



## Test Report (Class II Permissive Change)

Product Name	Intel® Centrino® Ultimate-N 6300
Model No	633ANHMW
FCC ID.	PD9633ANH

Applicant	Intel Corporation
Address	100 Center Point Circle Suite 200 Columbia, SC 29210

Date of Receipt	Oct. 13, 2011
Issue Date	Dec. 15, 2011
Report No.	11A219R-RFUSP42V01
Report Version	V1.0

The test results relate only to the samples tested.  
The test report shall not be reproduced except in full without the written approval of Quietek Corporation.  
This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government


# Test Report Certification

Issue Date: Dec. 15, 2011

Report No.: 11A219R-RFUSP42V01



**Accredited by NIST (NVLAP)**  
NVLAP Lab Code: 200533-0

Product Name	Intel® Centrino® Ultimate-N 6300	
Applicant	Intel Corporation	
Address	100 Center Point Circle Suite 200 Columbia, SC 29210	
Manufacturer	Intel Corporation	
Model No.	633ANHMW	
EUT Rated Voltage	DC 3.3V (via Mini-PCI Express slot)	
EUT Test Voltage	AC 120V/60Hz	
Trade Name	Intel	
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2010 ANSI C63.4: 2003+2009	 NVLAP Lab Code: 200533-0
Test Result	Complied	

The test results relate only to the samples tested.

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Testing Laboratory  
**0914**

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## 1. GENERAL INFORMATION

### 1.1. EUT Description

Product Name	Intel® Centrino® Ultimate-N 6300
Trade Name	Intel
Model No.	633ANHMW
FCC ID.	PD9633ANH
Frequency Range	802.11b/g/n-20MHz:2412-2462MHz,802.11n-40MHz:2422-2452MHz 802.11a/n-20MHz:5745-5825MHz ,802.11n-40MHz:5755-5795MHz
Number of Channels	802.11b/g/n-20MHz: 11, n-40MHz: 7 802.11a/n-20MHz: 5, n-40MHz: 2
Data Speed	802.11b: 1-11Mbps, 802.11a/g: 6-54Mbps, 802.11n: up to 450Mbps
Channel separation	802.11b/g/n-20MHz: 5 MHz, 802.11a/n-20MHz: 20MHz 802.11n-40MHz: 40MHz
Type of Modulation	802.11b:DSSS DBPSK, DQPSK, CCK 802.11a/g/n: OFDM BPSK, QPSK, 16QAM, 64QAM
Antenna Type	Dipole
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto

#### Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	Air802 + Amphenol + Hirose	Air 802 Antenna: ANRD245X05-RTP Amphenol Connector: 901-10097 Hirose Cable: U.FL-2LP-04N1-A-(100)	-1.65dBi for 2.4GHz 0.25dBi for 5.15-5.35GHz 0.12dBi for 5.47-5.725GHz -0.80dBi for 5.725-5.850GHz

Note: The antenna of EUT is conform to FCC 15.203

**802.11b/g/n-20MHz Center Frequency of Each Channel:**

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz		

**802.11a/n-20MHz Center Working Frequency of Each Channel:**

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 149:	5745 MHz	Channel 153:	5765 MHz	Channel 157:	5785 MHz	Channel 161:	5805 MHz
Channel 165:	5825 MHz						

**802.11n-40MHz (2.4G Band) Center Working Frequency of Each Channel:**

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 3:	2422 MHz	Channel 4:	2427 MHz	Channel 5:	2432 MHz	Channel 6:	2437 MHz
Channel 7:	2442 MHz	Channel 8:	2447 MHz	Channel 9:	2452 MHz		

**802.11n-40MHz (5G Band) Center Working Frequency of Each Channel:**

Channel	Frequency	Channel	Frequency
Channel 151:	5755 MHz	Channel 159:	5795 MHz

**Note:**

1. This device is an Intel® Centrino® Ultimate-N 6300 with a built-in 2.4GHz and 5GHz WLAN transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11a is 6Mbps 、802.11b is 1Mbps 、802.11g is 6Mbps 、802.11n(20M-BW) is 21.7Mbps and 、802.11n(40M-BW) is 45Mbps).
4. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11a/b/g/n transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.
5. This is to request a Class II permissive change for **FCC ID: PD9633ANH**, originally granted on **08/10/2009**.

The major change filed under this application is:

Change #1: Addition new antenna

Antenna type: Dipole antenna

Test Mode:	Mode 1: Transmit - 802.11b 1Mbps
	Mode 2: Transmit - 802.11g 6Mbps
	Mode 3: Transmit - 802.11a 6Mbps
	Mode 4: Transmit - 802.11n-20BW_21.7Mbps(2.4G Band)
	Mode 5: Transmit - 802.11n-40BW_45Mbps(2.4G Band)
	Mode 6: Transmit - 802.11n-20BW_21.7Mbps(5G Band)
	Mode 7: Transmit - 802.11n-40BW_45Mbps(5G Band)

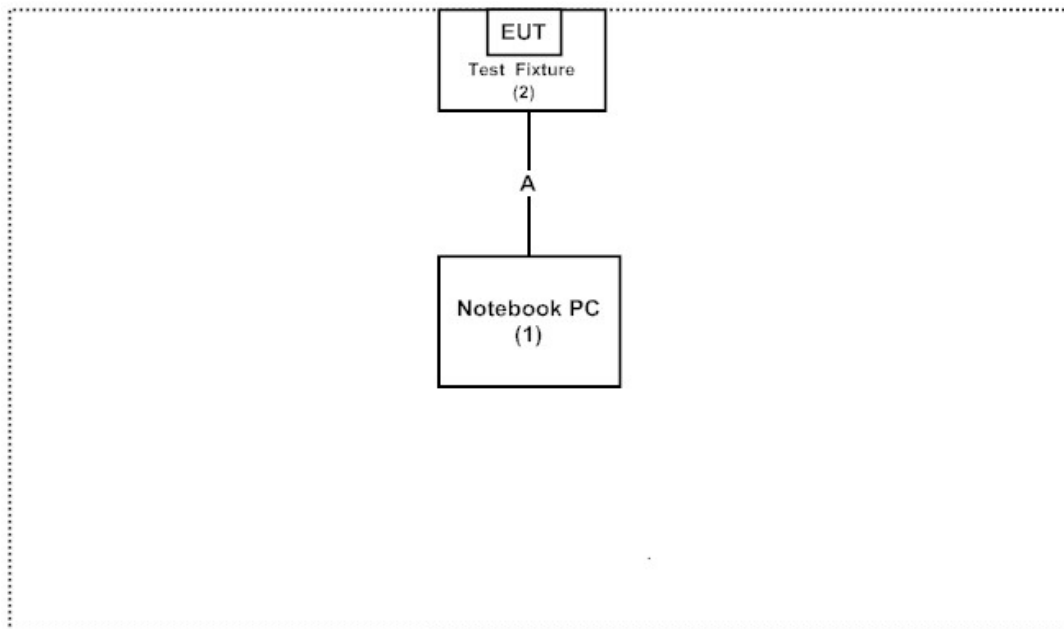
### 1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	Power Cord
(1) Notebook PC	Intel	N/A	N/A	Non-Shielded, 1.8m
(2) Test Fixture	Intel	N/A	N/A	N/A

Signal Cable Type	Signal cable Description
A Control Cable	Non-shielded, 0.15m

### 1.4. Configuration of Tested System



### 1.5. EUT Exercise Software

- (1) Setup the EUT as shown in Section 1.4
- (2) Execute “DRTU v1.5.3-0320” program on the Notebook.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Press “OK” to start the continuous Transmit.
- (5) Verify that the EUT works properly.

**1.6. Test Facility**

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-30
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from

Quietek Corporation's Web Site : <http://www.quietek.com/tw/ctg/cts/accreditations.htm>

The address and introduction of Quietek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>

Site Description: File on  
 Federal Communications Commission  
 FCC Engineering Laboratory  
 7435 Oakland Mills Road  
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 Registration Number: 92195



Accreditation on NVLAP  
 NVLAP Lab Code: 200533-0



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FCC Accreditation Number: TW1014



**2. Peak Power Output**

**2.1. Test Equipment**

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2011
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2011

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

**2.2. Test Setup**

Conducted Measurement



**2.3. Limits**

The maximum peak power shall be less 1 Watt.

**2.4. Test Procedure**

The EUT was tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

**2.5. Uncertainty**

± 1.27 dB



## 2.6. Test Result of Peak Power Output

Product : Intel® Centrino® Ultimate-N 6300  
Test Item : Peak Power Output Data  
Test Site : No.3 OATS  
Test Mode : Mode 1: Transmit - 802.11b 1Mbps

### CHAIN A

Channel No.	Frequency (MHz)	Measurement (Average)	Measurement (Peak)	Required Limit	Result
01	2412	16.58	18.82	1Watt= 30 dBm	Pass
06	2437	16.38	18.66	1Watt= 30 dBm	Pass
11	2462	16.40	18.69	1Watt= 30 dBm	Pass

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : Intel® Centrino® Ultimate-N 6300  
Test Item : Peak Power Output Data  
Test Site : No.3 OATS  
Test Mode : Mode 2: Transmit - 802.11g 6Mbps

**CHAIN A**

Channel No.	Frequency (MHz)	Measurement (Average)	Measurement (Peak)	Required Limit	Result
01	2412	15.40	24.84	1Watt= 30 dBm	Pass
06	2437	16.62	22.29	1Watt= 30 dBm	Pass
11	2462	14.80	21.53	1Watt= 30 dBm	Pass

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : Intel® Centrino® Ultimate-N 6300  
Test Item : Peak Power Output Data  
Test Site : No.3 OATS  
Test Mode : Mode 3: Transmit - 802.11a 6Mbps

**CHAIN A**

Channel No.	Frequency (MHz)	Measurement (Average)	Measurement (Peak)	Required Limit	Result
149	5745	16.67	21.33	1Watt= 30 dBm	Pass
157	5785	16.57	21.21	1Watt= 30 dBm	Pass
165	5825	16.56	21.26	1Watt= 30 dBm	Pass

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Peak Power Output Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 4: Transmit - 802.11n-20BW\_21.7Mbps(2.4G Band)

**CHAIN A+B+C \_Peak Detector**

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain C Power (dBm)	Chain A+B+C Power (dBm)	Limit (dBm)	Result
1	2412	HT16	18.84	19.83	18.76	23.94	<30dBm	Pass
6	2437	HT16	20.09	21.33	20.44	25.42	<30dBm	Pass
11	2462	HT16	18.87	20.14	19.02	24.15	<30dBm	Pass

Note: Peak Power Output Value (dBm) = 10\*LOG (Chain A (mW)+ Chain B (mW) + Chain C (mW))

**CHAIN A+B+C \_Average Detector**

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain	Average Power (dBm)	Total Average Power (dBm)
1	2412	HT16	A	9.96	14.48
			B	9.55	
			C	9.60	
6	2437	HT16	A	11.74	16.49
			B	11.71	
			C	11.70	
11	2462	HT16	A	9.81	14.56
			B	9.80	
			C	9.77	

Note: Peak Power Output Value (dBm) = 10\*LOG (Chain A (mW)+ Chain B (mW) + Chain C (mW))

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Peak Power Output Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 5: Transmit - 802.11n-40BW\_45Mbps(2.4G Band)

**CHAIN A+B+C\_Peak Detector**

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain C Power (dBm)	Chain A+B+C Power (dBm)	Limit (dBm)	Result
3	2422	HT16	16.42	17.21	16.21	21.41	<30dBm	Pass
6	2437	HT16	20.01	21.14	20.33	25.29	<30dBm	Pass
9	2452	HT16	16.82	17.10	16.71	21.65	<30dBm	Pass

Note: Peak Power Output Value (dBm) = 10\*LOG (Chain A (mW)+ Chain B (mW))+ Chain C (mW))

**CHAIN A+B+C\_Average Detector**

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain	Average Power (dBm)	Total Average Power (dBm)
3	2422	HT16	A	7.38	12.01
			B	7.16	
			C	7.16	
6	2437	HT16	A	11.89	16.61
			B	11.83	
			C	11.80	
9	2452	HT16	A	7.52	12.09
			B	7.06	
			C	7.37	

Note: Peak Power Output Value (dBm) = 10\*LOG (Chain A (mW)+ Chain B (mW) + Chain C (mW))

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Peak Power Output Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 6: Transmit - 802.11n-20BW\_21.7Mbps(5G Band)

**CHAIN A+B+C\_ Peak Detector**

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain C Power (dBm)	Chain A+B+C Power (dBm)	Limit (dBm)	Result
149	5745	HT16	20.61	18.97	18.67	24.27	<30dBm	Pass
157	5785	HT16	20.47	18.65	18.11	23.97	<30dBm	Pass
165	5825	HT16	20.50	18.67	18.01	23.96	<30dBm	Pass

Note: Peak Power Output Value (dBm) = 10\*LOG (Chain A (mW)+ Chain B (mW)+ Chain C (mW))

**CHAIN A+B+C\_ Average Detector**

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain	Average Power (dBm)	Total Average Power (dBm)
149	5745	HT16	A	12.08	16.73
			B	11.92	
			C	11.86	
157	5785	HT16	A	11.78	16.38
			B	11.49	
			C	11.55	
165	5825	HT16	A	11.52	16.31
			B	11.58	
			C	11.51	

Note: Peak Power Output Value (dBm) = 10\*LOG (Chain A (mW)+ Chain B (mW) + Chain C (mW))

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Peak Power Output Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 7: Transmit - 802.11n-40BW\_45Mbps(5G Band)

**CHAIN A+B+C\_ Peak Detector**

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain C Power (dBm)	Chain A+B+C Power (dBm)	Limit (dBm)	Result
151	5755	HT16	20.24	20.13	18.56	24.48	<30dBm	Pass
159	5795	HT16	20.56	20.04	18.03	24.44	<30dBm	Pass

Note: Peak Power Output Value (dBm) = 10\*LOG (Chain A (mW)+ Chain B (mW) + Chain C (mW))

**CHAIN A+B+C\_Average Detector**

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain	Average Power (dBm)	Total Average Power (dBm)
151	5755	HT16	A	11.56	16.49
			B	11.85	
			C	11.74	
159	5795	HT16	A	11.91	16.55
			B	11.88	
			C	11.54	

Note: Peak Power Output Value (dBm) = 10\*LOG (Chain A (mW)+ Chain B (mW) + Chain C (mW))

### 3. Radiated Emission

#### 3.1. Test Equipment

The following test equipment are used during the radiated emission test:

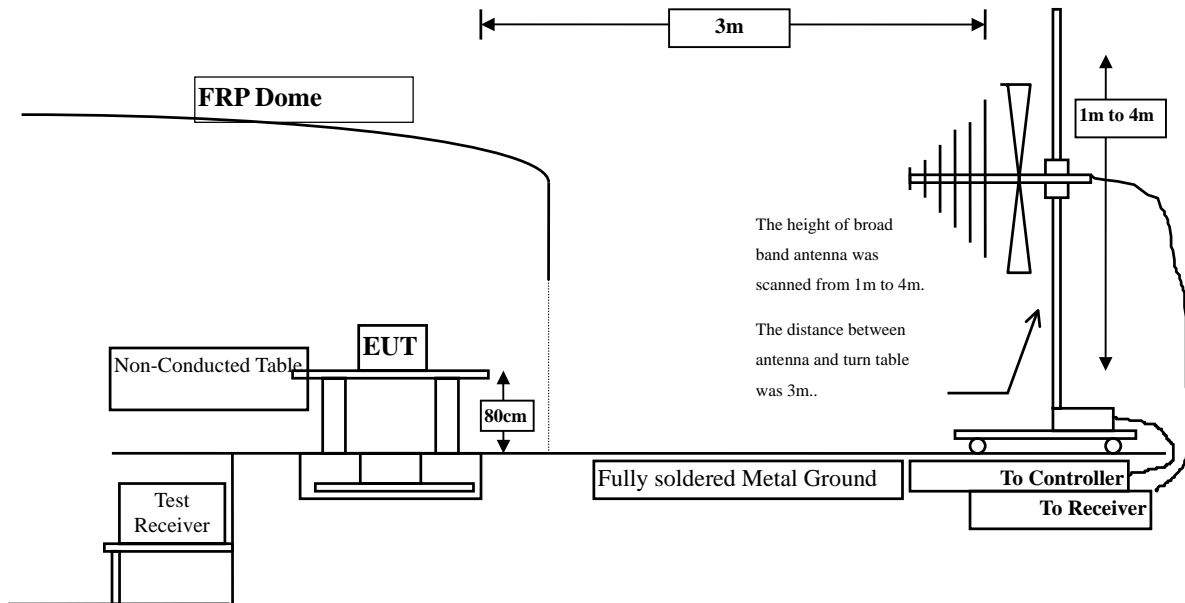
Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	X Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2011
	X Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2011
	X Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2011
	X Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2011
	X Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2011
	X Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2011
	X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2011
	X Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2011
	X Coaxial Cable	Quietek	QTK-CABLE/ CAB5	Feb., 2011
	X Controller	Quietek	QTK-CONTROLLER/ CTRL3	N/A
	X Coaxial Switch	Anritsu	MP59B/6200265729	N/A

- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
  2. The test instruments marked with “X” are used to measure the final test results.

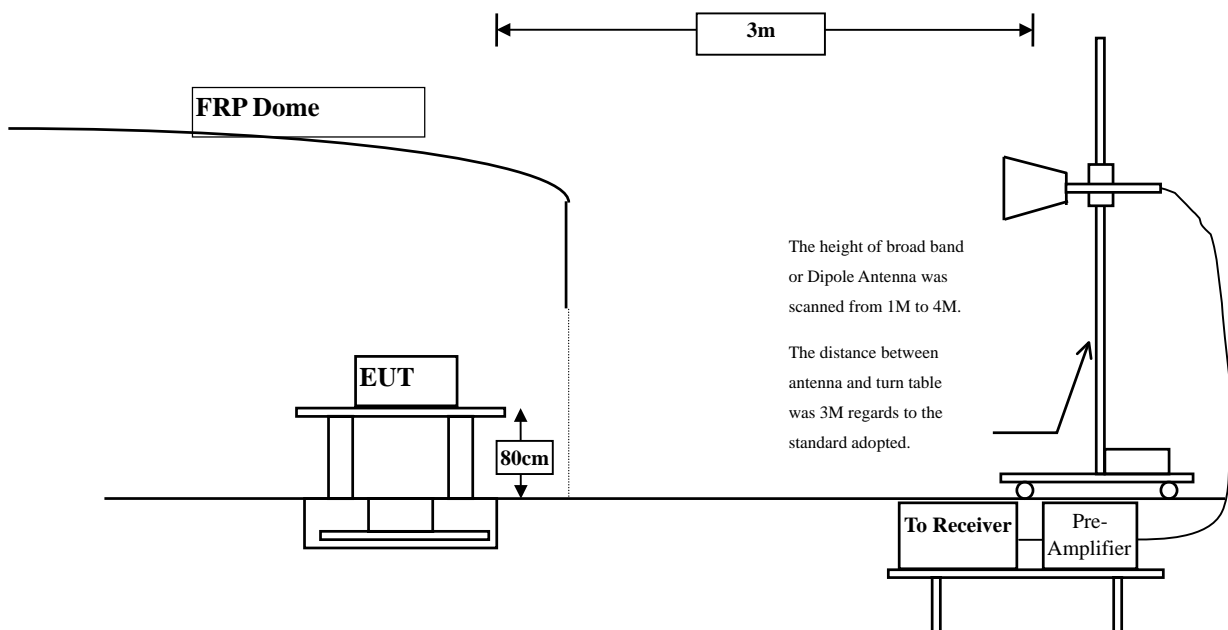


### 3.2. Test Setup

#### Radiated Emission Below 1GHz



#### Radiated Emission Above 1GHz



### 3.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

<b>FCC Part 15 Subpart C Paragraph 15.209(a) Limits</b>		
Frequency MHz	uV/m @3m	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks: E field strength (dBuV/m) = 20 log E field strength (uV/m)

### 3.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2009 and tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2009 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

The measurement frequency range from 30MHz - 10th Harmonic of fundamental was investigated.

### 3.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

### 3.6. Test Result of Radiated Emission

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 802.11b 1Mbps (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4824.000	3.261	38.180	41.441	-32.559	74.000
7236.000	10.650	36.540	47.190	-26.810	74.000
9648.000	13.337	36.610	49.946	-24.054	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4824.000	6.421	43.880	50.301	-23.699	74.000
7236.000	11.495	37.560	49.055	-24.945	74.000
9648.000	13.807	36.660	50.466	-23.534	74.000
<b>Average Detector:</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 802.11b 1Mbps (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4874.000	3.038	37.680	40.717	-33.283	74.000
7311.000	11.795	35.520	47.314	-26.686	74.000
9748.000	12.635	37.950	50.585	-23.415	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4874.000	5.812	41.660	47.471	-26.529	74.000
7311.000	12.630	35.690	48.319	-25.681	74.000
9748.000	13.126	37.080	50.206	-23.794	74.000
<b>Average Detector:</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 802.11b 1Mbps (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4924.000	2.858	38.140	40.997	-33.003	74.000
7386.000	12.127	37.400	49.528	-24.472	74.000
9848.000	12.852	36.720	49.573	-24.427	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4924.000	5.521	42.350	47.870	-26.130	74.000
7386.000	13.254	35.350	48.604	-25.396	74.000
9848.000	13.367	36.750	50.117	-23.883	74.000
<b>Average Detector:</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 802.11g 6Mbps (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4824.000	3.261	37.700	40.961	-33.039	74.000
7236.000	10.650	36.320	46.970	-27.030	74.000
9648.000	13.337	36.860	50.196	-23.804	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4824.000	6.421	41.430	47.851	-26.149	74.000
7236.000	11.495	36.520	48.015	-25.985	74.000
9648.000	13.807	36.550	50.356	-23.644	74.000
<b>Average Detector:</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 802.11g 6Mbps (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4874.000	3.038	38.390	41.427	-32.573	74.000
7311.000	11.795	36.010	47.804	-26.196	74.000
9748.000	12.635	36.860	49.495	-24.505	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4874.000	5.812	43.020	48.831	-25.169	74.000
7311.000	12.630	35.730	48.359	-25.641	74.000
9748.000	13.126	37.060	50.186	-23.814	74.000
<b>Average Detector:</b>					
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Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.



Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 802.11g 6Mbps (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4924.000	2.858	37.900	40.757	-33.243	74.000
7386.000	12.127	35.780	47.908	-26.092	74.000
9848.000	12.852	36.430	49.283	-24.717	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4924.000	5.521	39.790	45.310	-28.690	74.000
7386.000	13.254	35.200	48.454	-25.546	74.000
9848.000	13.367	36.570	49.937	-24.063	74.000
<b>Average Detector:</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps (5745 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
11490.000	17.106	41.530	58.637	-15.363	74.000
<b>Average Detector:</b>					
11490.000	17.106	26.610	43.717	-10.283	54.000
<b>Vertical</b>					
<b>Peak Detector:</b>					
11490.000	18.034	47.040	65.075	-8.925	74.000
<b>Average Detector:</b>					
11490.000	18.034	31.700	49.735	-4.265	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps (5785 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
11570.000	16.809	43.570	60.379	-13.621	74.000
<b>Average Detector:</b>					
11570.000	16.809	29.020	45.829	-8.171	54.000
<b>Vertical</b>					
<b>Peak Detector:</b>					
11570.000	17.698	49.040	66.738	-7.262	74.000
<b>Average Detector:</b>					
11570.000	17.698	33.960	51.658	-2.342	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps (5825 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
11650.000	16.158	44.640	60.798	-13.202	74.000
<b>Average Detector:</b>					
11650.000	16.158	29.880	46.038	-7.962	54.000
<b>Vertical</b>					
<b>Peak Detector:</b>					
11650.000	17.274	49.090	66.365	-7.635	74.000
<b>Average Detector:</b>					
11650.000	17.274	34.380	51.655	-2.345	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 4: Transmit - 802.11n-20BW\_21.7Mbps(2.4G Band) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
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**Horizontal**

**Peak Detector:**

4824.000	3.261	38.720	41.981	-32.019	74.000
7236.000	10.650	37.270	47.920	-26.080	74.000
9648.000	13.337	36.940	50.276	-23.724	74.000

**Average Detector:**

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**Vertical**

**Peak Detector:**

4824.000	6.421	44.550	50.971	-23.029	74.000
7236.000	11.495	36.470	47.965	-26.035	74.000
9648.000	13.807	36.290	50.096	-23.904	74.000

**Average Detector:**

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Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 4: Transmit - 802.11n-20BW\_21.7Mbps(2.4G Band) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4874.000	3.038	40.800	43.837	-30.163	74.000
7311.000	11.795	35.630	47.424	-26.576	74.000
9748.000	12.635	37.010	49.645	-24.355	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4874.000	5.812	49.270	55.081	-18.919	74.000
7311.000	12.630	35.800	48.429	-25.571	74.000
9748.000	13.126	37.090	50.216	-23.784	74.000
<b>Average Detector:</b>					
4874.000	5.812	34.530	40.341	-13.659	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 4: Transmit - 802.11n-20BW\_21.7Mbps(2.4G Band) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4924.000	2.858	40.610	43.467	-30.533	74.000
7386.000	12.127	35.550	47.678	-26.322	74.000
9848.000	12.852	36.340	49.193	-24.807	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4924.000	5.521	48.280	53.800	-20.200	74.000
7386.000	13.254	35.110	48.364	-25.636	74.000
9848.000	13.367	36.580	49.947	-24.053	74.000
<b>Average Detector:</b>					
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Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 5: Transmit - 802.11n-40BW\_45Mbps(2.4G Band) (2422MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4844.000	3.171	38.070	41.241	-32.759	74.000
7266.000	11.162	36.890	48.052	-25.948	74.000
9688.000	12.964	37.070	50.035	-23.965	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4844.000	6.178	41.230	47.408	-26.592	74.000
7266.000	11.982	36.610	48.592	-25.408	74.000
9688.000	13.507	37.060	50.568	-23.432	74.000
<b>Average Detector:</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.



Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 5: Transmit - 802.11n-40BW\_45Mbps(2.4G Band) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4874.000	3.038	38.700	41.737	-32.263	74.000
7311.000	11.795	35.550	47.344	-26.656	74.000
9748.000	12.635	36.770	49.405	-24.595	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4874.000	5.812	46.800	52.611	-21.389	74.000
7311.000	12.630	36.280	48.909	-25.091	74.000
9748.000	13.126	36.920	50.046	-23.954	74.000
<b>Average Detector:</b>					
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Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 5: Transmit - 802.11n-40BW\_45Mbps(2.4G Band) (2452 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4904.000	2.914	37.440	40.355	-33.645	74.000
7356.000	11.995	35.910	47.904	-26.096	74.000
9808.000	12.475	36.770	49.245	-24.755	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4904.000	5.530	42.120	47.651	-26.349	74.000
7356.000	13.005	35.420	48.424	-25.576	74.000
9808.000	12.901	36.600	49.501	-24.499	74.000
<b>Average Detector:</b>					
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Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 6: Transmit - 802.11n-20BW\_21.7Mbps(5G Band) (5745MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
11490.000	17.106	36.590	53.697	-20.303	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
11490.000	18.034	40.640	58.675	-15.325	74.000
<b>Average Detector:</b>					
11490.000	18.034	26.750	44.785	-9.215	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 6: Transmit - 802.11n-20BW\_21.7Mbps(5G Band) (5785 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
11570.000	16.809	39.270	56.079	-17.921	74.000
<b>Average Detector:</b>					
11570.000	16.809	24.800	41.609	-12.391	54.000
<b>Vertical</b>					
<b>Peak Detector:</b>					
11570.000	17.698	42.060	59.758	-14.242	74.000
<b>Average Detector:</b>					
11570.000	17.698	28.430	46.128	-7.872	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 6: Transmit - 802.11n-20BW\_21.7Mbps(5G Band) (5825 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
11650.000	16.158	40.070	56.228	-17.772	74.000
<b>Average Detector:</b>					
11650.000	16.158	26.080	42.238	-11.762	54.000
<b>Vertical</b>					
<b>Peak Detector:</b>					
11650.000	17.274	43.190	60.465	-13.535	74.000
<b>Average Detector:</b>					
11650.000	17.274	29.150	46.425	-7.575	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 7: Transmit - 802.11n-40BW\_45Mbps(5G Band) (5755MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
11510.000	17.124	36.950	54.074	-19.926	74.000
<b>Average Detector:</b>					
11510.000	17.124	22.770	39.894	-14.106	54.000
<b>Vertical</b>					
<b>Peak Detector:</b>					
11510.000	18.081	40.350	58.431	-15.569	74.000
<b>Average Detector:</b>					
11510.000	18.081	25.700	43.781	-10.219	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 7: Transmit - 802.11n-40BW\_45Mbps(5G Band) (5795 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
11590.000	16.701	39.240	55.940	-18.060	74.000
<b>Average Detector:</b>					
11590.000	16.701	24.650	41.350	-12.650	54.000
<b>Vertical</b>					
<b>Peak Detector:</b>					
11590.000	17.567	41.800	59.366	-14.634	74.000
<b>Average Detector:</b>					
11590.000	17.567	27.140	44.706	-9.294	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 802.11b 1Mbps (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
119.240	-9.621	44.169	34.548	-8.952	43.500
198.780	-10.661	45.037	34.376	-9.124	43.500
328.760	-4.609	44.546	39.937	-6.063	46.000
499.480	0.048	34.894	34.942	-11.058	46.000
699.300	2.875	33.786	36.661	-9.339	46.000
875.840	5.271	31.843	37.114	-8.886	46.000
<b>Vertical</b>					
70.740	-6.151	41.909	35.758	-4.242	40.000
355.920	-3.488	34.713	31.225	-14.775	46.000
499.480	-0.852	33.478	32.626	-13.374	46.000
608.120	-1.576	29.864	28.288	-17.712	46.000
825.400	3.430	30.031	33.461	-12.539	46.000
967.020	8.071	28.721	36.792	-17.208	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.



Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 802.11g 6Mbps (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
128.940	-10.088	45.615	35.527	-7.973	43.500
297.720	-3.633	43.844	40.212	-5.788	46.000
499.480	0.048	35.705	35.753	-10.247	46.000
615.880	3.215	30.777	33.992	-12.008	46.000
759.440	4.372	29.742	34.114	-11.886	46.000
875.840	5.271	32.559	37.830	-8.170	46.000
<b>Vertical</b>					
101.780	-0.021	36.987	36.965	-6.535	43.500
357.860	-3.734	35.653	31.919	-14.081	46.000
499.480	-0.852	33.553	32.701	-13.299	46.000
606.180	-1.594	30.558	28.964	-17.036	46.000
788.540	2.952	30.693	33.645	-12.355	46.000
930.160	6.477	29.691	36.168	-9.832	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps (5785MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
128.940	-10.088	44.905	34.817	-8.683	43.500
198.780	-10.661	47.202	36.541	-6.959	43.500
299.660	-3.585	45.207	41.622	-4.378	46.000
499.480	0.048	35.866	35.914	-10.086	46.000
695.420	3.438	30.386	33.824	-12.176	46.000
866.140	5.596	30.398	35.994	-10.006	46.000
<b>Vertical</b>					
72.680	-5.622	42.278	36.655	-3.345	40.000
154.160	-6.221	34.997	28.776	-14.724	43.500
305.480	-6.809	37.232	30.423	-15.577	46.000
499.480	-0.852	32.805	31.953	-14.047	46.000
685.720	2.319	29.487	31.805	-14.195	46.000
773.020	2.746	36.794	39.540	-6.460	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 4: Transmit - 802.11n-20BW\_21.7Mbps(2.4G Band) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
128.940	-10.088	45.479	35.391	-8.109	43.500
297.720	-3.633	45.122	41.490	-4.510	46.000
431.580	-2.099	31.581	29.482	-16.518	46.000
499.480	0.048	36.490	36.538	-9.462	46.000
757.500	4.361	30.655	35.016	-10.984	46.000
875.840	5.271	32.814	38.085	-7.915	46.000
<b>Vertical</b>					
70.740	-6.151	43.433	37.282	-2.718	40.000
154.160	-6.221	35.048	28.827	-14.673	43.500
336.520	-4.630	36.629	31.999	-14.001	46.000
499.480	-0.852	34.031	33.179	-12.821	46.000
608.120	-1.576	29.434	27.858	-18.142	46.000
827.340	3.162	30.290	33.452	-12.548	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 5: Transmit - 802.11n-40BW\_45Mbps(2.4G Band) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
130.880	-10.159	45.248	35.089	-8.411	43.500
305.480	-2.929	43.730	40.801	-5.199	46.000
499.480	0.048	36.649	36.697	-9.303	46.000
699.300	2.875	29.793	32.668	-13.332	46.000
852.560	6.342	28.542	34.884	-11.116	46.000
951.500	6.641	30.398	37.039	-8.961	46.000
<b>Vertical</b>					
74.620	-5.082	41.241	36.159	-3.841	40.000
336.520	-4.630	38.663	34.033	-11.967	46.000
499.480	-0.852	31.644	30.792	-15.208	46.000
674.080	-0.501	28.976	28.475	-17.525	46.000
842.860	3.074	29.474	32.548	-13.452	46.000
932.100	6.152	31.765	37.917	-8.083	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 6: Transmit - 802.11n-20BW\_21.7Mbps(5G Band) (5785 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
127.000	-10.017	45.157	35.140	-8.360	43.500
256.980	-5.073	42.286	37.213	-8.787	46.000
499.480	0.048	35.820	35.868	-10.132	46.000
714.820	3.562	30.121	33.683	-12.317	46.000
831.220	6.121	30.570	36.691	-9.309	46.000
945.680	6.554	29.179	35.733	-10.267	46.000
<b>Vertical</b>					
74.620	-5.082	40.437	35.355	-4.645	40.000
158.040	-6.191	35.950	29.759	-13.741	43.500
336.520	-4.630	35.328	30.698	-15.302	46.000
499.480	-0.852	32.965	32.113	-13.887	46.000
681.840	1.484	30.088	31.572	-14.428	46.000
928.220	6.203	29.771	35.974	-10.026	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 7: Transmit - 802.11n-40BW\_45Mbps(5G Band) (5755MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
128.940	-10.088	44.416	34.328	-9.172	43.500
239.520	-6.851	41.965	35.115	-10.885	46.000
375.320	-1.209	31.280	30.071	-15.929	46.000
604.240	4.770	29.452	34.222	-11.778	46.000
763.320	4.301	30.386	34.688	-11.312	46.000
875.840	5.271	32.678	37.949	-8.051	46.000
<b>Vertical</b>					
76.560	-5.258	40.621	35.363	-4.637	40.000
161.920	-6.696	34.835	28.140	-15.360	43.500
336.520	-4.630	36.759	32.129	-13.871	46.000
499.480	-0.852	33.122	32.270	-13.730	46.000
695.420	1.878	29.561	31.439	-14.561	46.000
932.100	6.152	30.445	36.597	-9.403	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

## 4. Band Edge

### 4.1. Test Equipment

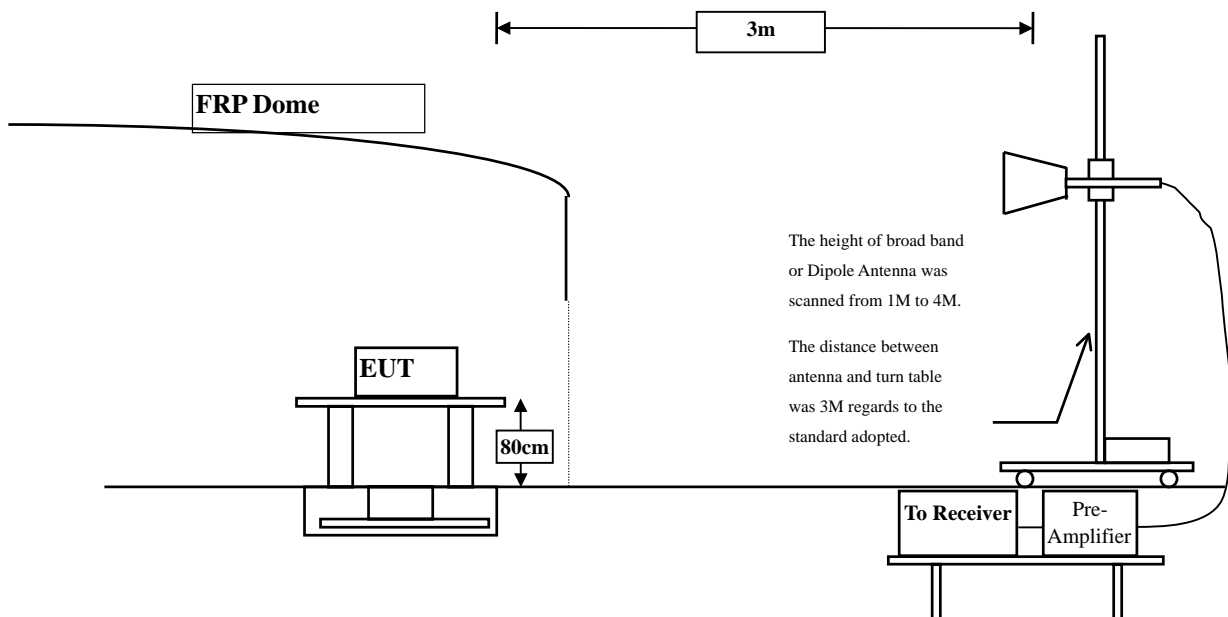
The following test equipments are used during the band edge tests:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.	
☒ Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2011
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2011
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2011
		Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2011
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2011
		Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2011
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2011
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2011
	X	Coaxial Cable	Quietek	QTK-CABLE/ CAB5	Feb., 2011
	X	Controller	Quietek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

- Note:
1. All instruments are calibrated every one year.
  2. The test instruments marked by "X" are used to measure the final test results.

### 4.2. Test Setup

#### RF Radiated Measurement:



### 4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

### 4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2009 and tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2009 on radiated measurement.

### 4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz



### 4.6. Test Result of Band Edge

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 802.11b 1Mbps (2412 MHz)

#### RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2388.000	-4.695	51.553	46.857	74.00	54.00	Pass
01 (Peak)	2390.000	-4.687	50.371	45.684	74.00	54.00	Pass
01 (Peak)	2410.600	-4.644	91.722	87.078	--	--	--
01 (Average)	2390.000	-4.687	38.571	33.884	74.00	54.00	Pass
01 (Average)	2409.400	-4.646	87.828	83.182	--	--	--

Figure Channel 01: Horizontal (Peak)

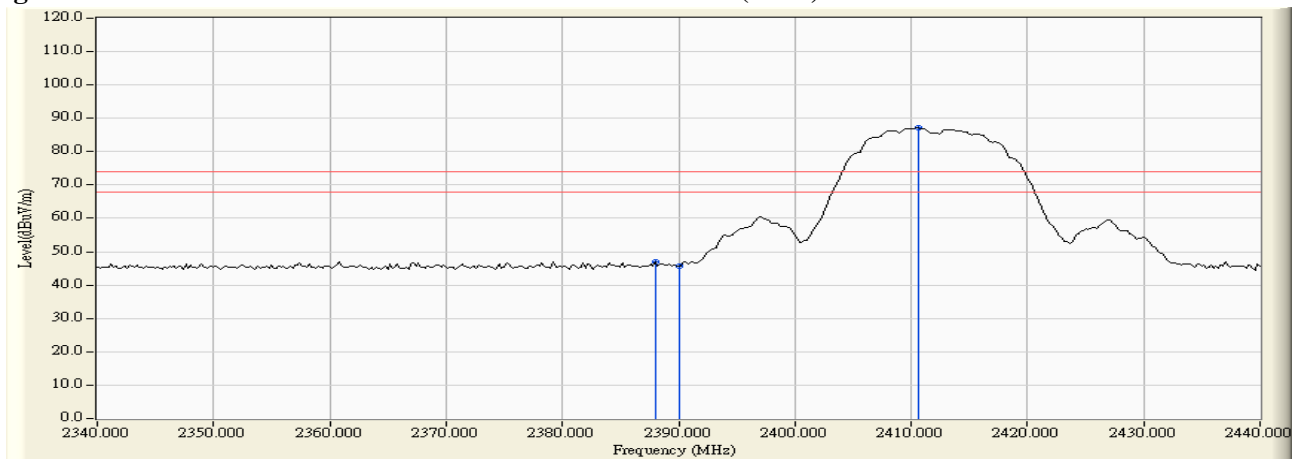
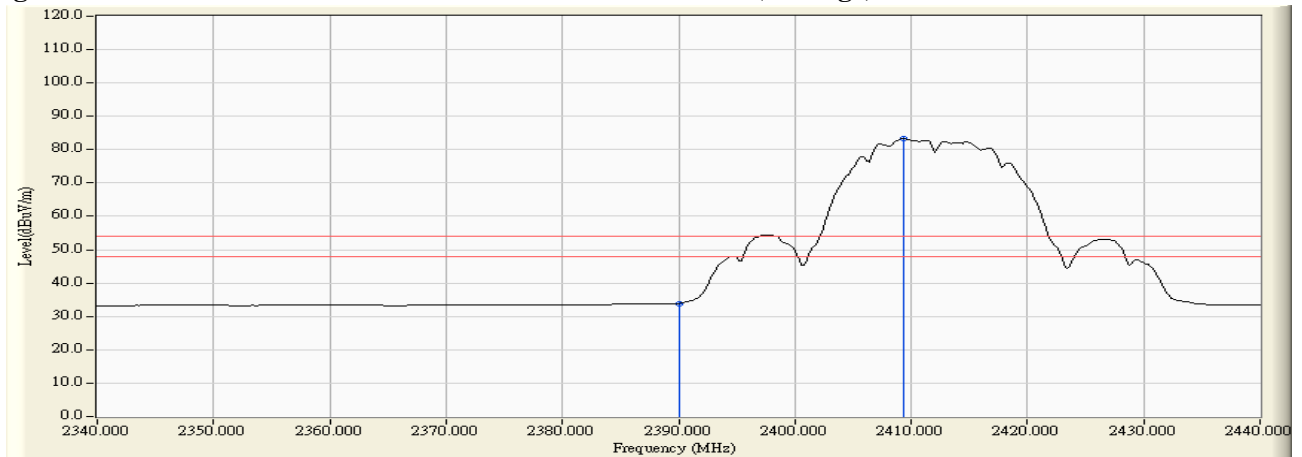


Figure Channel 01: Horizontal (Average)



Note:

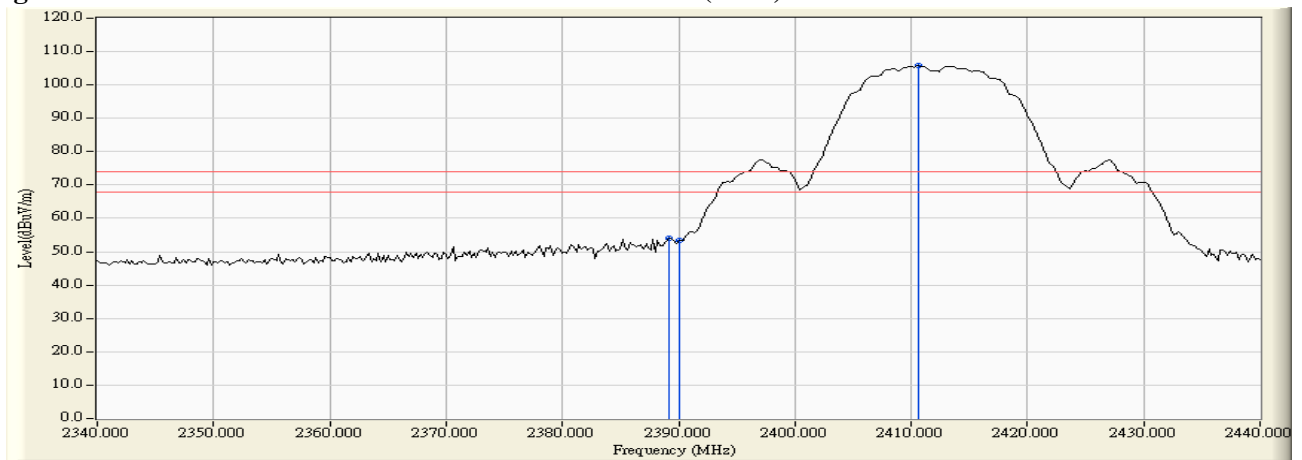
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 802.11b 1Mbps (2412 MHz)

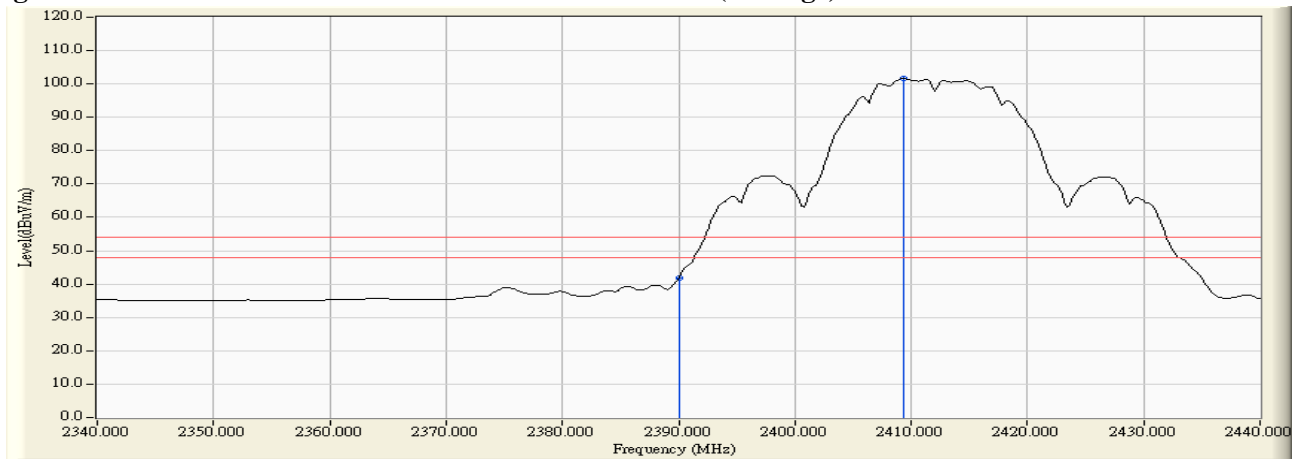
**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2389.200	-6.156	60.083	53.927	74.00	54.00	Pass
01 (Peak)	2390.000	-6.159	59.615	53.456	74.00	54.00	Pass
01 (Peak)	2410.600	-6.169	111.885	105.716	--	--	--
01 (Average)	2390.000	-6.159	47.985	41.826	74.00	54.00	Pass
01 (Average)	2409.400	-6.168	107.737	101.568	--	--	--

**Figure Channel 01: Vertical (Peak)**



**Figure Channel 01: Vertical (Average)**



**Note:**

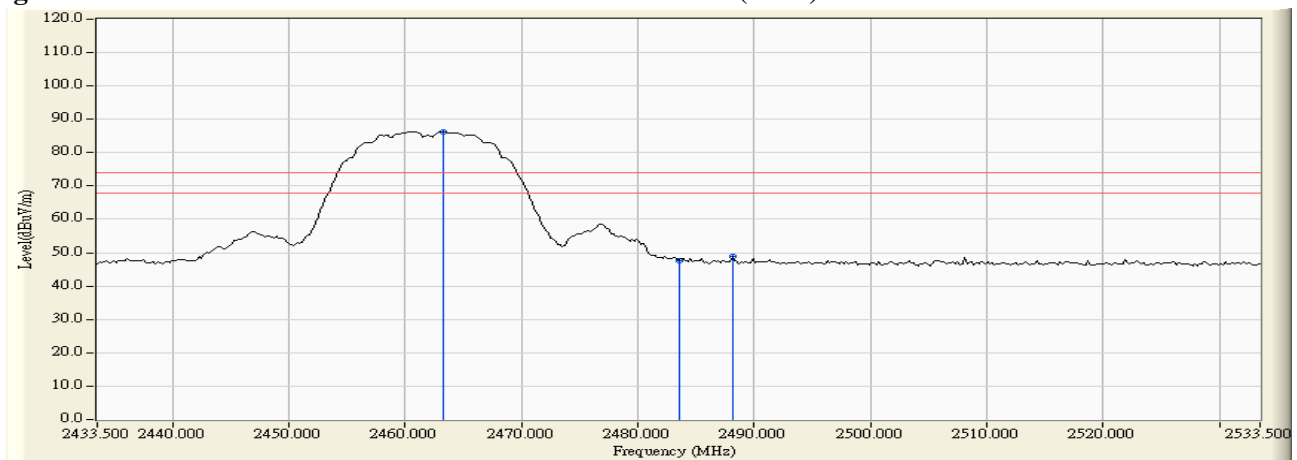
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 802.11b 1Mbps (2462 MHz)

**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2463.300	-4.622	90.866	86.245	--	--	--
11 (Peak)	2483.500	-4.601	52.250	47.648	74.00	54.00	Pass
11 (Peak)	2488.100	-4.597	53.437	48.839	74.00	54.00	Pass
11 (Average)	2459.300	-4.624	86.825	82.200	--	--	--
11 (Average)	2483.500	-4.601	40.866	36.264	74.00	54.00	Pass

**Figure Channel 11: Horizontal (Peak)**



**Figure Channel 11: Horizontal (Average)**



**Note:**

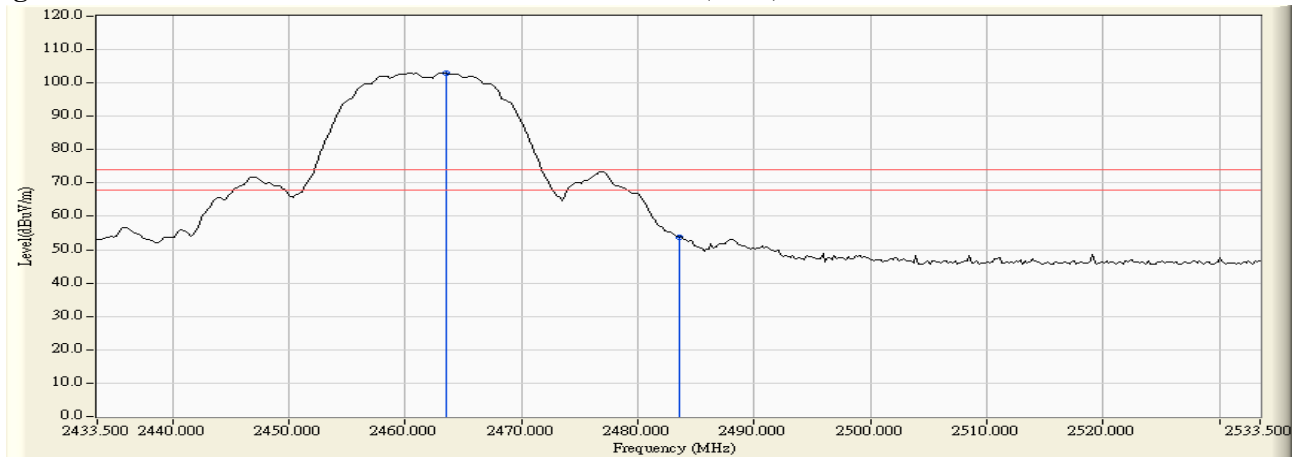
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit - 802.11b 1Mbps (2462 MHz)

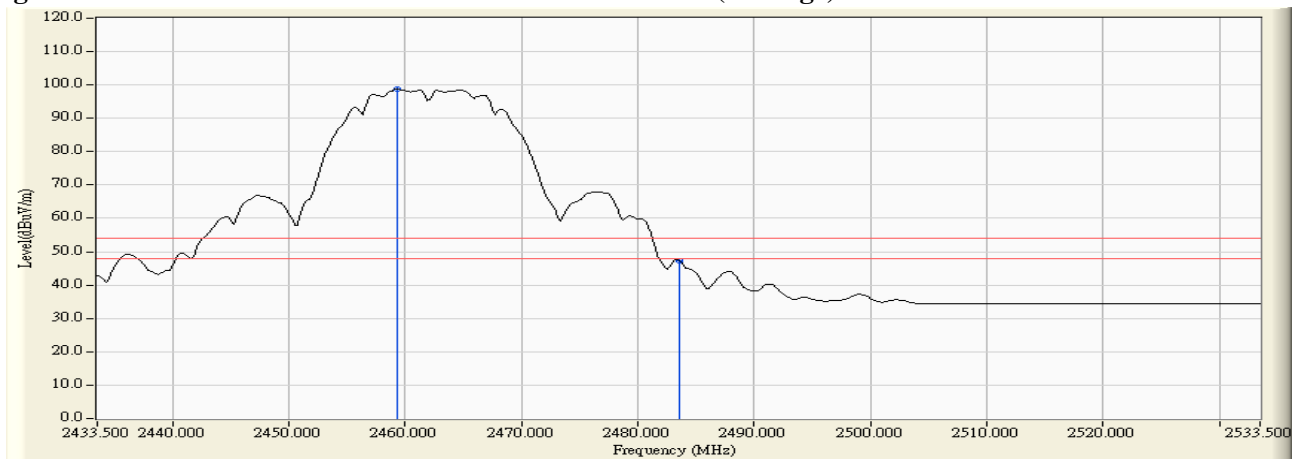
**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2463.500	-6.030	108.961	102.931	--	--	--
11 (Peak)	2483.500	-5.966	59.731	53.764	74.00	54.00	Pass
11 (Average)	2459.300	-6.042	104.726	98.683	--	--	--
11 (Average)	2483.500	-5.966	53.350	47.383	74.00	54.00	Pass

**Figure Channel 11: Vertical (Peak)**



**Figure Channel 11: Vertical (Average)**



**Note:**

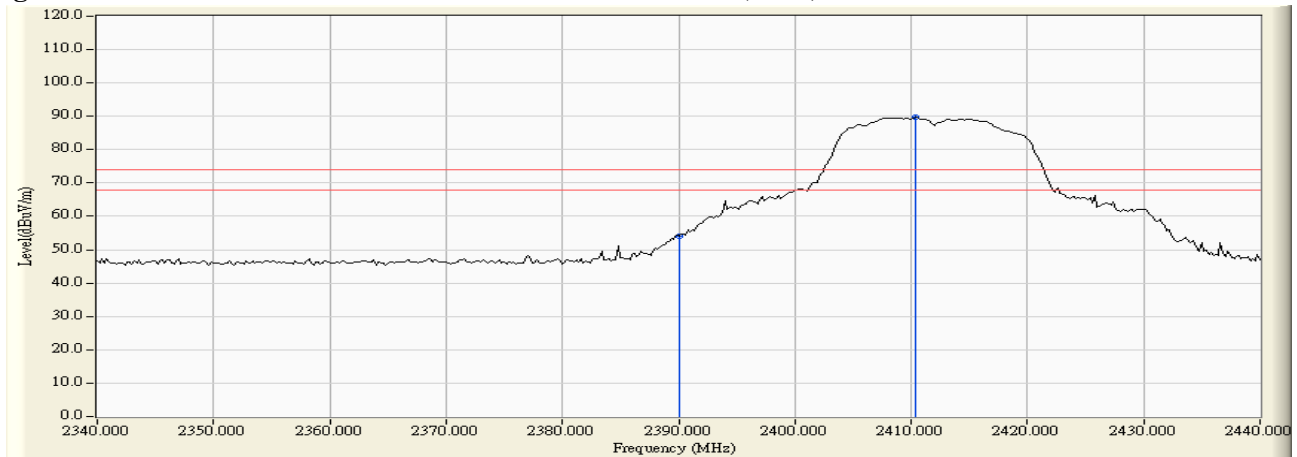
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 802.11g 6Mbps (2412 MHz)

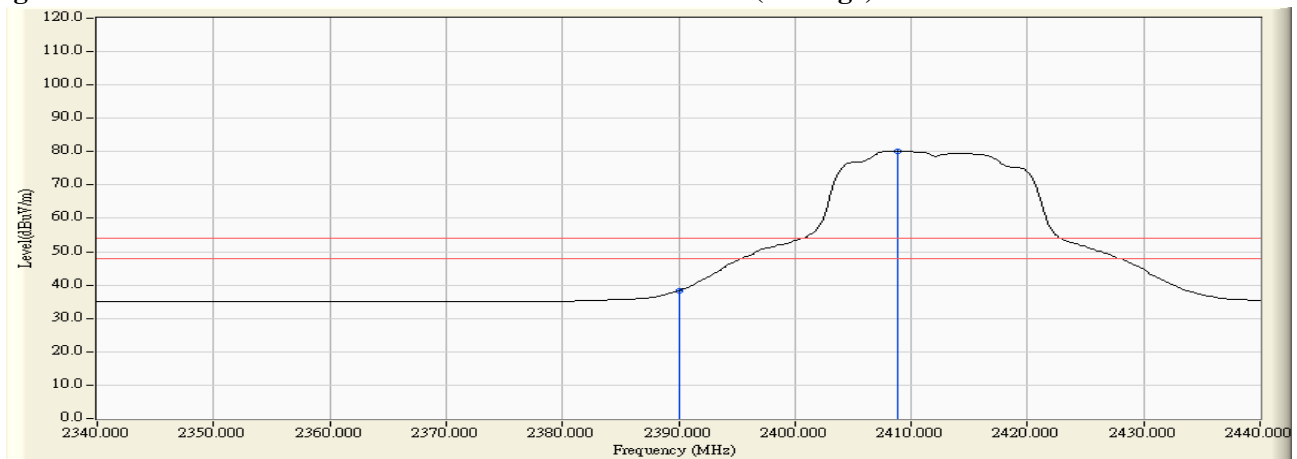
**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	-4.687	58.738	54.051	74.00	54.00	Pass
01 (Peak)	2410.400	-4.645	94.273	89.629	--	--	--
01 (Average)	2390.000	-4.687	43.014	38.327	74.00	54.00	Pass
01 (Average)	2408.800	-4.647	84.840	80.193	--	--	--

**Figure Channel 01: Horizontal (Peak)**



**Figure Channel 01: Horizontal (Average)**



**Note:**

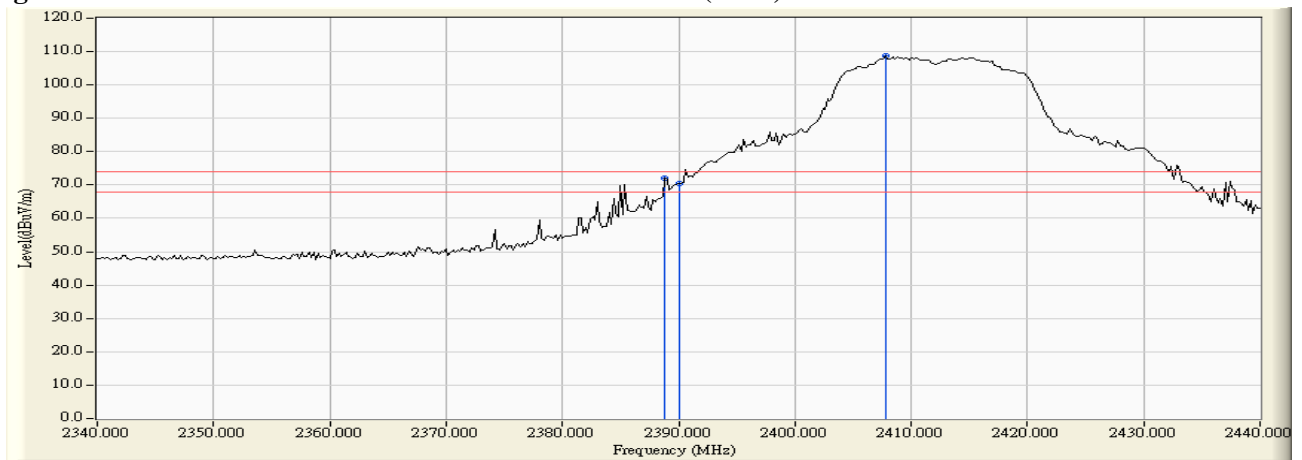
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 802.11g 6Mbps (2412 MHz)

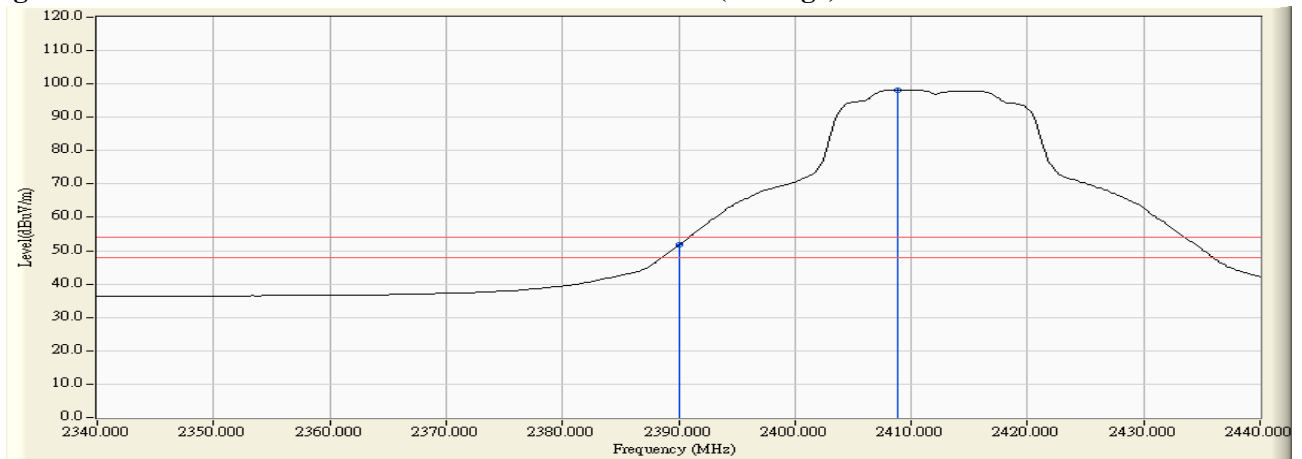
**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2388.800	-6.155	78.307	72.152	74.00	54.00	Pass
01 (Peak)	2390.000	-6.159	76.491	70.332	74.00	54.00	Pass
01 (Peak)	2407.800	-6.169	115.061	108.892	--	--	--
01 (Average)	2390.000	-6.159	57.800	51.641	74.00	54.00	Pass
01 (Average)	2408.800	-6.169	104.370	98.201	--	--	--

**Figure Channel 01: Vertical (Peak)**



**Figure Channel 01: Vertical (Average)**



**Note:**

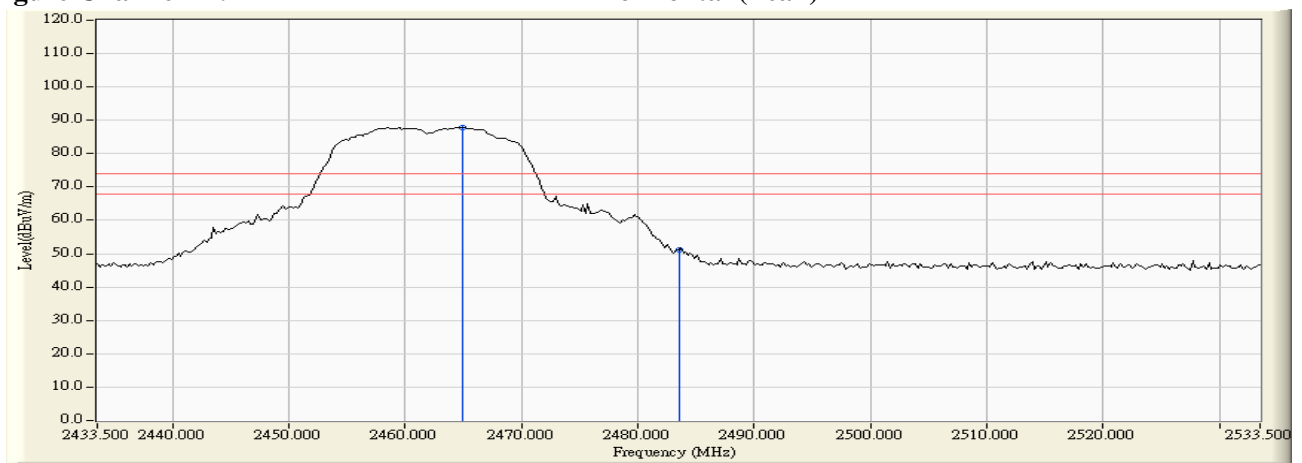
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 802.11g 6Mbps (2462 MHz)

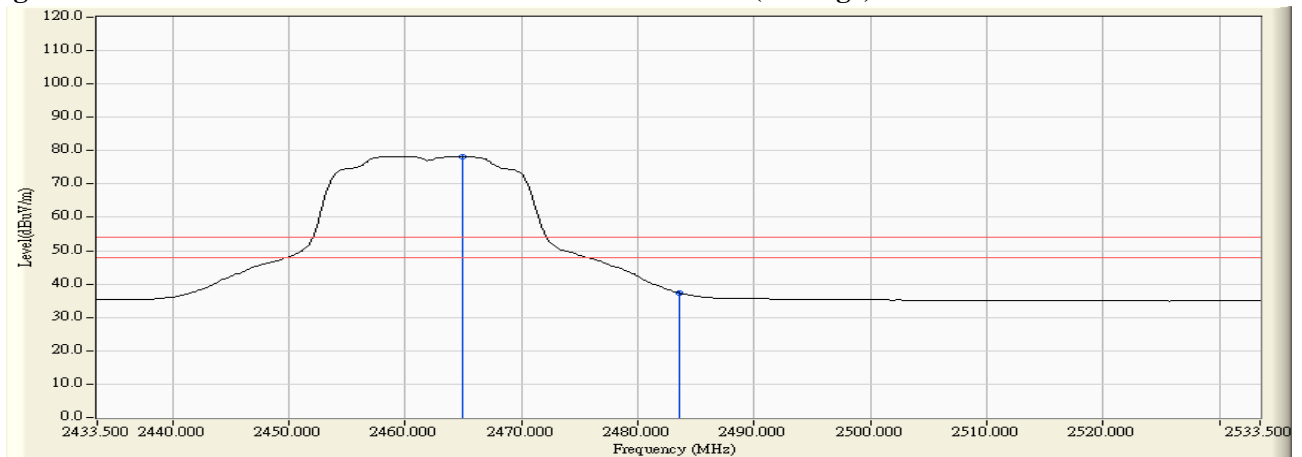
**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2464.900	-4.620	92.546	87.926	--	--	--
11 (Peak)	2483.500	-4.601	55.853	51.251	74.00	54.00	Pass
11 (Average)	2464.900	-4.620	82.826	78.206	--	--	--
11 (Average)	2483.500	-4.601	41.906	37.304	74.00	54.00	Pass

**Figure Channel 11: Horizontal (Peak)**



**Figure Channel 11: Horizontal (Average)**



**Note:**

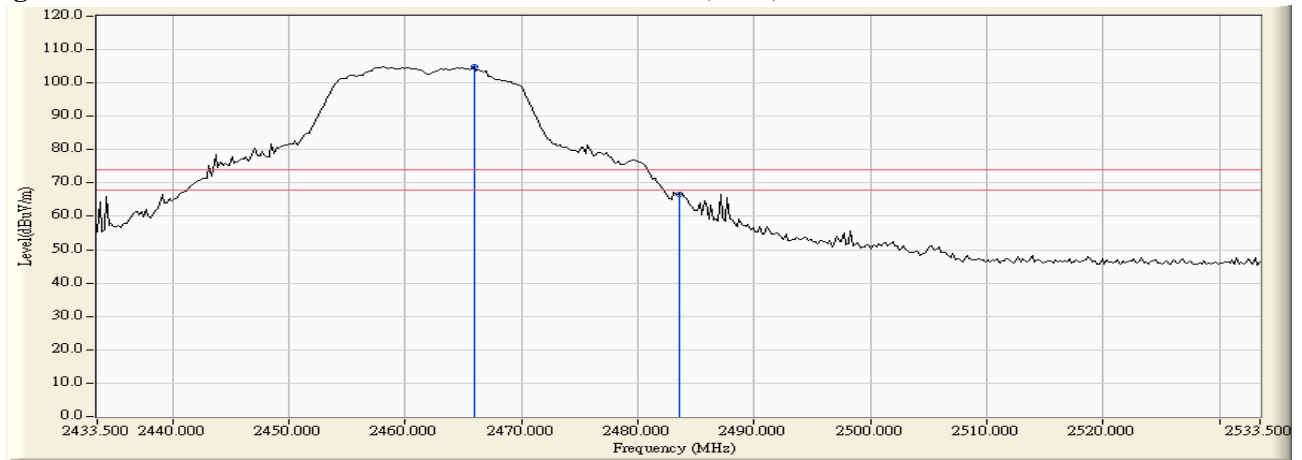
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit - 802.11g 6Mbps (2462 MHz)

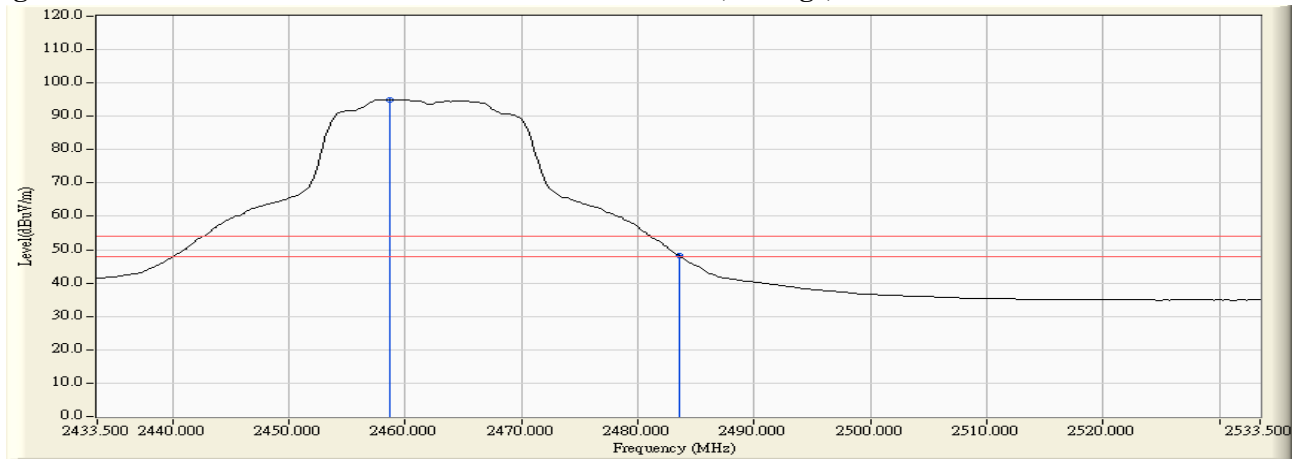
**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2465.900	-6.022	110.867	104.845	--	--	--
11 (Peak)	2483.500	-5.966	72.632	66.665	74.00	54.00	Pass
11 (Average)	2458.700	-6.044	101.027	94.982	--	--	--
11 (Average)	2483.500	-5.966	54.130	48.163	74.00	54.00	Pass

**Figure Channel 11: Vertical (Peak)**



**Figure Channel 11: Vertical (Average)**



**Note:**

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

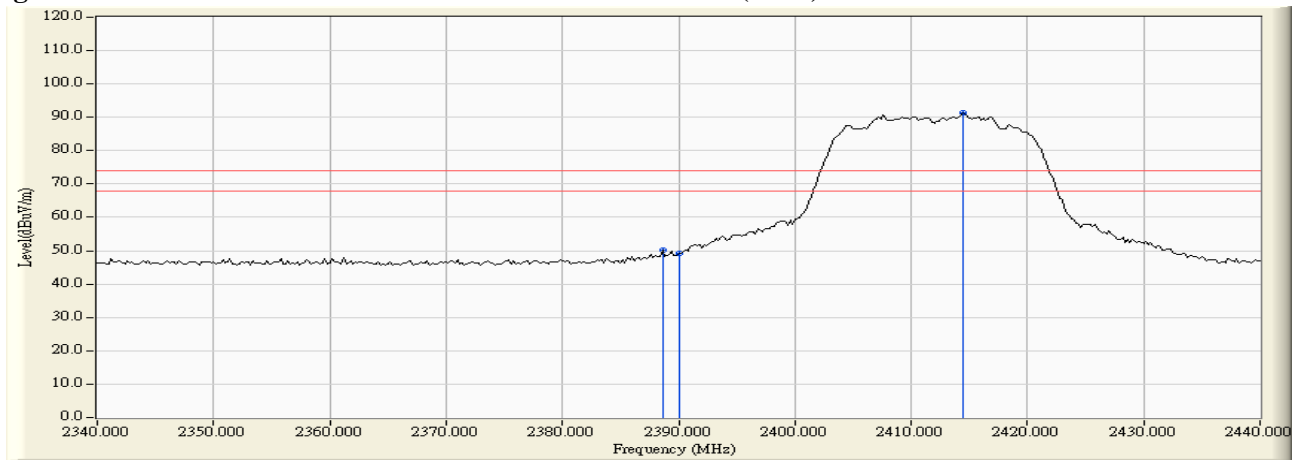


Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 4: Transmit - 802.11n-20BW\_21.7Mbps(2.4G Band) (2412 MHz)

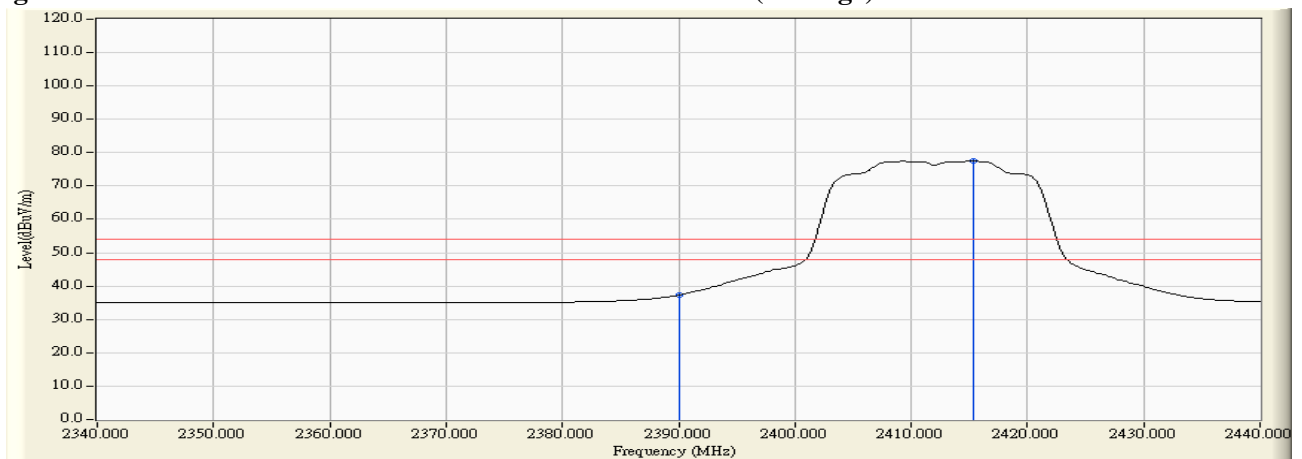
**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2388.600	-4.694	54.932	50.239	74.00	54.00	Pass
01 (Peak)	2390.000	-4.687	53.897	49.210	74.00	54.00	Pass
01 (Peak)	2414.400	-4.642	95.934	91.291	--	--	--
01 (Average)	2390.000	-4.687	41.915	37.228	74.00	54.00	Pass
01 (Average)	2415.400	-4.642	82.099	77.457	--	--	--

**Figure Channel 01: Horizontal (Peak)**



**Figure Channel 01: Horizontal (Average)**



**Note:**

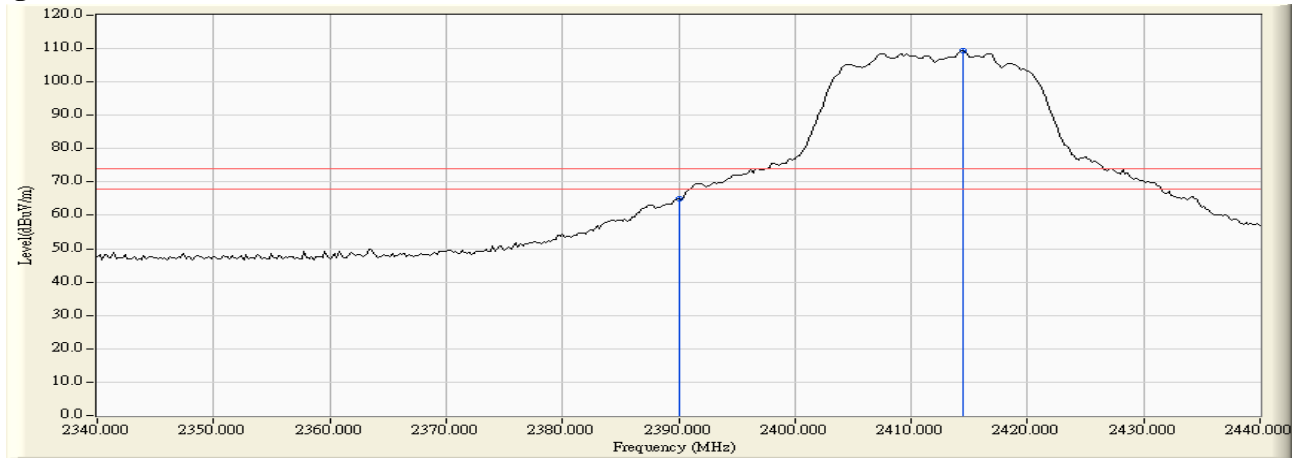
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 4: Transmit - 802.11n-20BW\_21.7Mbps(2.4G Band) (2412 MHz)

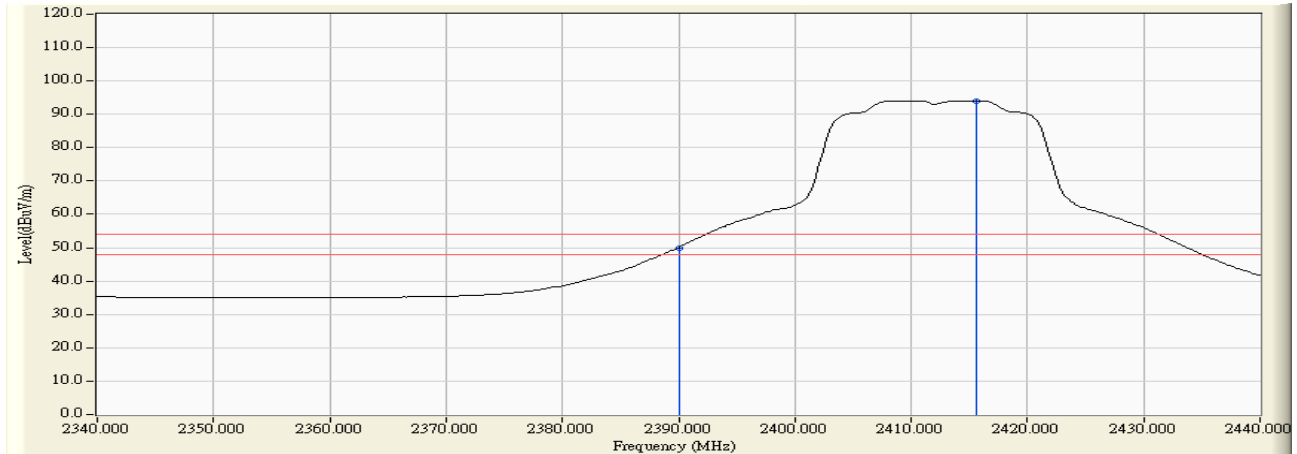
**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	-6.159	71.108	64.949	74.00	54.00	Pass
01 (Peak)	2414.400	-6.160	115.460	109.300	--	--	--
01 (Average)	2390.000	-6.159	56.150	49.991	74.00	54.00	Pass
01 (Average)	2415.600	-6.158	100.252	94.094	--	--	--

**Figure Channel 01: Vertical (Peak)**



**Figure Channel 01: Vertical (Average)**



**Note:**

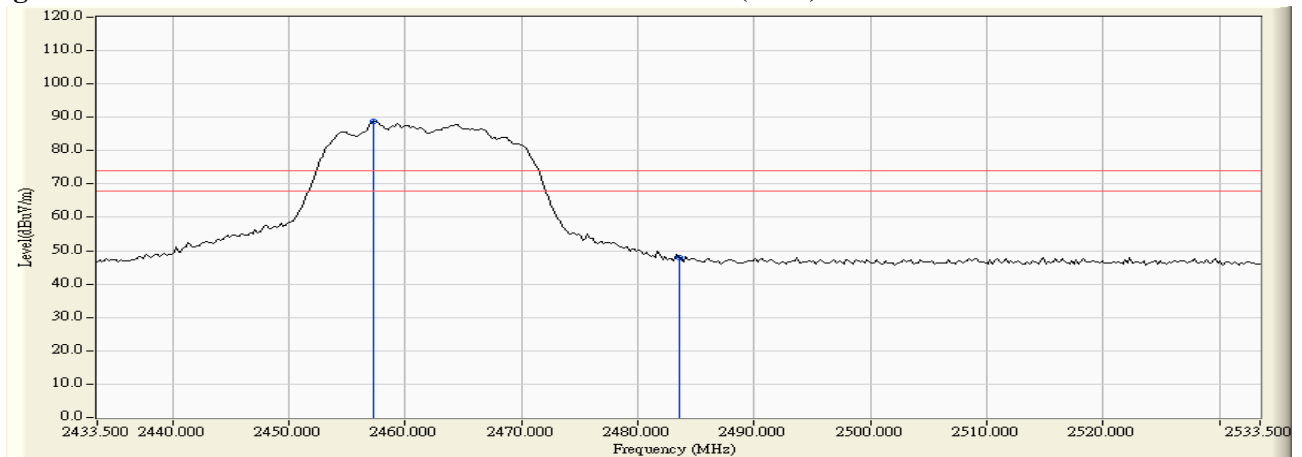
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 4: Transmit - 802.11n-20BW\_21.7Mbps(2.4G Band) (2462 MHz)

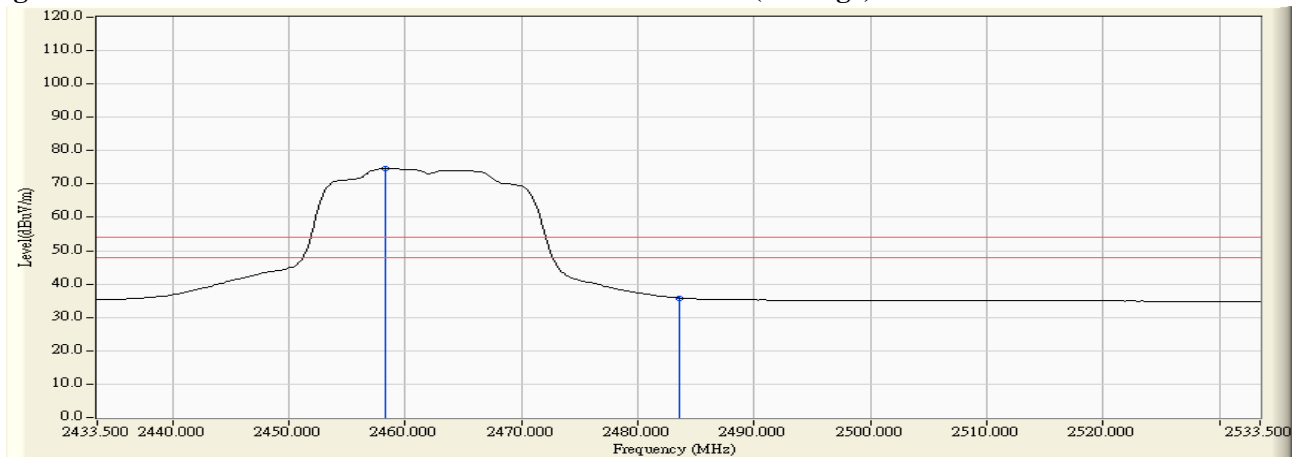
**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2457.300	-4.626	93.318	88.692	--	--	--
11 (Peak)	2483.500	-4.601	52.692	48.090	74.00	54.00	Pass
11 (Average)	2458.300	-4.626	79.309	74.684	--	--	--
11 (Average)	2483.500	-4.601	40.402	35.800	74.00	54.00	Pass

**Figure Channel 11: Horizontal (Peak)**



**Figure Channel 11: Horizontal (Average)**



**Note:**

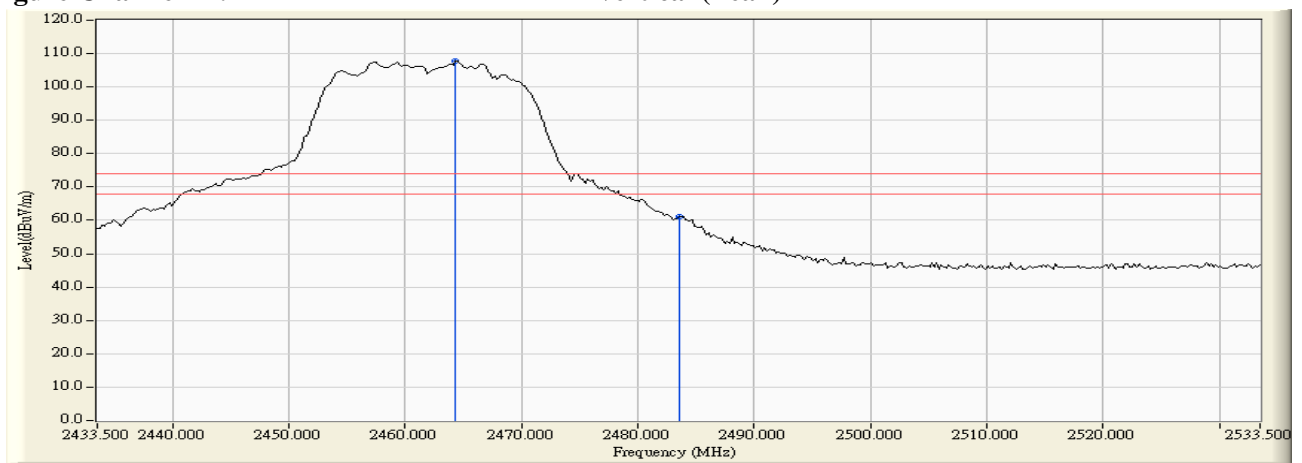
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 4: Transmit - 802.11n-20BW\_21.7Mbps(2.4G Band) (2462 MHz)

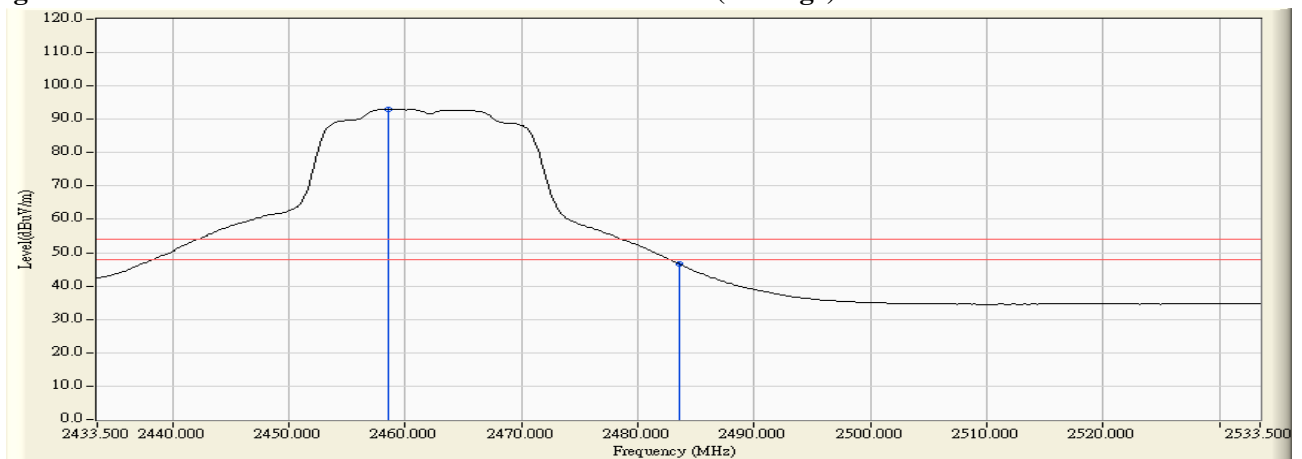
**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2464.300	-6.027	113.789	107.762	--	--	--
11 (Peak)	2483.500	-5.966	67.148	61.181	74.00	54.00	Pass
11 (Average)	2458.500	-6.046	99.079	93.034	--	--	--
11 (Average)	2483.500	-5.966	52.614	46.647	74.00	54.00	Pass

**Figure Channel 11: Vertical (Peak)**



**Figure Channel 11: Vertical (Average)**



**Note:**

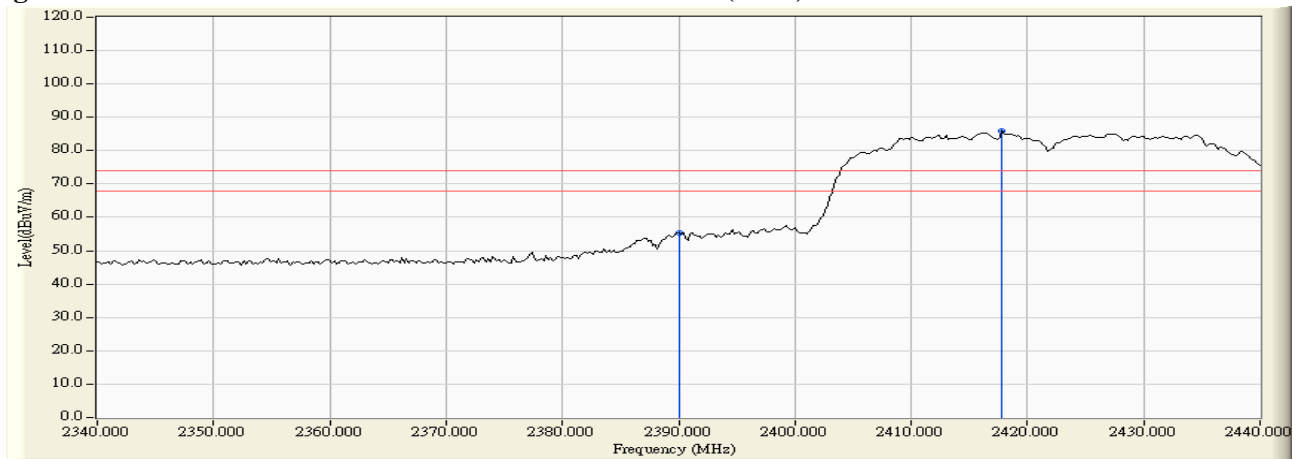
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 5: Transmit - 802.11n-40BW\_45Mbps(2.4G Band) (2422MHz)

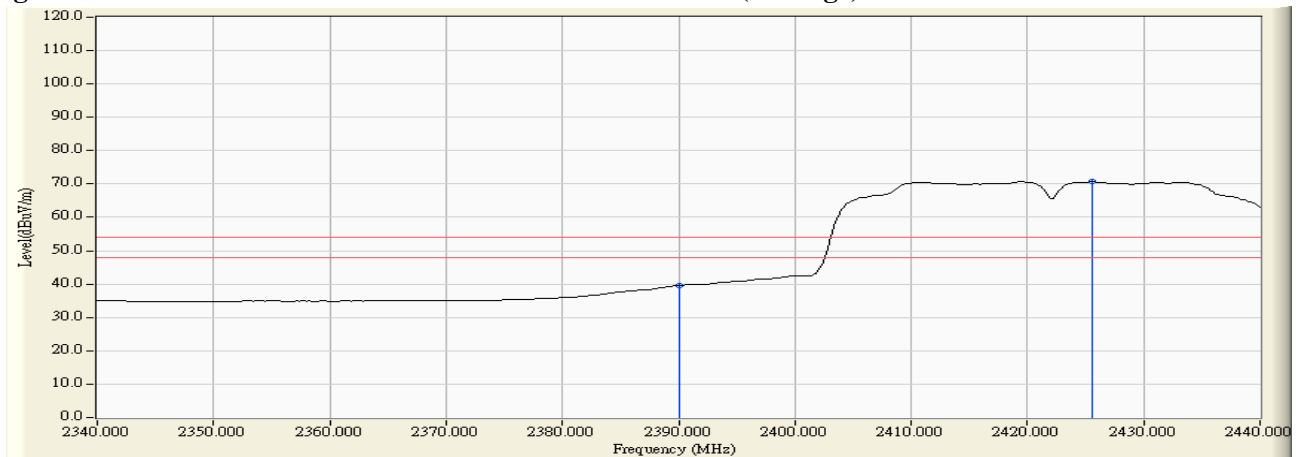
**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
3 (Peak)	2390.000	-4.687	59.925	55.238	74.00	54.00	Pass
3 (Peak)	2417.800	-4.642	90.391	85.749	--	--	--
3 (Average)	2390.000	-4.687	44.216	39.529	74.00	54.00	Pass
3 (Average)	2425.600	-4.640	75.309	70.669	--	--	--

**Figure Channel 3: Horizontal (Peak)**



**Figure Channel 3: Horizontal (Average)**



**Note:**

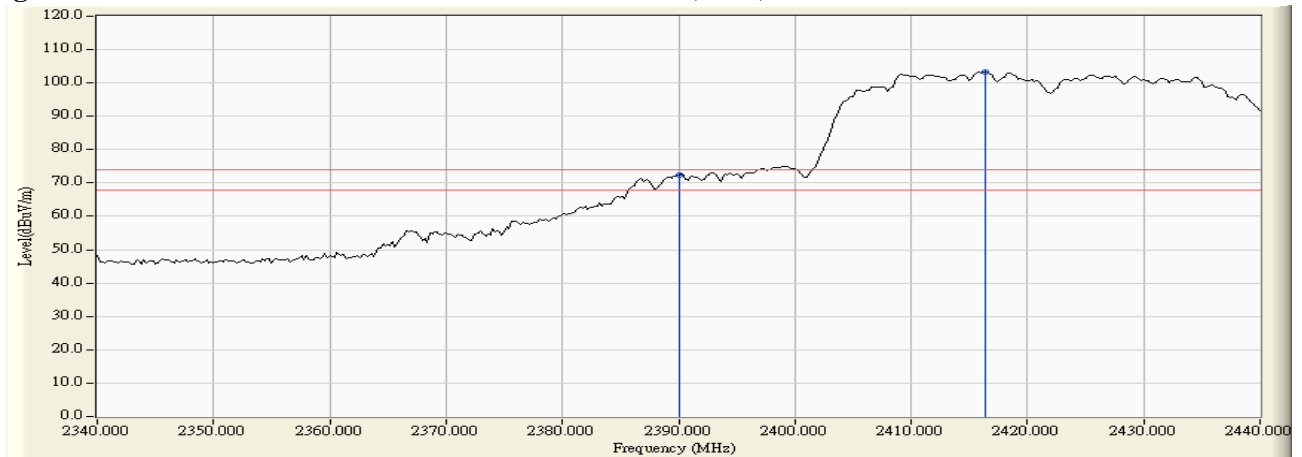
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 5: Transmit - 802.11n-40BW\_45Mbps(2.4G Band) (2422MHz)

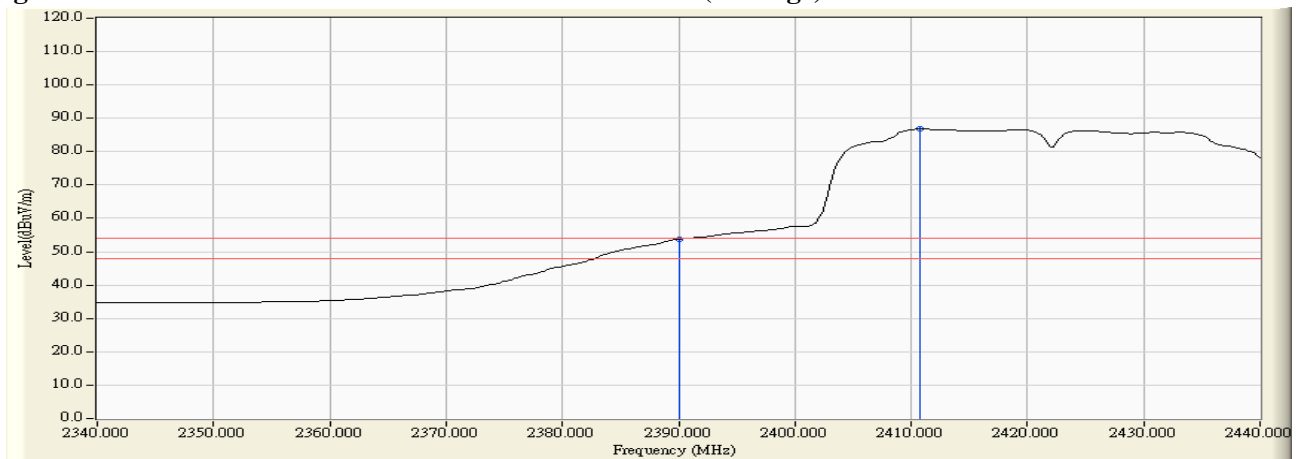
**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
3 (Peak)	2390.000	-6.159	78.576	72.417	74.00	54.00	Pass
3 (Peak)	2416.400	-6.156	109.392	103.236	--	--	--
3 (Average)	2390.000	-6.159	59.869	53.710	74.00	54.00	Pass
3 (Average)	2410.800	-6.169	93.106	86.937	--	--	--

**Figure Channel 3: Vertical (Peak)**



**Figure Channel 3: Vertical (Average)**



**Note:**

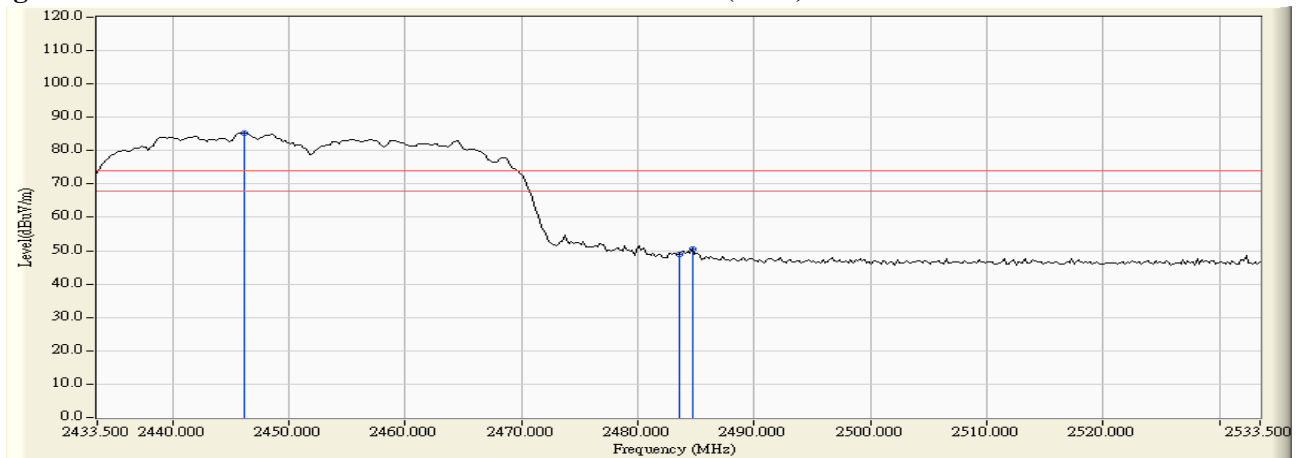
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 5: Transmit - 802.11n-40BW\_45Mbps(2.4G Band) (2452MHz)

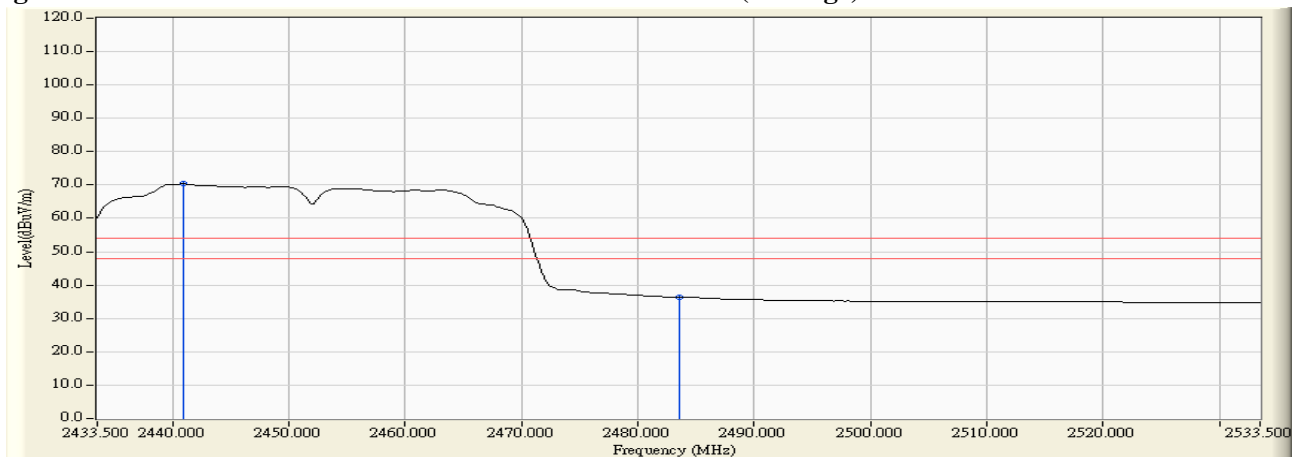
**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
9 (Peak)	2446.100	-4.635	89.917	85.282	--	--	--
9 (Peak)	2483.500	-4.601	53.373	48.771	74.00	54.00	Pass
9 (Peak)	2484.700	-4.600	55.154	50.553	74.00	54.00	Pass
9 (Average)	2440.900	-4.636	74.979	70.342	--	--	--
9 (Average)	2483.500	-4.601	41.016	36.414	74.00	54.00	Pass

**Figure Channel 9: Horizontal (Peak)**



**Figure Channel 9: Horizontal (Average)**



**Note:**

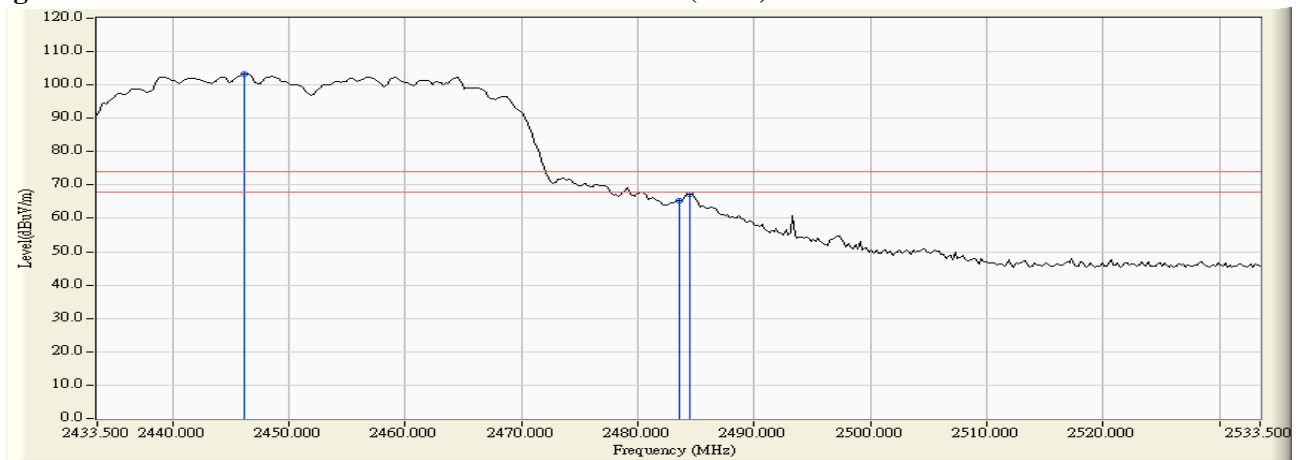
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Intel® Centrino® Ultimate-N 6300  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 5: Transmit - 802.11n-40BW\_45Mbps(2.4G Band) (2452MHz)

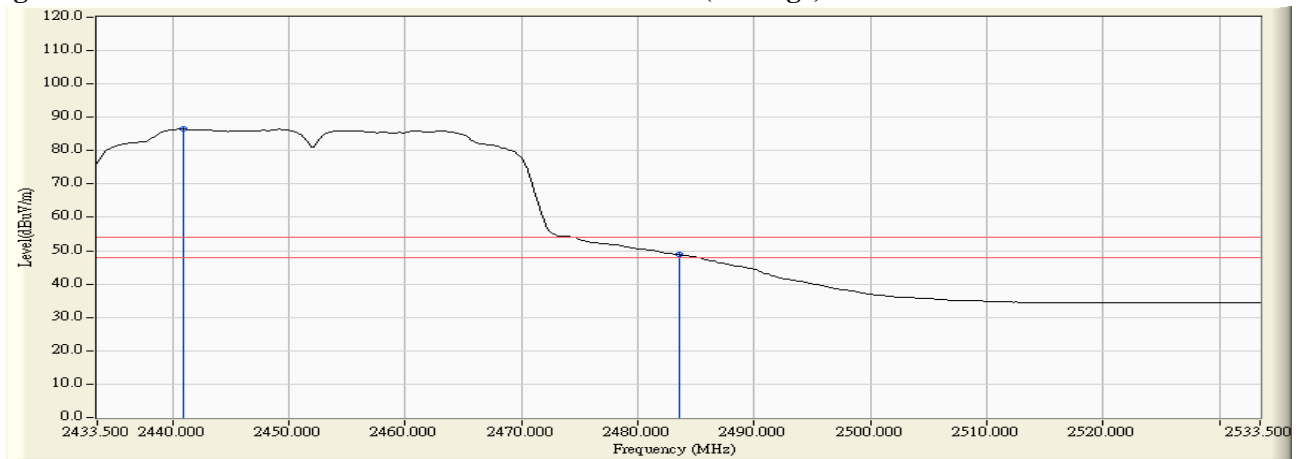
**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
9 (Peak)	2446.100	-6.084	109.428	103.345	--	--	--
9 (Peak)	2483.500	-5.966	71.348	65.381	74.00	54.00	Pass
9 (Peak)	2484.500	-5.964	73.275	67.311	74.00	54.00	Pass
9 (Average)	2440.900	-6.096	92.528	86.431	--	--	--
9 (Average)	2483.500	-5.966	54.852	48.885	74.00	54.00	Pass

**Figure Channel 9: Vertical (Peak)**



**Figure Channel 9: Vertical (Average)**



**Note:**

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.



## **5. EMI Reduction Method During Compliance Testing**

No modification was made during testing.

## Attachment 1: EUT Test Photographs

## Attachment 2: EUT Detailed Photographs