

**MEASUREMENT REPORT**  
**of**  
***WIFI module***  
***for***  
***Class II permissive change***

**Applicant** : PEGATRON CORPORATION  
**EUT** : WIFI module  
**Model No.** : UPWL6025  
**FCC ID** : VUIUPWL6025

Tested by :

***Training Research Co., Ltd.***

**TEL : 886-2-26935155      FAX : 886-2-26934440**

No. 255, Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C.

# CERTIFICATION

**We here by verify that:**

The test data, data evaluation, test procedures and equipment configurations shown in this report were made mainly in accordance with the procedures given in ANSI C63.4 (2003) as a reference. All test were conducted by **Training Research Co., Ltd.**, 255 Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C. Also, we attest to the accuracy of each.

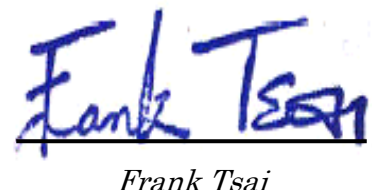
We further submit that the energy emitted by the sample EUT tested as described in the report is **in compliance with** the technical requirements set forth in the FCC Rules Part 15 Subpart C Section 15.247.

**Applicant** : PEGATRON CORPORATION  
**Applicant Address** : 5F, NO. 76, LIGONG ST., BEITOU DISTRICT,  
 TAIPEI CITY, Taiwan  
**FCC ID** : VUIUPWL6025  
**Report No.** : P5515110068  
**Test Date** : July 28, 2011 ~ August 05, 2011

Prepared by:

  
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**Conditions of issue :**

- (1) **This test report shall not be reproduced except in full, without written approval of TRC. And the test result contained within this report only relate to the sample submitted for testing.**

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## **I . GENERAL**

### **1.1 Introduction**

The following measurement report is submitted on behalf of applicant in support that the certification in accordance with Part 2 Subpart J and Part 15 Subpart A, B and C of the Commission's Rules and Regulations.

### **1.2 Description of EUT**

<b>FCC ID</b>	:	VUIUPWL6025
<b>Product Name</b>	:	WIFI module
<b>Model Name</b>	:	UPWL6025
<b>Frequency Range</b>	:	IEEE 802.11b/g/n Draft 1.0 20M: 2.412GHz ~ 2.462GHz IEEE 802.11n Draft 1.0 40M: 2.422GHz ~ 2.452GHz
<b>Channel Spacing</b>	:	5MHz
<b>Support Channel</b>	:	IEEE 802.11b/g/n Draft 1.0 20M: 11 Channels IEEE 802.11n Draft 1.0 40M: 7 Channels
<b>Modulation Skill</b>	:	DBPSK, DQPSK, CCK, OFDM
<b>Power Type</b>	:	Powered by PCI Express interface of client's device

### **1.3 Test method**

- 1.3.1 Insert the EUT into the PCI Express interface of extend card of the test fixture.
- 1.3.2 Using the computer and software provided by the manufacturer to control EUT.  
The software is operated under the Windows to control the EUT in the mode of continuous transmission; the test is performed under the specific conditions.
- 1.3.3 Set different data rate and channel (IEEE 802.11b/g/n Draft 1.0 20M: CH01/CH06/CH11, IEEE 802.11n Draft 1.0 40M: CH03/CH06/CH09) being tested and repeat the procedures above.
  - (a) Conducted test and Radiated test:  
making EUT to the continuously (TX) mode.

#### **1.4 Description of Support Equipment**

In order to construct the minimum testing, following equipment were used as the support units.

**Notebook : DELL**  
Model No. : JX285 (PP26L)  
Serial No. : 410362204  
FCC ID : Doc Approved  
BSMI : R33002

**Power Adaptor : DELL**  
Model No. : LA65NS1-00  
Part No. : PA-1650-05D3  
Serial No. : CN-0YD637-716145-82T-0B8F  
FCC ID : Doc Approved  
BSMI : R33275  
Power type : 100 ~ 240VAC / 50 - 60Hz, 1.5A, Switching  
Power cord (Main power to adaptor): Non-shielded, 0.90m length, Plastic hood, No ferrite core  
Power cord (DC plug to adaptor): Shielded, 1.83m length, Plastic hood, ferrite core

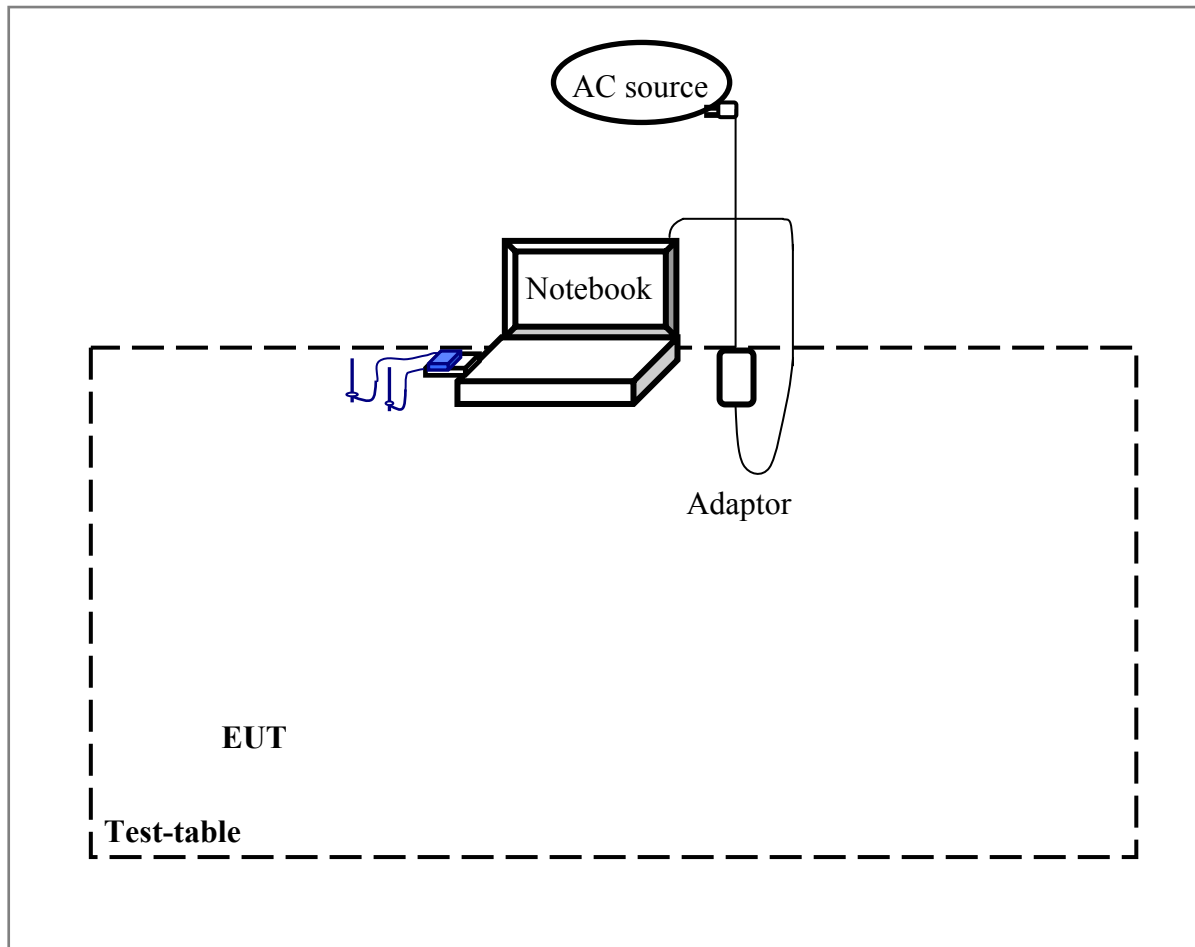
#### **Test fixture**

**(PCI Express Extend Card):PEGATRON CORPORATION**

Model No. : ADC-PEMCCC01  
Serial No. : N/A  
Power type : By NB

## **1.5 Configuration of System Under Test**

### **1.5.1 Conducted and Radiated Emission Test**



#### **Notebook PC:**

\*Mini-PCI Port ..... EUT

The tests below are carried with the EUT transmitter set at high power in TDD mode. The EUT is forced to select of output power level and channel number by USB port.

The setting up procedure was recorded in 1.3 test method.

### 1.6 Verify the Frequency and Channel

Channel	Frequency (GHz)
1	2.412
2	2.417
3	2.422
4	2.427
5	2.432
6	2.437
7	2.442
8	2.447
9	2.452
10	2.457
11	2.462

Note:

1. This is for confirming that all frequencies of IEEE 802.11b/g/n Draft 1.0 20M are in 2.412GHz to 2.462GHz. and all frequencies of IEEE 802.11n Draft 1.0 40M are in 2.422GHz to 2.452GHz.
2. Section 15.31(m): Measurements on intentional radiators or receivers shall be performed at three frequencies for operating frequency range over 10 MHz  
(The locations of these frequencies one near the top, one near the middle and one near the bottom.)
3. After test, the EUT operating frequencies are in 2.412GHz to 2.462GHz and 2.422GHz to 2.452GHz. So all the items as followed in testing report are need to test these three frequencies: IEEE 802.11b/g/n Draft 1.0 20M: CH01/CH06/CH11, IEEE 802.11n Draft 1.0 40M: CH03/CH06/CH09



### **1.7 Test Procedure**

All measurements contained in this report were performed mainly according to the techniques described in ANSI C63.4 (2003) and the pre-setup was written on 1.3 test method, the detail setup was written on each test item.

### **1.8 Location of the Test Site**

The radiated emissions measurements required by the rules were performed on the **three-meter, Semi-anechoic Chamber (FCC Registration Number: 93906)** maintained by *Training Research Co., Ltd.* 1F, No. 255 Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C. Complete description and measurement data have been placed on file with the commission. The conducted power line emissions tests and other test items were performed in a semi-anechoic chamber also located at Training Research Co., Ltd.

No. 255 Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C. *Training Research Co., Ltd.* is listed by the FCC as a facility available to do measurement work for others on a contract basis.

### **1.9 General Test Condition**

The conditions under which the EUT operates were varied to determine their effect on the equipment's emission characteristics. The final configuration of the test system and the mode of operation used during these tests were chosen as that which produced the highest emission levels. However, only those conditions, which the EUT was considered likely to encounter in normal use were investigated.

In test, they were set in high power and continuously transmitting mode that controlled by computer. The ch01, ch06 and ch11 of EUT were all tested. The setting up procedure is recorded on 1.3 test method.

## II. Section 15.203: Antenna requirement

The EUT can be equipped with detachable antenna. The external antenna is affixed to the EUT using a unique connector. The antenna requirement stated in Section 15.203 is inapplicable to this EUT.

The antenna specification of list as follows,

Antenna No.	Antenna Manufacturer	Model	Connector	With Core	Antenna Type	Antenna Gain (Max.)
Antenna #1	Airgain	N2420DS & N2420DCS	U.FL COMPATIBLE PLUG	NO	PCB	4.93dBi
Antenna #2	Airgain	N2420DS & N2420DCS	U.FL COMPATIBLE PLUG	YES	PCB	4.93dBi
Antenna #3	Wanshu	WPB208 & WPB209	MHF	YES	PCB	4.27dBi

Note:

- 1) For more detailed features description, please reference to the Antenna Specifications. (Please reference to RF Exposure Information)
- 2) We select three kinds antenna including **antenna #1**, **antenna #2** and **antenna #3** which apply to conduction and radiated emission.
- 3) The conduction and radiated emissions data presented the worst case of the **antenna #1** supplied with the EUT.

### **III. Section 15.207: Power Line Conducted Emissions for AC Powered Units**

#### **3.1 Test Condition & Setup**

The power line conducted emission measurements were performed in an semi-anechoic chamber. The EUT was assembled on a wooden table, which is 80 centimeters high, was placed 40 centimeters from the backwall and at least 1 meter from the sidewall.

Power was fed to the EUT from the public utility power grid through a line filter and Line Impedance Stabilization Networks (LISNs). The LISN housing, measuring instrumentation case, ground plane, etc., were electrically bonded together at the same RF potential. The Spectrum analyzer (or EMI receiver) was connected to the AC line through an isolation transformer. The 50-ohm output of the LISN was connected to the spectrum analyzer directly. Conducted emission levels were in the CISPR quasi-peak and average detection mode. The analyzer's 6 dB bandwidth was set to 9 KHz. No post-detector video filter was used.

The spectrum was scanned from 150 KHz to 30 MHz. The physical arrangement of the test system and associated cabling was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude and frequency. All spurious emission frequencies were observed. The highest emission amplitudes relative to the appropriate limit were measured and have been recorded in paragraph 4.3

There is a test condition apply in this test item, the test procedure description as <1.3>. Three channels were tested, one in the top, one in the middle and the other in bottom.

### 3.2 List of Test Instruments

Instrument Name	Model	Brand	Serial No.	Calibration Date
				Next time
EMI Receiver	8546A	HP	3520A00242	09/12/11
RF Filter Section	85460A	HP	3448A00217	09/12/11
LISN (EUT)	3816/2	EMCO	00042976	02/10/12
LISN (Support E.)	3816/2	EMCO	00042989	01/26/12
Pre-amplifier	15542 ZFL-500	Mini – Circuits	0 0117	10/06/11
6dB Attenuator	MCL BW-S6W2	Mini – Circuits	9915 – Conducted	10/06/11
10dB Attenuator	A5542 VAT010	Mini – Circuits	0215 – Conducted	10/06/11
Coaxial Cable (2.0 meter)	A30A30-0058-50FS-2M	Jyebao	SMA-08	10/06/11
Coaxial Cable (1.1 meter)	A30A30-0058-50FS-1M	Jyebao	SMA-09	10/06/11
Coaxial Cable (20 meter)	RG-214/U	Jyebao	NP-01	10/06/11
Coaxial Cable (20 meter)	RG-214/U	Jyebao	NP-02	10/06/11
Auto Switch Box (< 30MHz)	ASB-01	TRC	9904-01	10/06/11

### 3.3 Test Result of Power Line Conducted Emissions

The following table shows a summary of the highest emissions of power line conducted emissions on the LIVE and NETURAL conductors of the EUT power cord. Show as follows.

Test Conditions: Temperature : 25 °C Humidity : 73 % RH

Test mode: IEEE 802.11b Channel 1

Power Connected Emissions					Class B		
Conductor	Frequency (KHz)	Peak (dBμV)	QP (dBμV)	Average (dBμV)	QP-limit (dBμV)	AVG-limit (dBμV)	Margin (dB)
Line 1	169.000	50.04	---	---	65.46	55.46	-5.42
	1783.000	40.98	---	---	56.00	46.00	-5.02
	1941.000	40.53	---	---	56.00	46.00	-5.47
	3731.020	46.99	44.79	30.13	56.00	46.00	-11.21
	4065.095	46.25	44.39	30.39	56.00	46.00	-11.61
	4445.000	41.55	---	---	56.00	46.00	-4.45
Line 2	3283.325	46.19	40.81	23.90	56.00	46.00	-15.19
	3562.060	49.85	46.84	28.76	56.00	46.00	-9.16
	3674.340	51.09	48.61	30.57	56.00	46.00	-7.39
	3896.545	52.02	50.35	33.64	56.00	46.00	-5.65
	4063.740	50.36	48.59	32.47	56.00	46.00	-7.41
	4121.070	49.27	46.68	30.52	56.00	46.00	-9.32

NOTE:

- (1)Margin = Peak Amplitude – Limit, The reading amplitudes are all under limit.
- (2)A "+" sign in the margin column means the emission is OVER the Class B Limit and "-" sign of means UNDER the Class B limit

**Test mode: IEEE 802.11b Channel 6**

<b>Power Connected Emissions</b>					<b>Class B</b>		
<b>Conductor</b>	<b>Frequency (KHz)</b>	<b>Peak (dBμV)</b>	<b>QP (dBμV)</b>	<b>Average (dBμV)</b>	<b>QP-limit (dBμV)</b>	<b>AVG-limit (dBμV)</b>	<b>Margin (dB)</b>
Line 1	167.000	51.69	---	---	65.51	55.51	-3.82
	1941.000	41.48	---	---	56.00	46.00	-4.52
	2158.000	40.05	---	---	56.00	46.00	-5.95
	3683.365	45.65	33.38	16.29	56.00	46.00	-22.62
	3840.690	47.27	45.40	30.99	56.00	46.00	-10.60
	4053.000	41.85	---	---	56.00	46.00	-4.15
Line 2	167.000	49.98	---	---	65.51	55.51	-5.53
	1713.000	40.67	---	---	56.00	46.00	-5.33
	2012.000	41.75	---	---	56.00	46.00	-4.25
	3564.475	49.39	45.90	28.76	56.00	46.00	-10.10
	3780.000	42.99	---	---	56.00	46.00	-3.01
	3953.065	51.62	49.81	33.29	56.00	46.00	-6.19

**Test mode: IEEE 802.11b Channel 11**

<b>Power Connected Emissions</b>					<b>Class B</b>		
<b>Conductor</b>	<b>Frequency (KHz)</b>	<b>Peak (dBμV)</b>	<b>QP (dBμV)</b>	<b>Average (dBμV)</b>	<b>QP-limit (dBμV)</b>	<b>AVG-limit (dBμV)</b>	<b>Margin (dB)</b>
Line 1	169.245	55.27	53.56	44.99	65.51	55.51	-10.52
	3542.000	41.97	---	---	56.00	46.00	-4.03
	3936.000	42.14	---	---	56.00	46.00	-3.86
	4047.675	46.75	44.65	31.54	56.00	46.00	-11.35
	4367.000	42.69	---	---	56.00	46.00	-3.31
	5001.250	43.42	41.14	27.39	56.00	46.00	-14.86
Line 2	169.425	53.27	51.63	43.40	65.51	55.51	-12.11
	2136.000	42.43	---	---	56.00	46.00	-3.57
	3317.000	40.87	---	---	56.00	46.00	-5.13
	3586.095	50.48	47.16	28.96	56.00	46.00	-8.84
	3641.515	50.56	46.80	29.91	56.00	46.00	-9.20
	3976.295	51.52	49.89	33.14	56.00	46.00	-6.11

**Test mode: IEEE 802.11g Channel 1**

<b>Power Connected Emissions</b>					<b>Class B</b>		
<b>Conductor</b>	<b>Frequency (KHz)</b>	<b>Peak (dBμV)</b>	<b>QP (dBμV)</b>	<b>Average (dBμV)</b>	<b>QP-limit (dBμV)</b>	<b>AVG-limit (dBμV)</b>	<b>Margin (dB)</b>
Line 1	167.670	52.19	51.08	43.83	65.51	55.51	-11.68
	1731.000	39.29	---	---	56.00	46.00	-6.71
	2222.000	40.09	---	---	56.00	46.00	-5.91
	3445.000	39.39	---	---	56.00	46.00	-6.61
	3799.055	46.58	43.86	30.20	56.00	46.00	-12.14
	4131.000	39.83	---	---	56.00	46.00	-6.17
Line 2	166.000	51.04	---	---	65.54	55.54	-4.50
	2179.000	40.13	---	---	56.00	46.00	-5.87
	3221.000	40.84	---	---	56.00	46.00	-5.16
	3573.975	50.45	46.95	29.05	56.00	46.00	-9.05
	3909.305	51.10	48.67	33.18	56.00	46.00	-7.33
	4130.910	48.62	45.65	31.85	56.00	46.00	-10.35

**Test mode: IEEE 802.11g Channel 6**

<b>Power Connected Emissions</b>					<b>Class B</b>		
<b>Conductor</b>	<b>Frequency (KHz)</b>	<b>Peak (dBμV)</b>	<b>QP (dBμV)</b>	<b>Average (dBμV)</b>	<b>QP-limit (dBμV)</b>	<b>AVG-limit (dBμV)</b>	<b>Margin (dB)</b>
Line 1	166.000	52.11	---	---	65.54	55.54	-3.43
	1731.000	39.68	---	---	56.00	46.00	-6.32
	2051.000	39.52	---	---	56.00	46.00	-6.48
	3674.970	45.18	41.27	21.45	56.00	46.00	-14.73
	3739.560	46.37	43.86	30.11	56.00	46.00	-12.14
	3936.000	41.92	---	---	56.00	46.00	-4.08
Line 2	167.000	50.88	---	---	65.51	55.51	-4.63
	2029.000	40.19	---	---	56.00	46.00	-5.81
	3513.545	48.24	43.04	27.74	56.00	46.00	-12.96
	3625.665	49.63	46.72	30.72	56.00	46.00	-9.28
	3740.190	50.95	48.81	31.30	56.00	46.00	-7.19
	4017.535	51.03	49.35	32.95	56.00	46.00	-6.65

**Test mode: IEEE 802.11g Channel 11**

<b>Power Connected Emissions</b>					<b>FCC Class B</b>		
<b>Conductor</b>	<b>Frequency (KHz)</b>	<b>Peak (dBμV)</b>	<b>QP (dBμV)</b>	<b>Average (dBμV)</b>	<b>QP-limit (dBμV)</b>	<b>AVG-limit (dBμV)</b>	<b>Margin (dB)</b>
Line 1	167.000	49.97	---	---	65.51	55.51	-5.54
	1783.000	38.87	---	---	56.00	46.00	-7.13
	2115.000	39.40	---	---	56.00	46.00	-6.60
	3606.000	38.65	---	---	56.00	46.00	-7.35
	3850.545	47.45	45.15	30.49	56.00	46.00	-10.85
	4014.000	42.75	---	---	56.00	46.00	-3.25
Line 2	2158.000	41.44	---	---	56.00	46.00	-4.56
	3381.000	40.50	---	---	56.00	46.00	-5.50
	3510.000	41.24	---	---	56.00	46.00	-4.76
	3628.265	49.04	46.53	28.78	56.00	46.00	-9.47
	3792.055	50.84	48.74	32.74	56.00	46.00	-7.26
	4072.910	50.53	48.16	32.31	56.00	46.00	-7.84

**Test mode: IEEE 802.11n 20M Channel 1**

<b>Power Connected Emissions</b>					<b>Class B</b>		
<b>Conductor</b>	<b>Frequency (KHz)</b>	<b>Peak (dBμV)</b>	<b>QP (dBμV)</b>	<b>Average (dBμV)</b>	<b>QP-limit (dBμV)</b>	<b>AVG-limit (dBμV)</b>	<b>Margin (dB)</b>
Line 1	167.000	50.71	---	---	65.51	55.51	-4.80
	1941.000	39.63	---	---	56.00	46.00	-6.37
	2051.000	39.50	---	---	56.00	46.00	-6.50
	3510.000	39.65	---	---	56.00	46.00	-6.35
	3731.995	45.67	41.54	23.73	56.00	46.00	-14.46
	3975.000	41.20	---	---	56.00	46.00	-4.80
Line 2	167.000	48.72	---	---	65.51	55.51	-6.79
	1889.000	39.36	---	---	56.00	46.00	-6.64
	2012.000	39.61	---	---	56.00	46.00	-6.39
	3349.000	38.74	---	---	56.00	46.00	-7.26
	3571.010	49.88	47.00	29.03	56.00	46.00	-9.00
	3905.930	51.08	49.13	33.20	56.00	46.00	-6.87



**Test mode: IEEE 802.11n 20M Channel 6**

<b>Power Connected Emissions</b>					<b>Class B</b>		
<b>Conductor</b>	<b>Frequency (KHz)</b>	<b>Peak (dBμV)</b>	<b>QP (dBμV)</b>	<b>Average (dBμV)</b>	<b>QP-limit (dBμV)</b>	<b>AVG-limit (dBμV)</b>	<b>Margin (dB)</b>
Line 1	169.000	49.97	---	---	65.46	55.46	-5.49
	1889.000	39.41	---	---	56.00	46.00	-6.59
	2012.000	39.25	---	---	56.00	46.00	-6.75
	3510.000	41.81	---	---	56.00	46.00	-4.19
	3780.000	41.68	---	---	56.00	46.00	-4.32
	4014.000	42.17	---	---	56.00	46.00	-3.83
Line 2	167.000	49.15	---	---	65.51	55.51	-6.36
	1661.000	40.44	---	---	56.00	46.00	-5.56
	1889.000	39.75	---	---	56.00	46.00	-6.25
	2115.000	40.06	---	---	56.00	46.00	-5.94
	3570.830	49.91	46.95	29.07	56.00	46.00	-9.05
	3906.340	51.15	49.06	33.23	56.00	46.00	-6.94

**Test mode: IEEE 802.11n 20M Channel 11**

<b>Power Connected Emissions</b>					<b>Class B</b>		
<b>Conductor</b>	<b>Frequency (KHz)</b>	<b>Peak (dBμV)</b>	<b>QP (dBμV)</b>	<b>Average (dBμV)</b>	<b>QP-limit (dBμV)</b>	<b>AVG-limit (dBμV)</b>	<b>Margin (dB)</b>
Line 1	166.000	49.80	---	---	65.54	55.54	-5.74
	1731.000	40.05	---	---	56.00	46.00	-5.95
	1941.000	39.44	---	---	56.00	46.00	-6.56
	3670.000	40.70	---	---	56.00	46.00	-5.30
	3905.275	47.28	44.93	31.10	56.00	46.00	-11.07
	4171.000	38.98	---	---	56.00	46.00	-7.02
Line 2	166.000	50.00	---	---	65.54	55.54	-5.54
	1783.000	41.08	---	---	56.00	46.00	-4.92
	3445.000	40.52	---	---	56.00	46.00	-5.48
	3795.865	51.07	49.08	31.21	56.00	46.00	-6.92
	3850.530	51.06	49.46	33.25	56.00	46.00	-6.54
	3961.490	51.31	49.72	33.31	56.00	46.00	-6.28

**Test mode: IEEE 802.11n 40M Channel 3**

<b>Power Connected Emissions</b>					<b>Class B</b>		
<b>Conductor</b>	<b>Frequency (KHz)</b>	<b>Peak (dBμV)</b>	<b>QP (dBμV)</b>	<b>Average (dBμV)</b>	<b>QP-limit (dBμV)</b>	<b>AVG-limit (dBμV)</b>	<b>Margin (dB)</b>
Line 1	167.000	50.08	---	---	65.51	55.51	-5.43
	1783.000	40.28	---	---	56.00	46.00	-5.72
	3574.000	40.04	---	---	56.00	46.00	-5.96
	3670.000	40.89	---	---	56.00	46.00	-5.11
	3962.185	47.51	45.68	31.37	56.00	46.00	-10.32
	4171.000	40.05	---	---	56.00	46.00	-5.95
Line 2	3346.990	47.30	42.33	25.84	56.00	46.00	-13.67
	3569.815	49.67	46.23	29.71	56.00	46.00	-9.77
	3681.905	49.86	47.20	30.84	56.00	46.00	-8.80
	3739.940	50.91	48.34	32.01	56.00	46.00	-7.66
	3850.110	51.52	49.74	33.96	56.00	46.00	-6.26
	4129.570	48.16	45.88	31.21	56.00	46.00	-10.12

**Test mode: IEEE 802.11n 40M Channel 6**

<b>Power Connected Emissions</b>					<b>Class B</b>		
<b>Conductor</b>	<b>Frequency (KHz)</b>	<b>Peak (dBμV)</b>	<b>QP (dBμV)</b>	<b>Average (dBμV)</b>	<b>QP-limit (dBμV)</b>	<b>AVG-limit (dBμV)</b>	<b>Margin (dB)</b>
Line 1	167.000	49.71	---	---	65.51	55.51	-5.80
	2158.000	39.26	---	---	56.00	46.00	-6.74
	3574.000	39.06	---	---	56.00	46.00	-6.94
	3741.000	42.65	---	---	56.00	46.00	-3.35
	3962.315	47.46	45.72	31.47	56.00	46.00	-10.28
	4053.000	43.00	---	---	56.00	46.00	-3.00
Line 2	3381.000	42.65	---	---	56.00	46.00	-3.35
	3524.255	47.90	38.38	17.04	56.00	46.00	-17.62
	3682.300	50.26	47.83	30.81	56.00	46.00	-8.17
	3850.575	51.30	49.68	33.72	56.00	46.00	-6.32
	3959.825	51.43	48.88	33.68	56.00	46.00	-7.12
	4129.265	48.03	46.09	31.39	56.00	46.00	-9.91

**Test mode: IEEE 802.11n 40M Channel 9**

<b>Power Connected Emissions</b>					<b>FCC Class B</b>		
<b>Conductor</b>	<b>Frequency (KHz)</b>	<b>Peak (dBμV)</b>	<b>QP (dBμV)</b>	<b>Average (dBμV)</b>	<b>QP-limit (dBμV)</b>	<b>AVG-limit (dBμV)</b>	<b>Margin (dB)</b>
Line 1	166.000	50.01	---	---	65.54	55.54	-5.53
	1941.000	40.67	---	---	56.00	46.00	-5.33
	2115.000	40.28	---	---	56.00	46.00	-5.72
	3606.000	42.43	---	---	56.00	46.00	-3.57
	3748.525	45.73	37.48	17.19	56.00	46.00	-18.52
	3897.000	41.97	---	---	56.00	46.00	-4.03
Line 2	1889.000	39.41	---	---	56.00	46.00	-6.59
	3346.020	46.89	41.86	24.81	56.00	46.00	-14.14
	3571.395	49.84	45.52	28.60	56.00	46.00	-10.48
	3675.805	49.35	45.71	24.61	56.00	46.00	-10.29
	3850.885	51.54	49.81	33.35	56.00	46.00	-6.19
	4128.835	48.74	46.65	31.97	56.00	46.00	-9.35

#### **IV. Section 15.247 (a): Technical description of the EUT**

*Direct Sequence System* is a spread spectrum system in which the carrier has been modulated by a high speed spreading code and an information data stream. The high speed code sequence dominates the “modulating function” and is the direct cause of the wide spreading of the transmitted signal. In the operational description demonstrates the operation principles of the Baseband processor employed by the EUT, shows that which is a complete DSSS baseband processor and meets the definition of the direct sequence spread spectrum system.

## **V. Section 15.247 (C): Spurious Emissions (Radiated)**

### **5.1 Test Condition & Setup**

We'd performed the test by the *radiated emission* skill: The EUT was placed in an semi-anechoic chamber, and set the EUT transmitting continuously and scanned at 3-meter distance to determine its emission characteristics. The physical arrangement of the EUT was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude, directivity, and frequency. The exact system configuration, which produced the highest emissions was noted so it could be reproduced later during the final tests. For the measurement above 1GHz, according to the guidance we'd set the spectrum analyzer's 6dB bandwidth RBW to 1MHz.

This was done to ensure that the final measurements would demonstrate the worst-case interference potential of the EUT.

Final radiation measurements were made on a three-meter, semi-anechoic chamber. The EUT system was placed on a nonconductive turntable, which is 0.8 meters height, top surface 1.0 x 1.5 meter.

The spectrum was examined from 30MHz to 1000MHz using an Hewlett Packard 85460A EMI Receiver, SCHWARZECK whole range Small Biconical Antenna (Model No.: UBAA9114 & BBVU9135) is used to measure frequency from 30 MHz to 1GHz. The final test is used the HP 85460A spectrum and 8564E spectrum was examined from 1GHz to 25GHz using an Hewlett Packard Spectrum Analyzer, EMCO/HP Horn Antenna (Model 3115 / 84125-80008) for 1G - 25GHz.

At each frequency, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. There are two spectrum analyzers use on this testing, HP 85460A for frequency 30MHz to 1000MHz, and 8564E for frequency 1GHz to 25GHz. No post-detector video filters were used in the test. The spectrum analyzer's 6dB bandwidth was set to 120KHz (spectrum was examined from 30 MHz to 1000 MHz), the spectrum analyzer's 6 dB bandwidth was set to 1 MHz (spectrum was examined from 1GHz to 25GHz) and the analyzer was operated in the maximum hold mode. There is a test condition applies in this test item, the test procedure description as the following:

Three channels were tested, one in the top, one in the middle and the other in bottom. The setting up procedure is recorded on <1.3>

With the transmitter operating from a AC source and using the internal of EUT, radiates spurious emissions falling within the restricted bands of 15.209 were measured at operating frequencies corresponding to upper, middle and bottom channels in the 2400 ~ 2483.5 MHz band.

The actual field intensity in decibels referenced to 1 microvolt per meter (dBμV/m) is determined by algebraically adding the measured reading in dBμV, the antenna factor (dB), and cable loss (dB) at the appropriate frequency. Since the EUT was set to transmit continuously, no *duty cycle* is present.

**For frequency between 30MHz to 1000MHz**

$$F_{Ia} \text{ (dBuV/m)} = F_{Ir} \text{ (dB}\mu\text{V)} + \text{Correction Factors}$$

F<sub>Ia</sub> : Actual Field Intensity

F<sub>Ir</sub> : Reading of the Field Intensity

Correction Factors = Antenna Factor + (Cable Loss – Amplifier Gain) + Switching Box Loss

**For frequency between 1GHz to 25GHz**

$$F_{Ia} \text{ (dB}\mu\text{V/m)} = F_{Ir} \text{ (dB}\mu\text{V)} + \text{Correction Factor}$$

F<sub>Ia</sub> : Actual Field Intensity

F<sub>Ir</sub> : Reading of the Field Intensity

Correction Factors = Antenna Factor + (Cable Loss – Amplifier Gain) + Switching Box Loss

## 5.2 List of Test Instruments

Instrument Name	Model	Brand	Serial No.	Calibration Date
				Next time
EMI Receiver	8546A	HP	3520A00242	09/12/11
RF Filter Section	85460A	HP	3448A00217	09/12/11
Small Biconical Antenna	UBAA9114 & BBVU9135	SCHWARZECK	127	09/21/11
Pre-amplifier	PA1F	TRC	1FAC	10/06/11
Coaxial Cable (Double shielded, 15 meter)	A30A30-0058-50FS-15M	JYEBAO	SMA-01	10/06/11
Coaxial Cable (1.1 meter)	A30A30-0058-50FS-1M	JYEBAO	SMA-02	10/06/11
Spectrum Analyzer	8564E	HP	3720A00840	04/12/12
Microwave Preamplifier	84125C	HP	US36433002	10/19/11
Horn Antenna	3115	EMCO	9104-3668	01/27/12
Standard Guide Horn Antenna	84125-80008	HP	18-26.5GHz	01/18/12
Standard Guide Horn Antenna	84125-80001	HP	26.5-40GHz	01/31/12
Horn Antenna	1196E (3115)	HP (EMCO)	9704-5178	01/31/12
Pre-amplifier	PA2F	TRC	2F1GZ	01/31/12
Coaxial Cable (3 miter)	A30A30-0058-50FST118	JYEBAO	MSA-05	01/31/12
Coaxial Cable (1 meter)	A30A30-0058-50FST118	JYEBAO	MSA-04	01/31/12

### 5.3 Test Result of Spurious Radiated Emissions

The highest peak values of radiated emissions from the EUT at various antenna heights, antenna polarizations, EUT orientation, etc. are recorded on the following.

Test Conditions: Temperature : 25 ° C Humidity : 73 % RH

**Test mode: IEEE 802.11b CH01 for 30MHz to 1GHz [Horizontal]**

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B ( 3 m )</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
37.27	23.05	1.00	183	4.97	28.02	40.00	-11.98
94.26	30.09	1.00	343	-0.49	29.60	43.50	-13.90
18.54	39.67	1.00	166	-2.85	36.82	43.50	-6.68
260.37	40.01	1.00	92	-3.48	36.53	46.00	-9.47
301.60	42.24	1.00	180	-2.81	39.43	46.00	-6.57
368.29	35.91	1.00	10	-1.80	34.11	46.00	-11.89

**Test mode: IEEE 802.11b CH01 for 30MHz to 1GHz [Vertical]**

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B ( 3 m )</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
31.21	22.18	1.00	269	7.54	29.72	40.00	-10.28
100.32	31.91	1.00	252	-0.98	30.93	43.50	-12.57
131.85	29.16	1.00	131	-2.78	26.38	43.50	-17.12
198.54	33.15	1.00	283	-2.85	30.30	43.50	-13.20
322.21	32.20	1.00	256	-2.61	29.59	46.00	-16.41
499.24	26.95	1.00	279	2.92	29.87	46.00	-16.13

Note:

1. Margin = Amplitude – limit, if margin is minus means under limit.
2. Corrected Amplitude = Reading Amplitude + Correction Factors
3. Correction factor = Antenna factor + (Cable Loss – Amplitude gain) + Switching Box Loss



**Test mode: IEEE 802.11b CH01 for 1GHz to 26.5GHz [Horizontal]**

<b>Frequency</b>	<b>Ant. H.</b>	<b>Table</b>	<b>Amplitude</b>		<b>Correction Factor</b>	<b>Corrected Amplitude</b>		<b>Limit</b>		<b>Margin</b>
			<b>Peak / Ave.</b>			<b>Peak / Ave.</b>		<b>Peak / Ave.</b>		
<b>MHz</b>	<b>m</b>	<b>degree</b>	<b>dBμV</b>		<b>dB/m</b>	<b>dBμV/m</b>		<b>dBμV/m</b>		<b>dB</b>
1662.91	1.00	182	40.07	24.67	13.35	53.42	38.02	73.96	53.96	-15.94
2251.96	1.00	2	45.16	33.17	8.80	53.96	41.97	73.96	53.96	-11.99
2335.16	1.00	23	47.33	34.33	9.03	56.36	43.36	73.96	53.96	-10.60
2480.01	1.00	9	47.36	34.67	9.43	56.79	44.10	73.96	53.96	-9.86
2532.02	1.00	9	47.82	36.67	9.55	57.37	46.22	73.96	53.96	-7.74
2570.86	1.00	9	51.00	39.33	9.62	60.62	48.95	73.96	53.96	-5.01
7234.96	1.00	191	46.43	31.61	10.08	56.51	41.69	73.96	53.96	-12.27
24120.00	1.00	104	44.58	---	3.40	47.98	---	73.96	53.96	-5.98

*Test mode: IEEE 802.11b CH01 for 1GHz to 26.5GHz [Vertical]*

<i>Frequency</i>	<i>Ant. H.</i>	<i>Table</i>	<i>Amplitude  Peak / Ave.</i>		<i>Correction Factor</i>	<i>Corrected Amplitude  Peak / Ave.</i>		<i>Limit  Peak / Ave.</i>		<i>Margin</i>
<i>MHz</i>	<i>m</i>	<i>degree</i>	<i>dBμV</i>		<i>dB/m</i>	<i>dBμV/m</i>		<i>dBμV/m</i>		<i>dB</i>
1662.50	1.00	333	38.66	---	13.36	52.02	---	73.96	53.96	-1.94
2333.33	1.00	158	40.17	---	9.02	49.19	---	73.96	53.96	-4.77
2485.42	1.00	96	42.50	---	9.45	51.95	---	73.96	53.96	-2.01
2572.92	1.00	25	40.16	---	9.63	49.79	---	73.96	53.96	-4.17
7233.75	1.00	278	40.44	---	10.07	50.51	---	73.96	53.96	-3.45
24120.00	1.00	87	44.42	---	3.40	47.82	---	73.96	53.96	-6.14

Note:

1. Margin = Corrected - Limit.
2. The EUT utilizes a *permanently attached antenna*. In addition the spurious RF radiated emissions levels do comply with the *20dBc limit* both at its bandedges and other spurious emissions.
3. As stated in Section 15.35(b), for any frequencies above 1000MHz, radiated limits shown are based upon the use of measurement instrumentation employing an average detector function. As the results of our test, the peak amplitudes are already below the FCC limit. Thus the average amplitudes of the rest are omitted.

**Test mode: IEEE 802.11b CH06 for 30MHz to 1GHz [Horizontal]**

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B ( 3 m )</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
67.59	26.97	1.00	225	1.48	28.45	40.00	-11.55
199.75	40.41	1.00	135	-2.81	37.60	43.50	-5.90
260.37	38.12	1.00	256	-3.48	34.64	46.00	-11.36
300.39	41.00	1.00	168	-2.83	38.17	46.00	-7.83
323.42	36.76	1.00	178	-2.60	34.16	46.00	-11.84
368.29	35.91	1.00	148	-1.80	34.11	46.00	-11.89

**Test mode: IEEE 802.11b CH06 for 30MHz to 1GHz [Vertical]**

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B ( 3 m )</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
39.70	23.72	1.00	148	4.22	27.94	40.00	-12.06
101.54	31.34	1.00	242	-1.04	30.30	43.50	-13.20
130.64	30.25	1.00	182	-2.69	27.56	43.50	-15.94
198.54	33.99	1.00	273	-2.85	31.14	43.50	-12.36
322.21	31.52	1.00	195	-2.61	28.91	46.00	-17.09
501.66	25.57	1.00	289	3.03	28.60	46.00	-17.40

**Test mode: IEEE 802.11b CH06 for 1GHz to 26.5GHz [Horizontal]**

<b>Frequency</b>	<b>Ant. H.</b>	<b>Table</b>	<b>Amplitude</b>		<b>Correction Factor</b>	<b>Corrected Amplitude</b>		<b>Limit</b>		<b>Margin</b>
			<b>Peak / Ave.</b>			<b>Peak / Ave.</b>		<b>Peak / Ave.</b>		
<b>MHz</b>	<b>m</b>	<b>degree</b>	<b>dBμV</b>		<b>dB/m</b>	<b>dBμV/m</b>		<b>dBμV/m</b>		<b>dB</b>
1660.64	1.00	182	42.14	24.33	13.38	55.52	37.71	73.96	53.96	-16.25
2272.06	1.00	13	44.34	32.33	8.85	53.19	41.18	73.96	53.96	-12.78
2355.24	1.00	24	48.84	34.17	9.08	57.92	43.25	73.96	53.96	-10.71
2556.31	1.00	44	49.16	35.67	9.60	58.76	45.27	73.96	53.96	-8.69
2601.59	1.00	33	50.66	38.33	9.68	60.34	48.01	73.96	53.96	-5.95
7312.29	1.00	61	38.27	---	10.30	48.57	---	73.96	53.96	-5.39
24371.46	1.00	311	45.95	---	3.26	49.21	---	73.96	53.96	-4.75

**Test mode: IEEE 802.11b CH06 for 1GHz to 26.5GHz [Vertical]**

<b>Frequency</b>	<b>Ant. H.</b>	<b>Table</b>	<b>Amplitude</b>		<b>Correction Factor</b>	<b>Corrected Amplitude</b>		<b>Limit</b>		<b>Margin</b>
			<b>Peak / Ave.</b>			<b>Peak / Ave.</b>		<b>Peak / Ave.</b>		
<b>MHz</b>	<b>m</b>	<b>degree</b>	<b>dBμV</b>		<b>dB/m</b>	<b>dBμV/m</b>		<b>dBμV/m</b>		<b>dB</b>
1658.33	1.00	252	39.17	---	13.42	52.59	---	73.96	53.96	-1.37
2356.25	1.00	230	41.00	---	9.09	50.09	---	73.96	53.96	-3.87
2489.58	1.00	230	41.00	---	9.46	50.46	---	73.96	53.96	-3.50
7312.29	1.00	2	38.94	---	10.30	49.24	---	73.96	53.96	-4.72
9747.08	1.00	6	37.77	---	11.89	49.66	---	73.96	53.96	-4.30
24371.46	1.00	318	45.95	---	3.26	49.21	---	73.96	53.96	-4.75

*Test mode: IEEE 802.11b CH11 for 30MHz to 1GHz [Horizontal]*

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B (3 m)</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
93.05	30.43	1.00	286	-0.39	30.04	43.50	-13.46
198.54	40.57	1.00	124	-2.85	37.72	43.50	-5.78
261.59	38.01	1.00	138	-3.47	34.54	46.00	-11.46
300.39	40.53	1.00	158	-2.83	37.70	46.00	-8.30
322.21	36.87	1.00	168	-2.61	34.26	46.00	-11.74
368.29	35.49	1.00	178	-1.80	33.69	46.00	-12.31

*Test mode: IEEE 802.11b CH11 for 30MHz to 1GHz [Vertical]*

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B (3 m)</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
38.49	32.28	1.00	224	4.60	28.27	40.00	-11.73
101.54	32.28	1.00	228	-1.04	31.24	43.50	-12.26
129.43	29.79	1.00	166	-2.61	27.18	43.50	-16.32
168.22	30.53	1.00	177	-3.65	26.88	43.50	-16.62
198.54	33.91	1.00	278	-2.85	31.06	43.50	-12.44
323.42	31.08	1.00	221	-2.60	28.48	46.00	-17.52

**Test mode: IEEE 802.11b CH11 for 1GHz to 26.5GHz [Horizontal]**

<b>Frequency</b>	<b>Ant. H.</b>	<b>Table</b>	<b>Amplitude</b>		<b>Correction Factor</b>	<b>Corrected Amplitude</b>		<b>Limit</b>		<b>Margin</b>
			<b>Peak / Ave.</b>			<b>Peak / Ave.</b>		<b>Peak / Ave.</b>		
<b>MHz</b>	<b>m</b>	<b>degree</b>	<b>dBμV</b>		<b>dB/m</b>	<b>dBμV/m</b>		<b>dBμV/m</b>		<b>dB</b>
1661.70	1.00	107	40.42	24.50	13.37	53.79	37.87	73.96	53.96	-16.09
2342.51	1.00	6	47.66	35.00	9.05	56.71	44.05	73.96	53.96	-9.91
2559.99	1.00	17	47.51	34.33	9.60	57.11	43.93	73.96	53.96	-10.03
2620.72	1.00	5	48.66	39.00	9.72	58.38	48.72	73.96	53.96	-5.24
7384.79	1.00	38	39.94	---	10.42	50.36	---	73.96	53.96	-3.60
24619.37	1.00	205	45.21	---	3.01	48.22	---	73.96	53.96	-5.74

**Test mode: IEEE 802.11b CH11 for 1GHz to 26.5GHz [Vertical]**

<b>Frequency</b>	<b>Ant. H.</b>	<b>Table</b>	<b>Amplitude</b>		<b>Correction Factor</b>	<b>Corrected Amplitude</b>		<b>Limit</b>		<b>Margin</b>
			<b>Peak / Ave.</b>			<b>Peak / Ave.</b>		<b>Peak / Ave.</b>		
<b>MHz</b>	<b>m</b>	<b>degree</b>	<b>dBμV</b>		<b>dB/m</b>	<b>dBμV/m</b>		<b>dBμV/m</b>		<b>dB</b>
1660.42	1.00	83	37.50	---	13.39	50.89	---	73.96	53.96	-3.07
2539.58	1.00	213	39.17	---	9.56	48.73	---	73.96	53.96	-5.23
2618.75	1.00	84	42.84	---	9.71	52.55	---	73.96	53.96	-1.41
9849.79	1.00	190	37.78	---	11.93	49.71	---	73.96	53.96	-4.25
12308.75	1.00	346	39.94	---	9.56	49.50	---	73.96	53.96	-4.46
24619.37	1.00	208	45.31	---	3.01	48.32	---	73.96	53.96	-5.64

**Test mode: IEEE 802.11g CH01 for 30MHz to 1GHz [Horizontal]**

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B ( 3 m )</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
93.05	32.64	1.00	95	-0.39	32.25	43.50	-11.25
198.54	40.89	1.00	146	-2.85	38.04	43.50	-5.46
257.95	39.11	1.00	68	-3.46	35.65	46.00	-10.35
300.39	41.14	1.00	170	-2.83	38.31	46.00	-7.69
322.21	37.54	1.00	109	-2.61	34.93	46.00	-11.07
367.07	35.67	1.00	180	-1.83	33.84	46.00	-12.16

**Test mode: IEEE 802.11g CH01 for 30MHz to 1GHz [Vertical]**

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B ( 3 m )</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
100.32	30.86	1.00	266	-0.98	29.88	43.50	-13.62
130.64	29.36	1.00	175	-2.69	26.67	43.50	-16.83
168.22	29.22	1.00	185	-3.65	25.57	43.50	-17.93
199.75	33.09	1.00	256	-2.81	30.28	43.50	-13.22
322.21	32.71	1.00	199	-2.61	30.10	46.00	-15.90
499.24	26.49	1.00	283	2.92	29.41	46.00	-16.59

**Test mode: IEEE 802.11g CH01 for 1GHz to 26.5GHz [Horizontal]**

Frequency	Ant. H.	Table	Amplitude		Correction Factor	Corrected Amplitude		Limit		Margin
			Peak / Ave.			Peak / Ave.		Peak / Ave.		
MHz	m	degree	dBμV		dB/m	dBμV/m		dBμV/m		dB
1665.24	1.00	115	40.38	24.67	13.31	53.69	37.98	73.96	53.96	-15.98
2491.68	1.00	360	46.67	29.17	9.47	56.14	38.64	73.96	53.96	-15.32
2533.24	1.00	360	46.49	28.33	9.55	56.04	37.88	73.96	53.96	-16.08
2572.25	1.00	311	46.66	29.00	9.63	56.29	38.63	73.96	53.96	-15.33
2645.25	1.00	154	45.01	27.00	9.76	54.77	36.76	73.96	53.96	-17.20
7233.75	1.00	32	38.44	---	10.07	48.51	---	73.96	53.96	-5.45
24120.00	1.00	101	44.38	---	3.40	47.78	---	73.96	53.96	-6.18

**Test mode: IEEE 802.11g CH01 for 1GHz to 26.5GHz [Vertical]**

Frequency	Ant. H.	Table	Amplitude		Correction Factor	Corrected Amplitude		Limit		Margin
			Peak / Ave.			Peak / Ave.		Peak / Ave.		
MHz	m	degree	dBμV		dB/m	dBμV/m		dBμV/m		dB
1660.42	1.00	247	39.33	---	13.39	52.72	---	73.96	53.96	-1.24
2577.08	1.00	35	40.00	---	9.63	49.63	---	73.96	53.96	-4.33
2643.75	1.00	260	39.00	---	9.76	48.76	---	73.96	53.96	-5.20
9650.42	1.00	43	34.94	---	11.47	46.41	---	73.96	53.96	-7.55
21708.12	1.00	105	44.66	---	2.87	47.53	---	73.96	53.96	-6.43
24120.00	1.00	84	44.48	---	3.40	47.88	---	73.96	53.96	-6.08



*Test mode: IEEE 802.11g CH06 for 30MHz to 1GHz [Horizontal]*

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B (3 m)</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
93.05	32.59	1.00	246	-0.39	32.20	43.50	-11.30
198.54	40.50	1.00	155	-2.85	37.65	43.50	-5.85
211.87	34.46	1.00	114	-2.81	31.65	43.50	-11.85
257.95	41.44	1.00	98	-3.46	37.98	46.00	-8.02
285.84	40.57	1.00	128	-2.81	37.76	46.00	-8.24
301.60	41.63	1.00	178	-2.81	38.82	46.00	-7.18

*Test mode: IEEE 802.11g CH06 for 30MHz to 1GHz [Vertical]*

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B (3 m)</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
31.21	21.35	1.00	346	7.54	28.89	40.00	-11.11
38.49	23.95	1.00	161	4.60	28.55	40.00	-11.45
100.32	31.40	1.00	257	-0.98	30.42	43.50	-13.08
198.54	33.47	1.00	267	-2.85	30.62	43.50	-12.88
287.05	31.64	1.00	7	-2.77	28.87	46.00	-17.13
323.42	33.03	1.00	199	-2.60	30.43	46.00	-15.57

**Test mode: IEEE 802.11g CH06 for 1GHz to 26.5GHz [Horizontal]**

<b>Frequency</b>	<b>Ant. H.</b>	<b>Table</b>	<b>Amplitude</b>		<b>Correction Factor</b>	<b>Corrected Amplitude</b>		<b>Limit</b>		<b>Margin</b>
			<b>Peak / Ave.</b>			<b>Peak / Ave.</b>		<b>Peak / Ave.</b>		
<b>MHz</b>	<b>m</b>	<b>degree</b>	<b>dBμV</b>		<b>dB/m</b>	<b>dBμV/m</b>		<b>dBμV/m</b>		<b>dB</b>
1661.01	1.00	194	39.71	25.17	13.38	53.09	38.55	73.96	53.96	-15.41
2557.34	1.00	66	48.49	29.17	9.60	58.09	38.77	73.96	53.96	-15.19
2597.50	1.00	261	47.33	28.50	9.67	57.00	38.17	73.96	53.96	-15.79
12187.92	1.00	58	38.27	---	9.74	48.01	---	73.96	53.96	-5.95
21934.79	1.00	289	46.26	---	3.09	49.35	---	73.96	53.96	-4.61
24371.46	1.00	292	46.14	---	3.26	49.40	---	73.96	53.96	-4.56

**Test mode: IEEE 802.11g CH06 for 1GHz to 26.5GHz [Vertical]**

<b>Frequency</b>	<b>Ant. H.</b>	<b>Table</b>	<b>Amplitude</b>		<b>Correction Factor</b>	<b>Corrected Amplitude</b>		<b>Limit</b>		<b>Margin</b>
			<b>Peak / Ave.</b>			<b>Peak / Ave.</b>		<b>Peak / Ave.</b>		
<b>MHz</b>	<b>m</b>	<b>degree</b>	<b>dBμV</b>		<b>dB/m</b>	<b>dBμV/m</b>		<b>dBμV/m</b>		<b>dB</b>
1664.58	1.00	179	38.50	---	13.32	51.82	---	73.96	53.96	-2.14
2522.92	1.00	53	41.67	---	9.53	51.20	---	73.96	53.96	-2.76
2604.17	1.00	53	41.33	---	9.69	51.02	---	73.96	53.96	-2.94
12187.92	1.00	222	37.94	---	9.74	47.68	---	73.96	53.96	-6.28
21934.79	1.00	191	46.05	---	3.09	49.14	---	73.96	53.96	-4.82
24371.46	1.00	197	45.55	---	3.26	48.81	---	73.96	53.96	-5.15

**Test mode: IEEE 802.11g CH11 for 30MHz to 1GHz [Horizontal]**

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B ( 3 m )</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
196.11	42.34	1.00	263	-2.94	39.40	43.50	-4.10
211.87	35.21	1.00	113	-2.81	32.40	43.50	-11.10
227.64	36.05	1.00	103	-3.25	32.80	46.00	-13.20
257.95	37.31	1.00	233	-3.46	33.85	46.00	-12.15
300.39	41.30	1.00	167	-2.83	38.47	46.00	-7.53
367.07	36.42	1.00	317	-1.83	34.59	46.00	-11.41

**Test mode: IEEE 802.11g CH11 for 30MHz to 1GHz [Vertical]**

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B ( 3 m )</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
38.49	24.42	1.00	60	4.60	29.02	40.00	-10.98
101.54	30.61	1.00	233	-1.04	29.57	43.50	-13.93
130.64	29.25	1.00	133	-2.69	26.56	43.50	-16.94
198.54	33.15	1.00	283	-2.85	30.30	43.50	-13.20
499.24	26.77	1.00	290	2.92	29.69	46.00	-16.31
699.30	23.67	1.00	280	9.38	33.05	46.00	-12.95

**Test mode: IEEE 802.11g CH11 for 1GHz to 26.5GHz [Horizontal]**

Frequency	Ant. H.	Table	Amplitude		Correction Factor	Corrected Amplitude		Limit		Margin
			Peak / Ave.			Peak / Ave.		Peak / Ave.		
MHz	m	degree	dBμV		dB/m	dBμV/m		dBμV/m		dB
1664.93	1.00	192	41.87	24.67	13.32	55.19	37.99	73.96	53.96	-15.97
2362.50	1.00	23	43.17	---	9.10	52.27	---	73.96	53.96	-1.69
2560.01	1.00	192	46.17	28.33	9.60	55.77	37.93	73.96	53.96	-16.03
2620.39	1.00	192	48.16	29.17	9.72	57.88	38.89	73.96	53.96	-15.07
12308.75	1.00	192	36.61	---	9.56	46.17	---	73.96	53.96	-7.79
24619.37	1.00	201	45.62	---	3.01	48.63	---	73.96	53.96	-5.33

**Test mode: IEEE 802.11g CH11 for 1GHz to 26.5GHz [Vertical]**

Frequency	Ant. H.	Table	Amplitude		Correction Factor	Corrected Amplitude		Limit		Margin
			Peak / Ave.			Peak / Ave.		Peak / Ave.		
MHz	m	degree	dBμV		dB/m	dBμV/m		dBμV/m		dB
1659.33	1.00	52	40.15	23.83	13.40	53.55	37.23	73.96	53.96	-16.73
2352.08	1.00	211	38.50	---	9.08	47.58	---	73.96	53.96	-6.38
2618.75	1.00	33	38.84	---	9.71	48.55	---	73.96	53.96	-5.41
9849.79	1.00	279	34.94	---	11.93	46.87	---	73.96	53.96	-7.09
22157.92	1.00	142	44.06	---	3.25	47.31	---	73.96	53.96	-6.65
24619.37	1.00	193	45.25	---	3.01	48.26	---	73.96	53.96	-5.70

**Test mode: IEEE 802.11n 20M CH01 for 30MHz to 1GHz [Horizontal]**

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B ( 3 m )</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
93.05	30.27	1.00	266	-0.39	29.88	43.50	-13.62
198.54	41.65	1.00	155	-2.85	38.80	43.50	-4.70
260.37	41.42	1.00	77	-3.48	37.94	46.00	-8.06
287.05	37.82	1.00	299	-2.77	35.05	46.00	-10.95
301.60	41.20	1.00	178	-2.81	38.39	46.00	-7.61
368.29	36.53	1.00	168	-1.80	34.73	46.00	-11.27

**Test mode: IEEE 802.11n 20M CH01 for 30MHz to 1GHz [Vertical]**

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B ( 3 m )</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
101.54	30.05	1.00	245	-1.04	29.01	43.50	-14.49
130.64	29.59	1.00	204	-2.69	26.90	43.50	-16.60
167.01	29.95	1.00	163	-3.66	26.29	43.50	-17.21
198.54	35.70	1.00	275	-2.85	32.85	43.50	-10.65
322.21	31.74	1.00	207	-2.61	29.13	46.00	-16.87
612.00	24.32	1.00	80	6.75	31.07	46.00	-14.93

**Test mode: IEEE 802.11n 20M CH01 for 1GHz to 26.5GHz [Horizontal]**

Frequency	Ant. H.	Table	Amplitude		Correction Factor	Corrected Amplitude		Limit		Margin
			Peak / Ave.			Peak / Ave.		Peak / Ave.		
MHz	m	degree	dBμV		dB/m	dBμV/m		dBμV/m		dB
1662.44	1.00	140	39.33	25.17	13.36	52.69	38.53	73.96	53.96	-15.43
1702.37	1.00	177	40.01	24.67	12.73	52.74	37.40	73.96	53.96	-16.56
2492.08	1.00	71	45.33	32.67	9.47	54.80	42.14	73.96	53.96	-11.82
2585.79	1.04	272	44.67	32.17	9.65	54.32	41.82	73.96	53.96	-12.14
12061.04	1.00	161	36.44	---	9.81	46.25	---	73.96	53.96	-7.71
24120.00	1.00	94	44.56	---	3.40	47.96	---	73.96	53.96	-6.00

**Test mode: IEEE 802.11n 20M CH01 for 1GHz to 26.5GHz [Vertical]**

Frequency	Ant. H.	Table	Amplitude		Correction Factor	Corrected Amplitude		Limit		Margin
			Peak / Ave.			Peak / Ave.		Peak / Ave.		
MHz	m	degree	dBμV		dB/m	dBμV/m		dBμV/m		dB
1660.42	1.00	112	38.16	---	13.39	51.55	---	73.96	53.96	-2.41
2352.08	1.00	315	40.33	---	9.08	49.41	---	73.96	53.96	-4.55
2491.67	1.00	314	40.16	---	9.47	49.63	---	73.96	53.96	-4.33
9650.42	1.00	219	34.77	---	11.47	46.24	---	73.96	53.96	-7.72
21708.12	1.00	99	44.72	---	2.87	47.59	---	73.96	53.96	-6.37
24120.00	1.00	87	44.50	---	3.40	47.90	---	73.96	53.96	-6.06

**Test mode: IEEE 802.11n 20M CH06 for 30MHz to 1GHz [Horizontal]**

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B ( 3 m )</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
198.54	40.47	1.00	130	-2.85	37.62	43.50	-5.88
257.95	40.91	1.00	80	-3.46	37.45	46.00	-8.55
287.05	44.94	1.00	170	-2.77	42.17	46.00	-3.83
300.39	43.17	1.00	160	-2.83	40.34	46.00	-5.66
324.64	36.21	1.00	203	-2.59	33.62	46.00	-12.38
368.29	37.13	1.00	0	-1.80	35.33	46.00	-10.67

**Test mode: IEEE 802.11n 20M CH06 for 30MHz to 1GHz [Vertical]**

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B ( 3 m )</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
100.32	31.01	1.00	232	-0.98	30.03	43.50	-13.47
167.01	30.26	1.00	161	-3.66	26.60	43.50	-16.90
197.32	35.81	1.00	252	-2.89	32.92	43.50	-10.58
208.24	29.17	1.00	283	-2.74	26.43	43.50	-17.07
321.00	32.96	1.00	215	-2.62	30.34	46.00	-15.66
619.27	25.39	1.00	83	6.94	32.33	46.00	-13.67

**Test mode: IEEE 802.11n 20M CH06 for 1GHz to 26.5GHz [Horizontal]**

Frequency	Ant. H.	Table	Amplitude		Correction	Corrected		Limit		Margin
			Peak / Ave.			Peak / Ave.		Peak / Ave.		
MHz	m	degree	dBμV		dB/m	dBμV/m		dBμV/m		dB
2378.00	1.00	5	45.00	35.83	9.15	54.15	44.98	73.96	53.96	-8.98
2497.59	1.00	181	47.49	33.83	9.48	56.97	43.31	73.96	53.96	-10.65
2595.39	1.00	4	46.84	34.33	9.67	56.51	44.00	73.96	53.96	-9.96
2676.31	1.00	181	45.34	32.50	9.82	55.16	42.32	73.96	53.96	-11.64
12187.92	1.00	0	38.44	---	9.74	48.18	---	73.96	53.96	-5.78
24371.46	1.00	203	45.63	---	3.26	48.89	---	73.96	53.96	-5.07

**Test mode: IEEE 802.11n 20M CH06 for 1GHz to 26.5GHz [Vertical]**

Frequency	Ant. H.	Table	Amplitude		Correction	Corrected		Limit		Margin
			Peak / Ave.			Peak / Ave.		Peak / Ave.		
MHz	m	degree	dBμV		dB/m	dBμV/m		dBμV/m		dB
1658.26	1.00	153	39.60	23.50	13.42	53.02	36.92	73.96	53.96	-17.04
2362.50	1.00	142	39.50	---	9.10	48.60	---	73.96	53.96	-5.36
12187.92	1.00	223	37.77	---	9.74	47.51	---	73.96	53.96	-6.45
19498.12	1.00	232	46.85	---	1.70	48.55	---	73.96	53.96	-5.41
21934.79	1.00	189	45.70	---	3.09	48.79	---	73.96	53.96	-5.17
24371.46	1.00	206	45.86	---	3.26	49.12	---	73.96	53.96	-4.84



**Test mode: IEEE 802.11n 20M CH11 for 30MHz to 1GHz [Horizontal]**

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B ( 3 m )</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
93.05	31.03	1.00	277	-0.39	30.64	43.50	-12.86
198.54	40.87	1.00	150	-2.85	38.02	43.50	-5.48
257.95	39.62	1.00	70	-3.46	36.16	46.00	-9.84
301.60	42.51	1.00	150	-2.81	39.70	46.00	-6.30
322.21	35.76	1.00	173	-2.61	33.15	46.00	-12.85
368.29	36.83	1.00	173	-1.80	35.03	46.00	-10.97

**Test mode: IEEE 802.11n 20M CH11 for 30MHz to 1GHz [Vertical]**

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B ( 3 m )</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
101.54	31.25	1.00	290	-1.04	30.21	43.50	-13.29
130.64	29.22	1.00	203	-2.69	26.53	43.50	-16.97
198.54	34.60	1.00	253	-2.85	31.75	43.50	-11.75
257.95	30.71	1.00	323	-3.46	27.25	46.00	-18.75
322.21	32.34	1.00	357	-2.61	29.73	46.00	-16.27
501.66	25.53	1.00	290	3.03	28.56	46.00	-17.44

**Test mode: IEEE 802.11n 20M CH11 for 1GHz to 26.5GHz [Horizontal]**

Frequency	Ant. H.	Table	Amplitude		Correction	Corrected		Limit		Margin
			Peak / Ave.			Peak / Ave.		Peak / Ave.		
MHz	m	degree	dBμV		dB/m	dBμV/m		dBμV/m		dB
2366.67	1.00	8	43.50	---	9.12	52.62	---	73.96	53.96	-1.34
2560.00	1.00	8	46.68	32.50	9.60	56.28	42.10	73.96	53.96	-11.86
2518.30	1.00	18	46.84	33.33	9.71	56.55	43.04	73.96	53.96	-10.92
2673.59	1.00	191	43.65	30.00	9.82	53.47	39.82	73.96	53.96	-14.14
12308.75	1.00	196	37.11	---	9.56	46.67	---	73.96	53.96	-7.29
24619.37	1.00	214	45.23	---	3.01	48.24	---	73.96	53.96	-5.72

**Test mode: IEEE 802.11n 20M CH11for 1GHz to 26.5GHz [Vertical]**

Frequency	Ant. H.	Table	Amplitude		Correction	Corrected		Limit		Margin
			Peak / Ave.			Peak / Ave.		Peak / Ave.		
MHz	m	degree	dBμV		dB/m	dBμV/m		dBμV/m		dB
1660.93	1.00	193	39.51	24.33	13.38	52.89	37.71	73.96	53.96	-16.25
2552.08	1.00	63	38.83	---	9.59	48.42	---	73.96	53.96	-5.54
9849.79	1.00	274	35.11	---	11.93	47.04	---	73.96	53.96	-6.92
19696.46	1.00	293	45.39	---	1.81	47.20	---	73.96	53.96	-6.76
22157.92	1.00	125	43.85	---	3.25	47.10	---	73.96	53.96	-6.86
24619.37	1.00	214	45.19	---	3.01	48.20	---	73.96	53.96	-5.76

*Test mode: IEEE 802.11n 40M CH03 for 30MHz to 1GHz [Horizontal]*

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B (3 m)</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
93.05	30.57	1.00	44	-0.39	30.18	43.50	-13.32
198.54	41.24	1.00	136	-2.85	38.39	43.50	-5.11
226.42	36.06	1.00	126	-3.23	32.83	46.00	-13.17
261.59	40.81	1.00	78	-3.47	37.34	46.00	-8.66
301.60	41.54	1.00	170	-2.81	38.73	46.00	-7.27
368.29	36.62	1.00	160	-1.80	34.82	46.00	-11.18

*Test mode: IEEE 802.11n 40M CH03 for 30MHz to 1GHz [Vertical]*

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B (3 m)</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
100.32	32.31	1.00	246	-0.98	31.33	43.50	-12.17
130.64	31.43	1.00	195	-2.69	28.74	43.50	-14.76
167.01	29.21	1.00	135	-3.66	25.55	43.50	-17.95
197.32	35.26	1.00	286	-2.89	32.37	43.50	-11.13
227.64	29.73	1.00	350	-3.25	26.48	46.00	-19.52
321.00	31.88	1.00	7	-2.62	29.26	46.00	-16.74

**Test mode: IEEE 802.11n 40M CH03 for 1GHz to 26.5GHz [Horizontal]**

Frequency	Ant. H.	Table	Amplitude		Correction	Corrected		Limit		Margin
			Peak / Ave.			Peak / Ave.		Peak / Ave.		
MHz	m	degree	dBμV		dB/m	dBμV/m		dBμV/m		dB
1645.21	1.00	177	40.13	24.50	13.62	53.75	38.12	73.96	53.96	-15.84
1665.13	1.00	202	39.68	24.83	13.31	52.99	38.14	73.96	53.96	-15.82
2583.95	1.00	86	45.32	31.83	9.65	54.97	41.48	73.96	53.96	-12.48
9686.67	1.00	44	36.27	---	11.63	47.90	---	73.96	53.96	-6.06
12109.37	1.00	320	38.44	---	9.61	48.05	---	73.96	53.96	-5.91
24219.17	1.00	320	45.87	---	2.85	48.72	---	73.96	53.96	-5.24

**Test mode: IEEE 802.11n 40M CH03 for 1GHz to 26.5GHz [Vertical]**

Frequency	Ant. H.	Table	Amplitude		Correction	Corrected		Limit		Margin
			Peak / Ave.			Peak / Ave.		Peak / Ave.		
MHz	m	degree	dBμV		dB/m	dBμV/m		dBμV/m		dB
1614.58	1.00	201	38.00	---	14.10	52.10	---	73.96	53.96	-1.86
1662.50	1.00	297	38.83	---	13.36	52.19	---	73.96	53.96	-1.77
2331.25	1.00	217	38.50	---	9.02	47.52	---	73.96	53.96	-6.44
12109.37	1.00	303	38.10	---	9.61	47.71	---	73.96	53.96	-6.25
21796.67	1.00	177	44.77	---	2.72	47.49	---	73.96	53.96	-6.47
24219.17	1.00	339	45.95	---	2.85	48.80	---	73.96	53.96	-5.16

*Test mode: IEEE 802.11n 40M CH06 for 30MHz to 1GHz [Horizontal]*

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B (3 m)</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
198.54	41.03	1.00	145	-2.85	38.18	43.50	-5.32
227.64	38.63	1.00	98	-3.25	35.38	46.00	-10.62
260.37	39.80	1.00	118	-3.48	36.32	46.00	-9.68
285.84	39.97	1.00	209	-2.81	37.16	46.00	-8.84
301.60	40.94	1.00	158	-2.81	38.13	46.00	-7.87
322.21	39.04	1.00	87	-2.61	36.43	46.00	-9.57

*Test mode: IEEE 802.11n 40M CH06 for 30MHz to 1GHz [Vertical]*

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B (3 m)</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
101.54	32.87	1.00	236	-1.04	31.83	43.50	-11.67
130.64	29.13	1.00	124	-2.69	26.44	43.50	-17.06
198.54	34.16	1.00	281	-2.85	31.31	43.50	-12.19
322.21	33.12	1.00	214	-2.61	30.51	46.00	-15.49
501.66	26.31	1.00	300	3.03	29.34	46.00	-16.66
601.09	24.70	1.00	195	6.46	31.16	46.00	-14.84

**Test mode: IEEE 802.11n 40M CH06 for 1GHz to 26.5GHz [Horizontal]**

<b>Frequency</b>	<b>Ant. H.</b>	<b>Table</b>	<b>Amplitude</b>		<b>Correction Factor</b>	<b>Corrected Amplitude</b>		<b>Limit</b>		<b>Margin</b>
			<b>Peak / Ave.</b>			<b>Peak / Ave.</b>		<b>Peak / Ave.</b>		
<b>MHz</b>	<b>m</b>	<b>degree</b>	<b>dBμV</b>		<b>dB/m</b>	<b>dBμV/m</b>		<b>dBμV/m</b>		<b>dB</b>
1635.42	1.00	132	38.16	---	13.78	51.94	---	73.96	53.96	-2.02
2597.01	1.00	254	46.67	35.17	9.67	56.34	44.84	73.96	53.96	-9.12
12187.92	1.00	107	39.60	---	9.74	49.34	---	73.96	53.96	-4.62
19498.12	1.00	203	46.54	---	1.70	48.24	---	73.96	53.96	-5.72
21934.79	1.00	176	45.93	---	3.09	49.02	---	73.96	53.96	-4.94
24371.46	1.00	209	45.83	---	3.26	49.09	---	73.96	53.96	-4.87

**Test mode: IEEE 802.11n 40M CH06 for 1GHz to 26.5GHz [Vertical]**

<b>Frequency</b>	<b>Ant. H.</b>	<b>Table</b>	<b>Amplitude</b>		<b>Correction Factor</b>	<b>Corrected Amplitude</b>		<b>Limit</b>		<b>Margin</b>
			<b>Peak / Ave.</b>			<b>Peak / Ave.</b>		<b>Peak / Ave.</b>		
<b>MHz</b>	<b>m</b>	<b>degree</b>	<b>dBμV</b>		<b>dB/m</b>	<b>dBμV/m</b>		<b>dBμV/m</b>		<b>dB</b>
1654.02	1.00	313	39.60	23.50	13.49	53.09	36.99	73.96	53.96	-16.97
2333.33	1.00	288	39.00	---	9.02	48.02	---	73.96	53.96	-5.94
12187.92	1.00	142	39.77	---	9.74	49.51	---	73.96	53.96	-4.45
19498.12	1.00	222	46.52	---	1.70	48.22	---	73.96	53.96	-5.74
21934.79	1.00	184	45.87	---	3.09	48.96	---	73.96	53.96	-5.00
24371.46	1.00	204	45.65	---	3.26	48.91	---	73.96	53.96	-5.05

**Test mode: IEEE 802.11n 40M CH09 for 30MHz to 1GHz [Horizontal]**

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B ( 3 m )</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
196.11	42.66	1.00	132	-2.94	39.72	43.50	-3.78
209.45	35.89	1.00	164	-2.73	33.16	43.50	-10.34
228.85	37.01	1.00	296	-3.26	33.75	46.00	-12.25
257.95	38.83	1.00	143	-3.46	35.37	46.00	-10.63
300.39	43.05	1.00	178	-2.83	40.22	46.00	-5.78
367.07	36.92	1.00	189	-1.83	35.09	46.00	-10.91

**Test mode: IEEE 802.11n 40M CH09 for 30MHz to 1GHz [Vertical]**

<b>Radiated Emission</b>				<b>Correction Factors</b>	<b>Corrected Amplitude</b>	<b>Class B ( 3 m )</b>	
<b>Frequency (MHz)</b>	<b>Amplitude (dBμV)</b>	<b>Ant. H. (m)</b>	<b>Table ( )</b>			<b>Limit (dBμV/m)</b>	<b>Margin (dB)</b>
38.49	24.12	1.00	118	4.60	28.72	40.00	-11.28
101.54	32.30	1.00	273	-1.04	31.26	43.50	-12.24
130.64	29.01	1.00	151	-2.69	26.32	43.50	-17.18
197.32	35.21	1.00	252	-2.89	32.32	43.50	-11.18
499.24	26.93	1.00	289	2.92	29.85	46.00	-16.15
698.09	23.27	1.00	343	9.34	32.61	46.00	-13.39

**Test mode: IEEE 802.11n 40M CH09 for 1GHz to 26.5GHz [Horizontal]**

<b>Frequency</b>	<b>Ant. H.</b>	<b>Table</b>	<b>Amplitude</b>		<b>Correction Factor</b>	<b>Corrected Amplitude</b>		<b>Limit</b>		<b>Margin</b>
			<b>Peak / Ave.</b>			<b>Peak / Ave.</b>		<b>Peak / Ave.</b>		
<b>MHz</b>	<b>m</b>	<b>degree</b>	<b>dBμV</b>		<b>dB/m</b>	<b>dBμV/m</b>		<b>dBμV/m</b>		<b>dB</b>
1663.04	1.00	104	41.01	24.50	13.35	54.36	37.85	73.96	53.96	-16.11
2614.19	1.00	278	47.00	33.00	9.70	56.70	42.70	73.96	53.96	-11.26
2718.75	1.00	84	38.83	---	9.90	48.73	---	73.96	53.96	-5.23
12260.42	1.00	248	38.61	---	9.86	48.47	---	73.96	53.96	-5.49
19615.00	1.00	117	45.41	---	1.70	47.11	---	73.96	53.96	-6.85
24520.21	1.00	142	45.33	---	2.37	47.70	---	73.96	53.96	-6.26

**Test mode: IEEE 802.11n 40M CH09 for 1GHz to 26.5GHz [Vertical]**

<b>Frequency</b>	<b>Ant. H.</b>	<b>Table</b>	<b>Amplitude</b>		<b>Correction Factor</b>	<b>Corrected Amplitude</b>		<b>Limit</b>		<b>Margin</b>
			<b>Peak / Ave.</b>			<b>Peak / Ave.</b>		<b>Peak / Ave.</b>		
<b>MHz</b>	<b>m</b>	<b>degree</b>	<b>dBμV</b>		<b>dB/m</b>	<b>dBμV/m</b>		<b>dBμV/m</b>		<b>dB</b>
1660.42	1.00	107	38.16	---	13.39	51.55	---	73.96	53.96	-2.41
9807.50	1.00	70	34.77	---	11.92	46.69	---	73.96	53.96	-7.27
12260.42	1.00	121	38.61	---	9.86	48.47	---	73.96	53.96	-5.49
19615.00	1.00	108	42.56	---	4.70	47.26	---	73.96	53.96	-6.70
22069.37	1.00	125	44.12	---	2.77	46.89	---	73.96	53.96	-7.07
24520.21	1.00	134	45.47	---	2.37	47.84	---	73.96	53.96	-6.12



#### **5.4 Test Result of the Bandedge**

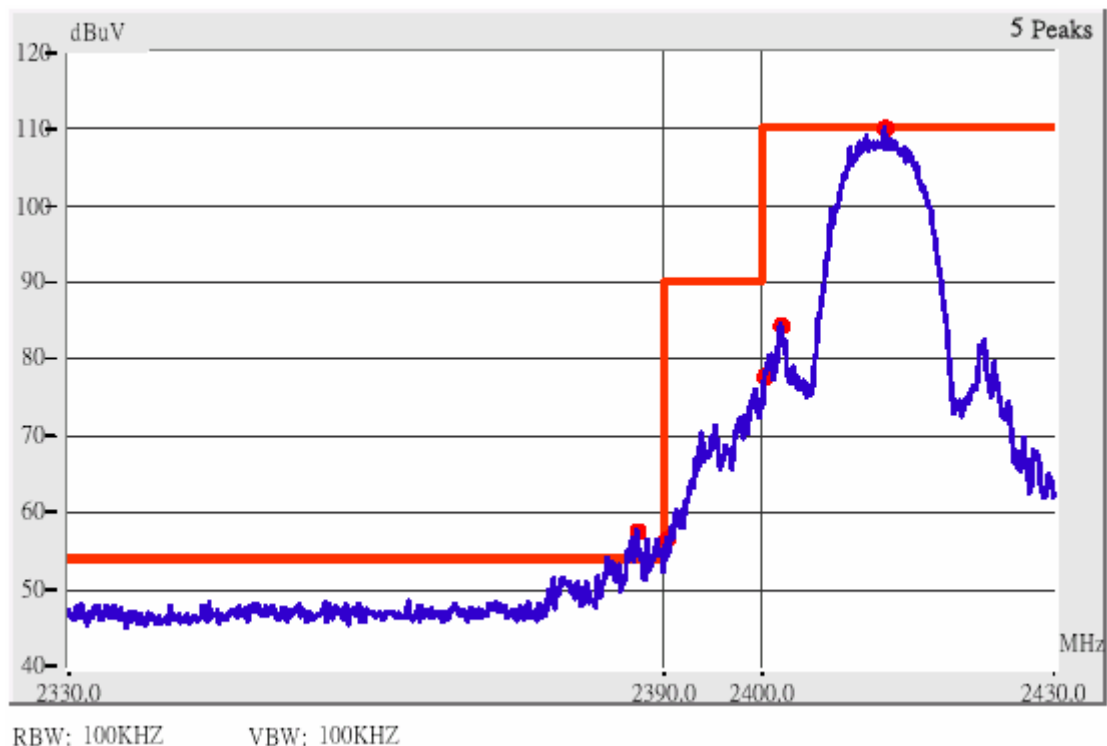
If any 100 kHz bandwidth outside these frequency bands, the radio frequency power that is produced by the modulation products of the spreading sequence, the information sequence and the carrier frequency shall be either *at least 20 dB below that in any 100 kHz bandwidth within the band that contains the highest level of the desired power or shall not exceed the general levels specified in §15.209(a)*,

We perform this section by the *radiated manner*, the RBW is set to 100kHz and VBW>RBW. We'd made the observation *up to 10<sup>th</sup> harmonics and the criterion is all the harmonic/spurious emissions must be 20dB below the highest emission level measured*. If the emissions fall in the restricted bands stated in the Part15.205(a) must also *comply with the radiated emission limits specified in Part15.209(a)*. (*Peak mode: RBW=VBW=1MHz, Average mode: RBW=1MHz; VBW=10Hz*)

The following pages show our observations referring to the channel 1 and 11 respectively.

Test Condition & Setup: same as < 8.1 >

**Channel 1 of IEEE 802.11b**

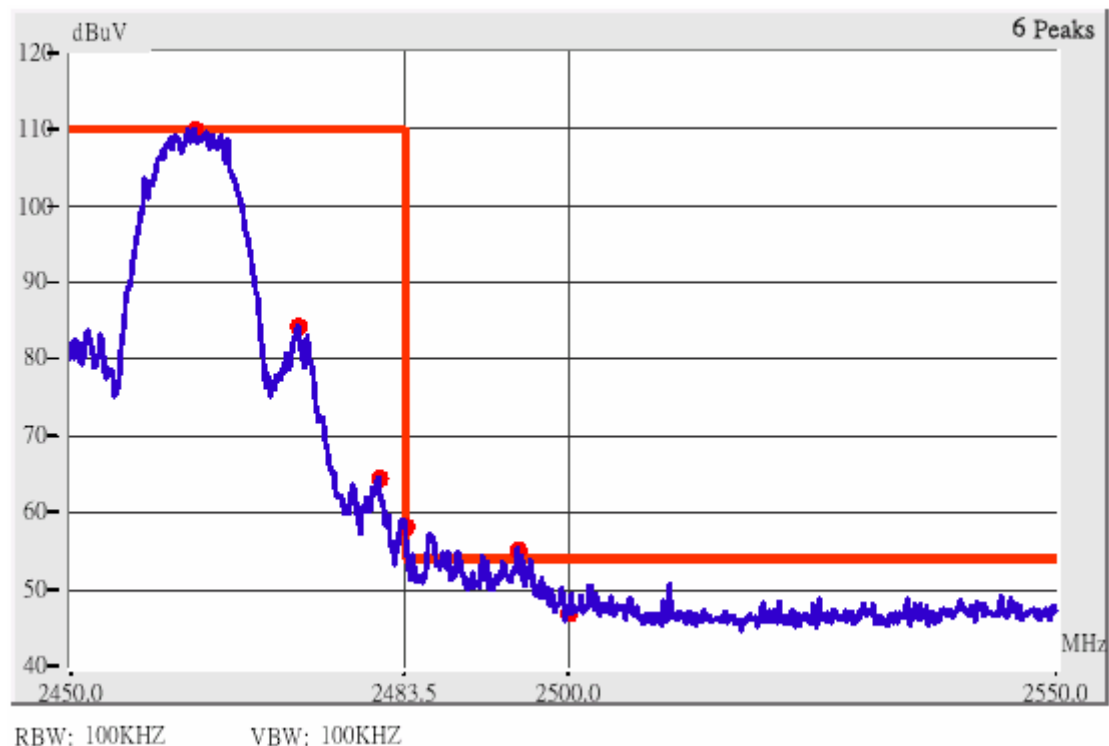


This is the hard copy of our bandedge measurement generated by our bandedge testing program. The plot shown above is the bandedge of channel 1.

1. The lobe left by the fundamental side is already 20dB below the highest emission level.
2. The emissions recorded in the restricted band is do comply with the Part 15.209(a) – as below.

<i>Radiated Emission</i>					<i>Corrected Amplitude</i>		<i>Class B ( 3m )</i>		
<i>Frequency (MHz)</i>	<i>Ant. P.</i>	<i>Ant. H. (m)</i>	<i>Table ( )</i>	<i>Factors (dB)</i>	<i>(dBμV/m)</i>		<i>Limit (dBμV/m)</i>		<i>Margin (dB)</i>
					<i>Peak</i>	<i>Average</i>	<i>Peak</i>	<i>Ave.</i>	
2383.85	Hor	1.00	304	9.16	61.33	45.66	73.96	53.96	-8.30
2390.48	Hor	1.00	4	9.18	67.68	51.01	73.96	53.96	-2.95
2387.00	Ver	1.00	164	9.17	57.51	42.34	73.96	53.96	-11.62
2390.44	Ver	1.00	170	9.18	59.68	45.01	73.96	53.96	-8.95

**Channel 11 of IEEE 802.11b**

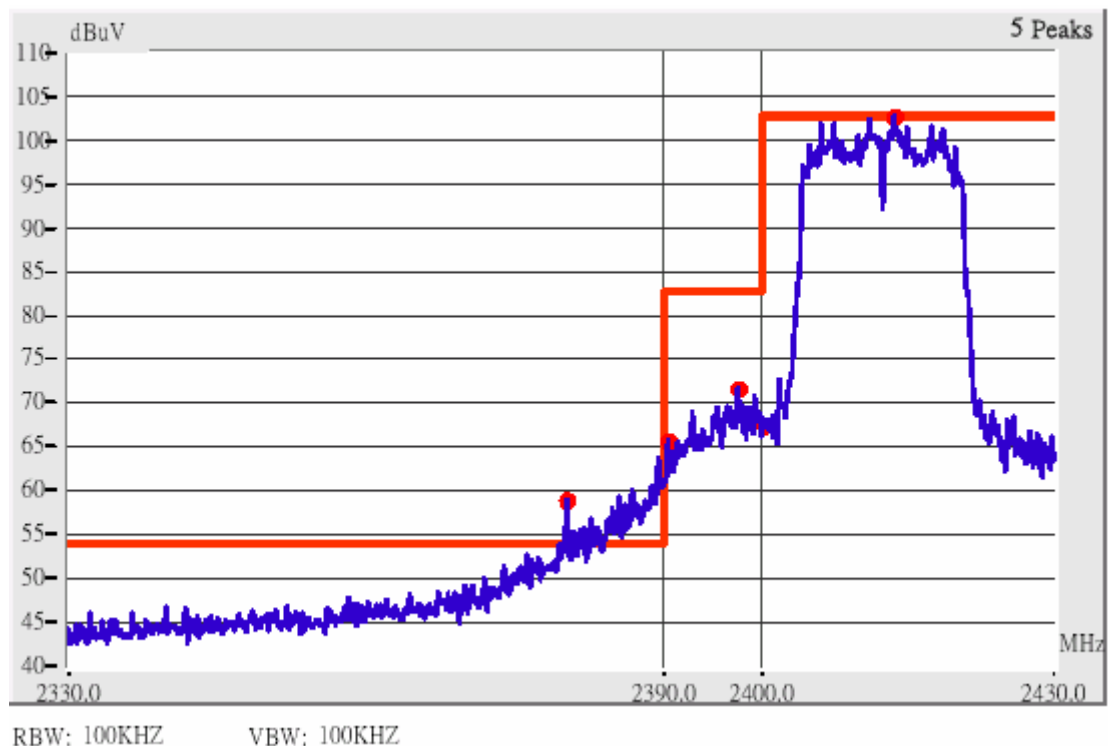


This is the hard copy of our bandedge measurement generated by our bandedge testing program. The plot shown above is the bandedge of channel 11.

3. The lobe right by the fundamental side is already 20dB below the highest emission level.
4. The emissions recorded in the restricted band is do comply with the Part 15.209(a) – as below

Radiated Emission					Corrected Amplitude		Class B ( 3m )		
Frequency (MHz)	Ant. P.	Ant. H. (m)	Table ( )	Factors (dB)	(dBμV/m)		Limit (dBμV/m)		Margin (dB)
					Peak	Average	Peak	Ave.	
2483.08	Hor	1.00	67	9.44	63.44	49.77	73.96	53.96	-4.19
2485.90	Hor	1.00	67	9.45	62.78	48.62	73.96	53.96	-5.34
2500.02	Hor	1.00	67	9.49	57.82	42.99	73.96	53.96	-10.97
2506.72	Hor	1.00	69	9.50	57.50	41.50	73.96	53.96	-12.46
2482.94	Ver	1.00	124	9.44	54.78	43.11	73.96	53.96	-10.85
2485.97	Ver	1.00	125	9.45	56.45	42.12	73.96	53.96	-11.84
2500.01	Ver	1.00	125	9.49	49.66	---	73.96	53.96	-4.30
2508.93	Ver	1.00	126	9.51	48.84	---	73.96	53.96	-5.12

**Channel 1 of IEEE 802.11g**

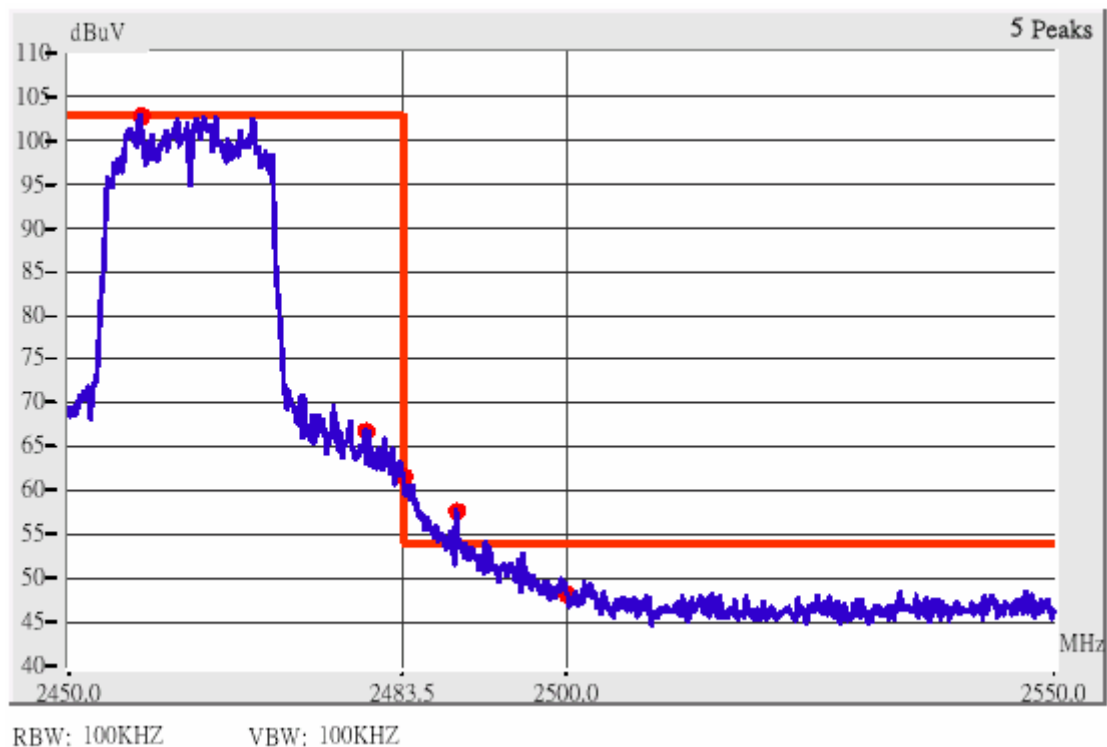


This is the hard copy of our bandedge measurement generated by our bandedge testing program. The plot shown above is the bandedge of channel 1.

5. The lobe left by the fundamental side is already 20dB below the highest emission level.
6. The emissions recorded in the restricted band is do comply with the Part 15.209(a) – as below.

<i>Radiated Emission</i>					<i>Corrected Amplitude</i>		<i>Class B ( 3m )</i>		
<i>Frequency (MHz)</i>	<i>Ant. P.</i>	<i>Ant. H. (m)</i>	<i>Table ( )</i>	<i>Factors (dB)</i>	<i>(dBμV/m)</i>		<i>Limit (dBμV/m)</i>		<i>Margin (dB)</i>
					<i>Peak</i>	<i>Average</i>	<i>Peak</i>	<i>Ave.</i>	
2385.17	Hor	1.00	321	9.17	71.17	39.67	73.96	53.96	-2.79
2390.13	Hor	1.00	7	9.18	72.52	42.35	73.96	53.96	-1.44
2385.71	Ver	1.00	213	9.17	68.00	36.84	73.96	53.96	-5.96
2390.42	Ver	1.00	235	9.18	72.02	40.51	73.96	53.96	-1.94

**Channel 11 of IEEE 802.11g**

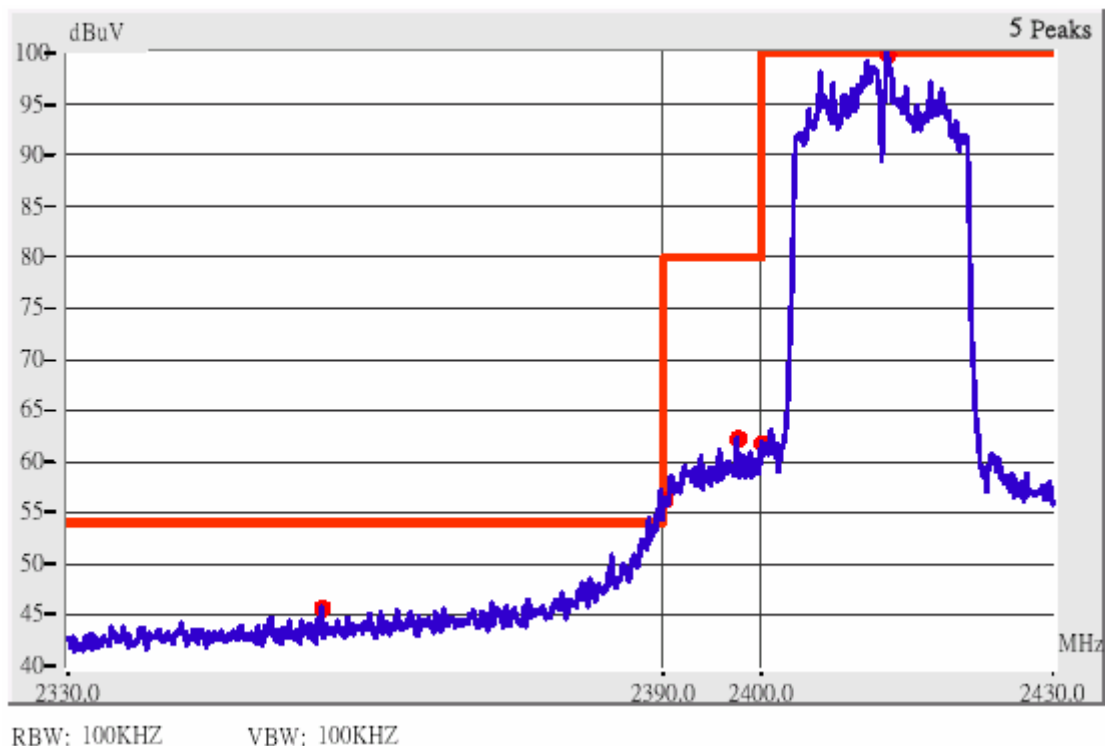


This is the hard copy of our bandedge measurement generated by our bandedge testing program. The plot shown above is the bandedge of channel 11.

7. The lobe right by the fundamental side is already 20dB below the highest emission level.
8. The emissions recorded in the restricted band is do comply with the Part 15.209(a) – as below

<i>Radiated Emission</i>					<i>Corrected Amplitude</i>		<i>Class B ( 3m )</i>		
<i>Frequency (MHz)</i>	<i>Ant. P.</i>	<i>Ant. H. (m)</i>	<i>Table ( )</i>	<i>Factors (dB)</i>	<i>(dBμV/m)</i>		<i>Limit (dBμV/m)</i>		<i>Margin (dB)</i>
					<i>Peak</i>	<i>Average</i>	<i>Peak</i>	<i>Ave.</i>	
2483.57	Hor	1.00	153	9.44	72.44	42.77	73.96	53.96	-1.52
2487.62	Hor	1.00	354	9.46	68.29	41.29	73.96	53.96	-5.67
2499.85	Hor	1.00	150	9.49	57.82	37.99	73.96	53.96	-15.97
2504.83	Hor	1.00	284	9.50	58.67	37.50	73.96	53.96	-15.29
2483.25	Ver	1.00	339	9.44	68.28	40.61	73.96	53.96	-5.68
2486.32	Ver	1.00	339	9.54	65.62	37.95	73.96	53.96	-8.34
2499.48	Ver	1.00	332	9.49	52.99	35.82	73.96	53.96	-18.14
2505.20	Ver	1.00	340	9.50	50.50	---	73.96	53.96	-3.46

**Channel 01 of IEEE 802.11n 20M**



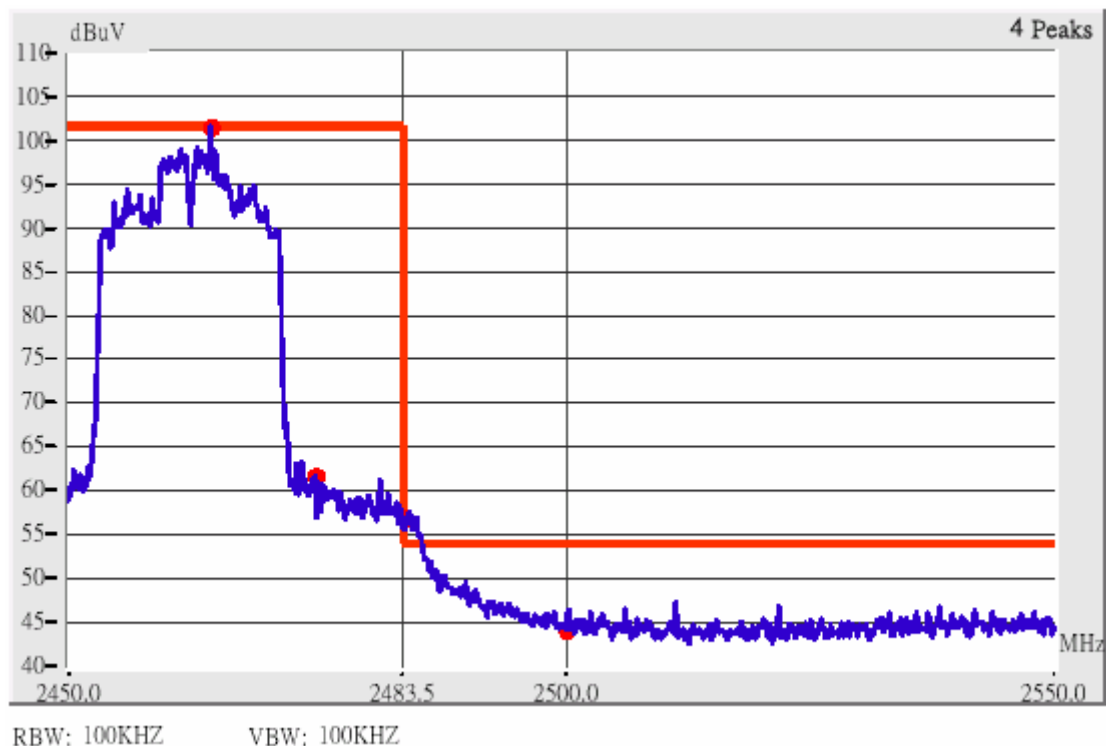
This is the hard copy of our bandedge measurement generated by our bandedge testing program. The plot shown above is the bandedge of channel 1.

9. The lobe left by the fundamental side is already 20dB below the highest emission level.

10. The emissions recorded in the restricted band is do comply with the Part 15.209(a) – as below.

Radiated Emission					Corrected Amplitude		Class B ( 3m )		
Frequency (MHz)	Ant. P.	Ant. H. (m)	Table ( )	Factors (dB)	(dBμV/m)		Limit (dBμV/m)		Margin (dB)
					Peak	Average	Peak	Ave.	
2388.27	Hor	1.00	55	9.18	67.51	50.68	73.96	53.96	-3.28
2389.74	Hor	1.00	61	9.18	71.18	52.85	73.96	53.96	-1.11
2387.66	Ver	1.00	198	9.18	57.84	44.18	73.96	53.96	-9.78
2390.49	Ver	1.00	198	9.18	64.02	48.01	73.96	53.96	-5.95

**Channel 11 of IEEE 802.11n 20M**



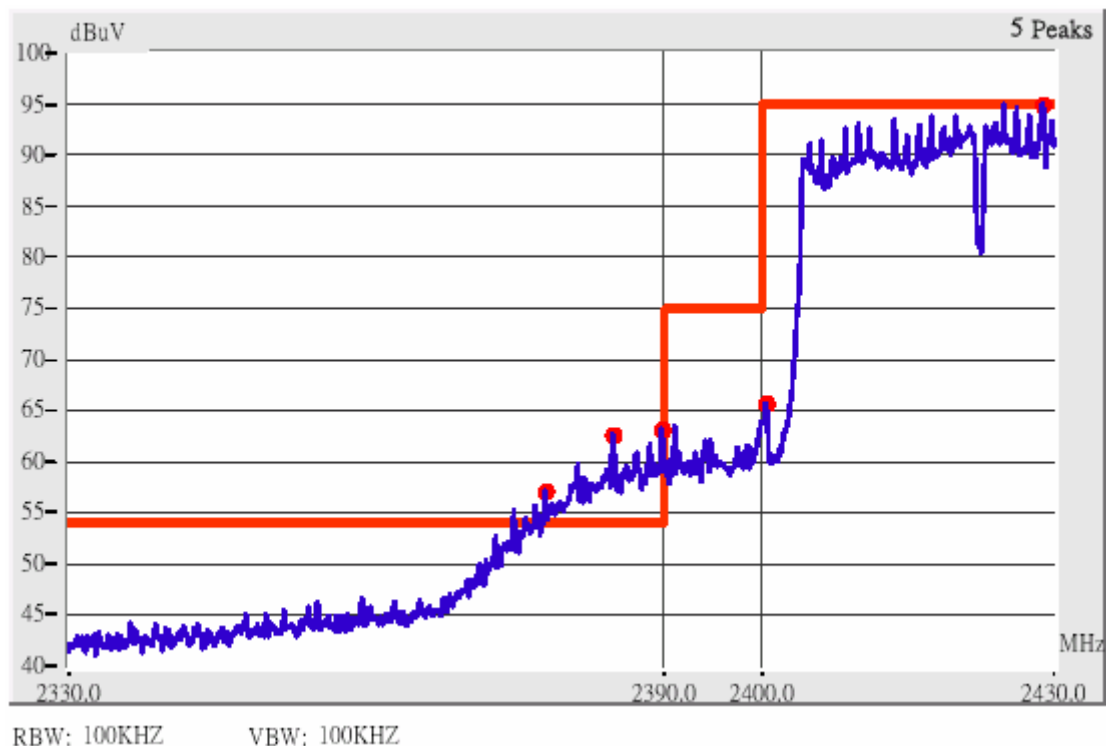
This is the hard copy of our bandedge measurement generated by our bandedge testing program. The plot shown above is the bandedge of channel 11.

11.The lobe right by the fundamental side is already 20dB below the highest emission level.

12.The emissions recorded in the restricted band is do comply with the Part 15.209(a) – as below

<i>Radiated Emission</i>					<i>Corrected Amplitude</i>		<i>Class B ( 3m )</i>		
<i>Frequency (MHz)</i>	<i>Ant. P.</i>	<i>Ant. H. (m)</i>	<i>Table ( )</i>	<i>Factors (dB)</i>	<i>(dBμV/m)</i>		<i>Limit (dBμV/m)</i>		<i>Margin (dB)</i>
					<i>Peak</i>	<i>Average</i>	<i>Peak</i>	<i>Ave.</i>	
2483.51	Hor	1.00	308	9.44	69.78	52.94	73.96	53.96	-1.02
2486.37	Hor	1.00	305	9.46	66.12	48.62	73.96	53.96	-5.34
2499.62	Hor	1.00	306	9.49	54.16	41.49	73.96	53.96	-12.47
2506.49	Hor	1.00	306	9.50	54.00	40.17	73.96	53.96	-13.79
2483.63	Ver	1.00	237	9.44	66.78	46.27	73.96	53.96	-7.18
2485.74	Ver	1.00	147	9.45	63.28	43.28	73.96	53.96	-10.68
2499.85	Ver	1.00	143	9.49	49.66	35.99	73.96	53.96	-17.97
2505.05	Ver	1.00	228	9.50	47.17	35.17	73.96	53.96	-18.79

### Channel CH03 of IEEE 802.11n 40M



This is the hard copy of our bandedge measurement generated by our bandedge testing program. The plot shown above is the bandedge of channel 3.

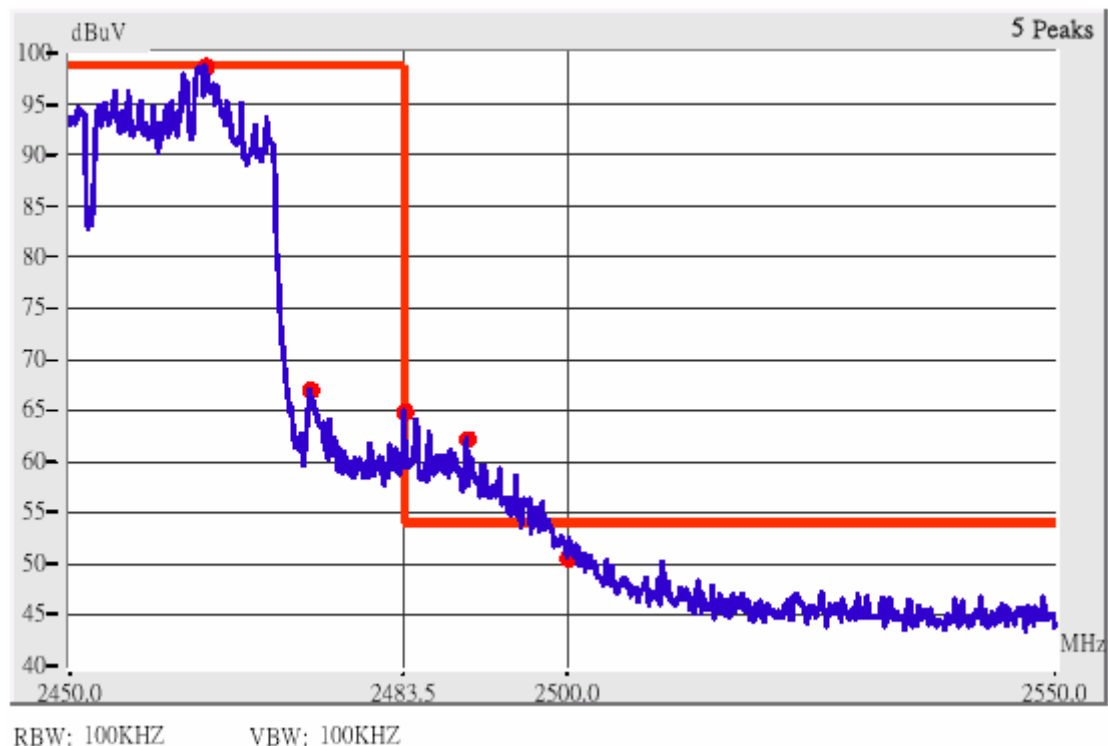
13. The lobe left by the fundamental side is already 20dB below the highest emission level.

14. The emissions recorded in the restricted band do comply with the Part 15.209(a) – as below.

Radiated Emission					Corrected Amplitude		Class B ( 3m )		
Frequency (MHz)	Ant. P.	Ant. H. (m)	Table ( )	Factors (dB)	(dBμV/m)		Limit (dBμV/m)		Margin (dB)
					Peak	Average	Peak	Ave.	
2385.77	Hor	1.00	78	9.17	72.17	52.84	73.96	53.96	-1.12
2389.44	Hor	1.00	76	9.18	71.35	52.51	73.96	53.96	-1.45
2381.67	Ver	1.00	2	9.16	64.16	45.83	73.96	53.96	-8.13
2389.47	Ver	1.00	4	9.18	66.35	48.18	73.96	53.96	-5.78



### Channel 09 of IEEE 802.11n 40M



This is the hard copy of our bandedge measurement generated by our bandedge testing program. The plot shown above is the bandedge of channel 09.

15. The lobe right by the fundamental side is already 20dB below the highest emission level.

16. The emissions recorded in the restricted band do comply with the Part 15.209(a) – as below

Radiated Emission					Corrected Amplitude		Class B ( 3m )		
Frequency (MHz)	Ant. P.	Ant. H. (m)	Table ( )	Factors (dB)	(dBμV/m)		Limit (dBμV/m)		Margin (dB)
					Peak	Average	Peak	Ave.	
2483.94	Hor	1.00	159	9.45	71.11	52.95	73.96	53.96	-1.01
2489.19	Hor	1.00	153	9.46	71.46	51.96	73.96	53.96	-2.00
2499.78	Hor	1.00	151	9.49	62.82	46.66	73.96	53.96	-7.30
2503.95	Hor	1.00	153	9.50	60.83	43.67	73.96	53.96	-10.29
2483.93	Ver	1.00	286	9.44	65.44	48.11	73.96	53.96	-5.85
2488.26	Ver	1.00	298	9.46	64.79	56.96	73.96	53.96	-7.00
2499.83	Ver	1.00	298	9.49	57.66	41.16	73.96	53.96	-12.80
2507.42	Ver	1.00	298	9.50	51.84	---	73.96	53.96	-2.12