

**CLASS II PERMISSIVE CHANGE
MEASUREMENT REPORT
of
*Wireless Router***

Applicant : ASUSTek Computer Inc.
EUT : Wireless Router
Model No. : WL-520G
FCC ID : MSQWL520G

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.

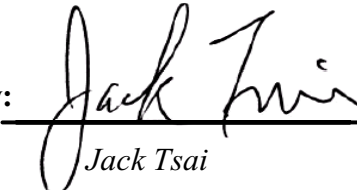
CERTIFICATION

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 B (Declaration of Conformity) and C Section 15.247.

Applicant : ASUSTek Computer Inc.
Applicant Address : 4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.
Product Name : 125 High Speed Wireless Router
Model : WL-520G
Report No. : A5415050256
Test Date : March 11, 2005

Prepared by: 
Jack Tsai

Approved by: 
Frank Tsai

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.**
- (2) **This report must not be used by the client to claim product endorsement by NVLAP or any agency of U.S. Government.**
- (3) **This test report, measurements made by TRC are traceable to the NIST only Conducted and Radiated Method.**

★ NVLAP LAB CODE: 200174-0

Federal Communications Commission **Declaration of Conformity** **(DoC)**

for the following equipment:

Product name : 125 High Speed Wireless Router
 Model name : WL-520G
 Trade name : ASUS

Is herewith confirmed and found to comply with the requirements of CFR 47 part15 Subpart B - Unintentional Radiators regulation. The results of electromagnetic mission evaluation are shown in the report number : A5415050256

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation

<i>Manufacturer</i>	<i>USA local representative</i>
Company name: ASUSTeK Computer Inc.	To be determined
Computer address: 4/F, 150, Li-Te Rd., Peitou, Taipei, Taiwan	
ZIP / Postal code 112	
Contact person: Lawrence Yu	
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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

FCC ID	:	MSQWL520G
Product Name	:	125 High Speed Wireless Router
Model Name	:	WL-520G
Frequency Range	:	2.412GHz ~ 2.462GHz
Support Channel	:	11 Channels
Modulation Skill	:	DBPSK, DQPSK, CCK, OFDM
Power Type	:	Powered by the AC-DC adapter (1) or (2), 1) Model: DV-0980S-B20 I/P: 120VAC, 60Hz, 14W O/P: 9VDC, 800mA 190cm length, non-shielded, no ferrite core 2) Model: 480910003CT I/P: 120VAC 60Hz 15.5W O/P: 9.0VDC 1000mA 185cm length, non-shielded, no ferrite core
Data Cable	:	RJ45 cable x1, 60cm length, non-shielded, no ferrite core RJ45 cable x3, 1m length, non-shielded, no ferrite core RJ45 cable x1, 30m length, non-shielded, no ferrite core

1.3 Test method

- 1.3.1 The LAN1, LAN2 and LAN3 ports of EUT are termination by RJ45 cables.
- 1.3.2 The WAN port connected to far Hub.
- 1.3.3 Connected the LAN4 port of EUT with the LAN card of PC. Using PC and software provided by the manufacturer to control EUT, the test is performed under the specific conditions.
- 1.3.4 Set different data rate and channel (CH01/CH06/CH11) being tested
 - (a) Radiated for Intentional test:
 - making EUT to the mode of continuous transmission
 - (b) Conducted test and Radiated for unintentional test:
 - making EUT to the linking (Rx/Tx) mode with far support equipments

1.4 Description of Support Equipment

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

- PC : HP**
 - Model No. : d338 uT
 - Serial No. : SGH41508PJ
 - FCC ID : N/A, DoC (Declaration of Confirmation) Approved
 - BSMI : R33001
 - Power type : 100 ~ 127VAC/6A, 200 ~ 240VAC/3A, 50 ~ 60Hz, Switching
 - Power cord : Non-shielded, 1.8m length, Plastic hood, No ferrite core

- Monitor : HP 15' Color Monitor**
 - Model No. : D8894A
 - Serial No. : CN02364355
 - FCC ID : ARSCM356N
 - BSMI : 3882A031
 - Power type : 100 ~ 240 VAC / 1.5A, 50 ~ 60 Hz, Switching
 - Power cord : Non-shielded, 1.80m length, Plastic hood, No ferrite core
 - Data cable : Shielded, 1.50m length, Plastic hood, with ferrite core

Printer : **EPSON**
Model No. : B241A
Serial No. : FAPY155090
FCC ID : N/A, DoC Approved
BSMI : R33126
Power type : Switching adaptor
Power cord : Non-shielded, 198cm length, No ferrite core
Data cable : Shielded, 1.50m length, No ferrite core

PS/2 Mouse : **HP**
Model No. : M-S69
Serial No. : 334684-002 323614-001
FCC ID : DoC Approved
BSMI : R41126
Power type : By PC
Power cord : Shielded, 1.90m length, No ferrite core

PS/2 Keyboard : **HP**
Model No. : 5181
Serial No. : BE21700405
FCC ID : DoC Approved
BSMI : 3892C981
Power type : By PC
Data cable : Shielded, 1.73m length, no ferrite core

Modem : **ACEEX**
Model No. : DM-1414
Serial No. : 9010583
FCC ID : IFAXDM1414
Power type : Linear
Power cord : Non-shielded, 1.9m length, No ferrite cord
Data cable : RS232, Shielded, 1.2m length, No ferrite core
RJ11C x 2, 7' length non-shielded, No ferrite core

USB Game pad : Logitech
Model No. : G-UC3B
Serial No. : AE3500500
FCC ID : DoC Approved
BSMI : 4902A047
Power type : Powered by PC
Power Cable : Shielded, 187cm length, Plastic hood, No ferrite core.

LAN Card : D-Link
Model No. : DFE-530TX
Serial No. : 0050BAE32FF3
FCC ID : N/A, DoC Approved

Notebook PC : Twinhead
Model No. : N222S
Serial No. : SY3261000988
FCC ID : DoC (Declaration of Confirmation) Approved
BSMI : 71001018

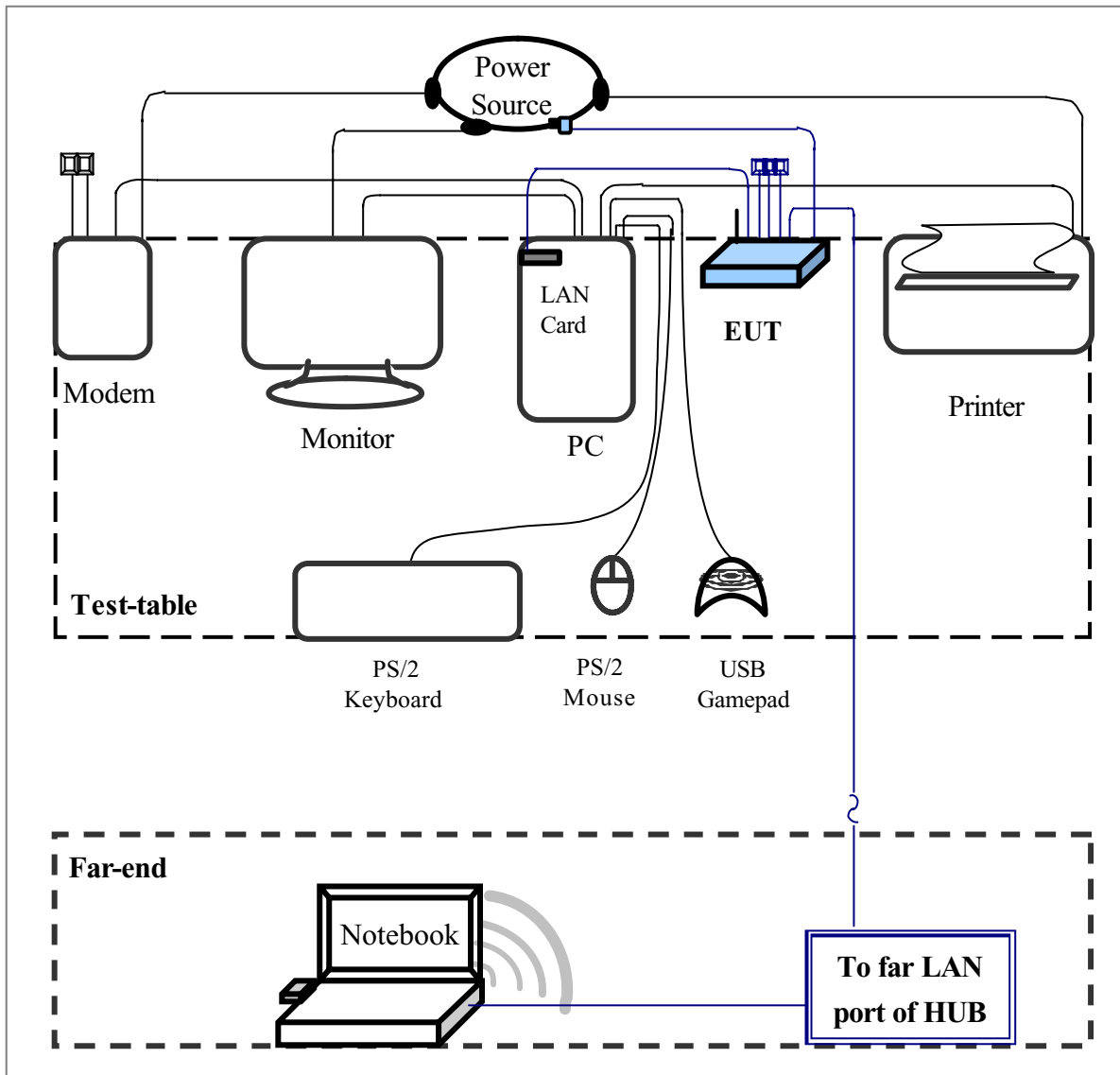
Power adaptor : LI Shin International Enterprise Corp.
Model No. : LSE9802A2060
Serial No. : A20231065818
BSMI : 3882B381
Power type : 100 ~ 240VAC / 50 ~ 60Hz, 1.5A, Switching
Power cord : Non-shielded, 1.0m length, Plastic hood, No ferrite core
(Main power to adaptor)
Shielded, 1.5m length, Plastic hood, ferrite core
(DC plug to adaptor)

WLAN Card : Gemtek Technology Co., Ltd.
Model No. : C911003
FCC ID : MXF-C911003

HUB : ASUS
Model No. : GX2048
FCC ID : None (CE approval)
Power type : Switching adaptor

1.5 Configuration of System Under Test

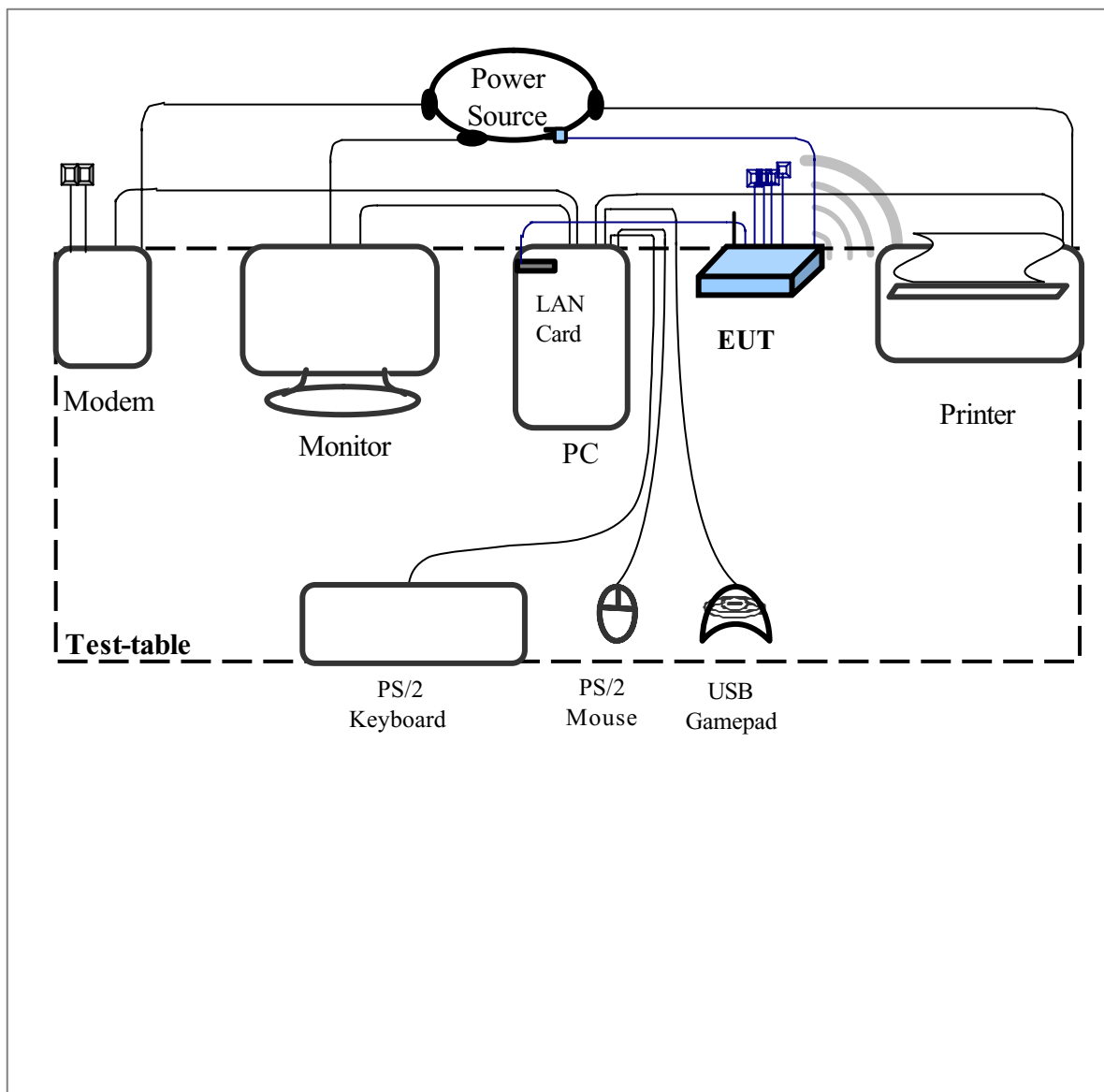
1.5.1 Conducted and Radiated for Unintentional



Connections of Equipment

- PC:**
- *Parallel Port --- a printer
 - *VGA Port --- a monitor
 - *Serial Port --- an external modem
 - *USB Port --- a USB gamepad
 - *LAN Interface --- EUT
 - *PS/2-key Port --- a PS/2 keyboard
 - *PS/2-mouse Port --- a PS/2 mouse

1.5.2 Radiated of Intentional



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 LAN 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 are in 2.412GHz to 2.462GHz.
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. So all the items as followed in testing report are need to test these three frequencies:
Top: Channel – 1; Middle: Channel – 6; Bottom: Channel – 11.

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, 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 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 15.101(a): Equipment authorization of unintentional radiators

The EUT equipped with a LAN interface and should be operated with the computer. It was categorized to *Class B personal computers and peripherals* as cannot be operated stand-alone. The authorization requires **Declaration of Conformity (DoC)** and the items required such as Sect.15.107 (Conducted limits) and Section15.109 (Radiated emission limits) is same as Section15.207 and 15.247(C).

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 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 (CH01), one in the middle (CH06) and the other in bottom (CH11).

3.2 List of Test Instruments

Instrument Name	Model	Brand	Serial No.	Calibration Date
				Next time
EMI Receiver	8546A	HP	3520A00242	08/05/05
RF Filter Section	85460A	HP	3448A00217	08/05/05
LISN (EUT)	LISN-01	TRC	99-05	10/07/05
LISN (Support E.)	LISN-01	TRC	9912-03, 04	11/04/05
Pre-amplifier	15542 ZFL-500	Mini – Circuits	0 0117	05/20/05
6dB Attenuator	MCL BW-S6W2	Mini – Circuits	9915 – Conducted	05/20/05
10dB Attenuator	A5542 VAT010	Mini – Circuits	0215 – Conducted	05/20/05
Coaxial Cable (2 meter)	A30A30-0058-50FS-2M	Jyebao	SMA-08	05/20/05
Coaxial Cable (1.1 meter)	A30A30-0058-50FS-1M	Jyebao	SMA-09	05/20/05
Coaxial Cable (20 meter)	RG-214/U	Jyebao	NP-01	05/20/05
Coaxial Cable (20 meter)	RG-214/U	Jyebao	NP-02	05/20/05
Auto Switch Box (< 30MHz)	ASB-01	TRC	9904-01	05/20/05

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: Standby mode

<i>Power Connected Emissions</i>					<i>Class B</i>		
<i>Conductor</i>	<i>Frequency (KHz)</i>	<i>Peak (dBµV)</i>	<i>QP (dBµV)</i>	<i>Average (dBµV)</i>	<i>QP-limit (dBµV)</i>	<i>AVG-limit (dBµV)</i>	<i>Margin (dB)</i>
Line 1	165.500	55.53	49.99	16.24	65.31	55.31	-15.32
	250.045	52.30	46.93	13.47	62.89	52.89	-15.96
	361.765	49.33	43.79	10.09	59.71	49.71	-15.92
	498.690	47.51	40.70	8.11	56.00	46.00	-15.30
	8470.000	43.35	---	---	60.00	50.00	-6.65
	10005.055	49.06	48.02	41.56	60.00	50.00	-8.44
Line 2	171.180	55.69	50.03	15.65	65.14	55.14	-15.11
	236.270	53.86	47.74	13.61	63.29	53.29	-15.55
	398.965	51.10	44.19	10.10	59.11	49.11	-14.92
	443.090	50.38	43.41	8.73	57.37	47.37	-13.96
	485.315	49.19	42.51	7.42	56.17	46.17	-13.66
	9680.000	46.99	---	---	60.00	50.00	-3.01

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 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	174.225	54.98	49.61	15.63	65.06	55.06	-15.45
	362.710	49.36	43.65	10.56	59.71	49.71	-16.06
	496.710	47.37	40.79	7.36	56.00	46.00	15.21
	911.000	37.72	---	---	56.00	46.00	-8.28
	8340.000	43.28	---	---	60.00	50.00	-6.72
	10467.785	50.10	49.50	45.22	60.00	50.00	-4.78
Line 2	163.075	56.47	50.03	15.99	65.54	55.54	-15.51
	320.225	52.23	45.29	10.59	60.89	50.89	-15.60
	463.800	49.69	42.98	8.07	56.83	46.83	-13.85
	1256.000	35.91	---	---	56.00	46.00	-10.09
	8470.000	42.37	---	---	60.00	50.00	-7.63
	10158.700	49.52	45.44	35.02	60.00	50.00	-14.56

Test mode: IEEE 802.11b Channel 6

Power Connected Emissions					Class B		
Conductor	Frequency (KHz)	Peak (dBμV)	QP (dBμV)	Average (dBμV)	QP-limit (dBμV)	AVG-limit (dBμV)	Margin (dB)
Line 1	176.495	54.72	49.64	15.51	65.00	55.00	-15.36
	337.935	49.96	44.61	10.98	60.43	50.43	-15.82
	521.610	47.20	40.21	6.47	56.00	46.00	-15.79
	919.000	37.19	---	---	56.00	46.00	-8.81
	7730.000	41.52	---	---	60.00	50.00	-8.48
	10306.005	50.35	40.93	25.83	60.00	50.00	-19.07
Line 2	182.180	55.36	49.29	15.10	64.83	54.83	-15.54
	241.450	53.79	47.24	12.92	63.14	53.14	-15.90
	317.180	52.23	45.44	10.78	60.97	50.97	-15.53
	455.150	50.03	42.95	11.29	57.11	47.11	-14.16
	674.000	41.22	---	---	56.00	46.00	-4.78
	10318.775	50.15	48.10	42.51	60.00	50.00	-7.49

Test mode: IEEE 802.11b Channel 11

Power Connected Emissions					Class B		
Conductor	Frequency (KHz)	Peak (dBμV)	QP (dBμV)	Average (dBμV)	QP-limit (dBμV)	AVG-limit (dBμV)	Margin (dB)
Line 1	159.630	55.32	50.08	15.96	65.69	55.69	-15.61
	330.260	49.66	44.53	10.72	60.63	50.63	-16.10
	457.000	47.78	41.63	11.95	56.97	46.97	-15.34
	583.315	44.34	37.92	4.37	56.00	46.00	-18.08
	954.000	36.72	---	---	56.00	46.00	-9.28
	10010.700	50.10	42.86	28.81	60.00	50.00	-17.14
Line 2	182.955	55.48	49.77	15.21	65.06	55.06	-15.29
	303.440	52.26	46.19	13.55	61.40	51.40	-15.21
	486.620	49.29	42.51	7.23	56.17	46.17	-13.66
	781.000	37.77	---	---	56.00	46.00	-8.23
	10311.530	50.03	42.86	26.13	60.00	50.00	-17.14
	18240.000	39.66	---	---	60.00	50.00	-10.34

Test mode: IEEE 802.11g 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	179.080	54.09	49.38	15.45	64.94	54.94	-15.56
	269.530	51.17	46.26	12.78	62.37	52.37	-16.11
	349.285	49.69	44.10	10.23	60.14	50.14	-16.04
	505.890	47.34	40.51	7.94	56.00	46.00	-15.49
	937.000	37.09	---	---	56.00	46.00	-8.91
	10323.555	50.77	45.73	38.29	60.00	50.00	-11.71
Line 2	164.680	55.90	50.05	15.80	65.37	55.37	-15.32
	309.755	52.23	45.75	11.48	61.23	51.23	-15.48
	471.495	49.57	42.89	7.96	56.57	46.57	-13.68
	738.000	38.49	---	---	56.00	46.00	-7.51
	10472.375	50.33	44.81	32.90	60.00	50.00	-15.19
	18240.000	39.05	---	---	60.00	50.00	-10.95

Test mode: IEEE 802.11g Channel 6

Power Connected Emissions					Class B		
Conductor	Frequency (KHz)	Peak (dBμV)	QP (dBμV)	Average (dBμV)	QP-limit (dBμV)	AVG-limit (dBμV)	Margin (dB)
Line 1	188.270	54.37	49.11	15.97	64.66	54.66	-15.55
	347.485	49.59	44.22	10.55	60.14	50.14	-15.92
	471.270	47.90	41.44	8.31	56.57	46.57	-15.13
	963.000	36.69	---	---	56.00	46.00	-9.31
	7730.000	40.54	---	---	60.00	50.00	-9.46
	10173.045	50.33	50.03	45.71	60.00	50.00	-4.29
Line 2	206.740	54.93	48.00	14.21	64.34	54.34	-16.34
	296.090	52.65	46.22	12.30	61.57	51.57	-15.35
	400.045	51.17	44.17	10.30	58.60	48.60	-14.43
	482.125	49.59	42.60	7.42	56.29	46.29	-13.69
	911.000	36.48	---	---	56.00	46.00	-9.52
	10328.705	50.03	48.90	43.61	60.00	50.00	-6.39

Test mode: IEEE 802.11g Channel 11

Power Connected Emissions					FCC Class B		
Conductor	Frequency (KHz)	Peak (dBμV)	QP (dBμV)	Average (dBμV)	QP-limit (dBμV)	AVG-limit (dBμV)	Margin (dB)
Line 1	178.000	54.65	49.48	15.55	64.94	54.94	-15.46
	311.060	50.82	45.10	11.65	61.23	51.23	-16.13
	463.530	48.28	41.58	8.00	56.83	46.83	-15.25
	945.000	36.58	---	---	56.00	46.00	-9.42
	8040.000	41.40	---	---	60.00	50.00	-8.60
	10170.905	50.89	49.97	45.49	60.00	50.00	-4.51
Line 2	199.855	55.12	48.89	18.29	64.60	54.60	-15.71
	282.000	52.81	46.50	11.97	61.97	51.97	-15.47
	357.250	51.47	44.80	10.08	60.14	50.14	-15.34
	452.045	50.08	43.37	9.19	57.11	47.11	-13.74
	10476.215	49.59	48.90	45.04	60.00	50.00	-4.96
	23120.000	39.06	---	---	60.00	50.00	-10.94

IV. Section 15.247 (C): Spurious Emissions (Radiated)

4.1 Test Condition & Setup

We'd performed the test by the *radiated emission* skill: The EUT was placed in an 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, 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 (CH01), one in the middle (CH06) and the other in bottom (CH11). 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 (dB μ V/m) is determined by algebraically adding the measured reading in dB μ V, 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

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

F_{Ia} : Actual Field Intensity

F_{Ir} : Reading of the Field Intensity

$$\text{Correction Factors} = \text{Antenna Factor} + (\text{Cable Loss} - \text{Amplifier Gain}) + \text{Switching Box Loss}$$

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_{Ia} : Actual Field Intensity

F_{Ir} : Reading of the Field Intensity

$$\text{Correction Factors} = \text{Antenna Factor} + (\text{Cable Loss} - \text{Amplifier Gain}) + \text{Switching Box Loss}$$

4.2 List of Test Instruments

				<u>Calibration Date</u>
Instrument Name	Model	Brand	Serial No.	Next time
EMI Receiver	8546A	HP	3520A00242	08/05/05
RF Filter Section	85460A	HP	3448A00217	08/05/05
Small Biconical Antenna	UBAA9114 & BBVU9135	SCHWARZECK	127	10/11/05
Pre-amplifier	PA1F	TRC	1FAC	05/20/05
Auto Switch Box (>30MHz)	ASB-01	TRC	9904-01	05/20/05
Coaxial Cable (Double shielded, 15 meter)	A30A30-0058-50FS-15M	JYEBAO	SMA-01	05/20/05
Coaxial Cable (1.1 meter)	A30A30-0058-50FS-1M	JYEBAO	SMA-02	05/20/05
Spectrum Analyzer	8564E	HP	3720A00840	08/13/05
Microwave Preamplifier	84125C	HP	US36433002	08/13/05
Horn Antenna	3115	EMCO	9104-3668	12/27/05
Standard Guide Horn Antenna	84125-80008	HP	18-26.5GHz	10/15/05
Standard Guide Horn Antenna	84125-80001	HP	26.5-40GHz	10/15/05
Horn Antenna	1196E (3115)	HP (EMCO)	9704-5178	01/11/06
Pre-amplifier	PA2F	TRC	2F1GZ	06/20/05
Coaxial Cable (3 miter)	A30A30-0058-50FST118	JYEBAO	MSA-05	06/20/05
Coaxial Cable (1 meter)	A30A30-0058-50FST118	JYEBAO	MSA-04	06/20/05

4.3 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: Standby mode for 30MHz to 1GHz [Horizontal]

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBµV)	Ant. H. (m)	Table (°)			Limit (dBµV/m)	Margin (dB)
142.76	40.11	1.00	326	-2.93	37.18	43.50	-6.32
251.89	44.05	1.00	232	-4.05	40.00	46.00	-6.00
401.02	37.74	1.00	290	-0.96	36.78	46.00	-9.22
499.24	37.83	1.00	229	2.87	40.70	46.00	-5.30
531.98	32.93	1.00	129	4.25	37.18	46.00	-8.82
901.79	24.33	1.00	157	14.75	39.08	46.00	-6.92

Test mode: Standby mode for 30MHz to 1GHz [Vertical]

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBµV)	Ant. H. (m)	Table (°)			Limit (dBµV/m)	Margin (dB)
151.25	37.53	1.00	351	-3.18	34.35	43.50	-9.15
200.96	40.04	1.00	3	-3.82	36.22	43.50	-7.28
501.66	34.37	1.00	195	2.97	37.34	46.00	-8.66
601.09	29.72	1.00	217	6.71	36.43	46.00	-9.57
701.73	28.76	1.00	333	9.61	38.37	46.00	-7.63
901.79	24.91	1.00	162	14.75	39.66	46.00	-6.34

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: Standby mode for 1GHz to 25GHz [Horizontal]

<i>Frequency</i>	<i>Ant. H.</i>	<i>Table</i>	<i>Amplitude</i>		<i>Correction Factor</i>	<i>Corrected Amplitude</i>		<i>Limit</i>		<i>Margin</i>
			<i>Peak / Ave.</i>			<i>Peak / Ave.</i>		<i>Peak / Ave.</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>
1595.00	1.00	336	38.04	---	0.30	38.34	---	73.96	53.96	-15.62
3195.83	1.00	242	31.94	---	9.61	41.55	---	73.96	53.96	-12.41
5944.17	1.00	349	26.58	---	17.87	44.45	---	73.96	53.96	-9.51
9974.58	1.00	284	22.96	---	22.94	45.90	---	73.96	53.96	-8.06
21708.12	1.00	118	46.87	---	2.87	49.74	---	73.96	53.96	-4.22

Test mode: Standby mode for 1GHz to 25GHz [Vertical]

<i>Frequency</i>	<i>Ant. H.</i>	<i>Table</i>	<i>Amplitude</i>		<i>Correction Factor</i>	<i>Corrected Amplitude</i>		<i>Limit</i>		<i>Margin</i>
			<i>Peak / Ave.</i>			<i>Peak / Ave.</i>		<i>Peak / Ave.</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>
1651.67	1.00	174	38.50	---	0.46	38.96	---	73.96	53.96	-15.00
2912.50	1.00	330	31.00	---	8.99	39.99	---	73.96	53.96	-13.97
5469.58	1.00	166	27.34	---	16.85	44.19	---	73.96	53.96	-9.77
9953.33	1.00	273	23.78	---	22.98	46.76	---	73.96	53.96	-7.20
21708.12	1.00	123	46.73	---	2.87	49.60	---	73.96	53.96	-4.36

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 CH01 for 30MHz to 1GHz [Horizontal]

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)			Limit (dBμV/m)	Margin (dB)
151.25	37.29	1.00	249	-3.18	34.11	43.50	-9.39
251.89	43.80	1.00	129	-4.05	39.75	46.00	-6.25
401.02	37.09	1.00	286	-0.96	36.13	46.00	-9.87
500.45	37.56	1.00	234	2.92	40.48	46.00	-5.52
531.98	33.56	1.00	125	4.25	37.81	46.00	-8.19
901.79	25.02	1.00	262	14.75	39.77	46.00	-6.23

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

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)			Limit (dBμV/m)	Margin (dB)
151.25	38.31	1.00	6	-3.18	35.13	43.50	-8.37
200.96	39.28	1.00	6	-3.82	35.46	43.50	-8.04
401.02	37.51	1.00	207	-0.96	36.55	46.00	-9.45
501.66	34.53	1.00	192	2.97	37.50	46.00	-8.50
701.73	29.43	1.00	283	9.61	39.04	46.00	-6.96
901.79	24.71	1.00	342	14.75	39.46	46.00	-6.54

Test mode: IEEE 802.11b CH01 for 1GHz to 25GHz [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
1608.33	1.00	147	36.37	---	14.20	50.57	---	73.96	53.96	-3.39
2197.92	1.00	204	36.35	---	8.64	44.99	---	73.96	53.96	-8.97
3216.67	1.00	127	36.03	---	11.47	47.50	---	73.96	53.96	-6.46
4823.12	1.00	259	45.84	---	3.76	49.60	---	73.96	53.96	-4.36
9650.42	1.00	157	37.77	---	11.47	49.24	---	73.96	53.96	-4.72
12061.04	1.00	198	38.68	---	9.81	48.49	---	73.96	53.96	-5.47

Test mode: IEEE 802.11b CH01 for 1GHz to 25GHz [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
1608.33	1.00	253	37.08	---	14.20	51.28	---	73.96	53.96	-2.68
1656.25	1.00	130	37.76	---	13.45	51.21	---	73.96	53.96	-2.75
2329.17	1.00	118	42.25	---	9.01	51.26	---	73.96	53.96	-2.70
3215.96	1.00	103	42.50	40.98	11.47	53.97	52.45	73.96	53.96	-1.51
4825.16	1.00	271	52.90	42.32	3.76	56.66	46.08	73.96	53.96	-7.88
9647.89	1.00	151	42.62	38.19	11.46	54.08	49.65	73.96	53.96	-4.31

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

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)			Limit (dBμV/m)	Margin (dB)
151.25	38.31	1.00	250	-3.18	35.13	43.50	-8.37
251.89	44.22	1.00	134	-4.05	40.17	46.00	-5.83
401.02	36.83	1.00	293	-0.96	35.87	46.00	-10.13
500.45	37.63	1.00	223	2.92	40.55	46.00	-5.45
806.00	27.17	1.00	246	11.80	38.97	46.00	-7.03
901.79	25.75	1.00	151	14.75	40.50	46.00	-5.50

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

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)			Limit (dBμV/m)	Margin (dB)
200.96	39.07	1.00	24	-3.82	35.25	43.50	-8.25
401.02	40.13	1.00	211	-0.96	39.17	46.00	-6.83
501.66	34.91	1.00	198	2.97	37.88	46.00	-8.12
601.09	29.90	1.00	188	6.71	36.61	46.00	-9.39
701.73	29.46	1.00	326	9.61	39.07	46.00	-6.93
901.79	24.38	1.00	157	14.75	39.13	46.00	-6.87

Test mode: IEEE 802.11b CH06 for 1GHz to 25GHz [Horizontal]

<i>Frequency</i>	<i>Ant. H.</i>	<i>Table</i>	<i>Amplitude</i>		<i>Correction Factor</i>	<i>Corrected Amplitude</i>		<i>Limit</i>		<i>Margin</i>
			<i>Peak / Ave.</i>			<i>Peak / Ave.</i>		<i>Peak / Ave.</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>
1595.83	1.00	270	36.27	---	14.40	50.67	---	73.96	53.96	-3.29
1625.00	1.00	82	36.73	---	13.94	50.67	---	73.96	53.96	-3.29
3250.00	1.00	97	35.94	---	11.63	47.57	---	73.96	53.96	-6.39
7312.29	1.00	10	35.57	---	10.30	45.87	---	73.96	53.96	-8.09
9747.08	1.00	8	35.05	---	11.89	46.94	---	73.96	53.96	-7.02
12187.92	1.00	185	39.60	---	9.74	49.34	---	73.96	53.96	-4.62

Test mode: IEEE 802.11b CH06 for 1GHz to 25GHz [Vertical]

<i>Frequency</i>	<i>Ant. H.</i>	<i>Table</i>	<i>Amplitude</i>		<i>Correction Factor</i>	<i>Corrected Amplitude</i>		<i>Limit</i>		<i>Margin</i>
			<i>Peak / Ave.</i>			<i>Peak / Ave.</i>		<i>Peak / Ave.</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>
1624.64	1.00	200	37.40	30.17	13.95	51.35	44.12	73.96	53.96	-9.84
1654.25	1.00	71	38.07	---	13.45	51.52	---	73.96	53.96	-2.44
2364.58	1.00	90	42.06	---	9.11	51.17	---	73.96	53.96	-2.79
3249.30	1.00	95	41.96	39.84	11.63	53.59	51.47	73.96	53.96	-2.49
4871.46	1.00	179	45.61	---	3.95	49.56	---	73.96	53.96	-4.40
9747.08	1.00	349	37.53	---	11.89	49.42	---	73.96	53.96	-4.54

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

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)			Limit (dBμV/m)	Margin (dB)
151.25	37.39	1.00	250	-3.18	34.21	43.50	-9.29
251.89	43.79	1.00	223	-4.05	39.74	46.00	-6.26
401.02	39.22	1.00	217	-0.96	38.26	46.00	-7.74
499.24	38.32	1.00	229	2.87	41.19	46.00	-4.81
801.15	25.06	1.00	249	11.65	36.71	46.00	-9.29
901.79	24.66	1.00	255	14.75	39.41	46.00	-6.59

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

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)			Limit (dBμV/m)	Margin (dB)
151.25	37.29	1.00	24	-3.18	34.11	43.50	-9.39
200.96	39.81	1.00	351	-3.82	35.99	43.50	-7.51
501.66	36.29	1.00	186	2.97	39.26	46.00	-6.74
601.09	30.06	1.00	191	6.71	36.77	46.00	-9.23
701.73	28.90	1.00	295	9.61	38.51	46.00	-7.49
901.79	23.91	1.00	354	14.75	38.66	46.00	-7.34

Test mode: IEEE 802.11b CH11 for 1GHz to 25GHz [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
1614.58	1.00	344	36.57	---	14.10	50.67	---	73.96	53.96	-3.29
1641.67	1.00	340	37.23	---	13.68	50.91	---	73.96	53.96	-3.05
3216.67	1.00	196	33.89	---	11.47	45.36	---	73.96	53.96	-8.60
9849.79	1.00	110	35.82	---	11.93	47.75	---	73.96	53.96	-6.21
12308.75	1.00	238	38.53	---	9.56	48.09	---	73.96	53.96	-5.87
22157.92	1.00	126	46.76	---	3.25	50.01	---	73.96	53.96	-3.95

Test mode: IEEE 802.11b CH11 for 1GHz to 25GHz [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
1656.58	1.00	351	38.29	32.84	13.45	51.74	46.29	73.96	53.96	-7.67
2250.00	1.00	185	41.47	---	8.79	50.26	---	73.96	53.96	-3.70
2399.97	1.00	85	44.49	34.05	9.21	53.70	43.26	73.96	53.96	-10.70
3282.63	1.00	107	42.69	40.98	11.79	54.48	52.77	73.96	53.96	-1.19
4925.40	1.00	272	51.13	41.42	4.13	55.26	45.55	73.96	53.96	-8.41
9847.88	1.00	127	40.86	36.51	11.93	52.79	48.44	73.96	53.96	-5.52

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

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)			Limit (dBμV/m)	Margin (dB)
151.25	37.41	1.00	249	-3.18	34.23	43.50	-9.27
251.89	43.87	1.00	135	-4.05	39.82	46.00	-6.18
301.60	41.40	1.00	265	-3.68	37.72	46.00	-8.28
401.02	37.39	1.00	258	-0.96	36.43	46.00	-9.57
500.45	37.40	1.00	231	2.92	40.32	46.00	-5.68
901.79	23.73	1.00	268	14.75	38.48	46.00	-7.52

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

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)			Limit (dBμV/m)	Margin (dB)
200.96	39.90	1.00	333	-3.82	36.08	43.50	-7.42
401.02	37.53	1.00	220	-0.96	36.57	46.00	-9.43
501.66	35.12	1.00	207	2.97	38.09	46.00	-7.91
601.09	29.37	1.00	188	6.71	36.08	46.00	-9.92
701.73	28.69	1.00	342	9.61	38.30	46.00	-7.70
901.79	24.28	1.00	360	14.75	39.03	46.00	-6.97

Test mode: IEEE 802.11g CH01 for 1GHz to 25GHz [Horizontal]

<i>Frequency</i>	<i>Ant. H.</i>	<i>Table</i>	<i>Amplitude</i>		<i>Correction Factor</i>	<i>Corrected Amplitude</i>		<i>Limit</i>		<i>Margin</i>
			<i>Peak / Ave.</i>			<i>Peak / Ave.</i>		<i>Peak / Ave.</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>
1608.33	1.00	251	35.96	---	14.20	50.16	---	73.96	53.96	-3.80
3216.67	1.00	103	35.96	---	11.47	47.43	---	73.96	53.96	-6.53
7233.75	1.00	263	37.29	---	10.07	47.36	---	73.96	53.96	-6.60
9650.42	1.00	221	37.28	---	11.47	48.75	---	73.96	53.96	-5.21
12061.04	1.00	333	39.69	---	9.81	49.50	---	73.96	53.96	-4.46
21708.12	1.00	108	46.95	---	2.87	49.82	---	73.96	53.96	-4.14

Test mode: IEEE 802.11g CH01 for 1GHz to 25GHz [Vertical]

<i>Frequency</i>	<i>Ant. H.</i>	<i>Table</i>	<i>Amplitude</i>		<i>Correction Factor</i>	<i>Corrected Amplitude</i>		<i>Limit</i>		<i>Margin</i>
			<i>Peak / Ave.</i>			<i>Peak / Ave.</i>		<i>Peak / Ave.</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>
1608.33	1.00	269	37.21	---	14.20	51.41	---	73.96	53.96	-2.55
1656.25	1.00	163	37.70	---	13.45	51.15	---	73.96	53.96	-2.81
2247.92	1.00	187	41.55	---	8.78	50.33	---	73.96	53.96	-3.63
3215.96	1.00	97	41.71	40.03	11.47	53.18	51.50	73.96	53.96	-2.46
4827.08	1.00	277	51.76	41.72	3.77	55.53	45.49	73.96	53.96	-8.47
12061.04	1.00	210	39.09	---	9.81	48.90	---	73.96	53.96	-5.06

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

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)			Limit (dBμV/m)	Margin (dB)
151.25	37.34	1.00	247	-3.18	34.16	43.50	-9.34
251.89	43.98	1.00	229	-4.05	39.93	46.00	-6.07
401.02	37.48	1.00	284	-0.96	36.52	46.00	-9.48
499.24	37.97	1.00	229	2.87	40.84	46.00	-5.16
533.19	32.98	1.00	129	4.30	37.28	46.00	-8.72
901.79	23.82	1.00	265	14.75	38.57	46.00	-7.43

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

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)			Limit (dBμV/m)	Margin (dB)
200.96	39.39	1.00	24	-3.82	35.57	43.50	-7.93
401.02	37.44	1.00	229	-0.96	36.48	46.00	-9.52
501.66	34.00	1.00	192	2.97	36.97	46.00	-9.03
601.09	30.08	1.00	192	6.71	36.79	46.00	-9.21
701.73	29.46	1.00	339	9.61	39.07	46.00	-6.93
901.79	23.89	1.00	320	14.75	38.64	46.00	-7.36

Test mode: IEEE 802.11g CH06 for 1GHz to 25GHz [Horizontal]

<i>Frequency</i>	<i>Ant. H.</i>	<i>Table</i>	<i>Amplitude</i>		<i>Correction Factor</i>	<i>Corrected Amplitude</i>		<i>Limit</i>		<i>Margin</i>
			<i>Peak / Ave.</i>			<i>Peak / Ave.</i>		<i>Peak / Ave.</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>
1597.92	1.00	259	36.44	---	14.36	50.80	---	73.96	53.96	-3.16
1625.00	1.00	331	37.44	---	13.94	51.38	---	73.96	53.96	-2.58
3250.00	1.00	77	35.57	---	11.63	47.20	---	73.96	53.96	-6.76
9747.08	1.00	305	36.81	---	11.89	48.70	---	73.96	53.96	-5.26
12187.92	1.00	12	39.67	---	9.74	49.41	---	73.96	53.96	-4.55
21934.79	1.00	157	47.08	---	3.09	50.17	---	73.96	53.96	-3.79

Test mode: IEEE 802.11g CH06 for 1GHz to 25GHz [Vertical]

<i>Frequency</i>	<i>Ant. H.</i>	<i>Table</i>	<i>Amplitude</i>		<i>Correction Factor</i>	<i>Corrected Amplitude</i>		<i>Limit</i>		<i>Margin</i>
			<i>Peak / Ave.</i>			<i>Peak / Ave.</i>		<i>Peak / Ave.</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>
1624.65	1.00	212	38.27	31.72	13.95	52.22	45.67	73.96	53.96	-8.29
1656.25	1.00	96	38.55	---	13.45	52.00	---	73.96	53.96	-1.96
2187.50	1.00	127	42.31	---	8.62	50.93	---	73.96	53.96	-3.03
3250.00	1.00	62	40.15	---	11.63	51.78	---	73.96	53.96	-2.18
4873.96	1.00	186	51.51	41.80	3.96	55.47	45.76	73.96	53.96	-8.20
9747.08	1.00	76	38.29	---	11.89	50.18	---	73.96	53.96	-3.78

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

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)			Limit (dBμV/m)	Margin (dB)
151.25	38.24	1.00	241	-3.18	35.06	43.50	-8.44
251.89	43.94	1.00	229	-4.05	39.89	46.00	-6.11
301.60	39.99	1.00	278	-3.68	36.31	46.00	-9.69
500.45	37.61	1.00	226	2.92	40.53	46.00	-5.47
533.19	33.52	1.00	126	4.30	37.82	46.00	-8.18
901.79	23.80	1.00	258	14.75	38.55	46.00	-7.45

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

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)			Limit (dBμV/m)	Margin (dB)
151.25	36.97	1.00	342	-3.18	33.79	43.50	-9.71
200.96	39.60	1.00	15	-3.82	35.78	43.50	-7.72
401.02	37.27	1.00	223	-0.96	36.31	46.00	-9.69
501.66	34.53	1.00	198	2.97	37.50	46.00	-8.50
601.09	31.02	1.00	200	6.71	37.73	46.00	-8.27
701.73	29.01	1.00	335	9.61	38.62	46.00	-7.38

Test mode: IEEE 802.11g CH11 for 1GHz to 25GHz [Horizontal]

<i>Frequency</i>	<i>Ant. H.</i>	<i>Table</i>	<i>Amplitude</i>		<i>Correction Factor</i>	<i>Corrected Amplitude</i>		<i>Limit</i>		<i>Margin</i>
			<i>Peak / Ave.</i>			<i>Peak / Ave.</i>		<i>Peak / Ave.</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>
1593.75	1.00	295	36.66	---	14.43	51.09	---	73.96	53.96	-2.87
1641.67	1.00	81	37.53	---	13.68	51.21	---	73.96	53.96	-2.75
3283.33	1.00	134	36.71	---	11.79	48.50	---	73.96	53.96	-5.46
9849.79	1.00	296	36.47	---	11.93	48.40	---	73.96	53.96	-5.56
12308.75	1.00	6	37.66	---	9.56	47.22	---	73.96	53.96	-6.74
22157.92	1.00	136	47.11	---	3.25	50.36	---	73.96	53.96	-3.60

Test mode: IEEE 802.11g CH11 for 1GHz to 25GHz [Vertical]

<i>Frequency</i>	<i>Ant. H.</i>	<i>Table</i>	<i>Amplitude</i>		<i>Correction Factor</i>	<i>Corrected Amplitude</i>		<i>Limit</i>		<i>Margin</i>
			<i>Peak / Ave.</i>			<i>Peak / Ave.</i>		<i>Peak / Ave.</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>
1593.75	1.00	175	36.17	---	14.43	50.60	---	73.96	53.96	-3.36
1658.33	1.00	114	37.90	---	13.42	51.32	---	73.96	53.96	-2.64
2369.98	1.00	134	44.13	32.42	9.13	53.26	41.55	73.96	53.96	-12.41
3282.63	1.00	196	42.55	40.24	11.79	54.34	52.03	73.96	53.96	-1.93
4922.73	1.00	280	48.33	39.99	4.12	52.45	44.11	73.96	53.96	-9.85
9849.79	1.00	130	37.57	---	11.93	49.50	---	73.96	53.96	-4.46

4.4 Test Result of the Bandedge

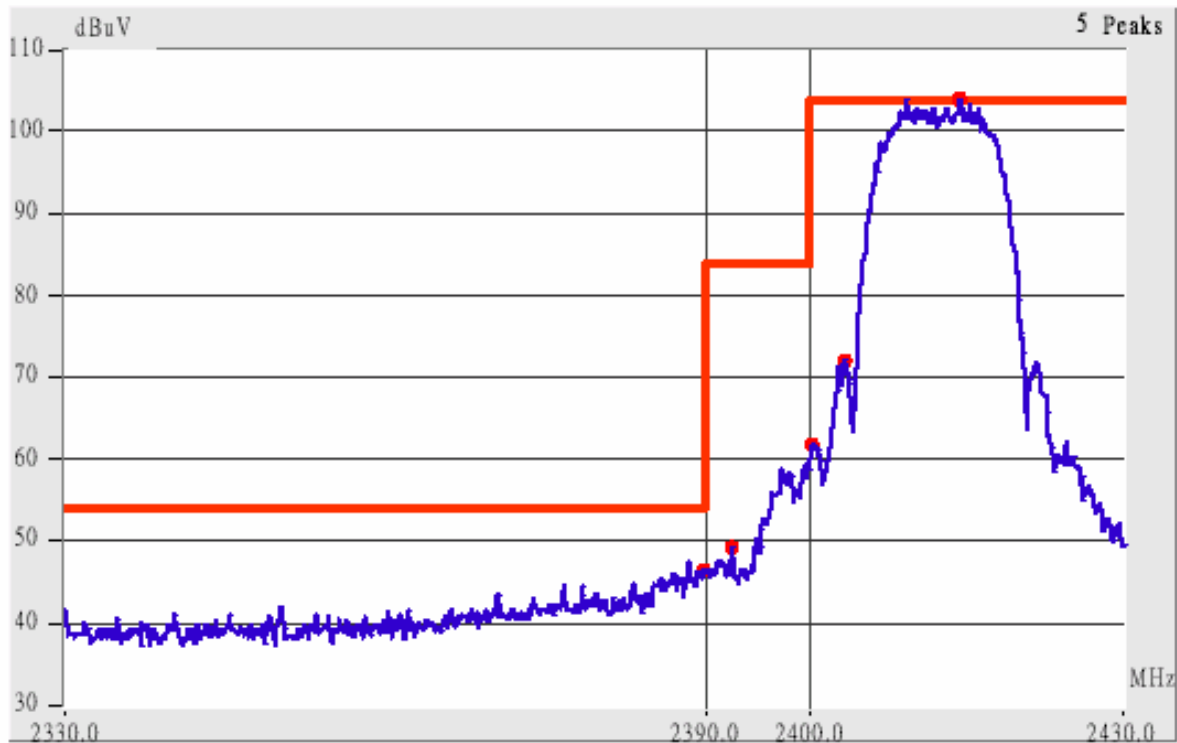
If any 100 kHz bandwidth outside these frequency bands, the radio frequency power that is produced by the modulation products of the spreading sequence, the information sequence and the carrier frequency shall be either *at least 20 dB below that in any 100 kHz bandwidth within the band that contains 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 10th 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 < 4.1 >

Channel 1 of IEEE 802.11b

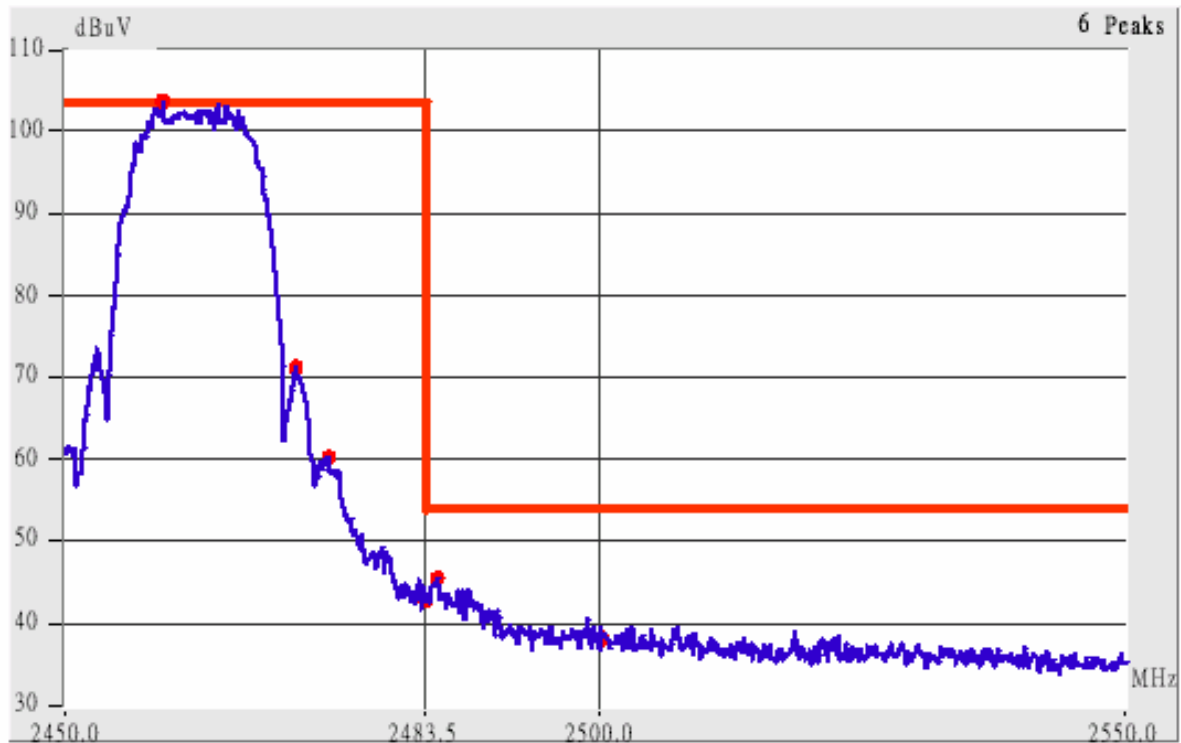


This is the hard copy of our bandedge measurement generated by our bandedge testing program. The plot shown above is the bandedge of channel 1.

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>	
2386.55	Hor	1.00	119	9.17	48.01	---	73.96	53.96	-5.95
2390.02	Hor	1.00	107	9.18	46.82	---	73.96	53.96	-7.14
2387.43	Ver	1.00	114	9.17	58.49	46.53	73.96	53.96	-7.43
2390.32	Ver	1.00	99	9.18	56.92	48.00	73.96	53.96	-5.96

Channel 11 of IEEE 802.11b

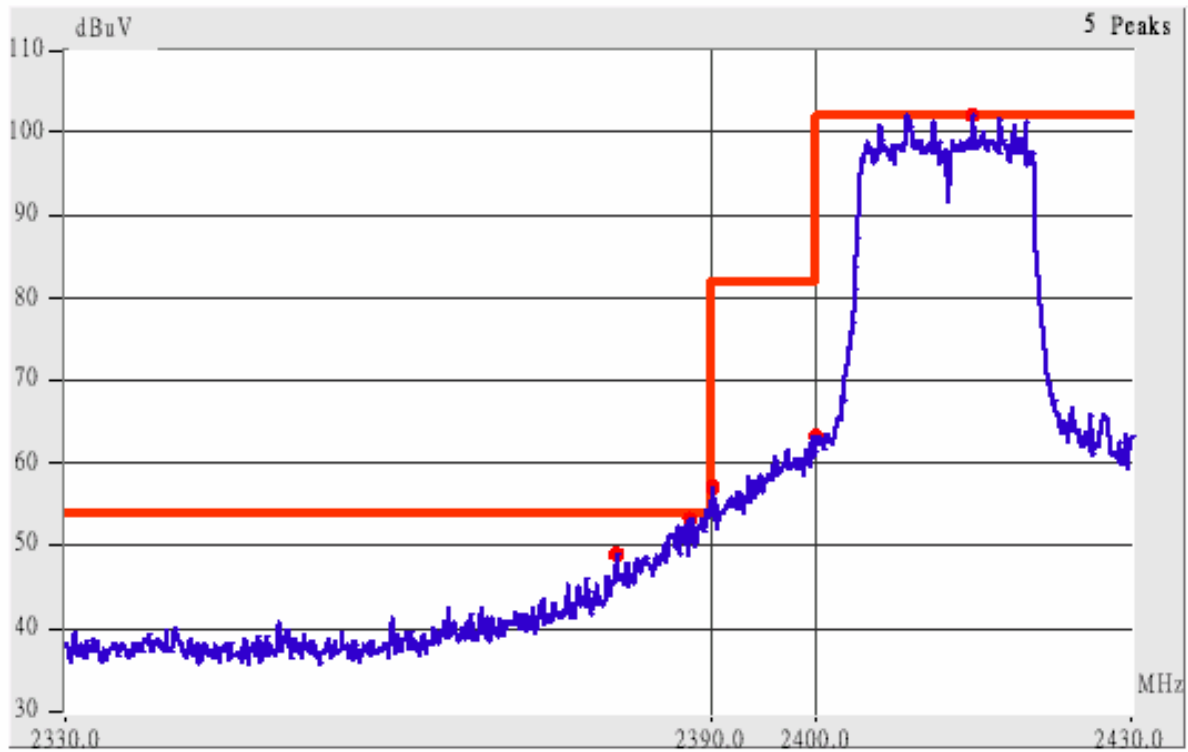


This is the hard copy of our bandedge measurement generated by our bandedge testing program. The plot shown above is the bandedge of channel 11.

- 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

<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>	
2487.35	Hor	1.00	249	9.45	45.50	---	73.96	53.96	-8.46
2501.64	Hor	1.00	236	9.49	45.13	---	73.96	53.96	-8.83
2482.91	Ver	1.00	131	9.44	54.47	43.82	73.96	53.96	-10.14
2484.40	Ver	1.00	138	9.45	55.18	43.58	73.96	53.96	-10.38
2500.01	Ver	1.00	130	9.49	47.73	---	73.96	53.96	-6.23
2507.59	Ver	1.00	142	9.50	50.01	---	73.96	53.96	-3.95

Channel 1 of IEEE 802.11g

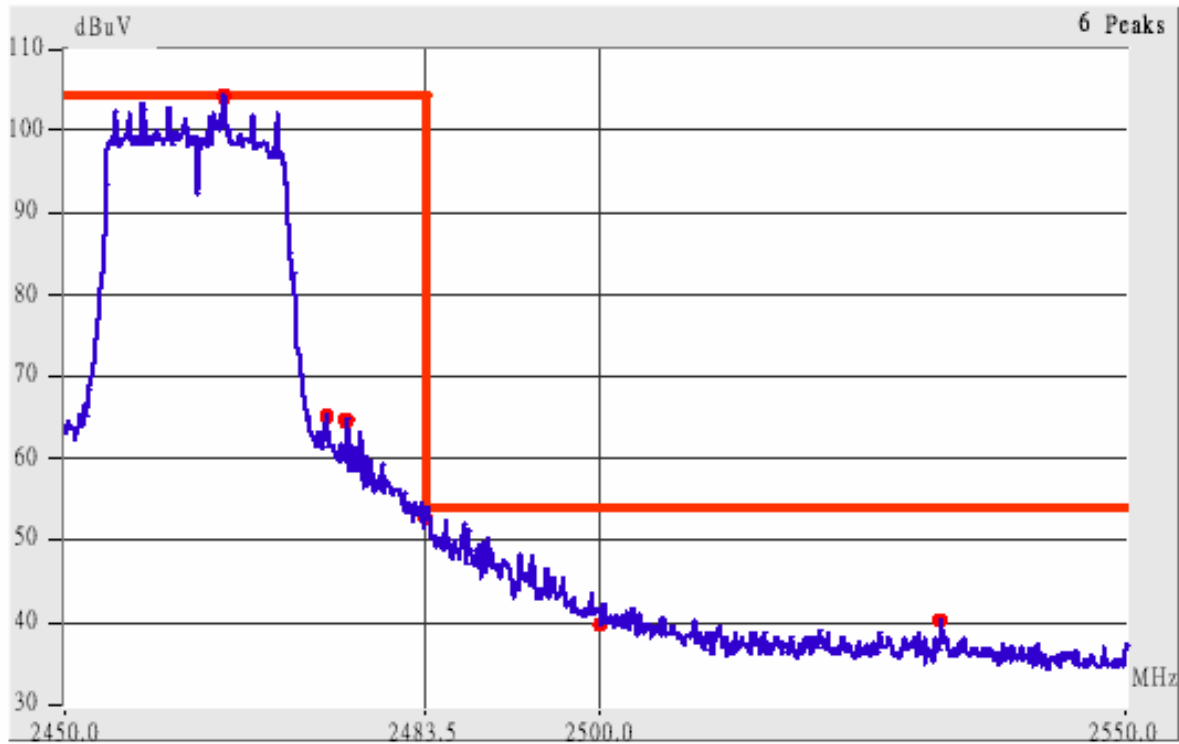


This is the hard copy of our bandedge measurement generated by our bandedge testing program. The plot shown above is the bandedge of channel 1.

- 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>	
2388.59	Hor	1.00	124	9.18	59.74	40.52	73.96	53.96	-13.44
2390.42	Hor	1.00	245	9.18	55.14	42.08	73.96	53.96	-11.88
2388.91	Ver	1.00	77	9.18	70.12	50.92	73.96	53.96	-3.04
2390.04	Ver	1.00	61	9.18	63.19	52.54	73.96	53.96	-1.42

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>	
2483.29	Hor	1.00	177	9.44	59.01	40.07	73.96	53.96	-13.89
2485.65	Hor	1.00	182	9.45	55.58	37.81	73.96	53.96	-16.15
2500.01	Ver	1.00	132	9.49	44.72	---	73.96	53.96	-9.24
2509.93	Ver	1.00	246	9.51	45.42	---	73.96	53.96	-8.54
2483.85	Ver	1.00	189	9.44	53.84	39.59	73.96	53.96	-14.37
2485.82	Ver	1.00	350	9.45	55.33	37.85	73.96	53.96	-16.11