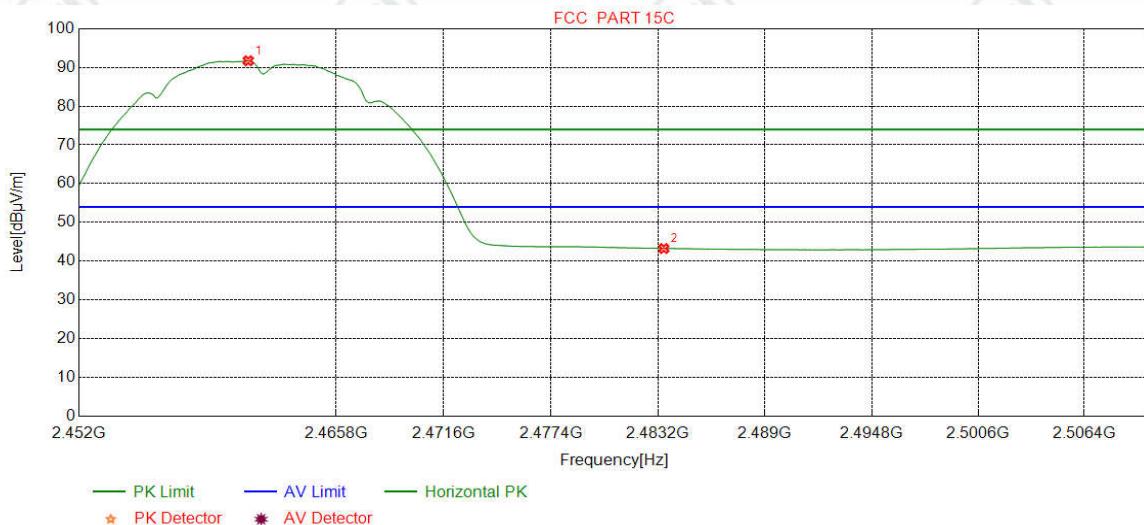
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2460.4205	32.34	13.48	-36.67	84.36	93.51	74.00	-19.51	Pass	Horizontal
2	2483.5000	32.38	13.38	-36.80	45.42	54.38	74.00	19.62	Pass	Horizontal

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2462
Remark:	Peak		



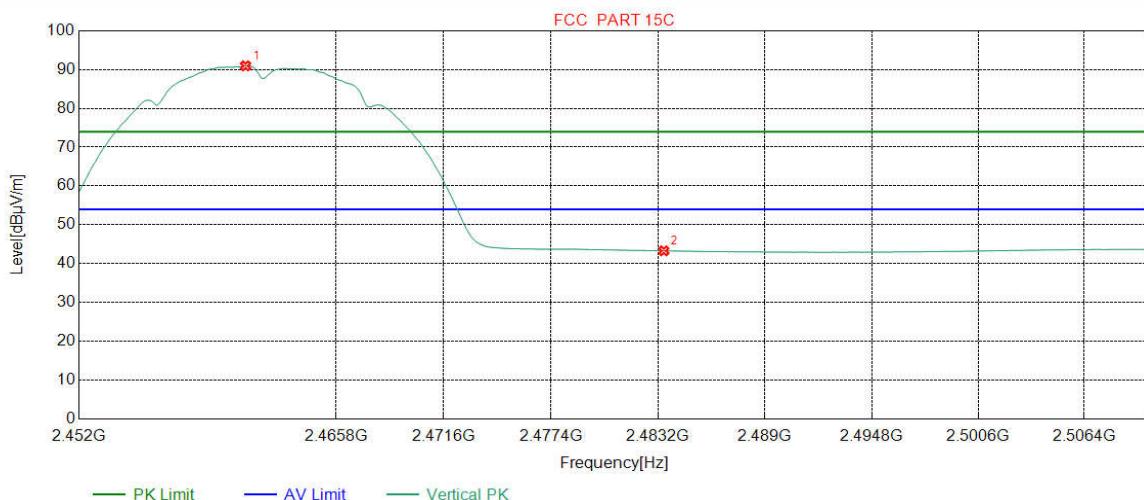
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2460.6383	32.34	13.48	-36.68	83.57	92.71	74.00	-18.71	Pass	Vertical
2	2483.5000	32.38	13.38	-36.80	45.37	54.33	74.00	19.67	Pass	Vertical

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2462
Remark:	Average		



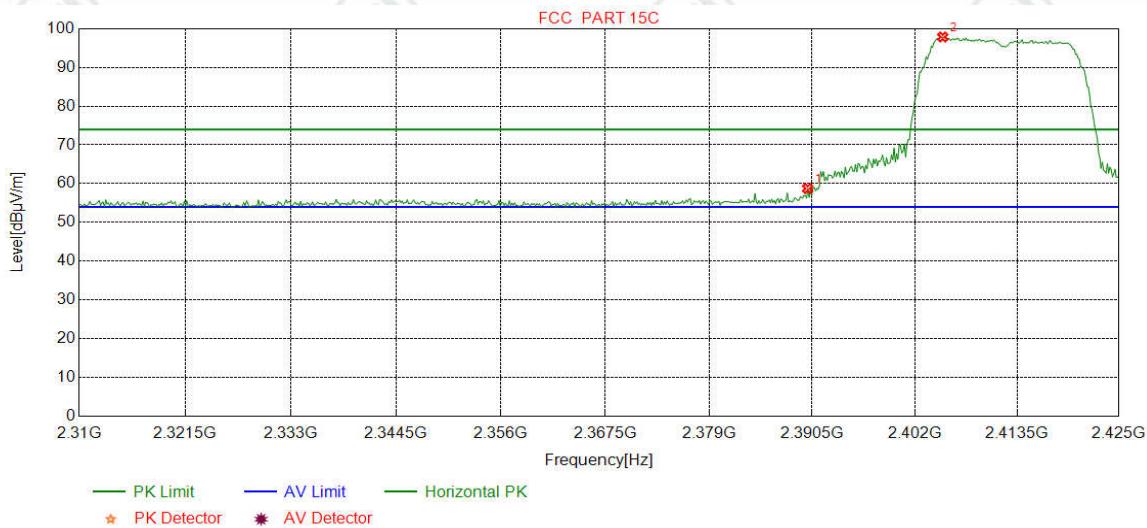
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1	2461.0738	32.35	13.48	-36.69	82.60	91.74	54.00	-37.74	Pass	Horizontal
2	2483.5000	32.38	13.38	-36.80	34.28	43.24	54.00	10.76	Pass	Horizontal

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2462
Remark:	Average		



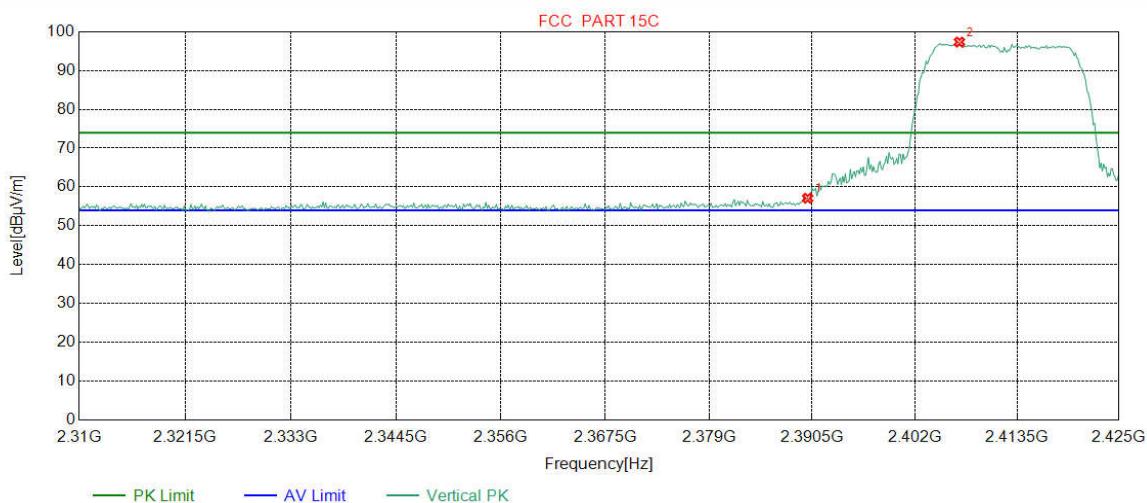
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1	2460.9287	32.35	13.48	-36.69	81.83	90.97	54.00	-36.97	Pass	Vertical
2	2483.5000	32.38	13.38	-36.80	34.31	43.27	54.00	10.73	Pass	Vertical

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



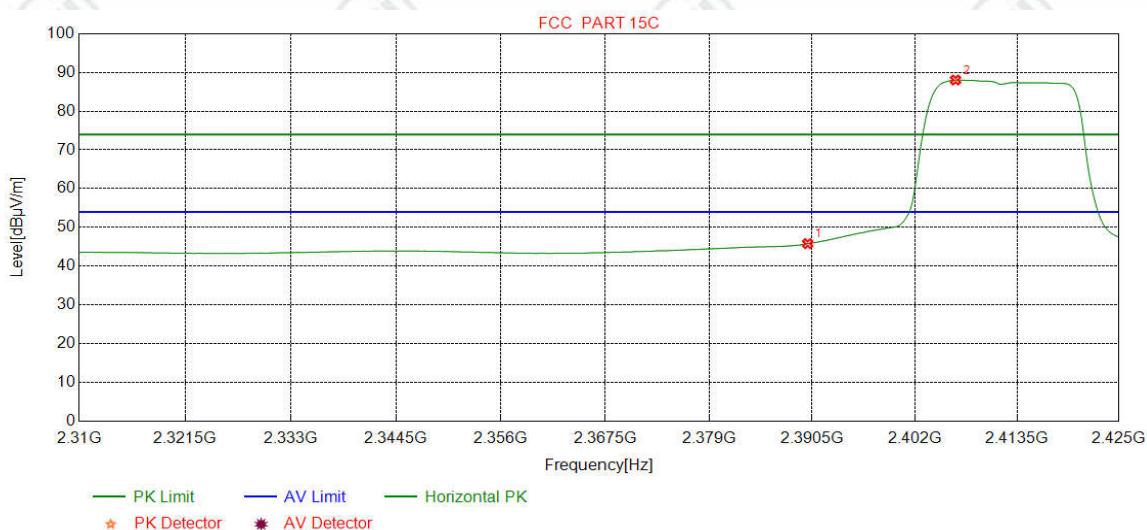
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-36.62	49.75	58.75	74.00	15.25	Pass	Horizontal
2	2405.1377	32.27	13.32	-36.60	88.89	97.88	74.00	-23.88	Pass	Horizontal

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



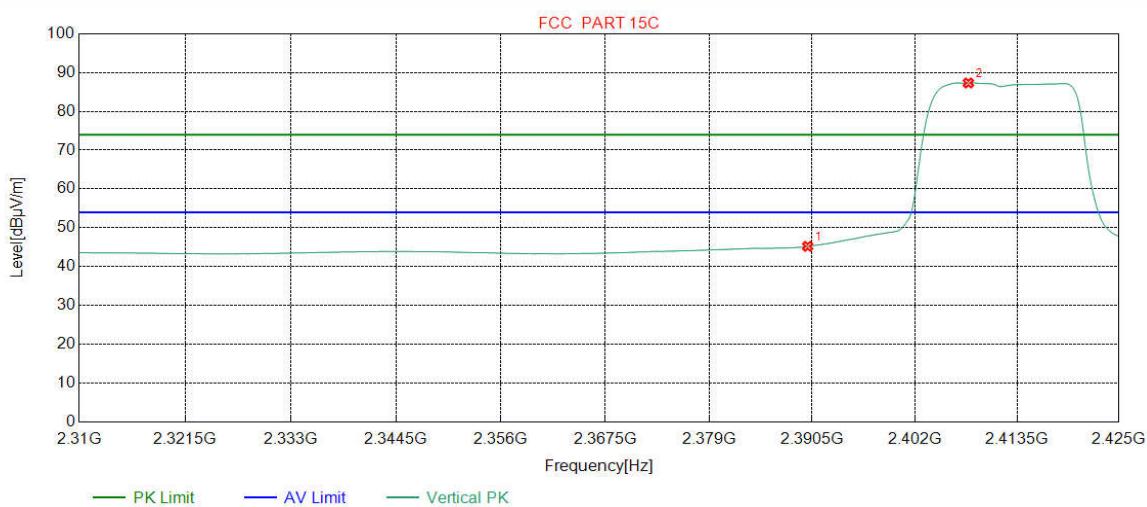
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-36.62	48.10	57.10	74.00	16.90	Pass	Vertical
2	2407.0088	32.27	13.33	-36.60	88.36	97.36	74.00	-23.36	Pass	Vertical

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



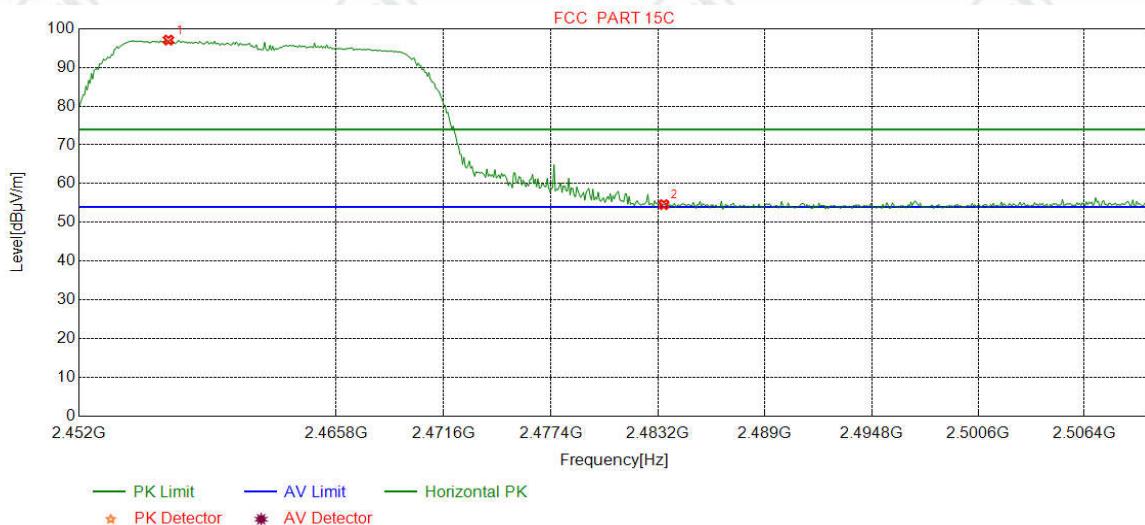
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1	2390.0000	32.25	13.37	-36.62	36.79	45.79	54.00	8.21	Pass	Horizontal
2	2406.5770	32.27	13.33	-36.60	79.06	88.06	54.00	-34.06	Pass	Horizontal

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



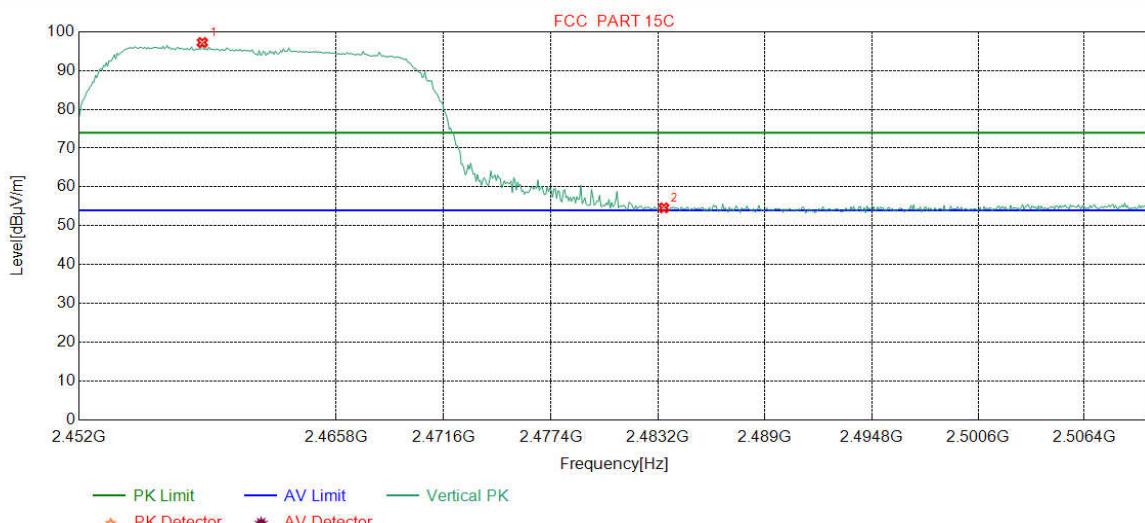
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1	2390.0000	32.25	13.37	-36.62	36.20	45.20	54.00	8.80	Pass	Vertical
2	2408.0163	32.27	13.34	-36.61	78.33	87.33	54.00	-33.33	Pass	Vertical

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



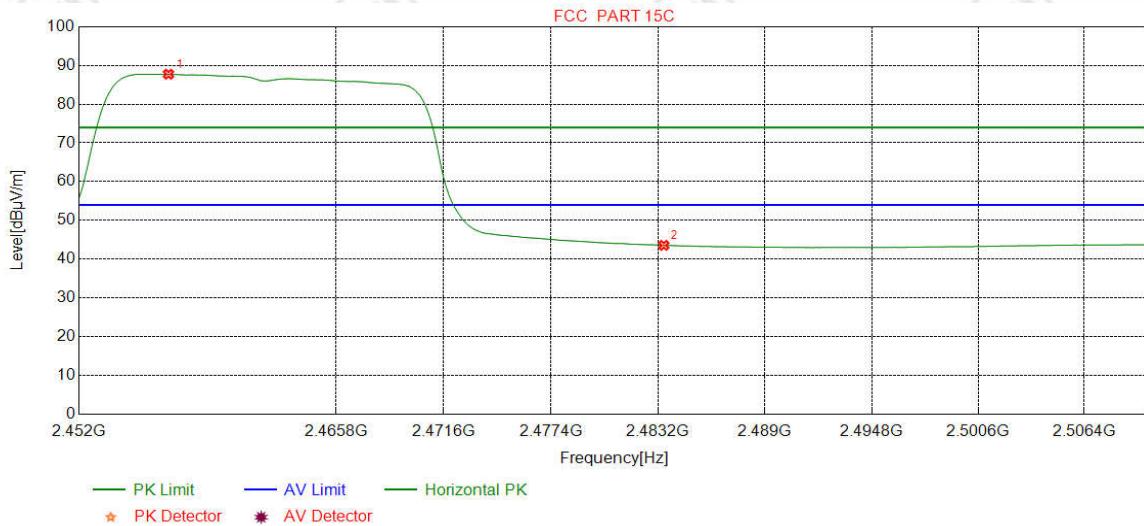
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1	2456.7910	32.34	13.50	-36.66	87.91	97.09	74.00	-23.09	Pass	Horizontal
2	2483.5000	32.38	13.38	-36.80	45.62	54.58	74.00	19.42	Pass	Horizontal

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



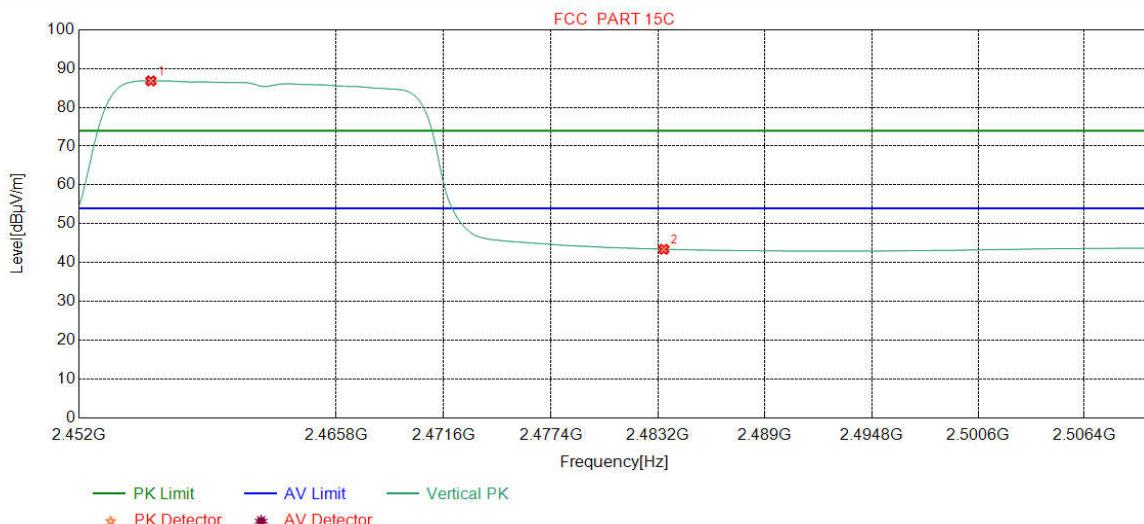
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1	2458.6058	32.34	13.49	-36.67	88.09	97.25	74.00	-23.25	Pass	Vertical
2	2483.5000	32.38	13.38	-36.80	45.66	54.62	74.00	19.38	Pass	Vertical

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



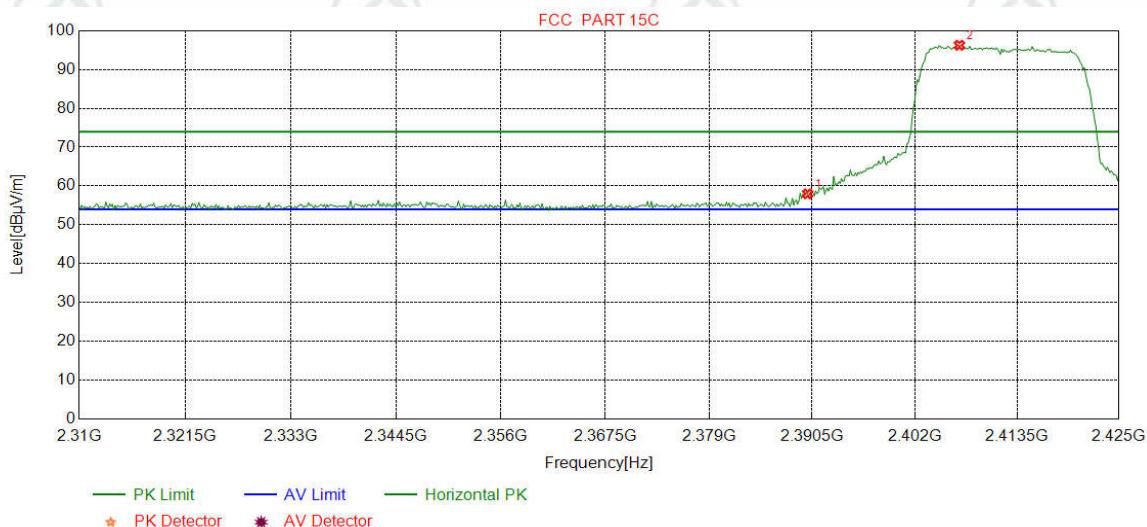
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2456.7910	32.34	13.50	-36.66	78.57	87.75	54.00	-33.75	Pass	Horizontal
2	2483.5000	32.38	13.38	-36.80	34.57	43.53	54.00	10.47	Pass	Horizontal

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



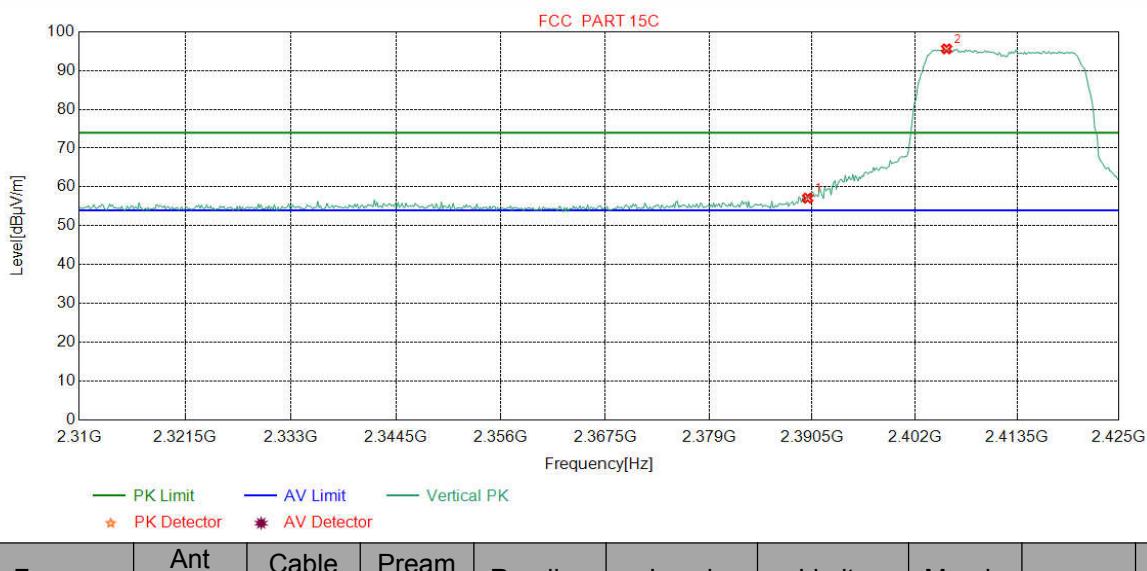
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2455.8473	32.34	13.50	-36.66	77.66	86.84	54.00	-32.84	Pass	Vertical
2	2483.5000	32.38	13.38	-36.80	34.46	43.42	54.00	10.58	Pass	Vertical

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



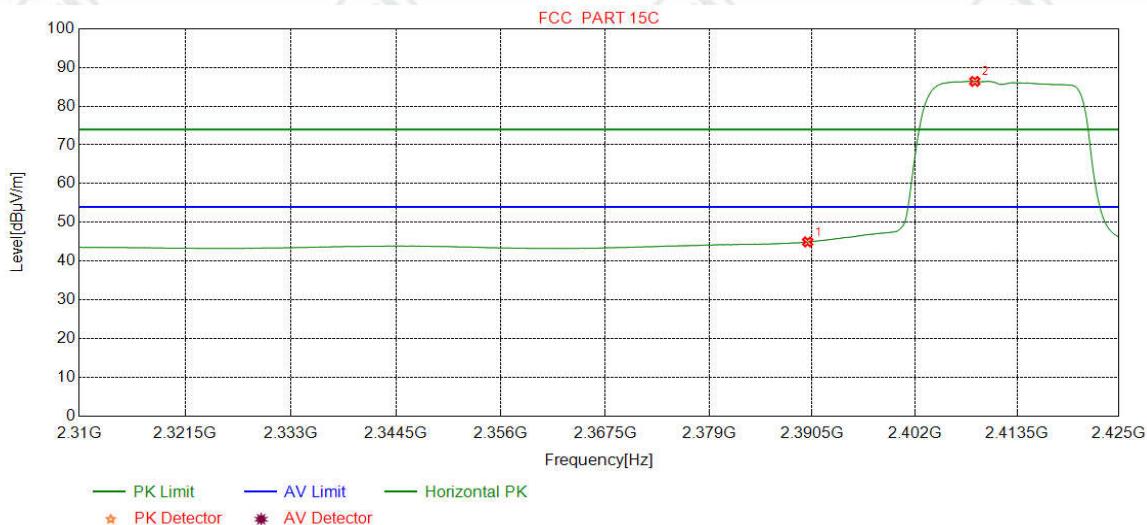
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1	2390.0000	32.25	13.37	-36.62	48.98	57.98	74.00	16.02	Pass	Horizontal
2	2407.0088	32.27	13.33	-36.60	87.28	96.28	74.00	-22.28	Pass	Horizontal

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



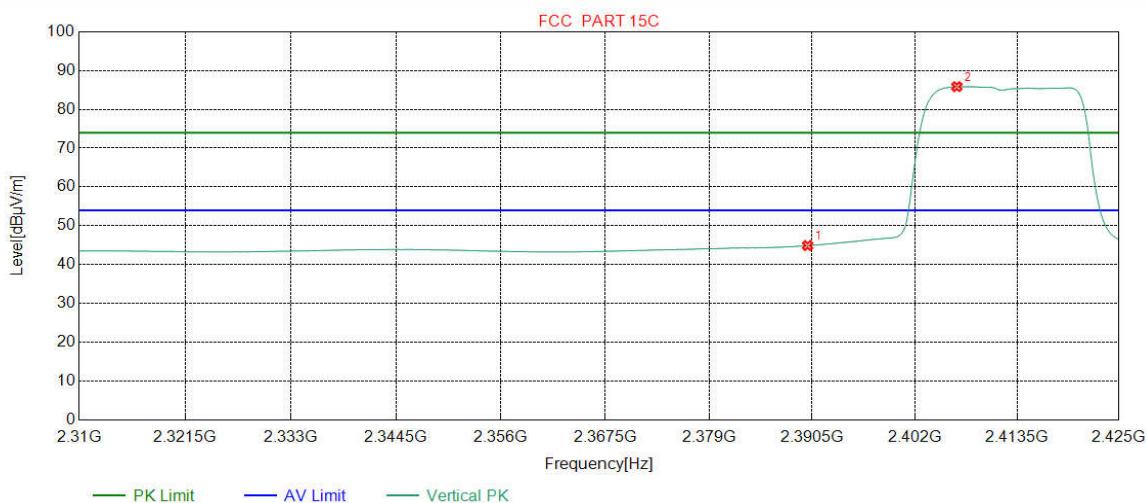
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1	2390.0000	32.25	13.37	-36.62	48.12	57.12	74.00	16.88	Pass	Vertical
2	2405.5695	32.27	13.33	-36.61	86.61	95.60	74.00	-21.60	Pass	Vertical

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



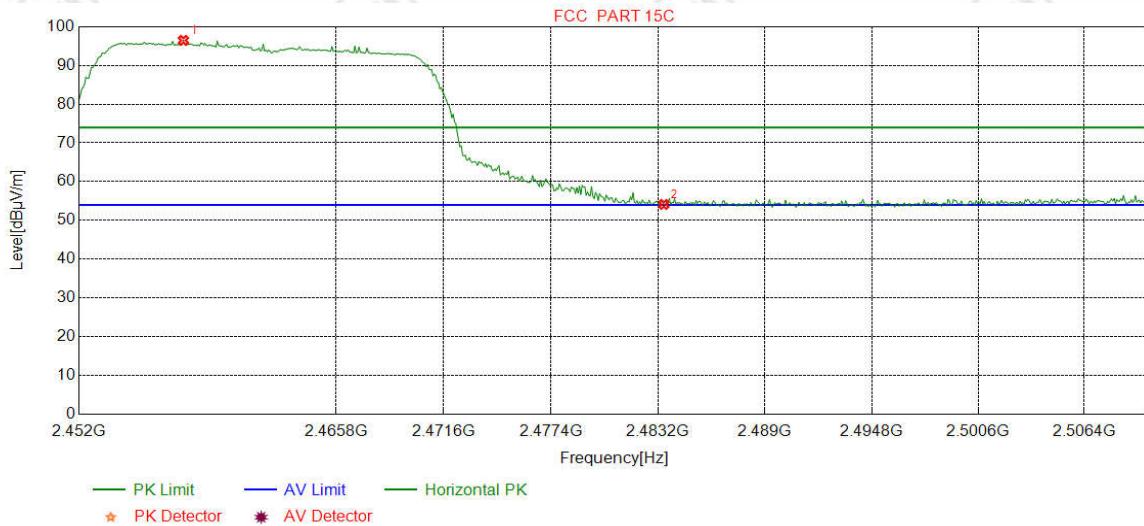
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-36.62	35.94	44.94	54.00	9.06	Pass	Horizontal
2	2408.7359	32.27	13.34	-36.60	77.41	86.42	54.00	-32.42	Pass	Horizontal

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



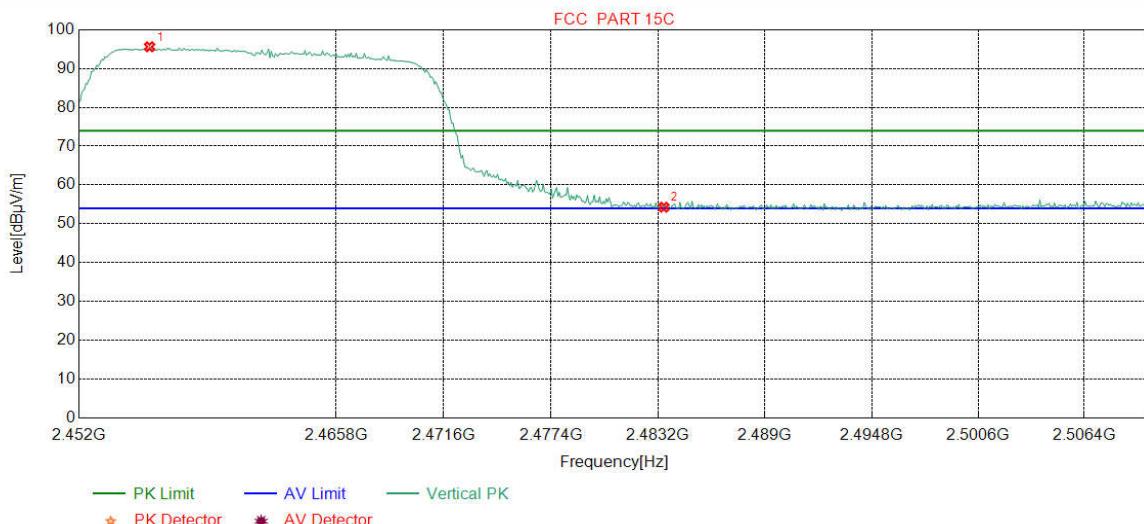
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-36.62	35.89	44.89	54.00	9.11	Pass	Vertical
2	2406.7209	32.27	13.33	-36.60	76.86	85.86	54.00	-31.86	Pass	Vertical

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



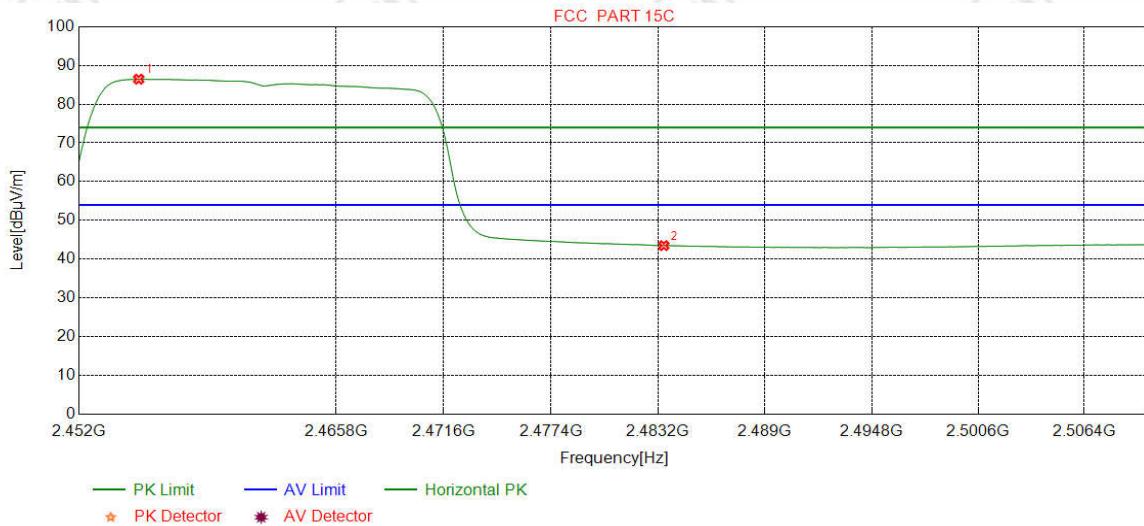
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2457.5895	32.34	13.50	-36.67	87.32	96.49	74.00	-22.49	Pass	Horizontal
2	2483.5000	32.38	13.38	-36.80	45.15	54.11	74.00	19.89	Pass	Horizontal

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



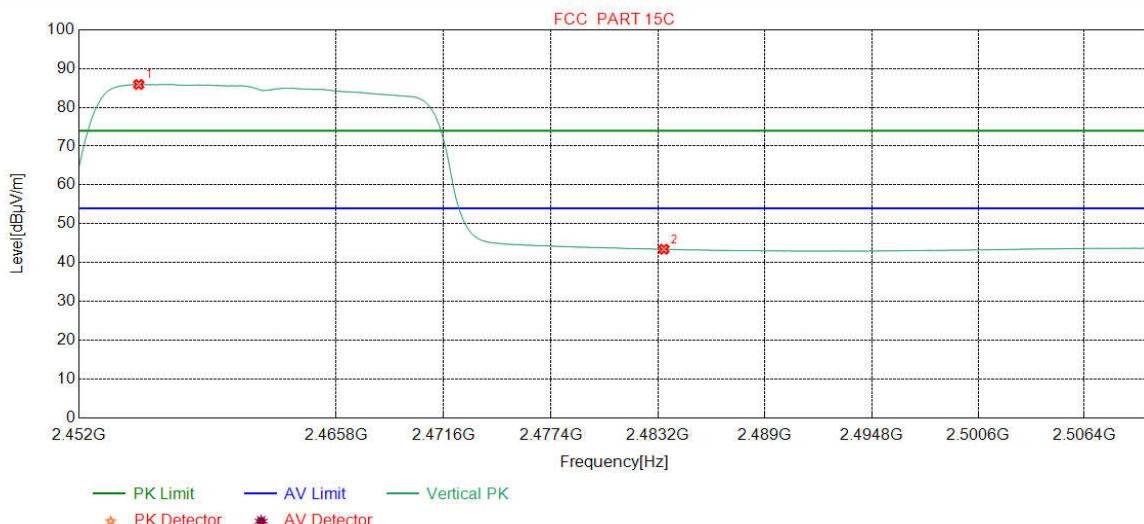
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2455.7747	32.34	13.50	-36.66	86.45	95.63	74.00	-21.63	Pass	Vertical
2	2483.5000	32.38	13.38	-36.80	45.31	54.27	74.00	19.73	Pass	Vertical

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



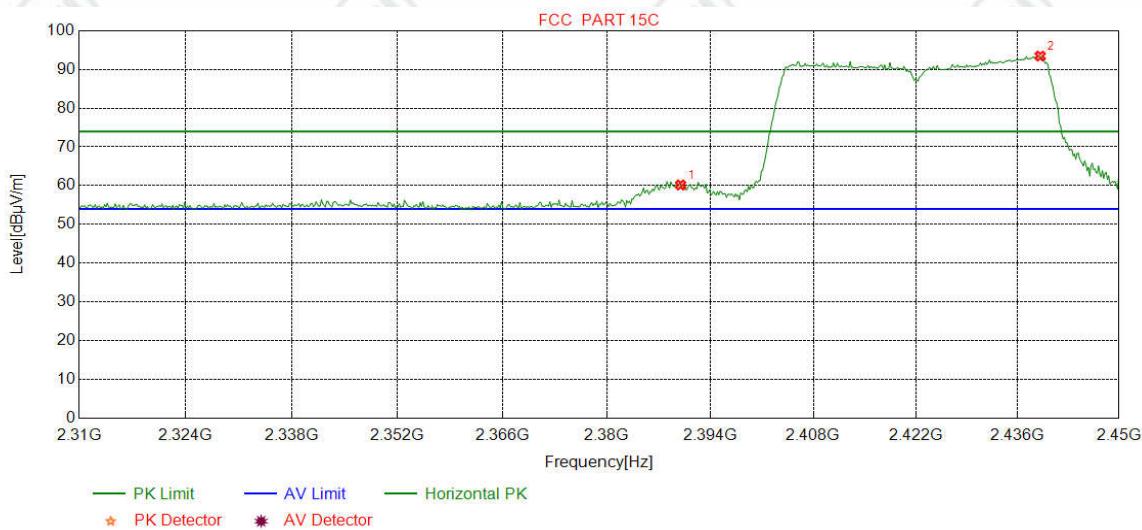
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2455.1940	32.34	13.51	-36.66	77.28	86.47	54.00	-32.47	Pass	Horizontal
2	2483.5000	32.38	13.38	-36.80	34.51	43.47	54.00	10.53	Pass	Horizontal

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



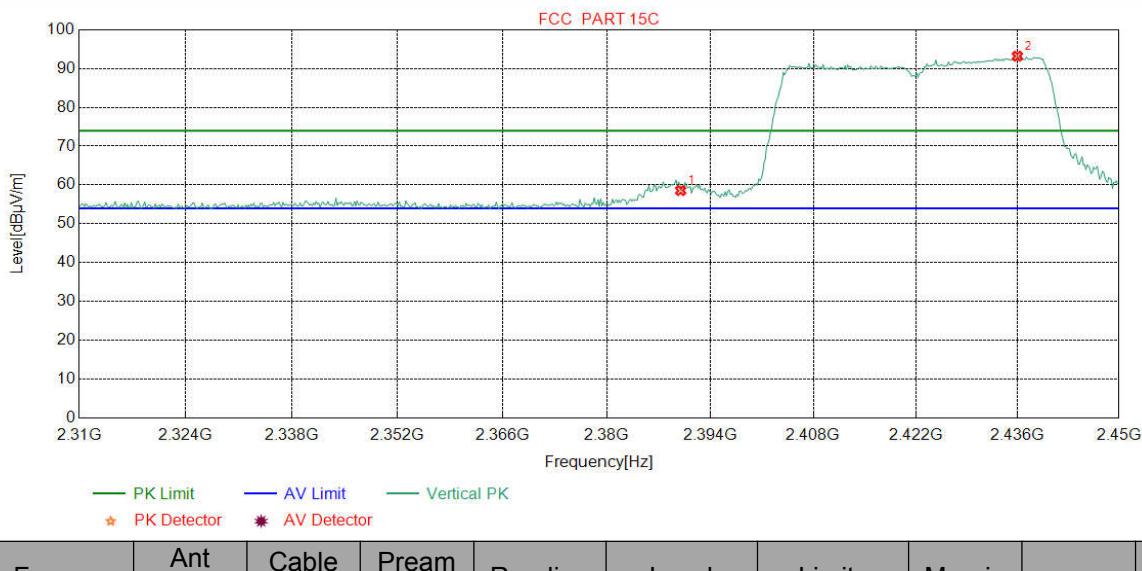
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2455.1940	32.34	13.51	-36.66	76.72	85.91	54.00	-31.91	Pass	Vertical
2	2483.5000	32.38	13.38	-36.80	34.47	43.43	54.00	10.57	Pass	Vertical

Mode:	802.11 n(HT40) (6.5Mbps) Transmitting	Channel:	2422
Remark:	Peak		



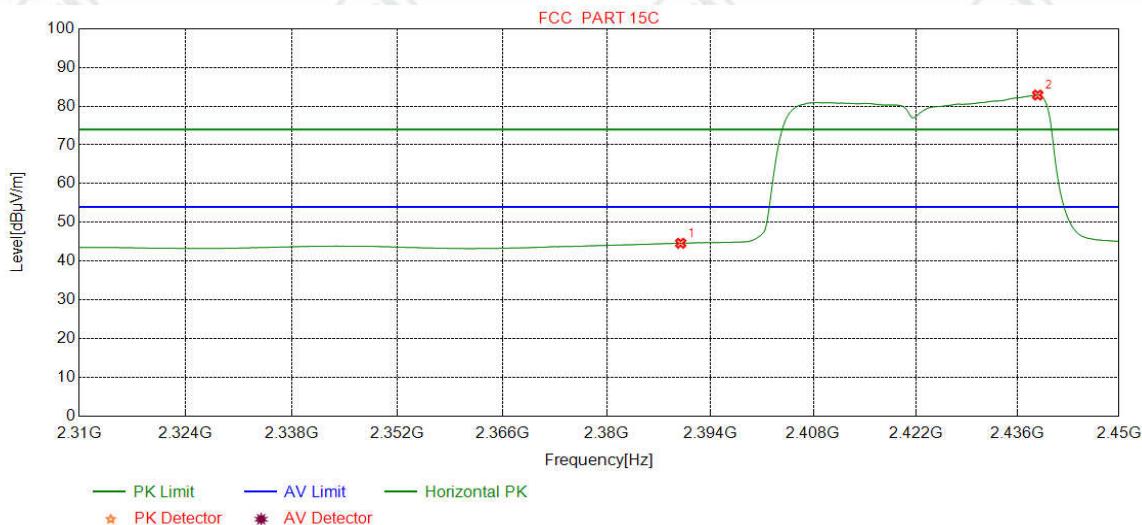
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-36.62	51.17	60.17	74.00	13.83	Pass	Horizontal
2	2439.1364	32.31	13.48	-36.62	84.29	93.46	74.00	-19.46	Pass	Horizontal

Mode:	802.11 n(HT40) (6.5Mbps) Transmitting	Channel:	2422
Remark:	Peak		



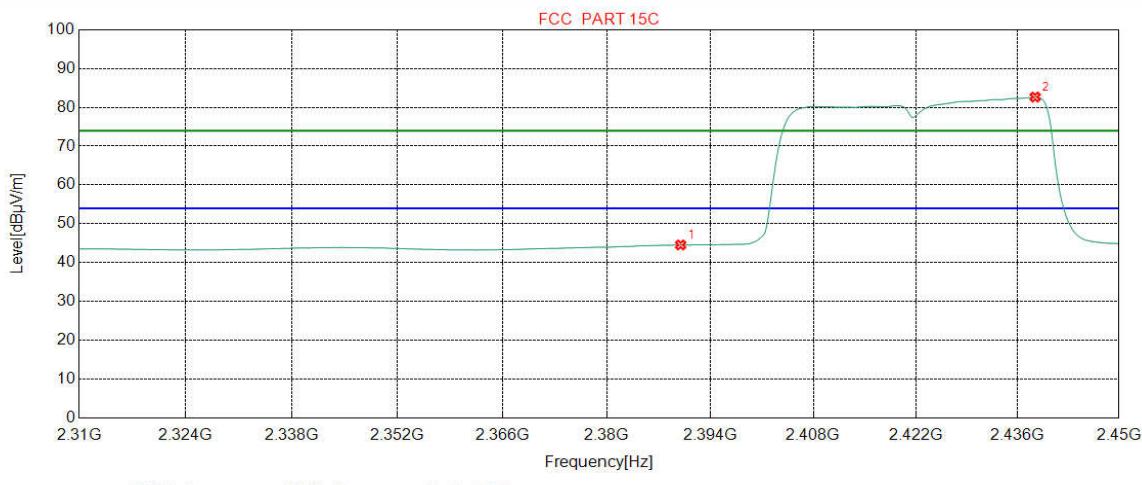
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-36.62	49.56	58.56	74.00	15.44	Pass	Vertical
2	2435.9825	32.31	13.47	-36.63	84.06	93.21	74.00	-19.21	Pass	Vertical

Mode:	802.11 n(HT40) (6.5Mbps) Transmitting	Channel:	2422
Remark:	Average		



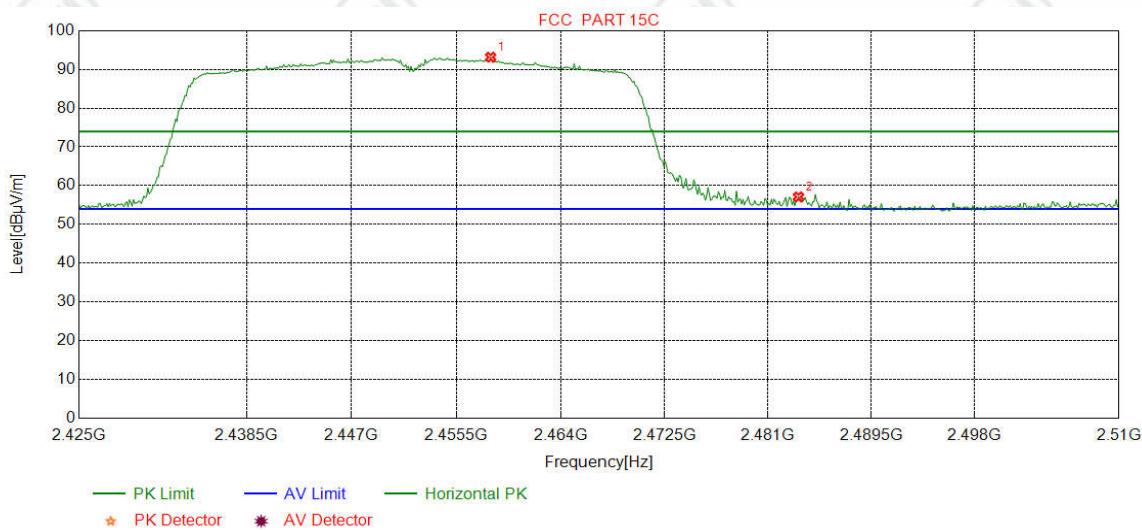
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-36.62	35.59	44.59	54.00	9.41	Pass	Horizontal
2	2438.7860	32.31	13.48	-36.62	73.71	82.88	54.00	-28.88	Pass	Horizontal

Mode:	802.11 n(HT40) (6.5Mbps) Transmitting	Channel:	2422
Remark:	Average		



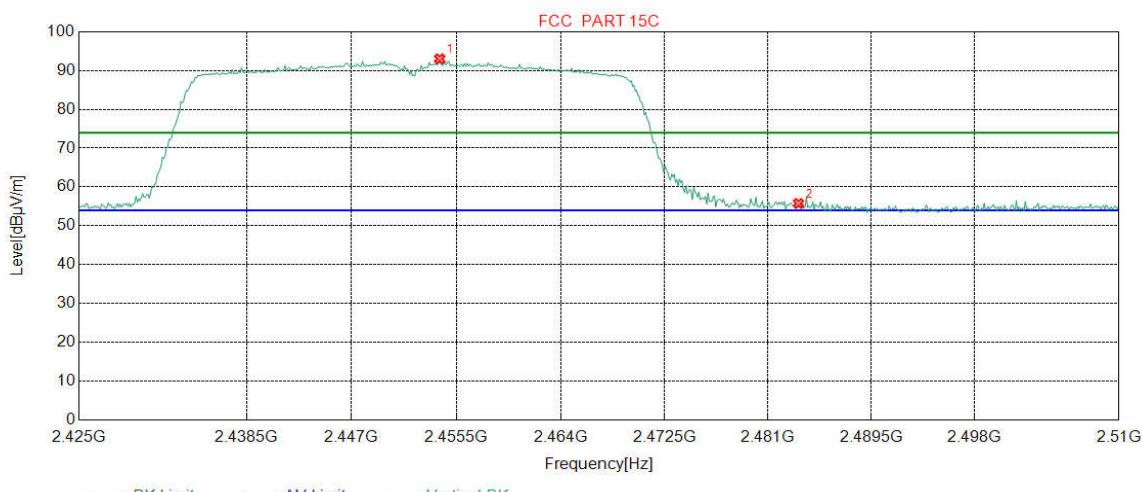
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-36.62	35.54	44.54	54.00	9.46	Pass	Vertical
2	2438.4355	32.31	13.48	-36.62	73.50	82.67	54.00	-28.67	Pass	Vertical

Mode:	802.11 n(HT40) (6.5Mbps) Transmitting	Channel:	2452
Remark:	Peak		



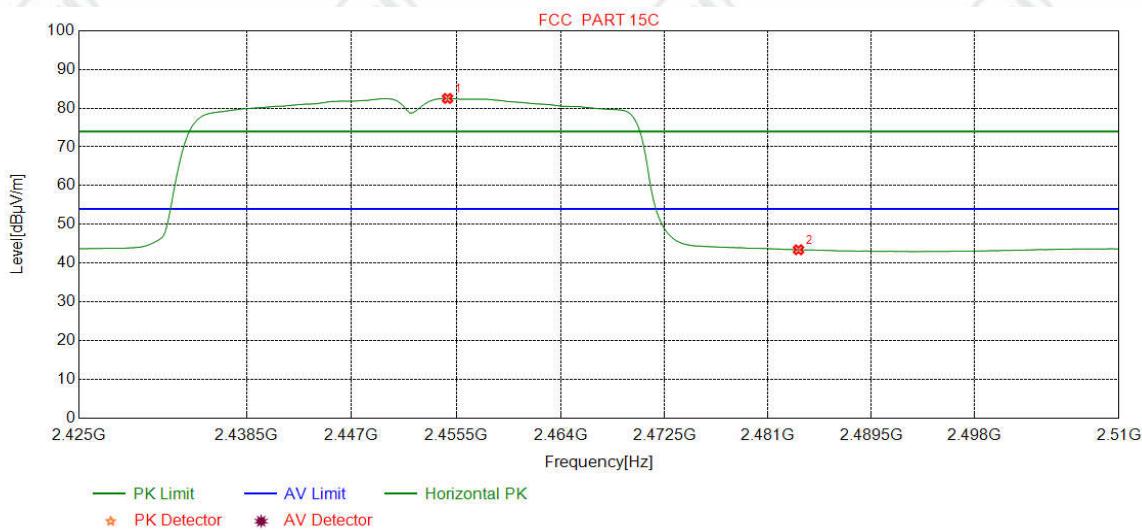
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2458.2979	32.34	13.49	-36.67	84.03	93.19	74.00	-19.19	Pass	Horizontal
2	2483.5000	32.38	13.38	-36.80	48.13	57.09	74.00	16.91	Pass	Horizontal

Mode:	802.11 n(HT40) (6.5Mbps)	Channel:	2452
Remark:	Peak		



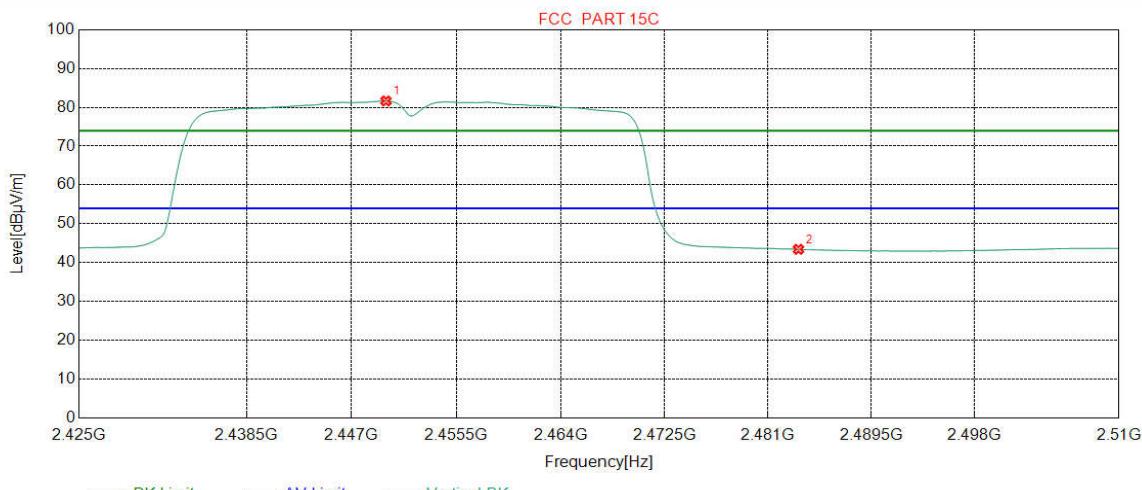
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2454.1489	32.34	13.51	-36.65	83.84	93.04	74.00	-19.04	Pass	Vertical
2	2483.5000	32.38	13.38	-36.80	46.78	55.74	74.00	18.26	Pass	Vertical

Mode:	802.11 n(HT40) (6.5Mbps) Transmitting	Channel:	2452
Remark:	Average		



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2454.7872	32.34	13.51	-36.66	73.33	82.52	54.00	-28.52	Pass	Horizontal
2	2483.5000	32.38	13.38	-36.80	34.47	43.43	54.00	10.57	Pass	Horizontal

Mode:	802.11 n(HT40) (6.5Mbps) Transmitting	Channel:	2452
Remark:	Average		



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Result	Polarity
1	2449.7872	32.33	13.53	-36.63	72.43	81.66	54.00	-27.66	Pass	Vertical
2	2483.5000	32.38	13.38	-36.80	34.45	43.41	54.00	10.59	Pass	Vertical

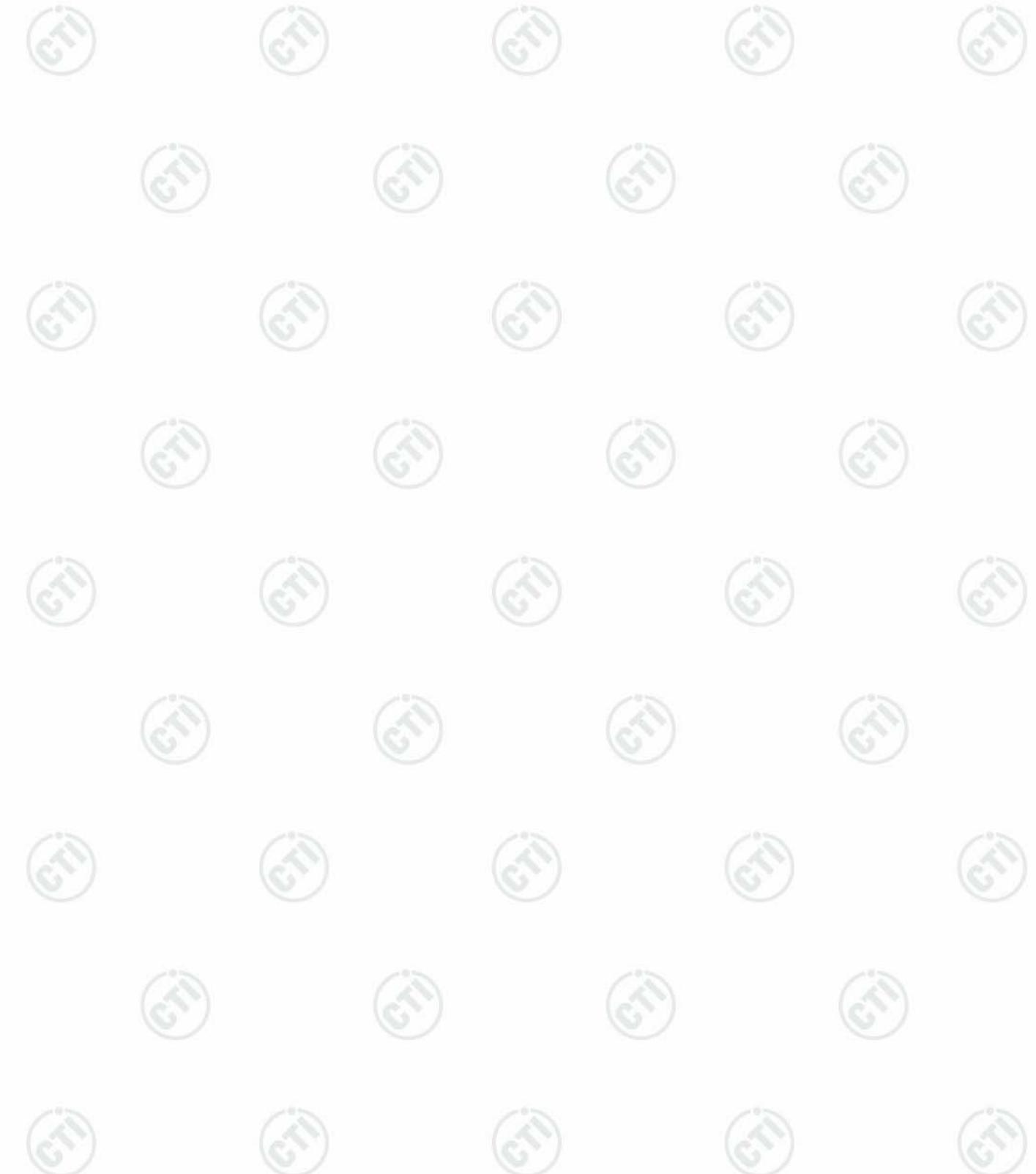
Note:

1) Through transmitting mode with all kind of modulation and data rate, find the 11Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) ; 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:						
<b>Below 1GHz test procedure as below:</b>						
a.	The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. 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.					
<b>Above 1GHz test procedure as below:</b>						
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 (dB $\mu$ V/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:

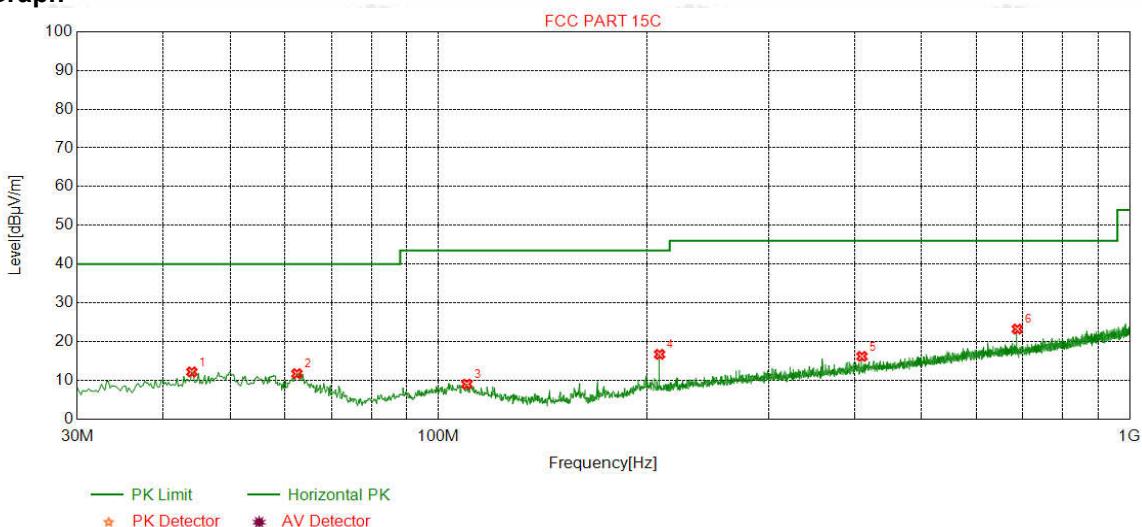
Product : Handheld UHF Reader  
Temperature : 21°C

Model/Type reference : C76  
Humidity : 60%

### Radiated Emission below 1GHz

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2412
Remark:	QP		

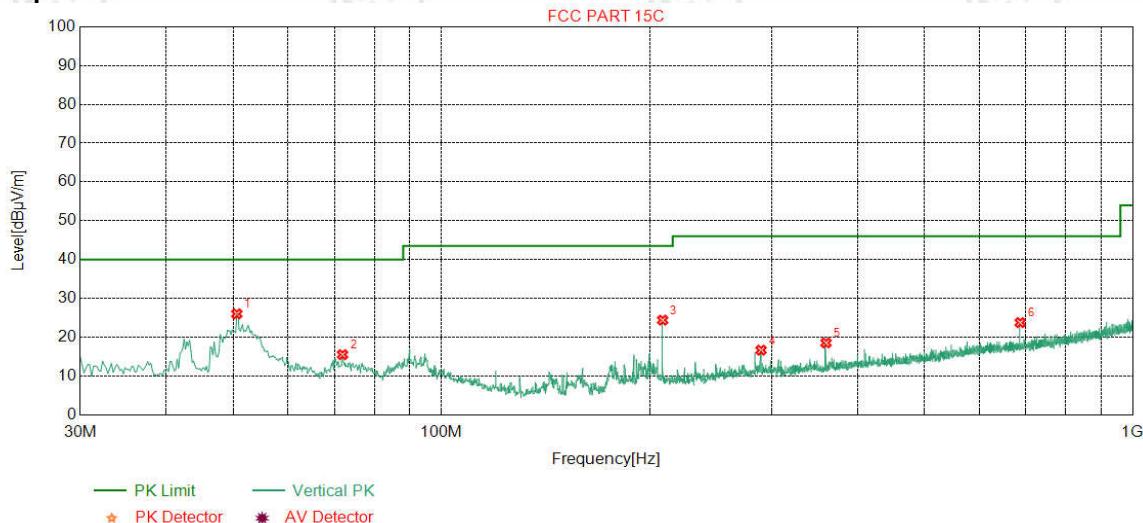
### Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity
1	43.9708	13.01	0.74	-32.11	30.49	12.13	40.00	27.87	Pass	Horizontal
2	62.4045	10.97	0.91	-32.04	31.84	11.68	40.00	28.32	Pass	Horizontal
3	109.9440	10.90	1.24	-32.07	28.91	8.98	43.50	34.52	Pass	Horizontal
4	208.9038	11.13	1.71	-31.94	35.77	16.67	43.50	26.83	Pass	Horizontal
5	409.9280	15.56	2.42	-31.84	30.00	16.14	46.00	29.86	Pass	Horizontal
6	687.5975	19.70	3.14	-32.06	32.43	23.21	46.00	22.79	Pass	Horizontal

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2412
Remark:	QP		

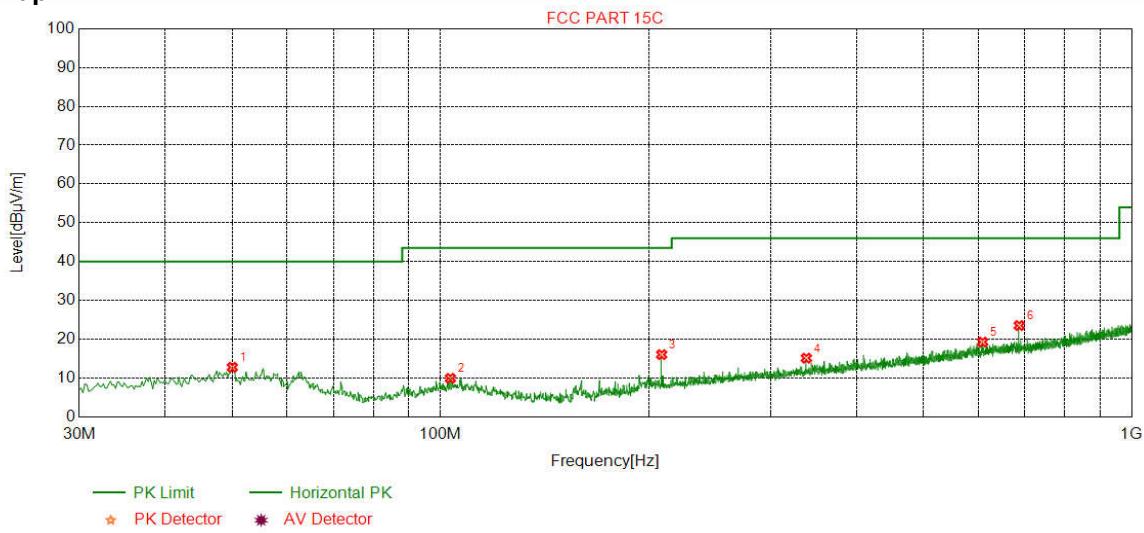
**Test Graph**



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity
1	50.5681	13.11	0.80	-32.11	44.19	25.99	40.00	14.01	Pass	Vertical
2	71.9124	8.64	0.97	-32.05	37.92	15.48	40.00	24.52	Pass	Vertical
3	208.9038	11.13	1.71	-31.94	43.47	24.37	43.50	19.13	Pass	Vertical
4	290.0120	13.00	2.03	-31.88	33.48	16.63	46.00	29.37	Pass	Vertical
5	360.0600	14.52	2.27	-31.84	33.55	18.50	46.00	27.50	Pass	Vertical
6	687.5975	19.70	3.14	-32.06	32.95	23.73	46.00	22.27	Pass	Vertical

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

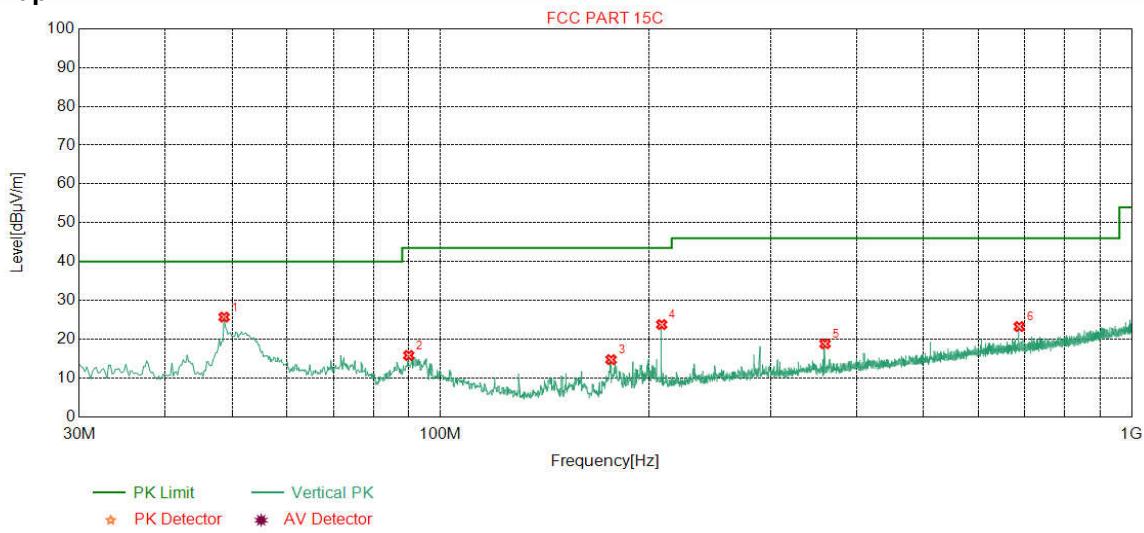
**Test Graph**



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity
1	49.9860	13.20	0.80	-32.12	30.84	12.72	40.00	27.28	Pass	Horizontal
2	103.3467	10.97	1.19	-32.06	29.78	9.88	43.50	33.62	Pass	Horizontal
3	208.9038	11.13	1.71	-31.94	35.10	16.00	43.50	27.50	Pass	Horizontal
4	338.3277	14.04	2.19	-31.81	30.66	15.08	46.00	30.92	Pass	Horizontal
5	608.6237	19.07	2.96	-32.05	29.25	19.23	46.00	26.77	Pass	Horizontal
6	687.5975	19.70	3.14	-32.06	32.71	23.49	46.00	22.51	Pass	Horizontal

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

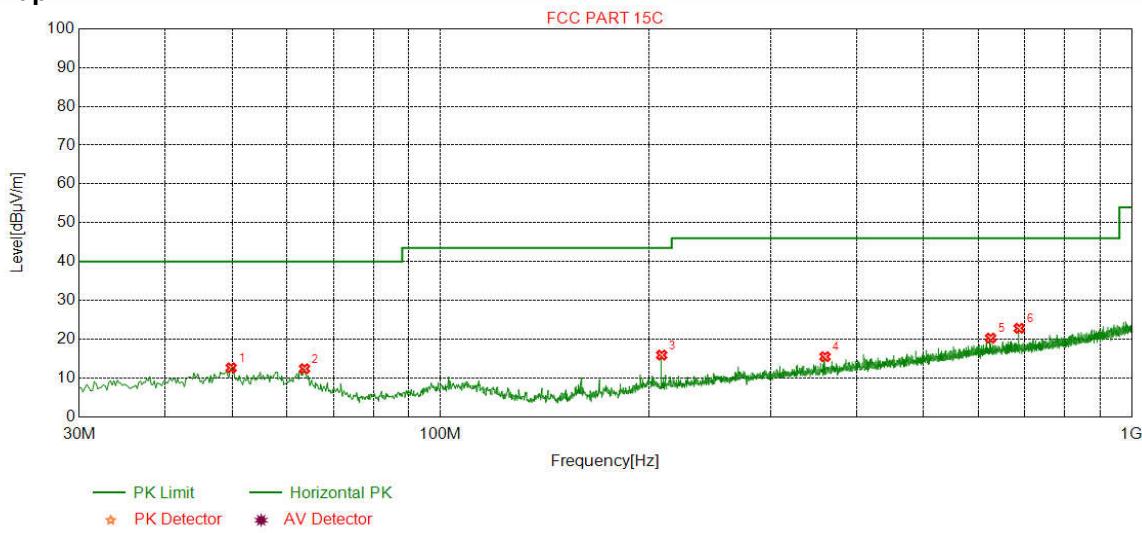
**Test Graph**



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity
1	48.6277	13.20	0.79	-32.12	43.80	25.67	40.00	14.33	Pass	Vertical
2	89.9580	9.39	1.10	-32.09	37.38	15.78	43.50	27.72	Pass	Vertical
3	176.4993	8.81	1.56	-31.98	36.31	14.70	43.50	28.80	Pass	Vertical
4	208.9038	11.13	1.71	-31.94	42.84	23.74	43.50	19.76	Pass	Vertical
5	360.0600	14.52	2.27	-31.84	33.82	18.77	46.00	27.23	Pass	Vertical
6	687.5975	19.70	3.14	-32.06	32.44	23.22	46.00	22.78	Pass	Vertical

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

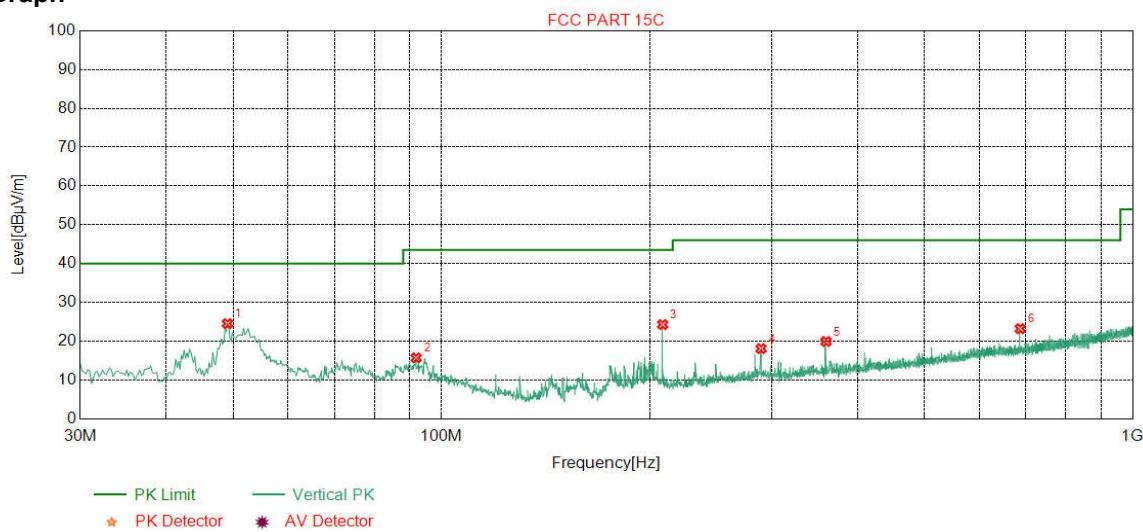
**Test Graph**



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity
1	49.7920	13.20	0.80	-32.12	30.70	12.58	40.00	27.42	Pass	Horizontal
2	63.5687	10.67	0.91	-32.04	32.82	12.36	40.00	27.64	Pass	Horizontal
3	208.9038	11.13	1.71	-31.94	34.97	15.87	43.50	27.63	Pass	Horizontal
4	360.0600	14.52	2.27	-31.84	30.51	15.46	46.00	30.54	Pass	Horizontal
5	625.1170	19.20	2.97	-31.98	30.06	20.25	46.00	25.75	Pass	Horizontal
6	687.5975	19.70	3.14	-32.06	32.00	22.78	46.00	23.22	Pass	Horizontal

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

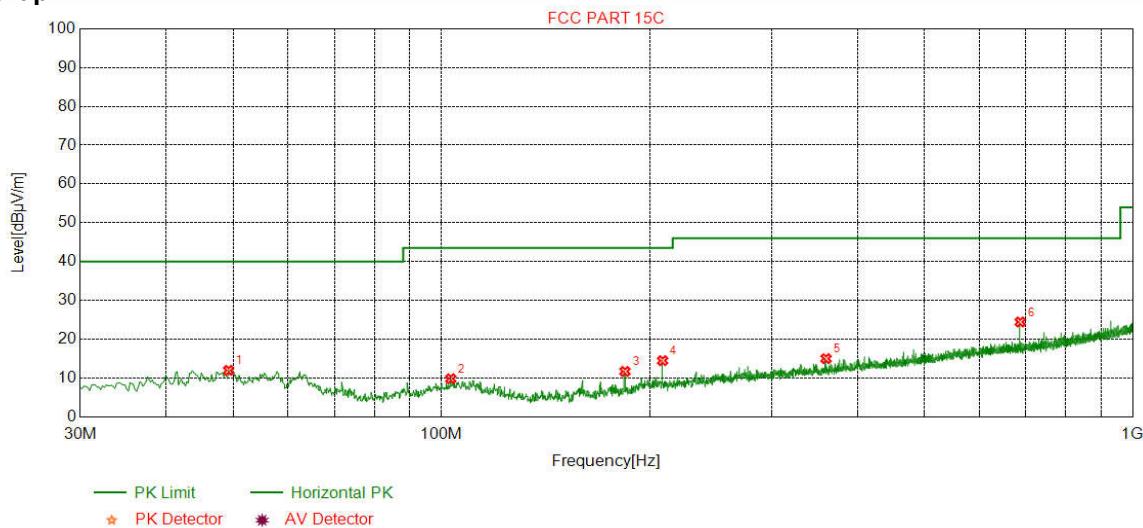
**Test Graph**



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity
1	49.0158	13.20	0.79	-32.12	42.64	24.51	40.00	15.49	Pass	Vertical
2	91.8984	9.70	1.11	-32.08	36.95	15.68	43.50	27.82	Pass	Vertical
3	208.9038	11.13	1.71	-31.94	43.36	24.26	43.50	19.24	Pass	Vertical
4	290.0120	13.00	2.03	-31.88	34.90	18.05	46.00	27.95	Pass	Vertical
5	360.0600	14.52	2.27	-31.84	34.94	19.89	46.00	26.11	Pass	Vertical
6	687.5975	19.70	3.14	-32.06	32.42	23.20	46.00	22.80	Pass	Vertical

Mode:	802.11 n(HT40) (6.5Mbps)	Channel:	2422
Remark:	QP		

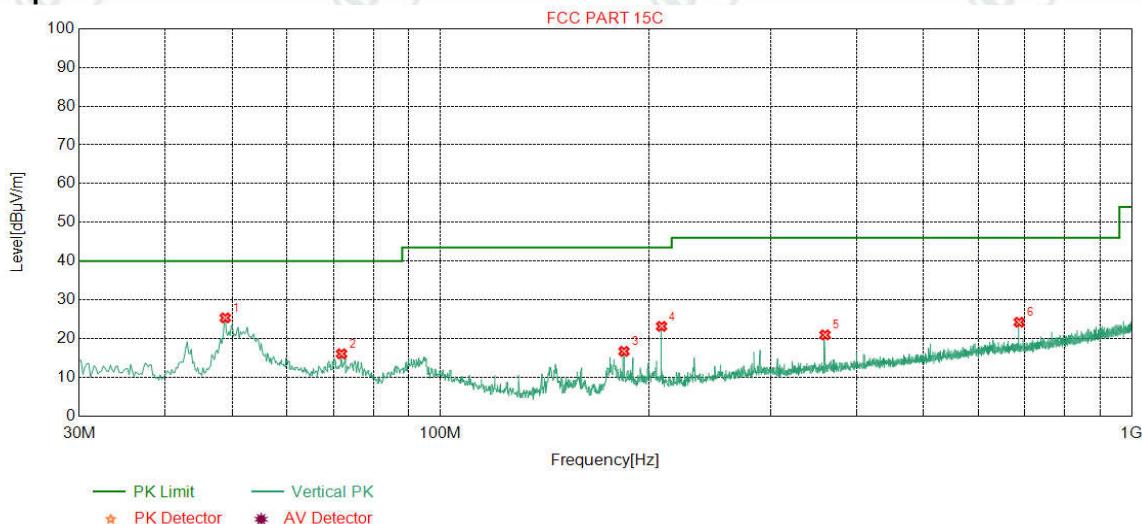
**Test Graph**



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity
1	49.2098	13.20	0.79	-32.12	30.06	11.93	40.00	28.07	Pass	Horizontal
2	103.1526	10.97	1.19	-32.06	29.67	9.77	43.50	33.73	Pass	Horizontal
3	184.2609	9.40	1.59	-31.97	32.64	11.66	43.50	31.84	Pass	Horizontal
4	208.9038	11.13	1.71	-31.94	33.54	14.44	43.50	29.06	Pass	Horizontal
5	360.0600	14.52	2.27	-31.84	30.01	14.96	46.00	31.04	Pass	Horizontal
6	687.5975	19.70	3.14	-32.06	33.63	24.41	46.00	21.59	Pass	Horizontal

Mode:	802.11 n(HT40) (6.5Mbps)	Channel:	2422
Remark:			QP

**Test Graph**



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity
1	48.8218	13.20	0.79	-32.12	43.45	25.32	40.00	14.68	Pass	Vertical
2	71.9124	8.64	0.97	-32.05	38.48	16.04	40.00	23.96	Pass	Vertical
3	184.2609	9.40	1.59	-31.97	37.65	16.67	43.50	26.83	Pass	Vertical
4	208.9038	11.13	1.71	-31.94	42.23	23.13	43.50	20.37	Pass	Vertical
5	360.0600	14.52	2.27	-31.84	35.98	20.93	46.00	25.07	Pass	Vertical
6	687.5975	19.70	3.14	-32.06	33.42	24.20	46.00	21.80	Pass	Vertical

## Transmitter Emission above 1GHz

Mode:		802.11b(11Mbps) Transmitting			Channel:				2412		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity	Remark
1	2900.7802	33.04	4.38	-36.62	46.96	47.76	74.00	26.24	Pass	H	Peak
2	4824.0000	34.50	4.61	-36.11	40.79	43.79	74.00	30.21	Pass	H	Peak
3	5989.6490	35.78	5.34	-36.29	43.38	48.21	74.00	25.79	Pass	H	Peak
4	7236.0000	36.34	5.79	-36.44	41.54	47.23	74.00	26.77	Pass	H	Peak
5	7895.9646	36.44	6.00	-36.22	43.49	49.71	74.00	24.29	Pass	H	Peak
6	9648.0000	37.66	6.72	-36.92	42.35	49.81	74.00	24.19	Pass	H	Peak
7	1855.7712	30.75	3.38	-36.93	47.78	44.98	74.00	29.02	Pass	V	Peak
8	3219.3969	33.29	4.57	-36.74	46.17	47.29	74.00	26.71	Pass	V	Peak
9	4824.0000	34.50	4.61	-36.11	40.11	43.11	74.00	30.89	Pass	V	Peak
10	6369.9370	35.87	5.40	-36.21	43.17	48.23	74.00	25.77	Pass	V	Peak
11	7236.0000	36.34	5.79	-36.44	41.36	47.05	74.00	26.95	Pass	V	Peak
12	9648.0000	37.66	6.72	-36.92	41.71	49.17	74.00	24.83	Pass	V	Peak

Mode:		802.11b(11Mbps) Transmitting			Channel:				2437		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity	Remark
1	3310.0810	33.32	4.57	-36.77	46.41	47.53	74.00	26.47	Pass	H	Peak
2	4874.0000	34.50	4.78	-36.09	40.47	43.66	74.00	30.34	Pass	H	Peak
3	6375.7876	35.88	5.38	-36.24	42.68	47.70	74.00	26.30	Pass	H	Peak
4	7311.0000	36.41	5.85	-36.31	41.22	47.17	74.00	26.83	Pass	H	Peak
5	9041.7042	37.69	6.46	-36.50	42.99	50.64	74.00	23.36	Pass	H	Peak
6	9748.0000	37.70	6.77	-36.79	42.32	50.00	74.00	24.00	Pass	H	Peak
7	2960.7922	33.14	4.43	-36.79	46.41	47.19	74.00	26.81	Pass	V	Peak
8	4874.0000	34.50	4.78	-36.09	40.69	43.88	74.00	30.12	Pass	V	Peak
9	5853.1353	35.57	5.08	-36.03	43.56	48.18	74.00	25.82	Pass	V	Peak
10	7311.0000	36.41	5.85	-36.31	40.19	46.14	74.00	27.86	Pass	V	Peak
11	8425.4425	36.57	6.37	-36.35	43.84	50.43	74.00	23.57	Pass	V	Peak
12	9748.0000	37.70	6.77	-36.79	41.38	49.06	74.00	24.94	Pass	V	Peak

Mode:		802.11b(11Mbps) Transmitting			Channel:				2462		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity	Remark
1	3460.2460	33.38	4.44	-36.57	47.22	48.47	74.00	25.53	Pass	H	Peak
2	4924.0000	34.50	4.85	-36.17	41.20	44.38	74.00	29.62	Pass	H	Peak
3	5850.2100	35.56	5.08	-36.01	42.87	47.50	74.00	26.50	Pass	H	Peak
4	7386.0000	36.49	5.85	-36.34	40.81	46.81	74.00	27.19	Pass	H	Peak
5	8430.3180	36.57	6.37	-36.35	43.84	50.43	74.00	23.57	Pass	H	Peak
6	9848.0000	37.74	6.83	-36.93	40.70	48.34	74.00	25.66	Pass	H	Peak
7	3219.3969	33.29	4.57	-36.74	46.26	47.38	74.00	26.62	Pass	V	Peak
8	4924.0000	34.50	4.85	-36.17	41.47	44.65	74.00	29.35	Pass	V	Peak
9	5774.1524	35.44	4.96	-36.08	43.04	47.36	74.00	26.64	Pass	V	Peak
10	7386.0000	36.49	5.85	-36.34	40.40	46.40	74.00	27.60	Pass	V	Peak
11	8425.4425	36.57	6.37	-36.35	44.03	50.62	74.00	23.38	Pass	V	Peak
12	9848.0000	37.74	6.83	-36.93	41.23	48.87	74.00	25.13	Pass	V	Peak

Mode:		802.11g(6Mbps) Transmitting			Channel:				2412		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity	Remark
1	3221.3471	33.29	4.56	-36.74	46.36	47.47	74.00	26.53	Pass	H	Peak
2	4824.0000	34.50	4.61	-36.11	40.97	43.97	74.00	30.03	Pass	H	Peak
3	6158.3408	35.83	5.24	-36.20	42.45	47.32	74.00	26.68	Pass	H	Peak
4	7236.0000	36.34	5.79	-36.44	40.34	46.03	74.00	27.97	Pass	H	Peak
5	8385.4635	36.55	6.28	-36.38	44.31	50.76	74.00	23.24	Pass	H	Peak
6	9648.0000	37.66	6.72	-36.92	41.74	49.20	74.00	24.80	Pass	H	Peak
7	2747.5495	32.80	4.15	-36.75	47.97	48.17	74.00	25.83	Pass	V	Peak
8	4824.0000	34.50	4.61	-36.11	40.75	43.75	74.00	30.25	Pass	V	Peak
9	6198.3198	35.84	5.22	-36.33	43.45	48.18	74.00	25.82	Pass	V	Peak
10	7236.0000	36.34	5.79	-36.44	40.60	46.29	74.00	27.71	Pass	V	Peak
11	8294.7795	36.52	6.12	-36.58	44.28	50.34	74.00	23.66	Pass	V	Peak
12	9648.0000	37.66	6.72	-36.92	42.21	49.67	74.00	24.33	Pass	V	Peak

Mode:		802.11g(6Mbps) Transmitting			Channel:				2437		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity	Remark
1	3000.0000	33.20	4.93	-36.71	46.08	47.50	74.00	26.50	Pass	H	Peak
2	4874.0000	34.50	4.78	-36.09	40.65	43.84	74.00	30.16	Pass	H	Peak
3	6319.2319	35.86	5.46	-36.19	43.15	48.28	74.00	25.72	Pass	H	Peak
4	7311.0000	36.41	5.85	-36.31	40.86	46.81	74.00	27.19	Pass	H	Peak
5	8402.0402	36.56	6.33	-36.26	44.05	50.68	74.00	23.32	Pass	H	Peak
6	9748.0000	37.70	6.77	-36.79	43.06	50.74	74.00	23.26	Pass	H	Peak
7	2931.9864	33.09	4.39	-36.74	47.31	48.05	74.00	25.95	Pass	V	Peak
8	4413.8914	34.38	4.63	-36.14	44.21	47.08	74.00	26.92	Pass	V	Peak
9	4874.0000	34.50	4.78	-36.09	40.98	44.17	74.00	29.83	Pass	V	Peak
10	6461.5962	35.89	5.51	-36.25	43.34	48.49	74.00	25.51	Pass	V	Peak
11	7311.0000	36.41	5.85	-36.31	41.74	47.69	74.00	26.31	Pass	V	Peak
12	9748.0000	37.70	6.77	-36.79	42.04	49.72	74.00	24.28	Pass	V	Peak

Mode:		802.11g(6Mbps) Transmitting			Channel:				2462		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity	Remark
1	2945.5891	33.11	4.40	-36.79	46.78	47.50	74.00	26.50	Pass	H	Peak
2	4924.0000	34.50	4.85	-36.17	41.19	44.37	74.00	29.63	Pass	H	Peak
3	5788.7789	35.46	4.97	-36.04	43.47	47.86	74.00	26.14	Pass	H	Peak
4	7386.0000	36.49	5.85	-36.34	41.55	47.55	74.00	26.45	Pass	H	Peak
5	8489.7990	36.60	6.47	-36.45	43.86	50.48	74.00	23.52	Pass	H	Peak
6	9848.0000	37.74	6.83	-36.93	40.07	47.71	74.00	26.29	Pass	H	Peak
7	2171.0342	31.94	3.65	-36.41	47.35	46.53	74.00	27.47	Pass	V	Peak
8	3570.4320	33.46	4.40	-36.50	45.34	46.70	74.00	27.30	Pass	V	Peak
9	4924.0000	34.50	4.85	-36.17	41.04	44.22	74.00	29.78	Pass	V	Peak
10	6301.6802	35.86	5.46	-36.23	43.14	48.23	74.00	25.77	Pass	V	Peak
11	7386.0000	36.49	5.85	-36.34	40.63	46.63	74.00	27.37	Pass	V	Peak
12	9848.0000	37.74	6.83	-36.93	41.68	49.32	74.00	24.68	Pass	V	Peak

Mode:		802.11n(HT20)(6.5Mbps)			Channel:				2412		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity	Remark
1	3079.9580	33.23	4.76	-36.83	46.31	47.47	74.00	26.53	Pass	H	Peak
2	3776.1776	33.62	4.36	-36.23	44.21	45.96	74.00	28.04	Pass	H	Peak
3	4824.0000	34.50	4.61	-36.11	40.12	43.12	74.00	30.88	Pass	H	Peak
4	6434.2934	35.89	5.45	-36.28	42.71	47.77	74.00	26.23	Pass	H	Peak
5	7236.0000	36.34	5.79	-36.44	40.12	45.81	74.00	28.19	Pass	H	Peak
6	9648.0000	37.66	6.72	-36.92	42.04	49.50	74.00	24.50	Pass	H	Peak
7	3090.6841	33.24	4.74	-36.83	46.24	47.39	74.00	26.61	Pass	V	Peak
8	4824.0000	34.50	4.61	-36.11	40.91	43.91	74.00	30.09	Pass	V	Peak
9	5145.2145	34.65	4.89	-36.08	43.71	47.17	74.00	26.83	Pass	V	Peak
10	7236.0000	36.34	5.79	-36.44	40.81	46.50	74.00	27.50	Pass	V	Peak
11	8414.7165	36.57	6.35	-36.31	43.73	50.34	74.00	23.66	Pass	V	Peak
12	9648.0000	37.66	6.72	-36.92	42.38	49.84	74.00	24.16	Pass	V	Peak

Mode:		802.11n(HT20)(6.5Mbps)			Channel:				2437		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity	Remark
1	3214.5215	33.29	4.59	-36.73	46.39	47.54	74.00	26.46	Pass	H	Peak
2	4874.0000	34.50	4.78	-36.09	40.29	43.48	74.00	30.52	Pass	H	Peak
3	6328.0078	35.87	5.46	-36.18	42.90	48.05	74.00	25.95	Pass	H	Peak
4	7311.0000	36.41	5.85	-36.31	40.57	46.52	74.00	27.48	Pass	H	Peak
5	8481.9982	36.59	6.46	-36.44	43.84	50.45	74.00	23.55	Pass	H	Peak
6	9748.0000	37.70	6.77	-36.79	41.29	48.97	74.00	25.03	Pass	H	Peak
7	3398.8149	33.36	4.56	-36.64	46.18	47.46	74.00	26.54	Pass	V	Peak
8	4874.0000	34.50	4.78	-36.09	41.18	44.37	74.00	29.63	Pass	V	Peak
9	5754.6505	35.41	4.94	-36.12	43.49	47.72	74.00	26.28	Pass	V	Peak
10	7311.0000	36.41	5.85	-36.31	40.59	46.54	74.00	27.46	Pass	V	Peak
11	8438.1188	36.58	6.38	-36.38	44.19	50.77	74.00	23.23	Pass	V	Peak
12	9748.0000	37.70	6.77	-36.79	42.09	49.77	74.00	24.23	Pass	V	Peak

Mode:		802.11n(HT20)(6.5Mbps)			Channel:				2462		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity	Remark
1	2759.1518	32.81	4.17	-36.77	47.36	47.57	74.00	26.43	Pass	H	Peak
2	4924.0000	34.50	4.85	-36.17	40.76	43.94	74.00	30.06	Pass	H	Peak
3	5866.7867	35.59	5.07	-36.09	43.11	47.68	74.00	26.32	Pass	H	Peak
4	7386.0000	36.49	5.85	-36.34	40.07	46.07	74.00	27.93	Pass	H	Peak
5	8433.2433	36.57	6.38	-36.37	44.07	50.65	74.00	23.35	Pass	H	Peak
6	9848.0000	37.74	6.83	-36.93	41.38	49.02	74.00	24.98	Pass	H	Peak
7	1410.8822	28.31	2.91	-37.18	49.88	43.92	74.00	30.08	Pass	V	Peak
8	3017.5518	33.21	4.89	-36.77	46.51	47.84	74.00	26.16	Pass	V	Peak
9	4924.0000	34.50	4.85	-36.17	40.28	43.46	74.00	30.54	Pass	V	Peak
10	7386.0000	36.49	5.85	-36.34	40.11	46.11	74.00	27.89	Pass	V	Peak
11	8157.2907	36.46	6.41	-36.48	44.18	50.57	74.00	23.43	Pass	V	Peak
12	9848.0000	37.74	6.83	-36.93	41.09	48.73	74.00	25.27	Pass	V	Peak

Mode:		802.11n(HT40)(13.5Mbps)			Channel:				2422		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity	Remark
1	2153.4307	31.91	3.65	-36.30	46.90	46.16	74.00	27.84	Pass	H	Peak
2	3013.6514	33.21	4.90	-36.76	47.08	48.43	74.00	25.57	Pass	H	Peak
3	4844.0000	34.50	4.67	-36.07	40.88	43.98	74.00	30.02	Pass	H	Peak
4	6318.2568	35.86	5.46	-36.19	42.87	48.00	74.00	26.00	Pass	H	Peak
5	7266.0000	36.37	5.80	-36.37	40.57	46.37	74.00	27.63	Pass	H	Peak
6	9688.0000	37.68	6.62	-36.75	43.18	50.73	74.00	23.27	Pass	H	Peak
7	3001.9502	33.20	4.93	-36.72	47.19	48.60	74.00	25.40	Pass	V	Peak
8	4844.0000	34.50	4.67	-36.07	39.94	43.04	74.00	30.96	Pass	V	Peak
9	6245.1245	35.85	5.34	-36.30	42.92	47.81	74.00	26.19	Pass	V	Peak
10	7266.0000	36.37	5.80	-36.37	41.36	47.16	74.00	26.84	Pass	V	Peak
11	8408.8659	36.56	6.34	-36.28	43.92	50.54	74.00	23.46	Pass	V	Peak
12	9688.0000	37.68	6.62	-36.75	42.67	50.22	74.00	23.78	Pass	V	Peak

Mode:		802.11n(HT40) (13.5Mbps)			Channel:				2437		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity	Remark
1	3123.8374	33.25	4.65	-36.88	46.87	47.89	74.00	26.11	Pass	H	Peak
2	4874.0000	34.50	4.78	-36.09	40.14	43.33	74.00	30.67	Pass	H	Peak
3	6381.6382	35.88	5.37	-36.27	42.81	47.79	74.00	26.21	Pass	H	Peak
4	7311.0000	36.41	5.85	-36.31	40.45	46.40	74.00	27.60	Pass	H	Peak
5	8442.0192	36.58	6.39	-36.40	43.91	50.48	74.00	23.52	Pass	H	Peak
6	9748.0000	37.70	6.77	-36.79	42.58	50.26	74.00	23.74	Pass	H	Peak
7	2800.3601	32.88	4.24	-36.89	47.66	47.89	74.00	26.11	Pass	V	Peak
8	4874.0000	34.50	4.78	-36.09	40.40	43.59	74.00	30.41	Pass	V	Peak
9	6375.7876	35.88	5.38	-36.24	43.32	48.34	74.00	25.66	Pass	V	Peak
10	7311.0000	36.41	5.85	-36.31	40.28	46.23	74.00	27.77	Pass	V	Peak
11	8433.2433	36.57	6.38	-36.37	44.18	50.76	74.00	23.24	Pass	V	Peak
12	9748.0000	37.70	6.77	-36.79	42.20	49.88	74.00	24.12	Pass	V	Peak

Mode:		802.11n(HT40) (13.5Mbps)			Channel:				2462		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dB $\mu$ V]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Magin [dB]	Result	Polarity	Remark
1	2155.4311	31.92	3.65	-36.32	47.11	46.36	74.00	27.64	Pass	H	Peak
2	3195.9946	33.28	4.64	-36.71	46.34	47.55	74.00	26.45	Pass	H	Peak
3	4904.0000	34.50	4.87	-36.12	41.62	44.87	74.00	29.13	Pass	H	Peak
4	6966.6967	36.09	5.77	-36.24	43.52	49.14	74.00	24.86	Pass	H	Peak
5	7356.0000	36.46	5.85	-36.57	40.73	46.47	74.00	27.53	Pass	H	Peak
6	9808.0000	37.72	6.59	-36.89	42.24	49.66	74.00	24.34	Pass	H	Peak
7	2898.7798	33.04	4.38	-36.63	47.32	48.11	74.00	25.89	Pass	V	Peak
8	4904.0000	34.50	4.87	-36.12	40.57	43.82	74.00	30.18	Pass	V	Peak
9	6338.7339	35.87	5.46	-36.15	42.88	48.06	74.00	25.94	Pass	V	Peak
10	7356.0000	36.46	5.85	-36.57	39.57	45.31	74.00	28.69	Pass	V	Peak
11	8207.0207	36.48	6.34	-36.83	43.99	49.98	74.00	24.02	Pass	V	Peak
12	9808.0000	37.72	6.59	-36.89	41.82	49.24	74.00	24.76	Pass	V	Peak

## Note:

1) Through transmitting mode with all kind of modulation and data rate, find the 11Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20); 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

3) Scan from 9kHz to 25GHz, the disturbance above 9.8GHz 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.

## PHOTOGRAPHS OF TEST SETUP

Test Model No.: C76



**Radiated spurious emission Test Setup-1(30MHz~1GHz)**



**Radiated spurious emission Test Setup-2(1GHz~18GHz)**



**Conducted Emissions Test Setup**



## PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No.EED32K00243601 for EUT external and internal photos.

\*\*\* End of Report \*\*\*

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

