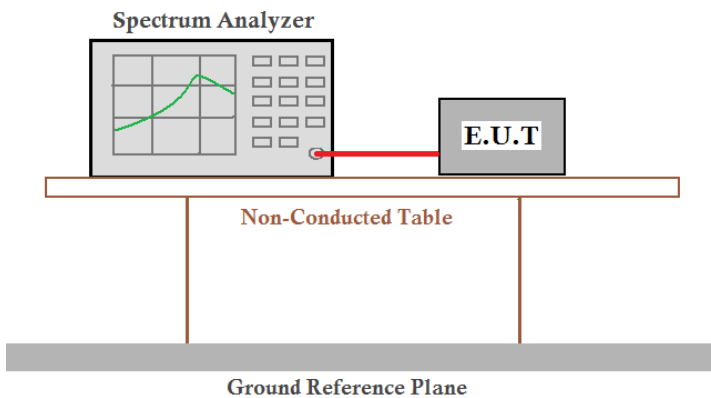


6.7 Spurious Emission

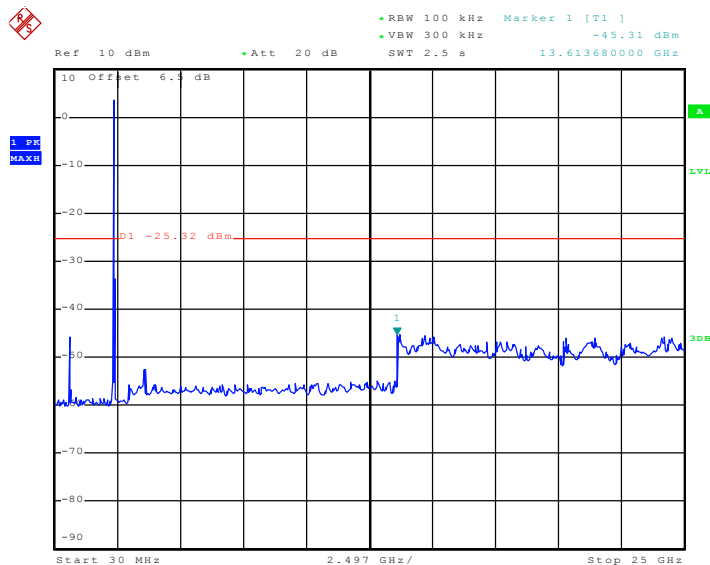
6.7.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.4:2003 and KDB558074
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	 <p>The diagram illustrates the test setup for conducted emission measurement. A Spectrum Analyzer is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p>
Test Instruments:	Refer to section 5.6 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Test plot as follows:

Test mode:	802.11b
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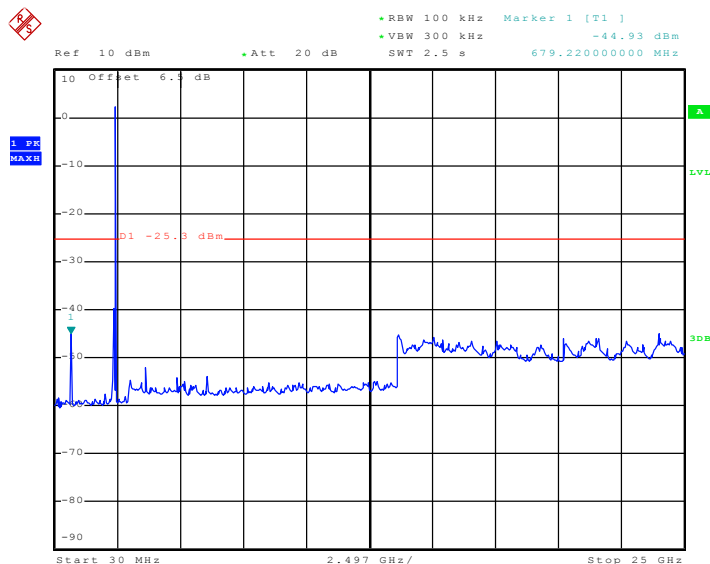
Lowest channel



Date: 19.SEP.2014 22:43:43

30MHz~25GHz

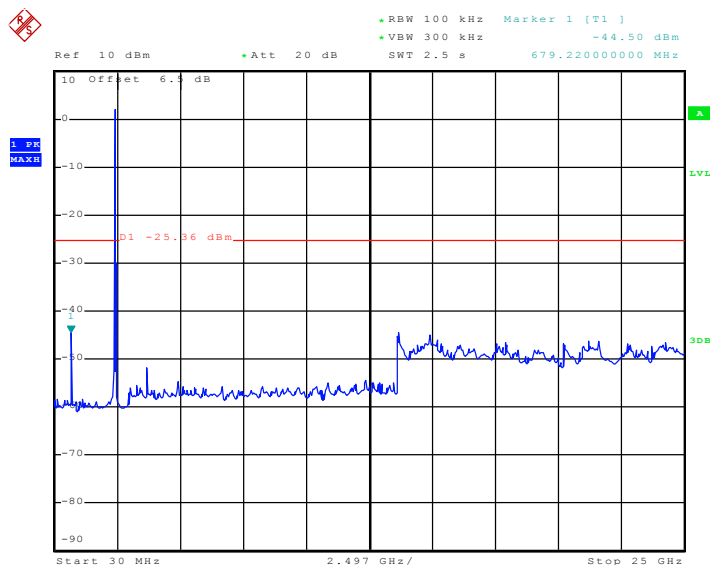
Middle channel



Date: 19.SEP.2014 22:44:44

30MHz~25GHz

Highest channel

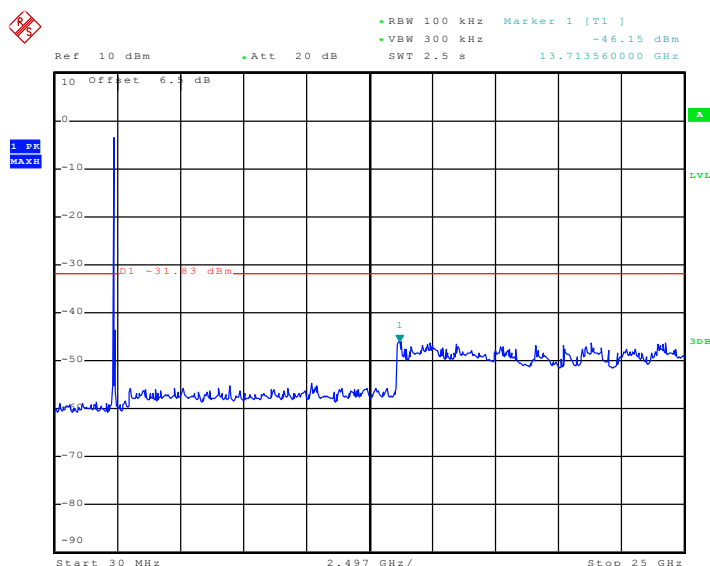


Date: 19.SEP.2014 22:45:11

30MHz~25GHz

Test mode:	802.11g
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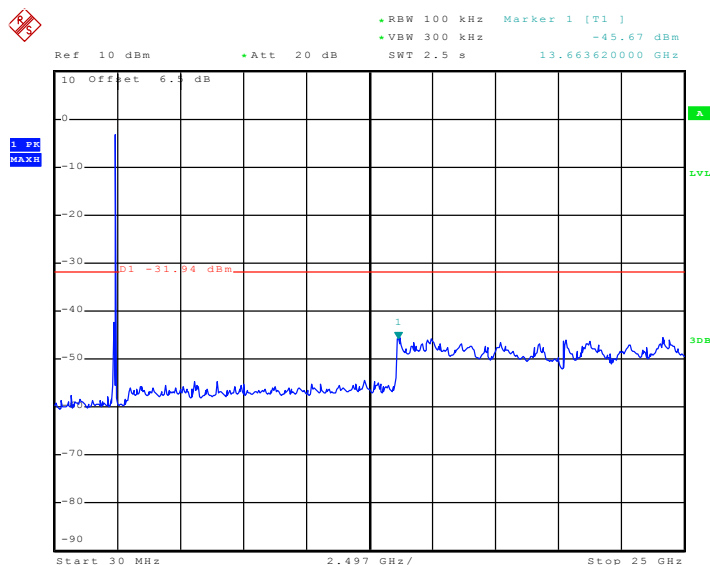
Lowest channel



Date: 19.SEP.2014 22:42:55

30MHz~25GHz

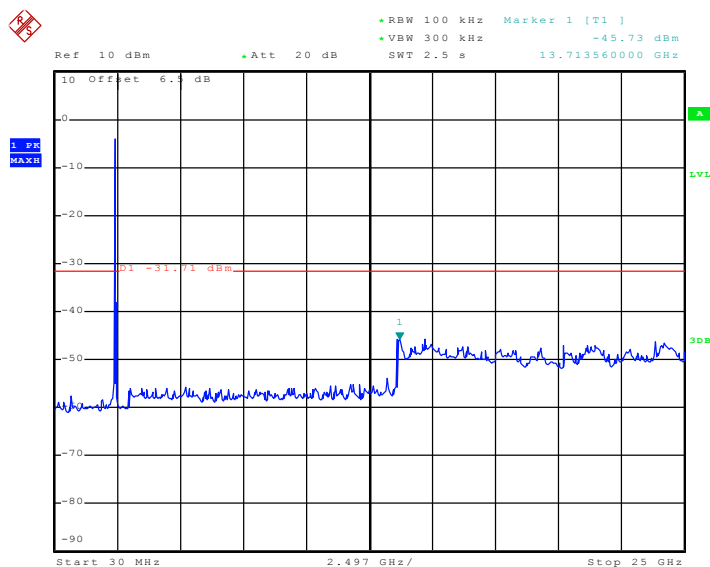
Middle channel



Date: 19.SEP.2014 22:42:14

30MHz~25GHz

Highest channel

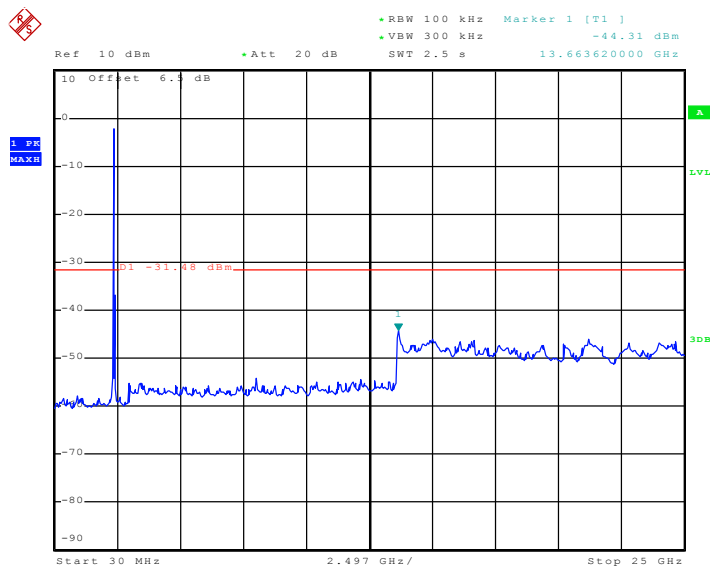


Date: 19.SEP.2014 22:41:18

30MHz~25GHz

Test mode:	802.11n(H20)
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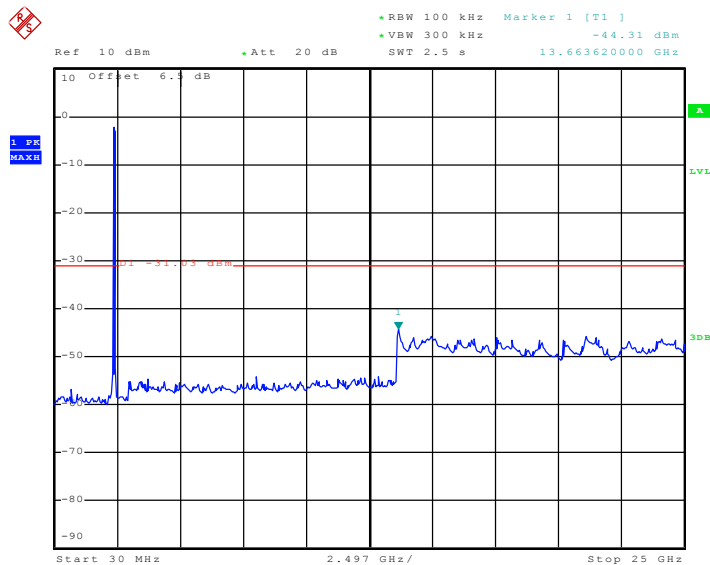
Lowest channel



Date: 19.SEP.2014 22:46:00

30MHz~25GHz

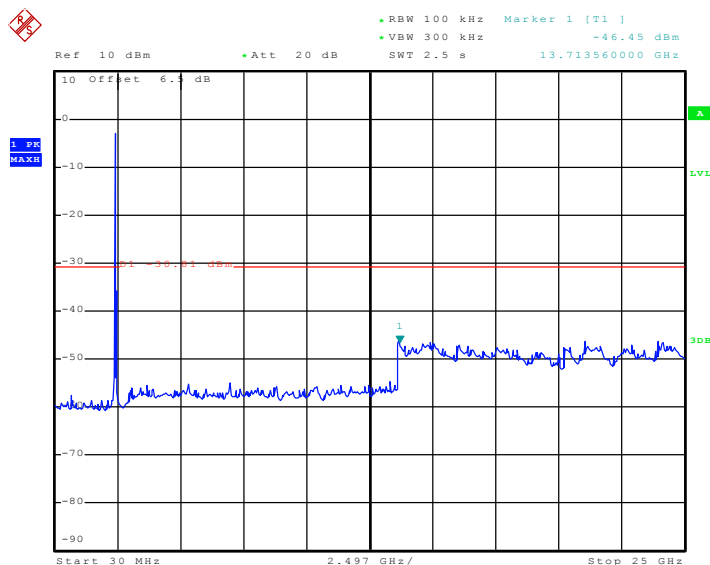
Middle channel



Date: 19.SEP.2014 22:46:41

30MHz~25GHz

Highest channel



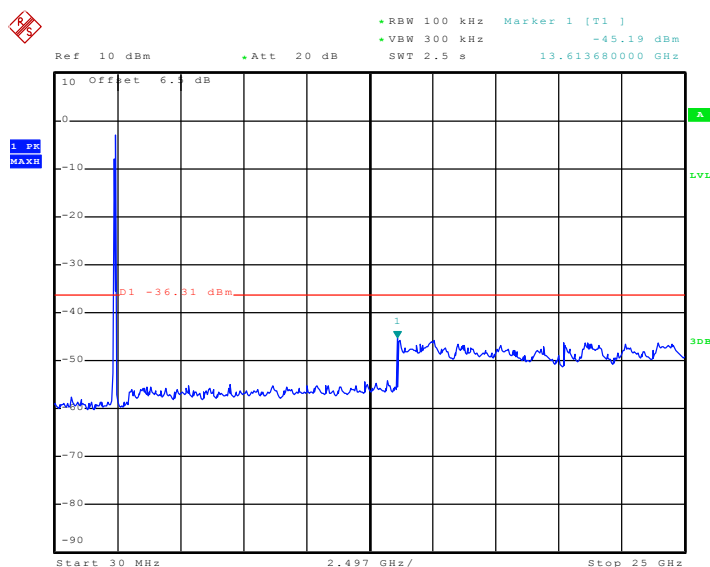
Date: 19.SRP.2014 22:47:13

30MHz~25GHz

Test mode:

802.11n(H40)

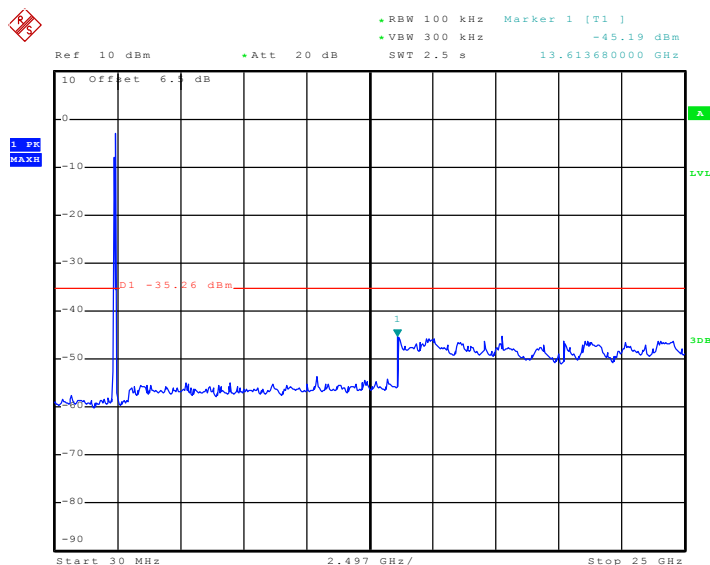
Lowest channel



Date: 19.SRP.2014 22:47:49

30MHz~25GHz

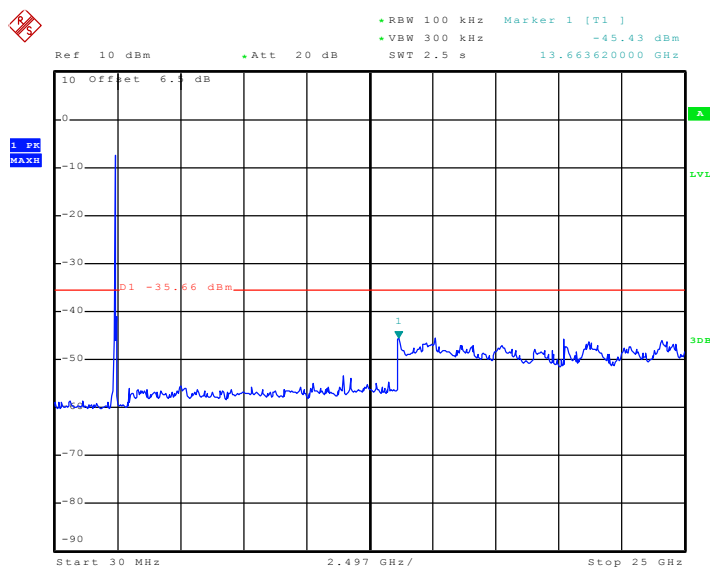
Middle channel



Date: 19.SRP.2014 22:48:17

30MHz~25GHz

Highest channel

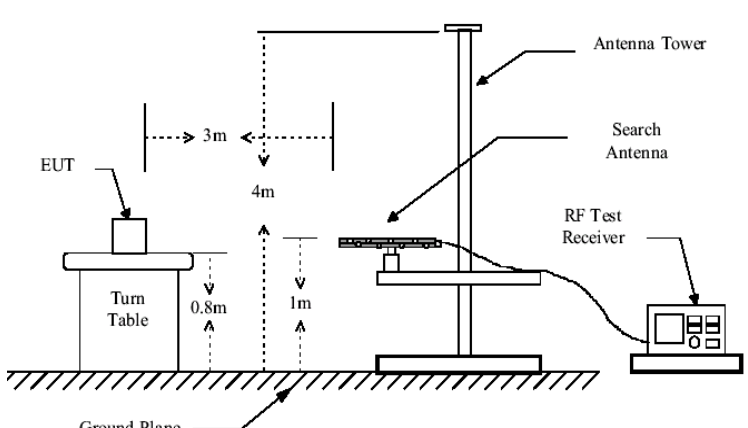
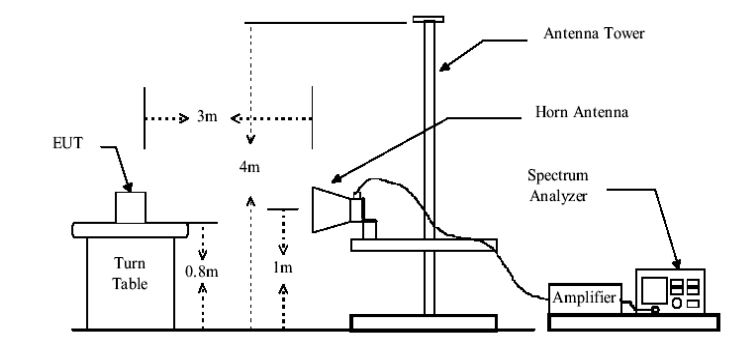


Date: 19.SRP.2014 22:48:50

30MHz~25GHz

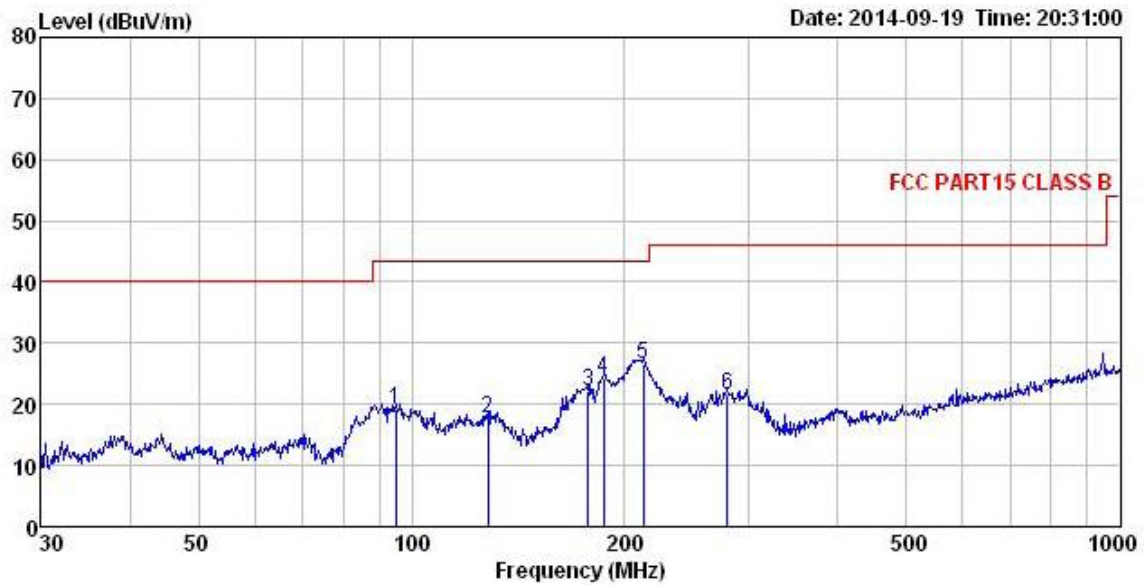
6.7.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205				
Test Method:	ANSI C63.4:2003				
Test Frequency Range:	9KHz to 25GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:					
	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
Peak		1MHz	10Hz	Average Value	
Limit:					
	Frequency		Limit (dBuV/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 Procedure:	<div>1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.</div> <div>2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</div> <div>3. 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.</div> <div>4. 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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading.</div> <div>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</div> <div>6. 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.</div>				

Test setup:	<p>Below 1GHz</p>  <p>Above 1GHz</p> 
Test Instruments:	Refer to section 5.6 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	<ol style="list-style-type: none"> 1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case. 2. 9 kHz to 30MHz is too low, so only shows the data of above 30MHz in this report.

Below 1GHz

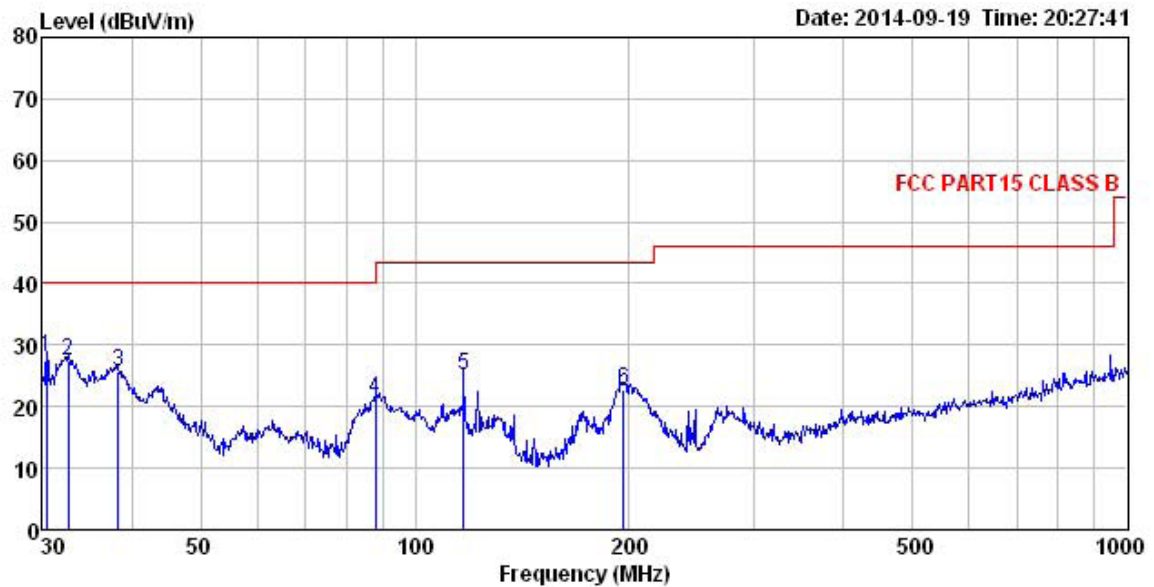
Horizontal :



Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) HORIZONTAL
 Pro : 774RF
 EUT : Smart Phone
 Model : U1
 Test mode : WIFI mode
 Power Rating : AC 120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: Carey
 REMARK :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamplifier Factor	Level	Limit	Over	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	95.093	34.92	12.84	0.93	29.55	19.14	43.50	-24.36	QP
2	128.113	36.77	9.22	1.18	29.34	17.83	43.50	-25.67	QP
3	177.509	40.15	9.49	1.36	28.99	22.01	43.50	-21.49	QP
4	186.441	41.46	10.24	1.37	28.93	24.14	43.50	-19.36	QP
5	212.270	43.00	10.93	1.44	28.75	26.62	43.50	-16.88	QP
6	279.044	35.82	12.63	1.71	28.49	21.67	46.00	-24.33	QP

Vertical :



Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) VERTICAL
 Pro : 774RF
 EUT : Smart Phone
 Model : U1
 Test mode : WIFI mode
 Power Rating : AC 120V/60Hz
 Environment : Temp:25.5'C Humi:55%
 Test Engineer: Carey
 REMARK :

	Freq	ReadAntenna	Cable Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	30.424	45.25	12.33	0.43	29.98	28.03	40.00	-11.97 QP
2	32.634	44.58	12.31	0.46	29.96	27.39	40.00	-12.61 QP
3	38.346	41.97	13.15	0.51	29.92	25.71	40.00	-14.29 QP
4	88.033	38.61	11.32	0.90	29.58	21.25	43.50	-22.25 QP
5	116.950	42.39	11.00	1.10	29.41	25.08	43.50	-18.42 QP
6	196.510	39.72	10.57	1.38	28.85	22.82	43.50	-20.68 QP

Above 1GHz

Test mode: 802.11b			Test channel: Lowest			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	50.60	31.53	8.90	40.24	50.79	74.00	-23.21	Vertical
4824.00	47.85	31.53	8.90	40.24	48.04	74.00	-25.96	Horizontal

Test mode: 802.11b			Test channel: Lowest			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	40.35	31.53	8.90	40.24	40.54	54.00	-13.46	Vertical
4824.00	37.07	31.53	8.90	40.24	37.26	54.00	-16.74	Horizontal

Test mode: 802.11b			Test channel: Middle			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	45.59	31.58	8.98	40.15	46.00	74.00	-28.00	Vertical
4874.00	45.77	31.58	8.98	40.15	46.18	74.00	-27.82	Horizontal

Test mode: 802.11b			Test channel: Middle			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	35.55	31.58	8.98	40.15	35.96	54.00	-18.04	Vertical
4874.00	35.67	31.58	8.98	40.15	36.08	54.00	-17.92	Horizontal

Test mode: 802.11b			Test channel: Highest			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	45.67	31.69	9.08	40.03	46.41	74.00	-27.59	Vertical
4924.00	45.04	31.69	9.08	40.03	45.78	74.00	-28.22	Horizontal

Test mode: 802.11b			Test channel: Highest			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	35.55	31.69	9.08	40.03	36.29	54.00	-17.71	Vertical
4924.00	36.46	31.69	9.08	40.03	37.20	54.00	-16.80	Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test mode: 802.11g			Test channel: Lowest			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	45.98	31.53	8.90	40.24	46.17	74.00	-27.83	Vertical
4824.00	45.62	31.53	8.90	40.24	45.81	74.00	-28.19	Horizontal

Test mode: 802.11g			Test channel: Lowest			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	35.95	31.53	8.90	40.24	36.14	54.00	-17.86	Vertical
4824.00	35.15	31.53	8.90	40.24	35.34	54.00	-18.66	Horizontal

Test mode: 802.11g			Test channel: Middle			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	46.27	31.58	8.98	40.15	46.68	74.00	-27.32	Vertical
4874.00	45.75	31.58	8.98	40.15	46.16	74.00	-27.84	Horizontal

Test mode: 802.11g			Test channel: Middle			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	36.43	31.58	8.98	40.15	36.84	54.00	-17.16	Vertical
4874.00	35.33	31.58	8.98	40.15	35.74	54.00	-18.26	Horizontal

Test mode: 802.11g			Test channel: Highest			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	45.47	31.69	9.08	40.03	46.21	74.00	-27.79	Vertical
4924.00	44.86	31.69	9.08	40.03	45.60	74.00	-28.40	Horizontal

Test mode: 802.11g			Test channel: Highest			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	35.57	31.69	9.08	40.03	36.31	54.00	-17.69	Vertical
4924.00	34.60	31.69	9.08	40.03	35.34	54.00	-18.66	Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test mode: 802.11n(H20)			Test channel: Lowest			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	45.83	31.53	8.90	40.24	46.02	74.00	-27.98	Vertical
4824.00	46.16	31.53	8.90	40.24	46.35	74.00	-27.65	Horizontal

Test mode: 802.11n(H20)			Test channel: Lowest			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	35.46	31.53	8.90	40.24	35.65	54.00	-18.35	Vertical
4824.00	36.19	31.53	8.90	40.24	36.38	54.00	-17.62	Horizontal

Test mode: 802.11n(H20)			Test channel: Middle			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	46.19	31.58	8.98	40.15	46.60	74.00	-27.40	Vertical
4874.00	45.52	31.58	8.98	40.15	45.93	74.00	-28.07	Horizontal

Test mode: 802.11n(H20)			Test channel: Middle			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	36.31	31.58	8.98	40.15	36.72	54.00	-17.28	Vertical
4874.00	35.77	31.58	8.98	40.15	36.18	54.00	-17.82	Horizontal

Test mode: 802.11n(H20)			Test channel: Highest			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	44.96	31.69	9.08	40.03	45.70	74.00	-28.30	Vertical
4924.00	45.54	31.69	9.08	40.03	46.28	74.00	-27.72	Horizontal

Test mode: 802.11n(H20)			Test channel: Highest			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	35.03	31.69	9.08	40.03	35.77	54.00	-18.23	Vertical
4924.00	35.10	31.69	9.08	40.03	35.84	54.00	-18.16	Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test mode: 802.11n(H40)			Test channel: Lowest			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4844.00	45.61	31.53	8.90	40.24	45.80	74.00	-28.20	Vertical
4844.00	46.18	31.53	8.90	40.24	46.37	74.00	-27.63	Horizontal

Test mode: 802.11n(H40)			Test channel: Lowest			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4844.00	35.37	31.53	8.90	40.24	35.56	54.00	-18.44	Vertical
4844.00	36.38	31.53	8.90	40.24	36.57	54.00	-17.43	Horizontal

Test mode: 802.11n(H40)			Test channel: Middle			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	46.06	31.58	8.98	40.15	46.47	74.00	-27.53	Vertical
4874.00	45.07	31.58	8.98	40.15	45.48	74.00	-28.52	Horizontal

Test mode: 802.11n(H40)			Test channel: Middle			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	36.53	31.58	8.98	40.15	36.94	54.00	-17.06	Vertical
4874.00	35.45	31.58	8.98	40.15	35.86	54.00	-18.14	Horizontal

Test mode: 802.11n(H40)			Test channel: Highest			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4904.00	46.18	31.69	9.08	40.03	46.92	74.00	-27.08	Vertical
4904.00	45.14	31.69	9.08	40.03	45.88	74.00	-28.12	Horizontal

Test mode: 802.11n(H40)			Test channel: Highest			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4904.00	36.64	31.69	9.08	40.03	37.38	54.00	-16.62	Vertical
4904.00	35.48	31.69	9.08	40.03	36.22	54.00	-17.78	Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.